The WTO, Agriculture and Sustainable Development

Analysis of the Effects of the World Trade Order on the Agricultural Markets in light of Conditioning Sustainable Development

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CONTENTS

FIGURES, GRAPHES AND TABLES

PRELIMINARY REMARKS BY THE PROJECT HEAD

This study is of particular significance, because it endeavours to put the current world trade conflicts in a larger context in order to evaluate them. Proceeding from the assumption of a wide-scoped intellectual road-map, guidelines and arguments serving to secure local and global welfare on a long-term basis can be recommended to politicians, who are dictated by the short-term problems of every-day, and short-term, non-sustainable pursuit of interest can be unmasked as such.

The preliminary sessions of the originally envisaged MILLENNIUM Round of the WTO in Seattle and the course of the following procedures have shown that the limits of an unconditional market economy are becoming clear on a global scope as well. This makes basic orientation, such as that presented by this study, all the more valuable.

The clear criticism of the presently dominating mind-set, which is based almost exclusively on short-term competitive grounds, and the demand for those course corrections and institutional innovations that appear necessary in order to place the required limits on the market despite the new technical scope provided by communication and transportation in the global market, will give rise to contradiction. This is all the more valid regarding the unavoidable demand for special conditions for agriculture and forestry as the economic sector which is closest to nature. This expected protest must be met with the insight that "business as usual" is not sustainable and disciplines other than economics have come up with crushing evidence which the preferred economic schools of thought can no longer ignore, if they wish to avoid being reproached for trying to see the world with blinkers on. Backcasting from the future requires the incorporation of future-oriented control elements into world economics. This doesn't only apply to the global financial markets, which have beome a real danger, but also to the recognizable socially and ecologically undermining competition, as well as the increasing concentration of market power.

The demand for a reevaluation of preferred, common thinking patterns, and the necessary course correction, especially its institutional realisation, sometimes has a "ceterum censeo" character, because it cannot be applied in the near future in view of the current reality of politics. It is therefore all the more important to make this topical and take measure according to it, because the danger is otherwise given that one might get carried away with the changing "requirements" of the varying constellations of power, and then cover up ex post with ideologies of partial justification. This can only lead to an increasing feeling of unease and a loss of image and legitimacy of the pesent economic order.

It must also be remarked that the success and the quality of political work in the realm of international trade politics, especially in small countries, can for the most part, not be measured according to the short-term achievement of the targets recommended by this study. The

achievement of significant changes has become much more difficult, since initiatives now require prior consensus in multi-staged processes in the institutions of world trade, whereby agriculture is only considered a "causa minor." Yet small countries can provide insights and propose strategies, as well as foster intellectual partnerships, hindering the excesses of an obsolete paradigm and thus contributing to long-term change. There was therefore no attempt made to present a "blueprint" for the present negotiations in order to impose stipulations on the politicians. Instead, the intention is to offer them support in their difficult work in the form of improved insights and basic arguments.

Despite the necessary scientific reserve, issues are brought up by name in the trade policy section, which are not mentioned in diplomatic relations, the awareness of which can better explain the present trade policy situation. It should furthermore be mentioned that this study can not go beyond the prescribed scope in terms of content, financing and personnel. It had to be limited to partial areas of social activity, and certain factors had to be taken for granted, although they could have been questioned, despite which the study does have a solid scientific basis.

The thorough examination of the issue regarding "non-product-related production methods" is an invaluable basis for the negotiations, since international environmental and social policy can have no lasting effect without a change taking place towards the inclusion of the total life-cycle of a product. The likewise detailed elaboration of the Agreement on Sanitary and Phytosanitary Measures is also of great practical significance, since agricultural production, which tends towards overspecialization, inherently creates new problems. The same is valid for a broadening of vision in view of ecological economics, since the past asymmetrical global economic development is becoming a grave problem, with the result that the WTO is suffering increasingly in terms of acceptance and image.

The dominating younger fraction of the team made a great effort in familiarizing themselves with the material. On the one hand, this means that experts-to-be will be available in the future, and on the other hand, it is thus possible to incorporate new insights.

In view of this background, it is to be hoped that the present study serves as an incentive and improved basis for orienting the negotiations in the scope of the ongoing WTO negotiations towards more public welfare. Particularly the Chapter "Conclusions and Proposed Solutions" as well as the recommendations formulated in the following reflections, will hopefully be of practical value in this respect.

Vienna, January 2000

I. EXECUTIVE SUMMARY

I.1 Goals

The goal of the present study is to identify the strengths and weaknesses of liberalised world trade, in particular in the agricultural sector, and to investigate whether and to which extent the WTO Agreements provide the opportunity to react to negative developments, and if not, to suggest necessary further developments of the said agreements and their application. Furthermore, the study should contribute towards alleviating the lack of basic theoretical arguments, pointed out by trade policy-makers, in order to arrive at a well-founded position through improved insight and analysis. Although concrete recommendations for the WTO negotiations cannot be presented, important points of orientation, basic goals and basic proposals for solutions can be provided. In the scope of academic liberty, the mainstream of trade policy is partly left behind, the axioms of which are questioned and comprehensive approaches are chosen. Economic goals are diverse *a priori* and vary greatly according to situation; it is therefore hardly possible to formulate a complete list of detailed goals for a sustainable global economy which is capable of finding consensus. This study is therefore limited to the aspects of sustainability, environmental protection and food security as the major preconditions for an economy that is efficient in the long term and secures prosperity.

In order to be able to make statements regarding the deficits of the world trade system and its conflicts with basic societal goals, such as sustainability or long term security of supplies, it was initially necessary to elaborate basic problematic interrelationships of the issues in question in addition to clarifying the terminology. In the case of the present study, this has taken inter alia on the form of a detailed elaboration of the concept of sustainability as well as the present world trade system and the theoretical concepts upon which it is based.

Proposals for solutions were developed on this basis. A brief summary of the individual issues and their possible conclusions is presented below:

- in Section I.2: Important Boundary Conditions and Definition of Position
- in Section I.3: Tentative Solutions and Recommendations

I.2 Important Boundary Conditions and Definition of Position

I.2.1 Important Terms and Significant Connections

I.2.1.1 Sustainability as Basic Postulation of the Future Subsistence of the Earth

Sustainability has become a principle which has received wide international recognition, but which has not yet been sufficiently applied. However, it is also one of the most controversial principles in terms of application, and this is exemplified by the wealth of definitions it is given in relevant literature.

Sustainability is defined as "strong sustainability" in this study, signifying that the natural capital of the earth should be kept intact on a long-term basis, since a series of scientific research results gives evidence that the critical limit of possible substitution of natural goods by man-made goods has already been reached. The major factors in connection with this concept are:

- inter- and intragenerational justice
- protection of resources and conservation of the natural base of production
- conservation and enhancement of biodiversity
- securing the biological basis of our existence in conjunction with long term economic stability.

Sustainability in this sense can and should only be realized while adhering to moral principles – this includes the postulate of maintaining the base of life (also for the future generations) and a fair access to the resources of the earth both regionally and globally.

I.2.1.2 The World Trade System - WORLD TRADE ORGANIZATION (WTO) and Its Regulatory Mechanisms

The present world trade system is often seen as a static system of codified legal standards, with the highest custodian being the WORLD TRADE ORGANIZATION (WTO). This is the conviction in the majority of Europe, in particular, as a result of the corresponding legal tradition. The WTO functions as a "watchman" of international trade, however it would be exaggerating to speak of a full, consistent and worldwide recognition, or even an enforceable foreign trade legal codex, at the present. The world trade regulations were mainly derived from international agreements concluded in eight rounds of negotiations in the scope of the General Agreement on Tariffs and Trade (GATT). The creation of the WTO gave these agreements an institutional umbrella for the first time. The primary aspects of this new system are: a coherent system of contractual obligations, the legal code of the WTO, as well as the institutional precautions for their

monitoring, development and administration. The WTO is a "member-driven organization." Its case-law oriented legal development has been eased by the novelty that according to the modified dispute settlement procedure, panel reports can now only be rejected unanimously (abolition of the veto right). The following report under Figure I.2-1 provides an overview of the structure and content of the World Trade Agreements of the year 1994.

The aspect of sustainability can only be found peripherally in the agendas of the World Trade Organization. However, the cardinal question in this connection is whether an organization like the WTO can be expected to implement and monitor such a broad range of goals including environmental protection, inter- and intragenerational justice, food security (for present and future generations) and economic prosperity for everyone. On the other hand, the WTO's common goals prescribe consideration of the aspect of sustainability. The preamble of the WTO Agreement relates the increased the standard of living to the condition of an "optimal use of the world's resources" in connection with sustainable development which protects and conserves the environment as well as increasing the necessary means to that end. This marks the advent of a new orientation of the world trade system's goals towards environmental issues.

The WTO's various agreements and treaties can be categorized into two groups, first, the "multilateral agreements" which are binding for all Member States and, second, the "plurilateral agreements" which are only binding for those Members which have ratified them.

In the case of the multilateral agreements, valid for all WTO member states, a differentiation must be made between two types of principles: the general principles which are applicable to all types of agreements, including the agreements on trade of goods and services as well as the agreement on Trade-Related Aspects of Intellectual Property Rights (e.g. the most-favored-nation principle, the principle of reciprocity, and the national treatment principle, etc.), and the specific agreements which solely concern trade in goods or services or the protection of intellectual property rights. In the scope of the present study, emphasis has been placed on the elaboration of the Agreement on Agriculture and the Agreement on Technical Barriers to Trade as well as the basic aspects of the Agreement on the Application of Sanitary and Phytosanitary Measures.

Figure I.2-1

Structure and Content of the World Trade Organization Agreements (WTO) of 1994

I. Significant Content of the WTO Agreement

- Establishing of the WTO
- Determination of the scope of application, functions and structure of the WTO
- The Secretariat, Budget and Contributions
- Legal status of the WTO
- Procedural stipulations (the practice of decision-making by consensus followed under GATT 1947)
- Stipulations regarding membership, accession to and withdrawal from the WTO Agreement

II. Multilateral Trade Agreements as an Integral Part of the WTO Agreement *)
- Annexes 1-3 to the WTO Agreement

1. Multilateral agreements on trade of goods
   - *General Agreement on Tariffs and Trade (GATT) 1994*
   - *Agreement on Agriculture (see details in Section III.1.8)*
   - *Agreement on the Application of Sanitary and Phytosanitary Measures (see details in Section III.2)*
   - *Agreement on Textiles and Clothing*
   - *Agreement on Technical Barriers to Trade (see details in Section III.2)*
   - *Agreement on Trade-Related Investment Measures*
   - *Agreement on Implementation of Article VI GATT 1994*
   - *Agreement on Implementation of Article VII GATT 1994*
   - *Agreement on Preshipment Inspection*
   - *Agreement on Rules of Origin*
   - *Agreement on Import Licensing Procedures*
   - *Agreement on Subsidies and Countervailing Measures*
   - *Agreement on Safeguards*
2. General Agreement on Trade in Services
3. Agreement on Trade-Related Aspects of Intellectual Property Rights
4. Dispute Settlement Procedures
5. Trade Policy Review Mechanism

III. Plurilateral Trade Agreements **) – Annex 4 of the WTO Agreement

1. Agreement on Trade in Civil Aircraft
2. Agreement on Government Procurement
3. International Dairy Agreement
4. International Bovine Meat Agreement

*) According to Art. II par. 2 WTO Agreement binding for all Members

**) According to Art. II par. 3 WTO Agreement, the listed agreements are only binding for those Members which have ratified them.

The following regulations and interpretations in the scope of the WTO proved themselves particularly controversial and contradictory, especially in connection with the postulate of sustainability:

a) the term "like products," the current interpretation of which excludes production methods and life cycle analysis

b) the scope of application ratione materiae of special nature conservation regulations according to Articles XI and XX of GATT: in contrast to the corresponding disputes to date, the "Shrimp Dispute" would point to a certain change of case practise, but the remarks of the appellate body remain unclear regarding this significant issue. However, it can be presumed that the protection of common resources outside the jurisdiction of a country, in as far as it is basically considered permissible, is only legally possible in a very limited scope in terms of GATT/WTO.

I.2.1.3 The World Trade System – Basic Theoretical Assumptions

Section IV.1 sketches the most important propositions of neoclassical welfare and trade theory, as well as its main weaknesses, such as disregarding cost of adjustment, endogenous growth, spatial aspects, and questions of sustainability. It is illustrated that the general proposition of free trade being advantageous for all trading countries cannot be generally sustained, if those aspects are considered. Subsequently, the role of competition in the efficiency of markets will be outlined. The discussion makes clear that competition does not a priori lead to more efficient results; in many cases it causes an inefficient outcome. Finally, Section IV.1 gives a summary regarding how the results of neoclassical welfare and trade theory have to be modified, if ecological effects are introduced into the models. In general, we distinguish between local externalities and border-crossing externalities. In case of negative local externalities, countries importing the damaging products gain through market liberalization, while the welfare effect for exporting countries is unclear. However, if the optimal environmental policy is in force in all countries, then all countries gain by more liberal trade. In case of international spillovers, such as the greenhouse effect, a general overproduction of the damaging goods must be expected, since countries can shift their costs to others, and the introduction of the optimal environmental policy is therefore unlikely.

Section IV.2 deals with the question of the circumstances under which free trade can be an obstacle to introducing optimal environmental standards. It is shown that especially in case of structural (non-wage-driven) unemployment, there is an incentive to export domestic unemployment to foreign countries by means of lowering standards.

Furthermore it must be emphasized that economy cannot be isolated from biogeosphere, and that it is a part of this system. Various physical indicators are introduced, which can act complimentary to monetary values in measuring the national economic output. Concerning the

connection between international trade and environment, the theory postulating that "the increase of income above significant income brackets goes hand-in-hand with reduced damage to the environment" (GATT, 1992) is often taken for granted. The introduction of improved more environmentally efficient technologies (technology effect), and the sectoral shift towards less environmentally harmful sectors (compound effect) are considered the explanation for the decoupling theory. Usually it is presumed that a typical path of development is based upon this: At the beginning of a period of growth, each GNP increase is accompanied by high environmental damage. Less environmentally harmful – and more expensive – technologies are not yet available, and the environmental consciousness of the population is low. Environmental damage increases with income until a certain point. Beyond this point, the effect topples and environmental quality improves with each additional GNP unit.

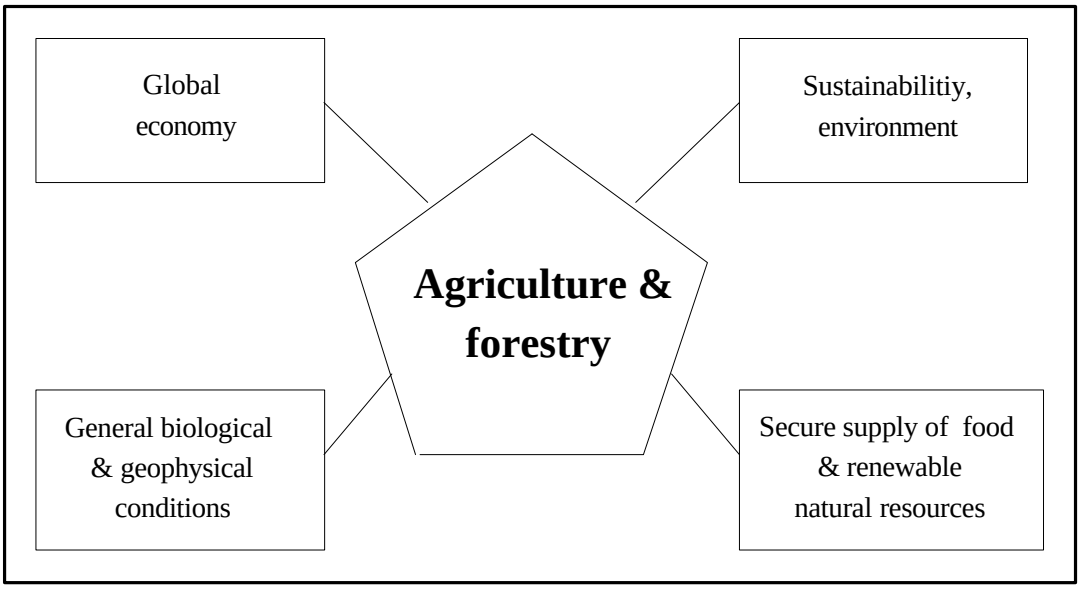
However, new empirical studies indicate that it cannot generally be assumed that a decoupling of output (= income) and environmental damage is taking place. The positive effects of output on environmental factors could only be proven for pollutants creating a local, short-term cost burden. For the major part, this has only been illustrated for individual pollutants, and in some cases, after a temporary decrease, environmental damage increases again along with increasing income. In addition, only partial empirical evidence can be found for the theory that the environment is a luxury good. Since the presumption that "higher income leads to an improvement of environmental quality," is not generally valid, the conclusion must be made that in order to provide better recommendations, an analytical scope is required which explicitly considers biogeophysical factors. The problem of irreversible environmental damage must also be borne in mind.

I.2.2 Agriculture as Affected Sector

Following the above basic considerations and the elaboration of the basic concepts and framework, the present study aims at bringing them in relation to agricultural economics, on the one hand since agriculture and forestry play a central role in the upcoming WTO negotiations and, on the other hand, since these sectors have a particular affinity with the term sustainability as they constitute the natural basis of mankind's existence. Accordingly, agricultural production is situated in the multi-faceted field of tension between economy, society and ecology as seen both nationally and globally (Figure I.2-2).

Figure I.2-2

Agriculture in the Field of Tension between National and Global Economy, Society and Ecology



Initially, however, a clear definition of terminology worthy of support must be formed for this study's concept of sustainable agricultural production. According to the general definition of sustainability, it is evident that the organic farming comes very close to the postulate of sustainability (refer to the following definitions).

The *basic principles of organic agriculture* according to WOODWORD ET AL. (1996) are:

- To work as much as possible within a closed system, and draw upon local resources
- To maintain the long-term fertility of soils
- To avoid all forms of pollution possibly resulting from agricultural techniques
- To produce foodstuffs of high nutritional quality and in a sufficient quantity
- To reduce to a minimum the use of fossil energy in agricultural practice
- To give livestock conditions of life conforming to their physiological needs and to humanitarian principles
- To make it possible for agricultural producers to earn a living through their work and to develop their potentialities as human beings
- To use and develop appropriate technology based on an understanding of biological systems
- To use decentralised systems for processing, distribution and marketing of products

- To create a system aesthetically pleasing to both - those within and those outside the system
- To maintain and preserve wildlife and their habitats.

The next issue to be examined concerns why sustainable agricultural production should be protected in the scope of the elaborated world trade system.

In many areas of agricultural production the basic economic goals are dissimilar or incompatible to those in other sectors of the economy. While thinking in terms of real assets prevails in agricultural production (i.e. there is a tendency to maintain a farm over generations resulting in economic and social sustainability), in other economic sectors the goal of maximizing income is dominating - in as far as family enterprises are excluded (this is to say that in the latter the economic activity is oriented towards individuals and their families and not to the profession or the enterprise).

In particular, it is typical of agricultural production that it provides a series of related services. This includes protection and conservation of the environment (soil, water and air) as well as landscape conservation.

■ Agricultural Production and Risk Management

The sustainability of locally compatible farming methods in several ways also constitutes a risk minimization factor. On the one hand, it provides security in the case of shortages of imported foodstuffs. The worldwide climate change caused by the Greenhouse Effect and the increasing related climatic catastrophes along with the higher risk of crop failures indicate that the above consideration is not improbable (see also the *"World Disaster Report 1999*" by the Federation of Red Cross and Red Half-Moon Societies, as well as the proceedings of the International Conference in 1997 at the FAL, the Swiss Research Center for Agricultural Economics and Technology in Tänikon/Thurgau, on *"Sustainable Agriculture for Food, Energy and Industry"*). On the other hand, site oriented local agriculture serves to minimize the risk over generations, since it prevents the loss of know-how concerning proven forms of farming and appropriate technologies. The loss of this know-how, the majority of which is based on long term past experience, can only be made up for over generations. Another often ignored aspect constitutes the risk of supply shortages caused by political factors (crises or war), as well as the increased risk of disrupted supplies due to logistics problems in the ever larger and vulnerable supply systems. This entails an increased threat of massive international supply crises.

The discussion regarding compensation for these services has meanwhile become global, although it continues to be highly disputed (also see WTO, 1999). The main issue at question is how to quantify these services. The problem of weak comparability and incommensurability is apparent. While traditional evaluation processes assume that different goals and values can be assessed

according to one uniform scale, as well as assuming that complete data for these values and goals are available, in actual fact the scales diverge, and for the most part only uncertain data are available. These challenges are now being increasingly tackled by the field of "ecological economics" which endeavors to delve deeper into such issues (also see MUNDA in: VAN DEN BERGH, 1997; as well as MARTINEZ-ALIER, MUNDA AND O'NEILL, 1997).

■ Sustainable Agriculture and the World Trade System

Part V.2.2 investigates whether liberalization of agricultural markets would have positive or negative effects on the environment. It can be expected that an opening of markets would lead to decreasing prices in industrial countries. Most authors conclude that freer trade would lead to a reduction in use of environmentally harmful means of production, such as chemical fertilizers or pesticides, and therefore improve the situation of the environment. The crucial assumption of this conclusion is that aggregate production is positively correlated with the use of such inputs, so that a neoclassical damage function exists. However, what is evident in the short run for the firm-scale production function need not be true for the long-term aggregate production function of a whole country. If declining prices lead to stronger specialization in enterprises or regions, as expected according to neoclassical theory, the use of environmentally harmful inputs would definitely rise, and the resulting negative environmental effects might be much larger than the positive effects due to a reduction of the intensity. Therefore, we see that the question as to whether free trade in agriculture would be good or bad for the environment can only be answered if more information is available.

There is need for further research in this field and the selection and definition of evaluation criteria is a core issue. If multifunctionality is included as a new demand, the reference grid changes substantially. For example, if the agricultural production is discontinued in a region of marginal yield, whether it be the Montanas in Portugal or the mountainous regions of the Alps, an entire bundle of services existentially significant to the degree of jeopardizing the basis of life is eliminated.

However, the interests and production methods of the most significant stakeholders in the world agricultural market pose a threat to the goal of sustainable agricultural production, such as that outlined above: the changes in the domestic trade policy of the mega-trade giants, the EU and the USA, were decisive for the development of world agricultural markets. This becomes clearly apparent by the fact that the greatest changes took place in the realm of products, which had the most highly reformed market regulations (cereals, in particular), while there were less changes in other sectors of the world market with a mainly unchanging policy (e.g. dairy products). It is difficult to predict the environmental effects of these changes with the presently available data. The decline in trade volume can initially be positively evaluated in view of decreasing the volumes of traffic and transportation. However, the regional shift of production is much more difficult to assess, since serious environmental problems arise in regions of intensive agricultural

production. There is an additional danger that intensive production is concentrated in favoured regions.

In an excursus regarding the connections between world trade dynamics and AGENDA 2000, the necessity for change of trade policy regulations is pointed out, if site oriented sustainable agricultural production is to be possible in terms of the "European Model of Agriculture (MEA)."

I.3 Tentative Solutions and Recommendations

The "Tentative Solutions and Recommendations" essentially comprise two sections:

In **Section VI**, a general **overview is given of possible environmental or agropolitical measures** within the current world trade system.

First the attempt is made to tie environmental and agricultural policies together, explaining the reasons why environmental policy measures are relevant in the realm of agriculture. Such reasons are:

- agriculture and forestry as instruments for preserving agricultural and recreational landscapes which are as intact as possible
- agriculture and forestry as sectors which are affected by harmful environmental influences
- agriculture as potential cause of environmental problems (in addition to other causes).

In the following, the basic principles of agricultural and environmental policy will be elaborated on a national scale, and their trade-offs with international and world trade principles, in particular, will be explained. Finally, a list of possible environmental policy measures in the agricultural sector, which can either be implemented solely on a national basis or in accordance with the current world trade system is presented.

As an opportunity for breaking out of the present economic school of thought, proposals for solutions derived from ecological economics are introduced. In general, the viewpoint of ecological economists differs from that of conventional economics in four points:

a) by recognizing the biogeophysical limits of growth,

b) by the significance placed on the danger of irreversible damage in combination with the current factor of uncertainty,

c) by the explicit integration of unintentional (monetary and significant physical) external effects in production theory, and

d) through the concept of nature as a basic infrastructure instead of a luxury good.

On this basis, it is argued that international trade can potentially lead to better results than autarky. Whether this is actually the case, depends upon the prevailing conditions. Three related central issues and the respective necessary measures are introduced and discussed:

- consideration of product life cycles,
- internalization of external costs,
- coupling of trade liberalization and ecological obligations.

Therefrom it can be derived that open markets should be supported by a multilateral, non-discriminatory, regulated and global system of clear social and ecological standards, instead of uniform and undifferentiated liberalization, since the economy is inherently embedded in the social, biological and geophysical spheres.

In **Section VII** the opportunities for **adjustment of interpretation of the WTO Agreements, as well as eventual amendments**, are indicated in order to achieve the desired effect and to combat the various undesirable developments:

The practically oriented elaboration of *"Conclusions and Proposals for Solutions"* ranges from basic orientation to the recommendation to tie further opening of the market to the simultaneous consideration of environmental issues. The following points should be emphasized:

Section VII.1 illustrates that a **future sustainable economic policy can only be successful on the basis of negotiation principles that concur with the general legal code and legal understanding** as well as attempt to include various important goals regarding social, economic and ecological development. The above-mentioned points are both required in order to ensure social sustainability. However, the regulations of the WTO (GATT) have not yet been fully developed in this respect. It is therefore imperative to specially emphasize those basic action guidelines which are a part of the legal code of "civilized nations." This can take place through the recognition of *guiding legal principles along with reorganizing priorities of objects of legal protection*. Consideration must also be given to the insight that prosperity-increasing social strategies require well-balanced and *diverse goals*.

In this regard, the following basic action guidelines deserve special attention:

- the application of the **funding principle**, i.e. the priority protection of those basic realities upon which all others are built. This means, in particular:
    + The long-term security of food supply in quantitative and qualitative terms in the case of crises or war, as well as in the case of disrupted supplies and supply shortages, must be given top priority. On the one hand, food security for all people and at all times requires the domestic production base to be sustained, and on the other hand, trade policy regulations in which rights to market access are complemented by the obligation to insure food supply;

+ and that sustainably *securing the ecological basis* is recognized as the unconditional and generally valid principle of society and economy, which must also be taken into account in international trade. This means inter alia that sustainable patterns of husbanding nature are to be used and supported.

- Furthermore, the broad recognition of the principles of caution, precaution, and plausibility have to be seen as a consequence and product of human rights. In view of this, the establishment of a corresponding pervasive legal culture should be supported. This concerns in particular the present practice of interpretation of the term "scientific evidence". It is generally given a very narrow interpretation: proof of damage as well as proof of a linear causal connection is demanded. The consequence of this precondition is that on the one side the party fearing damages has no right at all to ask for precautionary change and on the other side the victim of damage is forced into the unfair position of having the duty to produce such narrow evidence, although such evidence is very difficult and costly to produce in complex systems.

The world trade system should take into account the worldwide ecological, social and cultural diversity and support ***fair*** competition between various social systems. The rules of the game should favor a positive pattern of competition in which socially and ecologically attractive systems can stand the test and serve as models.

As elaborated above, a partial reinterpretation or adaptation of regulations is required in order to achieve sustainably oriented world trade dynamics. This should not overtax the WTO (GATT), which sees itself primarily as an advocate of global competition. Instead, a socially and ecologically sustainable framework must be formulated for the global market. The WTO must be expected to support this, and not only to respect it. This lies in its own interest in the long term, since the WTO is also dependent on broad, long-term acceptance.

With reference to **Article VI** and the **Agreement on Implementation of Article VI** of GATT, 1994, it must be clarified that undermining ecological and social standards, distorting exchange rates, and other kinds of detectable unfair system competition justify countervailing measures.

Correspondingly, in connection with the final act of the URUGUAY Round, it should be clarified in **Article XVI** and in the **Agreement on Subsidies and Countervailing Measures** that lower social and ecological standards, as well as the (conscious) distortion of exchange rates, are the equivalent to systematically subsidizing the export industry. At the same time, it must be stated that paying for services in the interest of the general public – in particular in the agricultural sector – does not constitute subsidizing.

The interpretation of **Article XX (b)** pertaining to the **protection of human, animal or plant life and health** should also take into account the latest state of the art in science. This paragraph is

still only interpreted in terms of veterinary health and phytosanitary issues, although *protection of ecological systems* is clearly required.

Article XX (g) regarding **measures for the conservation of exhaustible natural resources** was originally based upon the classically exploited resources (minerals and organic/fossil fuels). In the light of the results of ecological research, soil, water and biodiversity are also exhaustible natural resources. Their non-sustainable exploitation poses a substantial threat and risk to mankind.

Section VII.2 is divided into three parts: **Part VII.2.1** summarizes the **essential problem areas for a sustainable economic design**, which might arise as a result of liberalized world markets. It is emphasized that a *free market is usually guided by short-term objectives and determined by uncertainty*. This favors non-sustainable production processes. Especially in case of global environmental problems, such as the green-house effect or overexploitation of global resources, it cannot be expected that international negotiations will lead to solutions as long as trade sanctions are not permitted. Moreover, in the case of open markets, high unemployment and high capital mobility, governments face a strong incentive to reduce their own unemployment by means of low environmental and social standards also at the cost of other countries. This can lead to setting national standards systematically below efficient levels. Finally, it shall be stressed that an efficient level of international division of labour can only be achieved, if transport prices reflect the true cost of transport, including environmental costs. Since currently this is not the case, a liberalized market leads to both inefficiently high environmental costs and inefficiently high levels of specialization, concentration and exchange.

Part VII.2.2 investigates whether the current **WTO system** hinders those problems from being solved. The *core problem* can be seen in the fact that under the current system, import products can only be differentiated by their *properties* but not by their method of production. Therefore the investigation or sanctioning of production processes in foreign countries is forbidden. Due to increasing competition, this impedes efficient regulation of domestic production as well. In order to solve the above-mentioned problems (chapter VII.2.1), a change of this rule is imperative in clearly defined cases.

Part VII.2.3 raises the question as to which room for manoeuvre can be seen in order to change those rules. In general, either Article XX could be revised, or the TBT Agreement could be extended to production processes, or a new "Agreement on securing Sustainable Development" could be signed. In order to delimitate the scope of action, there are various possibilities: Firstly, *protective measures could be imposed unilaterally*, and the burden of proof could be left to the incriminated countries. Secondly, *discrimination in trade could be based on actual environmental costs;* a potential method would be an emission-based, border-balancing system. Finally, discrimination could be based on internationally acknowledged *eco-labels*. Revenue from the proposed measures could flow into an **International Fund** supporting those countries which raise their standards. The fiscally motivated incentive for protectionism could thus be removed.

In addition to a discrimination according to production processes, an attempt should be made to install a system of *dynamic minimum standards*. This could be confined to groups of countries with a comparable state of economic development. Thus, the problem of "ecological and social dumping", i.e. negative system competition, at least could be addressed. In order to create *true prices in the transport sector*, internationally arranged environmental cost factors for different fuels could be determined by an international expert group, and it could be left to national governments to decide how they internalize those costs in their own states. Countries refusing internalization could then be charged with equivalent duties.

Section VII.3 deals with the **agricultural sector**, the special status of which is documented in the Agreement on Agriculture (AoA). Since the stipulated "Non-trade Concerns" are a hitherto undefined legal term, the section starts by attempting to define some basic concerns in the light of the overruling aim of fostering a sustainable agricultural sector. Three objectives seem to be of special importance: *long term security of food supply*, *ecological preservation* and *economic viability of rural areas*. In order to achieve those objectives, the following conditions should be met:

- Farmers deciding in favour of sustainable production methods, should not be disadvantaged economically as a result of this decision.
- Farmers in disadvantaged regions should be enabled to continue farming.
- Services provided by the agricultural sector to the public should be remunerated.

The following part reflects on the consequences of the rules and instruments of the Agreement on Agriculture with regard to the above objectives, and tries to formulate proposals on how to improve the framework of the Agreement. With regard to the objectives mentioned above, the Green box is particularly important and, within limits, the Blue box. Under current framework conditions a further reduction of boarder protection is presumed to have rather negative effects on those objectives, while export subsidies hardly affect them.

From an ecological or a regional point of view, the following *changes in the Green box* would be desirable:

1) Thematic expansion of environmental programmes for measures in favor of "the well-being of animals" and the "sustainable cultivation of plants for non-food purposes."
2) In the case of environmental programmes, raising of the upper limit of payments to the monetary value of ecological performance, or full compensation of the cost difference compared to environmentally harmful technologies, if such technologies are permitted for domestic or foreign competitors, or on the cost difference resulting from the national standards of the most important competing countries.

3) Expansion of regional programmes by premiums according to current head of livestock, but limited to the livestock of a base period (only if the Blue box is cancelled) in order to allow appropriate development, especially in disadvantaged areas (par. 13b; Annex 2, AoA).

4) Introduction of a further item (14) in Annex 2 of AoA, which enables payment for services in the public interest which have to be delivered by their very nature in conjunction with agricultural production.

Should the ***Blue box*** come under pressure in the coming round of WTO negotiations, there are various alternatives. On the one hand, Blue box measures could be tied to ecological production methods and/or unfavorable location; on the other hand, the money currently used for "CAP-premiums" (premiums of the Common markt organisation) could be used for environmental and regional programmes covered by the Green box. In both cases, Blue box measures could be maintained for farms with sustainable production methods and farms in less favoured areas. However, in the latter case it should be determined in advance whether there is still enough room for additional payments. The above mentioned changes in the Green box should be claimed if reductions in the Blue box are put forward.

Finally, the money available could also be used for decoupled income transfers (following the FAIR Act 1996 of the United States). The handicap of this alternative is that under the current framework such payments can not be tied to a continuation of farming activities. Therefore, a weakening of this regulation (par. 6e; Annex 2), such as allowing payments to be tied to a minimum production, could be claimed in exchange for possibilites within the Blue box.

An *inclusion of environmental costs* in the **calculation of AMS** would be a first step towards true costing. Avoidance costs could be determined as the monetary value of environmental damage of the actual situation, compared to a "state-of-the-art" scenario, and then be added to AMS.

A further ***opening up of agricultural markets*** in any case should *be tied to a solution for those problems presented in Section VII.2.* A further reduction of tariffs under the current framework is supposed to speed up the closure of farms in unfavorable regions and discourage cost-intensive sustainable production methods.

In the **final remarks** (Section VIII), the currently **conflicting world views**, which form the background of the world trade discussions, are given consideration, and it is pointed out that the "Guidelines for Sustainable Development" (AGENDA 21), formulated in the scope of the United Nations Conference on Environment and Development (UNCED) 1992 in Rio de Janeiro, have been mostly ignored in trade policy practice. This is apparent, e.g., in the ex post rejection of the term "multifunctionality of agriculture and forestry" which was introduced into the international discussions in Rio.

It must be furthermore pointed out that the **evaluation**, stipulated according to Article 20 of the Agreement on Agriculture (1994) in the scope of the URUGUAY Round, did not take place, and

that no evaluation criteria have been elaborated to date. In this relation it is also significant that the speed of development inherent in agriculture and forestry requires longer periods of evaluation. It is therefore proposed that the stipulated period be prolonged for a further five years.

Finally, it must be emphasized that well-balanced ecologically and socially tolerable and sustainable world development requires institutional benchmarking, since the present world trade system threatens to lose its social acceptance without a minimum of institutionalised solidarity. Without the integration of ecological and social issues, world trade tends to increase the world-wide economic and social disparities, thus heading towards self-destruction.

The concerted taxation of international capital and information transfers, charging resources consumption taxes for utilization of nonrenewable resources as well as penalising ecological and social undermining by countervailing duties, and using this revenue for international financial adjustment are considered to be milestones for a sustainable future world development.

II. ELABORATION OF THE PROBLEM, THE ISSUES IN QUESTION AND GENESIS OF WORK

II.1 On the Elaboration of the Problem and the Genesis of Work

The increase in regional and social disparity, as well as the threatening ecological changes in the scope of world economic development, justifies the question as to whether these rules of the game – particularly those of world trade – should be adjusted and partially replaced. The present study poses a comprehensive contribution to the discussion regarding the upcoming round of negotiations in the scope of the WTO, which cannot only deal with the issue of further liberalization of world trade and the corresponding "improvement" of the relevant technical regulations, but in which the basic question of a positive world-wide development of economy and society will also be significant.

This study is being concluded at a time when the dynamics of the beginning negotiation process are already becoming noticeable. It is significant that this process is not only determined by the struggle for global agricultural markets and the problems resulting therefrom. Also the discussions which at the same time become apparent regarding the scale of values and related social dynamics are significant in this negotiation process. This is expressed in the discussion regarding a stronger ecological orientation of economy and society, as well as the demand for responsible, non-exploitative utilization of natural resources and the principle of sustainability which is being called for on different levels. The deficits evident in this concern indicate that a redefinition of guidelines is required in order to reorient the development of the world markets in the desired direction in ecological, social and economic terms.[1] The handbook <Environment and Trade> of UNEP and IISD presents a respective, actual overview. However, according to its purpose it cannot elaborate in sufficient depth on the subjects of this study and take into account specific questions in the realm of agriculture and sustainable economic development.[2]

The presently dominating world market philosophy is almost exclusively based on the automatic self-regulation of markets along the lines of general equilibrium. Therefore, new guidelines should create an institutional framework for consideration of those public welfare interests ignored by the markets, particularly over the long term.

1 Also see the Annual Reports of the UNDP (United Nations Development Program), the WORLDWATCH INSTITUTE, and the "DEVELOPMENT AND PEACE FOUNDATION" (Global Trends, Fischer Taschenbuch Verlag).

2 United Nations Environment Programme (UNEP) and International Institute for Sustainable Development (IISD), <Environment and Trade> Winnipeg 2000; http://www.unep.ch/etu

The drawbacks become apparent more quickly and clearly in agriculture and forestry than in other economic sectors, since the former two naturally involve long-term social interests due to their dependency upon natural processes.

This view of the problem led to the initiation of considerations on this topic – around one and a half years ago. The original task was to provide political decision-makers with basic arguments which would help to ensure sustainable agricultural production methods and secure the food supply in the upcoming WTO negotiations on trade in agriculture. However, it soon became clear that important viewpoints and basic arguments would have to be elaborated anew. Furthermore, it seemed that a differentiated view of Austrian agriculture as a case study was also required, based upon the respective ecological and economic benefits. On the other hand, it also became apparent that in some areas it was not possible to harmonize the present complex system of regulations in the WTO to comply with the high demands of sustainability which are assumed implicitly or explicitly.[3] After the interim report was made, the commissioner criticized that the study lacked the grounds for political implementation at the time. According to the nature of the subject, it is only possible to indicate basic options for implementation.

In the final version at hand, it is intended to take into account the above-mentioned problem as far as possible. On the one hand, more space was allotted for the elaboration of the present world trade system – i.e. the system of regulations of the WTO and GATT as well as the basic economic concepts (Sections II and III). On the other hand, the effects of these said conditions on the agricultural sector will be elaborated and analysed in the following (Section IV). Particular attention is paid to the effects of agriculture and forestry on the state of the environment, as it appears to be programmed on the basis of the present world trade system. A wide scope has been dedicated to the complex situation of the Austrian agricultural sector within the global economy as well as to ecological problems and the issue of securing foodstuff supply (Section V). Sections VI and, in particular, VII deal with possible concepts for solutions and recommendations. Initially, theoretical concepts for solutions in the fields of environment and agriculture were sketched in order to present concrete suggestions in the following. These can only be proposals and recommendations which could then form the basis of a thorough scientific analysis. Some aspects proposed in the scope of this study may not necessarily be immediately implemented in daily politics. However, in order to ensure that a uniform overall view is maintained, it would appear important to indicate basic structural changes with concern to long-term strategic planning.

The underlying cultural conflicts usually masked by current affairs (but decisive for them) are discussed in the Final Reflections (Section VIII). The demand to imbed husbandry of nature into a comprehensive concept of sustainability is also addressed. In the end the necessary changes of the institutional framework are thematised.

3 This takes place in the preamble and in panel decisions, however it is not adhered to consequentially.

Above all, this study should also contribute to reduce **the lack of basic theoretical arguments,** which has been repeatedly criticized by trade policy-makers. The opposing parties in the WTO process generally refer to a series of studies that they commissioned in order to support their position. These usually have an "apologetic-interest character"; however, there is a blatant lack of equivalent counter-projects.

In this connection the willingness of the members of the steering committee should be praised, in particular, since they gave us their support in the form of critical remarks and expert input. The members of this body thus had a significant part in this study. The steering committee members were:

Prof. Dr. Hanns Abele, Institute of Economic Theory and Policy, Vienna University of Economics and Business Administration

Dr. Gabriela Habermayer, Federal Ministry of Economic Affairs, Austria

Prof. Dr. Markus Hofreither, Department of Economics, Politics and Law, University of Agricultural Sciences, Vienna

Walter Kucera, Presidents' Conference of the Chambers of Agriculture in Austria

Josef Mayer, Federal Ministry of Economic Affairs, Austria

Dr. Karl M. Ortner, Federal Institute of Agriculture, Austria

Werner Pevetz, Federal Institute of Agriculture, Austria

Prof. Dr. Gerhard Poschacher, Federal Ministry of Agriculture and Forestry, Austria

Prof. Dr. Kunibert Raffer, Institute of Economic Science, University of Vienna, Austria

Prof. Dr. Uwe Schubert, Interdisciplinary Institute for Environmental Economics and Management, Vienna University of Economics and Business Administration

Dr. Walter Tausch, Federal Ministry of Agriculture and Forestry, Austria.

Gratitude is expressed to Prof. Dr. Senti (ETH Zurich) in particular for his willingness to comprehensively elaborate the framework of WTO regulations in a separate project commissioned by the Federal Ministry of Economic Affairs. Thanks to his consent and that of the Federal Ministry of Economic Affairs, it was possible to integrate his study in the present research report in the form of an essential basic component.

The members of team of the present project were:

- Dr. Katrin Forgó, Research Institute for European Affairs, Vienna University of Economics and Business Administration
- Theodor Quendler, Austrian Institute for Regional Studies and Spatial Planning, Vienna

- Tobias Reichert, Giessen
- Bernd Schuh, Interdisciplinary Institute for Environmental Economics and Management, Vienna University of Economics and Business Administration
- Dr. Sigrid Stagl, Department of Economics, Vienna University of Economics and Business Adminiatration
- Franz Weiss, Department of Economics, Politics and Law, University of Agricultural Sciences, Vienna
- Prof. Dr. Heinrich Wohlmeyer, Austrian Association for Agricultural Research (ÖVAF), Vienna.

Finally it must be remarked that due to the duration of the study, some of the data reflect the current state of affairs in December 1998. This does not, however, undermine the validity or content of the statements made. It should also be mentioned that the project team agreed to coordinate their individual contributions among themselves, yet each was written by a single author. In this context, the individual authors themselves have the final responsibility for the content of their own contributions.

In summary, it can be stated that the present study does not intent to provide concrete recommendations for negotiation in the upcoming round of trade negotiations, but it does contribute to determine the present state of affairs and provide basic arguments. In addition, new perspectives for negotiation are opened by questioning substantial stipulations and axioms of current world trade theory and practice.

II.2 Preliminary Issues and Basic Considerations

Heinrich Wohlmeyer

According to commission, this study is based upon the concrete problem of trade in agriculture and its contribution to the future sustainability of world development. The problems of the ecologically sensitive and diverse agricultural production in Austria[1] will be given special consideration since it provides an advance warning and acts as a "seismograph." Undesirable developments manifest themselves first in sensitive ecosystems and forms of cultivation. Furthermore, an attempt shall be made to consider old perspectives (e.g., GRAHAM'S paradox) as well as novel ones to find new concepts and do justice to the apparently increasingly intolerable state of the ecology and society.[2] This will be achieved in the following sections after elaborating the general structure of the World Trade Organization.

II.2.1 The Intellectual Coordinates

However, upon presentation of the major part of the preliminary details, it became apparent that it would be impossible to make an informed judgement of the present developmental dynamics without delving into their basic paradigms. The complex phenomenon of the modern global economy and its inherent necessities require a closer examination from different angles and not only from the perspective of a highly differentiated expert view. Granted, the latter is necessary, however it is not sufficient.

Of particular significance for this project is the well-known fact that paradigms cannot be proven, but only can be mediated in the form of basic values. The current world trade system arose from an almost fundamentalist belief in the free market economy's *capacity* to always increase the standard of living. An Indian colleague in the banking sector expressed the latter at an international seminar in the following words: "The WTO is the 'institutionalized invisible hand'." This unfailing belief in an invisible mechanism, which unites the egoistic tendencies of individuals to the benefit of public welfare, leads to a simplistic (reductionist) perspective of the world in which – in order to maintain it - important observations and even logical conclusions with the opposite results are ignored.[3]

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1 Austria encompasses around 40% of the Alpine mountains, and the climate ranges from dry in the east to slopes with high precipitation in the west.

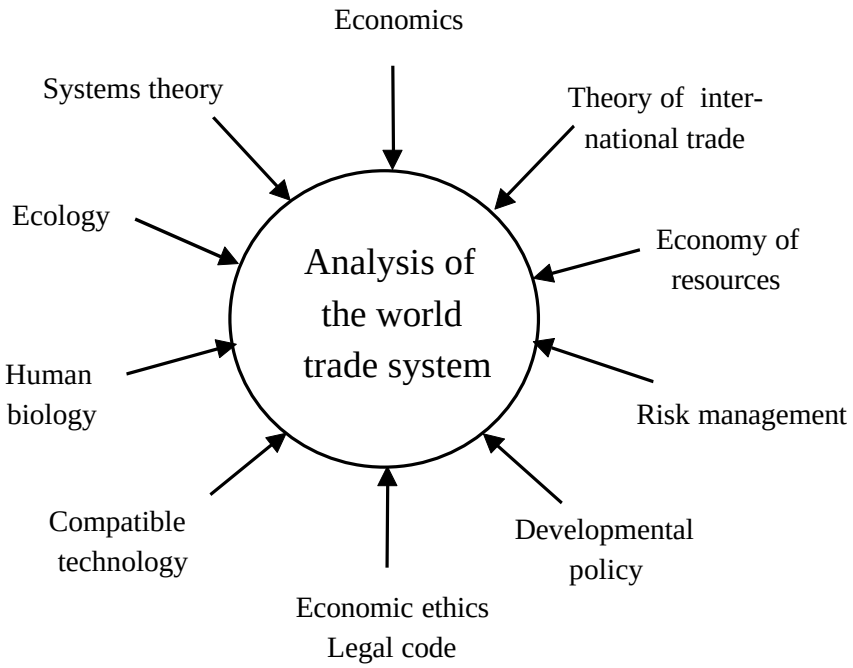
2 Refer to the Global Environment Outlook 1997 of the United Nation's Environmental Program (UNEP) and the Human Development Reports over the past years of the United Nation's Development Program (UNDP).

3 The philosopher and sociologist MAX HORKHEIMER (1895-1973) stated that one can recognize the limits of scholars/scientists best according to the phenomena they ignore or don't pay attention to.

Therefore an attempt must be made to indicate the axioms and ignorance upon which certain behavioral patterns in world trade are based in addition to the classic arguments of established thought patterns in the leading intellectual mainstream. This "mixed strategy," including philosophy, political science, human ecology, economics and ecology, will do justice to the complex problem better than the almost useless argumentation with set limits or self-made limits which often function as scholarly blinders. On the contrary, effort will be made to do justice to the complex phenomenon by highlighting it equally from the viewpoints of several different disciplines (refer to Figure II.2-1).

Figure II.2-1

Overview of the Necessary Interdisciplinary Perspective



Avoiding the disconcerting perspective beyond the field of one's own discipline seems to be characteristic in economics, in particular.[4]

The following encouraging statement made by Nobel Prize laureate ERWIN SCHRÖDINGER also contributed towards the decision to prove the necessity of a more comprehensive view: "If we do

4 The Nobel Prize laureate in economics of the year 1988, the Frenchman MAURICE ALLAIS, described this as follows: "In order not to create friction, and to quickly achieve recognition and success in the ruling system, a cleverly chosen arabesque (decorative element) is added to the dominating theoretical concepts, and it is borne in mind that this should serve the economic powers. This takes place although the current patterns of behavior are increasingly destabilizing global economy and society, so that severe crises must follow." (Personal conversation on the occasion of a guest lecture at the University of Economics, Vienna, 1989.)

not wish to give up our true objective for ever, there must be a way out of the dilemma: some of us must dare to consider both facts and theories, even if information therein is partially second-hand or incomplete, and they run the risk of being ridiculed."

In this section an effort will be made to go beyond the bounds of the usual economic limits of argumentation, in order to do justice to the task and not only glean recognition in the mainstream. The intention is to demonstrate that the problematic agricultural issues are embedded in a wealth of other problems. This fact also helps us to realize that the problems of the agricultural sector do not lie in the insufficient adaptation of this sector, but in the lacking sustainability in the design of our entire economy, of which the enormous ecological and economic deficits first become apparent in those sectors that are closest to nature (refer to the following tabular "eye-opening scenarios").

In particular in this section, the reader is invited to view a perspective which goes beyond the usual bounds of discipline in order to provide a fair judgement of the rules and regulations of foreign trade policy.

II.2.2 On the Concept of Foreign Trade Policy

II.2.2.1 Basic Preliminary Remarks

Current foreign trade policy has been characterized by two historical processes, in particular: the experience of the negative results of the upward spiraling protectionism of the 1930s, and the "re-education" of Europe and Japan after World War II by the winning force, the United States of America. It practically called for a crusade in the name of modernization and globalization, at the climax of which we presently find ourselves.[5] Since the heated discussion based upon the reflections of S. HUNTINGTON,[6] at the latest, the world's view of the intellectual and military PAX AMERICANA has been relativized. The obvious interest-bound world view of the Western Hemisphere increasingly jeopardizes its universal acceptance *eo ipso*. In other words, the "holy" cause of *human rights* and the connected concept of *democracy* are loosing their credibility,

5 The dominating manner of American trade delegates at the WTO negotiations and the way they tread upon all individual cultural reservations are a clear indicator thereof.

In a lecture on Globalization and Ethnicity entitled: "Der Kulturkampf zwischen universalisierter und fragmentierter Kultur" in the scope of the European Alpbach Forum 1998, M. BOCK labeled this "the destruction of the conquered culture," a phenomenon that also manifested itself in the humiliating and willful destruction of cultural monuments in the air bombardments towards the end of World War II. The fact that "the modernization and globalization theories became so influential, is not by any means the result of their general scientific strength and superiority, but the result of an exceptional historical situation and the political willpower of the USA."

6 HUNTINGTON, S.P., The Clash of Civilizations and the Remaking of World Order, 1st Edition, Simon & Schuster, New York, 1997.

because they are being misused.[7] Yet it is this very combination which might gain mutual acceptance by all cultures and religions.[8] This would permit a worldwide humanisation of increasingly inhuman economic dealings.

Remarks on the Historical Genesis: While the Christian occidental tradition considered economics to be ethically founded,[9] modern economic philosophy has succeeded in shaking off this ethical basis, for the most part. Milestones in this process constitute the plutocratic interpretation of J. Calvin's theory of predestination in the 16th century[10] and the invention of the "invisible hand" by the moral philosopher and economist A. SMITH in the 18th century. He still considered economics to be ethically founded and limited by "well-meaning self-interest," however the adjective "well-meaning" was increasingly superceded or egoistically interpreted. The continuation of the process of shaking the ethical basis is reflected by the term "inherent necessity" coined at the end of the 19th century. In accordance with it, the negative consequences of one's own actions for a third party must be considered unavoidable in a prescribed system which one cannot change. Actions taken at the cost of a third party were thus given moral legitimization. Since negative interpersonal feedback cannot take place in an anonymous large-scale system,[11] less consideration is taken of others and the rest of the world, and rules of the game become increasingly brutal.[12]

This is enhanced by the recent neo-naturalism of neurophysiology, which postulates that it may only be a question of time until all states of consciousness and behavioural pattern can be explained neurochemically.[13] However this would break down our traditional moral basis. Freedom of decision would yield to a new determinism. Crime and punishment would no longer

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7 The oil interventions in the Persian Gulf, which took place in the name of human rights, and the support of repressive, dictatorial regimes in the name of democracy played a large role in this process.

8 A corresponding plead was published by a professor of International Relations born in Damascus, BASSAM TIBI, in: "Die Presse" dated 24/25-4-1999, Spectrum, pp. I-II entitled "Mit dem Kopftuch durch die Wand?" Also refer to his book: "Die neue Weltordnung – Westliche Dominanz und islamischer Fundamentalismus."

9 Refer to the wealth of medieval literature about fair prices. The discussion primarily called for by the "developing countries" with concern to fair prices is disregarded in the international world as "anachronistic."

10 Calvin's theory was based upon the simple formula: Whomsoever God blesses in heaven, will already be blessed by Him on Earth. These blessings are expressed in wealth. This legitimized the amassment of wealth without questioning where it came from, and even made it appear desirable. American culture is strongly characterized by this tradition (New York was originally New Amsterdam).

11 It is an established economic fact that anonymous markets function "more efficiently" in the form of models, since they then can not be "distorted" or "hindered" by diverse considerations. The Nobel laureate K. LORENZ described this fact with the following statement: "The human inhibition to kill decreases by the square of distance, just as radiation does."

12 In this context, the Polish-English sociologist ZYGMUNT BAUMANN speaks of a "secretly induced brutalization," which goes as far as to redefine the problem of poverty in terms of "criminalizing and medication," in order to culturally negate the return of the poor and the weak. (Article: "Die Angst, die durch die Häuser spukt," in: "Die Presse", I-II, Vienna 13-3-1999.)

13 The wealth of related literature is presently increasing. The European Alpbach Forum 1999 with the general topic of "Material, Mind and Consciousness" provided an overview in this respect as well as insight into the dominating stance of the association of neurophysiologists. Brain researcher WOLF SINGER states that it will eventually be possible to trace all brain functions down to "interactions between material components" (quote according to SITTE, P. (Ed.), Jahrhundertwissenschaft Biologie: Die großen Themen, Beck Verlag, Munich, 1999.

exist. Altruism and consideration would be interpreted as group-preservation, i.e. self-preservation. In the wider context of society, however, one's own genes would be able to dominate. The latter literally means that it is "natural" to exploit others and our environment to our own advantage. The consequences of the new ideology of disinhibition are not yet foreseeable, just as the primitive ideologies of the "master race" and fascism were underestimated. However, since this is currently being popularized, there is the eminent danger that it becomes so widely effective that it not only leads to a further disintegration of social cohesion, but also to an unexpected brutalization of economic dealings.

The development of rules favoring the economic powers and the opening up of the entire world for their ambitions come anlong with ideologies justifing those powers. When viewed from this angle the concept of "unconditional free trade" appears in another light. A world trade policy that only serves to strengthen the economic powers, and excludes the local physical and psychological well-being, cannot actually increase the level of prosperity. Quite the opposite, it requires the freedom *and* protection for shaping local social and cultural structures, which can enter into fair competition with each other.[14]

The latter issue was clearly elaborated for the first time already at the beginning of the 16th century by THOMAS MORE in his social parable "Utopia."[15] He describes how the ideal state on the peninsula Utopia comes into difficulty because of imports which are produced without regarding the social rules of the Utopians (consideration of others human beings as well as nature), under the conditions of imperfect market information and open borders (Utopia is described as a banana-shaped peninsula). Prince Utopus, along with the entire population, therefore decides to dig a channel at the isthmus, which enables monitoring of the imports. Thus we come to the highly current topics of "like products" as well as processing and production methods (PPMs). MORE's statement is clear: The exchange of goods must be tied to fair rules, also with regard to the method of production, if the ideal society called into being by the Utopians is not to be undermined. One of the most important rules of the game is therefore to consider each *peoples' right of self-determination* and the related *right to control* the conditions under which goods and services are imported. This is the only way to uphold local prosperity and the attractive model of a successful social organization. If this does not take place, a downwards trend will result (also refer to Section IV.2). The goal of a world trade system, which takes into account cultural and social evolution, should be the organized and fair competition of social systems (societies). The best solutions should prevail, due to their attractive example.[16]

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14 Christianity, which has been misinterpreted and misused by modern power politicians, takes this basic approach. It initially attempted to promote unified cultural diversity through a bond of love, however it was taken over by the ruling elite for their purposes, so that the vision of a "multiculture of love," which is connected to the almighty love of the God, still remains a dream.

15 MORE, THOMAS: Utopia, Appleton-Century-Crofts, New York, 1949.

16 One small example thereof are the exemplary "mining laws" compiled in the Medieval Ages by Iglava, and "copied" everywhere in the following, even in America.

II.2.2.2 Remarks on the Basic Assumptions

The most important basic assumption is that free trade has the automatic effect of increasing prosperity. This axiom is no longer questioned. However, there are several reasons for relativizing this assumption:

a) In traditional trade theory, things were based upon generally immobile capital, expensive and dangerous modes of transportation, and practically non-existent telecommunication. This no longer reflects the current situation at all. Under the conditions of completely free trade, the production of goods and services is therefore not concentrated at "relatively" cost efficient locations, but at the "absolutely" most cost-saving location; and this holds true, in particular, when the "advantage of location" is achieved by distorted exchange rates and undermining social and ecological standards.

b) In the former century, the economist FRIEDRICH LIST already recognized that free trade only increases prosperity if the partners concerned are at a similar stage of development. This fact is taken into account by special regulations for developing countries, but not for other countries.

c) Furthermore, in 1923 GRAHAM (i.e., Graham's Paradox) already pointed out that under the realistic assumption of not constant costs – i.e., variably increasing marginal costs – specialization can lead to a decrease in national prosperity as well as a decrease in global prosperity. GRAHAM used corn as the agricultural product and watches as the industrial good in his trade model, since the law of decreasing soil yields is clearly recognizable in the case of corn. K. RAFFER has further illuminated this argument recently.[17]

d) In addition, the classic theorem of comparative advantage is based upon the assumption of constant general, technological conditions. Changes in technology can turn specialization into an economic and social catastrophe over night. Possible examples of this, although they still remain hypothetical, are the biotechnological production of vanilla and cocoa in fermenters.[18] In the event of this, countries specialized in the original production of these goods, such as Madagascar (vanilla) and Ghana (cacao) would face national ruin.

e) It is also questionable whether traditional trade theory can be applied to the sector of services without undergoing any adaptation. Since multifunctional agricultural production also provides many local services in the public interest, the transfer of industrial regulations to apply to the agricultural sector achieved by the USA and the CAIRNS Group, (agriculture

17 RAFFER, K.: Disadvantaging Comparative Advantages – The Problem of Decreasing Returns, in "Market Forces and World Development:" R. PRENDERGAST & F. STEWART (Eds.), St Martin's Press, New York, 1994.

18 The treatment of plant and animal cells to make them multiply in a fermenter already reflects the current state of technology.

shall be treated like any other industry), during the URUGUAY Round should be seriously questioned by science.[19]

f) It is a well-known fact of development politics that sustainable development requires a diversified economy. Overspecialization not only leads to dangerous dependencies, but also to "economic entropy," since no creative potential can flow and economic synergisms cannot take effect. The fate of the cocoa and banana nations is exemplary of this phenomenon.[20] A striking parallel thus becomes apparent between the economic sector and the biological sector. In the latter case, great diversity also leads to greater stability and higher total productivity.

g) The argument of power is stubbornly excluded. Modern game theory treats all partners as if they had the same influence on the market. Yet this does not reflect reality. Economic and political powers are at an advantage when bargaining, and they can realize their own interests, if no interventions are made favoring the weaker parties. This problem is extreme in the sector of transnational financial, service and trading companies. They have managed to take up strategically important positions as global players. These TNCs (transnational corporations) have key resources and excellent access to the ruling powers at their disposition. As a minority, they are thus able to force their own preferred dynamics of development upon the whole world.

h) At present there exists only a theory (of justification) of free trade. A scientific elaboration and illumination of "protectionism", i.e. the appropriate protection of local economy is lacking.[21] In this connection, the phenomenon of system competition also should be mentioned, since it is generally not taken into consideration.

i) The fact of *system competition* is excluded from current trade theory, although MORE (refer to above) already recognized and described it in the theoretical model of his parable. HANS WERNER SINN dealt with this topic on the occasion of his inaugural lecture at the University of Vienna on 20-1-1990 under the title of "Limits of System Competition."

   System competition can have various reasons: classic cases comprise the general level of social protection and environmental protection requirements for agricultural production. A nation that deals with its citizens in a careful and non-exploitative manner, and provides them a social security network, i.e. a good health and pension system based on solidarity, naturally has higher taxes and levies. In a state of unconditional free trade, this will lead to relocation of entrepreneurs' activities in countries with worse social security systems, and

19 Refer to RAFFER, K.: Trade in Agrarian Products and Services: How free should it be? in "Trade Liberalization in the 1990s, H.W, SINGER ET AL. (Eds.), Indus Publishing Co., New Delhi, 1990.

20 GUNNAR MYRDAL pointed out this fact in his work "Ökonomische Theorie und unterentwickelte Regionen," Fischer Verlag, Frankfurt/Main, 1974.

21 Also refer to K. RAFFER, loc. cit.

that goods and services are exported from the latter countries to the countries with better social security systems. This furthermore leads to a migration of healthy and productive people into the country having a lower standard of social security, as well as of the less productive and older people into the country with the higher standard of social security. The resulting lack of equilibrium reflected in the trade balances and the budgets will force downward adjustments.

This is even more dramatic in the agricultural products sector. Strict environmental and nature conservation requirements naturally lead to higher costs which normally cannot be compensated for by means of product diversification, due to the generally homogenous nature of agricultural products.

The following graphic charts are intended to illustrate interconnections, which are overlooked, as well as to ensure that the problem is no longer ignored (Figure II.2-2).

j) To the above-mentioned unrealistic assumptions of the dominating world trade theory the assumptions of complete market transparency as well as perfect mobility and flexibility have to be added. The latter two, in particular, are not given to any extent in the agricultural sector, on account of its nature, since it is bound by a fixed location and long production cycles. On the subject of mobility of the work force, it must be added that the demanded hypermobility leads to a destruction of social ties. The foreseeable result will be an increasingly homeless society. The author remembers a time when it was considered a central political task to bring the work to the people, instead of uprooting them and forcing them to rush from place to place.

k) On an international scale broad-scoped free trade that increases prosperity requires a permanently institutionalized system of financial adjustment. In this connection, it should be taken into consideration that national free-trade zones only were able to come into being when a comprehensive tax and fiscal equalization system was created in parallel for the area concerned. Only then was it possible to dismantle the diverse local customs duties and market prerogatives, without the respective regions and communities winding up in a state of crisis. The current world trade system, however, tendentially leads to a concentration of profits and income in a few regions, while the others decline.[22]

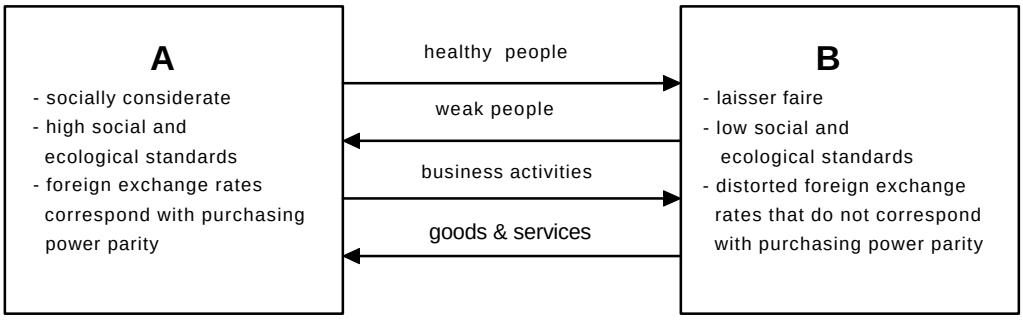
22 Refer to the "Human Development Report," loc. cit.

Figure II.2-2

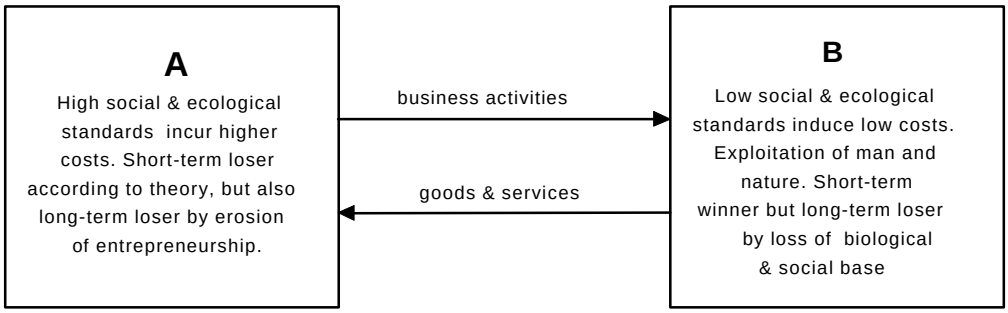
Contrasting Economic and Social Systems and Consequences for Foreign Trade

The syndrom of systems competition:

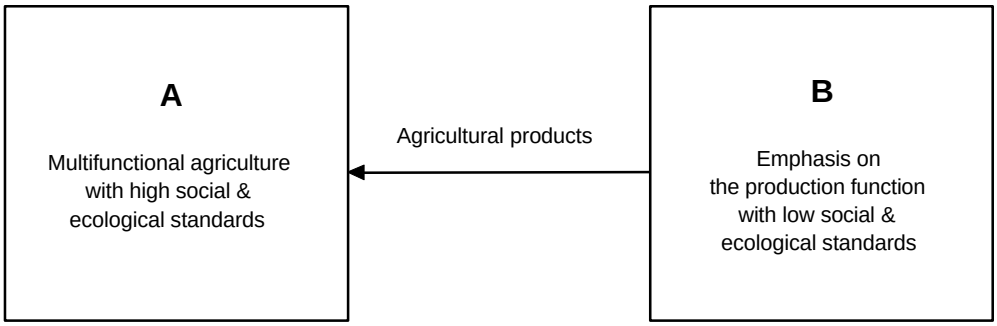
- Social welfare state (A) versus laisser faire state (B)
- undercutting social and ecological standards
- distorted foreign exchange rates



Effects of undercutting social and ecological standards



Agriculture & systems competition in unconditional free trade without reimbursement for services in the common interest: a one-way street



Division of labor by trade is not automatically welfare-enhancing, since

- there may be situations, even from a traditional viewpoint, which lead to a decrease in prosperity (refer to GRAHAM's paradox above)
- the streamlining of an economy to an economic monoculture, which becomes dependent and open to blackmail, as well as more risky, can lead to the collapse of markets for the products involved, resulting in a national disaster
- dynamic social and economic development requires the incitement of diversity; ecologically and socially well organized fulfillment of needs requires decentralization and networking. Only by these means closed material flows can be achieved, as well as manageable social units with satisfactory work distribution, reasonable power structures, and appropriate solidarity.[23] Well-considered politics are imperative in order to benefit from markets as a means of increasing prosperity. Markets are a good economic draught horse but they need proper reins.

Some major reasons why the prevailing theory of international economics can only be considered to correspond to reality to a limited extent, and why the markets cannot be said to sustainably increase prosperity in the present framework of the agricultural sector, are summarized in the following two tabular overviews (Tables II.2-3 and II.2-4).

23 A surprising example of this trend of thought is "Sustainable Community Indicator Examples" by "Hart Environmental Data" in Massachusetts. One of the indicators of sustainability is the "amount of food produced locally." Also refer to JOHN ECCLES and HANS ZEIER in "Gehirn und Geist:" Kindler Taschenbuecher, Munich & Zurich, 1980.

Figure II.2-3

Major reasons for considering current theory of international economics not to reflect reality sufficiently

(1) **Myopia (Short-sightedness) of the Market**	(2) **Basic assumptions which do not reflect reality**	(3) **Ignoring the growing risk**	(4) **Lack of equilibrium in the market economy**	(5) **Lacking international fiscal adjustment**	(6) **Imbalance in development policy**
A recognized characteristic of people and markets is that they underestimate future events and risks. The world market is therefore overtaxed when it is expected to solve the dilemma between present surpluses (caused by plundering) and foreseeable long-term shortages in the agricultural sector. Therefore specific state intervention, compatible with market mechanisms, is required on a national and international scope.	The traditional global economic theory was developed when capital was mostly immobile. In addition transportation was costly and dangerous, and telecommunication was not yet developed. The classic economists of world trade theory would have therefore arrived at different conclusions today. Furthermore, it was already demonstrated in the interwar period (between WWI and WWII) that traditional trade theory is based upon static technology and the assumption of static marginal yields. When marginal yields decline – this is mainly the case in the agriculture sector – the traditional theory of comparative advantage leading to increased prosperity cannot be adhered too any more.	The current globalization philosophy stubbornly excludes risk management. Yet it is indisputable that the degree of risk increases with the size of the respective system and its vulnerability. The latter is particularly valid for megalogistics which are established in interna-tional trade. Such exclusions of risk-considerations are legalized through liability limitations (refer to item 5 of Figure II.2-4). In the agricultural sector, the generally required cooling chains are extremely dependent on energy, and the system collapses in the case of disruption or shortage of energy supplies.	Practically all of the dominating market models and their elaboration in terms of games theory assume that the market participants have equal market power. However, history and the UNDP World Development Reports indicate that this is incorrect. On the contrary, a market, which is not democratically controlled, leads to the "law of the strongest" and creates an intolerable situation in terms of distribution.	Domestic free trade only became possible after the introduction of uniform tax and financial adjustment zones. It was this institutional innovation which first enabled the abolishment of local trade barriers, such as market prerogatives. However an analogous compensatory mechanism is lacking in the world market. This causes increasing difference in levels of prosperity. An approach to solving the problem could be an international development fund which is financed through stipulated countervailing duties, taxes on speculative capital transfer and fees on information transfer.	To date, the model of export-induced and industrially induced development dominates in the scope of development policy. Yet history (e.g. European development) and the mistakes made in the course of the past century indicate that in order to be sustainable, the lasting evolutionary path lead from efficient autonomous agricultural production, to its association with related trades and industries and finally to the evolvement of independent industrial trade and modern service sectors.

Figure II.2-4

Major reasons for disputing the long term welfare enhancing effects of the domestic and world markets, particularly in the agricultural sector

(1) No consideration for ecological limits of systems	(2) Over-exploitation of natural resources	(3) Mismanagement	(4) Denial of systems competition	(5) Transportation prices not reflecting true costs	(6) Ignoring the demand for desired public goods
The a priori obligation to consider the ecological limits of systems is lacking for the most part in domestic, supranational and international economic orders. The WTO-discussion on product production methods underlines this assertion. The meager attempts, particularly in the scope of the Conventions on Climate and Biodiversity, have brought forth practically no changes in system dynamics. The global economy is thus developing dynamics which are destructive to the ecosystem. Taking into consideration the organizational principles of the biosphere delineates such an indispensable limit of a system.	Permitting the plunderous exploitation of fossil raw materials and primary energy carriers, which creates turbulence in the equilibrium of the ecosphere. The resulting costs are currently externalized at the cost of the general public and future generations. For agriculture and forestry, this means forfeiting markets for fuel and organic raw materials in terms of demand, and an enforced production increase on the supply side. In addition the prices of transportation do not reflect the total costs. This in turn leads to non-sustainable world trade flows (see (5)).	Mismanagement of markets through anticipated state-guaranteed cheap energy supply, mobility and waste disposal, as well as through legally limited liability for dangerous, large-scale technology. The optimizing interaction between demand and supply is thus eliminated, and world trade is distorted. A mixed syndrome of items (2) and (3) is evident in transportation, rendering this market function globally less than optimal (see (5)). This results in a less than optimal allocation of production factors in view of sustainability.	Denial of the fact that systems competition does not allow optimal allocation of production factors and fair competition in ecological, social and economic terms. The development and subsidizing of traffic and transportation, as well as telecommunication and transfer of know-how, particularly in the scope of multinational groups, enables system competition to become thoroughly effective. The neomercantilist systems competition of the former and remaining countries with a state-regulated economy (e.g. China) becomes effective through elimination of mismanagement which so far compensated for unilateral advantages.	In contrast to the circumstances prevailing when common trade theory was developed, transportation has become much cheaper. Availability of fuel at dumping prices, tax exemptions for transport of petroleum products used for transports, construction of traffic & transportation infrastructures with public funding, as well as granting of exemptions from liability for damages (limited liability for airlines and shipping lines) distort the world markets to the extent that flows of commodities develop which are absurd in the scope of the overall economy. This holds especially for agricultural commodities.	The preservation, conservation and creation of public goods, such as clean air, fresh water, biodiversity, harmonic landscapes, availability of recreation grounds for urban populations, and the establishment of closed material cycles must not be left to the devices of the markets for goods and services, because one of the preconditions of functioning markets, the possibility to exclude from consumption those consumers, who are not willing to pay, is not existent. The WTO still needs to recognize these issues as non-trade concerns. The fact that the provision of such services by agriculture in the public interest is not included in the System of National Accounting corresponds to this <ignoration>. Payments for performances for the public are dismissed as subsidies.

II.2.2.3 Supplementary Remarks on the Sector of Transportation

The sector of transportation merits several additional remarks:

Transportation costs amount to only 1% of the cost of the goods on a worldwide basis,[1] meaning they are a position that can be neglected. These low costs are explained by the massive subsidizing of the transportation sector. This takes place directly by providing infrastructures, (roads, harbors, airports, etc) at public expense, and indirectly by tax exemptions,[2] by exceptions to regular operating liability,[3] and not lastly, by tolerating the externalization of costs.[4]

In the agricultural sector, this has particularly negative repercussions, since products can be transported around the world at a low cost[5] and with a steady demand and high price elasticity, (a special characteristic of the agricultural markets), small surplus volumes usually create steep falls in prices. This results in a *non-sustainable allocation of production factors*, as well as *avoidable market disturbances*, which pose a threat to many existences in the agricultural sector.

The degree to which distances affect the sustainability of a supply chain is evident according to a Sustainable Processing Index (SPI)[6] calculated in the scope of a research project regarding the supply of Austria with onions from various countries of origin (Figure II.2-5).

1 Estimates of the "Factor 10 Club," communication from Prof. F. SCHMIDT-BLEEK, 1999.

2 International airlines and shipping lines do not pay any petroleum taxes whatsoever.
Airlines and shipping lines are favored with a limited liability, as are atomic energy plants. The costs of massive risks are thereby socialized and the profits are privatized.

3 Airlines and shipping lines are favored with a limited liability, as are atomic energy plants. The costs of massive risks are thereby socialized and the profits are privatized.

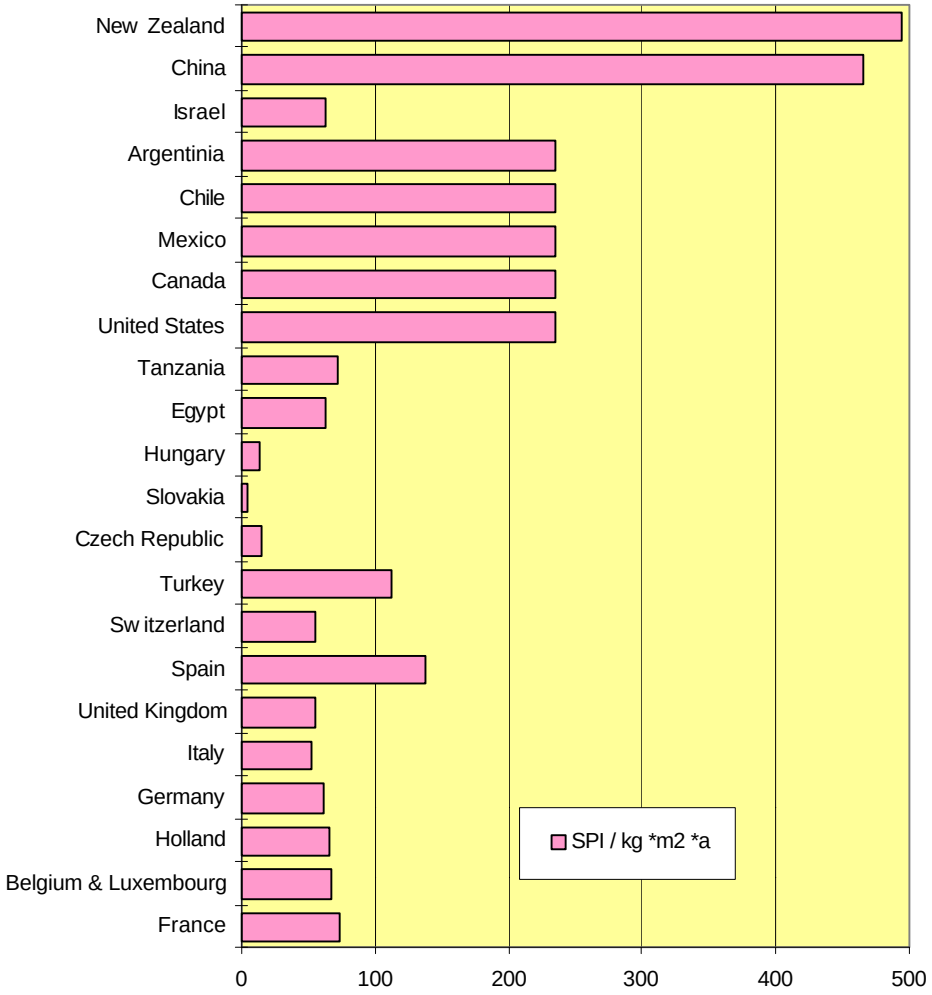
4 The share of the externalized costs of traffic in relation to the European gross national product is 2.5% according to careful calculations, whereby a good portion cannot be included due to lack of data. Refer to Wissenschaft und Verkehr: "Kostenwahrheit im europäischen Verkehr," published by Verkehrsclub Deutschland (VCD), Verkehrsklub Österreich (VCÖ) und Verkehrsclub Schweiz, Mödling/Vienna, 1998.

5 This fact can lead to grotesque situations, such as the following example: The author found Saudi Arabian quality wheat, which is produced at a high cost and using non-renewable water resources, in the largest mill of Singapore that also operates the largest mill in the world in Indonesia. At the same time, Saudi Arabia imports wheat from the USA as "*captatio benevolentiae*."

6 The SPI is a scale for sustainability, which measures the durability of a behavioral pattern according to land utilization in a sustainably designed economic system.

Figure II.2-5

SPI Factors of onions imported from various countries of origin



Source: SCHÜTZ, O., KÖNIG, F., KROTSCHEK, C. (1998): Nachhaltiger Stadthügel Wien-Westbahnhof, Teil 3: Überlegungen zur Lebensmittelversorgung eines Ballungsraumes: ÖVAF, TU Graz, 12/1989.

In conclusion to these basic remarks on the theory of international trade and economic theory in general, it is necessary to mention the *position of the agricultural and forestry sectors within the overall economy*, since the resulting inherent pressures usually are not conscious to the public. In most countries, the agricultural sector is a minor political and economic factor, to which the overall economy dictates the "necessities". If the overall economy does not adhere to a sustainable pattern and agriculture, which is the most nature related economic sector, is simultaneously treated "like any other industry," (refer to the demands made by the USA and the CAIRNS Group in the WTO), the deficits of this economic pattern here will become apparent first. The agricultural sector will lose out doubly if it is treated in this unspecific manner:

- Firstly, it underlies the law of declining crop yield rate of return and non-enlargable basic means of production (soils), while the other economic sectors can generally count on

sinking marginal costs at increasing production, and can increase the basic means of production according to need. Since income and wages usually develop parallel to marginal productivity, the agricultural sector falls into an income gap, which leads either to an exodus from this sector or to ecologically irresponsible attempts at increasing productivity.

- Secondly, it is the first economic sector to encounter ecological limitations, since it is the sector closest to nature. Given the inherent necessity of increasing growth parallel to the rest of the economy, it therefore becomes an obvious environmental threat as well as the object of protective regulations. The latter increase the costs again – which leads to a perfect agricultural Procrustean Bed.

This analysis can be summarized in the following sentence: Sustainable agricultural production is not possible in a non-sustainable overall economy, unless the state or community of states consciously steers against the mainstream in this vital economic sector. **This means that agriculture and forestry cannot be treated like because they are not like any other industry.**

The degree to which the situation of the agricultural sector is dependent on the overall design of the economy in terms of macro-economics and trade policy is to be illustrated by the following comparison of five (partially hypothetical) scenarios with regard to the coming round of trade negotiations (Figure II.2-6). They serve the purpose of opening our eyes to the fact that if is not agriculture and forestry which do not demonstrate sufficient capability to adjust, instead it is the overall economy which shows massive ecological deficits in adjusting.

These deficits in adjusting result in a "deadly constriction" for sustainable, proven agricultural systems.

Figure II.2-6: **Synopsis of theoretically possible Scenarios concerning the outcome of the MILLENIUM Round of WTO-negotiations – Agricultural Sector**

Under future general conditions of sustainability (ceterum censeo – long-term)	**Admission of different welfare models (positive systems competition - medium term)**	**Business as usual (e.g. forecast by Prof. Tangermann)**	**Using all new possibilities in the WTO (e.g. manoeuvring space according to the view of Prof. Senti)**	**Tactical minimal variant (scenario of damage minimization – most likely case)**
The consumption of fossil organic raw materials and primary energy carriers will be reduced to the incorporation rate of the biosphere (particularly CO_2 in form of calcium carbonate in the oceans). Thus the global buffer stocks are stabilised (Factor 10 – Strategy). • Agricultural production uses less fossil energy and raw materials, but is more labour-intensive. • Agricultural land becomes short – no surpluses due to the plundering of fossil organic stocks. • Decentralising and networking of supply systems. Low distance supply dominates. Agricultural policy targeted on fine-tuning and ensuring its sustainable multifunctionality. No longer a desperate struggle for larger shares of the world markets.	A universal formation of sustainable boundary conditions born by global unanimity does not take place, but room is given for shaping autonomous welfare models. Europe (the EU) votes for a future oriented societal model, in which the organising principles of the biosphere and basic human needs according to the insights of human biology are respected as unsurpassable guardrails. Agricultural land becomes short in Europe. No further surpluses which create pressure to export. Taxation of the consumption of finite (esp. fossil organic) resources up to their replacement value – resp. the cost of the substitute technology. Proven additional costs of sustainable cultivation of land are internalised by compensation levies ("real pricing" = true costs). This sustainable pathway is	The pressure exerted by the fossil-fuelled American world power continues to increase. Instead of the imperative recoupling of agriculture and industry, the former is played out against the latter. The needy have no money and the rich are more than satisfied. The resulting "structural" agricultural surpluses force the prices to sink. The USA and the Cairns Group demand that small-scale mixed, multi-functional European farming be phased out so they can conquer the strong buying market. Europe has to take a course of adjustment in order to limit its losses. The reductionist economy (denying social and ecological limits), demands the complete elimination of "protectionism," since the consumer rent can thus achieve a maximum (short-term). Due to a lack of taxes on consumption of non-renewable resources, capital and information	The advocates of sustainability succeed in opening the case law oriented WTO-practice for ecological and social concerns. Therefore it is possible to incorporate differential treatment of goods and services with respect to the related production processes, i.e. their "ecological and social rucksacks". A new definition of "like products", includes the mode of production. The undercutting of social and ecological standards is no longer treated as a "legitimate comparative advantage", but as an inadmissible indirect subsidisation. In contrast payments for specified performances of agriculture and forestry in the public interest are not considered as undue subsidies but as necessary payments on the market for public goods (Provider gets Principle). Because the provision of such public goods and services is usually collateral to agricultural and forest production, an independent panel of	The ratios of power on the world market and Europe's various interests (lack of consensus) result in the USA and the Cairns Group dominating the MILLENNIUM Round in the agricultural sector. They are flanked by the majority of the OECD countries. Although the USA demanded waivers for its agricultural sector as for a long time as the dominating power, they now call on all other members to grant unconditional free trade with agricultural products. At the same time, they threaten with countervailing measures in industry and politics. Worries about food security are dismissed with reference to the *Pax Americana*. Agricultural and forestry sectors are forced to try to adapt to the import conditions This would mean: 1. Adjusting to enforced market access with price reductions, in order to reduce

• The USA use their large photosynthetical potential to a major part for the production of renewable organic raw materials and primary energy carriers, instead of waging oil wars. • WTO as the guardian of a fair international exchange of goods, services and knowledge. The consumption of finite resources is globally taxed up to the replacement value – resp. the costs of the substitute technology. • Capital transfers are taxed in order to eliminate speculation and to finance budgets for common needs. • The revenue from a moderate global taxation of information transfer serves to establish an equivalent education and information infrastructure in the less developed countries. The WTO takes on a coordinating control function.	secured externally by equalisation levies in conformity with the WTO-GATT rules (esp. Art. III and XX). Recoupling of agriculture and industry. Development of the axis agriculture-chemistry-industry (ref. Forecasting and Assessment for Science and Technology Report to the EU Commission 1987) as the leading path towards environmentally compatible utilization of Europe's renewable natural resource base. As model concepts in this direction can be seen: Studies like "Sustainable Europe" and "Sustainable Germany" (Wuppertal Institute for Climate, Environment and Energy); scenarios of a solar-based economy (Eurosolar); Factor 10 Scenario; Austrian "Sustain Scenario", long term goals of the Austrian National Environmental Plan (NEP).	transfer, budgets become shorter and shorter. Therefore farmer's performances in the interest of the public cannot be adequately rewarded. Due to unbalanced labour markets the jobless pose added competition for the farmers in the budget. Industry promises more jobs in the case of completely free trade. In order to "succeed" in the WTO, the prices and protective measures are lowered for agriculture. Support-free exports are the central goal of the WTO-driven agricultural policy. Thus large scale industrial farming will survive in favoured areas. Small-scale farms and regions with marginal yield are abandoned. The aspects of future shortages and sustainable production methods do not play a role in the short-term calculus of trade policy.	experts controls whether a prohibited overcompensation is taking place. The latter qualifies as prohibited subsidy. Disadvantaged regions are kept in readiness to produce in the interest of future generations (ability to cope with future shortages of food). Current food stuff surpluses are absorbed as chemical feed stocks and primary energy carriers in the short run. However the applied technology is designed so, that it can be adapted to non edible plants or parts of plants (particularly cellulose) at any given time. Thus a flexible response to changes in the food markets is possible (food → non food → food switch).	attractiveness of imports. 2. Dealing with reduction of the export subsidies in the same manner. 3. Rendering unassailable the measures for supporting domestic farmers' income made necessary through items 1 and 2 by decoupling subsidies according to the American model and by increasing the demand for concrete ecological services (greening). Defence strategies could comprise attacking the American flat rate payments in the scope of the Fair Act, since they are out to create international cut-throat competition. The effect of the lump sum payments is, that a majority of farmers are relieved of most of their fixed costs, so they can beat the competition with low variable costs, due to their large scale and low ecological and social standards. After gaining control of world markets, prices can be increased and state subsidies can be withdrawn.

II.2.3 The Indispensable Interdisciplinary Viewpoint

Dealing competently with complex phenomena requires examination of these phenomena from various angles (refer to Figure II.2-1) in order to grasp their entire complexity and to steer them towards a sustainable path. In the following, some of the major viewpoints regarding the world trade system will be briefly commented upon (in a counter-clockwise order).

II.2.3.1 The Perspective of Systems Theory

Systems theory requires that mankind and his related systems of utilization can only be seen as subsystems of a global system. The maintenance of the latter has become our foremost task. This is mainly the case, because mankind's tools have become so large-scale that he not only damages the system in terms of small needlepoint punctures that heal quickly, but also inflicts large, incurable wounds that endanger his own existence. Man must come to recognize and implement into politics the fact that he has no choice, but to intelligently adjust to the global system, since he otherwise endangers his own basis of existence. It is thus absolutely essential that we elaborate the limits within which our species can survive sustainably, without endangering the overall system and ourselves. The major protagonists of global economics, however, still assume that the possibilities are unlimited in terms of their practical dealings. By means of compound interest, the money economy, in particular, calls for unlimited growth in a limited system. This is a recognizable behaviour pattern, which is self-destructive over the long-term. Despite this, world society, and particularly the WTO, refuse to internalize the given limits. The discussion regarding PPMs, the processing and production methods of traded goods and services, is an alarming example of the above.

Systems are stable when they are supported by diverse means, flexible and resilient - the latter also in case of error. Subsystems must be oriented towards the organization principles of the overall system. The latter leads us to the issue of the ecology.

II.2.3.2 The Perspective of Ecology

The earth's ecosystem has recognizable characteristics and organizational principles. Its essential principles, and the way they are disregarded by mankind's current lifestyle, which is driven by fossil fuel and atomic energy, must be summarized in brief:

1. We are dealing with a *limited system*, the biosphere which survives by using the entropy difference between the earth and the sun. The utilization of other than solar sources of energy alters the thermal equilibrium, which leads to problems of adjustment in the biosphere, also affecting the conditions of living for human beings as a result. The rapid

consume[1] of fossil fuels in the form of mineral oil, gas and coal overtaxes the biosphere threefold:

- The average temperature quickly increases, which leads to a destabilization of the established dynamic equilibrium. This results in a rapid increase of natural hazards, which have a significant impact on insurance statistics and the consequence of non-insurability.[2]

- The enormous consumption of organic fossil substances brings volumes of CO_2 into circulation which exceed the rate at which it can be absorbed.[3] The resulting changes in the volume of the CO_2 buffer reservoir leads to a lower rate of heat loss, which in turn increases the average temperature (greenhouse effect).

- The rapidity of this process overtaxes the inherent faculty of adaptation of higher forms of life – including that which is most adaptable, namely mankind (in terms of his bodily welfare).

  Since any consumption of energy results in heat, any production and supply systems that are not powered with *solar energy* are ecologically overtaxing and incompatible, in particular the world systems of traffic and transportation. This also means that the regional division of labor and the concentration of manufacturing processes have ecological limits.

2. The biological system of the biosphere is characterized by the *cascade-like utilization of fuels and materials* as well as cycle-oriented material flows. This minimizes the forming of an entropy. The present through-put economy, based upon fossil fuels, directly counters this principle of organization.

3. In order to arrive at cyclic patterns of utilization, *site-oriented decentralization and networking* must take place (building principle). The present concentrations and the technologies and systems of incentives that support them are at complete odds with the former principle of organization.

4. *Biodiversity* contributes to the stability of the overall system as well as to an increase in the possible number of synergisms. The diverse genetic information system is therefore one of the most valuable resources of mankind. The presently dominating agricultural production methods lead towards biological impoverishment, and are therefore

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1 In one year, mankind presently consumes around the same amount that was formed in approximately one million years.

2 Refer to the brochure of SCHWEIZER RÜCKVERSICHERUNG "Protección del medio ambiente – protección de la vida," Zurich, 1989.

3 Mainly through the $CaCO_3$ that is formed in the oceans, whereby this compensating mechanism is additionally destroyed by emissions of substances.

incompatible with the above principle of organization. "Lean production" in farming means undermining biodiversity.[4]

5. The *growth of living structures* by means of incorporating solar energy is the only entropy-reducing process in the earth's ecosystem. Protection of flora and fauna therefore means self-protection of mankind as a species.

If the dynamics of the global economy are considered in view of the above brief summary, it becomes evident that a radical course correction, or eco-restructuring is required. Just as general ecological conditions need to be incorporated into national legal codes[5] in order to steer human behavioral pattern towards sustainability, this also needs to occur within the world trade system, so that the dynamics of the global economic system do not have the effect of decreasing prosperity on the long term.[6]

II.2.3.3 Demands based on Human Biology

It is not a miracle that mankind has adapted his basic physical and mental requirements to the biosphere, since he is a part of it. Disregarding this phylogenetic imprint triggers mass neuroses which become evident in deep human suffering, as well as in the form of damage to the economy.

The biological heritage of humans demands, in particular:[7]

- the organization in manageable groups of approximately 100 individuals, who are self-organized and remain transparent with clear group affiliation
- the assuming of defined roles within the group
- learning and communication through direct contact with familiar contemporaries in a manageable group
- a close binding relationship with a mother or father figure until the phase of defiance (age of sufficient mobility and capacity to survive – detachment from the mother/father figure, establishment in the small group of the extended family) in the individual ontogenesis

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4 Refer to the graphic chart at the end of Section VII-1-5 (Overview VII.1-5).

5 Refer to WOHLMEYER, H., "Zur Rezeption der ökologischen Vorgaben in Gesellschaft und Gesetzgebung": in "Kurswechsel oder Untergang" (H. Prat, Ed.), Peter Lang Europäischer Verlag der Wissenschaften Frankfurt/Main, 1994.

6 Suggestions to this end were elaborated by the "Experts Group on Environmental Law of the World Commission on Environment and Development: Environmental Protection and Sustainable Development, Legal Principles and Recommendations." Graham & Trotman/Martinus Nijhoff, London/Dordrecht/Boston., 1987.

7 Refer to ECCLES, J.D. and ZEIER, H., "Geist und Psyche, Gehirn und Geist, Biologische Erkenntnisse über Vorgeschichte, Wesen und Zukunft des Menschen", Kindler Verlag, Munich & Zurich, 1980;

MEVES, C., "Kinderschicksal in unserer Hand, Erfahrungen aus der psychagogischen Praxis", Verlag Herder, Freiburg/Breiusgau, 1984: ibid: "Verhaltensstörungen bei Kinder", Piper Verlag, Munich/Zurich, 1983.

MARKL, H., "Evolution, Genetik und menschliches Verhalten", Piper Verlag, Munich, 1985.

- learning the major behavioral patterns (virtues) for healthy human relations, such as love, reliability, loyalty, tolerance, the golden rule of human relations,[8] appropriateness, readiness to make sacrifices in the corresponding small group
- growing into larger communities on the basis of the social abilities learnt within the small, stable group
- assuming the earth to be one's home based upon the feeling of belonging in a familiar, clear and secure social network (feeling of security)

The above-mentioned leads to the following maxims:

- No pressure to give up the local supply system in favor of the world market, rather the strengthening of the former using modern technologies (microelectronics, computing science, biotechnology, etc.). The creation of modern, decentralized and networked supply systems, which are adapted in terms of human biology and ecology, is one of the keystones of a sustainable lifestyle.
- No further seggregation of agriculture and industry. No adaptation of agricultural production to the requirements of industry, but the adaptation of industrial production and distribution methods to the requirements of sustainable agricultural production and a manageable size of community.
- (Re-)Establishment of decentralized, functionally networked, small, socially satisfactory communities with transparent power structures and communication networks; preservation of local culture instead of its destruction; adaptation of social incentive systems and technology to these requirements.
- Time (leisure time) for human relations and contact with the environment to activate the capacity of the right hemisphere of the brain[9] in terms of recognizing complex systems and managing those systems. The latter counters the increasingly oppressive, frenzied pace of life, which is attributed to the requirements of the world market (faster and faster; more and more). Instead of using high productivity to create more leisure time, it is proclaimed that leisure time must be reduced to the minimum that is sufficient for survival in the short-term, in the interest of maintaining competitiveness.[10]

8 Do not unto others that which you would not have them do unto you.

9 Refer to the digression (excursus) in Chapter II.2.2.1

10 Refer to the article "Streßtod: Arbeiten und Sterben in Japan" (lit. transl.: "Stress Death: Working and Living in Japan"): Die Presse, Vienna, 18-3-1998, p. 3, in which the concrete consequences of unchecked productivity increase are elaborated; and the reflections of cultural philosopher W. MÜLLER-FUNK in his article "Bis einem Hören und Sehen vergeht" (lit. transl.: "Until We've Lost Our Hearing and Sight") dated 10-1-1998, ibid. Spectrum p. 1.

The consequences of neglecting basic human biological requirements were elaborated by the psychagogue C. MEVES two decades ago in a presentation to the Association of Austrian Industrialists (see above FN 7). Above all, these are:

- inattentive people who are incapable of dealing with stress
- people incapable of functioning in partnerships or teams
- eternally dissatisfied individuals who are constantly in haste.

This not only means the loss of a harmonious life and the onset of deep suffering, but it also incurs high social costs and the loss of effectiveness on a long-term basis which results in lack of competitiveness due to "limited human capital." The present process of rendering everything anonymous and overtaxing the overall society threatens to lead to increasing autism which strengthens the preceding statement.[11]

The systematic dissolution of human relationships furthermore results in less stable societies with a less reliable economic basis being the consequence.[12] Consideration of basic human biological requirements in society's structure is not only a humanitarian demand, but also an economic and socio-political prerequisite of the highest indirect profitability.

The above-mentioned relationship of human beings to natural systems, (the biological environment), requires a short digression concerning the special preconditions *for mobilizing the capabilities of the right hemisphere of the human brain*:[13]

The right hemisphere of the human brain is the seat of the capacity for recognizing complex forms, systems and harmonies, as well as dealing with the above in a spontaneous and integrated manner. However, the latter capability to behave in conformity with systems in the scope of complex realities requires close, long-term contact. This will result in a feeling for or comprehension of the whole system.[14]

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11 Personal communications from doctors practicing in relevant fields.

12 Sociologist R. SENNET concludes his case study on the new working world with the statement: "But I do know that a regime, which provides human beings no deep reasons to care about one another, cannot long preserve its legitimacy." SENNET, R., The Corrosion of Character: The personal consequences of work in the new capitalism, W.W. Norton & Co, New York/London, 1998.

13 The knowledge of the above was gathered through contacts with J. ECCLES, K. LORENZ, R. RIEDL and many working farmers – in particular the late F. STEINDL (the author's foster-father) and the late J. PLANITZER (high-alpine farmer), as well as from personal experience in dealing with sensitive ecosystems.

14 A classic example of this is a mother's early recognition of the onset of her child's illness. Due to her intimate contact with her child, she notices the smallest changes in the "complex system of the child," which lead her to take measures to regulate and support this system. She notices that her child has "caught" something. If the child is left in the care of other persons, who are not able to recognize the fine changes in the biological system of the child, then the disturbance in his system will not be recognized until later – often not until his system collapses. The same applies *mutatis mutandis* to animals and plants. (One of the forming experiences that economist F. SCHUMACHER experienced as an internee on a farm in Great Britain during WWII, was the death of an animal he was entrusted with, because he was not able to recognize in time the changes in its behavior due to his remote relationship to it.)

However, the modern drive towards increasingly large units, remote control and hypermobility hinders any close contact with the local biosphere, which constitutes the prerequisite for functioning of the capabilities of the right hemisphere of the brain. The present understanding of agricultural production (agribusiness), which comprises agricultural export countries with enormous areas of land that became cropland at a relatively late time point, differs fundamentally from agrarian civilizations that developed over many generations with the help of a close relationship to animals, plants and soil, as well as the complex system of the agrarian landscape.[15]

The farmer, who still works with his hands like a skilled craftsman, can develop a locally rooted and permanently close relationship with the biosphere and can thus combine his expert training with his experience of complex systems. On this basis the sustainably adapted control of systems is possible.

In this connection, the phenomenon of negative feedback that becomes evident when dealing with living systems should be mentioned. In a close relationship with a living being, the person in question not only asks himself the question as to whether the animal or plant is "doing well," a reaction also takes place that K. LORENZ[16] has called the "inhibition of man to kill." However, this innate, life-supporting, negative feedback in human behavior is switched off, if interaction with animals, plants and soil has become anonymous. World agricultural production is developing in this direction. This is also a plausible explanation as to why the destruction of nature is on the unhindered increase.

The "unemotional" philosophy behind the current world trade regime stubbornly excludes such considerations at present, or smiles condescendingly at the reference of them. This makes it all the more imperative to equally as stubbornly remark that the insight gained in other fields of science must also be taken into consideration when elaborating leading concepts in the field of economics, if strategies are not to fall short or even be counterproductive.

Based upon the above-mentioned insights, global economic strategies should favor small-scale, site-oriented and surveyably structured farming that involves the managing farmer in the handwork. This enables him to have the indispensable close physical and mental relationship with the environment that has been entrusted to him, and is the prerequisite for the development and use of the capacities located in the right hemisphere of the brain.

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15 The Swiss agro-sociologist, regional planner and psychotherapist, T. ABT goes even further. He has empirically determined that a collective, *prima facie* unconscious knowledge has grown over generations regarding the characteristics and capacities of ecosystems. Refer to his book "Fortschritt ohne Seelenverlust": Verlag Hallwag, Berne, 1988. Modern hypermobility and unrest have capped our access to this resource.

16 Nobel laureate for medicine and physiology of the year 1973, K. LORENZ, understands the term "Tötungs-hemmung" (inhibition of man to kill) to mean the inborn characteristic of man to spare the lives of fellow humans and other living beings. Exceptions exist, if ones own life is endangered by another living being. Neurotic and psychotic perversions should not be taken as the rule.

Based on the above consideratinos the current discussions on the permissible supports in the scope of the WTO's Agreement on Agriculture must be seen in a new light, since different structural ideals are the resulting economic goals of the clashing positions.

II.2.3.4 The Demand for Appropriate Technologies

The above-listed basic requirements in terms of systems theory, ecology and human biology, also call for a changed technical design. Instead of the concept of technology as a mega-machine that conquers nature and requires massive amounts of fuel and raw resources, we need the concept of an environmentally compatible technology that uses as many natural synergies as possible (including human relations).

This comprises:

- solar-oriented energy supply
- material flow cycles
- diverse, small-scale, site-oriented agriculture and forestry with production patterns similar to horticulture (interaction with the "Oasis Earth" should be learnt according to husbanding of nature in small oases)
- multi-purpose techniques using multiple resources for processing agricultural produce and raw materials based upon the above production patterns
- the networking of agriculture, forestry and industry on the basis of renewable natural resources in a partnership with the purpose of creating closed cycles of organic materials
- the establishment of intelligent local supply systems for energy, food, organic raw materials and basic services
- minimization of the use of energy and materials per unit of services produced (goods or services: Factor 10 Concept17).

The know-how required for such sustainable technologies is currently available. It is the duty of national and international economic policy-makers to call for it (create the incentive by providing a suitable framework). In this light the abstinence of the stakeholders in the scope of the WTO appears to be a serious negligence of their duties (if acting to promote public welfare is seen to be a moral duty – refer to the following remarks on the ethical point of view).

17 Refer to SCHMIDT-BLEEK ET AL.: The International Factor 10 Club's Statement to Governments and Business Leaders 1997, Factor 10 Institute, Carnoules, 1997.

II.2.3.5 The Ethical Point of View and the Legal Code

In the scope of the present study, it is not possible to delve into the depths of international ethics to the extent that would actually be required for this complex issue,[18] as was done in the previous remarks; only a few key issues will be dealt with. International peace ethics, which have been elaborated in greatest detail, cannot be dealt with here either.

Ethics means the orientation of the behavior of individuals and society towards moral values. However, the precondition for the above is to recognize values to which one feels bound. In terms of international ethics, the following questions immediately arise: Which values does the international community feel itself bound to? Where is there a recognizable consensus of values? What are the priorities?

The most broad-scoped orientation enjoying a broad consensus is the "Universal Declaration of Human Rights" adopted by the General Assembly of the United Nations on the 10th December 1948. In accordance with it, all patterns of behavior and measures that contradict the dignity and welfare of mankind are inadmissible. Human dignity has the highest priority.

As a rule, further declarations of values can be found in the preambles of international treaties. Changing values and changes in the hierarchy of values aspired to[19] become apparent in these preambles. GATT did not recognize in its preamble the goal of "the optimal use of the world's resources in accordance with the objective of sustainable development." This was first incorporated in the preamble for the establishment of the WTO. It is the result of the intensive discussions on the subject of sustainability, which originated in the insight that the human behavioral patterns are beginning to endanger the basis of life.

Thus, there are priorities of basic values – such as human dignity – and priorities which are the result of situations.

The absolute priority of human dignity is expressed in the call for a fair distribution of the goods of the Earth among all people (horizontal solidarity)[20] as well as to not diminish the chances of the coming generation (vertical solidarity).[21] The above both imply the maxims that a behavioral

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18 For a comprehensive introduction, refer to R. WEILERS: Internationale Ethik (International Ethics), Duncker & Humbolt, Berlin, Vol. I (Grundlegung der sittlichen Ordnung der Völkergemeinschaft), 1986; Vol. II (Anwendungsfelder – Fields of Application), 1989, in the latter, particular reference is made to Section 3: Die gerechte Ordnung der Internationalen Wirtschaft (Justice and the International Economic System).

19 For more highly detailed, empirically based information on values in Europe and North America, refer to P.M. ZULEHNER & H. DENZ, "Wie Europa lebt und glaubt - Europäische Wertestudie (How Europe lives and believes – European Value Study)," Patmos Verlag, Düsseldorf, 1993.

20 Refer to e.g. PAUL VI, Enzyklika Populorum Progressio dated 26-3-1967. One particular ethical problem is posed by those countries that force their own populations to starve in the course of their economic policy, because they concentrate their agricultural activities on exporting of a few selected products. The question arises as to whether international interventions are justified by such politics – which, as a rule, serve a minority that has taken over the seats of the former colonial rulers. A parallel could be drawn to the trade regulations concerning slavery or forced labour in prisons.

21 Refer to the classical definition of the "World Commission on Environment and Development" in "Our Common Future", Oxford University Press, Oxford-New York, 1987, p. 8. "Humanity has the ability to make

pattern in principle should be applicable to all people (global applicability), and it should be practically applicable for all future generations (future sustainability). Likewise, there should be fair access to the resources of the Earth for all people and all future generations. Internationally effective activities must be rated according to these maxims.

As mentioned above with regard to the expected individual and social behavior patterns, a particular accent was set with the insight that mankind's traditional struggle to survive shifted very dramatically when its tools for modifying nature became so powerful, primarily by mastering the harnessing of energy and developing the use of fossil fuels and atomic energy. Now caution and the wisdom of self-restriction are called for in implementing the technological instruments that have been developed. We cannot simply do whatever we like, if we don't want to endanger our own basis of life.[22]

In the scope of recognizing the existential dangers, the paradigm of unlimited growth that characterizes international economics is increasingly being questioned.[23] **Unlimited growth in a limited system – like the Earth – can only lead to the destruction of that system.** However, the concept of the money economy dominating the global economy is based upon unlimited growth through compound interest.

The questioning of the paradigm of growth is particularly significant in agricultural economics. Forcing the economic sector most closely related to nature into the economic mainstream leads to its inappropriate "development" in terms of ecology and human biology (refer to above). At sinking marginal yields per unit of surface area, the only possible measure is to increase the size of the enterprise ("grow or go"). On the one hand, this leads to the above-mentioned "remote" handling of nature and to "lean production", meaning production strategies that reduce biodiversity. On the other hand, this results in the decline of rural communities and culture, isolation of the farmer, and last but not least, in an undesired concentration of land ownership.[24]

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development sustainable – to ensure that it meets the needs of the present without compromissing the ability of the future generations to meet their own needs."

22 The book by Heidegger-disciple, H. JONAS, entitled "Prinzip Verantwortung" (The Principle of Responsibility), Insel Verlag, Frankfurt/Main, 1979 is characterized by this insight. We should not do anything for which others will have to take over the future responsibility, and we should also refrain from doing anything that has unknown consequences. See also the lecture of POPE JOHN PAUL II at the opening of the study week of the Papal Academy of Sciences "Achtung der Menschenrechte – Leben mit der Schöpfung" dated 12-3-1999 in "L'Osservatore Romano" dated 2-10-1999, pp. 14-15. Here, risks and dangers are elaborated, and a call is made for a "political, economic and legal world system that is based upon clear moral rules in order that communal well-being becomes the goal of international relations.

23 But in all the annual reports of the WTO and the embassies of national governments, the greatest possible growth is still persistently honored.

24 Refer to the excellent elaboration of this situation and analysis in the Pastoral Message of the National Bishops' Conference of the Catholic Bishops of the United States of America, "Economic Justice For All" (Catholic Social Teaching and the U.S. Economy), 1987; [http://listserv.american.edu:80/catholic/church/us/econ.justice]; particularly the chapters "Food and Agriculture" and "The U.S. Economy and the Developing Nations: Complexity, Challenge and Choices"; see also commented edition F. HENGSBACH, "Gegen Unmenschlichkeit in der Wirtschaft", Herder Verlag, Freiburg/Basel/Vienna, 1987.

The central concept of unlimited growth and its related economic design are rooted in a world view of unlimited possibilities, which can no longer be upheld, as well as in the metaphysical positioning of "progress" and "modernization". These are both affirmed for their own worth, and they are the final metaphysical objective in the leading, secularized concept of mankind's destiny. However, almost nobody asks where such a final destiny will lead. Instead, there is an emphatic submission to the anonymous corpus of a world machine which is constructed so that it has to constantly push forward.[25] The dominating attitude towards the end of the twentieth century is amazingly similar to the Nietzschean ideal of the master race which was propagated at the end of the nineteenth century. Both goals have in common that traditional morals favoring the weak have to be rejected. It is therefore no wonder that particularly those large communities with transcendentally based values, (true is that which has proven itself over the ages), namely the *great world religions*, have taken up the contrary position, whereby the Catholic social doctrine has developed the most complete set of concepts (which is also reflected in the literature quoted).[26] They have the belief in a common childrenship of God from whom human dignity and the call for a multiculture of love come forth.

The teachings of Christianity include a significant model for agriculture and forestry. This is the dominating image of the Garden which has been entrusted to Mankind in the story of creation in Genesis. In order to be fruitful and harmonious, a garden requires balanced diversity, harmonious beauty, intelligent perception of various synergies, and the personal, loving care of the gardener.[27]

Ethics cannot be proven with the methodology of the natural sciences. However, ethics can provide detailed guidelines[28] and convinces us through successful ways of life and social concepts. Particularly on account of the latter, the global economic system be conceptualized so that various social structures can enter into peaceful and fair competition with one another. The present indirect goal of the global economic machine, to impose the same social concept upon everyone, only leads to "social entropy" which cannot be the aim of "progress."

The essence of legal systems is the "normative imprint" of value systems. Their internal logic is elaborated by applied ethics. This core has been neglected in the past, particularly in international economic law, however it is coming under renewed discussion in the scope of social and environmental issues.

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25 Refer to MÜLLER-FUNK, loc.cit.

26 Refer to e.g. J. SCHASCHING: "Die Soziale Botschaft der Kirche" (The Social Message of the Church), Tyrolia Verlag, Innsbruck/Vienna/Munich, 1962.

27 In this connection, it should be remarked that the core of Austrian organic farmers formed their attitude, which is directed against the mainstream, based upon these roots.

28 Refer to KÜNG: "Weltethos für Weltpolitik und Weltwirtschaft" (A common Ethos for world politics and the world economy), Piper Verlag, Munich 1997; G.VIRT: "Wir stehen am Anfang – Bausteine für eine christliche Umweltethik" (We stand at the beginning – Basics for Christian environmental ethics), in "Academia," Vol. 3/1989, Vienna, 1989.

II.2.3.6 Further Aspects

Since the further viewpoints listed in Figure II.2-1, i.e. developmental policy, risk management, resource economics, theory of international trade and macro economic theory, will be covered sufficiently in other chapters, brief references will only be made where it appears useful to point onto additional noteworthy perspectives.

Sustainable development policy is increasingly turning away from the traditional export-induced concept in favor of an adapted and diversified autonomous development, which is supplemented by export strategies. Since GUNNAR MYRDAL's analyses, teaching doctrines have changed and now advocate that sustainable development policy must be based upon a diversified autonomous economy. The autonomous economy represents the "bread," and the exports represent the "butter".[29]

The greatest deficits are to be found in the field of **risk management**. Most large-scale risks are completely ignored in the scope of economic considerations (e.g. failure of long-distance supply networks and international computer networks), or they are passed on to undetermined future victims (individuals and communities) through legal limitation of liability (i.e. airlines, shipping lines, and atomic power plants). This results in very high potential social costs being externalized, and constitutes massive favoring of international trade.

Since this is always played down with the argument that the risks in question are very unlikely to take place, it must be emphasized that the magnitude of the risk of a product is calculated by the size of the potential magnitude times the probability of its happening (R = M x P). In this light, it is apparent that the externalized risks are far more massive than thought initially.[30]

In the scope of **resource economics**, it must be taken into consideration that the leading economic model is based upon the assumption of a long-term optimizing behaviour of those with the right of control. Concrete economic dealings however illustrate, that short-term goals are in the majority, and that cost competition forces the economies of scale to be used in the exploitation of resources. If no limitation is imposed in the interest of the general public, this leads to short term exploitation, i.e. plundering of resources. Furthermore, the currently common practice of discounting future needs to their present value results in a very irresponsible underestimation of future needs, since usually long periods of time are involved.

As far as the **economic viewpoint** is concerned, the changes in social values reflected in macroeconomic goals must be mentioned. The "magic economic triangle" *(full employment,*

29 There is also an amazing parallel to this in the development of a concept for successful regional policy. This is also more strongly based upon autonomous potential.

30 They are therefore only insured by international insurance agencies under the condition of limited liability or secondary liability of the state.

stable currency, and balanced foreign trade budget) has been transformed into a "magic hexagon" to which *securing the basis of life, qualitative economic growth and a long-term stable balanced budget* must be added. The last goal, in particular, leads to the question of international fiscal adjustment. Furthermore, it is to be expected that the goals, which have been excluded in the past, such as income distribution, distribution of ownership, and "physical and mental well-being," are added to the above. In contrast to the market-determined Anglo-American school of economic thinking, it must be emphasized that the social goals are prescribed by political consensus. It is the task of the economy to help to attain these goals as effectively as possible (i.e., at the lowest cost possible). To expect that social goals can be derived from market mechanism leads to the proverbial self-understanding that the <morals of business is business>.

The above spotlights should illuminate the fact that sustainable world trade policy requires additional angles to be integrated in order to increase prosperity. The global economy will only then really be able to develop along the lines of increased welfare, if these viewpoints find expression in the framing of adequate institutions.

III. THE CURRENT PERFORMANCE OF THE WORLD TRADE SYSTEM (WTO)

III.1 The Present Legal Basis of the World Trade System with Respect to a Future-Oriented World Economy

Richard Senti

Foreword

The conclusion of the URUGUAY Round in Geneva on the 15th December 1993 and the signing of the agreements in Marrakech (Morocco) on the 15th April 1994 constituted a continuation as well as an expansion of the General Agreement on Tariffs and Trade (GATT). One may speak of a continuation, because the new World Trade Organization (WTO) took over the basic stipulations of the former GATT, and an expansion, because the stipulations now go beyond regulations for trade in goods to include cross-border services and the protection of intellectual property rights.

The following elaborations are structured such as to provide a short overview of the development and institutional regulation of the WTO in the first two Sections (III.1.1 and III.1.2), followed by a summary of the material content of the new system. The third section deals with the general stipulations, i.e., the basic regulations which are found in all of the separate WTO agreements. This section also goes into length on environmental protection (including the respective source references), since this topic is of particular relevance with regard to the current project of the Austrian Association for Agricultural Research (*Österreichische Vereinigung für Agrarwissenschaftliche Forschung - ÖVAF*). Sections four to seven (III.1.4 – III.1.7) summarize the content of GATT, GATS and TRIPS without further elaborating the subsections of agriculture, sanitary and phytosanitary measures, and subsidies. These special topics are then dealt with in further detail regarding their significance for the above-mentioned project: The Agreement on Agriculture is elaborated in Section III.1.8; sanitary and phytosanitary measures in Section III.1.9; and subsidies in Section III.1.10.

These elaborations are based upon the following publications by RICHARD SENTI: *GATT - WTO, Die neue Welthandelsrunde nach der* URUGUAY*-Runde*, 2nd ed., Zurich (1999); SENTI/CONLAN: *WTO, Regulation of World Trade after the* URUGUAY *Round*, Zurich (1998); and RICHARD SENTI: *WTO, System. und Funktionsweise der Welthandelsordnung*, Zürich und Wien (2000).

Abbreviations

ATC	Agreement on Textiles and Clothing
BISD	Basic Instruments and Selected Documents (GATT)
BBl	Swiss Federal Act (Bundesblatt)
CCC	Customs Cooperation Council
CIS	Commonwealth of Independent States
DSB	Dispute Settlement Body
EC	European Communities
EU	European Union (officially European Communities in the WTO)
ITO	International Trade Organization
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
MFA	Multifibre Agreement
mfn	most-favoured nation
PGE	Permanent Group of Experts
PPM	Processing & Production Methods
SDR	Special Drawing Right, 1 SDR = approx. US$1.38
SPS	Agreement on the Application of Sanitary and Phytosanitary Measures
SR	Systematic compilation of the Swiss national legislation
TMB	Textiles Monitoring Body
TRIMS	Agreement on Trade-Related Investment Measures
TRIPS	Trade-Related aspects of Intellectual Property Rights
UNCTAD	United Nations Conference on Trade and Development
UN	United Nations
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

III.1.1 The Establishment of the World Trade Organization

■ The Starting Point

The creation of GATT was based upon the American initiative after World War II to restructure the system of world trade and transform the wartime industry, which had developed during the 1940s, into a peacetime industry. The American vision of a newly founded world trade system was a conscious extension of the *New Deal* of the 1930s and the Trade Act of 1934, a series of provisions in which the most important principles of the new trade system were stipulated.

In order to combat the recession of the 1930s, the American government drew up the *Smoot Hawley* Customs Tariff Act which brought an increase in customs tariffs from an average of 26 to approximately 50 percent. This proposal was met with massive protests in many business sectors, yet President *Herbert Hoover* signed the new foreign trade act in the year 1930.

In 1932, Democrat *Franklin D. Roosevelt* successfully challenged Republican *Herbert Hoover*'s claim to another period of presidency. The victory of the Democrats was apparently based upon the promise to lead the American economy out of its increasingly devastating economic crisis. Two years after taking up office, *Franklin D. Roosevelt* signed a new trade act which formally constituted a supplement to the *Smoot Hawley* Customs Tariff Act, however it actually formed a new concept of American foreign trade policy comprising the following focal points:

- Elimination of trade barriers: To achieve this goal, the law entitled the President to draw up agreements with foreign countries involving reductions in customs tariffs of up to 50 percent of the respective valid customs tariffs.
- Non-discrimination among members states (principle of the most-favoured nation)
- Negotiations based upon the principle of reciprocity: The demand for reciprocity was made with the goal of improving trade relations, employment and balance of payments - whereby the same arguments are still cited today.

■ The Failure of the ITO

In November 1945 the American State Department published its *Proposals for Expansion of World Trade and Employment*, and in February 1946 the Economic and Social Council of the UN made the decision to hold an international conference on trade and employment with the intention of creating an international organization for trade and employment analogous to the *Bretton Woods Institutions* (International Monetary Fund and World Bank), which were coming into being at the time.

After preliminary preparations, the United Nations Conference on Trade and Employment took place in Havana from November 1947 to March 1948. The *Havana Charter for an International Trade Organization (ITO)* was signed by a total of 54 nations on the 24th of March 1948.

The *Havana Charter*, based upon the initiative of the American State Department, was eventually voted down by the American Congress. The majority of the members of congress were against the ITO - the liberals, because the ITO was too protectionist for them; and the protectionists, because it was too liberal.

■ GATT as an Intermediate Solution

At the first preliminary conference of 1946, the participating nations decided to give priority to the American proposal for a reduction of customs tariffs and non-tariff trade barriers, and to regulate the issue by means of a special convention outside the scope of the ITO. The intention was to include this treaty as Section IV of the currently elaborated ITO. It was given preference, because the creation of a world-wide trade organization proved to be more time-consuming than expected, and the American offer was only good until the end of 1947, due to the *currently valid Trade Act*. The form of an agreement (instead of the form of an organization) was chosen, because the government of the United States was only empowered to draw up trade agreements in accordance with the Trade Act valid at the time. The power of decision to become a member of an organization was reserved to the legislative body.

On the 1st of January 1948 the *GATT Agreements* came into power for the eight member states of Australia, Belgium, France, Great Britain, Canada, Luxembourg, the Netherlands and the United States of America. Around twenty countries ratified the treaty over the course of the following months.

■ From GATT to the WTO

The further *development of the world trade system* took place in the form of trade negotiations or trade rounds.

A trade round significant for the continuing existence of GATT took place in 1955, during which all members of the treaty gave their renewed approval of the Agreement in its current form. The changes and amendments made at the same time were limited to relatively insignificant new formulations of the preamble, the determining of a procedure for the periodical withdrawal of tariff concessions, and the annual monitoring of payment-related trade restrictions.

GATT underwent an expansion in 1966 when it granted exceptions in order to provide developing countries with improved market access to industrial nations (cf. Section IV: Trade and Development).

In the scope of the GATT framework, eight trade rounds have taken place to date. The first six rounds mainly dealt with the accession of new GATT members and the reduction of customs tariffs. The topics of the seventh round (the Tokyo Round from 1973-79) were, for the first time, reduction of non-tariff trade barriers, as well as new regulations for dumping, subsidies, government procurement and tariff preferences in favour of developing nations. These changes enhanced the qualitative standards of GATT, and this course was maintained during the last round (URUGUAY Round 1986-1993). The URUGUAY Round expanded the world trade system to include cross-border services and the protection of intellectual property rights, and it institutionally anchored these additions in an umbrella organization entitled the WORLD TRADE ORGANIZATION (WTO).

■ The Present Scope of Application of the WTO

The following table Figure III.1-1 indicates those areas which are regulated by THE WORLD TRADE ORGANIZATION in one form or another, as well as those which are still up for discussion pertaining regulation.

Figure III.1-1

Present Scope of Application According to the Final Report of the URUGUAY Round*

Institutional Section

- WTO contribution towards greater economic policy convergence
- creation of a broad-scoped trade-policy monitoring system
- ensuring of an integrated dispute settlement procedure
- trade and environmental protection (elaborations not yet completed; task of the WTO preparatory committee)
- measures for the promotion of developing nations and nations which have not attained self-sufficiency in the foodstuff sector

I. Trade in Goods (GATT)

- protocol of the consolidated reduction of tariffs and non-tariff trade restrictions (including primary products and tropical products)
- system for regulation of agriculture, including sanitary and phytosanitary measures
- the Agreement on Trade in Textiles and Clothing
- the amendment of the Codes of the 7th World Trade Round (Tokyo Round) with regard to anti-dumping policy, technical trade barriers, import licenses, subsidies and countervailing duties, obligation of notification, customs valuation, government procurement,** and civil aircraft **
- revision or reinterpretation of GATT provisions on customs tariffs and other levies, state enterprises, balance of payments policy-related measures, safeguard clauses, customs unions and free-trade zones, waivers, amendments to tariff concessions, and suspension of GATT regulations in special cases
- the Agreement on Rules of Origin
- regulations for preshipment inspection
- the Agreement on Trade-Related Investment Measures

II. The General Agreement on Trade in Services (GATS)

- the text of the agreement includes various ministerial decisions and declarations on the institutional organization, the special aspect of services in the dispute settlement procedure, environmental protection, labour-force mobility, financial services, aircraft transportation, telecommunications, international auditing, and the audio-visual sector

III. Trade-Related Aspects of Intellectual Property Rights (TRIPS)

- the text of the convention promotes the protection of intellectual property rights in cross-border trade, including the trade in counterfeits and forgeries

* Texts in the form of agreements and definitions.

** Sectors which only apply to those nations willing to ratify them

III.1.2 The WTO as an Institution

III.1.2.1 Membership

The transformation of the original GATT (also referred to as the GATT 47) into the WTO resulted in the members of the Agreement becoming the member states of the WTO. At present the WTO counts a total of 132 members (December 1998).

The original GATT members, which adopted the final act of the URUGUAY Round and the international trade agreements it comprised, became the founding members of the WTO. According to UN definition, least-developed countries are excused from fulfilling the contractual duties and concessions to the extent required by their economic, financial and trade-related status or their administrative and institutional shortcomings.

Each member state has the right to withdraw itself from the WTO. Withdrawal is possible six months after written notice. The contractual rights also allow the member states to withdraw from individual supplementary agreements (plurilateral trade agreements) without having to withdraw from the WTO as a whole. The deadlines to be adhered to in this regard are outlined in special agreements.

In the year 1948, GATT comprised 23 members. By the autumn of 1998, it had a total of 132 partner states and 32 so-called *'de-facto'* member states which adhere to the WTO agreements without having signed them. The Peoples' Republic of China withdrew from GATT in 1950, followed by Liberia (1950), Lebanon (1951) and Syria (1951). The Peoples' Republic of China has had an observer-status since 1984. It participated in the URUGUAY Rounds and is presently striving to become a full member.

To date, the former USSR and the states in its succession have neither become GATT partners nor members of the WTO. Doubtless, the reasons for their aloofness can be seen in the relatively insignificant position of foreign trade in the former Soviet Union as well as the incompatibility of the planned economy with a free foreign trade system. The participation of developing nations is often a result of the independence they have achieved. At present, an estimated 70 to 80 percent of cross-border trade in goods and services is accounted for by the member states of the WTO.

III.1.2.2 The Individual Bodies

Due to the failure of the ITO, GATT 47 originally lacked a fixed organizational structure. Its institutional development in the direction of an organization took place through a customary law

process which led to the further development of the *General Agreement on Tariffs and Trade* in the course of its practical application.[1]

The first and foremost decision-making body was represented by the nations which had signed the GATT, the parties' delegates met once annually under the title of *contracting parties* to decide upon the destiny of the Agreement. Each *contracting party* was allotted one vote. Changes with regard to most-favoured-nation, the national treatment principle, and the decision-making process required unanimity. According to their significance, further resolutions either required a majority of two-thirds of all delegates or all those delegates present or, if not otherwise stipulated by the Agreement, a simple majority.

In 1960 the CONTRACTING PARTIES delegated the majority of their competencies to the GATT Council to run the day-to-day business between the annual sessions of the *contracting parties*. The GATT Council usually assembled on a monthly basis. The head Secretariat of GATT, located in Geneva, was under the auspices of the managing Secretary-General of the *contracting parties* or, from 1965 onwards, the Director-General. The past Secretaries-General and Directors-General have been: *Eric Wyndham-White* (1948-1968), *Olivier Long* (1968-1980), *Arthur Dunkel* (1980-1993), and *Peter Denis Sutherland* (1993-1994). *Renato Ruggiero* (1994-1999), *Mike Moore* holds this office since 1999.

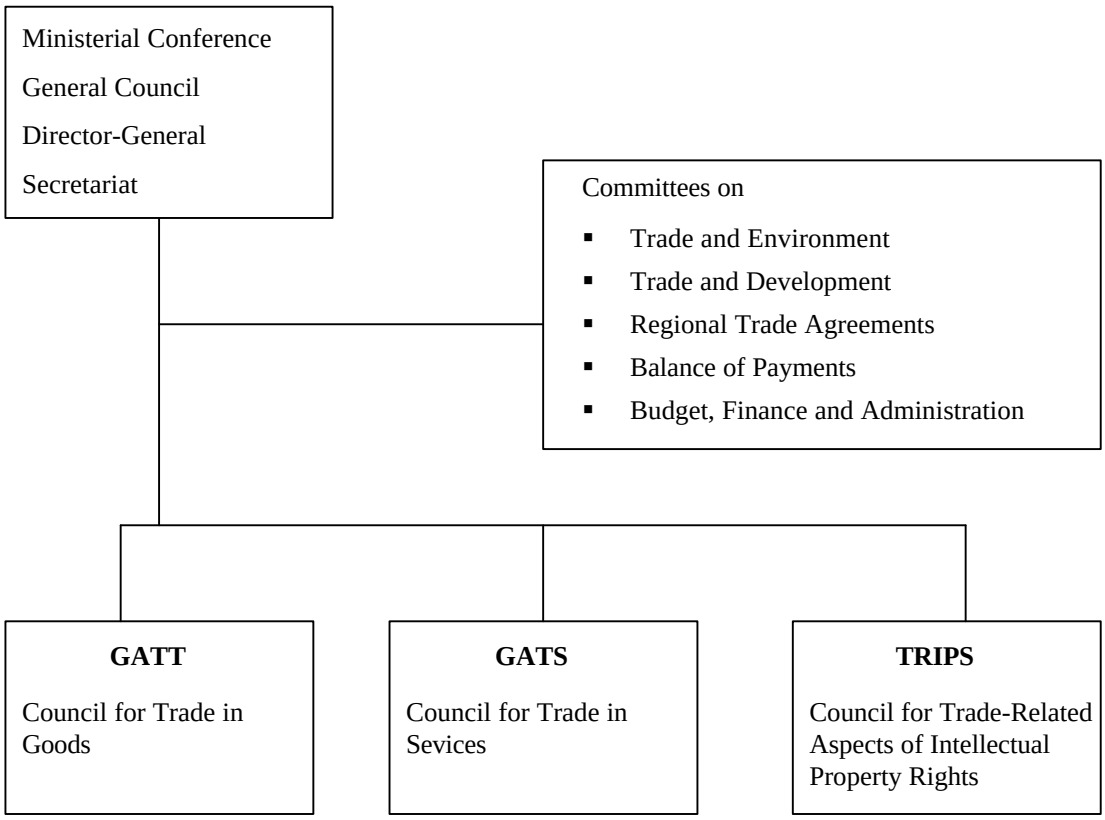
In order to deal with certain problematic issues (i.e., the sectors of textile trade or agriculture), commissions were called into being (for an indefinite period of time), as were working groups (for limited periods of time). In the case of suspected breaches of the contract, a Dispute Panel was available to draw up a proposal for a decision in the name of the GATT Council.

The WTO took over the basic structure of the GATT organization, however it simultaneously added two further treaties to the current GATT Agreement, namely the General Agreement on Trade in Services and the agreement on Trade-Related Aspects of Intellectual Property Rights. The Table on the following page (Figure III.1-2) is a flow-chart of the WTO according to the final report of the URUGUAY Round dated 15th of April 1994.

1 BENEDEK (1990), p. 185.

Figure III.1-2

Flowchart of the WTO



The *Ministerial Conference*: The highest organizational body comprises representatives from all member states on the ministerial level and convenes biannually. The Ministerial Conference takes the final responsibility for the proper functioning of the WTO.

The *General Council*: It is in task of dealing with affairs between the regular sessions of the Ministerial Conference. It comprises delegates from the individual member states and it is open to all member states. The General Council convenes on a monthly basis. In the scope of the WTO, it fulfils those functions which were the tasks of the GATT Council in GATT 47. Due to its decision-making powers, it is the most important organ of the WTO. Whenever the Ministerial Conference is mentioned in the following, this is equally applicable to the General Council.

The *Director-General*: The Director-General carries out the resolutions made by the Ministerial Conference and the General Council and simultaneously holds the chair of the Secretariat. He has to draw up periodical statements on the operations of the WTO.

The *Secretariat*: The major tasks of the Secretariat are the preparation and holding of negotiations among the WTO member states; advising trade partners; the analysis, elaboration and publication of developments in world trade; and the organization of dispute settlement proceedings.

The *Committees of the WTO:* In accordance with the final act of the URUGUAY Round, the Ministerial Conference set up the following three committees: 1) The Committee on Trade and Development Issues, 2) The Committee on Balance of Payments Restrictions, and 3) The Committee on Budgetary, Financial and Administrative Issues.

The Council for Trade in Goods; the Council for Trade in Services; and *the Council for Trade-Related Aspects of Intellectual Property Rights*: As already mentioned, the World Trade Organization comprises three major sections: GATT, GATS, and TRIPS. Each of these three trade sectors is headed by a standing working group, the Council for Trade in Goods, the Council for Trade in Services, and the Council for Trade-Related Aspects of Intellectual Property Rights. These Councils have the task of enforcing the respective agreements.

It is up to the Councils whether they wish to create additional bodies for the fulfilment of their tasks. The Councils are open to all contracting parties. The chairs of the Councils are elected by the member states.

III.1.2.3 The Decision-Making Process

Each member state of the WTO can cast *one vote* in the passing of a resolution. The European Union has as many votes as it has members in the WTO. There is no weighting of votes in the WTO according to proportion of world trade, membership fee, or any other criteria in contrast to other international organizations such as the International Monetary Fund or the World Bank.

Each member state of GATT, GATS, and TRIPS has the right of nomination.

In order to maintain past GATT practices, the WTO has the goal of passing resolutions unanimously (a consensus of all members present).

III.1.2.4 Dispute Settlement Procedure

The dispute settlement procedure applied in GATT can be traced back to the year 1952. At that time the *contracting parties* (signatory nations) set up a special working group for current cases of dispute. This developed into the practice of allocating a group of experts for each proceeding. The legal anchoring of this customary panel-procedure took place in 1979 in the form of a definition of the common GATT practice.[2]

2 BENEDEK (1990), p. 314.

The present dispute settlement procedure came into being during the URUGUAY Round. It was published as an interim report in Montreal in 1988 and supplemented by *The URUGUAY Round Understanding on Rules and Procedures Governing the Settlement of Disputes*.[3] However, since the Montreal regulations were only valid until April 1994, respective measures had to be taken in order to insure their continuing validity until the coming into power of the resolutions of the URUGUAY Round.

Over the past decades GATT has held around 200 dispute settlement proceedings. A total of 27 percent of the cases were withdrawn during the course of the proceedings, 31 percent resulted in a legal compromise between the contracting parties, and 42 percent ended in a court ruling. Ninety percent of the rulings were accepted by the disputing parties. In ten percent of the court rulings, the parties refused to accept the Panel resolutions and rectify the proven breach of contract.[4]

Although dispute settlement proceedings had been limited to the sector of trade in goods in the past, since the URUGUAY Round they have also included the trade in services, the protection of intellectual property rights, as well as the Agreements on Trade in Civil Aircraft, Government Procurement, the International Dairy Agreement and the International Bovine Meat Agreement. The general dispute settlement procedure is applied to cases regarding special agreements (i.e., anti-dumping, technical trade barriers, textiles, etc.) in as far as no special regulations have been stipulated in the respective agreements. There are many exceptions which apply to developing countries.

From an institutional point of view, the WTO dispute settlement procedure has been comparatively strengthened through the creation of *a standing Dispute Settlement Body* (DSB) as well as *an Appellate Body*.

The individual steps in the procedure are as follows:

- If member A is convinced that the rights it has according to the contract have been curtailed or violated through the action of member B, then it is entitled to open appropriate consultations with member B.
- If negotiations have not begun between A and B within 60 days following country A's appeal, or if B refuses to negotiate, then A has the right to apply to the WTO for the creation of a panel.
- WTO procedures require that the panel must reach a decision within six months or, in urgent cases, within three months. However, the panel's ruling is neither final nor binding.

3 GATT (1994), Final Act, p. 353 f.

4 For the statistical evaluation of panel resolutions, cf. HUDEC (1993), p. 1-113.

It is a proposal made to the WTO Dispute Settlement Body, a working group of the General Council.

- The proposal made by the panel is considered to have been accepted if the Dispute Settlement Body does not unanimously vote to reject it, and none of the parties involved files an appeal. This can be considered the most significant development of the current procedure towards codification of the Dispute Settlement Body.
- If an appeal is filed, it is directed to the Appellate Body which comprises seven members. The Appellate Body must reach a decision within 60 days and relay this decision to the Dispute Settlement Body. If the Dispute Settlement Body does not unanimously rule down the decision, the contracting parties must accept the decision within 30 days.
- Once the decision has been accepted, the party concerned must inform the Dispute Settlement Body as to how it intends to rectify the breach of contract.
- If a contracting party does not meet the demands outlined in the Panel's proposal, the disadvantaged or threatened country approaches the Dispute Settlement Body anew requesting retaliatory measures to be taken against the member state which did not accept the decision or did not comply with the ruling of the Dispute Settlement Body.

III.1.3 The General WTO Regulations

III.1.3.1 Organization

The various treaties and agreements of the WTO may be divided into two different groups (see Figure III.1-3): firstly, *multilateral agreements* which are binding for all member states of the WTO, and secondly, *plurilateral agreements* which are only binding for those countries willing to ratify them.

The multilateral agreements, which apply to all WTO member states, may also be divided into two different types. Firstly, there are directives which are generally applicable to all aspects of the agreements, including trade in goods and services and the protection of intellectual property rights (most-favoured-nation clause, equal status for domestic and foreign trade, obligation of reciprocity, etc.); and secondly, there are directives which either apply solely to trade in goods, or trade in services, or the protection of intellectual property rights.

In the scope of this third section, the general rules, which apply to all agreements, will be discussed. With due consideration to the current project of the Austrian Association for Agricultural Research, the section on environmental protection (Section III.1.8) is allotted a broader scope.

Figure III.1-3

Overview of the Types of Agreements

Multilateral Agreements

GATT	GATS	TRIPS

General Aspects

- Object
- Most-favoured-nation clause
- National treatment principle
- Reciprocity
- Reduction of tariff-related and non-tariff trade barriers
- Special treatment of developing nations
- Environmental protection

Agriculture Health Textiles & clothing Technical barriers Investments Dumping Customs valuation Preshipment inspection Rules of origin Import licenses Subsidies Safeguards	Personal transportation Air trafffic Financial services Telecommunication	Transitional regulations

Plurilateral Agreements

- Trade in civil aircraft
- Government procurement

III.1.3.2 Mutual Goals

A comparison of the goals of GATT 47 with those of the WTO reveals a new orientation, among other things. GATT 47 dealt with the increase of the standard of living, the realization of employment for everyone, a high and steadily growing volume of real income, "the full use of the resources of the world", as well as sustainable development of production and trade. The preamble of the WTO agreement omits the goal of "*developing the full use of the resources of the world*". Instead it associates an increase in the standard of living and the realization of employment for everyone with the condition of the "*optimal use of the world's resources*" in connection with a sustainable development which promotes protection and conservation of the environment while simultaneously increasing the means required to do so.

In addition to the inclusion of environmental problem issues, the preamble of the WTO agreement comprises a new section on the special consideration of developing countries. The contracting parties of the WTO thereby recognize the necessity of guaranteeing the least-developed countries, in particular, a share in world trade growth which corresponds to their level of economic development.

III.1.3.3 The Most-Favoured-Nation Principle

Article I of GATT 94, Article II of GATS, and Article 4 of TRIPS stipulate, partially in the same wording, that the members of the WTO are obliged to also grant any advantages, favours, privileges and immunities in connection with trade in goods and services or intellectual property rights to another country or citizen of another country (regardless of whether or not a WTO member country or a citizen of a WTO member), without imposing any delay or any conditions for all comparable goods and services or intellectual property rights. In other words, a WTO member state may not allot differential treatment to the other WTO member states, nor may it treat any one worse than a third country. On the other hand, each country is free to grant the advantages conceded to WTO member states to any other non-member state.

The stipulation 'immediately', found in the text of the agreements, is meant to ensure that any advantage or benefit, etc., must be granted to all WTO member states simultaneously and without any delay. A process of succession is not permitted.

The term 'unconditionally' stipulates that any favours granted to a member state must also be granted to all other WTO member states without any claim to return services or supplementary conditions. This term is a conscious rejection of the conditional most-favoured-nation treatment in the 1920s which involved granting privileges to third countries only if these were prepared to agree to 'appropriate' concessions or counterdeals.

The principle of most-favoured nation includes:

- the amendment of customs duties and levies of all kinds which are imposed for importing or exporting good and services
- the transfer of payments for international trade in goods
- the process of imposing customs duties and other levies
- the administrative procedure used for registering and monitoring cross-border goods and services
- the imposing of direct or indirect levies on goods and services
- legal regulation of the trade, sale, transportation, distribution and utilization of imported goods and services in the domestic territory
- the regulation of intellectual property rights in the form of standard guidelines with concern to counterfeits, copyrights and patents

The issue regarding *the 'likeness' of products* will never be completely resolved. According to the sphere of interests, various criteria can be applied: When comparing wood, for example, should the emphasis be placed upon the botanical tree species, the internal quality of the product, or the field of application? The same tree species may have greatly varying qualities of timber depending on whether it grew in a moderate climate at sea level or in northern latitudes in inhospitable mountainous conditions. What should be at the centre of focus: the tree species, the timber quality or the scope of application?[5]

The principle of the most-favoured nation has been undermined more than once, partially by means of exemptions in the original GATT Agreement, partially by subsequent concessions made in supplementary agreements. The exceptions to the contract include the liberty to create customs unions, free-trade communities and frontier zones as well as the granting of preferential status to developing countries. Concessions can also be found in the Multifibre Agreement and the codices of the 1970s and 1980s.

III.1.3.4 The National Treatment Principle

Another focal area of the WTO is the trade-related equal status of international and domestic trade. Through the national treatment principle, member states are obliged to give potential sellers, goods and services from other member states equal treatment to that given domestic sellers, goods and services. Customs tariffs form the only exception to the national treatment principle. If a country actually requires protection against foreign trade, this must take the form

5 Cf., Dispute Canada/Japan Timber Exports: GATT (1989), FOCUS, Newsletter No. 62, p. 1 f.

of customs tariffs. This exception is based upon the presumption that customs levies are a relatively transparent and easily applicable foreign trade instrument, whereas non-tariff trade barriers can usually not be monitored.

The major stipulations of the national treatment principle can be found in Article III of GATT, Article XVII of GATS and Article 3 of TRIPS. There are certain differences among GATT, GATS and TRIPS stipulations in as far as GATT refers only to goods, GATS to services, and TRIPS to the protection of the legal owner of rights, his nationality as well as his permanent and current places of residence.

In the *General Agreement on Tariffs and Trade* (GATT), the member states of the WTO have accepted that "internal taxes and other internal charges and laws, regulations and requirements affecting the internal sale, offering for sale, purchase, transportation, distribution or use of products internally, as well as internal quantitative regulations requiring the mixture, processing or use of products in specified amounts or proportions, should not be applied to imported or domestic products so as to afford protection to domestic production". This formulation corresponds to an endless list of non-tariff trade barriers.

The further text of the Agreement comprises both a limitation and an extension of the national treatment principle: The limitation amounts to the sole application of the principle of non-disparity to 'like products' (the difficulty of defining the likeness of products was elaborated in the previous section). The extension amounts to the fact that 'moreover' local taxes or other levies may not be applied in such manner as to give preference to domestic goods. As pointed out by JOHN H. JACKSON according to the treaty negotiations of 1948, this not only prohibits the disparity of 'like' goods, but also that of any 'competition'. This would mean that a country, which does not grow its own oranges, is acting contrary to the GATT Agreement, if it imposes such high customs tariffs on oranges that the domestic orange consumption breaks down, and the consumers switch over to apples.[6]

The national treatment principle does not apply to laws, directives or other rules regulating government procurement, in as far as the goods acquired by means of government procurement are used to cover state requirements and do not find their way into commercial trade. The national treatment principle laid down in GATT does not prohibit granting subsidies to domestic producers. The same applies to subsidies funded by revenue stemming from local taxes or other domestic levies that may be imposed in harmony with GATT stipulations, as well as to subsidies that take the form of state purchases of domestic products.

The national treatment principle cannot be applied to services which the state avails itself of without making them available to the private sector.

6 JACKSON (1969), p. 282.

The principle of national treatment can also be found in the agreement on Trade-Related Aspects of Intellectual Property Rights. This takes the form of an extension of the principle of equal treatment which was already anchored in earlier international agreements. The PARIS Convention of 1967 already stipulated that the dependants of a treaty member enjoy the same rights for the protection of property in all contracting nations, "which the relevant laws guarantee for their own nationals either now or in the future" (SR 0.232.04). A similar formulation can be found in the BERNE Convention (SR 0.232.14).

III.1.3.5 The Principle of Reciprocity

A further important characteristic of the WTO agreements is *the principle of reciprocity.* This principle, which was anchored in GATT in the 1940s, is based upon the American Trade Act of 1934. The "Reciprocal Trade Agreements Act" of that time empowered the American President to reduce customs tariffs on goods imported from those countries prepared to make equivalent concessions for products of American origin.

In this connection, reciprocity is meant in the political sense. This very political reciprocity refers to the manner of treatment, and can been seen in contrast to legal reciprocity which is covered by the principle of the most-favoured nation in the scope of GATT and the WTO.

Within the GATT framework, the political principle of reciprocity applies to tariff negotiations (Article XXVIII (b)) and protective measures (Article XIX:3). The negotiations regarding the reduction of tariffs are to be held on "a reciprocal and mutually advantageous basis". Those measures imposed in order to protect against an unexpected development caused by existing obligations and tariff concessions, are to be reciprocal and mutually advantageous. Only with respect to developing countries, GATT does "not expect reciprocity" in tariff concessions or the reduction of other trade barriers.

Analogous to the trade rounds in GATT, the new General Agreement on Trade in Services also stipulates the reduction or abolition of trade barriers in international trade in services.

Finally, the principle of reciprocity is also found in the agreement on Trade-Related Aspects of Intellectual Property Rights. The promotion, procurement and dissemination of technical innovations is to take place on the basis of "a balance of rights and obligations" among the contracting parties according to Article 7 of TRIPS.

The principle of reciprocity is based upon the following arguments:

- *The argument of terms of trade*: If trade relations exist between two countries for the trade of goods, whose tariffs are influenced by the terms of trade, then the terms of trade can only be maintained as they are by means of mutual tariff concessions.

- *The argument of employment*: Each negotiation partner must strive towards creating employment for the labour force set free as a result of import concessions, by means of increasing the exports.
- *The argument of balance of payments*: Each country should make an effort to improve or at least not to worsen its balance of payment at negotiations.
- *The argument of negotiation*: The principle of reciprocity also gives the individual negotiation partners the opportunity to demand export advantages for products which otherwise may not be the subject of negotiations.
- *The argument of justification*: Finally, the negotiating delegations act in the name of their governments, their parliament and their sovereign. It is in their own interest to hold the negotiations on a reciprocal and mutually advantageous basis.

In contrast to traditional negotiation patterns, a new strategy of negotiation has come into existence in the United States and the European Union over the course of the past two decades. Under the term "fair trade", both parties demand that their trade partners grant them the same market access as they themselves have granted. This reciprocal negotiation no longer merely refers to respective negotiation concessions, but applies generally to equal market access.

It is uncertain whether the renewed declaration in favour of traditional reciprocity, made in the course of the URUGUAY Round, has the power to restrict the strategy of aggressive reciprocity which is practised in various individual countries or groups of countries.

III.1.3.6 The Removal of Trade Barriers

The mutual reduction of trade barriers is another specific characteristic of the present and future world trade system. A certain asymmetry exists in as far as tariffs need only be reduced, whereas non-tariff trade barriers are to be abolished completely. There are various explanations and justifications for this lack of symmetry: One argument claims that each country should have the absolute right to protect its own interests. Protective measures should be as transparent and foreseeable as possible. This applies more extensively to tariffs than to non-tariff trade barriers, which are subject to the arbitrariness of each and every country when it comes to administrative hurdles and volume restrictions. The asymmetrical orientation of GATT may also have a historical background. The reduction of tariffs and the simultaneous abolition of non-tariff trade barriers was intended to revive the "golden days before World War I" when tariffs constituted the only existing trade barriers. The non-tariff trade barriers reminded one too strongly of the difficult times during World War I and the Great Depression. Finally, the negotiators were also aware of the fact that the founding members of the new World Trade Organization were not prepared to abolish all tariffs. The same also applied to non-tariff trade barriers, however the trade partners were well aware of the impossibility of their effective monitoring.

Tariffs have been at the centre of interest in all GATT trade rounds to date. Although the mathematical average tariff level for industrial products varied from 40 to 50 percent of the import value at the beginning of the 1950s, it decreased to approximately 6.3 percent over the course of the first seven trade rounds. At the URUGUAY Round a further reduction to an average of 3.9 percent was achieved. Following the URUGUAY Round, the average tariff levies were 12.1 percent for textiles and clothing, 7.3 percent for leather and rubber goods, 5.8 percent for means of transportation, etc. (cf. Table III.1-1). The level of agricultural tariffs will not be known before termination of the conversion of non-tariff trade barriers, which is taking place nation by nation.

Table III.1-1

Tariff Reductions during the URUGUAY Round

Product categories	Import value	Average Tariff in %		
	billion $	pre UR	post UR	Reduction
All industrial products	736.9	6.3	3.9	38
Textiles & Clothing	66.4	15.5	12.1	22
Leather & Rubber Goods	31.7	8.9	7.3	18
Transportation Means	9.,3	7.5	5.8	23
Chemical Products	61.0	6.7	3.9	42
Electric Appliances	86.0	6.6	3.5	47
Fish & Fish products	18.5	6.1	4.5	26
Metals	69.4	3.7	1.5	59
Mineral Products	72.9	2.3	1.1	52

Source: GATT (1994), News of the URUGUAY Round, April, p. 11.

To a certain extent, GATT was a document covering the results of the tariff negotiations in its original form. The tariff concessions were made binding in the form of lists called Schedules. The term 'binding' meant that the tariff levies could only be further reduced, but could not be increased without making concessions to other countries. The percentage of binding tariffs for industrial products increased from 78 to 99 percent during the URUGUAY Round (corresponding to an increase in trade-weighted rate from 94 to 99%); that of developing countries grew from 22 to 72 percent (corresponding to 14 - 59%); and that of the Eastern Reform States increased from 73 to 98 percent (corresponding to 74 - 96%). As confirmed by negotiation reports, North America and Europe have maintained their valid binding rates of almost 100 percent. Latin America increased its binding rate from 38 to 100 percent (corresponding to 57 - 100%); whereby Asia held back as before, and only increased its binding rates from 17 to 67 percent corresponding to 36 - 70% (cf. GATT, News of the URUGUAY Round, April 1994, p. 7). Tariffs for agricultural products were not binding before the URUGUAY Round. After the URUGUAY

Round, they became binding at a rate of 100 percent. With regard to international trade relations, it is important to note that the principles of GATT and the WTO (mfn, national treatment principle, etc.) also apply to non-binding tariffs.

In the scope of the URUGUAY Round, it was possible to reduce tariff rates for trade and industry a further 30 percent. This resulted in a reduction of the arithmetically calculated tariff for industrial nations from 6 to 4 percent, corresponding to an average decrease in trade-weighted tariffs from 4.7 to 2.9 percent. According to the reports, high tariffs were reduced more than tariffs that were already low. Import tariffs on steel, pharmaceutical products, beverages, paper, and toys were abolished. The tariff reductions in Japan amounted to around 60 percent; in the European Union, the United States and Canada, around 50 percent; in Australia, New Zealand and South Korea, around 40 percent; and in the Latin American countries, around 30 percent. Tariff reductions are being conducted in five equal annual stages beginning with the effective date of the WTO Agreements. The contracting parties are free to advance the dates for tariff reductions (cf. ifo Schnelldienst 1-2/1994, p. 3).

Articles III, VIII and XI of GATT stipulate the abolition of non-tariff trade barriers. This issue was not on the agenda at GATT negotiations until the second half of the 1960s. The heterogeneity and the transformability of this type of trade barrier made common negotiations appear impossible. In addition, there was the legal question as to whether non-tariff trade barriers, which are in contradiction to GATT stipulations, may be the subject of mutual negotiations.

The inventory of non-tariff trade barriers made by GATT in the 1960s and 1970s illustrates the diversity in application of non-tariff trade barriers (Figure III.1-4).

Figure III.1-4

List of Non-Tariff Trade Barriers

Group I
Subsidies
State trade
Government purchases
Competitive restrictions
Group II
Consular formalities
Customs valuation
Anti-dumping levies
Customs formalities
Customs tariffication
Group III
Industrial, health and safety standards, etc.
Packing, labelling and rules of origin
Group IV
Volume restrictions and import licenses
Embargoes and other restrictions
Film quotas
Discrimination based upon bilateral agreements
Foreign exchange controls
Measures for regulating domestic prices
Export restrictions
Discrimination against suppliers
Customs quotas
Other restrictions
Group V
Additional levies, port taxes and statistics fees
Border compensation taxes
Discriminatory film taxes
Prearranged import deposits
Variable import/export levies
Discriminatory credit restrictions
Emergency measures

Source: Presse- und Informationsdienst der Deutschen Bundesregierung, No. 43, issued on 22nd April 1974.

Calculations on the extent of the protectionist effect of non-tariff trade barriers are very complicated, if not impossible, since many kinds of measures, such as performance systems (compulsory take-over of domestic products), standard guidelines and other harassments have not been quantitatively recorded by the administration. However, studies conducted by ROBERT E. BALDWIN indicate that after the KENNEDY Round in the USA, around one third of actual protectionism (under due consideration of the effects of trade-restricting measures on semi-finished products and value added) could be traced back to export subsidies and indirect taxes. In comparison with the early 1950s, actual protectionism had an increasing tendency due to non-tariff trade barriers, partially as a result of the tariff reductions achieved in the scope of the Kennedy Round, and in part because of higher indirect taxes.[7]

III.1.3.7 Allowances for Developing Countries

In 1948 GATT comprised thirteen industrial nations and ten developing nations. Currently, developed nations form around one third and developing countries around two thirds of all WTO member states. In spite of the present majority of poor countries, developed nations continue to dominate the WTO with a foreign trade share of over 80 percent of world trade.

Exceptions in favour of developing countries are also found in the TOKYO Round special agreements as well as in the agreements on trade in services and intellectual property rights.

According to the authorization clause of 1979, the developing countries may be given *preferential treatment* which does not have to be granted to the other contracting parties. This exemption may be applied to tariffs, non-tariff trade barriers and the creation of integration zones in poor countries. At present, the majority of the industrial nations grant tax-free market access for industrial goods to the developing countries. Agricultural products are usually exempt from preferential treatment.

GATT grants the right to developing countries to change or increase the binding tariffs in the Schedules according to their own judgment and without the consent of the other contracting parties in order to *promote their own industry* by this means. In addition, the poor countries are entitled to implement other protective measures for other purposes than that of balance of payment deficits, if the other contracting parties agree to such changes.

In accordance with GATT, the 'developed' countries among the member states *do not expect any reciprocity (return services)* in negotiations with lesser developed countries. The TOKYO Round and the URUGUAY Round have relativized the exemption of developing countries from compulsory reciprocity, in as far as more highly developed countries must fulfil the rights and obligations of GATT and the WTO with more diligence. This shifts the focus of the discussion on

7 BALDWIN (170), p. 165.

reciprocity or non-reciprocity to the determination of the economical, financial and administrative performance standards of each country.

Apart from the fact that the WTO only obligates the poor countries on the basis of their economic, financial and administrative capacity, these countries have the right to deliver their lists of concessions and obligations up to one year behind schedule. This extension of deadlines for developing countries corresponds to the granting of a prolonged period of transition (whereby the deadline of one year should not be overestimated).

III.1.3.8 Environmental Protection

Trade-relevant environmental regulations are partially based upon the international environmental protection agreements which exist parallel to the WTO, and partially upon the General Agreement on Tariffs and Trade or GATT 47. The following elaborations are divided into three sections: The first attempts an interpretation of all environmental protection regulations that can be found in the various WTO agreements; the second section deals with the increasing consideration of environmentally relevant aspects in the interpretation and application of the WTO regulations; and the third section discusses the consequences of the new WTO orientation for the future world trade system.

III.1.3.8.1 List of Environmental Protection Guidelines

The important environmental protection guidelines of the WTO agreements are summarized in the following.

- **The Preamble of GATT and the WTO**

In the preamble of GATT 47, the governments declared themselves prepared to orient their trade relations towards the "full use of the resources of the world", which was to be interpreted as "unrestricted access to natural resources" and not as the conservation of resources and the environment.[8] The contracting parties of GATT did not question this goal over the following decades, although environmental issues became imminent after publication of the study "The Limits of Growth",[9] and a working group for environmental protection measures and international trade has existed in the scope of GATT administration since 1971.[10] Even so, the

8 cf. GATT, Analytical Index 1953, 1959, 1966, 1970, 1986 and 1994, Preambles; JACKSON (1969), p. 26 and 126; SENTI (1994), p. 40 f.

9 MEADOWS, etc. (1972).

10 The Group on Environmental Measures and International Trade was set up with a view to the Stockholm Conference on Human Environment in 1972. Its task was to review all problems in connection with international trade, environmental pollution, the endangerment of the life and health of mankind. Cf. the portrayal of the activities of this working group in: GATT (1991), FOCUS, Newsletter No. l 85, p. 3 f. GATT, BISD, Annual Report of the Working Group. Latest report in GATT (1995), BISD 40th S, p. 75-99.

ministerial declaration at the URUGUAY Round in 1986 only spoke of the "fullest liberalization of trade in natural resource-based products". Environmental issues were not up for discussion.[11]

A formal new orientation of GATT environmental policy is manifest in the Dunkel Report dating from the end of 1991.[12] The preamble of the Dunkel Report proposes that trade and economic relations be oriented to "developing the optimal use of the resources of the world at sustainable levels".[13] The novelty can be seen in the fact that an "optimal use of natural resources at *sustainable levels*" was mentioned for the first time instead of the "full use of the resources of the world". This reorientation is apparent in the preamble of the *Agreement Establishing the World Trade Organization*, albeit in a milder legal form. The optimal use of natural resources is not mentioned as a common goal alongside the improvement of living standards, the securing of full employment, etc., instead it is listed under "expansion of production and trade". According to the present formulation, the WTO member states recognize that their trade and economic relations have the goal of expanding production and trade in goods and services "while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development".[14]

The WTO preamble elaborates rights which are not directly applicable. However, the chosen formulation clearly shows the manifestation of an environmental conscience as compared to GATT 47, and it should not be underestimated regarding the interpretation of the set of agreements.

■ GATT Article XI

GATT Article XI prohibits the contracting parties from introducing or maintaining volume-restricting trade barriers in the form of quotas or other measures. Exceptions are as follows:

a) export prohibitions or restrictions for the temporary prevention or alleviation of a critical shortage of food or other goods which are important to the exporting party (Article XI:2(a))

11 The text of the ministerial declaration of 1996 in: GATT (1987), BISD 33rd S, p. 19-30; reference to trade in natural resources on p. 23. The formulation of the ministerial declaration was taken over from the Working Group on Tropical Products. Cf. GATT (1987), FOCUS Newsletter No. 43, p. 4. The formulations 'international economic environment' and 'trade environment' are not to be understood in the sense of environmental protection, rather as the development of the international trade environment. Cf. i.e., the [German] translation of the ministerial declaration in: BBl 1987 I 561 [the Swiss Federal Act].

12 DUNKEL Report (1991), p. 91-104.

13 DUNKEL Report (1991), p. 91, par. 2.

14 WTO (1994), Agreement Establishing the World Trade Organization, Preamble, par. 1. The WTO Agreements can be found in: GATT (1995); HUMMER/WEISS (1997), and BENEDEK (1998).

b) import and export prohibitions or restrictions concerning the application of standards, assortment regulations and quality categories (Article XI:2(b))

c) restrictions applying to the import of agricultural and fishery products for the promotion of government measures which serve the purpose of:

   i restricting domestic production of the same or similar products (substitute products) (Article XI:2 (c)i)

   ii abolishing domestic surplus of the same or similar products (substitute products) (Article XI:2(c)ii)

   iii restricting the production volume of an animal product which is mainly dependent on feedstuff imports, in as far as the domestic production is relatively minor (Article XI:2(c)iii).

The formulation chosen in letter (a) includes restricting the application of measures to the necessary period of time. The terms 'prevention' and 'alleviation' make it apparent that the founders of GATT were not only concerned with alleviating an existing crisis, but also with the prevention of any foreseeable or predicted crisis. It may therefore be claimed that Article XI:2(a) of GATT also includes preventative measures. According to GATT, a "critical shortage" exists when the domestic requirement for food or other important goods can no longer be covered under the usual conditions, or if a drain of vital goods into exports is foreseeable.[15] According to a United Nations interpretation dating from 1947, the expression "other important goods" mainly refers to exhaustible products.[16]

The exceptions to the application of standards, assortment regulations and quality categories listed under letter (b) are in part relevant to environmental issues and partly to the course of trade. In as far as these exceptions concern the protection of the life and health of mankind, animals and plants, they are covered by GATT Article XX (general exceptions). If they are related to unimpaired trade relations, they do not come under environmentally relevant GATT stipulations.

The import restrictions listed under letter (c) are considered to be supporting measures for domestic agricultural policy. The individual countries are given instruments for enforcing and defending their policy for high-priced domestic agricultural products. Items (ii) and (iii) are special cases of item (i).

GATT Article XI remained unaltered over the course of the URUGUAY Round. The significant novelties related to agriculture are encompassed in special agreements on agriculture as well as

15 GATT (1995), BISD 3rd S, p. 191.

16 Cf. UN (1947), Doc. E/PC/T/A/SR/40, p. 1 f.

on sanitary and phytosanitary measures, the environmentally relevant stipulations of which are covered in Sections III.1.8 and III.1.9.

- **GATT Article XX**

GATT Article XX permits the contracting parties to undertake the following in exception to the obligations they undertake in the GATT framework:

- measures necessary for the protection of the life and health of human beings, animals and plants (Article XX(b))
- measures for the conservation of non-renewable natural resources (Article XX(g)).

These measures may not be applied in a manner that leads to an arbitrary or unjustified discrimination between countries which have the same conditions, or a masked restriction of international trade. Measures for the conservation of non-renewable natural resources require programmes that restrict "the domestic production or the domestic consumption".

The imprecise formulation of Article XX has caused great difficulty in interpretation over the course of the past years. The question of 'necessity' in letter (b) is resolved in accordance with an interpretation of letter (d), which states that no alternative measure for achieving the targeted objective is available that does not violate GATT stipulations, even if only marginally.[17]

It is also difficult to clarify the issue as to whether letter (b) only refers to the environment of a party's own national territory, or if it also refers to measures for the protection of extraterritorial environmental resources (the environmental resources of a partner state or common environmental resources, such as international waters or the atmosphere). The panel decision, US Tuna-Dolphin I, states that the extensive interpretation of Article XX(b) is unacceptable, "because it would lead to each contracting party also unilaterally determining a policy for the protection of life and health outside their own national territory, not allowing other contracting parties to deviate from it without expecting trade restrictions to affect themselves".[18] The verbal interpretation of Article XX differs: Since the legislator specifically mentions the protection of 'natural' cultural heritage in letter (f), in contrast to letter (b) where the term 'national' is missing, it can be assumed that letter (f) deals with that which is national, whereby letter (b) deals with that which is general, meaning the international protection of environmental resources. Otherwise the legislator would have included the term 'national' in letter (b).[19]

17 Cf. Panel Decisions Thailand - Cigarette Taxes, 74 f. and US-Tuna/Dolphin II 5.35. Cf. also: DIEM (1996), p. 64 and SCHLAGENHOF (1995), p. 135 f.

18 Panel Decision US-Tuna/Dolphin I, 5.27; Formulation in DIEM (1996), p. 113.

19 Cf. DIEM (1996), p. 115 with further literary references.

There is also a lack of clarity regarding the reservation that the measures may only be employed if they neither "lead to an arbitrary or unjustified discrimination between countries which have the same conditions, nor a masked restriction of international trade". Does it actually constitute an exception to GATT, if the most-favoured nation clause and the national treatment principle are applied? Don't GATT Articles III and XI provide sufficient leeway for the protection of human beings, animals and plants by granting each country the liberty to pass appropriate legislation, directives or other regulations concerning supply and demand, etc., under the condition that these directives are not discriminatory? Is discrimination not always unjust according to GATT? What is the meaning of "masked restriction of international trade"? The history of the origin of Article XX makes it clear that the exception to the rule came first, and this was followed by the remark on adhering to the most-favoured nation clause and the national treatment principle in a later phase. In other words, the initial catalogue of exceptions gave the founding countries the freedom to maintain existing protective measures or create new ones. Later reservations in this concern represent an anchoring of protective measures in general GATT obligations.[20]

■ The Agreement on Agriculture

Of the internal measures for promoting agriculture that are to be reduced by the contracting parties, those measures and infrastructural services applied in the scope of an environmental protection programme are exempted according to Article 6:1 of the Agreement on Agriculture and Appendix 2: Item 1. The promotion measures involved should "not give rise to any trade distortions or other effects on production, unless they are minimal", and must therefore fulfil two criteria: Firstly, the promotion measure must be in the scope of a state programme financed by public funding and take the form of a direct transfer from consumer to farmer. Secondly, the promotion measure should not have the effect of supporting the producer's prices.

The subsidies granted to the agricultural sector in the scope of environmental and conservation programmes are dependent on the fulfilment of certain conditions concerning production methods or operating resources according to Appendix 2: Items 12(a) and (b). The sum of the payments must be limited to cover the special expenses incurred "as a result of the state programme" or the loss of income caused by participation in the programme. This would indicate that these constitute compensatory payments in this connection and not additional agricultural support measures.

Neither in the Agreement on Agriculture itself, nor in Appendix 2 of the Convention, any conclusive remarks can be found regarding the nature of the environmental and conservation programmes. By indicating that the accompanying list is not exhaustive, the Agreement on Agriculture basically provides unlimited freedom in the sector of environmental protection.

20 SENTI (1986), p. 277.

■ The Agreement on the Application of Sanitary and Phytosanitary Measures

The Agreement on the Application of Sanitary and Phytosanitary Measures contains environmentally relevant stipulations in its preamble as well as in Articles 2, 3 and 4.

In the preamble, the WTO member states acknowledge that "no country should be hindered in taking measures towards the protection of the life or health of human beings, animals or plants" in as far as these measures do not constitute an arbitrary or unjustified discrimination between countries which have the same conditions, nor a masked restriction of international trade.[21] At the same time, they express the wish "to improve in the territory of all member states" the health of human beings and animals as well as the status of plant protection rights. The harmonization of these measures is to be promoted "without forcing the member states to change the standards which they consider appropriate for the protection of the life and health of human beings, animals or plants". The agreement thereby empowers the contracting parties to demand the same health standards and plant protection rights for imported goods and domestic products alike.

In Article 2 of the Agreement, the contracting parties are empowered according to the preamble to apply those health standards and plant protection measures to the degree "that is necessary for the protection of the life or health of human beings, animals or plants" and is based upon scientific principles, unless relevant scientific evidence is lacking. Article 2 of the Agreement recapitulates those conditions which are listed in GATT Article XX: The measures may not cause any arbitrary or unjustified transgression of the most-favoured nation clause or the national treatment principle, and they must not create any masked restriction of international trade.

According to Article 3, "with the goal of achieving the furthest possible harmonization of health standards and plant protection rights, the members are to base those measures taken to promote health standards and plant protection rights upon international standards, guidelines or recommendations, in as far as these exist". Measures which conform to international standards, guidelines or recommendations are "considered to be necessary for the protection of the life or health of human beings, animals or plants and to comply with the corresponding directives" of this Agreement.

In Article 4, the contracting parties oblige themselves to mutually acknowledge their various health standards and plant protection rights, if they ensure the same level of protection.

21 Formulation according to GATT Article XX.

■ The Agreement on Technical Barriers to Trade

The preamble of the Agreement on Technical Barriers to Trade recapitulates the basic principle laid down in GATT 47, which states that no country may be hindered in protecting the life or health of human beings, animals, plants or the environment. According to the preamble of this supplementary Agreement, these measures are to be applied in a manner that will not lead to any arbitrary or unjust discrimination between countries which have the same conditions, nor cause any masked restriction of international trade.

Analogous to the Agreement on the Application of Sanitary and Phytosanitary Measures, the Agreement on Technical Barriers to Trade permits the same standard regulations to be applied to imported goods as to products on the domestic market. According to Article 2, the contracting partners must ensure that technical regulations do not create "unnecessary hindrances in international trade", meaning they must be "no more trade-restrictive than necessary" in order to achieve a "justified goal".

According to Articles 2:9 and 2:10, if no relevant international standards exist, or if the technical content of a drafted technical guideline significantly deviates from the technical content of relevant international standards resulting in dire problems regarding security, health or environmental protection, then a country is justified in deviating from the usual procedure, (i.e., mutual exchange of information and conducting of a hearing), and immediately enacting respective laws.

■ The Agreement on Subsidies and Countervailing Measures

The Agreement on Subsidies and Countervailing Measures basically prohibits all state contributions which are coupled with exporting, or those which favour the consumption of domestic products over imported goods. There are two important exceptions to this in addition to the special regulations which promote agriculture. According to Article 8:2(b), one of these exceptions involves granting subsidies to disadvantaged regions, whereby the disadvantage must be long-term and recordable in terms of the levels of income and employment.[22] The second exception, in accordance with Article 8:2(c), refers to "subsidies for promoting the adjustment of existing institutions to new environmental requirements stipulated by laws and/or directives which lead to greater restrictions or financial burdens for enterprises". The precondition is that the subsidies form a singular measure, and the grants may not exceed a certain level, whereby they directly depend upon the planned reduction of environmental pollution by an enterprise.

22 This Agreement does not include a list of possible causes of disadvantage. It can be presumed that environmentally relevant reasons may be given due consideration.

The Agreement on Government Procurement

Analogous to GATT and various other special agreements, the Agreement on Government Procurement also includes a general exemption clause in Article XXIII:2,0 whereby the provisions of the Agreement must not hinder the contracting parties "to pass or implement measures for the protection ... of the life and health of human beings, animals and plants... ", under the condition "that the ... measures are not applied in a manner which leads to an arbitrary or unjust discrimination among countries which have the same conditions, or cause any masked restriction of international trade".

The General Agreement on Trade in Services (GATS)

The rules of exception in the General Agreement on Trade in Services are also oriented to the formulation found in GATT. Article XIV(b) reads as follows: "Under the condition that measures are not applied in a manner which leads to an arbitrary or unjust discrimination among countries where the same conditions exist, nor cause any masked restriction of trade in services, this agreement may not be interpreted so that it hinders the acceptance or enforcement of the measures of any member country... (b) which are necessary for the protection of the life or health of human beings, animals or plants". Analogous to GATT Article XX(b), GATS Article XIV(b) also points out the necessity of such measures (measures which are 'necessary').

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

The Agreement on Trade-Related Aspects of Intellectual Property Rights includes environmentally relevant provisions in Section 5 concerning patents. Article 27:2(b) states that the WTO member states and the TRIPS contracting parties can exclude inventions from the patent process "if the hindering of their commercial utilization in their national territory is necessary for the protection of public order or good morals as well as the protection of the life and health of human beings, animals or plants, and for the prevention of any serious damage to the environment". Such an exception may not be made simply because utilization is forbidden by the national laws of any member states.

The Granting of a Waiver

Under Article IX of the Agreement for the Establishment of the World Trade Organization, the ministerial conference also has the right to "release a member from the obligations of this agreement or a multilateral trade agreement in the face of extraordinary circumstances". The granting of a waiver requires three quarters of all members' votes. In the opinion of the GATT Environmental Working Group, this exceptional measure is basically sufficient for solving environmental problems by means of trade sanctions. Further regulations would only amount to

"disturbing the balance of rights and obligations"[23] in the framework of GATT according to the GATT environmental group. This basic attitude does not seem to be common to all members of the Environmental Working Group. Individual members of the group have called for clearer guidelines for the granting of a waiver, and have pointed out the problem of temporal limitations as well as the exceptional character of the WTO Agreement. Yet others pose the question as to how transboundary and global environmental problems can be tackled with the present rules of exemption.[24] The panel decisions made over the past years would give reason for the assumption that it is not possible to solve all environmental problems by means of mutual consent with the present rules of exemption.

III.1.3.8.2 The Increasing Consideration of Environmentally Relevant Aspects in the Interpretation and Application of WTO Stipulations

Over the past few years, there has been increasing consideration of environmentally relevant aspects in the interpretation and application of GATT and WTO stipulations. Three new aspects, in particular, are at the centre of focus: The terms 'product' and 'like product' are being more closely related to environmental issues; the extraterritoriality of WTO environmental protection policy has gained in significance; and environmentally relevant objectives are increasingly replacing the former economically relevant objectives.

- **The New Understanding of the Term 'Product'**

The definition of the likeness and equivalency of products has been up for discussion in GATT for years, without the contracting parties agreeing upon any generally valid definition of the term. In the GATT Report of 1970 on customs valuation of goods, a GATT working group decided that the interpretation of product likeness should be determined from case to case. The valid criteria are the utilization of the final product in a certain market; the varying consumer patterns from country to country; and the characteristics and qualities of the product itself.[25] Several panel decisions were based upon this terminology definition, for example that pertaining to US taxes on petroleum products dated 1988,[26] the decision regarding Japanese customs duties on wine and other alcoholic beverages,[27] and the decision on US alcoholic beverages.[28]

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23 GATT (1995), BISD 40th S, p. 80, item 21 f.

24 In GATT terminology, the talk is of 'transboundary and global environmental problems' and the creation of an 'environmental window' in GATT. GATT (1995) BISD 40th S, p. 81, item 24.

25 GATT (1972), BISD 18th S, p. 101 f., item 18.

26 Panel Decision: US taxes on petroleum products, item 5.1.1.

27 Panel Decision: Japanese customs duties on imported wine, item 5.5.

28 Panel Decision: US alcoholic beverages, items 5.23 - 5.26. Environmentally relevant evaluation criteria are also taken into consideration in items 5.71 and 5.72.

Health and environmental criteria have been given increasing consideration in the latest panel decisions, and they are a deciding factor in the definition of product likeness.

■ Consideration of Health Aspects

In the dispute on American alcoholic beverages in the year 1992, one of the questions pertained to whether beer having a low alcohol content is the same product as beer having a high alcohol content. Some American states restricted sales outlets for beer with an alcohol content exceeding 3.2%/Vol., while arguing that the sales restriction contributed to the protection of the life and health of human beings as well as an increase in public morals. However, Canada considered the product differentiation according to alcohol content and the resulting differential treatment to be a breach of the GATT Agreement. All kinds of beer were seen to be 'like' products, regardless of the alcohol content. Canada referred to the American regulation which differentiates between non-alcoholic beer and beer with a low alcohol content, and the fact that all kinds of beer are categorized under the same tariff heading in the American customs tariffs.[29]

The GATT panel ruled in its decision that GATT was not pursuing the goal of harmonizing internal levies and legal regulations, rather merely trying to hinder a unilateral preferential treatment of domestic products. If the products of a single assortment are declared to be 'like', this renders it impossible for individual states to practice their own economic and environmental policy, meaning the autonomy of the individual states is jeopardized because of the limited product definition. The Panel came to the decision that even if beers with a high or low alcoholic content can be considered very similar, they must be regarded as different products based upon the aspects of health and morals.[30]

■ Environmentally Relevant Aspects of Consumption

In the dispute concerning American vehicle taxes, environmental protection criteria were taken into consideration[31] similarly to the dispute regarding the health aspects of American alcoholic beverages. The United States imposed a tax on certain vehicles based upon their fuel consumption (the car guzzler tax). Cars with a fuel consumption of less than 10.4 liters/100 km have been tax-free since 1990. Models consuming 10.4 to 18.8 litres/100 km are subject to taxes ranging from US$1,000 to 6,400 and those over 18.8 liters/100 km are taxed at US$7,700. In the opinion of the European Union, this differential tax system represents a violation regarding the understanding of product likeness stipulated in the GATT Agreement. All vehicles are seen to be 'like' products and should therefore be given equal treatment. The vehicles have the same physical characteristics and the same components, and they serve the same purpose. Differences in fuel

29 Panel Decision: US alcoholic beverages, items 3.120 - 3.132.

30 Panel Decision: US alcoholic beverages, item 5.74.

31 Panel Decision: US vehicle taxes.

consumption do suffice to form the basis of different products which can be given differential treatment. However, the United States takes the stance that differences in fuel consumption and the varying environmental burden are sufficient reason for considering car models to be different products. These taxes also serve the purpose of conserving fossil fuels.

The panel report on US vehicle taxes ruled in its decision that Article III only serves to hinder legal differences among products in favour of domestic products. GATT does not prohibit its partners from pursuing different policy targets. Based upon this point of view, the panel requests that differentiation be made between the objectives and the effects of the measures taken. A measure has the *objective* of protecting the domestic economy if its origin would indicate "that a change in the competitive conditions in favour of domestic products is the targeted intention and not only a coincidental result of the implementation of a legitimate political objective". In contrast to this, a measure has the effect of protecting the domestic economy, if it grants more favourable competitive conditions to domestic suppliers than to importers, regardless of whether the imported volume fluctuates or not. A change in the foreign trade volumes can be traced back to various causes.[32]

The GATT Panel came to the decision that the goal followed by the United States was not the protection of the domestic automobile industry, but a vehicle tax on high fuel consumption as an incentive for purchasing vehicles with a low fuel consumption and a contribution to the conservation of fossil fuels. According to the panel decision, a country is at liberty to implement a political tool which gives foreign suppliers and products less favourable treatment than its own suppliers and offers. Both the American and the foreign automobile industries are capable of manufacturing cars with either a low or high fuel consumption. The taxing of a vehicle according to its fuel consumption does not affect the competitive conditions, nor does it amount to protection of domestic manufacturing. Foreign automobiles with a higher fuel consumption are therefore not to be considered the equivalent of domestically manufactured vehicles with a low fuel consumption, meaning neither are they like products, nor are they equivalent.[33]

■ Environmental Protection Aspects of Processing and Production Methods (PPMs)

Consideration of processing and production methods represents a further issue. Traditional GATT stipulations do not allow for any differentiation of goods based upon different processing or production methods as long as the differences are neither manifest nor presumed in the products themselves.[34] Doubtless, this legal view derives from the fear that considering different

32 Panel Decision: US vehicle taxes, item 5.10.

33 Panel Decision: US vehicle taxes, item 5.26. Cf. also DIEM (1996), p. 47 f.

34 Cf. Panel Decision: US Tuna-Dolphin II, item 5.9; DIEM (1996) p. 99.

processing and production methods would prepare the field for trade protectionism in the evaluation of product equivalence.[35]

However, if products are divided into different consumption categories because of their varying burden on the environment, and consumers do not regard them as equal products, that there is only one more small step left towards product differentiation based upon different processing and production methods. This is even more so the case, if one considers that the text of the WTO Agreement also includes the wish that the health of human beings and animals, as well as the state of plant protection rights, are to be improved "in the territories of all members",[36] and the text of the Agreement does not stipulate that only physically determinable differences in the final product can play a role in product evaluation, whereas criteria such as different processing and production methods or related ethical aspects can not. The discussion concerning this issue has not yet been resolved.

■ The Extension of Environmental Protection to Extraterritorial Bounds

Relevant literature differentiates between domestic and extraterritorial environmental resources. Domestic environmental resources involve the protection of the life and health of human beings, animals and plants in a country's own territory, while extraterritorial resources refers to environmental protection abroad, or common environmental resources, and involves the air, the water and the atmosphere (the ozone layer).

In order to exemplify the changing legal interpretation of this issue, the panel decision Tuna-Dolphin I dated 1991 will be compared with the panel decision Tuna-Dolphin II.

The Tuna-Dolphin I dispute in the year 1991 dealt with the issue as to whether the United States should be allowed to prohibit the import of tuna from other countries, if their fishing methods allowed more than a certain number of dolphins to be killed (due to the use of drag-nets). The United States defended its ban on imports of tuna from the Eastern tropical pacific region with the argument that such a measure was necessary in order to prevent the extinction of dolphins. According to the Washington Biodiversity Treaty, a country is actually obliged to ban the import of endangered animal species. The counter-argument of the suing party, namely the European Union and the Netherlands, claimed that the United States of America did not have the right to take legal action outside of its jurisdiction.

The GATT Panel agreed that Article XX(b) of GATT only referred to the protection of human beings, animals and plants in a country's own national territory. This view resulted from the historical interpretation of the Article in the 1940s.[37] The extensive interpretation of Article

35 Cf. GATT (1992), International Trade 90-91, Vol. 1, p. 22.

36 Cf. WTO, Agreement on the Application of Sanitary and Phytosanitary Measures, Preamble.

37 Panel Decision US Tuna-Dolphin I, item 5.26.

XX(b) by the United States would result in each country having the right to determine the level of protection implemented in other countries. And this, in turn, would question the entire world trade system manifest in GATT. In view of this aspect and considering the question of the necessity of this measure, the GATT Panel decided that the United States did not have the right to ban the import of tuna from other countries based upon their fishing methods.[38]

The US Tuna-Dolphin II panel decision from 1994 concerning the same dispute was revised in as far as Article XX(b) does not mention any geographical restrictions for the protection of environmental resources. A country is justified in taking measures for the protection of extraterritorial environmental resources, if these measures are necessary.

The revised panel decision may not be interpreted to mean that a country can determine the level of protection or environmental regulations outside of its own territory or make legal rulings for another country. Quite the contrary, based upon this precedential ruling, any country is free to define a product according to environmentally relevant and idealistic criteria which demand certain processing and production methods in the country of origin. In this sense, the panel decision Tuna-Dolphin II is a logical result of the differentiated and more environmentally relevant domestic evaluation of a product.[39]

■ The New Formulation of Political Objectives

GATT legal stipulations are based upon the principle in GATT Article III which states that trade barriers in the form of levies, charges, laws and stipulations, etc. "may not be applied such as to afford protection for domestic production". However if the targeted goal is not the protection of the domestic economy, meaning the improvement of the competitive situation of domestic suppliers, rather the protection of the environment e.g., these measures may be applied under the condition that they do not violate the principle of equal treatment of like products (the national treatment principle). However, what is the definition of 'like' products in this case? While taking into consideration the freedom of action of a country regarding its political objectives (in particular its environmental goals), the panel decision on US alcoholic beverages ruled that it was obligatory to define product equivalency in GATT Article III in a manner which does not pose

38 Panel Decision US Tuna-Dolphin I, item 5.25. A more detailed elaboration of the Tuna-Dolphin I decision can be found in: DIEM (1996), p. 112 f.

39 In his analysis of the Panel Decision Tuna-Dolphin II, Andreas Diem concludes that the wording and systematics of Article XX(b) speak 'more for than against the admissibility of measures for the protection of extraterritorial environmental resources. The later study does not yet show any new concrete consensus of opinion among the contracting parties with regard to GATT, although the contours of a new legal interpretation are already becoming visible. The protection of extraterritorial environmental resources can justify trade barriers, if they have been endorsed on the widest possible international basis and are required in order to promote environmental protection measures. General international environmental law stipulates that all nations are required to ban imports or exports, if they are causing considerable damage to environmental resources. A teleological interpretation makes it clear that GATT rates any measures necessary for the protection of health above free trade.' DIEM (1996), p. 131.

any unnecessary restriction of the freedom of a country's legislation and the determination of its political goals. Product equivalency is to be defined differently according to the goal of the measure taken.[40] Bringing protection of the environment into focus alongside protection of the economy exemplifies a reorientation in the weighting of political goals.

III.1.3.8.3 The Consequences for the WTO's Future System of Trade

The highest objective of the WTO is to establish a world market order that is as liberal and unrestricted as possible. Environmental issues should be ranked lower than the former objective in the opinion of the free-trade lobbyists. The costs of environmental protection should be covered by the market price. The state has to manage without making any intervention that distorts the market. Environmental protection should not be abused as a measure for achieving protectionism. In the opinion of free-trade lobbyists, free trade and the resulting improvement of living standards serve to solve environmental problems, because additional means for alleviating environmental problems are made available through increased income.

In the opinion of environmentalists, the protection of the environment should be given priority over the demand for free trade. The utmost objective of economic activity is the maintenance and improvement of living standards. However, the expansion of trade also leads to an increase in production and more intensive shipping and transportation which, in turn, results in a greater burden to the environment and increased environmental pollution. Measures for protecting the environment should always be justified regardless of their effect on the domestic competitive situation or that of world trade.[41]

The increasing consideration of environmentally relevant aspects in the interpretation and application of the present world trade system points towards a basic reorientation in world order and politics. Environmental protection issues and the solving of environmental problems in one's own country, as well as abroad, are gathering increasing significance. According to the present world trade system, liberalization of trade and the common access to markets take priority. Measures for the protection of human beings, animals and plants may only be undertaken if there isn't any more effective alternative available, if the basic principles of the WTO are not violated arbitrarily or without justification, and these measures do not amount to a masked restriction of trade. The increase of environmental protection and social security permits the hypothesis to be made that environmental protection and social security will eventually have top priority in a future world trade system. Measures for the liberalization of trade and the mutual opening of the markets may only be taken if this does not represent an arbitrary or unjustified violation of the former goals.

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40 Panel Decision: US alcoholic beverages, items 5.25 and 5.72.

41 A careful comparison of the various arguments with corresponding literary references can be found in: SCHLAGENHOF (1995), p. 121 f.

The following elaborations indicate the effects this development has or might have on the present world trade system.

1. Consideration of environmental protection criteria with respect to the definition of "product equivalence" alters the inventory of the environmentally relevant WTO stipulations.

   The summaries made to date in relevant literature on the present environmentally relevant trade regulations of the WTO are of decreasing relevance. All regulations dealing with the likeness and equality of goods and services, or individual environmentally relevant political objectives, have an effect on the environment, in addition to those WTO regulations which directly concern the protection of human beings, animals and plants. In particular, this pertains to GATT Articles I, II:2(a), III:2 and 4, VI:(a) and (b), IX:1, XI:2(c), XIII:1 and XV:4 (most-favoured-nation clause, national treatment principle, antidumping and compensatory tariffs, rules of origin, volume restrictions and subsidies), as well as the WTO supplementary agreements based upon the most-favoured-nation principle and the national treatment principle.

2. The recognition of processing and production methods as criteria for product equivalency is a logical consequence of the present WTO legal practice.

   Because of the environmental impact of consuming or utilizing any particular good, its processing and production methods logically should be taken into consideration. If a product, which is environmentally harmful in its final application, is not considered the equivalent of a product that is environmentally compatible in its consumption or utilization, it follows that a product which causes harm to the environment through its production or processing cannot be considered the equivalent of a product which is environmentally compatible.

   This new definition of product equivalence under consideration of health and environmental criteria has now found its way into international law, yet it has been valid in the field of utility theory and marketing for decades: the differentiation of a product according to consumer valuation and assessment.

3. It would be quite feasible to expand the list of criteria to include further aspects.

   The concessions made in view of environmental protection create a bias with regard to the issue of whether labour rights and socio-political criteria, such as social security for the employed, unemployed and retired, etc., should also be taken into consideration in the valuation of products. A country could hence prohibit the import of products from a country providing a lesser social security plan while claiming that a product made by workers with a poor social security plan, or without any at all, is ethically and ideally not the equivalent of a product made by more socially secure workers; or a garment made in a country employing child labour is not the same as a product from a country prohibiting

child labour.[42] These remarks make it clear that the consideration of environmentally relevant and socio-political aspects - whether justifiable or not - would question the world trade system in its present form.

4. The recognition of production and processing methods as the criteria for product equivalence implicates the acceptance of protective measures that have extraterritorial consequences.

   The texts of the agreements (in particular GATT Article XX(b)) have been repeatedly analysed in the past panel decisions as to whether they empower the contracting parties to take measures that have extraterritorial consequences. The extraterritorial influence is not seen as a direct influence on the legal rulings or court decisions of another country, but as a practical influence on the economy of the country, where the imported merchandise originated, by means of internal measures. For example, a case might deal with the repercussions of an import ban for the merchandise X in country A effecting the production and processing of merchandise X in country B. These questions will no longer be relevant after the contracting parties have agreed upon the definition of product likeness and product equivalency. If the meat of livestock, which has been kept under conditions compatible to the species, is not considered the equivalent of meat from non-compatible livestock keeping, a country should have the right, according to the principles of the most-favoured nation and national treatment, to prohibit the sale of non-compatible products without violating WTO stipulations. It is obvious that this trade barrier will have an effect on the production in other countries.

5. There is an imminent danger that an alliance of sorts is formed between protectionists and environmentalists.

   Any state intervention protects the activities of individual suppliers which results in some form of profit for their competition. The American tuna suppliers were pleased that foreign tuna suppliers lost access to the market because of more stringent environmental restrictions. It is without doubt that the manufacturers of compact cars welcome special taxes on large cars, regardless of whether such cars are manufactured domestically or abroad. Breweries of beer with a low alcoholic content will also welcome the restrictions on the sale of beer with a higher alcoholic content. As environmental protection, labour rights and social policy increasingly come under discussion and grow in significance, the lobbyists of the various groups will use these means all the more intensively to achieve their goals. This could result in a so-called "unholy alliance" between those groups, interested in trade protectionism in their own interest, and environmentalists interested in protecting the environment.

42 This is termed social dumping.

6. The WTO faces the difficult task of finding an intermediate solution between trade liberalization and environmental protection.

   A reorientation of the world trade order along the lines of environmentally relevant goals and social targets poses a threat to the WTO in that it might lose significance with regard to free trade. In the place of internationally uniform trade regulations, national environmental stipulations and socio-political demands will increasingly take over, complicating trade and mutual cooperation in production and processing.

   Should this problem be tackled by means of a more flexible interpretation of the present WTO stipulations, or should these stipulations be changed? In the opinion of some individual experts, the present treaty is sufficient for solving imminent environmental problems. They believe a more flexible interpretation of the valid regulations should suffice in view of the fact that the panel decisions have the effect of a legal reassessment. However, the past years have proven that the environmentally relevant rulings, in particular, have not met with acceptance among the partner states and are not being adhered to. This will mean that a future solution to these problems lies in the expansion of the WTO Agreement - a new version of GATT and its supplementary agreements in which the contracting parties oblige themselves to make a minimum of concessions towards environmental protection.

III.1.4 The General Agreement on Tariffs and Trade (GATT)

The elaborations in Section 4 are limited to those GATT regulations which were not mentioned in the third section, meaning those which do not count among the general regulations. Neither the supplementary Agreement on Agriculture nor that on sanitary and phytosanitary measures are dealt with in this section, but in Sections 7 and 8, because these two agreements have particular significance with concern to the present project.

III.1.4.1 The General Regulations

GATT comprises all the general provisions of the Agreement presented in the previous sections, as well as several stipulations which specifically relate to trade in goods and are listed in the following:

- In accordance with GATT 47, the contracting parties must 'bind' their mutually accepted tariff results in the form of tariff lists or Schedules which are deposited with GATT. Bound tariffs may not be changed or increased without a new round of negotiations. In the course of the URUGUAY Round, the negotiation partners agreed that "other levies and charges" are also to be bound in the future, meaning they can also no longer be unilaterally changed to protect a country's own national economy. The new lists are valid as of the effective date of the WTO. GATT permits the new negotiation of tariff concessions in intervals of three years. These negotiations should initially be conducted

with the principal supplying interest, with the intention of making a new decision after a period of five years of experience regarding the regulation to be adhered to.

- GATT allows the individual contracting parties to protect their domestic film industries by stipulating a minimum showing time for each country's own films, and the fixing of showing-time quotas for foreign films. When determining foreign contingents, it is prohibited to divide them among countries according to the most-favoured-nation principle. In the URUGUAY Round, European countries including France, in particular, successfully refused any liberalization of film, multimedia and television. It is difficult to assess whether such protectionism actually benefits the culture or the industry that creates it as well as the intermediate trade involved.

- The contracting parties must grant each other free passage for "goods, watercraft and other means of transportation" with the exception of aircraft. No differentiation may be made according to the flag of the ship, the owner of the goods, the country of origin, or the destination. However, this does not exclude registration and border controls. The duties charged in this connection must be limited to the actual costs for the services rendered. Neither can they serve indirectly as a protective measure for domestic goods, nor as a tax for accruing state revenue. This full recovery principle of costing is not only valid for transit traffic, but also for imported or exported goods.

- If a partner country has difficulty in maintaining an international balance of payments, or if it is in danger of using up its currency reserves, it may impose import restrictions on volume or value in order to protect its own financial status. These measures must be chosen so they neither violate the basic principles of GATT (most-favoured-nation, national treatment, reciprocity, etc.), nor disproportionately restrict international trade. Whether or not this GATT stipulation is still valid in a system of floating exchange rates, is an issue that has been up for discussion in expert circles for years.

- Another chapter of GATT is dedicated to state trading. This refers to the government sector or individual state bodies playing a decisive role in controlling the international trade in goods, meaning they can significantly influence prices of merchandise or trade volumes. State measures for the regulation of state trading are only justified if they do not contradict the goals of GATT and the basic principle of non-discrimination. GATT therefore requires the public sectors of the contracting parties to oblige themselves to buy and sell exclusively in accordance with commercial considerations, and to grant other trade partners sufficient opportunity to participate in this buying and selling. A contracting party is exempted from the obligation of non-discrimination in three cases. (1) When importing goods for its own use or consumption (i.e., public procurement): The Agreement on Public Procurement, a plurilateral agreement to which practically all industrial nations have subscribed without exception, also requires the principle of the most-favoured nation to be adhered to, meaning that the great majority of public procurement is also subject to the most-favoured-nation clause, (2) imports based upon

earmarked loans (earmarked loans are seen as commercial considerations), and (3) in the case of export price differentiation, whereby price differentiation also must be made according to commercial considerations.

III.1.4.2 The Supplementary Agreements

The following overview of supplementary agreements excludes the Agreement on Agriculture and the Agreement on Subsidies and Countervailing Measures, because both of these agreements will be elaborated in a separate section after the general WTO summary due to their special significance in the scope of the current project.

■ The Agreement on Textiles and Clothing

It was always the declared intention of the URUGUAY Round to restore the disproportionately strict regulations for the trade in textiles (including the cotton trade) to a market order conforming with GATT. In the course of the Uruguay negotiations a new Agreement on Textiles was drawn up, which was to come into power along with the WTO in the year 1995. The trade restrictions, based upon the former MFA, are to be removed in four phases in accordance with the new Agreement (the import volumes of the year 1990 serve as the basis for calculations): (1) a minimum of 16 percent by 1st of January 1995, (2) a minimum of another 17 percent by 1st January 1998, (3) a minimum of another 18 percent by 1st January 2002, and (4) the remaining trade barriers by the 1st January 2005. At the same time, the Agreement stipulates that any restrictions still in existence must be liberalized at a certain annual percentage (16 to 27%). Analogous to previous regulations, the new Agreement also enables the carrying over of quotas that were not used up during the past year, as well as the anticipation of future quotas. Together, carryovers and carry forwards may not exceed 10 percent of the total permitted annual import quotas.

Trade restrictions other than the MFA were to be removed within one year of the coming into force of the new Agreement, or at the latest, by the end of the ten-year transition period.

■ The Agreement on Technical Barriers to Trade

This Agreement differentiates among technical stipulations, technical standards and specifications. The Agreement defines the term "technical stipulation" as the product's characteristics or its processing and production methods, compliance with which is mandatory for all members. On the other hand, the technical norm (also termed the standard), is a technical product characteristic that is approved by an accredited body for repeated and common use, although compliance with it is not compulsory. The specification assessment of a product refers to the level of quality, performance, safety, packing, identification and description of the product in question.

The goals of the agreement are as follows: the upholding of the principle of the most-favoured nation and that of national treatment, transparency of all regulations and standards, cooperation among the members, harmonization of the implemented measures, and a uniform procedure for dispute settlement in the scope of the WTO.

Products imported from the national territory of a contracting party may not be given any less favourable treatment than that which like products of domestic origin, or like products from abroad, are given with regard to technical regulations and norms. The Agreement was purposely given a broad formulation in order to include licensing requirements, monitoring methods and administrative measures, rather than only the product, itself. The principle of national treatment must be adhered to as an extension of the most-favoured nation principle. The application of technical regulations and standards should not be used in order to give any advantage to domestic products or their suppliers.

For more information see Section III.2 “The Agreement on Technical Barriers to Trade and Basic Aspects of the Agreement on Application of Sanitary and Phytosanitary Measures” (KATRIN FORGÓ); according to the practical account of this subject a more specific report has been carried out.

■ The Agreement on Trade-Related Investment Measures

This agreement exclusively deals with investments related to international trade in goods. It neither covers purely financial transactions nor trade in securities, stocks and bonds, or precious metals.

The main goals of the agreement involve the realization of the national treatment principle and the prohibiting of any quantitative import restrictions with regard to trade-related foreign investments. The agreement prohibits any trade-related investment stipulating the purchase or utilization of domestic products, or the purchase or utilization of specific imported products, limited to an amount corresponding to the volume or value of domestic exported products (the national treatment principle). It also prohibits any investment regulations that serve to restrict imports regarding volume or value, or link imports with the volume or value of domestic exported products, or restrict the access to foreign exchange to a certain amount corresponding with the foreign exchange inflow attributed to the enterprise in question, or permit specific export only according to the volume or value of products corresponding with a proportion of the volume or the value of domestic production (the prohibition of quantitative import restrictions).

The contracting parties must notify the Council for Trade in Goods regarding any investment measures that do not conform with the Agreement within 3 months of its coming into power. This obligation of notification also includes informing those bodies in the national media which publicize details on investment measures on a regular basis.

Industrialized countries must remove any of their investment measures which do not conform with the agreement within two years. Developing countries are granted a transition period of five years, and least developed countries are allowed a period of seven years.

■ The Agreement on Anti-Dumping

In accordance with the American legal code of the 1920s and 1930s, this agreement refers to dumping if "like products" are introduced to the market of another country at less than their actual value.

The term 'dumping' therefore means the normal domestic value of a certain good is above its export value. Yet, how does the agreement define the "normal domestic value"? And when is a product the 'likeness' of another product? What is the meaning of the term 'export value'?

The normal value of a product is fallen short of when:

- the export price of a product that is exported from one country to another is less than the comparable price in regular trading for the consumption of a like product in the exporting country. If there is no sale of the product in the exporting country,
- when the product's export price in regular trading is less than for a like product exported to any third country. If the product is neither sold in the exporting country nor in a third country,
- when the product's export price in regular trading is less than the production cost in the exporting country including a sufficient sum for administrative costs, sales, general expenses, and profits.

An anti-dumping levy may be imposed if the following two conditions are met:

- determination of a case of dumping
- determination of damage or threat caused by dumping in any sector of the economy

The definition of dumping was dealt within the above. Yet how does GATT, or the Agreement on Anti-Dumping, define the terms 'damage', 'threat', and 'domestic sector'?

In order to determine a case of damage, the Agreement on Anti-Dumping calls for the objective examination of (1) the volume of dumped imports and the effect of dumped imports on domestic market prices of like products, and (2) the consequences of the impact of such imports on the domestic manufacturers of these products.

Anti-dumping levies may only be imposed if a casual link can be proven to exist between the dumped imports and any damage or threat of damage. All relevant factors must be taken into consideration when dealing with the casual link in accordance with the Agreement that resulted at

the URUGUAY Round. For example, this includes imports that are not sold at dumping prices, alterations in demand and consumption or trade practices, technical developments, the productivity of domestic manufacturing, etc. Anti-dumping duties are justifiable only if the damage or threat to any domestic industry or sector can be traced back to dumping imports. No anti-dumping levies are permissible if any other factor is the cause of damage to the domestic sector of the economy. However, it is very difficult to apply such a clear differentiation in practice.

If the conditions that permit the imposing of anti-dumping levies are met, then the importing country may have the right to call for provisional taxes in the form of duties, cash deposits or bonds, but not prior to 60 days following the onset of the investigation and not for longer than four months - or following an extension - six months. The charges imposed must not be in excess of the established price margin.

Contrasting with the previous anti-dumping regulations, the new Agreement comprises provisions regarding the period of validity for the anti-dumping duties. Basically, it may be said that anti-dumping levies can only be imposed while dumping is taking place. Yet, despite this basic principle, definitive levies are terminated after a period of five years, unless the responsible authorities have determined that the dumping is still continuing before that period comes to an end. A new investigation of the situation must be conducted to determine whether the dumping still continues.

- **The Agreement on Customs Valuation**

This Agreement prescribes five methods for the establishment of customs valuation and includes a so-called 'catch-all' clause. These five methods are elaborated in hierarchical form: if customs valuation cannot be achieved using the first method, then the second method can be applied, etc. The importer may request to have recourse to the fourth and fifth methods in reverse.

- *First method*: The customs value of imported goods is equal to the value of the transaction, meaning the actual price paid (incl. commission fees as well as packing).
- *Second method*: If the actual price paid can no longer be determined, the customs value amounts to the transaction value of like goods that were imported under the same competitive conditions. When a direct comparison is impossible, a corresponding adjustment is permitted.
- *Third method*: If neither of the above two methods can be applied appropriately, the customs value is the transaction value of equivalent (not like) goods.
- *Fourth method*: If none of the above three methods can be implemented, assessment will be done according to the sales price of the product in the importing country, excluding the costs incurred and the usual profit margin.

- *Fifth method*: The customs value will correspond to the total of the costs of manufacturing, the trade margin in the exporting country and the relevant costs mentioned above in the first method.

- *"Catch-all" clause*: If the actual customs value of a product cannot be assessed according to one of the above five methods, the customs authorities should determine the value by considering all the relevant factors.

- **The Agreement on Preshipment Inspection**

This Agreement stipulates that the following must be adhered to when conducting inspections: non-discrimination among foreign trade partners (most-favoured nation principle); equal treatment of domestic and foreign importers and exporters; the restriction of inspection to the own territory of the member state; the provision of information by the inspection bodies regarding the inspection requirements incl. all laws or regulations which they are based upon; the protection of any confidential information gathered during the preshipment inspection, meaning a prohibition of the publication or the relaying of information to any third party; the avoidance of any unnecessary delay in conducting the inspections; the observance of mutually agreed upon inspection dates, and the provision of all inspection details to those involved within a period of five working days.

- **The Agreement on Rules of Origin**

The Agreement achieved at the URUGUAY Round comprises several basic principles to be applied to the three-year transitional period and the subsequent definitive rules of origin. Any currently valid autonomous, non-preferential rules of origin must be published and interpreted in adherence to the Agreement. The country of origin must be established according to two criteria: where a product has been obtained in the whole, and where the last substantial processing or transformation was undertaken. The application of the criterion of "last substantial processing or transformation" would indicate that the range of tariff listings within tariff nomenclature is also evident in the period of transition. Wherever the percentage rule is used, the method for calculating the percentage must be defined, and wherever the list rule is applied, the manufacturing or process operation must be designated.

- **The Agreement on Import Licensing Procedures**

This Agreement is mainly concerned with the reduction of administration to the absolute minimum in connection with licensing, thereby limiting its trade-restricting effect and preventing any discrimination among member states.

The individual member states must give notification of all details required for the obtaining of an import license including dates of application and expiration, any existing exceptions, as well as

the total number of licenses to be issued. All information on the administrative process for import licenses has to be made available, as well as the distribution of imports that is intended, and, if available, information on previous imports. In the case of licenses that are not expressly issued to a specific country, it is left to the license holder to announce the country to be selected. Whenever licenses are expressly issued to a specific country, this must be announced. The Agreement also stipulates that applications for a license must be dealt with within 60 days.

- **The Agreement on Safeguards**

Before any safeguard measures are implemented, the respective member state must be informed and given a hearing. In particularly urgent cases, where a delay would cause damage difficult to repair, provisional safeguard measures may be taken. These provisional measures have a maximum period of validity of 200 days. The extension of such safeguards requires correct preparatory procedures. When a follow-up investigation discloses that the provisional measures were not justified, the member state concerned must refund any losses.

III.1.5 The General Agreement on Trade in Services (GATS)

III.1.5.1 The Definition of Services

Section I of *the General Agreement on Trade in Services* includes a definition of the term 'services' and the measures which apply to cross-border trade in services. The scope of the Agreement covers passenger traffic, trade in services, i.e., the direct offer of services from the territory of one member state destined for the territory of another member state, as well as the offer of services over an intermediary partner, branch office, subsidiary or foreign agency. Services provided by the public sector are not included in the Agreement. The rules and practices of the federal, regional and municipal authorities of a country are not included among the "measures of a member state". Some examples of services can be listed including those provided by the sectors of banking, insurance, building, shipping, communication, engineering, consulting, legal services, trust companies, computing, and tourism.

III.1.5.2 Basic Principle

The basic principle of *the General Agreement on Trade in Services* is - analogous to GATT - the principle of the most-favoured nation found in Section II. It prescribes that all the advantages, favours or immunities which have been granted by one member state to another member state must be granted without delay or stipulating conditions for any 'like' services to be provided by another member state. If any changes have been made to the list of concessions, consideration must always be taken regarding the principle of the most-favoured nation. If a country has withdrawn one of its concessions, the disadvantaged member has the right to be granted compensation. Exemptions from the principle of the most-favoured nation are allowed in the

following cases: (1) for the creation of customs unions or free-trade zones, if these free-trade zones comprise practically all the trading of the countries concerned, and there are not any negative effects for third parties (the same exemption has applied to cross-border trade in goods since the beginning of GATT 1947), (2) for the setting-up of free-trade zones in the immediate vicinity of borders where the same services are provided and consumed, and (3) for all areas indicated by the Agreement (telecommunications, e.g.). The above-mentioned exemptions are valid for a period of ten years and can be prolonged if necessary.

Analogous *to the General Agreement on Tariffs and Trade*, GATS also pursues the realization of the principle of national treatment.

This Agreement places great emphasis on market access. Member states are under the obligation to publish all the provisions or measures that affect the cross-border trade in services.

III.1.5.3 Improvement of Market Access

In connection with the improvement of market access, the Agreement includes measures that are prohibited in the absence of any specific reservations in the Schedules for international trade in services. These prohibitions mainly concern: the limitation of the number of service suppliers, either in the form of quotas, monopolies, exclusive service supply contracts, or the stipulation of proof of economic need; the limitation of the total value of imported services thorough import quotas or proof of economic need; limitation of the total number of persons (workmen) that can be employed in any specific branch of service; measures that restrict or stipulate specific types of legal entities or joint ventures or the permitted participation of capital or investment limits.

III.1.5.4. Institutional Regulations

As mentioned above, there is a Council for Trade in Services, and provision is made for the Council to establish corresponding working groups. The tasks of the Council include the implementation of the contents of the Agreement.

III.1.6 The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

The agreement pertaining to the protection of intellectual property rights in international trade (TRIPS) forms the third pillar of the new world trade system alongside GATT and GATS. *The Agreement on Trade-Related Aspects of Intellectual Property Rights* has two goals: (1) the co-ordination and integration of the existing international stipulations regarding the protection of intellectual property rights, and (2) the adjustment and reorganization of measures concerning the demands of the steadily increasing interdependency apparent in international trade.

The international protection of intellectual property rights belonged to the field of competency of the Geneva-based *World Intellectual Property Organization* (WIPO), whose origins can be traced back to the 19th century. Today, the legal basis for the WIPO is formed by the *"Treaty on the Establishment of a World Intellectual Property Organization"* which was signed in 1967 and came into power in 1970. The World Intellectual Property Organization has been given the mandate to ensure the world-wide protection of intellectual property rights through cooperation among the relevant national authorities. International conventions important in this context are as follows: the 1883 Paris Convention for the Protection of Industrial Property - the last version of which dates 1979; the 1886 Berne Convention for the Protection of Literary and Artistic Works - its latest version dating from 1979; and the 1989 Treaty on Intellectual Property in Respect of Integrated Circuits (has not yet become effective). In addition, there are also co-operative agreements regarding the protection of patents, trade marks, indication of origin (geographical indication), utility models as well as those on industrial design.

The TRIPS Agreement that came into being during the course of the URUGUAY Round has been divided into seven sections. Section I deals with the general principles of WTO (i.e., most-favoured nation, national treatment, market access, etc.); Section II comprises the member states' obligations; Section III deals with enforcement; and Sections IV - VII deal with the prevention and settlement of disputes, and special international measures (border protection, e.g.) for suspected forgery, as well as transitional agreements and institutional reorganization.

III.1.6.1 The General Principles

As mentioned above in Section III.1.1, the general principles of the world trade system can also be applied to the protection of intellectual property rights and the national treatment of domestic and foreign holders of rights. The principle of the most-favoured nation stipulates that any advantage, favour, privilege or immunity with regard to intellectual property awarded by one member state to another member state must be granted without delay and without further condition to all other member states. The principle of the most-favoured nation was not manifest in this form in any existing agreement, and this should thus be considered an important novelty concerning the protection of intellectual property rights.

According to the principle of national treatment of domestic and foreign owners of rights, the members must not grant each other any less favourable treatment, nor may they apply any regulations that grant an advantage to one while disadvantaging another regarding the protection of intellectual property rights.

The further general stipulations in the Agreement are the obligation to ensure transparency in administration, mutual exchange of information, and the recognition of the Dispute Settlement Body of the WTO.

The individual member states are all obliged to enact national legislation for the protection of national interests, however, this must not be contrary to the WTO stipulations which have already been agreed upon. As a rule, the Agreement stipulates minimum requirements which may be exceeded by the member states through introduction of a high level of protection with regard to patents, e.g.

III.1.6.2 The Individual Stipulations

Section II of the Agreement regulates the individual areas of intellectual property rights and supplements them by introducing new areas, including the protection of commercial secrets, in particular.

The regulation of copyrights corresponds to that in the BERNE Convention on *the Protection of Literary and Artistic Works*. It has been expanded by means of the TRIPS to comprise computer programmes and data compilations in any form whatsoever. An interesting novelty in TRIPS is the inclusion of rental rights. The author of a computer programme, or the producer of a sound recording, has the right to either allow or prohibit the commercial rental of his works. Switzerland has been granted an exemption enabling it to maintain its system of purely compensatory rights. The minimum period of protection granted for copyrights is 50 years, while radio and television broadcasts are protected for a period of 20 years.

The owners of registered manufacturer's brands or trademarks have exclusive rights concerning utilization by any third party. A third party requires the owner's permission to use the specific trademark. This can be applied equally to goods and services. Trademarks should be registered for terms of at least seven years. The renewal of registration is possible for an indefinite term. If the registration includes the stipulation of use, registration can be annulled only after a continuous period of a minimum of three years of non-utilization.

With concern to the geographical indication, member states must ensure that this is not used in a misleading or an anti-competitive manner. Wine and other alcoholic beverages are given special protection. Geographical indications must not be used for such merchandise, even if there is no actual danger of confusion. Names that have taken on a generic status, (such as the name

'Burgundy'), are excluded from the above. The agreement also provides for continuing negotiations regarding the geographical indication of wines.

According to the Agreement, industrial designs are protected for a minimum period of ten years. The owner of an industrial design is entitled to prohibit the utilization of his designs in the form of copies.

New patents enjoy protection for a period of twenty years. This applies to all products, inventions and production processes in every technological sector. Inventions, which may not be exploited for reasons of public order or moral, are excluded from patenting. The exclusions that are permitted include plants and animals, but not micro-organisms.

With regard to integrated circuits, TRIPS intends to adhere to the Treaty on Intellectual Property in Respect of Integrated Circuits presented for signature in May 1989 in Washington. A minimum period of ten years' protection is included in the supplement to this agreement.

And finally, TRIPS has a novel stipulation which rules that data or commercial secrets submitted to governments for approval procedures must also be protected.

III.1.6.3 Legal Enforcement

Section III of TRIPS binds the member states to ensure that their obligations are fulfilled regardless of the nationality of the parties in the proceedings, and without stipulating any unreasonable time limitations, inappropriate administrative complications or costs.

The judicial authorities may use court injunctions if any delay or irreparable damage has been caused. The customs authorities have the right to withhold any counterfeit goods, or those which give rise to suspicion, for a certain period of time in order to stop them from being brought into free circulation. Any breach in the above respect will be subject to criminal procedures.

The periods of transition stipulated by the Agreement are one year for developed countries, five years for developing countries and countries presently in the course of transition from a centrally planned economy to a free market economy, and eleven years for least developed countries, although these are granted almost unlimited exceptions. The provision for non-discrimination applies from the date the Agreement comes into force. It is not subject to any period of transition.

Any disputes between member states are to be referred to the Dispute Settlement Body of the WTO unless exceptional provisions exist.

III.1.6.4 The Institutional Provisions and Exceptions

The TRIPS Council is responsible for monitoring the application of the Agreement. Its field of responsibility also includes cooperation with the other international organizations (WIPO, e.g.) and provision of legal counselling for the member states.

After expiration of the five years' transitional period, the TRIPS Council shall review the Agreement while giving due consideration to the experience gathered. Shorter time limitations are valid for the patenting of living organisms. Further reviews of the Agreement are to take place in intervals of two years.

The Agreement calls upon the member states to create information centres in their national administrative bodies, as well as to provide mutual legal assistance.

Analogous to GATT, TRIPS includes exceptions in the area of security. Every member state is granted the liberty of withholding information for security reasons or taking any action concerning the nuclear industry or the weapons industry without consideration of TRIPS.

III.1.7 The Plurilateral Agreements

In addition to the multilateral agreements, two further agreements exist within the WTO system of regulations, which are only binding for those contracting parties that wish to ratify them. In contrast to the multilateral agreements, these are termed plurilateral agreements. Such plurilateral agreements include the Agreement on Trade in Civil Aircraft and the Agreement on Government Procurement.

III.1.7.1 The Agreement on Trade in Civil Aircraft

In the course of the TOKYO Round, the countries of Japan, Canada, Sweden, the USA and the former European Community availed themselves of the opportunity to elaborate an agreement on competition regarding trade in civil aircraft in the scope of the GATT negotiations. This Agreement came into force on January 1st, 1980. In accordance with the last activity report (BISD, S. 39/448 f.), there are presently 23 signatory countries, mainly including the European and North American countries as well as Japan.

The goal of the Agreement is the creation of a trade system as liberal as possible with regard to civil aircraft, their engines and parts, as well as flight simulators and their components. A detailed list in the annex of the Agreement itemizes the products for which free trade applies. The establishment of uniform competitive conditions should serve to reduce the adverse effects of state intervention to a minimum. All government procurement is also subject to the same commercial criteria including price, quality and delivery time. Each signatory country has the

same right of access to tendering under the same conditions as the other countries. The GATT *Agreement on Subsidies and Countervailing Measures* also applies to trade in civil aircraft.

As apparent from its title, this Agreement only deals with the trade in civil aircraft. The procurement of any military aircraft or their parts for other purposes than civilian use is expressly excluded.

The Agreement stipulates that any disputes arising must be tackled by means of negotiations and mutual attempts to reach a solution. If a settlement cannot be achieved, the *Dispute Settlement Body* of the WTO may be appealed to.

In the summer of 1992, the committee decided to open negotiations for revision of the Agreement in order to achieve a broader membership. The results of these negotiations would indicate a possible integration of the bilateral treaty between the *United States* and the *European Union* in the *World Trade Organization*. The final outcome of the negotiations is not yet known.

III.1.7.2 The Agreement on Government Procurement

Over the course of drafting the ITO during the 1940s, several nations tried to have government procurement exempted from *the obligations of non-discrimination and national treatment*, in contrast to actual state trade. These nations did not want to give up their liberty in this sector. The principles stipulated in the Havana Charter were adopted by GATT 47 with only a couple of minor changes.

Over the course of the 1940s and 1950s, government procurement in industrial nations encompassed around 10 - 15 percent of the gross national product. This rose to a level of around 20 - 40 percent during the 1970s and 1980s. The member states addressed this issue during the Tokyo Round on account of the increasing significance of this sector. Negotiations regarding a respective Agreement were concluded in April 1970. The Agreement came into power on the 1st of January 1981. In the course of the URUGUAY Round, several aspects of this Agreement were amended and signed along with the rest of the Agreements in Marrakech on the 15th of April 1994. The Agreement came into power after ratification by the member parties. The current members are the European Union, Israel, Japan, Canada, Korea, Norway, Switzerland and the United States. Hong Kong is the only member state which has not signed this Agreement. At the same time, a total of 35 governments have observer status.

III.1.7.2.1 Goals and Scope of Applicability

This Agreement encompasses two main goals: (1) the equal treatment of both domestic and foreign suppliers and merchandise in the scope of the *Agreement (principle of national treatment)*, and (2) non-discrimination with regard to suppliers and merchandise among members of the *Agreement (the principle of the most-favoured nation)*.

Resorting to technical specifications (the description of the merchandise to be procured), must not lead to the circumvention of either of these principles (national treatment and mfn). This obligation involves the application of *the Agreement on Technical Barriers to Trade* regarding government procurement.

The present Agreement refers to:

- all laws, regulations, stipulations and practices employed by the public authorities, which concern the procurement of goods and services by the member states
- the governments and authorities of the member states, as well as many sub-national bodies such as provinces, cantons, municipalities and public authorities - (this is a new aspect in contrast to the old Agreement)
- contracts having a certain monetary value. The new Agreement stipulates certain monetary values (limits) for government procurement of products, services and construction work at national and sub-national levels. At the national level, the limit for products and services is stipulated at 130 000 SDR (approx. US$180 000); and at the sub-national level (i.e., provinces) this limit is set at 200 000 SDR; whereas the limit for state enterprises and public bodies is set at 400 000 SDR. In the case of construction work, the member states have agreed on a limit of 5 million SDR.

III.1.7.2.2 The Procedure for Awarding Contracts

This Agreement concerns the currently accepted practices of open, selective and invitation to tender procedures. The open procedure enables any interested supplier to submit his tender. The selective procedure only allows suppliers to submit a tender, if they have been invited to do so. Whereas, in the case of an invitation to tender, the procurement body individually contacts suppliers (where neither the open procedure nor the selective procedure would seem to serve the purpose).

In both the open and the selective procedures, the purchaser makes a first qualitative selection in a process called the qualification procedure. To be able to make the final selection, the necessary requirements must be stipulated in advance. Publication of the requirements must encompass: the type and quantity of the merchandise, the type of procedure, place of delivery, place of application, the technical and financial specifications, and the method of payment. The place of publication must be chosen from those stipulated in the Agreement. Wherever this selective procedure is applied, the purchaser must annually publish a list of all qualified suppliers including the admission conditions for the list and an itemization of the merchandise purchased according to this procedure.

Tenders should be received and opened in proper accordance with the stipulations. The opening of tenders must take place in presence of the tendering parties or representatives thereof, or an impartial observer as witness.

This Agreement does not specify any particular criteria for the awarding of the contract. The party awarding the contract has the liberty to decide upon and consider factors other than the price, such as quality, service, delivery time, spare parts, etc. These additional factors must be made known ahead of time. The contracting parties should try to refrain from expecting compensation on the condition of awarding the contract.

III.1.7.2.3 Allowances for Developing and Least Developed Countries

The contracting parties of the Agreement are expected to take account of the special needs of developing countries. This should be manifest in several manners including the establishing of information centres in the industrialized countries in order to promote facilitated market access for developing countries. It should also include the granting of any required technical assistance to developing countries with regard to government procurement.

The contracting parties are also empowered to enter into unilateral contracts with developing countries for the purpose of guaranteeing them advantages that are not allotted to other countries. Individual nations and groups of nations have already made such contracts (i.e., the European Union in the scope of the LOMÉ Agreement).

The final act of the URUGUAY Round proposes to the Council for Public Procurement measures for facilitating the participation of developing countries in the Agreement. However, it is not yet known what form these measures will take.

III.1.8 The Agreement on Agriculture

In his *Commentary on GATT*, KENNETH W. DAM comes to the conclusion that GATT has failed in the agricultural sector. Not only is actual protectionism in the sector of agriculture higher than in other economic sectors, many signs would also indicate that agricultural protectionism is still on the increase. In some countries the domestic prices for agricultural products are up to 100 percent higher than the import prices for the same products.[43]

III.1.8.1 The Establishment of the Agreement on Agriculture

The original intention of GATT was to equate international trade in agricultural products with that in the other trade sectors, allowing for a few minor exceptions. These exceptions refer to

43 DAM (1970), p. 257.

measures for combating a state of need in the foodstuff sector, the protection of regulations and standards, as well as accompanying measures in connection with reducing production surpluses. These requirements were either interpreted in a far too extensive manner, or not taken into consideration at all, with the result that in the course of time, a market structure contrary to GATT has come into being. Yet this has been fully accepted by the representatives of the countries in sole consideration of their own interests.

How could such a development take place? The exemptions listed in Article XI:2(c) of GATT were introduced by American delegates in the course of elaborating the Havana Charter. They were calling for the maintenance of the protective measures practiced by the United States regarding the crop programme for 1933 and the previously granted import quotas and subsidies for sugar.[44] However, the United States soon determined that GATT Article XI did not suffice to cover the requirements of the American agricultural industry, although modelled upon it.[45] Difficulties began to become apparent at the beginning of the 1950s with regard to milk import restrictions and the expansion of the Agricultural Adjustment Act of 1933, which granted the American President the power to impose protective levies or import volume restrictions if single products or groups of products are imported into the United States in such volumes or under such conditions that these imports either cause the American agropolitical measures to lose their effectiveness or pose a contradiction to the American Agricultural Act.[46] In order to eliminate the contradiction between the relatively liberal GATT incentive and the increasing agricultural protectionism in the United States, the GATT contracting parties granted a waiver to the American agricultural industry in 1955 concerning GATT Articles II and XI:

> *"[...] to the extent necessary to prevent a conflict with such provisions of the General Agreement in the case of action required to be taken by the Government of the United States under Section 22 [of the American Agricultural Adjustment Act of 1933]."* [47]

The *American waiver* was prolonged annually until the beginning of the URUGUAY Round.

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44 BROWN (1950), p. 22 f.; JACKSON (1969), p. 319; HILLMAN (1993), p. 761 f. JIMMEY HILLMAN demonstrates how GATT Article XI originated in the American Agricultural Act of 1933.

45 Although GATT Article XI 'was largely tailor-made to United States' requirements (...), the tailors cut the cloth too fine. This statement was made by former GATT Secretary General ERIC WYNDHAM WHITE on the occasion of a presentation in 1960, *'Europe and the GATT'*, in the Europe House, London. Cited according to DAM, KENNETH W. (1979): Law and International Economic Organization, Chicago, IL, etc., p. 260, annotation 7.

46 Section 22 of the Agricultural Adjustment Act of 1933 as re-enacted and amended in: GATT BISD, 3 S (1955), p. 36 f.

47 GATT, BISD, 3 S (1955), 34 f. 'The CONTRACTING PARTIES declare [...] that in deciding as aforesaid, they regret that circumstances make it necessary for the United States to continue to apply import restrictions which, in certain cases, adversely affect the trade of a number of contracting parties, impair concessions granted by the United States and thus impede the attainment of the objectives of the General Agreement.'

In 1957, the member states of the former European Economic Community (EEC) postulated that the creation of a customs union released them from the obligations stipulated in GATT Article XI, in as far as these obligations had a negative effect on the creation of a customs union and hindered the achievement of their objectives. The *contracting parties*, of GATT did not agree with this view, and waived the corresponding decision, which did not hinder the EEC from establishing an agricultural foreign trade policy that was incompatible with GATT principles (introduction of variable import/export levies and granting of export reimbursements).[48]

The GATT *contracting parties* did not take on any position with regard to the founding of the European Free Trade Association (EFTA).[49] The non-application of GATT Article XI by the United States, as well as the breach of GATT stipulations by the EEC and the EFTA, resulted in the newly acceded GATT members being granted analogous concessions. For example, the declaration on the provisional partnership of Switzerland, dated 1958, states as follows:

> *"The Government of the Swiss Confederation reserves its position with regard to the application of the provisions of Article XI of the General Agreement to the extent necessary to permit the Government [...] to apply import restrictions pursuant to [...] the Federal Law of 3rd October 1951."* [50]

The general discontent in GATT concerning the practice of agricultural protectionism is expressed in the *'Leutwiler Report'* commissioned in 1983 and published in 1985 by GATT Secretary General ARTHUR DUNKEL. The experts call for stricter discipline of the agricultural trade partners. They contend that a trade system is deeply unjust, if it protects those producers which are less productive by means of trade restrictions and export subsidies and forces the more productive competitors off the world market. The more productive suppliers, including a group of developing countries, had good reason to feel cheated of their rights in the international trading system. The export report made the following recommendation:

> *"Agricultural trade has to be based upon clearer and fairer regulations. There should not be any special treatment allotted to certain countries or products. More productive agricultural producers should not have their competitive opportunities restricted."* [51]

The *Ministerial Declaration of 1986*, made on the occasion of the inauguration of the URUGUAY Round, incorporates the recommendations of the expert report and states:

48 GATT, BISD, 6 S (1958), p. 11.

49 GATT (1961), BISD, 9th, S, p. 20 f. and 70 f.

50 GATT (1959), BISD, 7th S, p. 20; BISD (1966), 14th S, p. 63.

51 The second recommendation of the 'Leutwiler Report' published in: GATT (1985), Welthandelspolitik für eine bessere Zukunft, Fünfzehn Empfehlungen, Geneva, p. 42.

"The contracting parties agree that it is urgently required for greater discipline and predictability to be implemented in world trade in agricultural produce by means of correction and avoidance of restrictions and distortions, including those in connection with structurally related surpluses, in order to reduce uncertainty, inequality and instability in world agricultural markets." [52]

Agriculture was the subject dealt with by *the Sixth Working Group* in the URUGUAY Round. Negotiations were greatly varied and did not appear too promising over a long period of time, however they were finally concluded with *the Agreement on Agriculture* including the Modalities and further documents - a treaty which does justice to the special characteristics of international agricultural trade. The *Agreement on Agriculture* was signed on the 15th of April 1994 in MARRAKECH and became effective as of the 1st of January 1995.[53] The first section of the following elaborations deals with the world-wide significance of agricultural trade.

III.1.8.2 The Significance of International Agribusiness

Trade in foods and agricultural products registered by the WTO in the scope of the Agreement on Agriculture amounted to around US$ 570 billion, which corresponds to approximately ten percent of total world trade in goods at about US$ 5000 billion. This ratio is not subject to any significant change when comparing the internal EU agricultural trade figure of US$ 140 billion and the EU figure for total trade in goods at almost US$ 1200 billion. Agribusiness is the second strongest trade sector on an international scope. The only larger trade sector is that of machinery and means of transportation at around 18 percent. Smaller ratios apply to the sectors of office and telecommunications equipment, minerals, vehicles, chemicals, other consumer goods, and semi-finished products, each comprising 8 to 10 percent (whereby the ratio depends upon how the groups are formed).[54] The ratio for the agribusiness sector has remained relatively stabile over the past twenty years. During the 1950s and 1960s, this ratio was higher and amounted to 15 - 17 percent.[55]

At present, the major exporters of foodstuff and agricultural products on a world-wide basis are the United States at over 15 percent of total agricultural trade, the European Union at 14.5 percent (excluding internal trade), Canada at 4.7 percent, Brazil and China at 3.3 percent each, as well as Thailand, Argentina and Australia at somewhat over 2.5 percent each. The major

52 HUMMER/WEISS, p. 285 (German version); GATT (1987), BISD, 33rd S, p. 24 (English Version).

53 The text of the Agreement is found in: HUMMER/WEISS, p. 853 f. (German version); GATT (1994), The Legal Texts, p. 39 f. (English version). GATT, Docs. UR-93-0250 and MTN.GNG/MA/W/24 dated 20-12-1993 (cited as Modalities). The Modalities were formerly a part of the Dunkel Report. DUNKEL-Bericht (1991), p. L19-L34.

54 Cf. the statistical data in: WTO (1995), International Trade, p. 5; WTO (1996), Annual Report 1996, p. 1, 4, 65 and 70.

55 Cf. GATT (annual), International Trade.

importers of foodstuff and agricultural products are Japan at 12.3 of total agricultural trade, the European Union at around 10 percent (excluding internal trade), the United States at 8.6 percent, Hong Kong at 3.1 percent, Canada at 2.2 percent, as well as Mexico, Korea and China at around 1.5 percent each.[56]

III.1.8.3 The Scope of the Agreement

The Agreement begins with a preamble and defines the terms and groups of products used in the Section I. Section II explains how the Schedules, or lists submitted by the member states, form an integrated element of the Agreement. Sections III to VII elaborate the major parts of the Agreement, the regulations for market access, the stipulations for domestic support measures, as well as the regulation of export subsidies. Section VIII comprises remarks on the Agreement on the Application of Sanitary and Phytosanitary Measures. Sections IX and X are dedicated to the special status of developing countries. The final sections deal with institutional and organizational aspects. The text of the Agreement on Agriculture is of a general nature and is restricted to the basics. Elaboration and analysis of the Agreement therefore require consideration of the export stipulations in the *"Modalities for the Establishment of Specific Binding Commitments under the Reform Programme"* dated 20th December 1993.

■ Basic Orientation

The preamble lays down four areas of focus: Firstly, the creation of *a "fair and market-oriented trade system"* is stated as the long-term objective of the Agreement. This objective, taken from the present formulation of the MONTREAL Declaration of 1988,[57] makes it clear the negotiating delegates were fully aware that the trade system then valid for the agricultural system was neither fair, nor was it market-oriented. Furthermore, the present Agreement was to initiate and introduce a reform process. There was consensus among the negotiating delegates that a new Agreement would not provide any final short-term or long-term solution to the problem of agricultural trade. It was their intention to suggest an initial approach and to feel their way to a future agricultural trade policy. In accordance with this, the Agreement was conceived for a period of implementation covering six years, under the condition that an extension of the process be initiated one year before the end of the period of implementation; the experience gathered be analysed; and new proposals for solutions be introduced. Thirdly, the founding members agreed that a reform cannot be successfully introduced without a concrete declaration. The preamble therefore calls for an effective reduction of agricultural levies as well as a stage-by-stage reduction of supportive and protective measures for agriculture. A first "corrective measure" was to be undertaken. And finally, the preamble guarantees special treatment of developing countries

56 Cf. WTO (1996), Annual Report 1996, p. 87.

57 Montreal Declaration, Section on Agriculture, Item 5. Published in: GATT (1989), FOCUS, Newsletter No. 61, p. 2 f.

in the form of longer transition periods for the application of the negotiated liberalization measures, as well as improved market access in those countries purchasing such goods.

■ Product Classification

Section I of the Agreement comprises definitions of terms, and lists the product categories for which the Agreement is valid. Article 1 of the Agreement on Agriculture covers the definition of the terms which are applied in the following text of the Agreement. For didactic reasons, there will not be a list of definitions given at this point, instead, special terms will be introduced in connection with the individual stipulations of the Agreement.

The goods, which are designated as "agricultural produce", may be found in Article 2 of the Agreement on Agriculture and its accompanying Appendix 1. The Agreement mainly refers to HS Tariff Chapters 1 to 24 including livestock and livestock products, plant products, vegetable oils and animal fats, as well as goods from the foodstuff industry. Trade in fish (HS Chapter 3) and fish products (HS Chapter 16) is not included in the Agreement on Agriculture.[58] Furthermore, Appendix 1 of the Agreement on Agriculture mentions several products not included in HS Chapters 1 to 24, which by nature are closely related to agricultural production or produce, and are therefore also subject to the Agreement. These products are mannite or manna sugar, sorbite (acyclic alcohols, HS Chapters 2905 43 and 44), etheric oils (HS Chapter 3301), casein, albumin, gelatin, proteins and starches (HS Chapters 3501 to 3505), finishing and dressing agents (HS Chapter 3809 10), fatty acids (HS Chapter 3823 60), hides and pelts (HS Chapters 4101 to 4103), furs (HS Chapter 4301), raw silk (HS Chapters 5001 - 5003), wool and animal hair (HS Chapters 5101 - 5103), raw cotton (HS Chapters 5201 - 5203), flax (HS Chapter 5301), and hemp (HS Chapter 5302).

■ Commitment to Concessions

According to Article 3 of the Agreement on Agriculture, each of the contracting parties must record its concessions and obligations in Schedules or lists, and these must be deposited with the WTO. Once concessions are granted or obligations are made, they cannot be unilaterally withdrawn within a pre-defined implementation period of six years or changed to the disadvantage of the other contracting parties. However, improvements in favour of other trade partners may be made at any time. The obligations in the Schedules form a "major component" of GATT 94 and the WTO agreements. Article 3 of the Agreement on Agriculture corresponds with GATT Article II which deals with tariff lists and binding tariffs.

58 in contrast to Article XI of GATT which expressly excludes fisheries (trade in fish and fish products) from the obligation of reducing restrictions in trade volume.

■ Market Access

The first of the three main objectives of the Agreement on Agriculture concerns *the improvement of market access* and is laid down in Section III, Articles 4 and 5 of the Agreement. This objective is to be achieved by the following means: tariffication of all currently existing non-tariff trade barriers with the following reduction of all tariffs according to a predetermined time schedule; conversion of trade volume restrictions into customs quotas while simultaneously permitting additional imports at tariff rates which are also to be reduced in succession; minimal access for products that were previously completely excluded from the market; permission for protective measures in the case of unexpected volume or price successions; as well as the granting of exceptions to developing countries.[59]

Tariffication is to be conducted for volume restrictions, import levies, minimum import prices, import licensing according to discretion, non-tariff trade barriers of state enterprises, voluntary import/export restrictions and similar customs measures that do not form actual taxes.[60] The products mentioned in Appendix 5 of the agreement are exempt from tariffication, if their imports did not exceed more than 3 percent of total domestic consumption during the base years from 1986 to 1988; they did not benefit from export subsidies; and their domestic production has been effectively limited. As compensation for this exemption from tariffication, a country must guarantee the right to a steady minimum market access for the product in question, ensuring it lies above that which is stipulated in the Agreement. This initially amounts to 4 percent of domestic consumption, and increases to 8 percent at the end of the six-year period (instead of 3 and 5 percent for tariffed products). If this exemption is upheld over the six-year period, the minimum access is to be further increased. In the face of these stipulations, only Japan, Korea, the Philippines (re: rice), and Israel (re: certain meat and milk products) have chosen to make use of this exemption.[61]

Tariffication takes place according either to the additive method or the variate difference method. In accordance with *the additive method*, the maximum revenue tariff is equal to the total of the financial burdens during the base years 1986 to 1988 (total of the tariffs and non-tariff trade barriers). The import price plus the total border taxes (maximum revenue tariff) equal the protected domestic price. Protective measures for imports are maintained, albeit only by means of tariffs instead of tariffs and non-tariff trade barriers. This means there is no change for the domestic supplier who remains protected against foreign competition. In the European Union,

59 In connection with Appendix C of the Agreement on the Application of Sanitary and Phytosanitary Measures, Article 4 of the Agreement on Agriculture can also be applied in the scope of dispute settlement if monitoring, inspection and approval procedures at borders are employed in a manner which hinders or renders impossible market access. Cf. consultations between the United States and Korea in: WTO Internet, Overview of the State-of-Play of WTO Disputes, Pending Consultations 1(a) and 1(b).

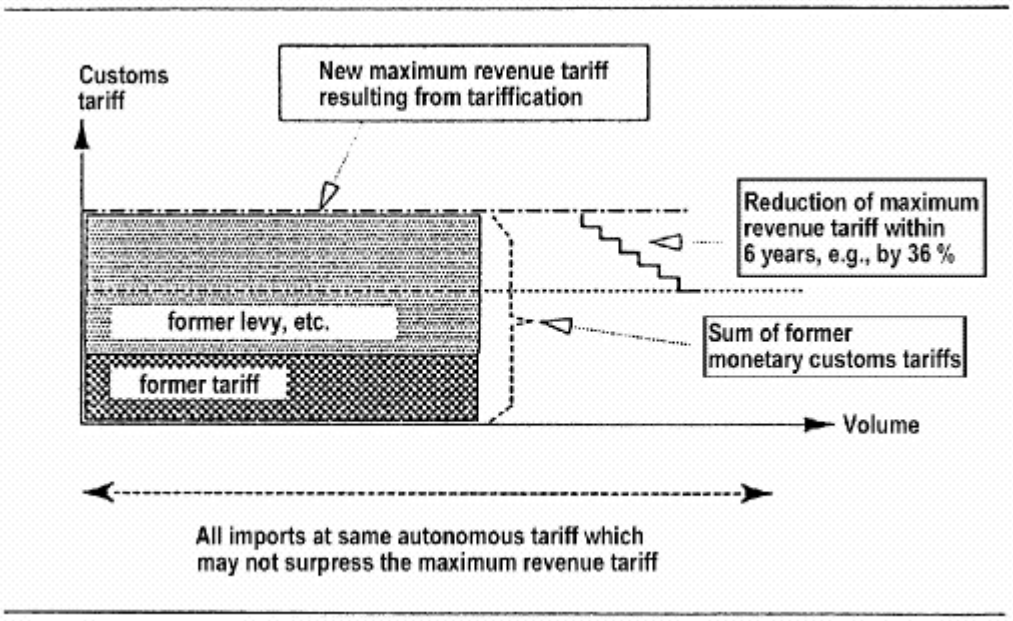
60 Cf. Agreement on Agriculture, Article 4:2, Annotation 1.

61 Cf. BBl 1994, IV 149.

tariff protection is calculated as the difference between the corresponding market price in the years 1986-88 and the intervention price which has been increased by 10 percent. A special regulation is valid for grains in the EU and stipulates that the import price, including all levies, may be 55 percent above the intervention price. In the case of world market price decreases of over 30 percent, additional tariffs are permitted. The additive method of tariffication is schematically portrayed in Figure III.1-5.

Figure III.1-5
The additive method of tariffication*)

Additive Method: Schematic diagram of the future customs tariffs for products which are presently only financially burdened at borders (tariffs and other levies). These products are not currently subject to any volume restrictions such as quotas, or productivity systems, etc.



Note: The calculation of the initial maximum revenue tariff was done according to the additive method and therefore corresponds to the total of the monetary customs tariffs during the base years (total of tariffs, import levies, surcharges, etc.).

*) Source: BBl, 1994 IV 159.

The variate difference method is applied in those product sectors where volume-related import restrictions may be converted into tariff quotas and continue to be applied as such. Either the quotas are exempt from customs duties, or a low tariff applies, and it may not be increased.[62]

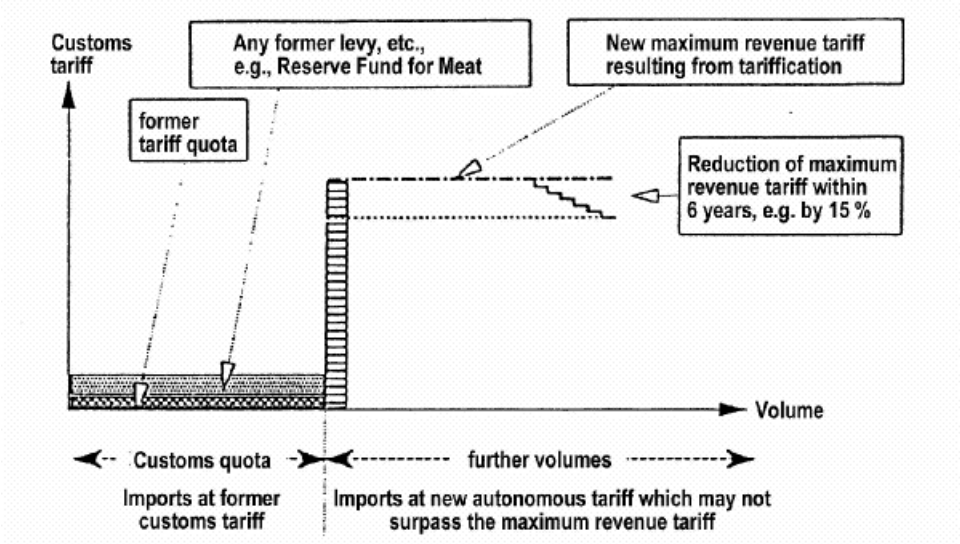
62 GATT, Modalities, Item 12.

Further imports are now permitted over and above the volume of the contingency, in contrast to the past. For this additional volume a levy may be imposed, which is comparable to the difference between the domestic price and the foreign price. The temporal basis for calculations is the 1st of September 1986. The variate difference method is portrayed in Figure III.1-6. Distribution of the quota is left to the discretion of the respective country and is often subject to government allotment or the drawing of lots. Auctioning procedures (although favoured in terms of economic), have proven problematic. The revenue gained by an auction (in the name of the state) has the effect of imposing an import levy, and foreign suppliers consider this contradictory to WTO policy.

Figure III.1-6

The variate difference method of tariffication*)

Variate difference method: Schematic diagram of future border taxes for products that are currently subject to volume restrictions in addition to monetary customs tariffs (levies or otherwise).



Note: The former monetary customs tariffs are valid for imports in the scope of the new customs quotas at the volume of the average imports in the base period. As a rule, these are relatively low and do not afford any significant protection for the agricultural sector. The new customs valuation within the tariff quotas is not to be reduced unless it is compensated by the maximum revenue tariff as a result of its reduction.

*) Source: BBl, 1994 IV 161.

Notification of the maximum revenue tariffs calculated according to tariffication must be made to the WTO, and they are to be consolidated (made binding). They may only be reduced in the future, but not further increased.

According to *Item 5 of the Modalities*, all tariffs, including the maximum revenue tariffs calculated according to tariffication, must be reduced at an average of 36 percent and a minimum of 15 percent over the course of six years following the effective date of the WTO. The average refers to the non-trade-weighted tariff lines (in general, the HS tariff headings with four digits, as well as the HS tariff headings with six digits for fruit and vegetables). The average value of 36 percent should not be overestimated, since it is relatively easily achieved by means of tariff reductions in those positions which are insignificant in terms of trade. However, the stipulation is important that each tariff rate must be reduced at a minimum of 15 percent over the course of six years. This tariff reduction must be conducted independently of trade-weight, meaning it must also be conducted for products assuming a significant position in trade.

Market access, amounting to at least 3 percent of domestic consumption over the base period from 1986-1988, must be ensured in the first year of the transitional period for product sectors which a country had previously either partially or completely barred from access to its market, followed by an increase to 5 percent by the end of the transitional period.[63]

Analogous to the GATT general protection clause, Article 5 of the Agreement on Agriculture also includes a protection clause for the unexpected case that import concessions either cause a disproportionately steep increase of the import volume or a steep fall in import prices.

The *volume-related protection clause* permits the existing customs tariffs to be increased up to one third if the annual import volume surpasses a certain *trigger level*, whereby "up to one third" is not defined in closer terms. The trigger level varies according to the level of self-sufficiency and the import figures of the country:

- At a self-sufficiency level of 90 percent and import figures of 10 percent, protective duties may be imposed if additional imports are more than 25 percent over average imports documented in the past three years.
- At a self-sufficiency level of 70 to 90 percent and import figures of 10 to 30 percent, protective duties may be imposed if additional imports are more than 10 percent over average imports documented in the past three years.
- At a self-sufficiency level of less than 70 percent and import figures of over 30 percent, protective duties may be imposed if additional imports are more than 5 percent over average imports documented in the past three years.

The trigger level climbs with an increasing level of self-sufficiency, and this amounts to a reduction of protective measures. In other words, taking consideration of past imports and the level of self-sufficiency means that protective measures should be employed later for smaller

63 GATT, Modalities, Item 5.

import volume rates than for larger import rates. An increase in the level of self-sufficiency is connected with an increase in the trigger level. This means that providing market access is rewarded, and an increase of domestic production is punished. The Agreement on Agriculture does not deal with the question as to whether corresponding alterations in volume and price at home and abroad are economically based and justified or whether this is not the case (on the basis of increased productivity, e.g.).

If concessions granted in connection with the agreement cause a decline in import prices resulting in turbulence in the domestic market, the respective country has the right to adopt protective measures. Price-related protective measures are to be implemented according to Article 5:5 of the Agreement on Agriculture. They comprise a total of five stages with the following trigger levels:

- If the current import price[64] is less than 10 percent below the trigger price or the reference price[65] from the period 1986-1988, then a provisional tariff increase can not take place.
- If the current import price is between 10 and 40 percent below the reference price, the permitted additional tariff corresponds to 30 percent of the amount by which the difference surpasses 10 percent.
- If the current import price is between 40 and 60 percent below the reference price, the permitted additional tariff corresponds to 50 percent of the amount by which the difference surpasses 40 percent plus the additional tariff of the previous stage.
- If the current import price is between 60 and 75 percent below the reference price, the permitted additional tariff corresponds to 70 percent of the amount by which the difference surpasses 60 percent plus the additional tariff of the two previous stages.
- If the current import price is more than 75 percent below the reference price, the permitted additional tariff corresponds to 90 percent of the amount by which the difference surpasses 75 percent plus the additional tariff of the three previous stages.

For example, if the import price of merchandise decreases to below 80 percent of the reference price of the years 1986 to 1988, the importing country may impose a protective levy at 34.0 percent of the price decrease in addition to the currently existing tariff (no variable import levy for the first 10% = 0%, +30% of 30% = 9.0%, +50% of 20% = 10%, +70% of 15% = 10.5%, + 90% of 5% = 4.5%. Total: 9.0 + 10 + 10.5 + 4.5 = 34.0% + previous tariff).

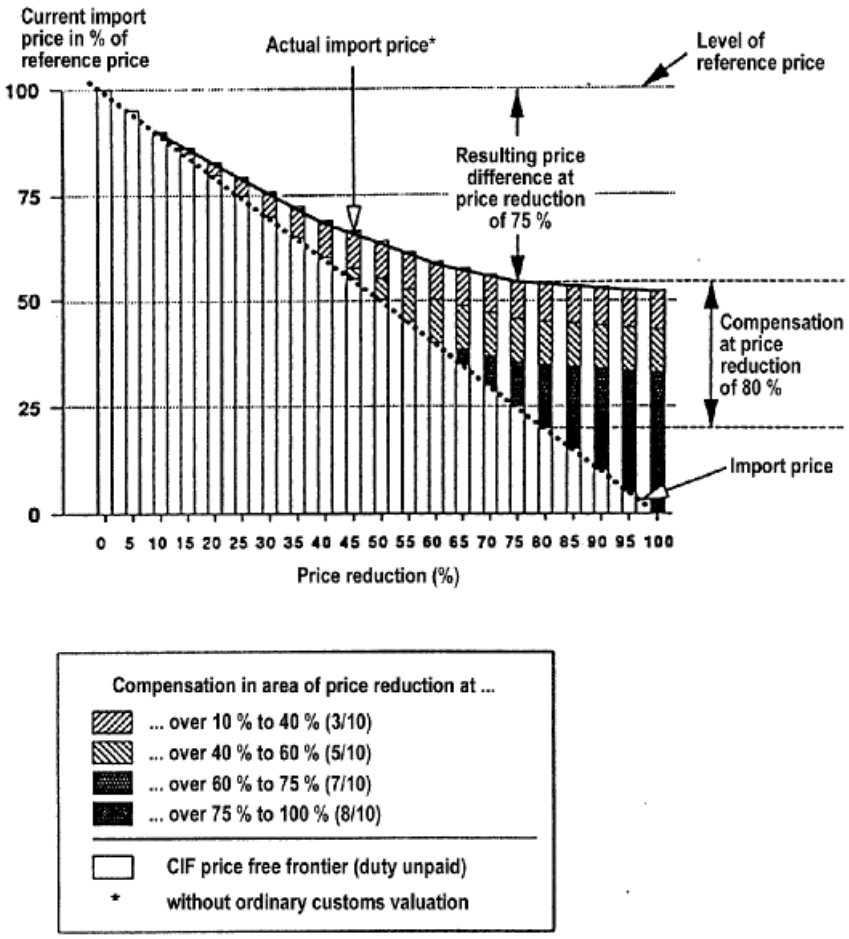
64 The import price is calculated at the CIF value. Cf. WTO Agreement on Agriculture, Article 5:1(b).

65 The trigger price corresponds to the reference price in the period 1986-1988, which is also calculated at the CIF value. Cf. WTO Agreement on Agriculture, Article 5:1(b), Annotation 1.

Figure III.1-7 illustrates that *the extent of variable import levies* increases progressively *in the case of a continuing price decline*. The permitted variable import levy is not high enough that it completely prevents a price decline from becoming apparent in the domestic market. The variable import levy is imposed in a manner which limits, yet does not completely eliminate price declines.

Figure III.1-7

The progressive increase of the import levies in the case of a continuing price decline



Source: BBl 1994 IV, 153.

■ The Reduction of Domestic Support

The second focal area of the WTO agricultural trade system involves *the reduction of those domestic support measures* which distort or otherwise affect foreign agribusiness by favouring domestic producers. This refers to support measures in the form of product-related price and sales subsidies, surcharges, price regulations, sales guarantees for predetermined prices, price guarantees and other transfers made by the consumers. A "*de minimis* clause" stipulates that product-related supports are to be exempt from reductions, if they amount to less than 5 percent

of the production value of an individual product or the sum of less than 5 percent of the total value of agricultural production. The legal basis for the reduction of domestic supports can be found in Section IV as well as Articles 6 and 7 of the Agreement on Agriculture and its Appendices 2, 3 and 4, as well as in Items 8, 9 and 10 of the Modalities and its Appendices 4, 5 and 6.

Domestic support measures and direct payments are exempt from reduction, if they form no distortion or almost no distortion of foreign trade and do not influence production, meaning all those measures which are part of a publicly financed government programme and are not financed through transfers by consumers, under the condition that they do not have the effect of price supports for the producer. Appendix 2 of the Agreement on Agriculture lists the following support measures as exceptions: general state funding for research, education, advising, monitoring, market information and infrastructure services (improvement of roadway networks, water provision, electricity networks, etc.), public warehouses and foodstuff supplies, domestic foodstuff support measures, direct income support, participation in programmes for securing income, payments made for calamities, pension programmes, fallow land programmes, investment subsidies, environmental programmes, and regional assistance programmes.

In accordance with Article 6:5 of the Agreement on Agriculture, *direct payments in the scope of programmes limiting production are not to be reduced* providing that either the payments are made for specific cropland and crops, or if payments are based upon 85 percent or less of the basic production volume, or if premiums for livestock are aimed at a stable herd size.[66]

How are *the calculations done for those measures which are to be reduced*? First of all, a difference must be made between the "**aggregate measurement of support**" (AMS) and the "**equivalent measurement of support**". The AMS constitutes the actual annual financial support paid to an agricultural producer for each individual agricultural product. This is the sum of all product-related supports in the form of price or sales guarantees. Internal support measures are to be estimated and calculated "according to the officially regulated prices which are applied and the production volume justified for maintaining this price" or "according to budgetary expenses made for supporting the production price", if the allowance is not directly product-related or, as stated in Appendix 4, Item 2 of the Agreement on Agriculture, if the calculation of this AMS component is "not practicable". The equivalent measurement of support is calculated on the basis of the amount of the subsidy in the closest proximity to the first sales location of the relevant

66 Politicians and the media speak of orange box measures in connection with product-specific support measures which are to be reduced. Green box measures are referred to in connection with those support measures which do not have to be reduced, generally including measures that either present a minimal distortion in trade or none at all, as well as the exceptions specifically listed in Appendix 2 of the Agreement on Agriculture. Those measures, which the United States and the EU agreed upon in the Blair House, are referred to as blue box measures. These include deficiency payments that do not have to be reduced according to the American Farm Bill of 1990 and the compensation payments provided by the agricultural program of the EU. Cf., e.g., INTERNATIONAL AGRICULTURAL TRADE RESEARCH CONSORTIUM (1994), p. 14.

agricultural product. Support measures in favour of the processor are taken into consideration when calculating the equivalent measurement of support in as far as they actually benefit the producer of the agricultural products. Specific agricultural levies and fees to be paid by the producers are deducted from the equivalent measurement of support.

Once the aggregate measurement of support and the equivalent measurement of support have been calculated, they are added together resulting in the total aggregate measurement of support (total AMS). The total aggregate measurement of support is the figure to be reduced. The temporal base for all calculations and estimates is the period from 1986 to 1988, whereby the reductions already undertaken after 1986 are to be taken into account in the calculations.

According to Item 8 of the Modalities, the abolishment of internal support measures stipulated in the Agreement on Agriculture involves reducing the total aggregate measurement of support at steady rates of approximately 20 percent over the course of six years. The agricultural market system of the WTO permits varying reductions of support according to products, on the condition that an average of 20 percent is maintained. The remaining subsidies are considered to be bound and cannot be increased anew. Developing countries have been allotted a period of ten years in the Agreement, and least developed countries have been exempt from making any reductions whatsoever.

■ The Reduction of Export Subsidies

The third major objective of the Agreement on Agriculture is *the reduction of export subsidies*, as well as *the reduction of the volume of subsidized exports*. The basic legal framework for the stipulations on export subsidies is found in Section V and Articles 8 to 11 of the Agreement on Agriculture, as well as in Items 11 and 12 of the Modalities and its Appendices 7 and 8.

The following public funding programmes are listed in the Agreement on Agriculture among the subsidies to be reduced: direct government subsidies, including non-cash benefits to companies, business sectors or producers of agricultural goods; the sale of products for export from public warehouses at prices below regular market prices; government-funded payments for the export of agricultural products; government funding for foreign marketing; coverage of transport and freighting costs for exported products at home and abroad; and those indirect payments made for export products through subsidies for preliminary products and by-products. There are special regulations for developing countries which exempt the following subsidies from reduction: investment subsidies, contributions towards the diversification of agricultural production, and support measures for farmers with a low income.

The reference period from 1986 to 1990 is the period used for calculating the initial status of those obliged to make cuts. However, in order to take into account the subsidy reductions made over the course of the past years and lighten the obligations to make cuts, the negotiating partners agreed upon postponing the start of subsidy reductions to the year 1991/92 in the Blair House

Agreement made on 20th November 1992. At the end of the six-year period, the targeted limit should remain at the level of the period 1986 to 1990 minus the stipulated reduction.[67]

The agricultural market system of the WTO stipulates that the developed nations have to reduce their export subsidies by 36 percent over the course of six equal annual rates. Developing countries have been allotted a reduction rate of 24 percent (two thirds of 36%) over a period of ten years. The volume of subsidized exports must also be reduced by 21 percent starting from the effective date of the Agreement over a period of six years. Developing countries have a reduction rate of 14 percent (two thirds of 21%), and least developed countries are completely exempt from any obligation to make reductions.

A reduction of export subsidies by 36 percent is also stipulated for processed foods and the foodstuff industry. However, processed foods are not subject to volume reductions.

■ Further Regulations

Articles 12 to 21 of the Agreement on Agriculture comprise provisions on the reintroduction of export limits, the creditability of internal support measures in determining compensatory tariffs, the recognition of the Agreement on the Application of Sanitary and Phytosanitary Measures, the preferential treatment of developing and least developed countries, as well as the enforcement of the Agreement.

In accord with Article 12 of the Agreement on Agriculture, a contracting member planning export prohibitions or export restrictions, has to determine the effects of such measures on foreign trade, inform the agricultural committee, and consult with the trade partners involved.

Article 13 of the Agreement on Agriculture calls for the member states to use discretion when imposing compensatory tariffs according to the Agreement on Subsidies and Countervailing Measures, and not to abuse the support measures permitted in Appendix 2 of the Agreement on Agriculture (contributions to research, education, consulting, market information, etc.) as an excuse for compensatory tariffs. Article 13 of the Agreement on Agriculture is known as the 'Peace Clause' in the experts' jargon.[68] In addition, Article 14 of the Agreement calls for "the Agreement on the Application of Sanitary and Phytosanitary Measures to be implemented". Articles 15 and 16 recapitulate the obligation undertaken in the previous provisions of the

67 Article 13 of the Agreement on Agriculture became the subject of dispute among WTO members for the first time in 1996/97. Several countries have accused Hungary of exceeding the commitments it made in the URUGUAY Round with regard to granting export subsidies. Cf. WTO (1997), FOCUS Newsletter No. 16, p. 6.

68 In the opinion of Sri Lanka, Brazil has been imposing compensatory tariffs on the import of dried coconut products contrary to the stipulation in Article 13(a). Consultations between Sri Lanka and Brazil in: WTO Internet, Overview of the State-of-Play of WTO Disputes, Pending Consultations.

Agreement to give developing countries preferential treatment (in the form of lower reduction rates and longer periods of transition).

Finally, Article 20 of the Agreement on Agriculture reintroduces the basic concept, mentioned in the preamble, of initiating a reform process striving towards market access and trade liberalization by means of the Agreement. The experience gathered is to be analysed five years after the implementation of the treaty, and new long-term objectives are to be set.

III.1.8.4 Free-Trade Market versus Special Interests

Prior to and during the course of the URUGUAY Round, various negotiation partners, in particular the United States, called for international trade in agricultural products to be made subject to the general stipulations of GATT and the new world trade system that was to be established. They wanted to enable international trade in agricultural products according to the same principles as non-agricultural or industrial products. The introduction of a separate Agreement on Agriculture shows that the negotiating partners were able to mutually agree upon several common points, yet a complete integration of agricultural trade did not take place, otherwise the elaboration of a separate Agreement would not have been necessary.

The Agreement on Agriculture is an attempt to initiate a long-term reform process striving towards improved market access and the reduction of subsidies for agriculture. In accordance with this, the Agreement stipulates that the negotiations of the URUGUAY Round must be reopened and continued following a transitional period of five years.

It is difficult to assess how much has been achieved to date. If it can be said that tariffication and its goal of transparency, the existing tariff reductions along with minimum market access, the reduction of domestic support and export subsidies, as well as the prohibition of new non-tariff trade barriers all serve towards the initiation and new beginning of sustained liberalization of the agricultural market, then the results are significant (from an economic point of view). However, if the negotiations come to a halt, and liberalization of trade in agricultural products is discontinued, then the present results would seem rather modest. We are now confronted with the question regarding the problems to be tackled in future negotiations and what the chances are for solving these problems.

The conversion of non-tariff trade barriers into tariffs has led to such high customs barriers in some countries, (e.g., Canada in the case of milk products and poultry, and the EU in the case of cereal products [grains][69]), that any international trade is rendered impossible by them. The realization of this goal directly depends on the power of the respective interest groups, in this case, the agricultural lobbies. In this context, a further problem is posed by tariff quotas.

69 Cf. IATRC (1994), p. iii.

Concessions granted for current volume quotas to be converted into tariff quotas do not serve to revive trade - in particular if quota volumes are auctioned off, and the permitted supplementary imports are prevented by means of high customs duties. In the future it will be a matter of increasing quota volumes or reducing duties on supplementary imports so drastically that quota regulations cease to be necessary. This problem also needs to be tackled on a domestic level.

The current practice of tariff binding requires reorientation. A bound tariff cannot be increased anew. However, tariff reduction is permitted at any time. The goal of binding tariffs is to create transparency and provide a safeguard. The trade partner is to be protected from unexpected tariff increases. However, as became known during the course of the URUGUAY Round, if countries (particularly developing countries) bind their tariffs at a level which is above the current tariff rate, then a tariff can be raised within the binding limit according to wish just as before. Such binding effects are without any value when it comes to safeguarding trade. They offer no protection for the trade partner, and their establishment is a question of politics. The statement that tariffs have been 100 percent bound sounds very effective in the media, as long as no one inquires about the level at which they have been bound and the actual tariff rate.[70] It will be a task of future negotiations to ensure that binding tariffs are increasingly transparent and realistic.

It was not possible to come up with a final solution for agricultural subsidizing in the scope of the URUGUAY Round. Instead of abolishing agricultural subsidies, analogous to the industrial goods sector, the negotiating partners limited themselves to reducing subsidies. However, the reductions set the direction for continuing endeavours, providing the trade partners are in mutual agreement with this policy.

The most difficult problem for the future establishment of an agricultural market system is *the regulation of domestic support measures*, in a manner which is conceived to give each trade partner the chance to compensate or make up for eventual losses confronting agribusiness and resulting from a new trade system through internal measures, direct payments and contributions of any kind. According to Item 1 in Appendix 2 of the Agreement, these support measures are to be conceived so that they pose only a minimal trade distortion, or none at all; are funded by government programmes; and do not have the effect of price supports. Such a formulation would give the impression that there are domestic support measures which have no effect upon production or trade. From an economic viewpoint, it must be noted that contributions to enterprises, regardless of the form they take, always have a long-term effect on prices and costs, meaning they influence or distort foreign trade by means of changing prices.

In April 1998, the Cairns Group expressed its consternation that agriculture was regressing to its earlier state of protectionism in a few countries (particularly France and Japan) under the pretext of *'multifunctionality'*. The maintenance of the population structure, securing of jobs,

70 Cf. GATT (April 1995), News of the URUGUAY Round, Geneva, p. 6.

environmental protection, as well as regional considerations, were given as the reasons for increasing agricultural subsidies and agricultural protectionism.[71]

In summary, it may be stated along with *the International Agricultural Trade Research Consortium* that the URUGUAY Round made a substantial contribution towards the re-integration of trade in agriculture in the world trade system, although only a modest degree of liberalization was achieved in the negotiations, and "much remains to be done in future rounds of negotiations".[72]

III.1.9 The Agreement on the Application of Sanitary and Phytosanitary Measures

Agriculture takes on a relatively significant position in the scope of the Ministerial Declaration on the URUGUAY Round dated 20th September 1986. The focus is on market access, the reduction of import barriers, the improvement of competitive conditions, and - in a separate section - the "minimization of the negatives effects of health safety and plant protection policy or sanitary and phytosanitary regulations and barriers on trade in agricultural products".[73] In accordance with the Ministerial Declaration and the following Mid-Term Review of the URUGUAY Round, sanitary and phytosanitary measures were made the subject of Working Group 6 (Agriculture).

The Mid-Term Review of the URUGUAY Round dated 1987/88 documented the current results of the negotiations, and differentiated between long-term and short-term reform measures concerning agriculture, as well as between sanitary and phytosanitary measures. In the scope of sanitary and phytosanitary measures, the following objectives are to be tackled: the harmonization of sanitary and phytosanitary measures on the basis of internationally recognized guidelines; the reinforcement of GATT Article XX on the protection of the life and health of human beings, animals and plants; the creation of transparency in the notification of measures; the granting of opportunities for mutual consultation in order to facilitate bilateral dispute arbitration; the improvement of the dispute settlement procedure in the framework of GATT; allowances for developing countries; and scrutiny of the present programme with regard to short-term solutions.[74]

When negotiations were reopened after the failure of Brussels in 1990, sanitary and phytosanitary measures were still part of the agricultural dossier.[75] The same applied to the Dunkel Report of

71 Meeting of the Cairns Group in April 1998, Reported in: NZZ dated 7-04-1998, No. 81, p. 25.

72 IATRC (1994), p. iii.

73 GATT (1987), BISD 33rd S, p. 24.

74 Mid-Term Review, in: GATT (1989), FOCUS, Newsletter No. 61, p. 6.

75 Cf. GATT (1991); FOCUS, Newsletter No. 79, p. 2.

1991.[76] The sanitary and phytosanitary fields were not independent in the form of a separate multilateral agreement until shortly before the signing of the WTO Agreements in Marrakech on 15th April 1994. *The Agreement on the Application of Sanitary and Phytosanitary Measures* came into force on the 1st of January 1995 along with the WTO Agreement and the other multilateral agreements.[77]

III.1.9.1 The Scope of the Agreement

The Agreement on the Application of Sanitary and Phytosanitary Measures comprises the actual text of the Agreement supplemented by three appendices concerning terminological definitions; the creation of transparency; as well as monitoring, inspection and approval procedures. The text of the Agreement initially presents the main objectives and then deals with harmonization of the measures, mutual recognition of the stipulations, risk limitation, and creation of transparency.

■ Goals

The objectives set in the Agreement should serve towards improving the health of human beings, animals and plants in all member countries of the WTO, as well as creating a set of guidelines for minimizing the negative effects of protective measures on trade. No WTO member can be forced to change the extent of the protective measures which it considers appropriate.

According to GATT Article XX(b), a government has the right to take measures for protecting the life and health of human beings, animals and plants in as far as these measures are necessary and do not arbitrarily or unjustifiably discriminate between members, or lead to a veiled restriction of international trade. Under the pressure of domestic sectors subject to increased foreign competition due to the increased market access and liberalization created by the WTO, there is the danger that the existing policy measures will be surpassed, and that sanitary or phytosanitary measures will be implemented to protect the domestic economy (particularly the agricultural and foodstuff industries).

Because of these misgivings, the negotiating parties in the URUGUAY Round considered it imperative to limit to the absolute necessary those measures taken for the health, safety and protection of human beings, animals and plants; setting limits for pesticide residues; labelling regulations; and inspection procedures. This would mean they are only permitted if there is no alternative measure available less contradictory to GATT (question of necessity). These measures must also be based upon scientific principles and should not be introduced or upheld without sufficient scientific evidence (scientific prerequisite). In addition, the Agreement calls on the member states to base their measures upon existing international standards, guidelines and

76 DUNKEL Report (1991), Section C of the agricultural text, p.L. 35.

77 The text of the Agreement can be found in: HUMMER/WEISS, p. 888 f. (German version); GATT (1994), The Legal Texts, p. 69 f. (English Version).

recommendations (principle of harmonization), as well as to recognize the measures of the partner states as being equal (principle of equivalence).

■ Harmonization

Article 3 of the Agreement requires that the contracting parties base their sanitary and phytosanitary measures "as closely as possible [...] upon already existing international standards, regulations and recommendations", and only apply them to the required extent without arbitrarily or unjustifiably discriminating among countries. As already mentioned, analogous to the WTO Agreement, this is deemed necessary if no alternative methods that would have less effect on trade are available for achieving the required level of protection.

However, according to Articles 3:3 and 5 of the Agreement, under certain conditions the contracting parties have the right to introduce or maintain sanitary or phytosanitary measures exceeding the corresponding international standards, guidelines and recommendations in terms of protection. The only prerequisite mentioned for the above in the Agreement is the existence of scientific evidence and a state of increased risk. Yet the Agreement does not stipulate how a risk is to be evaluated. The Agreement calls for the application of a risk evaluation method recognized by international organizations. However, such recognition presupposes consideration of the following: available scientific evidence, related processes and production methods, inspection, and the spread of certain diseases or pests, etc. Economic factors, such as production losses caused by the spread of diseases or pests, should also be taken into calculation.

■ Equivalency

In accordance with Article 4:1 of the Agreement on the Application of Sanitary and Phytosanitary Measures, the contracting parties are obliged to recognize the various sanitary and phytosanitary measures of other countries as being equivalent to their own, if the respective trade partner is able to prove that his measures correspond to those of the importing country in terms of protection. In order to clarify the equivalency of measures, the importing country must be given the opportunity to inspect and monitor the measures implemented in the country of origin.

In the case of measures varying from country to country, Article 4:1 of the Agreement stipulates that the contracting parties are to make bilateral or multilateral agreements regarding mutual recognition.

■ Consideration of Regional Differences

In accord with Article 6, the contracting parties must ensure that their sanitary and phytosanitary measures are adapted to the local requirements and circumstances. This may pertain to a certain region within a country, and means that if a certain region of a country is more strongly affected by the spread of a disease or pest than the rest of the country, stricter protection measures can be

imposed for this region. On the other hand, if the spread of disease or pest is less prominent in a certain region, then protective measures may be relaxed there. Exporting countries claiming that their production regions are not affected by the spread of disease or pests, must provide sufficient proof of this and must grant their foreign trade partners access for the purpose of inspection and monitoring.

■ Transparency

In order to fulfil the stipulations of the Agreement, the contracting parties must notify each other in detail, meaning they must immediately make public all sanitary or phytosanitary measures they take. In accordance with Article 7 of the Agreement on Sanitary and Phytosanitary Measures, it is expected that public notification of measures is conducted in a manner which gives the trade partners concerned sufficient opportunity to adapt to these new regulations.

Each contracting partner must create an information centre that is kept informed of the current sanitary and phytosanitary measures, and is capable of providing the respective documentation regarding those regulations, as well as the procedures for inspection and monitoring, and the risk evaluation process.

If there are no international standards, recommendations or guidelines that apply, the contracting partners are requested to notify both those trade partners concerned and the WTO Secretariat of the introduction and enforcement of their own guidelines. Notification must take place as early as possible in order to give the partners the opportunity to make themselves familiar with these guidelines.

Confidential information and industrial secrets do not have to be published, and neither the WTO nor the trade partners need be notified of such information.

■ Administration and Dispute Settlement

The administration of the Agreement is the responsibility of the Committee on Sanitary and Phytosanitary Measures. According to Article 12 of the Agreement, the committee is to form a standing forum for consultations, and it is responsible for the co-ordination and integration of international and national protection measures. At the same time, the committee functions as a contact point for the relevant international organizations in the sector of sanitary and phytosanitary protection, in particular the Codes Alimentarius Commission, the International Office of Epizootics, and the Secretariat of the International Plant Protection Convention. In addition, the Committee is to elaborate a procedure for monitoring the international process of harmonization and the application of international standards, guidelines and recommendations. For this purpose, a list of international standards, regulations and recommendations is to be made in connection with trade-related protective measures. This list should increase transparency in the area of sanitary and phytosanitary protection which, in turn, should facilitate export and import.

The Committee has the right to investigate into the facts pertaining to any specific case and make corresponding recommendations.

Finally, the Committee is also obliged to evaluate and, if necessary, investigate into how well the Agreement is functioning three years after its coming into force. If the committee sees reason, it has the right to make corresponding recommendations for changes to the GATT Council.

The stipulations of GATT Articles XII and XIII and the Agreement on Dispute Settlement Procedure apply to disputes in the area of sanitary and phytosanitary measures.

III.1.9.2 Enforcement of the Agreement

The practical enforcement of the Agreement on the Application of Sanitary and Phytosanitary Measures is exemplified by the decision of the WTO Dispute Settlement Body in the dispute regarding meat from animals treated with hormones to increase their growth factor. The facts of the case are as follows: The agricultural ministers of the former European Community (and the EEC) passed four regulations in the years 1981, 1988 and 1996 which prohibited the use of certain hormones for increasing the livestock growth factor as well as the import of meat from livestock treated with such hormones.[78] The United States, whose meat exports were severely affected by this prohibition, claimed that by prohibiting the import of meat treated with hormones, the EC violated the WTO Agreement on the Application of Sanitary and Phytosanitary Measures, because this measure was neither necessary, nor was it based upon scientific principles, and sufficient scientific evidence against it was not available (Article 2:2 of the SPS Agreement). In addition, this prohibition was said to lead to an arbitrary and unjust discrimination between the member states of the WTO (Article 3:3 of the SPS Agreement). And finally, recognized evaluation methods of international organizations were considered in evaluating the respective risks (Article 5:1 of the SPS Agreement). The countries of Australia, Canada, New Zealand and Norway joined the United States in supporting its claim.

The former EC defended itself by refuting the American claim on the grounds that meat treated with hormones is not the equivalent of meat which has not been treated with hormones, instead of referring to the Agreement on Sanitary and Phytosanitary Measures. The defense claimed these were two different products which could also be allotted different treatment according to GATT Article III:4, and under such a context, a foreign product is often treated just as favourably as a domestic product. Furthermore, they claimed there could not be any talk of discriminating foreign suppliers or products, and even if the inequality of the products is questioned, it can be established that GATT Article XX(b) grants each trade partner the right to employ necessary measures for the protection of the life and health of human beings, animals and plants.

78 These are Guidelines Nos. EEC 81/602, EEC 88/146, EEC 88/299, and EC 96/22. They prohibit the use of the three natural hormones, oestradiol-17β, progesterone and testosterone, as well as the three synthetic hormones Trenbolon, Zeranol and Melengestrol.

Since the negotiations between the United States and the former European Community remained without result, the United States called for a WTO Panel to make a ruling on the dispute. In accordance, the Dispute Settle Body appointed a Panel on the 20th May 1996 with the task of examining the above-mentioned dispute in the light of the existing WTO stipulations, and making a respective report to the Dispute Settlement Body. The Panel began work in autumn of 1996 and completed its report on 30th June 1997.[79] Based upon the established situation, the Panel was to clarify the following questions: Which legal stipulations were to be applied - the GATT Agreement or the SPS Agreement? On which party was the onus of proof? By which means could necessity, basis for risk evaluation and scientific evidence be assessed?

The same principle, which states that special rights take precedence over general rights, is valid in international law as well as national law. In accordance with this, the Panel made the decision to judge the dispute with a view to the Agreement on Sanitary and Phytosanitary Measures. This decision was based upon the consideration that any decision whatsoever along the lines of the GATT Agreement would also require an assessment in view of the SPS Agreement. In contrast to this, an assessment of the case according to the GATT Agreement would be unnecessary, if a violation of the SPS Agreement was determined in the first place.[80]

On which party is the onus of proof? The Panel came to the following decision: The suing party has to provide conclusive evidence which proves the supposed breach of contract by a trade partner. In the proceedings, the onus of proof is on the party being sued, as this party has to prove that it upheld all its obligations in connection with the Agreement on Sanitary and Phytosanitary Measures, and that the measures it employed did not violate the SPS Agreement.[81]

With regard to the major issues, the Panel came to the final decision that the EC measures violated the SPS Agreement, because they were not "based upon a corresponding evaluation of the situation with regard to the risk for the life or health of human beings, animals or plants [...]", meaning methods of risk evaluation that had been developed by the responsible international organizations. In addition, according to Article 3.3 of the SPS Agreement, a trade party may only introduce or maintain sanitary or phytosanitary measures which provide a better level of protection than that achieved by the corresponding international standards, guidelines or recommendations, "if this is based upon scientific grounds or if the higher level of protection is the result of sanitary or phytosanitary measures stipulated by a member as appropriate according

79 WTO (1997), Panel Decision: US - EC Measures Concerning Meat and Meat Products (Hormones), Doc. WT/DS 26/R/USA, published in the Internet, Itemo 8.42 and 8.272 f.

80 WTO (1997), Panel Decision US - EC Measures Concerning Meat and Meat Products (Hormones), Doc. WT/DS 26/R/USA, published in the Internet, Items 8.42 and 8.272 f.

81 WTO (1997), Panel Decision US - EC Measures Concerning Meat and Meat Products (Hormones), Doc. WT/DS 26/R/USA, published in the Internet, Items 8.49 f, 8.84 f. and 8.252. In this connection Article 5:6 of the SPS Agreement should also be referred to. It stipulates that in the case of the introduction and maintenance of measures which are not regulated by international standards, the party that introduced the measures has to provide reasons for this.

to the respective provisions of Articles 5:1 to 8". In accordance with the footnote to Article 3:3 of the SPS Agreement, the "scientific grounds" are given if one trade partner can provide conclusive scientific evidence that "the corresponding international standards, guidelines or recommendations are not sufficient for achieving the level of protection considered appropriate". Since the measures taken by the EC were neither scientifically based, nor did they provide a level of protection which was considered appropriate by the Panel according to Article 5:1 to 8 of the SPS Agreement, the Panel approved the claim made by the United States, and declared the measures adopted by the EC to be contrary to WTO stipulations.[82] This decision did not prevent the EC from stipulating corresponding regulations for the labelling and marking of meat products sold within EC territory.[83]

The scientific basis referred to by both the SPS Agreement and the Panel Decision on US/EC Hormone-Treated Meat purely relies on scientific data from the fields of nutritional science and biology. The experts consulted by the Panel were biologists and toxicologists. The questions they were confronted with mainly dealt with the possible consequences of hormone treatment on animals, the effects of consuming hormone-treated meat on human health, the biological difference between meat from hormone-treated livestock and that which had not been treated, and the scientific ascertainment of residues in meat.

The experts gave answers that were, in part, very cautious, expressing the opinion that too high a dosage, or an improper combination of hormones in a dosage could possibly result in residues detrimental to health. In the experts' viewpoint, the hormones mentioned should not be used on dairy livestock, since corresponding residues can be found in the milk given. Apart from the fact that scientific opinions are often not final (i.e., when considering the scientific evidence regarding the contagiousness of the Mad Cow Disease BSE for human beings[84]), it must be stated that the former manner of interpretation did not take into consideration any ideals, psychological or ethical values (issues of environmental protection, methods of livestock keeping, slaughtering methods, subjective values, or consumer behaviour). These subjective values have been taken into consideration since many years for the purpose of product definition in utility theory and economics. It is difficult, even impossible, to quantify such subjective values. However, it would be questionable to leave out these values when defining a product. In the future it is completely conceivable that products will not be judged solely according to their nutritional or biological characteristics, but along the lines of ideals, or psychological and ethical values. A trade partner

82 WTO (1997), Panel Decision US - EC Measures Concerning Meat and Meat Products (Hormones), Doc. WT/DS 26/R/USA, published in the Internet, Item 9.1.

83 WTO (1997), Panel Decision US - EC Measures Concerning Meat and Meat Products (Hormones), Doc. WT/DS 26/R/USA, published in the Internet, Item 8.274.

84 Although the contagiousness of the Mad Cow Disease (BSE) for human beings had been negated for many years, in 1996 British studies confirmed suspicions that a cross-infection is possible after all. Cf. Reporting on related experiments and studies done in: NZZ dated 24-10-1996 No. 248, p. 20 and NZZ dated 4-12-1997, No. 282, p. 20.

would then have the right to prohibit the import of certain products on ethical grounds, for example.[85]

III.1.10 The Agreement on Subsidies and Countervailing Measures

III.1.10.1 The Present Regulations on Subsidies

In addition to GATT Articles VI and XVI, the most significant provisions regarding WTO subsidies are found in the Agreement on Subsidies and Countervailing Measures. In contrast to the agreement negotiated during the Tokyo Round, the WTO Agreement is clearly structured. The first section comprises a terminological definition of the subsidies. The second, third and fourth sections deal with prohibited, actionable and non-actionable subsidies. The fifth section is dedicated to countervailing measures, and sections six to nine elaborate the Committee for Subsidies, the rules of notification, the special treatment for developing countries, and the procedure of dispute settlement.

■ **The Definition of Subsidies**

The presently applicable WTO Agreement on Subsidies and Countervailing Measures for the first time defines the term 'subsidy' in the history of GATT. In accordance with Article 1.1 of the Agreement, a subsidy is "a financial contribution made by a government or public body in the territory of a member" or "any form of income or price support" which, according to GATT Article XVI, either has the effect of increasing the export of a product from the territory of the country granting the subsidy, or hinders the import of a product into its territory.[86] Financial remuneration can be made in the form of:

- direct transfers of capital such as general contributions, credits, capital increases, or credit guarantees
- a forfeit or waiver for government revenue due, such as taxes; the exemption of exported goods from levies or tariffs and the refund of taxes or tariffs for exported goods are not considered to be subsidies if the exemption or refund does not surpass the levies imposed upon domestic consumption (refund of value added tax upon export of goods, e.g.)[87]

85 Analogous to this, a change in attitude towards environmental protection is noticeable.

86 As a rule in economic law, the term 'grant' is used, as put by VOLKMAR GÖTZ, in order to avoid a narrowing of definition to only comprise subsidies in the form of benefits (payments or goods and services), and to also include 'relief subsidies' which serve to reduce cost burdens. GÖTZ (1998), H III Rz 1.

87 Cf. Footnote 1 of Article 1.1(a) of the Agreement on Subsidies and Countervailing Measures.

- the making available of goods or services by a government to an extent which surpasses the general infrastructure; this also includes excessive purchases of merchandise by the state[88]
- a federal contribution to a trust fund or an appeal made to a private body to make such a payment.[89]

Articles 1.2 and 2 of the Agreement differentiate between prohibited subsidies, actionable subsidies, and non-actionable subsidies. Prohibited and actionable subsidies are termed 'specific' subsidies. Non-actionable subsidies cannot be challenged, meaning they are permitted. In accordance with Article 2 of the Agreement, a subsidy is specific if it is directly connected to a certain enterprise, industrial sector, or a group of enterprises or industrial sectors in a certain region within the jurisdiction of the responsible authorities. On the other hand, a subsidy is non-specific, meaning it is permitted if, in compliance with Article 2.1(b) of the Agreement, objective criteria or conditions for qualification and amount of the subsidy are determined; and if, according to Footnote 2 of Article 2.1(b), the criteria and conditions are neutral and "do not favour any specific enterprise over another, and are economically orientated with concern to their nature and horizontal application, such as number of employees and size of the enterprise". The reference to the number of employees and size of the enterprise in specialized literature is interpreted to mean that state subsidies for small and medium-sized enterprises should not be considered 'specific' and therefore are not prohibited.[90]

Although the general definition of subsidies in Article 1 is very clear, the stipulations in Article 2 regarding the specific nature of subsidies are quite unclear. Correspondingly, respective consultations and cases for the dispute settlement body are frequent at the WTO. Over the first four years since the coming into power of the Agreement on Subsidies and Countervailing Measures, around 30 cases amounting to one fifth of all dispute settlement requests have been related to subsidy issues. Among others, the subject of consultations and disputes has included Australia's special credits favouring leather for the automobile industry; tax benefits for the export industries in Belgium, France, Greece, Great Britain, Ireland and the Netherlands; the American special tax on foreign sales corporations; and Brazil's support measures for its automobile industry exports, etc.[91]

88 In this context the question arises as to whether purchases of relief goods, which the country sends abroad in the form of aid programs, are also to be included here.

89 A detailed overview of the term 'federal grant' is found in: GÖTZ, (1998), H III.

90 Cf. ZAMPETTI, (1995), p. 12, e.g.

91 Cf. WTO Internet, wto.org./wto/dispute/bulletin.htm.

■ Prohibited Subsidies

Article 3 of the Agreement prohibits all subsidies with the exception of those contributions prescribed by the Agreement on Trade in Agriculture which "in fact" entirely depend upon the condition of utilizing domestic goods, or are in connection with this condition. The provision of "in fact being dependent upon the condition" means that the granting of a subsidy is directly connected to export performance, no matter whether this has a legal basis or not. However, the simple fact that an exporting company receives a subsidy does not necessarily imply export subsidies in the sense of the Agreement.[92]

Appendix 1 of the Agreement comprises a list of examples of export subsidies. Among others, it includes the granting of direct subsidies according to export performance; procedures for burdening foreign trade in the form of import premiums; transport and freight fee reductions for exported goods; the availability of federally subsidized unfinished products and service infrastructures for export production; tax benefits in the form of reductions and exemptions; the waiving or refunding of import levies; the granting of export credit guarantees, export credit securities and export credits; as well as "any other burden to the federal budget which represents an export subsidy in the sense of GATT 1944, Article XVI".

■ Actionable Subsidies

In accordance with Article 5 of the Agreement, no contracting party shall "cause negatives effects on the interests of other members" by granting subsidies. The Agreement mentions the following as "negative effects": harm inflicted to a domestic industrial sector due to excessive imports or an excessive pricing pressure; the elimination or reduction of advantages in the sense of GATT; as well as any serious harm or threat towards the interests of another contracting party.

In this connection, the most delicate question pertains to the clarification of the terms "serious injury" and "threat of serious injury".[93] When can harm be considered 'serious'? Article 6 of the Agreement makes a differentiation between serious harm and possible harm. Serious harm has been caused according to Article 6.1 of the Agreement, if the sum of the subsidies exceeds 5 percent of the value of the merchandise, or if the subsidy serves to cover the recurring operating losses of an enterprise (with the exception of single payments for long-term development projects and the prevention of acute social problems), or if the subsidies can be equated with a direct waiver of debts to the state or allowances for covering the repayment of debts. If one of these conditions is established, the harm is automatically considered to be serious, unless the country

92 Cf. Footnote 4 of Article 3.1.(a) in the Agreement on Subsidies and Countervailing Measures.

93 The 'threat of serious harm' is expressly equated with 'serious harm to the interests of another member' in Footnote 13 of Article 5(c).

granting the subsidy is able to prove that the subsidy is not causing any harm. The onus of proof is with the country granting the subsidy.

The stipulations regarding possible harm in Article 6.3 of the Agreement are more difficult to grasp. Serious injury 'may' result, firstly, if the subsidy reduces or displaces the import of like products of another supplier in the market of the member state granting the subsidy; secondly, if the subsidy reduces or displaces the export of like products of another trade partner to a market in a third country (the destination of the products of the subsidizing country); thirdly, if the subsidy leads to significant price undercutting on the part of the subsidized merchandise in comparison with the price of like merchandise of another trade partner on the same market; and finally, if the subsidy leads to a significant increase in market share in comparison to the past three years.

Since the legislative bodies were aware of the difficulty involved in proving a case of "crowding the competition out of the market", or prevention of market access, or price undercutting, they elaborated several basic principles in Items 4 ff. of Article 6 of the Agreement: A case of "crowding the competition out of the market", or "prevention of market access" can be established according to the Agreement on Subsidies and Countervailing Measures, if there are no prohibitions or restrictions for imports from the country lodging the appeal into the market of the third country involved; the government of the importing country does not control a trade monopoly and is not rerouting imports from the country that lodged the appeal into another country for non-commercial reasons; no natural catastrophes have occurred; no strikes are taking place; no arrangements or voluntary restrictions have been made; and no case of non-conformity with standard regulations can be determined.

How can a case of "crowding the competition out of the market" or "prevention of market access" be determined? Based upon the Agreement, crowding out of the market or prevention of market access for imports and exports is involved if a change in the relative market share to the disadvantage of non-subsidized 'like' merchandise can be established over a representative time period of at least one year. According to the Agreement, a "change in the relative market share" means a) an increase of the market share of subsidized merchandise; b) an unchanged market share of subsidized merchandise despite conditions which would have caused a decrease if no subsidies had been granted; or c) a slower decrease of the market share of subsidized merchandise than would have been expected if no subsidies had been granted.[94]

It is no less difficult to determine a case of "price undercutting". In accordance with the Agreement on Subsidies and Countervailing Measures, the determination of price undercutting is

94 Illustrated examples of market-share calculations and evaluations can be found in the dispute Australia vs. France which arose due to allegedly subsidized grain exports to Indonesia, Malaysia and Ceylon (Sri Lanka), cf. GATT (1995), BISD 7th S, p. 46 f.

based upon a price comparison between subsidized and non-subsidized like merchandise available on the same market at the same time.[95]

- **Non-Actionable Subsidies**

As already mentioned, two types of subsidies are permitted, on the one hand, those which are not specific, meaning they are not directly related to a specific enterprise, industrial sector, or a group of enterprises or industrial sectors in a specific region within the jurisdiction of the responsible authorities, and on the other hand, those subsidies which are specific although they fulfil certain conditions. These conditions are listed in Article 8.2 of the Agreement, and they cover both very general and very detailed criteria. For the purpose of an overview, a selection of individual stipulations is given as follows:

- *Grants for research* to be conducted either by enterprises alone or in cooperation with higher education and research centres on a contractual basis and which do not exceed more than 75 percent of the costs of industrial research or 50 percent of the costs of "pre-competitive development activity", and do not purely concern the costs incurred by personnel, instruments, equipment, professional consulting, etc.[96]
- *Grants for disadvantaged regions* within the territory of a contracting partner, under the condition that the region is clearly defined and is actually suffering from economic difficulties (lower than average level of income and higher than average unemployment rate).
- *Grants for supporting the adaptation of existing institutions* to new environmental protection stipulations, provided that this is a singular, non-recurring measure which does not exceed 20 percent of the adaptation costs.

The Committee must be notified regarding those subsidies referred to in Article 8 before they are actually granted by the governments in question. The notification must include all details which enable the remaining contracting parties to evaluate whether the programme conforms with the Agreement.

Figure III.1-8 gives an overview of the various types of subsidies according to the legal system of the WTO:

95 Cf. the examples of such price comparisons in the Panel reports regarding taxing practices in France, Belgium and the Netherlands in: GATT (1977), BISD 23rd S, p. 114 f., 127 f., and 137 f.

96 In the Appendix to Article 8.2(a), additional provisions can be found concerning the non-application of these provisions to the civil aircraft industry, the monitoring of the provisions by the Committee for Subsidies and Countervailing Measures, the exemption for basic research, and the definition of the term 'pre-competitive development' (making prototypes and conducting pilot projects).

Figure III.1-8

Classification of Subsidies in the WTO

<table>
<tr><td colspan="3">General Definition of Subsidy
• Financial contribution made by a government or public body, or
• any form of income or price support,
which directly or indirectly increases the export of goods and services, or reduces the import of goods and services. The stipulations of the Agreement on Agriculture apply to trade in agriculture.</td></tr>
<tr><td colspan="2">Specific Subsidy
Subsidies related to an enterprise, industry, or group of enterprises or industries in a certain region subject to the jurisdiction of the authorities.</td><td>Non-specific Subsidy
Subsidies that are neutral, meaning they do not favor any specific enterprise or group of enterprises.</td></tr>
<tr><td>Prohibited Subsidy
• dependent on export performance (favoring export)
• dependent on domestic consumption (favoring domestic production)</td><td>Actionable Subsidy
not disadvantageous to the interests of other members and not seriously harming the industries of other members</td><td>Non-actionable Subsidy
• specific subsidies for research & development as well as regional and environmental contributions
• non-specific subsidies, i.e. neutral contributions</td></tr>
</table>

III.1.10.2 Dispute Settlement Procedure

Articles 4, 7 and 9 of the Agreement on Subsidies and Countervailing Measures include provisions for cases where there is reason to presume that a country is unjustifiably granting subsidies, or where subsidies are causing damage difficult to repair. If such is the case, the contracting party concerned has the right to request consultations with the country granting the subsidies. If a common solution to the problem has not been found before a certain deadline (the individual deadlines are listed in the following table), the matter can be brought before the Dispute Settlement Body (DSB) in the case of prohibited and actionable subsidies, or passed on to the Committee in the case of non-actionable subsidies. The Dispute Settlement Body has to entrust a Panel to make a report. If prohibited subsidies are involved, the Panel 'can' appeal to the Permanent Group of Experts (PGE), however if it reverts to this possibility, it must accept the conclusions of the Permanent Group of Experts as binding. The final report of the Panel is forwarded to the DSB for approval. An appeal may be filed against the Panel report. If the appeal is rejected, the country granting the subsidy is called upon to accordingly change its practices of granting subsidies. If the country granting the subsidies does not comply with the decision made by the Dispute Settlement Body, the DSB will empower the country that filed the complaint to employ countervailing measures. The same applies to non-actionable subsidies, if the Committee report is rejected (i.e., in the case of a Committee decision ruling that the subsidies are not permitted contrary to former premises). The details of the various procedures are summarized in Figure III.1-9 according to the type of subsidy.

Articles 10 ff. of the Agreement on Subsidies and Countervailing Measures refer to GATT Article VI (anti-dumping and countervailing duties). They describe the introduction of the procedure and the following evaluation; define the evidence and information required; include the rules for consultation procedures; define the guidelines for calculating the amount of the subsidy according to the advantage for the recipient, as well as determine the degree of damage done; and clarify the term "domestic industrial sector". Furthermore, the Agreement differentiates between temporary measures and definitive countervailing duties. Temporary measures may only be taken if an investigation has actually been initiated, public notification has taken place, and the parties involved have had sufficient opportunity to provide information and express their views on the matter. A temporary measure may not be implemented earlier than 60 days after initiation of the investigation, and it may not exceed a period of four months.

Figure III.1-9

Procedures for Suspected Non-Conformity of Subsidies

<table>
<tr><th>Prohibited Subsidy
(Article 4)</th><th>Actionable Subsidies
(Article 7)</th><th>Non-actionable Subsidies
(Article 9)</th></tr>
<tr><td colspan="3">If there is reason to presume that a subsidy - be it prohibited, actionable or non-actionable - is being unjustly granted or is causing damage that will be difficult to rectify, then the country affected can request consultations with the country granting the subsidies.</td></tr>
<tr><td>If no common solution found within 30 days, passed on to DSB</td><td>If no common solution found within 60 days, passed on to DSB</td><td>If no common solution found within 60 days, passed on to DSB</td></tr>
<tr><td colspan="2">Establishment of a Panel by the DSB:</td><td rowspan="8"></td></tr>
<tr><td>Possible consultation of PGE (PGE conclusions are binding)</td><td></td><td>Final report made by Committee in 120 days (clarification of whether subsidy non-actionable).</td></tr>
<tr><td colspan="2">Panel report circulated:</td></tr>
<tr><td>in 90 days</td><td>in 120 days</td></tr>
<tr><td colspan="2">Acceptance of Panel report by DSB within 30 days unless unanimously rejected or appealed

Right to appeal within 60 days following circulation of the report</td></tr>
<tr><td>Appellate decision within 30-60 days</td><td>Appellate decision after 60 days or more</td></tr>
<tr><td colspan="2">DSB Ruling regarding appellate decision within 20 days</td></tr>
<tr><td colspan="3">If ruling is not followed, power is granted to take counter-measures:</td></tr>
<tr><td>after predetermined deadline</td><td>after 6 months</td><td>after 6 months</td></tr>
</table>

The decision to impose a definitive countervailing duty is made by the authorities of the country which is disadvantaged by the subsidy. This country must ensure that all trade partners granting subsidies are treated equally (principle of equal treatment). The countervailing duty may not be higher than the subsidy - analogous to anti-dumping duties. According to Article 21, the countervailing duty is only imposed for as long as necessary and to the extent "necessary for rendering ineffective the harmful subsidy". Regardless of all other regulations, the countervailing

duty must be lifted at the latest five years after it has been imposed, unless the authorities responsible for the countervailing duty have determined of their own accord that lifting the countervailing duty would lead to a prolongation or continuation of the subsidy and the harm inflicted on the economy.

■ The Position of Developing Countries

The position of developing countries can be summarized in *three items* elaborated in Article 27 of the Agreement on Subsidies and Countervailing Measures.

Item 2 of Article 27 of the Agreement stipulates that *certain developing countries* are *completely exempt* from the provisions on subsidies. Based upon Appendix VII of the Agreement, this would include those countries designated by the United Nations as "least developed", as well as all those countries having a national product of less than US$ 1000 per capita/per annum. Many African countries are expressly mentioned in this connection along with Bolivia and Nicaragua.

Further preference is allotted the developing countries according to Articles 27.3 ff. in the form of long transitional periods prior to the Agreement on Subsidies and Countervailing Measures coming into force. The provisions on subsidies only apply for developing countries after a period of five to eight years. The period of five years applies to those provisions for subsidies which are connected with the domestic consumption of merchandise, and the period of eight years applies to the remaining provisions for subsidies. In founded cases, these deadlines can be prolonged in agreement with the Committee. During transitional periods, the subsidies may not be increased, on the contrary, they are to be reduced wherever possible. If a developing country achieves a competitive status with regard to certain merchandise, the Agreement stipulates that those countries mentioned in the Appendix reduce their subsidies within eight years, and the remaining countries reduce theirs within two years. "Export competitiveness" is established according to the Agreement, when the export quota of the respective merchandise "achieves a world trade quota of at least 3.25 percent" over a period of two successive years.

Developing countries have also been given a special status regarding the application of countervailing measures. The contracting members, which are affected by the actionable subsidies these countries grant, may not undertake any countervailing measures. Article 27.8 of the Agreement is based upon the assumption that subsidies granted by developing countries would not inflict any serious damage in the sense of the Agreement. However such restraint is not called for, in accord with Article 27.9 of the Agreement, if the subsidy annuls or limits tariff concessions or other GATT obligations in a manner "which hard-presses or hinders the imports of like goods from another member into the market of the developing country that grants the subsidy, or which damages a domestic industrial sector in the market of an importing member". In addition, any investigation of countervailing duties is to be discontinued for merchandise originating in a developing country, if the current subsidy does not exceed 2 percent of the value of the merchandise, and the volume of the subsidized imports remains less than 4 percent of the

total imports of like goods, unless the sum of the imports from countries with a quota of less than 4 percent exceeds the quota of 9 percent in total.

■ The Institutions

The administration of the WTO system of subsidies is under the auspices of the Committee on Subsidies and the PGE. The Committee comprises representatives of all member states of the WTO, and the PGE is formed by "five independent persons with a high level of competency". The Committee convenes at least five times annually, whereas the PGE only convenes when the need arises. The main task of the Committee is to advise the members in all matters pertaining to the granting of subsidies and the implementation of countervailing duties. The Committee also plays a special role in dispute settlement with regard to non-actionable subsidies. If the disputing parties do not come to a mutual agreement, the Committee has to compile an arbitration report within 120 days; and if the parties still do not come to a mutual agreement after a period of six months in view of the report, the Committee must rule regarding permission to impose special measures. The system of procedure for the Committee to convene goes back to the 16th of September 1996 and is based upon the rules of the General Council.[97] In the dispute settlement procedure for prohibited and actionable subsidies, the PGE is available to the Panel of the DSB for consultations. Its decisions and proposals are binding for the Panel.

III.1.10.3 The Necessity for Further Negotiations

In the form of the regulations on subsidies, the WTO has made available to the individual contracting parties an instrument for influencing the economic policy of their trade partners. However, each government must weigh its interests between national economic demands and international free trade. This conflict cannot be settled by means of the international regulations on subsidies, regardless of how they are amended. Presently up for discussion are issues regarding the practical area of application and actionability.

The presently valid regulations on subsidies apply to the area of trade in goods. Although trade in services has been the subject of an independent WTO Agreement since the URUGUAY Round, this area has not been covered by GATT Articles VI and XVI or the Agreement on Subsidies and Countervailing Measures. It is understandable that such a construction was chosen after World War II when trade in services only amounted to around 10 percent of trade in goods, however is it surprising that services are still not taken into consideration at a present quota of almost 25 percent. Former delegates to negotiations explain this state of affairs by the fact that it was not possible to include services in the regulations on subsidies prior to concluding the General Agreement on Trade in Services. In the course of the next trade round, it will be absolutely necessary to include subsidies granted for services.

97 Publication of the text of the procedural system in: HUMMER/WEISS, p. 743 f. (English version).

The same question also can be posed regarding investment measures. Based upon Article 1 of the Agreement on Trade-Related Investment Measures (TRIMS), it can be claimed that only those investments related to trade in goods are covered by the regulations on subsidies. Yet, what about investment measures in the services sector? This issue will also have to be dealt with in future negotiations.[98]

The regulations on subsidies in GATT Articles VI and XVI, as well as the Agreement on Subsidies and Countervailing Measures, are limited to commerce and industry in the sector of trade in goods. The text of this Agreement refers to the Agreement on Agriculture with concern to agricultural subsidies. This would mean that a trade sector of particularly great significance in this regard is excluded from the general regulations on subsidies. In the agricultural sector, domestic supports (product-specific price and sales supports, price bonuses, pricing regulations, price guarantees, etc.) and direct export subsidies, are permitted and still continue to play an important role for many countries and many products. If the next trade round succeeds in more profoundly integrating agricultural trade into the general world trade system, it will be absolutely necessary to expand the present GATT regulations on subsidies and the Agreement on Subsidies and Countervailing Measures to include trade in agriculture, as well as abolish the exceptions for subsidies set down in the Agreement on Agriculture.

In summary, it can be concluded that the WTO regulations on subsidies underwent an important process of renewal during the URUGUAY Round, however they will come up for debate again at the next trade round.[99]

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98 Cf. this problem with ZAMPETTI, AMERICO, B. (1995), p. 26.

99 With regard to the discussion on the current problems in international regulations for subsidies, cf. BOURGEOIS (1991); COLLINS-WILLIAMS/SALEMBRIER (1996), p. 5-17; CUNNARE/STANBROOK (1996); GÖTZ (1998), H III ; SENTI (1991), p. 159-170; and ZAMPETTI (1995), p. 5-29.

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III.2 The Agreement on Technical Barriers to Trade and Basic Aspects of the Agreement on the Application of Sanitary and Phytosanitary Measures

Katrin Forgó

III.2.1 Introduction

This paper[1] deals with the Agreement on Techical Barriers to Trade (TBT Agreement) which is of considerable importance within the environmental policy field amongst others. Given some strong links between the said agreement and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) the basic provisions of the latter will also be outlined.

III.2.2 The Relationship between the SPS and TBT Agreements

The SPS Agreement takes precedence over the TBT Agreement. Therefore the following measures applied to protect human, animal or plant life, or health are subject to the SPS Agreement exclusively, namely measures

a) to protect animal or plant life or health from risks arising from the entry, establishment or spread of pests, diseases, disease-carrying organisms or disease-causing organisms;

b) to protect human or animal life or health from risks arsing from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;

c) to protect human life or health from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests;

d) to prevent or limit other damage from the entry, establishment or spread of pests.[2]

In turn all other technical regulations, standards and procedures for assessment of conformity which are not sanitary or phytosanitary measures according to the above definition are covered by the TBT Agreement.[3,4]

1 This paper has been completed in December 1998 (thereafter only minor modifications could be made for reasons of topicality).

2 For the precise definition see Annex A para. 1 lit. a-d SPS Agreement.

3 See Article 1.5 TBT Agreement.

4 It should be added that purchasing specifications prepared by governmental bodies for production or consumption requirements of governmental bodies are not subject to the TBT Agreement, but rather to the Agreement on Government Procurement (see Article 1.4 TBT Agreement).

III.2.3 The TBT Agreement

The TBT Agreement deals with the preparation, adoption and application of binding technical regulations and voluntary standards and the related procedures for assessment of conformity. The obligations laid down in the TBT Agreement vary between technical regulations and standards on the one hand and the competent bodies (central government bodies, local government bodies, non-governmental bodies) concerned on the other hand.[5]

III.2.3.1 The Basic Principles of the TBT Agreement

General Rules on Non-discrimination

The "Most-Favoured-Nation" principle and the principle of "National Treatment", laid down in Article I and Article III GATT respectively, represent central elements of GATT/WTO law. Those principles are also anchored in several provisions of the TBT Agreement.[6]

The Prevention of Unnecessary Obstacles to International Trade

Members shall ensure that technical regulations are not prepared or applied with a view to or with the effect of creating unnecessary obstacles to international trade. For this purpose, technical regulations shall be not more trade-restrictive than necessary[7] to fulfil a legitimate objective, taking into account the risks of non-fulfilment. Such legitimate objectives are, inter alia, national security; the prevention of deceptive practices; the protection of human health or safety; the protection of animal or plant life or health and the protection of the environment.[8] Relevant elements of consideration in the course of the assessment of risks are, inter alia, available

5 This results in a rather complex structure of the TBT Agreement. For reasons of better legibility the following chapter on the basic principles of the TBT Agreement will be structured as follows: In the main text, basically, only the provisions on technical regulations applicable to central government bodies are presented. However, the principles which underpin these provisions are largely reflected in the provisions on technical regulations applicable to local government bodies and non-governmental bodies on the one hand and those on standards on the other hand. In footnotes the respective provisions (which largely correspond to those on technical regulations by central government bodies) will be provided.

6 See Article 2.1. TBT Agreement, Article 3.1. TBT Agreement, Lit. D Code of Good Practice for the Preparation, Adoption and Application of Standards in Annex 3 TBT Agreement, Article 5.1.1 TBT Agreement, Article 7.1 TBT Agreement, Article 8.1 TBT Agreement.

7 This necessity requirement reminds of Article XX (b) GATT. Given that the legitimate objectives laid down in Article 2.2 TBT Agreement refer to matters which could be subsumed to different exception clauses of Article XX (and, in consequence, would be subject to divergent requirements of jusitification – see the respective difference between Article XX (b) and (g) GATT, in particular), the question of the relationship between the TBT Agreement and the GATT gains further importance. For a more detailed analysis compare FORGÓ, KATRIN: Europäisches Umweltzeichen und Welthandel. Grundlagen, Entscheidungsprozesse, rechtliche Fragen, Vienna 1999, p. 260 f.

8 The list of legitimate objectives provided for in Article 2.2 TBT Agreement is not conclusive, but exemplary as can be infered from the wording "inter alia".

scientific and technical information, related processing technology or intended end-uses of products.[9,10]

Therefore, the TBT Agreement does not only prohibit discrimination, but also provides for a conditional prohibition of restriction which reminds of the situation as it prevails within the context of EC law. The significance of the latter as source of inspiration for the interpretation of the TBT Agreement remains questionable. However, to provide some orientation, the relevant EC provisions shall be outlined.

The Free Movement of Goods within the EC

According to Article 28 [30] TEC (Treaty establishing the European Community)[11] quantitative restrictions on imports and all measures having equivalent effect are prohibited between the Member States of the EC, whereby all trading rules enacted by Member States capable of hindering directly or indirectly, actually or potentially, intra-Community trade are to be considered as measures having an effect equivalent to quantitative restrictions.[12]

However, under certain conditions barriers to trade are justified. Article 30 [36] TEC allows for prohibitions or restrictions on imports, exports or goods on grounds of

- public morality, public policy or public security
- the protection of

(i) health and life of humans, animals or plants;

(ii) national treasures possessing artistic, historic or archaeological value;

(iii) industrial and commercial property.

9 See Article 2.2 TBT Agreement.

10 Article 2.2 TBT Agreement provides for the obligations of central government bodies in relation to technical regulations. It is intended that also local government and non-governmental bodies follow these rules: Article 3.1 TBT Agreement provides for the WTO-Members to take such reasonable measure as may be available to them to ensure compliance by the said bodies with the provisions of Article 2 TBT Agreement (with the exception of the obligation to notify as referred to in Article 2 para. 9.2 und para. 10.1 TBT Agreement). Also in relation to standards a corresponding provision can be found, according to which standardizing bodies shall ensure that standards are not prepared, adopted or applied with a view to, or the effect of, creating unnecessary obstacles to international trade. However, contrary to the case of technical regulations, there is no explicit provision stating that standards should be not more trade-restrictive than necessary to fulfil legitimate objectives. Even though, the said rule seems to apply also to standards. See Article 4.1 TBT Agreement in conjunction with Lit. E Code of Good Practice for the Preparation, Adoption and Application of Standards in Annex 3 TBT Agreement and TIETJE, CHRISTIAN: "Voluntary Eco-Labelling Programmes and Questions of State Responsibility in the WTO/GATT Legal System", in: Journal of World Trade, Volume 29, Number 5, October 1995, p. 135 f. A similar rule is also laid down in relation to conformity assessment procedures. See Article 5.1.2 TBT Agreement, Article 7.1 TBT Agreement, Article 8.1 TBT Agreement.

11 In the Treaty of Amsterdam, which entered into force on 1st May 1999, the articles have been renumbered. In the following the numbers follow the Treaty of Amsterdam, however, for reasons of better orientation the previous numbers are stated in square brackets.

12 ECJ C-8/74, DASSONVILLE, 1979, 1761, para. 5.

However, such prohibitions or restrictions shall not constitute a means of arbitrary discrimination or a disguised restriction on trade between Member States and have to pass a test of proportionality[13].

From the above restrictions and prohibitions which may be justified under Article 30 [36] TEC, such measures have to be distinguished which are not to be qualified as measures having equivalent effect according to Article 28 [30] TEC. According to the ECJ's jurisdiction (European Court of Justice), obstacles to the free movement of goods within the Community resulting from disparities between the national laws relating to the marketing of the products in question must be accepted in so far as those provisions may be recognised as being necessary in order to satisfy mandatory requirements relating in particular to the effectiveness of fiscal supervision, the protection of public health, the fairness of commercial transactions and the defence of the consumer.[14]

Opposed to Article 30 [36] TEC, the list of mandatory requirements provided for in the Cassis de Dijon Judgement is not exhaustive, as may be inferred from the term "in particular" used by the ECJ. In fact, it can be and has been added to by the ECJ in the past, i.e. the issue of environmental protection[15]. It should be emphasized that also measures on grounds of mandatory requirements have to pass a test of proportionality.

Given some overlaps between Article 30 [36] TEC and the list of mandatory requirements arising from the Cassis de Dijon Judgement, the question as to whether a certain measure may be justified under Article 28 [30] TEC or Article 30 [36] TEC might arise.[16] In this context it should be stressed that the Cassis de Dijon Judgement is only applicable to non-discriminatory measures, i.e. measures which are indistinctly applicable to domestic goods and those from other Member States.

However, according to a more recent judgement of the ECJ, "the application to products from other Member States of national provisions restricting or prohibiting certain selling arrangements is *not* such as to hinder directly or indirectly, actually or potentially, trade between Member States within the meaning of the Dassonville Judgement [...] provided that those provisions apply to all affected traders operating within the national territory and provided that they affect in the same manner, in law and fact, the marketing of domestic products and of those from other Member States."[17] In other words, such

13 Within the course of this test it is assessed whether there is a less trade-restrictive alternative measure through which the respective objective may be achieved as well.

14 ECJ C-120/78, Cassis de Dijon, 1979, 649, para. 8.

15 ECJ C-302/86, Containers for beer and soft drinks, 1988, 4607.

16 The analysis of a measure on grounds of public health is to be based upon Article 30 [36] TEC: "The protection of public health is expressly mentioned amongst the grounds of public interest which are set out in Article 36 and enable a restriction on imports to escape the prohibition laid down in Article 30. In those circumstances, since Article 36 also applies where the contested measure restricts only imports, whereas according to the Court's case-law the question of imperative requirement for the purposes of the interpretation of Article 30 cannot arise unless the measure in question applies without distinction to both national and imported products, it is not necessary to consider whether the protection of public health might also be in the nature of an imperative requirement for the purposes of the application of Article 30." ECJ Joint Cases 1/90 and 176/90, *Aragonesa de Publicidad*, 1991, I-4151, para. 13.

17 ECJ Joint Cases 267/91 and 268/91, KECK, para. 16, emphasis added.

measures have to fulfil only the above mentioned criteria stated in the Keck Judgement[18], but do not have to pass a test of proportionality. However, this rule is restricted to measures which apply indistinctly to domestic goods and those from other Member States.[19] Discriminatory measures, although related to selling arrangements, remain to be subject to Articles 28 [30] and 30 [36] TEC and thus a strict test of proportionality.[20]

International Standards

The TBT Agreement provides for the obligation to use relevant international standards or relevant parts of them as a basis for technical regulations except when such international standards would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued.[21]

Harmonization

With a view to harmonizing technical regulations on as wide a basis as possible, WTO Members shall play a full part in the preparation of international standards by appropriate international standardizing bodies in the case that such standards are for products for which they either have adopted, or expect to adopt, technical regulations.[22] Members shall also give positive consideration to accepting as equivalent technical regulations of other Members, even if these regulations differ from their own, provided that these regulations adequately fulfil the objectives of their own regulations.[23]

18 See the text before fn 17.

19 Given the softened conditions which apply to non-discriminatory measures restricting or prohibiting certain selling arrangements, it is relevant to analyse which provisions may qualifiy as such measures. In the following examples for measures which fall within the KECK-category can be found: (i) a rule which prohibited pharmacists from advertising pharmaceutical products outside pharmacies (C-292/92, HÜNERMUND, 1993, I-6787), (ii) an Italian legislation on the closure of retail outlets on Sundays and holidays (Joint Cases 69/93 and 258/93, PUNTO CASA SpA, 1994, I-2355), (iii) a Dutch rule related to the opening hours of petrol stations (Joint Cases 401/92 und 402/92, Tankstation 't Heukse VOF und J.B.E. BOERMANS, 1994, I-2199), (iv) an Italian rule which reserves the retail sale of manufactured tobacco products to distributors authorized by the state (C-387/93, BANCHERO, 1995, I-4663), (v) a Greek provision which reserves the sale of processed milk for infants in principle exclusively to pharmacies (C-391/92, Processed Milk for Infants, 1995, I-1621).

20 See ECJ C-320/93, LUCIEN ORTSCHEIT, 1994, I-5243.

21 Article 2.4 TBT Agreement. The substance of fn 10 applies accordingly: Also local government and non-governmental bodies are intended to follow these rules (see Article 3.1 TBT Agreement). For the issue of standards see Lit. F Code of Good Practice for the Preparation, Adoption and Application of Standards in Annex 3 TBT Agreement. For the procedures for assessment of conformity see Article 5.4 TBT Agreement, Article 7.1 TBT Agreement, Article 8.1 TBT Agreement. In this context see also Article 9.3 TBT Agreement.

22 Article 2.6 TBT Agreement. The substance of fn 10 applies accordingly: Also local government and non-governmental bodies are intended to follow these rules (see Article 3.1 TBT Agreement). For the issue of standards see Lit. G Code of Good Practice for the Preparation, Adoption and Application of Standards in Annex 3 TBT Agreement. For the procedures for assessment of conformity see Article 5.5 TBT Agreement, Article 7.1 TBT Agreement, Article 8.1 TBT Agreement.

23 Article 2.7 TBT Agreement. The substance of fn 10 applies (with one exception, see below) accordingly: Also local government and non-governmental bodies are intended to follow these rules (see Article 3.1 TBT

III.2.3.2 Publication and Notification Requirements

The TBT Agreement provides for a wide range of publication and notification requirements. In Table III.2-1 some important rules applicable to technical regulations are shown; Table III.2-2 deals with the issue of standards.[24]

Table III.2-1

Publication and notification requirements within the scope of technical regulations

Central Government Bodies	Local Government and Non-governmental Bodies
Wherever a relevant international standard does not exist or the technical content of a proposed technical regulation is not in accordance with the technical content of relevant international standards, and if the technical regulation may have a significant effect on trade of other WTO-Members, Members shall	
	take such reasonable measures as may be available to them to ensure that the said bodies[25]
(i) publish a notice in a publication at an appropriately early stage that they propose to introduce a particular technical regulation.[26]	idem
(ii) notify other Members through the Secretariat of the products to be covered by the proposed technical regulation, together with a brief indication of its objective and rationale, at an appropriately early stage when amendments can still be introduced and comments taken into account.[27]	In general no obligation to notify for non-governmental bodies.[28] No obligation to notify for local government bodies in case of technical regulations of which the technical content is substantially the same as that of previously notified technical regulations of central government bodies of the Member concerned.[29]
(iii) upon request, provide to other Members particulars or copies of the proposed technical regulation.[30]	idem

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Agreement). For the procedures for assessment of conformity see Article 6.1 TBT Agreement, Article 6.2 TBT Agreement, Article 6.4 TBT Agreement, Article 7.1 TBT Agreement, Article 8.1 TBT Agreement. In the area of standards a similar provision lacks. However, in Lit. H Code of Good Practice for the Preparation, Adoption and Application of Standards in Annex 3 TBT Agreement the standardization organisations are requested to make every effort to avoid duplication of, or overlap with, the work of other standardizing bodies. This provision seems to cover also certain aspects of mutual recognition.

24 Moreover, compare also Article 10 TBT Agreement. See also Article 2.5 TBT Agreement. For the procedures for assessment of conformity see Article 5.2.8 and Article 5.6 ff. TBT Agreement.

25 For the following see Art. 3.1 TBT Agreement.

26 See Art. 2.9.1 TBT Agreement.

27 See Art. 2.9.2 TBT Agreement.

28 See Art 3.1 TBT Agreement.

29 See Art 3.2 TBT Agreement.

30 See Art. 2.9.3 TBT Agreement.

(iv)	without discrimination, allow reasonable time for other Members to make comments in writing, discuss these comments upon request, and take into account these written comments and the results of these discussions.[31]	idem
(v)	ensure that all technical regulations which have been adopted are published promptly or otherwise made available.[32]	idem
(vi)	allow a reasonable interval between the publication of technical regulations and their entry into force in order to allow time for producers in exporting Members to adapt their products or methods of production to the requirements of the importing Members.[33,34]	idem

Table III.2-2

Publication and notification requirements applying to standards

Central Government Bodies	Local Government and Non-governmental Bodies
Members	
shall ensure that their central government standardizing bodies accept and comply with the Code of Good Practice[35,36] with the effect that those	shall take such reasonable measures as may be available to them to ensure that local government and non-governmental standardizing bodies in particular accept and comply with the Code of Good Practice[37,38] with the effect that those
(i) publish a work programme containing the standards they are currently preparing and the standards which were adopted in the preceding period, at least once every six months.[39]	
(ii) provide the titles of specific draft standards, upon request, in English, French or Spanish.[40]	
(iii) publish a notice of the existence of the work programme in a publication on standardization activities.[41]	
(iv) indicate in the said work programme for each standard the classification relevant to the subject matter, the stage attained in the standard's development, and the references of any international standards taken as a basis.[42]	

31 See Art. 2.9.4 TBT Agreement.

32 See Art. 2.11 TBT Agreement.

33 See Art. 2.12 TBT Agreement.

34 For the case of urgent problems of safety, health and environmental protection see the provisions of Article 2.10 TBT Agreement.

35 Siehe Annex 3 TBT Agreement.

36 Art. 4.1 TBT Agreement.

37 See Annex 3 TBT Agreement.

38 Art. 4.1 TBT Agreement.

39 See Lit. J para. 1 Code of Good Practice for the Preparation, Adoption and Application of Standards.

40 See idem.

41 See idem.

(v)	notify the existence of the work programme to the ISO/IEC Information Centre in Geneva no later than at the time of its publication.[43]
(vi)	allow a period of at least 60 days for the submission of comments on the draft standard by interested parties before adopting a standard.[44,45]
(vii)	provide, upon request, a copy of a draft standard which it has submitted for comments.[46]
(viii)	take into account the comments received during the period of commenting and reply to comments received through standardizing bodies that have accepted the Code of Good Practice as promptly as possible. The reply shall include an explanation as to why a deviation from relevant international standards is necessary[47]
(ix)	publish a standard promptly, once it has been adopted.[48]
(x)	provide a copy of the most recent work programme or of a standard which it produced.[49]

III.2.3.3 Technical Regulations and Standards in the TBT Agreement

Terms used in the TBT Agreement shall in general have the same meaning as given in the definitions in the ISO/IEC Guide 2: 1991, General Terms and Their Definitions Concerning Standardization and Related Activities. However, this rule does not apply to terms for which a definition in Annex 1 to the TBT Agreement is laid down, amongst these "technical regulation" and "standard". The definition of "standard" in the TBT Agreement raises several questions which relate to some crucial points of the current environmentally oriented debate and shall be discussed in Chapters III.2.3.3.2. and III.2.3.3.3 of this paper. At first, however, two other essential terms, namely "product-related processes and production methods" and "non-product-related processes and production methods" shall be clarified.

III.2.3.3.1 "Product-related Processes and Production Methods" versus "Non-Product-related Processes and Production Methods"

Product-related Processes and Production Methods (PPMs) are production methods which change the characteristics of a product so that it may pollute or degrade the environment when it

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42 See Lit. J para. 2 Code of Good Practice for the Preparation, Adoption and Application of Standards.

43 See idem.

44 This period may be shortened in cases where urgent problems of safety, health or environment arise or threaten to arise. No later than at the start of the comment period, the standardizing body shall publish a notice announcing the period for commenting in a publication of standardization activities. See Lit. L Code of Good Practice for the Preparation, Adoption and Application of Standards.

45 See Lit. L Code of Good Practice for the Preparation, Adoption and Application of Standards.

46 See Lit. M idem.

47 See Lit. N idem.

48 See Lit. O idem.

49 See Lit. P idem.

is consumed or used ("consumption externalities"). Such damage to the environment caused by product-related PPMs would (also) occur in the importing country.[50]

Non-product-related Processes and Production Methods (PPMs) do not change the characteristics of a product. Damage to the environment caused by non-product-related PPMs is not transferred by the product itself. Non-product-related PPMs may lead to environmental degradation in the producing country and/or (in case of pollution spill-overs) in other countries ("production externalities").[51]

The Most-Favoured-Nation principle laid down in Article I GATT and the National-Treatment principle provided for in Article III GATT are based on the concept of "like products" which thus proves to be of crucial importance. The term "like product"[52] which occurs in several provisions of the GATT remains undefined. However, panel reports[53] allow for the conclusion that differences relating to non-product-related PPMs (which do not change the characteristics of a product per definition) do not allow for considering two products to be unalike.

Against this background and with a view to the previous case practice in relation to Article XX GATT it can be stated that – until the so called "shrimp-case" - any differentiated treatment of products, based on differences in the non-product-related PPMs had to be considered to conflict with GATT rules.[54,55] The report of the Appellate Body in the "shrimp-case" is not very clear

50 See STEVENS, C.: "Synthesis Report: Trade and Environment: PPM Issues", in: OECD (Hrsg.): Trade and Environment: Processes and Production Methods, Paris 1994, p. 8.

51 Vgl. STEVENS, C.: "Synthesis Report: Trade and Environment", above FN 50, p. 8.

52 And similar terms, respectively, such as "like commodity" in Art. VI para. 7 GATT or "like merchandise" in Art. VII para. 2 GATT.

53 See in this context in particular Panel Report on "Spain - Tariff Treatment of Unroasted Coffee", L/5135, adopted on 11 June 1981, 28S/102; Panel Report on "Belgian Family Allowances", G/32, adopted on 7 November 1952, 1S/59; Panel Report on "United States - Restrictions on Imports of Tuna", DS21/R, unadopted, 3 September 1991; Panel Report on "United States – Restrictions on Imports of Tuna", DS29/R, unadopted, 16 June 1994; Report on "United States - Measures Affecting Alcoholic and Malt Beverages", DS23/R-39S/206, adopted on 19 June 1992; Panel Report on "United States – Taxes on Automobiles", DS31/R, unadopted, 11 October 1994; Appellate Body Report "Japan – Taxes on Alcoholic Beverages", WT/DS8/AB/R, WT/DS11/AB/R, adopted on 1 November 1996. See also Forgó, Katrin: Europäisches Umweltzeichen und Welthandel, above fn 7, p. 191 ff.

54 See e.g. also HURLOCK, MATTHEW HUNTER: "The GATT, U.S. Law and the Environment: A Proposal to Amend the GATT in Light of the Tuna/Dolphin Decision", in: Columbia Law Review, Vol. 92, June 1992, p. 2127 ff; ESTY, D. C.: Greening the GATT: Trade, Environment, and the Future, Washington DC 1994, p. 49 f and 134; HAUSER, H. and SCHANZ, K. U. Das neue GATT. Die Welthandelsordnung nach Abschluß der URUGUAY-Runde, Munich 1995, p. 265; SENTI, R.: GATT-WTO Die neue Welthandelsordnung nach der URUGUAY-Runde, Zürich 1994, p. 65 f; SORSA, P.: "GATT and Environment", in: The World Economy, Vol. 15, January 1992, p. 121 f.

55 Compare e.g. also the conclusions of D. ESTY: "The differentiation between products and production processes cannot be sustained in an ecologically interdependent world [...] GATT's rules [...] allow a party to limit trade where a product entering its market is deemed to be environmentally damaging or dangerous. But where the product itself is environmentally benign, GATT rules do not permit trade restrictions, no matter how polluting or ecologically unsafe the process for making the product. The emergence of global environmental problems renders this traditional approach to sovereignity outdated. Today, we recognize that it can be of vital

with respect to this highly sensitive point of discussion. However, despite the uncertainties resulting from the unclear language of the said report, it can be suggested that, henceforth, a differentiated treatment of products, based on differences in the non-product-related PPMs seems to be compatible with GATT/WTO rules, provided that the measure in question is covered by a multilateral agreement and is applied between partners to this agreement.[56]

III.2.3.3.2 Questions Related to the Definition of the Term "Standard"

According to Annex I to the TBT Agreement, a "standard" is defined as follows:

> **Standard**
>
> Document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.[57]

A standard is therefore a document which lays down rules, guidelines or characteristics for products or *related processes and production methods*. It may also, as the second sentence of the above mentioned defintion runs, include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a *product, process or production method*.[58]

It is remarkable that the first sentence of the definition speaks of related processes and production methods, while the second refers to process or production methods alone. The current thematic debate focuses on the meaning of the word "related" and the above mentioned difference between the first part of the definition and the second. In particular, it is questionable whether standards relating to non-product-related PPM are covered by the TBT Agreement and, if this answered in the negative, whether these are compatible with the said Agreement.

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importance how products are produced. Pollution and other environmental harms arising from production or manufacturing can have important transboundary or global consequences. Thus GATT rules focussing on "like products" defined in terms of physical characteristics of goods as they appear at the importer's border, are environmentally inadequate. (ESTY, D. C.: Greening the GATT, above fn 54, p. 51 und 105).

56 For a more detailed analysis of Article XX GATT and the related recent case practice see FORGÓ, K.: Europäisches Umweltzeichen und Welthandel, above fn 7, p. 217 ff.

57 See Annex 1 TBT Agreement.

58 Emphasis added.

III.2.3.3.3 The Case of Eco-Labelling

The current debate[59] on the TBT Agreement's scope of application has been heated up by the issue of environmental labelling. The thematic discussion, therefore, to a considerable extent focuses on the said matter. In this context it should be stated that, in general, environmental labelling schemes are based on the concept of life cycle assessment. Therefore, not only product characteristics, but also a product's environmental perfomance in the non-product-related PPM field are decisive for the award of the label.

The assumption that labelling requirements relating to non-product-related PPM are covered by the definition of standard in the TBT Agreement implies that either the traditional concept of "like products" has to be modified or that Litera E has to be considered to be an exception clause to Litera D of the Code of Good Practice for the Preparation, Adoption and Application of Standards[60] (similar to the system resulting from Article I, III and XX GATT). Both interpretations would be remarkable, due to the hitherto steadiness of the traditional concept of "like products", however, the first would even have to be considered revolutionary.

In the current debate the USA[61], in particular, seem to present the point of view that eco-labelling programmes based on a life-cycle-analysis are covered by the TBT Agreement. This opinion is backed by the fact that the second part of the definition of standard does not refer to related processes and production methods. In addition representants of this "school" recall a decision of the TBT-Committee according under which mandatory labelling requirements are covered by the TBT Agreement regardless of the kind information provided on the label.[62] The said decision would imply that the TBT Agreement was applicable also to voluntary eco-labelling schemes.[63]

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59 The analysis of the negotiating history of the TBT Agreement shows that the said Agreement's scope of application has always been a highly sensitive issue. See WTO: Negotiating History of the Coverage of the Agreement on Technical Barriers to Trade with Regard to Labelling Requirements, Voluntary Standards and Processes and Production Methods Unrelated to Product Characteristics, WT/CTE/W/10, G/TBT/W/11, 29 August 1995.

60 A different interpretation according to which Article 2.2 represents an additional requirement to Article 2.1 TBT Agreement can be found in QUICK, REINHARD: "The Agreement on the Technical Barriers to Trade in the Context of the Trade and Environment Discussion", in: BOURGEOIS, JACQUES and BERROD, FRÉDÉRIQUE et al. (ed.): The URUGUAY Round Results. A European Lawyers' Perspective, College of Europe, Brugge, p. 315.

61 See the report on the meeting of the Committee on Trade and Environment, 26-29 February 1996, in: WTO: WTO Trade and Environment Bulletin, n°. 8; WTO Committee on Trade and Environment: Report of the meeting held on 26-29 February 1996, WT/CTE/M/7, 22 March 1996.

62 During the meeting of the TBT-Committee of 31st March 1991 some delegations expressed the need to clarify the relationship between labelling requirements and the provisions of the TBT Agreement. One Member reported the entry into force of a Mexican regulation introducing changes in the labelling of textiles. This regulation had not been notified under the TBT Agreement. According to Mexico the said regulation required that certain textile products bear "commercial information, whether the products were of domestic origin or imported, but it did not establish quality standards and his authorities therefore did not believe that it was a technical regulation within the meaning of Annex 1 of the Agreement." Mexico asked for further clarification of the coverage of the Agreement with respect to labelling requirements.

If, however, it is suggested that measures relating to non-product-related PPM are not covered by the TBT Agreement, two different arguments are thinkable as far as the legal consequences of such an interpretation are concerned. On the one hand the position could be taken that measures outside the TBT Agreement's scope of applicability are subject to the GATT and that, in consequence, the legality of such measures will have to be tested under the GATT.[64,65] On the other hand it could be argued that such measures are illegal, given that they are not covered by the TBT Agreement.[66] There are supporting arguments for both point of views. However, it should be stated that only since the findings in the above mentioned "shrimp-case" a major difference in terms of results between the two above mentioned possible ways of interpretation cannot be excluded. In any case, those arguments supporting the point of view that measures in the field of non-product-related PPM are incompatible with the TBT Agreement seem to be slightly more convincing than others.[67]

Mexico expressed the view that the second sentence of the definition of technical regulation was "illustrative of the first". Therefore, a labelling requirement was subject to the notification obligation only if it contained product specifications.

In October 1992, however, the TBT-Committee adopted the following decision:

"In conformity with Article 2.5 of the Agreement, Parties are obliged to notify all mandatory labelling requirements not substantially based on a relevant international standard and that may have significant effect on trade of other Parties. That obligation is not dependent upon the kind of information which is provided on the label, whether it is in the nature of a technical specification or not."

This decision was confirmed by the WTO TBT-Committee on 14 July 1995. See WTO: Negotiating History of the Coverage of the Agreement on Technical Barriers to Trade, above fn 59, para. 17 ff.

63 According to the EC, the Mexican regulation represented a simple labelling rule while eco-labelling schemes attest conformity with a whole range of criteria. Eco-labels are therefore "marks of conformity". The US replied, however, that also marks of conformity were covered by the second sentence of the definition of "standard".

64 Compare in this context the general interpretative note to Annex 1 A WTO-Agreement.

65 In favour of this interpretation are CHANG, TIETJE and QUICK. SEE CHANG, SEUNG WHA: "GATTing a Green Trade Barrier – Eco-Labelling and the WTO Agreement on Technical Barriers to Trade", in: Journal of World Trade, Volume 31, Number 1, February 1997, p. 148; TIETJE, CHRISTIAN: "Voluntary Eco-Labelling Programmes and Questions of State Responsibility in the WTO/GATT Legal System", above fn 10, p. 137; QUICK REINHARD: "The Agreement on the Technical Barriers to Trade in the Context of the Trade and Environment Discussion", above fn 60, S. 322.

According to thematic reports this point of view is shared by several WTO Members. WTO: Report of the WTO Committee on Trade and Environment to the WTO Ministerial Conference in Singapore in December 1996, 08 November 1996, para. 71.

66 In favour of this interpretation are REGE, the GATT Secretariate and obviously also VÖLKER. REGE, VINOD: "GATT Law and Environment-Related Issues Affecting the Trade of Developing Countries", in: Journal of World Trade, Volume 28, Number 3, June 1994, p. 111; WTO: Negotiating History of the Coverage of the Agreement on Technical Barriers to Trade, above fn 59, para. 3; VÖLKER, E.: "The Agreement on Technical Barriers to Trade", in: BOURGEOIS, J. and BERROD, F. ET AL. (Hrsg.): The URUGUAY Round Results. A European Lawyers' Perspective, College of Europe, Brugge, p. 286 f.

According to reports this opinion is shared by many WTO Members. See WTO: Report of the WTO Committee on Trade and Environment to the WTO Ministerial Conference in Singapore, above fn 65, para. 70.

67 For a more comprehensive analysis see FORGÓ, KATRIN: Europäisches Umweltzeichen und Welthandel, above fn 7, p. 276 ff.

Against this background it becomes clear that the acceptance of the TBT Agreement's applicability to eco-labelling programmes in principle[68] does not remain without considerable effect. In this context also the fact has to be taken into account that, on the condition that the TBT Agreement's applicability to eco-labels is accepted, the rules laid down in the said Agreement will apply to the respective schemes, resulting in a more limited scope of political action.[69] Reservations as to the applicability of the TBT Agreement to eco-labels are therefore comprehensible.

Given the importance which is in general attached to an unscathed life-cycle analysis, certain WTO Members plead for a better incorporation of non-product-related PPM labelling requirements into the framework of the WTO, whereby, also considerable opposition can be noticed, however. In this context, two options have been put forward by the EC in order to accommodate non-product-related PPM labelling requirements, the extension of the TBT Agreement's scope of application and the introduction of a new instrument ("code of conduct on eco-labelling"). Both, however, are disputed to a considerable extent.[70] Another suggestion (also disputed) put forward by Canada aims at interpreting the scope of application in a way covering standards relating to non-product-related PPMs which correspond to multilaterally agreed rules on eco-labelling.[71,72]

A solution of this problem relating to non-product-related PPMs is not in sight.[73] It should be added that the increase of transparency of eco-labelling schemes represents another key issue of the thematic debate.[74]

68 In this respect e.g. Japan seems to take a critical position. WTO Committee on Trade and Environment: Report of the meeting held on 26-29 February 1996, above fn 61, para. 66. In contrast, see Canada's position in WTO: Communication from Canada, WT/CTE/W/21, G/TBT/W/21, 21 February 1996, para. 3, lit. d.

69 See e.g. PAYE, OLIVIER: "La Protection de l'Environnement dans le Système du GATT", in: Revue Belge de Droit International, n° 1, 1992, p. 79.

70 See WTO: Report of the WTO-Committee on Trade and Environment to the WTO Ministerial Conference in Singapore in December 1996, 08 November 1996, para. 75 und 79.

71 WTO: Communication from Canada, above fn 68.

72 With a view to Canada's proposal a critical position has been taken e.g. by the EC, Argentina, Nigeria and the ASEAN countries. See WTO-Committee on Trade and Environment: Non-Paper by the European Community. Item 3 (b), 24 July 1996, para. 10; WTO Committee on Trade and Environment: Report of the meeting held on 26-29 February 1996, above fn 61, paras. 51, 52, 65.

73 In this context the Canadian delegation has stated that, although it might be counterproductive to discuss what the rules were, there might be merit in discussing what the rules should be. Compare the Report of the meeting of the "Committee on Trade and Environment", 21-22 May 1997, in: WTO: WTO Trade and Environment Bulletin, n° 18.

74 See e.g. WTO: US Proposal Regarding Further Work on Transpareny of Eco-Labelling, WT/CTE/W/27, 25 March 1996 and the latest reports on meetings of the Committee on Trade and Environment.

III.2.4 The SPS Agreement

III.2.4.1 Scope of Application

The SPS Agreement applies to all sanitary and phytosanitary measures which may, directly or indirectly, affect international trade.[75] The scope of application of the SPS Agreement is put in more concrete terms in Annex A to the SPS Agreement where the term "sanitary and phytosanitary measure" is defined.[76]

III.2.4.2 The Basic Right to Introduce Sanitary and Phytosanitary Measures

Members have the right to take sanitary and phytosanitary measures, provided that such measures are not inconsistent with the provisions of the SPS Agreement.[77]

III.2.4.3 Basic Obligations and Principles

The Principle of Necessity

The WTO-Members shall ensure that any sanitary or phytosanitary measure be applied only to the extent necessary to protect human, animal or plant life or health. Moreover, any such measure has to be based on scientific principles and is not maintained without sufficient scientific evidence.[78]

In this context the SPS Agreement provides for a legal assumption according to which sanitary or phytosanitary measures conforming to international standards, guidelines or recommendation shall be deemed to be necessary to protect human, animal or plant life or health and presumed to be consistent with the relevant provisions of the SPS Agreement and of GATT 1994.[79] In Annex A to the SPS Agreement the relevant international organisations are put in more concrete terms, namely the Codex Alimentarius Commission for matters related to food safety[80], the International

75 See Article 1.1 SPS-Agreement.

76 See also above chapter III.2.2.

77 See Article 2.1 SPS Agreement.

78 See Article 2.2 SPS Agreement which should constantly be read together with Article 5.1 SPS Agreement. Article 2.2 SPS Agreement informs Article 5.1 SPS Agreement: the elements that define the basic obligations set out in Article 2.2 SPS Agreement impart meaning to Article 5.1 SPS Agreement. See Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 180. See also p. 174 ff.

If a violation of the more specific Article 5.1 SPS Agreement is found such finding can be presumed to imply a violation of the more general provisions of Article 2.2 SPS Agreement. However, given the more general character of Article 2.2 SPS Agreement not all violations of Article 2.2 SPS Agreement are covered by Article 5.1 SPS Agreement. See Appellate Body Report "Australia Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 137.

79 See Article 3.2 SPS Agreement.

80 Within the Codex Alimentarius Commission the adoption of standards is normally done on the basis of a consensus decision. However, if requested a vote may be taken. In this case, a majority decision is required.

Office of Epizootics for issues related to animal health and zoonoses and the Secretariat of the International Plant Protection Convention for matters in the field of plant health. For matters not covered by the above mentioned organisations the SPS Agreement refers to other relevant international organisations, open for membership to all WTO members, as identified by the Committee.[81,82]

Also Article XX(b) GATT refers to the protection of human, animal or plant life or health. On certain conditions the said Article justifies measures which are in contradiction to GATT rules, provided that these measures are necessary to protect human, animal or plant life or health. The term "necessary" remains undefined in the text of the GATT and has been interpreted by a panel as follows: A measure is considered to be necessary in terms of Article XX(b) GATT if there is not any alternative measure which a state could reasonably be expected to employ and which is not consistent or less so with other GATT provisions than the measure concerned.[83] In the SPS Agreement the criterion of necessity is intended to be objectivized by means of the application of scientific principles.[84]

Given the above mentioned points of contact, the relationship between Article XX(b) GATT on the one hand and the SPS Agreement on the other hand is of particular interest and has been outlined by the panel in the hormones case as follows:

(i) As opposed to Article XX(b) GATT, the SPS Agreement does not only apply if a prior violation of a GATT provision has been established.[85]

(ii) The general approach adopted in Article XX(b) GATT is fundamentally different from that adopted in the SPS Agreement. Article XX(b) GATT is not limited to sanitary and phytosanitary measures, but provides for a general exception which can be invoked to justify any violation of another GATT provision. In contrast, the SPS Agreement provides for specific obligations to be met when enacting or maintaining sanitary and phytosanitary measures.[86]

The acceptance of Codex standards is voluntary and their implementation at the national level is the responsibility of the individual Members of the Codex Commission. Due to the SPS Agreement the Codex Alimentarius Commission has gained considerable importance. For a critical analysis compare e.g. HILF, M. and EGGERS, B.: Der WTO-Panelbericht im EG/USA-Hormonstreit, in: EuZW, Volume 18/1997, p. 565.

81 See Article 12 SPS-Agreement.

82 See Annex A para. 3 lit. a-d SPS-Agreement.

83 See PANEL REPORT "Thailand - Restrictions on Importation and Internal Taxes on Cigarettes", DS10/R, 7 November 1990, 37S/200.

84 See p. 174 ff and p. 177 ff.

85 See PANEL REPORT "EC Measures Concerning Meat and Meat Products (Hormones)", WT/DS26/R/USA, 18 August 1997, para. 8.38 and 8.41.

86 PANEL REPORT "EC Measures Concerning Meat and Meat Products (Hormones)", WT/DS26/R/USA, 18 August 1997, para. 8.39.

(iii) The SPS Agreement contains obligations which are not already imposed by the GATT. According to the above mentioned panel report, this conclusion is confirmed in two provisions of the SPS Agreement. First, sanitary and phytosanitary measures which conform to the relevant provisions of the SPS Agreement shall be presumed to be in accordance with the obligations of the Members under the provisions of the GATT 1994 which relate to the use of sanitary and phytosanitary measures, in particular the provisions of Article XX(b) GATT.[87] This implies, as the panel states, that the SPS Agreement imposes at least as many as, and probably even more obligations than, the GATT. Second, sanitary or phytosanitary measures which conform to international standards, guidelines or recommendations shall be deemed to be necessary to protect human, animal or plant life or health, and presumed to be consistent with the relevant provisions of the SPS Agreement and of the GATT.[88] The mention of both agreements in the foregoing provision establishes the SPS Agreement as an agreement which imposes obligations which are different from those imposed by the GATT. However this does not exclude that both agreements might apply in a given factual situation.[89]

The Prohibition of Arbitrary or Unjustifiable Discrimination

The WTO-Members shall ensure that their sanitary and phytosanitary measures do not arbitrarily or unjustifiably discriminate between Members where identical or similar conditions prevail. This prohibition does not only include horizontal, but also vertical discrimination, i.e. discrimination between a state's own territory and that of other Members. Moreover, sanitary and phytosanitary measures shall not be applied in a manner which would constitute a disguised restriction on international trade.[90]

International Standards and the Permissibility of Higher National Standards

87 See Article 2.4 SPS Agreement.

88 See Article 3.2 SPS Agreement.

89 PANEL REPORT "EC Measures Concerning Meat and Meat Products (Hormones)", WT/DS26/R/USA, 18 August 1997, para. 8.40.

90 See Article 2.3 SPS Agreement which has to be seen in conjunction with Article 5.5 SPS Agreement. Article 2.3 SPS Agreement is an important part of the context of Article 5.5 SPS Agreement. Article 5.5 SPS Agreement may be seen to be marking out and elaborating a particular route leading to the same destination set out in Article 2.3 SPS Agreement. See Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 212.

A finding of violation of Article 5.5 will necessarily imply a violation of Article 2.3. Discrimination within the meaning of Article 2.3 SPS Agreement can be established by following the complex and indirect route worked out and elaborated by Article 5.5 SPS Agreement. However, this route is not the only route leading to a finding that an SPS measure constitutes arbitrary or unjustifiable discrimination according to Article 2.3 SPS Agreement. Arbitrary or unjustifiable discrimination in the sense of Article 2.3 SPS Agreement can be found to exist without any examination under Article 5.5 SPS Agreement. See Appellate Body Report "Australia-Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 252.

The WTO-Members shall base their sanitary or phytosanitary measures on international standards, guidelines and recommendation, where they exist.[91,92] However, measures which result in a higher level of sanitary or phytosanitary protection than would be achieved by measures based on the relevant international standards may be introduced if there is a scientific justification[93], to be demonstrated within the course of a risk assessment procedure according to Article 5 SPS Agreement.[94,95] As provided in Article 5.1 SPS Agreement, sanitary and

91 See Article 3.1 SPS-Agreement.

92 Article 3.1 SPS Agreement obliges the WTO-Members to base their sanitary and phytosanitary measures on international standards, while Article 3.2 SPS Agreement speaks of sanitary or phytosanitary measures which conform to international standards and shall therefore be deemed to be consistent with the SPS Agreement and the GATT. In Article 3.3 SPS Agreement the term "based on" is used again. In the hormones-case, the Panel had assumed that the terms "based on" and "conform to" were identical in meaning. This conclusion has been reversed by the Appellate Body, stating that the two terms in question did not mean the same thing. See Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 160 ff.

93 See Article 3.3 SPS Agreement.

94 It is noteworthy that the text of Article 3.3 SPS Agreement is fairly unclear. According to the said Article measures which result in a higher level of protection than those based on international standards are permissible (i) "if there is a scientific justification or (ii) as a consequence of the level of sanitary or phytosanitary protection a Member determines to be appropriate in accordance with the relevant provisions of paragraphs 1 through 8 of Article 5". However, in practice the mention of two means of justification in Article 3.3 SPS Agreement remains without any effect, given the fact that national measures stricter than those based on international standards will always have to comply with Article 5.1 SPS Agreement. According to the Appellate Body in the hormones-case, this conclusion is confirmed in two provisions of the SPS Agreement. First, the last sentence of Article 3.3 SPS Agreement requires that all measures which result in a higher level of protection be not inconsistent with any other provision of the SPS Agreement. The term "any other provision of this Agreement" would textually include Article 5 SPS Agreement. Second, the footnote to Article 3.3 SPS Agreement defines "scientific justification" as an "examination and evaluation of available scientific information in conformity with relevant provisions of [the SPS-]Agreement". According to the Appelate Panel's report the said "examination and evaluation" would appear to partake of the nature of the risk assessment required in Article 5.1 and defined in paragraph 4 of Annex A of the SPS Agreement. See Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 173 ff.

95 Annex A para. 4 SPS Agreement defines a risk assessment as follows:

The evaluation of the likelihood of entry, establishment or spread of a pest or disease within the territory of an importing Member according to the sanitary or phytosanitary measures which might be applied, and of the associated potential biological and economic consequences; or the evaluation of the potential for adverse effects on human or animal health arising from the presence of additives, contaminants, toxins or disease-causing organisms in food, beverages and feedstuffs.

Annex A para. 4 SPS Agreement therefore defines two types of risk assessment. While the first type of risk assessment (Annex A para. 4, first part) is relevant in the so-called salmon-case, the second (Annex A para. 4, second part) applied to the hormones-case.

The first type of risk assessment comprises the following factors: (i) the identification of the diseases whose entry, establishment or spread a Member wants to prevent within its territory, as well as the potential biological and economic consequences associated with the entry, establishment or spread of these diseases; (ii) the evaluation of the likelihood of entry, establishment or spread of these diseases, as well as the associated potential biological and economic consequences; (iii) the evaluation of the likelihood of entry, establishment or spread of these diseases according to the SPS measure which might be applied.

The second type of risk assessment is substantially different from the first which has been outlined in the preceeding paragraph. While the second requires only the evaluation of the potential for adverse effects on

phytosanitary measures have to be based on an assessment, as appropriate to the circumstances, of the risks to human, animal or plant life or health. The said Article does however not insist, as stated by the Appellate Body in the hormones-case, that a WTO-Member that adopts a sanitary measure shall have carried out its own risk assessment.[96] Moreover, according to the said Appellate Body a panel is authorized only to determine whether a given SPS measure is "based on" a risk assessment[97], which shall be considered to be the case if there is an objectice relationship between a SPS measure and a risk assessment.[98] The results of a risk assessment must sufficiently warrant and support a SPS measure at stake.[99] This does however neither imply, the said Appellate Body continues, that a risk assessment has to come to a "monolithic conclusion" nor that it has to embody only the view of the majority of the relevant scientific community.[100] In addition, the admissibility of certain measure may not be dependent on a certain minimum magnitude of risk.[101,102,103]

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human or animal health, the first type demands an evaluation of the likelihood of entry, establishment or spread of a disease, and of the associated potential biological and economic consequences.

A risk assessment of the first type must therefore, as stated by the Appellate Body in the salmon-case, evaluate (i) the likelihood (i.e. probability) of entry, establishment or spread of diseases and associated biological and economic consequences and (ii) the likelihood (i.e. probability) of entry, establishment or spread of diseases according to the SPS measures which might be applied. See Appellate Body Report "Australia - Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 120 ff.

96 See Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 190.

97 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 186.

98 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 189.

99 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 193.

100 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 174.

101 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 186.

102 This is also confirmed for the first type of risk assessment according to Annex I para. 4 (first part) SPS Agreement which calls for the evaluation of probabilities (see fn 95). See Appellate Body Report "Australia - Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 124.

103 In this context it needs to be emphasized that the Appellate Body in the salmon-case notes that it is important to distinguish between the evaluation of a "risk" in a risk assessment and the determination of the appropriate level of protection. The "risk" evaluated in a risk assessment must be an ascertainable risk; theoretical uncertainty is not the kind of risk which, under Article 5.1 SPS Agreement, is to be assessed. This does however not exclude that a Member determines its own appropriate level of protection to be "zero risk". See Appellate Body Report "Australia-Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 125.

In the assessments of risks the WTO-Members shall take into account certain factors which are laid down in Article 5.2 SPS Agreement (it is specifically mentioned that in assessing the risk to animal or plant health also certain economic factors[104] shall be taken into account[105]):

(i) relevant inspection, sampling and testing methods;

(ii) prevalence of specific diseases or pests;

(iii) existence of pest- or disease-free areas;

(iv) relevant ecological and environmental conditions;

(v) quarantine or other treatment.

According to the report of the Appellate Body in the hormones-case the listing of factors that may be taken into account in a risk assessment is not exhaustive. In addition, not only matters susceptible of quantitative analysis may form part of a risk assessment. The risk that is to be evaluated in a risk assessment under Article 5.1 SPS Agreement, the Appellate Body in the hormones-case continues, is not only risk ascertainable in a science laboratory operating under strictly controlled conditions, but also risk in human societies as they actually exist, in other words, the actual potential for adverse effects on human health in the real world where people live and work and die.[106]

Consistency

The WTO-Members shall avoid arbitrary or unjustifiable distinctions in the levels they considers to be appropriate in different situations, if such distinctions result in discrimination or a disguised restriction on international trade.[107] A violation of this provision must show the presence of three distinct elements which are cumulative in nature[108,109]:

(i) A Member has adopted its own appropriate levels of sanitary protection in several different situations. According to the Appellate Body's report in the hormones-case, the situations exhibiting differing levels of protection have to present some common element or elements sufficient to render them comparable. If the situations proposed to be examined were

104 Namely, (i) the potential damage in terms of loss of production or sales in the event of the entry, establishment or spread of a pest or disease; (ii) the cost of control or eradiction in the territory of the importing Member; (iii) the relative cost-effectiveness of alternative approaches to limiting risks.

105 See Article 5.3 SPS Agreement.

106 Literal quotation. Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 187.

107 See Article 5.5 SPS Agreement.

108 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 215.

109 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 214.

totally different from one another, they would not be rationally comparable and the differences in levels of protection could not be examined for arbitrariness.[110]

(ii) Those levels of protection exhibit arbitrary or unjustifiable differences in their treatment of different situations.

(iii) The said arbitrary or unjustifiable differences result in discrimination or a disguised restriction of international trade. The answer to the question whether or not certain arbitrary or unjustifiable differences do in fact result in discrimination or disguised restriction on international trade must be sought in the circumstances of each individual case.[111]

As "warning signals" for the existence of a disguised restriction on international trade the following factors may serve: (i) the arbitrary or unjustifiable character of the differences in levels of protection; (ii) the substantial character of these differences; and (iii) the finding of inconsistency of a certain measure with Article 5.1 SPS Agreement.

Furthermore, specifics of the decision process related to a certain measure in question and the kind of measures which apply to the internal movement of goods within the relevant state may serve as "additional factors" to come to the conclusion whether or not to speak of a disguised restriction on international trade.[112]

The Obligation to Use the Least Trade-Restrictive Measure

According to Article 5.6 SPS Agreement, the WTO-Members shall ensure that such measures are not more trade-restrictive than required to achieve their appropriate level of sanitary or phytosanitary protection, taking into account technical and economic feasibility. According to a footnote attached to Article 5.6 SPS Agreement a measure is not more trade-restrictive than required unless there is another measure, reasonably available taking into account technical and economic feasibility, that achieves the appropriate level of sanitary and phytosanitary protection and is significantly less restrictive to trade. The Appellate Body in the salmon-case further states that a measure is more trade restrictive than required if there is an alternative measure which (i) is reasonably available taking into account technical and economic feasibility; (ii) achieves the Member's appropriate level of sanitary or phytosanitary protection; and (iii) is significantly less

110 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 217.

111 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 240.

112 Appellate Body Report "Australia - Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 161 ff.

restrictive to trade than the SPS measure contested. The above mentioned elements are cumulative in nature.[113]

It needs to be emphasized that the "appropriate level of protection" may not be implied from an existing SPS-measure in question. The level of protection achieved by a certain measure on the one hand and the "appropriate level of protection" on the other hand need to be distinguished. The determination of the appropriate level of protection, as stated by the Appellate Body in the salmon-case, is an element in the decision making process which logically precedes and is separate from the establishment or maintenance of a SPS-measure. The SPS Agreement, the Appellate Body continues, therefore contains an implicit obligation for the Members to determine the appropriate level of protection, whereby there is not any obligation to determine the appropriate level of protection in quantitative terms. The answer to the question whether the "appropriate level of protection" might be achieved by an alternative measure is therefore to be sought by analysing whether any alternative measure meets the appropriate level of protection as determined by the Member concerned, rather than the level of protection achieved by a certain measure at issue.[114]

The Precautionary Principle

In cases where relevant scientific evidence is insufficient for the purposes of a risk assessment the adoption of sanitary or phytosanitary measures on a provisional basis is permissible according to Article 5.7 SPS Agreement. However, according to the report of the Appellate Body in the hormones-case, Article 5.7 SPS Agreement does not exhaust the relevance of the precautionary principle. The latter is also reflected in the sixth paragraph of the preamble[115] and in Article 3.3[116] SPS Agreement. A panel may and should, as stated in the above mentioned report, bear in mind that responsible, representative governments commonly act from perspectives of prudence and precaution where risks of irreversible damage to human health are concerned. However, the principle has not been written into the SPS Agreement as a ground or justifying SPS measures that are otherwise inconsistent with the said Agreement. The precautionary principle does not by itself and without a clear textual directive to that effect, as the Appellate Body in the hormone-case continues, relieve a panel from the duty of applying the normal (i.e. customary international law) principles of treaty interpretation in reading the provisions of the

113 Appellate Body Report "Australia - Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 194.

114 Appellate Body Report "Australia - Measures affecting importation of salmon", WT/DS18/AB/R, 20 October 1998, para. 200 ff.

115 The relevant text runs as follows: Desiring to further the use of harmonized sanitary and phytosanitary measures [...] without requiring Members to change their appropriate level of protection of human, animal or plant life or health.

116 On certain conditions Article 3.3 SPS Agreement allows for the introduction or maintenance of national measures stricter than those based on international standards.

SPS Agreement.[117,118] According to the said Appellate Body, it may however not be excluded that the precautionary principle represents a principle of customary international law at least within the field of international environmental law.[119]

Mutual Recognition

Sanitary or phytosanitary measures of another WTO-Member which differ from own measures or those used by other Members shall be accepted as equivalent, if the exporting Member objectively demonstrates to the importing Member that its measures achieve the appropriate level of protection of the importing Member. For this purpose, reasonable access shall be given, upon request, to the importing Member for inspection, testing and other relevant procedures.[120]

Adaption to Regional Conditions

The WTO-Members shall ensure that their sanitary or phytosanitary measures are adapted to the sanitary or phytosanitary characteristics of the area from which the product originated and to which the product is destined.[121]

Transparency and Other Important Provisions

The SPS Agreement comprises a large number of transparency provisions which include notification procedures and are laid down in Annex B SPS Agreement. Annex C SPS Agreement deals with control, inspection and approval procedures. Furthermore, Article 13 of the SPS Agreement obliges the Members of the WTO to formulate and implement positive measures and mechanisms in support of the observance of the provisions of the SPS Agreement by other than central government bodies. In addition, Members shall not take any measures which have the effect of, directly or indirectly, requiring or encouraging amongst others non-governmental entities or local government bodies to act in a manner inconsistent the SPS Agreement. Members shall also ensure that they rely on the services of non-governmental entities for implementing sanitary or phytosanitary measures only if these entities comply with the provisions of the SPS Agreement.

117 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 124.

118 See also Article 3.2 Understanding on Rules and Procedures governing the Settlement of Disputes.

119 Appellate Body Report "EC measures concerning meat and meat products (hormones)", WT/DS26/AB/R, WT/DS48/AB/R, 16 January 1998, para. 123.

120 See Article 4.1 SPS Agreement.

121 See Article 6.1 SPS Agreement.

III.2.5 Conclusions

III.2.5.1 The Relevance of International Standards

In both the TBT and SPS Agreements the conformity and accordance respectively of national rules with international standards results in certain legal effects. Technical regulations which are prepared, adopted or applied for one of the legitimate objectives explicitly mentioned in Article 2.2 TBT Agreement and which are in accordance with relevant international standards shall be rebuttably presumed not to create an unnecessary obstacle to international trade.[122] Sanitary and phytosanitary measures which conform to international standards, guidelines or recommendations shall be presumed to be consistent with the relevant provisions of the SPS Agreement and of GATT 1994.[123] National measures which are not in accordance with and do not conform to international standards respectively therefore require some further justification. Within the scope of the SPS Agreement such justification needs to be demonstrated by a risk assessment. The relevant procedures have been interpreted by the Appellate Body in the hormones-case in a rather "soft" way, opposed to the previous Panel report which called for a relatively strict regime. However, measures which do not conform to international standards will nevertheless face greater difficulties due to the very existence of a risk assessment requirement alone. Therefore, it seems to be reasonable to pay specific attention to the factors set out in the following sub-chapters.

What is an International Standard and by whom are such Standards defined?

Given the relevance of international standards[124] within the framework of the TBT and the SPS Agreements, the question which standards have to be considered to be "international" proves to be of great importance. With reference to certain important policy areas covered by the SPS Agreement the relevant international organisations are laid down (Codex Alimentarius Commission, International Office of Epizootics, Secretariat of the International Plant Protection Convention). The TBT Agreement lacks any similar provision[125] - the matter is thus in particular highly disputed.[126] However, also the SPS Agreement provides for a general reference to "other relevant international organizations" as identified by the Committee (Article 12 SPS Agreement) in areas not covered by the above mentioned organisations. Specific attention therefore has to be

122 See Article 2.5 TBT Agreement.

123 See Article 3.2 SPS Agreement.

124 See also the "risk assessment techniques developed by the relevant international organizations" in Article 5.1 SPS Agreement.

125 Annex 1 para. 4 TBT Agreement only defines an international body as a body whose membership is open to the relevant bodies of at least all Members.

126 See e.g. the report on the meeting of the Committee on Trade and Environment, 21-22 May 1996, in: WTO: WTO Trade and Environment Bulletin, n° 18.

paid to the decision making process related to the determination of international organisations in terms of the TBT and the SPS Agreements.

The Decision-making Process within International Organisations

Various scientific contributions deal with the increasing relevance of international standardization organisations within the EC-law context and certain problems related to it.[127] Within the WTO, a situation might be found which is – at least to some extent – comparable with that of the EC. Legal policy problems related to these developments may not be discussed within the framework of this paper. However, it shall be emphasized that the decision-making process within the relevant international organisations proves to be of crucial importance, given the fact that this is the moment where the decision on the substance of an international standard is taken.

III.2.5.2 The Scientific Backing of Measures

Regardless of any WTO-law implications, a high degree of objectivity of measures is considered to be positive. In principle, compliance with the WTO-rules on risk assessment should be sought, not only to avoid WTO-legal problems, but also for internal and "intrinsic" reasons.

III.2.5.3 Harmonisation and Mutual Recognition within the Field of Technical Barriers to Trade

The fact that GATT/WTO-law, in principle, prohibits sanctioning non-product-related PPMs lies at the heart of a worldwide discussion. However, criticism referring to the priority of economic interests over ecological and social considerations is too simplistic. The possibility to discriminate on the basis of differences in the non-product-related PPMs carries with it the danger of protectionism, eco- or social imperialism and the export of bad policy. Diverging conditions limit the reasonable use of unilateral and harmonizing strategies.

The question of legitimizing process oriented standards or technical regulations must be seen in the context of conflicting aims and interests. On the one hand economic disadvantages related to environmental and social protection to be borne by entrepreneurs should not lead to competitive incapacity. In addition, "environment", as stated by some, represents a global good; a state may therefore not be entirely free when designing its process-oriented environmental policy. On the other hand diverging potentials and priorities in different states have to be taken into account.

Apart from various "unilateral" strategies there are basically two co-operative strategies envisageable in order to integrate process-oriented standards and technical regulations respectively within the framework of the WTO: harmonisation and mutual recognition, whereby

127 Compare e.g. GRILLER, ST.: Europäische Normung und Rechtsangleichung, Vienna 1990; RÖNCK, R.: Technische Normen als Gestaltungsmittel des Europäischen Gemeinschaftsrechts, Berlin 1995.

each concept might take a different shape. Within the field of eco-labelling, for example, various concepts of mutual recognition are currently under discussion, e.g.:

(i) A product which meets the requirements of the exporting country shall be considered to fulfil also the relevant eco-labelling criteria of the importing state.

(ii) The concept of mutual recognition is limited to the area of non-product-related PPM. The life-cycle analysis (LCA) is split into two parts, "cradle to export-border" and "import-border to grave". The first part focusses on the priorities of the exporting state, while the second takes into account the interests of the importing state.

(iii) The concept of mutual recognition is limited to the mutual recognition of test results.[128]

The concept outlined under point (ii) seems to be a concept which fits the traditional logics of GATT/WTO law and might therewith represent a valuable compromise to overcome the current blockages to the negotiation process.[129] However, the implementation of such a system might prove to be fairly problematic, provided that the question of equivalence remains to be assessed within the fabric of eco-labelling systems. Firstly, such an approach would be dependent on the fact that the importing state considers the criteria which are laid down within the framework of the exporting state's eco-labelling system and which refer to the field "cradle to export border" to be appropriate with respect to the conditions prevailing in the exporting state. Secondly, the establishment and effective management of an eco-labelling system as such might prove to be difficult in certain states. In particular, it might be highly problematic to ascertain compliance with the relevant eco-labelling criteria, given various practical problems (e.g. corruption, remote and hardly accessible production facilities[130]).

To conclude, with reference to standards and technical regulations, a system needs to be sought which, on certain conditions, allows to deviate from the dominant product-oriented GATT/WTO rule, which allows to appropriately take into account diverging framework conditions in different states and through which, to the highest possible degree, fair conditions of competition may be achieved. In addition, any solution needs to be feasible from a practical point of view. Against this background and due to the heterogeneity of states, mutual recognition based on the relative (rather than the absolute) equivalence of non-product-related PPM-oriented measures might prove to be, at least in certain situations, superior to harmonizing strategies. This does not, however, exclude the (complementary) use of harmonizing strategies and should not be interpreted as a panacea. This approach should rather be seen as one possible strategy amongst others which might help to overcome certain blockages to the negotiation process, the usefulness of which,

128 Compare e.g. UNCTAD: Eco-labelling and International Trade, para. 57 und 92 ff., p. 12 ff.

129 For more details and information on thematic litterature see FORGÓ, K.: Europäisches Umweltzeichen und Welthandel, above fn 7, p. 288 ff.

130 Compare e.g. UNICEF: The State of the World's children 1997, New York 1997, p. 68 f. (Internetversion).

however, should be examined on a case-by-case basis. To focus on the relative equivalence of process oriented measures which concern the field "cradle to export border" (and sets of such measures respectively) allows to take into account different potentials and framework conditions. The relative equivalence of measures (and sets of measures respectively) might be eventually considered to be the case if a certain percentage of the product's turnover is spent on the "greening" of the respective product. An eco-labelling scheme in the exporting state would therefore not be a prerequisite. Additonally, in certain situations cost-effective processes might be more easily assessed than compliance with process-oriented eco-labelling criteria.

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III.3 PSE and AMS: Suitable Gauges for Evaluating Agricultural and Trade Policy?

Heinrich Wohlmeyer

The two measures for estimating national support of agriculture and forestry, namely the OECD's "Producer Support Estimate" (PSE) and the WTO's (GATT's) "Aggregate Measure of Support" (AMS) are related. They form the actual basis of argumentation for the large-scale exporters, led by the USA, in the struggle to determine the regulations for world agricultural trade.

The method of calculation has been set for years. The assumptions on which the calculation is based are no longer questioned. There is reason for suspicion that although the calculations themselves are consistent, the essential basic assumptions favor the short-term interests of those agricultural exporters which are rich in land. A process of rethinking is taking place and has manifested itself in the fact that the original wording of PSE "Producer Subsidy Equivalent" has been changed to "Producer Support Estimate." This means that the *a priori* insinuation that any compensation made to agriculture is an impermissible subsidy has been at least partially reevaluated. However, there is a still a long way to go before it is recognized that there are services provided by agriculture and forestry, the remuneration of which is not covered by product prices (i.e. cannot be internalized), but which are imperative in the interest of the public and that public payments for such performances are not subsidies in the usual sense.

III.3.1 Basic Orientation

The PSE criteria used by the OECD as well as the AMS used by the WTO (GATT) are implicitly based upon the philosophy or precondition that those agricultural systems, which maintain cost-effective production practically without the help of public funding, are the desired objective of the universal model. Those agricultural systems, which have been developed in agricultural export production sites in the continents that were populated by Europeans over the past 500 years (particularly North America and Australia), are assumed to be the optimum. These systems of agricultural production are usually limited only to the *production function*. The other functions, which are valued highly in densely populated regions such as Europe, or China, India and Japan are not taken into consideration.

However, the above-mentioned evaluation criteria should both be questioned. They lead to practically all contributions made for services provided by agriculture and forestry in the interest of the general public being interpreted as market-distorting subsidies. If they are paid for with public funding, then they are considered a subsidy in the budget. If the costs are internalized in the prices for agricultural goods, the price differences are indicated as "market subsidies" in

contrast to non-internalizing competitive systems, without questioning whether the difference is socially or ecologically based.[1]

In practical trade policy, exceptions are made (Green box and Blue box), which permit the alleviation of the most grotesque situations that result in this scope. However, this pattern of judgement is stubbornly maintained in the basic demand/claim, particularly by the OECD which masterminds the WTO's concepts and strategies.

Multiple performance of agriculture and forestry is core characteristic of proven (i.e. sustainable) agricultural production systems of all lasting advanced civilisations: this characteristic has only been remained lately as the *concept of multifunctionality* (refer to the following Figure V.3-1 regarding major functions).

If the concept of multifunctionality is superimposed over the mind-set for the calculation of the two evaluation criteria, then the following *hidden assumptions* are made visible:

a) the same production strategies are assumed to be sensible for all the different agricultural locations and systems on the earth

b) all public interventions in the market are undesirable *eo ipso*

c) all public compensation falls into the field of undesirable supports, even if it involves public funds paid as compensation for performances in the interest of the general public

These assumptions inevitably lead to the following critical scrutiny:

Point (a):

Due to the varying climatic and geological situations, as well as the varying allocation of land ownership, there cannot be one common production strategy for all farming enterprises worldwide. In contrast, the concepts of those agricultural production systems currently dominating the world market have been superimposed upon all others without asking. Agricultural production systems in mountainous regions or unfavorable climates result in higher production costs due to their nature. However, it would be irresponsible to put them out of operation on account of their long-term contribution to food supply (refer to Section V.2.5 above). The farming enterprises in these regions also fulfill the essential task of preserving the landscape from avalanches, mudslides and floods. The issue of water management is often overlooked. In densely populated regions, the multiple function includes the organized recycling of organic materials, the making available of green recreation areas to enhance general well-being, as well as ensuring a harmonious landscape (refer to Figure III.3-2).

1 Therefore the Chicago trained and long term vice-director Dr. POPP of the Swiss Agricultural Office (a division of the Departement of Economic Affairs) has proposed in his new book "The Century of the Agricultural Revolution – Swiss Agriculture and Agricultural Politics in the 20th Century" (Bern 2000) to finally stop paying to OECD for the wrong calculations of the costs of <agricultural protections> ... (p. 89).

Figure III.3-1

The many functions of agriculture and forestry

1 PRODUCTION FUNCTION

- Foodstuff
- Feedstuff
- Organic raw materials
- Organic fuels

2 CREATION OF LANDSCAPES

- Preservation of natural environments
- Accessibility
- Maintenance and conservation
- Design suitable for recreation (environment enhances well-being)

3 CREATION OF BIOLOGICAL DIVERSITY

- E.g., habitats with a wealth of different species

4 DISPOSAL FUNCTION

- Site for organized recycling of organic materials

5 WATER MANAGEMENT

- Protection of water as a resource

6 INFRASTRUCTURE FUNCTION

- Roads, water, energy, telecommunications
- Minimum population density

7 SERVICES FOR THIRD PARTIES

- Forest maintenance
- Protection of water bodies
- Community services
- Services for those with a second home

8 SOCIAL "CUSHIONING" FUNCTION for

- Old people
- The potentially unemployed, who would create far higher costs if alternatively provided for
- The handicapped

9 CULTURAL FUNCTION

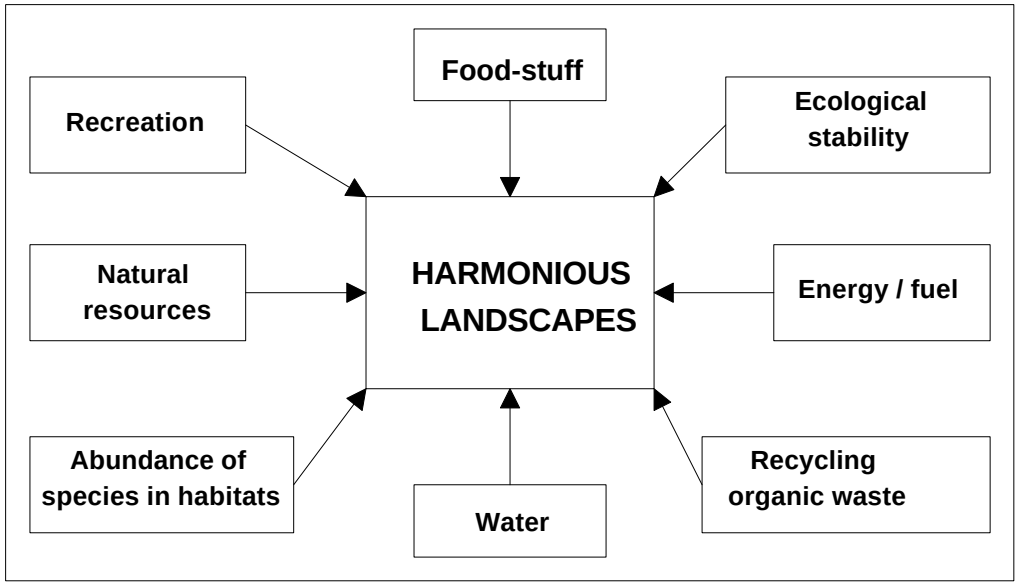
- Style of planning the common environment, formation of cultural landscapes
- Create access to contact with nature and impart an environmentally compatible lifestyle

Implying that the compensation of the services desired by society and provided for general well-being constitutes an "undesirable subsidy" is the result of unilateral reductionist calculations which are blatantly biased. The observation of this political genesis leads us to the conclusion that Europeans, in particular, saw themselves forced against their better judgement to take into account the American view,[2] which has now developed its own dynamics and jeopardizes the existence of the tradition of multiple performed European agriculture.

While the European tradition of agriculture[3] aims for comprehensive, sustainable, multifunctional systems of husbanding nature, where man is a part of the ecosystem, these functions are separated in the USA, in particular. Production regions are optimized in view of production (cleared landscapes for production), man is denied access to nature protection zones as an active participant,[4] and in tourist regions the supposedly intact world is presented in the form of an agricultural Disneyland.

Figure III-3-2

Multiple performance of harmonious landscapes



2 It was assumed that these calculations would not be taken as seriously as they were. (Source: personal communication from the late E. PULTAR, Section Head in the Austrian Ministry of Agriculture and Forestry).

3 The same applies to Japan, China and the subcontinent of India (refer to below).

4 This is particularly obvious in the registration criteria for national parks, also refer to Section V.4 appendix: The WTO and AGENDA 2000.

Completely contrasting cultures are thus clashing together. This conflict must not be ignored or passed over; it must be resolved. Those countries presently not involved (particularly the developing countries), will be forced to recognize that it is also a matter of their future in the long term. The agricultural systems of the ancient civilizations, (China, Europe, India and Japan), display the same basic pattern of small-scale, site-oriented, naturally compatible cultivation. Only thus it was possible to do proper justice to the equally diverse demands of the people – despite the high population density.

Considering the exorbitant increase of the world population and the stable or partially diminishing availability of the basis of production (soil, water, etc.), there is no doubt that the well-proven production patterns of the ancient civilizations are the model for future sustainability in an organizationally and technically modernized form. It must not be overlooked that multifunctional crop management not only serves to exploit a maximum of solar energy in a form usable by mankind (net energy output), but also contributes towards human well-being. The necessary site diversification based upon the experience of many generations should be added.[5] Implementation of the younger industrialized nations' agricultural production patterns all over the globe poses a great danger to general prosperity – even if these are only seen as a standard gauge.

Point (b):

Particularly in the agricultural sector, which is characterized by non-elastic and long-term fixed volumes of supply, (especially through crop rotation or long cultivation periods), and a relatively inelastic demand, which entail large unpredictable price fluctuations, it appears necessary to regulate the markets by means of public intervention to improve the equilibrium, if the markets are to be oriented to the welfare of the general public (eliminating poverty and stopping over-exploitation of resources). This requires both open market policies as well as quantitative regulation measures as the "ultimate instrument." In addition, public funding is imperative in compensating for services rendered in the interest of the public, if these services cannot be covered by the market prices for the products provided. The agricultural production systems of those countries, which do not assume that production only needs to achieve maximum profits, is thus put on the rack in a "Procrustes' Bed." On the one hand, society expects multifunctional management, and on the other hand, the regulations of trade policy force a monofunctional course to be taken.

The basic assumption that state intervention is generally undesirable cannot be upheld in view of the above.

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5 Concrete experience in Austria illustrates that small-scale, diversified crop cultivation is met with greater acceptance in terms of recreation value and well-being, while monotonous landscapes tend to be avoided. No one less than Napoleon already expressed regret that he could not take with him the landscape surrounding Vienna, which in his eyes was comparable to a "great garden" (citation: G. STENZEL, "Das Dorf in Österreich," Verlag Kremayr & Scheriau, Vienna 1984).

Point (c):

The classification of almost all public funding and compensation as "supports" is particularly dangerous and tragic. This manner of procedure has several catastrophic consequences:

- Compensation for public services is not incorporated in the gross national product, which leads to contributions to the economy made by agriculture and forestry being so severely underrated, that it is assumed they can be foregone according to these inadmissibly, simplistic economic calculations.[6] This also has an effect on WTO negotiations. The preliminary round has already shown that there is too much willingness to make concessions in order to achieve advantages in the "growth sectors" at the cost of a sector which is considered to have no significance in the economy.
- "Supports" are first items to be deleted from the budget in a budget crunch. This means that compensation for these services is uncertain, which makes the farmers feel insecure.
- "Supports" have the indirect stigma of being "undesirable," particularly in international trade policy. They are therefore threatened by the trade-policy measures of those nations which are barely acquainted with function of compensation for public services.

In order to do justice to the subject matter payments for performances in the public interest should thus no longer be classified as subsidies or supports.[7]

It thus becomes evident that major basic assumptions for calculating the measure of support have to be doubted at their roots.

6 This is reflected in internal EU discussions as well as in many national debates. Arguments are brought forth as follows: An increasingly small number of farmers require an increasingly large sum of money. (Note: Due to trade policy constraints, a transformation from cost-covering market prices to additional compensation of public services takes places. This is, however, insufficient and uncertain on a long-term basis, so that an increasing number of farmers have deserted the Ark and are no longer providing the required services.) Thus it is considered a moral duty to eliminate the "subsidies" paid to farmers, in order to invest the money in new jobs in the <branches of the future>. Holistic thinking makes it evident that such behavior is comparable to that of the spider which eliminates the "unnecessary" threads that anchor its web.

7 It must be remarked that an attempt was made in the past to classify granted subsidies in order to stabilize income under the term of "compensatory payments." This did a lot of damage to the cause, however it can generally be viewed as a past problem.

III.3.2 On the Particular Gauges of Support

III.3.2.1 On the Producer Support Estimate (PSE)

The "Producer Support Estimate" has two major components, namely, market price supports and public supports on the one hand, and financial burdens on the other hand. Market price supports are calculated from the difference between the domestic price and the price on the world market. The latter is taken from the export price or a theoretical import price under conditions of totally free trade. All public expenditures, which ensue as a result of agricultural policy, are classified as subsidies in this sense.[8] Financial burdens on producers in the form of payments to the public authorities, such as the Austrian "Land Protection Tax," essentially constitute fiscal taxes.

Market price supports are based upon the assumption that the world market price provides a suitable gauge for prices. This assumption can hardly be upheld, if the comparative world market price is generated by externalizing environmental and social costs, while the comparative domestic price carefully includes these costs. A further question is raised regarding the procedure if compensation for services to the public is included in the market price. In any case the usual method of calculation and present terminology appear to be misleading, since they insinuate that prohibited subsidies in excess of the market price are given, when this is not the case. Instead, each individual case should be examined and evaluated.

The situation concerning *subsidies* is even more extreme: All public expenditures connected to agriculture and forestry are comprised under this heading at the OECD. This leads to grotesque situations, for example, even schools for agriculture, which do not underlie the corresponding Ministry of Education, are classified as agricultural subsidies. (Who would classify a vocational school as undesirable subsidy of the respective vocation!?) The stipulated practice of recording expenditures for rural infrastructures – i.e. to secure the recreation areas for urban populations – as agricultural subsidies is equally astonishing. The model appears to be the "cowboy economy," as described by H. DALY, which cannot grasp the highly diversified pattern of multifunctional agricultural and forestry production situated in densely populated croplands.

In this concern, the fault of Europeans and other old-world nations lies in the fact that they did not resist such methods *ab initio*, and are now confronted with the structural deadlock of a faulty diagnosis, which determines WTO (GATT) activities in a major part.

In order not to be misleading, the extent of support measures that take into account multifunctional agricultural production would have to be limited to those supports which improve (distort) the competitive situation on the world markets in favor of the country granting the

8 Refer TO K.M. ORTNER: Internationale Stützungsmaße für die Landwirtschaft: PSE und AMS in Monatsberichte über die Österreichische Landwirtschaft No. 9, 1996, p. 371.

supports. Indirectly branding the compensation for public services made by agriculture and forestry as a subsidy is not only incorrect, it points towards market power policy interests. The same is true for the classification of expenditures for education and infrastructure as subsidies (supports). In the case of the latter two sectors, in particular, the blatantly unfair treatment is obvious in contrast to other sectors.

III.3.2.2 On the Aggregate Measure of Support (AMS)

The Aggregate Measure of Support (AMS), which is used in the WTO (GATT), takes its basic philosophy from PSE, but it is a trade policy compromise. In contrast to the PSE, it is based upon products and a fixed reference period, however it generally avoids the effects of fluctuations in exchange rates and classifies subsidies into those which are prohibited (red), those still tolerated (amber), those put out of dispute (blue), and those which are basically tolerated (green). The latter include expenditures for research, education, social aid and regional programmes, as well as ecologically desirable measures (green measures in common terms). The main characteristic of permissible subsidies is that they should have almost no effect on production – i.e., they are independent of production. As almost all services in the scope of multifunctional agricultural production are connected with production, due to the nature of the matter, this definition prepares the grounds for repeated attacks, since functions are divided (segregated) in the mind-set of those countries which have available a great wealth of land (USA and the CAIRNS Group), as mentioned above. In order to come up with a proper solution, it is necessary to clearly name expenditures for services in the interest of the public, and not to classify them as subsidies (also refer to Section VII.3).

In this connection, a basic remark on the American strategy of "decoupled payments" should be made. The USA adheres to a trade policy following the mode of strategic business planning, while Europeans still tend to think in terms of that which benefits general prosperity and take for granted that an objective instance will strive towards fair compensation. This, however, is not the case.

The strategy of the United States was to secure decoupled payments as green (permissible) in GATT, and then to anchor formal production-independent lump sum payments internally in the FAIR Act 1996 (Federal Agricultural Improvement Act) (also refer to VIII.3).

The trivial arguments brought forth to defend this strategy include the assumption that farmers are free to use the compensation they receive. They might "waste or drink it up", if they want. Any insider will clearly recognize that the compensation is regarded as an aid in strategically conquering the markets. Any farmer, who has the future in mind and wants to stay in business, will use these means in production in order to increase his competitiveness.

However, when Europeans and Japanese pay for concrete services which are naturally connected to production in the interest of ecological and social affairs, then that money has to be used for those services, and cannot be used for increasing market presence. The series of loudly proclaimed arguments implying that the Europeans and Japanese must finally also make up their minds in favor of completely decoupled payments so as not to distort the market, must therefore be *reversed*.

Presumably the most difficult point in this connection will be the expenditures for food security in the case of supply disruption as well as crises or war. In addition to the permissible maintenance of emergency stocks, the aim should be to maintain production readiness. This means that a minimum production must be maintained in a manner that allows intensification of production at any given time. This contradicts the prevailing short-term optimization philosophy of relocating production at the currently most cost-effective site. Ignoring future needs also clearly contradicts the recognized human right to a secured food supply and solidarity with the future generations. The latter aims should be given clear priority in a community-oriented hierarchy of objectives.

As already elaborated in Section II.2, a clarification of the ethical basis is also required. It cannot be disputed that those realities, which are based upon others, and those measures that take into account human rights, must have priority of protection.

Presently, the maintenance of production readiness is given, since supports may be granted for a production volume which comprises 85% of the base period[9] in the scope of the Blue box in the Agreement on Agriculture (WTO). However, if the Blue box is to be contested as expected, these payments are in danger of being jeopardized.

Finally, another particularly grotesque manifestation in the *evaluation of the admissibility of environmental measures* in the scope of the WTO (GATT, 1994) must be brought to attention, since it creates undesirable dynamics. Compensations (supports) are only allowed if they cover services rendered that surpass the obligatory standards of regular agricultural production.[10] If a nation has imposed high binding standards, then it limits its own margin of leeway for compensation of the higher standard of services provided by its farmers in contrast to world market standards, and thus puts them in an unacceptable competitive situation. The introduction of *higher standards* is thus punished instead of being promoted.

A further problem results in the scope of environmental protection. It is usually demanded that compensation for services should only be justifiable, if it serves the *improved performance* of environmental services. However, this means that existing agricultural systems with a good environmental performance lose out in the market. *Compensation of services* is therefore also

9 This percentage corresponds exactly to the transfer percentage of deficiency payments in decoupled lump-sum payments under the US FAIR Act.

10 The same dilemma exists within the EU, since most political figures are not acquainted with trade policy issues.

imperative for maintaining *environmentally compatible agricultural production systems that are suited to the local conditions*.

PSE and AMS should therefore be subjected to examination and revision based upon the latest scientific data as well as the change of values manifest in political priorities. Relevant working groups should be called for in the OECD and the WTO.

IV. CRITICAL REMARKS ON THE THEORY OF THE INTERNATIONAL TRADE

IV.1 Short Outline on Trade Theory

Franz Weiß

IV.1.1 Introduction

In order to study the consequences of free trade one has to become clear about why economists in general are so much in favour of it. Two arguments seem to be the most common. The first concerns division of labour and the second increasing competition. Therefore this section sketches the basic propositions of welfare and trade theory, and outlines the role of competition for the efficiency of markets. Subsequently, it summarises what traditional trade theory has to say about environmental aspects.

IV.1.2 Basics on Trade Theory

The reason for the supposed superiority of free trade is the increasing efficiency of production if all goods are produced by those agents or countries which can do it with the relatively least use of resources. In a free trade setting each agent and each country has an incentive to produce those goods, for which they are relatively most competitive (for which they have **a comparative advantage**), and exchange it against other products on the world market. This raises total output and income for all trading partners, and prevents the waste of resources. According to standard trade theory there are two main reasons for comparative advantages: different endowments and different technologies. This basic message of pure trade theory goes back to DAVID RICARDO and J.S. MILL, but neoclassical economists have then put those ideas into a more complete framework, which can be summarised in the following three propositions:

Supposed we have a fixed number of households, firms, products and factors. Households are the owners of both the factors and the firms (the latter in form of profit shares), and factors can either be consumed by the households or rented to firms. If production and utility functions are supposed to behave normally, then the following can be stated[1]:

a) If neither single consumers nor single entrepreneurs have enough market power in order to influence prices, then a price vector exists which clears all markets; that is, on all markets the desired supply is equal to the desired demand.

1 for the proof of prop. 1 see VARIAN, H.R. (1984).

b) This price vector, which need not be unique, leads to a Pareto efficient outcome, that is, no one can be made better off without deteriorating the situation of someone else.

c) Each Pareto efficient outcome can be attained through a certain distribution of endowments and profit shares, and an appropriate price vector.

d) Given a world competitive trade equilibrium allocation (which we know exists from a-c), any alternative allocation feasible under autarchy cannot be a Pareto improvement.

e) Given an allocation achieved under autarchy, a system of world trade prices and domestic lump-sum transfers (a change of endowments and profit shares) can be found, for which a competitive equilibrium allocation will exist and which will be at least as satisfactory as autarchy for every consumer.[2]

So, according to standard trade theory all countries will gain or at least stay on a constant level if they open up trade, as long as the usual assumptions are met. If countries are small, so that demand of one single country is not big enough to influence the world price of any good, we can state that no country as a whole gains from the imposition of artificial trade barriers such as tariffs or quotas. However, if we skip this assumption this is no longer true, since the terms of trade gains could exceed the efficiency losses of the tariff imposing country. We can even say that there will always exist an optimum tariff for a big country, which is superior to free trade. But of course the other country's welfare worsens and this will give rise to retaliation[3].

Beside differences in technology or endowments there is another important reason for trade that has been neglected for a long time due to its incompatibility with the neoclassical world of analysis. The idea is very simple. Both increasing returns to scale, and high fixed costs leads to decreasing average costs. In case of demand conditions, which make firms produce with decreasing average costs, it can be cheaper to produce the whole amount of a product in one single or a small number of firms. The freer trade, the larger the market, and the cheaper can be produced, if large firms thrust aside small ones. Notice that we do not need any differences between the countries, neither in endowments nor in techniques, to explain trade. Who is the importer and who is the exporter comes out to be rather a matter of accident than something we can predict (at least as long as we leave out geography and transport)[4].

In that way we can also explain the phenomenon of intra-industrial trade, as the simultaneous trade of one product between two countries in both directions. In a world of strongly differentiated products, firms have limited market power for their products, and are therefore able

2 for the proof of 2-3 see J.M. GRANDMONT and MCFADDEN (1972).
3 see G. GANDOLFO (1987), 1, pp. 121.
4 See: HELPMAN, E., KRUGMAN, P.R. (1985), pp. 113 ff.

to operate successfully in the domain of decreasing average costs. This leads to the same effect as in the case of increasing returns to scale.

Whether a liberalisation of trade leads to positive or negative welfare effects under those changed conditions, depends on the market power of the remaining firms. Usually the increased competition will reduce monopoly rents and the fewer remaining firms may operate on a more efficient scale. This raises welfare. However, the problem is that we could end up with a concentration of the increasing scale products in one single country, therefore shifting monopoly rents away from the others. General desirability of trade for all participants may therefore be in doubt[5].

In addition to what has already been mentioned, there are numerous other weaknesses of the neoclassical trade analysis. Some of them shall be sketched here, others will be elaborated in later sections:

- Firstly, neoclassical models tell us something about equilibrium situations, but usually nothing about the way towards equilibrium. Costs of adjustment like temporary unemployment etc. are not considered. In a steady state economy this seems reasonable, since the short-term costs of adjustment are outweighed by the long-run welfare gains. However, if technologies and preferences change this need no longer be the case.

- Similarly, neoclassical models are rather inconvenient in handling the question of growth. Usually technical progress is assumed to be exogenously determined, so that the static standard model is simply extended by a time dimension. Unsurprisingly, welfare implications do not change too much from those considerations. In contrast, more recent models, which try to endogenise technical progress, found evidence that free trade could contribute substantially to the conservation of the development state of less developed countries[6].

- Geographical aspects are not considered in the above model. Trade and transport are generally assumed to be costless, and technology is submitted to constant returns to scale. In case of changing those assumptions, as to allow for trade costs and increasing returns to scale, spatial dynamics can be determined endogenously. According to those models, under certain conditions a liberalisation of trade can lead to a further concentration of economic activities in agglomerations[7].

5 For a detailed treatment see: HELPMAN, E., KRUGMAN, P.R. (1985).
6 see KRUGMEN (1990 B)
7 see KRUGMAN (1991)

- Finally, maybe the most relevant weakness of neoclassical models is the fact that they hardly raise the question of sustainability. Long-term efficiency is in direct conflict with short-term cost-efficiency. Since perfect future markets do not exist, markets are predominantly guided by the latter, and so long-term efficient economic systems are thrusted aside by short-term-systems. Frequently not even a welfare maximising national government is able to conserve sustainable economic systems, since subsidies on the behalf of precaution can hardly be divided from protectionist measures. However, this and other problems, like externalities and limited resources, are elaborated in later sections and chapters.

IV.1.3 The Role of Competition

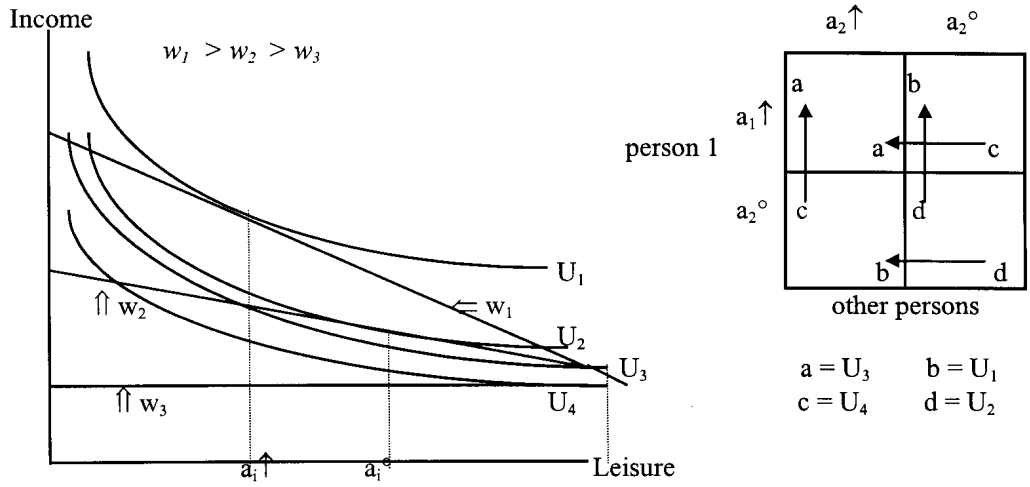
The important role of competition for the efficiency of markets is no news. Two factors seem to be crucial: On the one hand competition drives prices to the efficient level. Firms with the power to influence prices would not have an incentive to reduce prices to marginal costs. On the other hand, without competition firms would not be engaged in an efficient level of innovation. So competition is an indispensable factor not only for the sake of static efficiency but also for dynamic growth.

Unfortunately, competition is not always so desirable, especially if we relax the assumption of full employment and introduce uncertainty. So, take publicity as a marketing instrument in order to enhance the demand for a firm's product. In general the overall market demand for the product will not change too much. So it serves as a pure instrument of competition, and increasing sales will usually be on the cost of others. However, firms are trapped in a prisoner's dilemma, and so they will all engage in publicity with the effect that no one is able to get more customers. Total sales remain constant but they all have to bear publicity cost. No one can afford to give up advertising activities, because otherwise he would lose his customers to the competitors. The net welfare effect is unanimously negative.

A similar example can be given for the factor suppliers. Suppose a_i to be a measure of **personal effort which a labour supplier brings into the working process**. So a high personal input, near the capacity a_j, is accompanied by costs of exhaustion and stress for the individual. If the labour supplier expects higher prestige, a higher salary and the opportunity of having a brilliant career in the future as a consequence of high efforts now, he ends up with the following dilemma:

Graph IV.I-1

Labour Supply under competitive conditions



w_1 is the price if the labour supplier performs better than the average, w_2 if he performs on average and $w_3 = 0$ if he performs worse than his competitors and therefore loses his job. He will initially supply a_i - with the utility level U_1 if he expects w_1. But if all do the same he will be left with w_2 at a utility level of U_3 which is below the optimum of U_2 with the optimal labour supply of $a_i°$. So he has to change his behaviour and raise the labour supply although he is now to the left of the optimum even if he really gets the higher wage. But, irrespective of the competitors actions, he is well advised to act in that way since the new indifference map U_1 ' is still better than U_2 , and U_3 ' is still better than U_4 (unemployment). This game will continue until he reaches a level of a_i , where either the new indifference curve $U_1^e = U_2$ or $U_3^e = U_4$. So competition may cause an inefficiently high or an inefficiently low (in our example $a_i = 0$ with U_4) level of working efforts

Notice that the only necessary condition for the specific above dilemma is the occurence of involuntary unemployment. However, we could even go further and claim that in case of existing involuntary unemployment, whenever we have two situations (A and B), where A is less cost efficient in production than B but is nevertheless more desirable, we can expect the free competition to force us towards B since each producer is an agent in a prisoner's dilemma. Market is not an intelligent invisible hand, that wants to maximise our welfare, but only a force that drives production towards efficiency. Other welfare relevant factors will be influenced and changed for the sake of this efficiency goal, and there is no force that guarantees that the net effect is a welfare gain.

So we can state that there are good reasons for confidence in free competitive markets, but no less reasons for concern about the costs of strong competition.

IV.1.4 International Trade and Externalities

The smart story of the efficiency of free markets suffers from another crucial weakness. It implicitly requires that no one can shift the costs of own actions to others, or receive benefits without paying for it. That is, each consumer has to pay the marginal cost of the last unit of the product he consumes, and each producer has to receive the marginal benefit of the last unit of the product he produces. Otherwise free markets lead to inefficiency. If these conditions are not met we are confronted with a so called externality. We speak of positive externalities if we have unpaid benefits, leading to an undersupply of the good, and of negative externalities if costs are shifted onto others, implying oversupply and overconsumption. In both cases the most efficient outcome will not be attained by the forces of the market alone. Regulation is necessary. The best known example of negative externalities is all kinds of environmental damages, and in particular the connections of trade and environment have been a topic of vast research efforts in the last years. In this Section I will present the basic welfare considerations of opening up trade if we allow for externalities.

Basically, for the sake of trade analysis one has to divide two different sorts of externalities. On the one hand externalities which do not cross national borders, on the other hand international spillovers like the greenhouse effect. While in case of international spillovers there is quite general agreement that international policies would be necessary, there is disagreement among economists about whether regulating policies for local externalities should be left to the governments or at least partly be transferred to the international level.

In case of international spillovers we can divide the bilateral case (i.e. local trans-border emissions), and the multilateral case like emissions of CO_2. For the former welfare effects of freer trade heavily depend on the specific situation. There is vast literature about second-best solutions, which would be beyond the scope of a short introduction. For the latter case, the multilateral spillovers, national governments do not have an incentive to impose the optimal policy, since they are better off as free-riders, even if they are more affected than others. The only way to guarantee fair trade would be international regulation. However, not in all cases this is necessarily connected to the question of free or restricted trade. In many cases the dilemma would not be removed in a world of autark economies. A direct connection exists in case of transport externalities, since more trade leads to more transport, and so a solution of this problem cannot be seen independently from the question of market liberalisation. Moreover, a connection of international environmental policy and market liberalisation is sinful, since polluting countries have few incentives to change behaviour, and so trade instruments could serve as a lever.

In case of *negative local externalities* basic neoclassical theory tells us the following (partial analytical framework)[8]:

- In case of small countries, if the production of a good is pollutive and no environmental policy is in force, liberalising trade improves the welfare of the importing countries. The environmental quality of the exporting countries will decrease, but maybe this can be balanced by gains of the producers. If the optimal environmental policy is imposed, the exporting countries will gain from free trade as well.

- For larger countries the above effects will generally be smaller, since an importing country will raise the world price by its additional demand, and an exporting country faces lower world prices, because the demand of the others isn't infinitely elastic. If no retaliatory measures are expected, an optimal duty with the simultaneous introduction of the optimal environmental policy is the first best solution for a single country. However, for global Pareto-efficiency free trade is necessary.

  Export tariffs may reduce pollution to the efficient level but will raise welfare by less than the optimal environmental policy.

Under free trade an exporting country will usually gain if other countries adopt a more stringent environmental policy and therefore raise international prices, even if its environmental damage increases. Only in case of strong pollution effects welfare will decrease. Importing countries will always lose, except they switch from import to export. Losses will be smaller if the optimal pollution policy is in force.

In conclusion it can be said that for a Pareto-efficient solution harmonised environmental policy is not necessary, since the optimal environmental policy for a country depends on natural conditions, preferences and income. So, harmonisation could actually lead to welfare losses.

One important weakness of the above analysis is that we do not ask what will happen with the contracted resources if parts of home production are shifted abroad. In a fully employed neoclassical world the answer would be clear: the new equilibrium would be the new tangency point of income line and production possibility frontier. So if we start to import one good we will automatically shift the resources to the production of other goods. With higher environmental standards the shift will be a bit greater, with lower ones bit smaller. Free trade therefore leads to a specialisation on pollutive industries in countries without, and on clean industries in countries with high environmental standards. However, the income effect will be rather modest, and so will be the reaction on demand.

8 I will follow: ANDERSON, K. (1992), The standard welfare economics of policies affecting trade and the environment; in: Greening World trade issues, Harvester Wheatsheaf.

This might be a correct method of analysis for a long run perspective. However, what will happen in the short run in a more realistic world of substantial unemployment? In case of tightening environmental standards, it can be expected that some of home production will be shifted to foreign countries since it raises costs of home firms. So foreign employment will increase, while home employment will fall, and multiplicator effects can even strengthen this problem. Since, due to unemployment, formerly free resources are available in foreign countries, this will not necessarily result in a production transfer of other goods to the home country (as this would be the case in the neoclassical model). Rather we face at least temporarily an import of unemployment from other countries. This is a very immediate welfare effect, wheras environmental damages are usually long term effects and rather uncertain in dimension, and so it should not be surprising that governments are in general hesitant in adopting environmental measures that lower the competitiveness of home firms. However, those points will be elaborated in Section VI.2.

IV.2 Does Free Trade Prevent an Efficient Level of Environmental and Social Standards?

Franz Weiß

As mentioned above, in a neoclassical model there is no reason for a government, to set environmental standards on a wrong level, as long as the damage is local. The factor supply is fixed, and so factors, which are not needed for one activity, will automatically be shifted to another activity. So, if governments pursue a maximum of welfare for home people, environmental and social standards will be set on an efficient level. Inefficiencies due to lack of information, imbalances of power, or a deficit of democracy between different generations restrict the validity of the above statement, but they are not arising as a result of free trade.

In contrast to those theoretical considerations, we can observe the fear, that tight environmental and social standards could induce firms to change location, and therefore governments are hesitant in introducing such higher standards, in order to keep firms in the country. If such a competition for firms would lead to inefficiently low standards, this would be an argument for the harmonisation of standards. The following sections shall give an overview (for environmental standards), whether there are theoretical arguments for such a race to the bottom, and whether there are empirical studies, which could give evidence for such an effect.

IV.2.1 Theoretical Considerations

In contrast to the neoclassical model, the following models require internationally mobile capital and entrepreneurs. Moreover, there must be reasons, why countries might gain from additional capital or additional entrepreneurs. Without those conditions, a welfare maximising government would set standards in such a way, that gains and losses from an environmental improvement are in balance.

(1) $\Sigma MBi = MC$

MBi....Marginal benefit of tighter environmental standards for inhabitant i
MC.....Marginal cost of tighter environmental standards

If capital has a benefit per se, we must extend the formula by the losses, which arise due to the transfer of capital and firms to foreign countries.

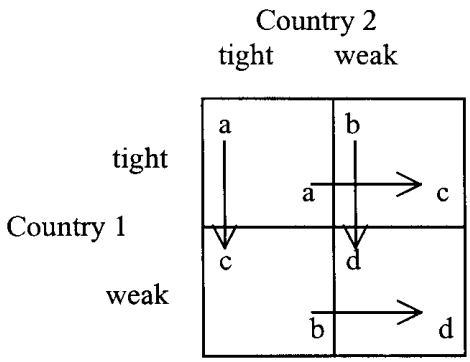
(2) $\Sigma MBi = MC - t*dK$

t..... Utility of one unit of capital
dK .....Change of home capital due to a tightening of standards

So, we get a lower level of environmental standards, than without this effect. From the point of view of one single country, this would still correspond to the requirements of an efficient solution. However, the inefficiency arises, because the total capital stock is supposed to be constant for the whole economy, and so the gains of one country can only be attained by the loss of other countries. So, governments are trapped within a prisoner's dilemma of the following shape (Graph IV.2-1).

Graph IV.2-1

Competition and environmental standards under conditions of unemployment and mobile capital



c>=a>=d>=b

For both countries weak standards are the dominant strategy, even if both would gain by setting standards on a tighter level (a>=d). The simple case of two countries can easily be extended to the case of more countries.

In literature mainly two reasons can be found in order to explain, why additional capital could be beneficial for a country or its government. On the one hand capital can be submitted to taxes, and this leads to a positive value of capital in the objective function of governments. This line of argument is used in models like OATES-SCHWAB (1988), and BOND-SAMUELSON (1989). On the other hand the benefit of capital can be due to unemployment of resources. This case is analysed in the models of HUANG (1992) and PECH, PFAFFERMAYER (1998).

While those models, which refer to the taxation of capital, need very specific assumptions, things are quite clear in the case of involuntary not-employment. What has to be explained is why involuntary unemployment exists. Huang bases his analysis on inflexible wages and on the efficiency-wage-theory (the positive correlation of wage and performance), but the results would hold for most forms of structural unemployment. So, involuntary unemployment can also be due to the adoption of labour-saving technologies, if the creation of new jobs in other branches cannot keep pace with the resulting destruction of jobs. The crucial assumption is, that total

unemployment (all countries together) cannot be reduced by a cost reduction like the weakening of environmental standards. In contrast, a single country can reduce its unemployment via cost reductions, but only by exporting the own unemployment at the cost of other countries.

In the model of Huang the capital value t for a country is:

(3) $t = (w-e)*dL/dK$

w ..... wage level
e ..... opportunity costs of leisure
dL ... additional labour, which is created by an additional unit of capital

If we put equation 3 into equation 2, we see that there is an incentive to set standards below the efficient level, since w>e due to involuntary unemployment. However, PECH, PFAFFERMAYER (1998) show, that a harmonisation of standards does not necessarily lead to a Pareto-improvement, if environmental policy has real labour market effects.

IV.2.2 Empirical Evidence

In order to find empirical evidence for the above effect, one can ask two different questions: Firstly: How important are environmental standards for the choice of location of entrepreneurs? Secondly: Is there any evidence, that governments hold environmental standards low, because they fear to lose firms? While LEVINSON (1996) names some studies, elaborating on the former question, there are hardly any investigations about the behaviour of governments. However, a close look to political statements makes clear, that the job argument is frequently used in order to oppose a tightening of environmental standards.

The studies used by LEVINSON deal with the location choice of firms, both on national (USA) and international level. On the one hand entrepreneurs have been interviewed about the importance of different factors for the location choice; in most cases environmental standards were not assessed to be extremely relevant. Similarly, the share of costs for environmental measures was rather low compared to other cost factors. On the other hand, national economic indicators, like employment, growth, imports and exports, or firm creation and destruction in environmentally sensitive branches, have been compared between countries according to the tightness of environmental standards. Clear evidence for an important role of environmental standards for location decision could not be found either. So, it seems that politicians assess the problem to be more crucial than could be justified by the behaviour of entrepreneurs. However, it is not the behaviour of entrepreneurs, which is crucial, but the behaviour of governments.

Due to the mainly unspecified and aggregated data, which have been used by the named studies, one has to be very precautious in interpreting the results. In those cases, where countries have been compared, the samples were very small, while factors of influence were numerous,

especially in the comparison of very different countries. For instance, in the comparison of industrialised and developing countries factors like wage costs, education or infrastructure can hardly be separated from environmental standards. So, the more interesting studies are those, which contrast countries with a comparable state of economic development. However, in those cases the differences in environmental standards were quite low, and this could be interpreted as a result of the competition effect, leading to a matching of standards on a too low level. So, meaningful results can hardly be expected from studies, carried through in the above way.

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IV.3 Free Trade and its Effects – Some Critical Comments

Sigrid Stagl

IV.3.1 Carrying Capacity, Ecosystem Resilience and International Trade

The economy cannot be separated from the biogeophysical sphere of which it is a subsystem. For the production of wealth ecosystem services are necessary, and to a large extent, the state of the economy is dependent upon the state of the natural resources (COSTANZA/DALY/ BARTHOLOMEW, 1991). This view was expressed in the 1990 Bergen Ministerial Declaration on Sustainable Development which pointed out the "symbiotic nature of economy and the environment" (UN Economic Commission for Europe, para. 13). Thus, neither economic analysis nor economic policy can be independent of environmental concerns.

The dogma of free trade is based on the assumption that wages can be leveled upward rather than downward. It is assumed that all people living on earth and many future generations can consume resources at the per capita level current in today's high-wage countries without inducing ecological collapse.

In its physical dimensions, however, the economy is an open subsystem of a materially closed, finite, and non-growing ecosystem with a limited throughput of solar energy. The environmental resource base upon which all economic activity ultimately depends includes ecological systems producing a wide variety of services. Imprudent use of the environmental resource bases may irreversibly reduce the capacity for generating material production in the future. This implies that there are limits to the carrying capacity of the planet (ARROW ET AL., 1995).

Probably the strongest argument for the absolute limits to growth can be made with regard to energy. GEORGESCU-ROEGEN (1971) argued that all economic processes entail the use of energy and that the second law of thermodynamics, the entropy law, indicates that the available energy in a closed system can only decline. There is a parallel between the degradation of the availability of energy and the order of materials. Economic processes entail, for example, using relatively concentrated iron resources which are then further concentrated through the use of energy, but ultimately end up being dispersed as rust and waste (sometimes even less concentrated than the original ore was). Recycling requires anew energy. Biodiversity degradation can be thought of as a similar problem. These processes constitute irreversibilities.

Only one factor, namely sunlight, can reduce entropy. Since the earth is a closed system only with regards to matter, but open with regards to energy, sunlight can be used additionally to the stock of resources. Differently than other resources, however, it constitutes a flow not a stock. This fact limits the quantity that can be used to the magnitude of the current stream.

Sustainable development means living within environmental constraints of regenerative and absorptive (local and global) capacities. International trade offers a way of loosening local constraints by importing environmental services, including waste absorption, from elsewhere. On the one hand, this is a virtue, because it allows us to use resources wherever production is most efficient. But when lacking adequate information systems international trade may lead to a situation in which each country tries to live beyond its own absorptive and regenerative capacities by importing these capacities from elsewhere (DALY/GOODLAND, 1994).

Information in the market place is still mostly limited to prices which may be distorted and thus may not reflect the adequate value. There are many reasons why prices cannot be used as the sole indicator of value. Among the many problems with prices as indicators are these (STAGL/GOWDY, 2000):

1) In a market context, only goods and services with market prices are valuable. Many of the most serious social and environmental effects of production, such as biodiversity loss or global warming, cannot be adequately taken into account by markets.

2) Prices are one-dimensional; value-monism is assumed. This means that the many varieties of value are regarded as instances of just one super-value which provides a unique best ranking of individual values (O'NEILL, 1993; MARTINEZ-ALIER, MUNDA and O'NEILL, 1996; MUNDA, 1996). This leads to the misguiding view that resources are highly substitutable.

3) Conventional economics treats equity and efficiency issues as if they were separable. If compensability *(*MUNDA, 1996) is recognized then it is clear that any particular Pareto optimal outcome depends on the initial income distribution. Since the willingness of a consumer to pay depends on his/her income, in the marketplace the voices of the poor count less than those of the wealthy.

4) The validity of prices as indicators of social welfare depends on the social consequences of individual maximizing behavior. Many examples from evolutionary biology indicate that individual optimizing behavior may not produce optimal global outcomes (HODGSON, 1993). As GEORGESCU-ROEGEN argued, the simple neoclassical assumption that what is good for the individual will be good for the aggregate, only works if the individuals are embedded in a community and take into consideration the whole group, including future generations, in their individual decisions.

5) Market prices and pseudo market prices are used rather indiscriminately to justify specific economic policies. Economists almost always assume that some "correct" price exists for any environmental good. In environmental economics a variety of methods (e.g., contingent valuation) have been developed to integrate the value of environmental goods in the market. VATN/BROMLEY (1994:138) point out that the "value of many environmental goods and services is derived from the very act of keeping them working in their existing functional relation".

Thus, there are two problems with living beyond our scale by importing capacities from elsewhere. First, not every country can live beyond its own absorptive and regenerative capacity by importing these capacities from elsewhere. The apparent escape from scale constraints via trade by some countries depends on other countries' willingness to adopt the very discipline of limiting scale that the importing countries seek to avoid (DALY/GOODLAND, 1994). Second, as long as our indicators are so deficient, we will not even realize the problem. This is why economic analysis must be complemented by biogeophysical factors.

A good index of the scale of the human economy as a part of the biosphere is the percentage of human appropriation of the total world product of photosynthesis. VITOUSEK ET AL. (1986) calculated that 40 percent of the total net terrestrial primary production[1] is currently appropriated by human beings[2]. If humankind's use continues to grow with the doubling time of only 35 years, which is implied in exponential growth, in a few decades the human species would seek to use all of the earth's NPP , thereby forcing all other species that are incapable of photosynthesis into extinction. (The NPP for Austria was calculated by IFF[3] Social Ecology, Vienna.)

Another useful index of environmental sustainability is ecosystem resilience. Resilience[4] stands for the ability of the system to sustain its self-organization in the face of stress and shock. Resilience is relative. A system may be resilient in response to small perturbations and non-resilient in response to larger ones. In a non-linear complex dynamic system (such as the biosphere), there may be multiple equilibria. This opens the possibility that, if sufficiently perturbated, the system might "flip" from one equilibrium trajectory to another. Such a flip could be associated with a sudden loss of biological productivity, and so reduced capacity to support human life (AYRES, 1995).

Higher levels of output usually require more energy, material and other inputs, and may thus lead to higher adverse effects of the kind just described. If, however, for other societal reasons (avoid unemployment in OECD countries and provide higher income for a striving population, respectively) high output levels are desirable, we must seek for possibilities to delink income creation from the production of environmental bads. Some authors have argued that enhanced

1 Net primary production (NPP) is the amount of solar energy captured in photosynethesis by primary producers, less the energy used in their own growth and reproduction. NPP is thus the basic food resource for everything on earth not capable of photosynthesis.

2 VITOUSEK ET AL. (1986) defined human appropriation as direct use by human beings (food, fuel, fiber, timber), plus the reduction from the potential due to ecosystem degradation caused by humans. The latter reflects deforestation, desertification, paving over, and human conversion to less productive systems (such as agriculture).

3 Interdisziplinäres Institut für Forschung und Fortbilung der Universitäten Wien, Klagenfurt und Innsbruck

4 It may be understood as a measure of the magnitude of disturbances that can be absorbed before a system centered on one locally stable equilibrium flips to another. Or in other words: It is the propensity of a system to retain its organizational structure following perturbation, and so refers to the stability of structure, process and function rather than the component populations of an ecological system (HOLLING, 1973, 1986; COMMON/PERRINGS, 1992).

trade positively contributes to both goals (e.g., ANTWEILER ET AL., 1998). To examine this proposition will be the purpose of the next section.

IV.3.2 Is International Trade harmful or beneficial for the Environment?

For Bhagwati, one of the strongest proponents of the 'free-trade-won't-lead-to-environmental-degradation' position, the engine of environmental improvement comes from the demand of the beneficiaries of free trade for a better environment as their incomes improve (BHAGWATI, 1993). To analyze this claim, the link between trade and growth, and then the one between growth to environmental impact and other issues of sustainability must be analyzed.

The relationship between international trade and economic growth is crucial in economic theory and has thus been discussed for centuries. Comparative advantage and economies of scale are usually the main arguments why international trade is beneficial[5]. The case is less clear for trade based on external economies. These are economies of scale which apply at the level of the industry rather than the firm. In the presence of external economies it is possible that trade is not beneficial to all countries (GRAHAM, 1923). While there may be gains to the world economy from concentrating production in particular industries to realize external economies (e.g., Silicon Valley or Swiss watch production), on the other hand there is no guarantee that the right country will produce a good subject to external economies, and it is possible that trade based on external economies may actually leave a country worse off than it would have been in the absence of trade. External economies potentially give a strong role to historical accident in determining who produces what, and may allow established patterns of specialization to persist even when they run counter to comparative advantage (KRUGMAN and OBSTFELD, 1994). And SAMUELSON cautioned that " free trade will not necessarily maximize the income, consumption and utility possibilities of a subset of persons or factors within a country" (1969:182). EKINS (1977:65) goes a step further when saying, "while the potential for everyone to be made better off with freer trade undoubtedly exists, the achievement of this all-win outcome requires compensation for the losers under such liberalization". For the most part, however, economists believe that the positive effects of international trade on economic growth outweigh the negative ones.

It is then GATT's assertion that "income growth has been associated with reduced pollution over significant ranges of per capita income" (GATT 1992:30) which must be tested. Since this claim is so fundamental to questions of economic development and sustainability it has provoked a vast load of research over the last five years[6].

5 For a recent summary of these arguments see KRUEGER (1998).

6 Two academic journals recently published special issues on the income-environmental relationship (Ecological Economics, 25/2 May 1998, and Environment and Development Economics, 2/4 October 1997) and it remains prominent at academic conferences (e.g., Biannual Conference of the International Society of Ecological Economics, Santiago de Chile, November 1998).

IV.3.2.1 The Delinking of the Income-Environment Relationship[7]

DALY (1977/1991) addressed physical exchange or material flows between the economy and the environment by considering them not only in terms of equity and efficiency, but also in terms of their physical scale or the total volume relative to the ecosystem. The environmentally relevant scale of the economy (S_t) in year t is defined as the level of population in year t (P_t) and per capita environmental claim or use (U_t).

$$S_t = P_t \cdot U_t \qquad (1)$$

Contrasting conventional economics, DALY refers by 'scale' to throughput, defined as the entropic physical flow of matter-energy from nature's sources, through the human economy and back to nature's sinks. The scale thus comprises material inputs into the economy (M) and outputs of the economy into the environment (pollution including waste, W). M and W refer to two distinct types of environmental pressure: depletion and pollution.

S_t is thus an indicator of total environmental pressure through material flows, that is, some aggregate of M and W. U_t, which is an aggregate of per capita claims in the domains of M and W, can be considered as being decomposable in a per capita material welfare or income term, y_t, and a variable reflecting the environmental pressure per unit of welfare, E_t. Thus, we obtain

$$St\ (M, W) = Pt\ .\ yt\ .\ Et\ (M, W) \qquad (2)$$

This links environmental pressure with driving forces such as the variation in income, population, and technology.

A 'proper scale' of economic activity should not go beyond the carrying capacity (C) of the total ecological system:

$$St\ (M, W) \leq C \qquad (3)$$

This is the condition for (ecological) sustainability (DALY, 1977/1991). The notion of carrying capacity has to be developed in a dynamic sense in order to correspond better to ecological complexities of the relationships between economy and environment. One may conceive of an ”environmental utilization space” as a set of steady states in terms of levels of M_t and W_t that are sustainable, i.e., compatible with the ecological processes (such as regeneration and absorption processes) and life-support systems underlying the economy (SIEBERT, 1982, OPSCHOOR, 1995). The notion of environmental space as a sustainability frontier implies that an initial carrying

7 For the most part this section is taken from BRUYN/OPSCHOOR (1997).

capacity C_0, if exceeded by S_t (W, M) at some point in time, will lead to a subsequent capacity $C_t < C_0$, which could in turn be sustained, but with lower yields in terms of sustainable environmental pressure than in the initial situation. Thus

$$Ct = h\ (Mt, Wt, Ct\text{-}1), \qquad (4)$$

which makes the environmental utilization space at the end of period t a function of its initial value C_{t-1} and the level of metabolism (M_t and W_t) during the period.

Some value of C* (e.g., C_0, if the current level of environmental potential is to be maintained) is chosen on the sustainability frontier, which is then imposed on the economic process as an environmental constraint

$$St\ (Mt, Wt) \leq C^*\ (Mt, Wt, Ct\text{-}1) \qquad (5)$$

This describes the pattern of environmental change over time and provides a link between environmental pressure and subsequent modifications of the state of the environment in terms of reduced carrying capacities.

Under these conditions a crucial question is of course, whether the economy will (or can be made to) move to a position compatible with it, or whether the economy will proceed ignoring the constraint by advancing along unsustainable paths. Given the high preference for rising material welfare, the question of possibility for continued economic growth with steady or declining throughput (S) becomes important.

Ratios M_t/Y_t and W_t/Y_t can be labeled the materials intensity and the pollution intensity of production; their inverses are the productivity coefficients of materials and pollution. A reduction of the materials intensities over time can be referred to as 'dematerialization' and, analogously, a reduction of pollution intensity could be labeled 'depollution'.

If environmental pressure S is a function of M (M being a proxy of U), and if we define m_t as the materials intensity M/Y in period t, then equation (1) can be rewritten as

$$St = mt \,.\, Yt \qquad (1.2)$$

and

$$\frac{dS}{dt} = Y_t \cdot \frac{dm}{dt} + m_t \cdot \frac{dY}{dt} \qquad (6)$$

For dematerialization materials consumption per unit of income must become smaller over time.

$$\frac{-dm/dt}{m} > \frac{dY/dt}{Y} \qquad (7)$$

A similar relationship could be shown for depollution.

Delinking[8] embraces both dematerialization and depollution. Thus, it means the process whereby aggregate economic activity gives rise to reduced environmental impacts, either in the form of materials and energy inputs, or its emissions and wastes.

Given an increase in output one would expect, everything else constant, a proportional increase in the environmental impact. However, this increase could be reduced by introducing an environmentally improved technology or by the sectoral composition shifting away from relatively environmentally intensive sectors. Thus, delinking may result from different sets of developments (or combinations thereof) (DE BRUYN/OPSCHOOR, EKINS, 1997):

- Changes in the composition of production and product design (composition effect – measured as percentage rate of change of various sectors; achieved through a shift in production and/or consumption patterns towards existing or new sectors or industries that are less environmentally damaging) and

- Changes in production processes (and production system) (technique effect – measured as percentage rate of technical change; achieved through more efficient use of inputs, substitution of less for more environmentally intensive inputs, less generation of wastes, transformation of wastes to less environmentally harmful forms, containment or recycling of wastes, a shift within a sector towards new, less environmentally harmful products or processes).

8 The term was introduced in The World Bank (1992).

In terms of the model delinking will continue, if dm is a negative function of income or time. Equ. (6) suggests that the manifestation as well as the magnitude of delinking depend on the relative values of the rate of economic growth (dY/Y) and the rate of change of the materials intensity coefficient (dm/m). As income grows, consumption patterns may change in less materials intensive directions and means may become mobilized towards technological innovations conducive to (dm/m) < 0 (DE BRUYN/OPSCHOOR, 1997).

Next we will consider, if delinking can be observed empirically and which role trade plays for such an effect.

IV.3.2.2 The Environmental Kuznets Curve Hypothesis

Within GATT concerns about environmental degradation are beginning to impinge on policy. But still they remain a tangential concern and it is often presumed that stronger embodiment in the regulations is not necessary, since economic growth and liberalization of international trade are, in some sense, good for the environment.

Economic policy reforms designed to promote growth and liberalization have been encouraged with little regard to their environmental consequences. It was assumed that these consequences could either be dealt with separately or would take care of themselves (ARROW ET AL., 1995).

The latter view is based upon a trust in the ”spiraling positive feedback loop” (DALY/GOODLAND, 1994) which implies the link of trade promoting growth, growth helping the environment, the environment helping growth, which in turn helps trade, which then helps growth again.

Besides the increased efficiency from international division of labor which reduces waste of environmental goods, arguments usually made in favor of environmental benefits from international trade are: (a) higher income generated through international trade corresponds with a higher preference for environmental quality *(Chapter IV.3.2.2.2),* (b) higher income corresponds with less polluting production patterns *(Chapter IV.3.2.2.3),* and (c) transfer of cleaner technology *(Chapter IV.3.2.2.4)* is enhanced. Before investigating these arguments in detail, we will search for empirical evidence for the environmental benefits hoped for from these effects together.

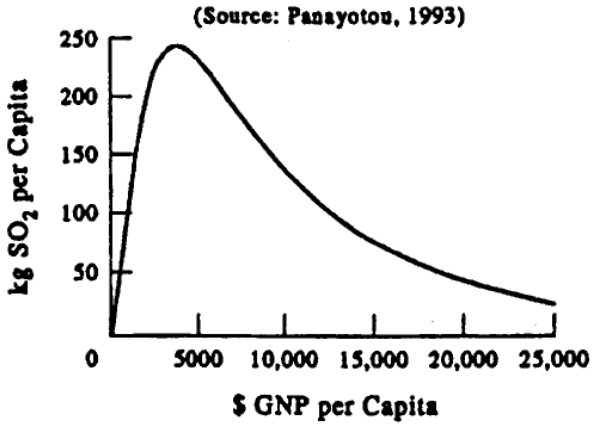
- **Economic Growth and the Environment**

The effect of economic growth on environmental quality is much under dispute. Among others BHAGWATI (1994) argued for economic growth as a precondition for environmental protection. And even the more in the South: "Economic growth appears to be a powerful way for improving environmental quality in developing countries" (PANAYOTOU, 1993:14). And BECKERMAN

(1992) saw "the best – and probably the only – way to attain a decent environment in most countries is to become rich". In contrast, DALY (1977/1991) argued that further growth would push the world economy beyond the biogeophysical limits. One of the positions put forward is the delinking hypothesis *(Chapter IV.3.2.1).* The argument is based on the assumption that at the beginning of a growth path in a country increase in GDP corresponds with high environmental degradation. Environmentally friendly - more expensive - technologies are not yet accessible and the awareness of environmental problems is low. Environmental degradation increases with income up to a certain point beyond which environmental quality is enhanced by higher GDP per capita. This relationship can be shown in an inverted U-shaped curve *(see Graph IV.3-1)*. This pattern is sometimes described as the "Environmental Kuznets Curve" (EKC), following the observation of Kuznets *(1955)* that it appeared to describe the relationship between the level of income and income inequality.

Graph IV.3-1

The Environmental Kuznets Curve for SO_2



At low levels of development the shape of the curve is argued with environmental degradation (both in quantity and intensity) being limited to the impacts of subsistence economic activity and to limited quantities of biodegradable wastes. As economic development accelerates with the intensification of agriculture and other resource extraction and the take off of industrialization, the rates of resource depletion begin to exceed the rates of resources regeneration, and waste generation increases in quantity and toxicity. At higher levels of development, structural change towards information-intensive industries and services, coupled with increased environmental awareness, enforcement of environmental regulations, better technology and higher environmental expenditures, result in leveling off and gradual decline of environmental degradation (PANAYOTOU, 1993).

In this sense, GROSSMAN/KRUEGER (1995) found that "while increases in GDP may be associated with worsening environmental conditions in very poor countries, air and water quality appears to benefit from economic growth once some critical level of income has been reached". In the empirical analysis they used data from 42 countries between 1979 and 1990 such a relationships for SO_2, suspended particulate matter, the oxygen regime in river basins (dissolved oxygen, BOD, COD), heavy metals in water (cadmium, arsenic, mercury, nickel), and fecal contamination of rivers. "The turning points of these inverted U-shaped relationships vary for the different pollutants, but in almost every case they occur at an income of less than $8,000 (1985 dollars)" (GROSSMAN/KRUEGER, 1995:370). SELDEN/SONG (1992) found similarly for estimated per capita national emissions of SO_2, suspended particles, NO_x, and CO; but with higher turning points. In the World Bank Development Report (1992) strong delinking of SO_x, lead and particulates for all OECD countries since 1970, and for NO_x was reported. Also case studies for individual countries, like for the Netherlands revealed reductions in some emissions (CFC's –46 percent, NH_3 –16 percent, SO_2 –20 percent) *(RIVM 1993)*. SHAFIK/ BANDYOPADHYAY (1992) observe an inverted U-shaped relationship between total and annual deforestation and national income for a sample of 77 countries between 1961 and 1986.

Several studies reveal decreasing material and energy intensities in a range of OECD countries, especially since 1970 (e.g., CHESSHIRE, 1986 for energy and TILTON, 1990 for materials).

The EKC might be taken to suggest that economic growth is not a threat to global sustainability, and that there are no environmental limits to growth. Indeed, the evidence was understood by some as a possibility "to grow out of some environmental problems" (SHAFIK/ BANDYOPADHYAY, 1992) or that "instead of there being a trade-off between greenhouse gases and economic growth, faster growth could serve as part of the solution to the worldwide emissions dilemma" (HOLTZ-EAKIN/SELDEN, 1992:3). And RADETZKI (1992:134) went even a step further when saying, "growth promoting liberalization of trade will often lead to improved environmental standards".

In the following we will try to show why this relationship must be seen in a more differentiated manner.

IV.3.2.2.1 General Critique

- **The inverted U-relation cannot be generalized for all emissions**

The relation was only confirmed for pollutants involving local short-term costs (for example sulfur, particulates, and fecal coliforms), not the accumulation of stocks of waste or for pollutants involving long-term and more dispersed costs (such as CO_2), which are often increasing functions with income (ARROW ET AL., 1995). Or more specifically, total annual CO_2

emissions rise with GDP per capita, then subsequently tend to decline. However, the implied turning point occurs at a GDP per capita of $24,568 (in 1987 dollars), which is well beyond the actual income of any country at the time. In other words, CO_2 emissions are estimated to continue to rise with income per capita over the range of existing incomes, though to rise less rapidly at higher incomes (LUCAS, 1996)[9]. Recently, (STERN ET AL., 1998) argued that turning point estimates may in general be biased downwards because relevant variables (e.g., effects of trade specialization) have not been included into the regression analyses.

EKINS (1997) calculated indices of different pollution factors whose development shows how the environmental impacts of the G7 countries have changed with GDP since 1970. Numbers greater than 100 indicate an increase in the quantity in this period. This then indicates environmental deterioration. Had all theses environmental effects grown pro rata with GDP, then the numbers would be the same as those in the GDP column. This would be the scale effect. Except for nitrogen fertilizers the environmental pollutants within the G7 countries have grown less than GDP, showing that they have been offset to some extent by the technique and composition effect. Where the numbers are less than 100, the technique and composition effects have more than offset the scale effect, so that the environment has actually improved.

Table IV.3-1

Growth of GDP, energy and fertilizer consumption, various emissions, and municipal waste, 1970 – late 1980s (usually 1988)

Country	GDP	Energy	CO_2	SO_2	NO_X	Nitrogen fertilisers	Municipal waste
Canada	208	152	132	57	143	371	121
France	166	135	82	43	121	169	134
West Germany	154	115	95	35	123	138	100
Italy	178	118	117	73	111	157	117
Japan	226	135	125	17	71	109	121
United Kingdom	155	100	87	59	101	169	109
USA	173	117	119	73	107	132	133

Note: Index numbers 1970 = 100, except CO_2 (1971 = 100) and municupal waste (1975 = 100).

Source: EKINS (1997) who calculated energy from OECD (1991a), all other columns from OECD (1991b).

Emissions of SO_2 have fallen in all countries despite the growth of GDP. For CO_2 and NO_x the record is mixed. In some countries emissions have decreased (Japan for NO_x, UK and West Germany for CO_2), but in most emissions have increased but less than GDP. For energy use and

9 The exceptions of a few European countries will be shown below in Table IV.3-1.

municipal waste, only the UK and Germany, respectively, have maintained quantities at 1970 levels; in all other countries they have increased (EKINS, 1997*)*.

ANTWEILER ET AL. (1998) base their model solely on SO_2 data and then conclude: "trade appears to be good for the environment"!

For toxic pollution no EKC could be found. Two studies have focused on air pollution generated in the manufacturing sector using developing and developed country data for 1960-1988 (LUCAS/WHEELER/HETTIGE, 1992, BIRDSALL/WHEELER, 1991). Both studies conclude that toxic intensity of GDP (i.e., air pollution emissions/GDP) does not decline with increasing income. The effect of income on pollution intensity tends to be negative (i.e., pollution intensity declines) in more open economies while it is positive in closed ones. Even in the most open countries, however, the absolute level of pollution increases with income despite the fact that pollution intensity declines (LOPÉZ, 1994)[10].

Those environmental indicators for which the EKC hypothesis is most plausible, are various indicators of air pollution only: NO_x, SO_2, CO, suspended particles, and dark matter.

■ **The inverted U-relation has mostly been shown for single pollutants only**

Each of the studies quoted above referred to single pollutants and/or single materials, but the aggregated developments of several pollutants or materials together were not analyzed. It is possible therefore that the only effect achieved is materials substitution. For this case de BRUYN/OPSCHOOR (1997) suggest the term "transmaterialization" instead of "dematerialization". For being able to reject this possibility a more complete aggregate of materials consumption must be investigated. Only a few studies tried this.

MAC-GILLIVRAY (1993) calculated an environmental performance measure for 22 OECD countries. The measure is made up from an aggregation of twelve different environmental indicators including emissions (CO_2, NO_x, SO_2), water, sewage treatment, protected land, threatened species, waste, energy intensity, private road transport, and nitrate fertilizer application. The regression of the total score against the countries' incomes shows a strong relationship between the environmental performance and income.

Most prominently JÄNICKE ET AL. *(1989)* used an aggregated indicator approximating the volume of throughput. Comparing 1970 and 1985 for a set of 31 COMECON and OECD countries, they concluded that economic growth seems to delink from the throughput indicator for most

10 A problem with these studies, however, is that they are not based on actual measures of air pollution but rather on estimated virtual indicators, which were calculated using the US pollution coefficients, i.e., only the composition effect is considered.

developed countries. They used four proxies for throughput: energy consumption, steel consumption, cement production, and weight of freight transport on rail and road. They found the EKC hypothesis confirmed.

DE BRUYN/OPSCHOOR (1997) challenged these results by asking whether delinking tendencies in the past can be extrapolated easily. If there are technological or economic upper bounds to the possibility to increase energy and material efficiency, equ. (7) will not hold – at least until further breakthroughs in research and development occur or a more intensive application of environmental policy checks is implemented. DE BRUYN/OPSCHOOR call this possibility the "relinking hypothesis". Differently than JÄNICKE ET AL. who compared the results in the initial and final years, de BRUYN/OPSCHOOR analyzed the changes over time by dividing the whole period into four sub-periods. Also, they extended the analysis to the period between 1966 and 1990.

The empirical analysis showed that the measure of strength of the relationship between material throughput and income (M/Y) dropped considerably after the first period (1966-1972), to drop to a low in the third period (1978-1984), and to pick up again in the final one (1984-1990). The slope has decreased until 1984, but increased slightly in the last period. The intercept increased until 1984, but decreased in the last period. The tendency of richer countries consuming less materials and energy over time while poorer countries consuming more, was confirmed. However, this development has come to an end in the last period. Formerly Eastern bloc countries together with the Northern Scandinavian countries were quite successful in reducing their throughput intensities, i.e., absolute reductions in their levels of throughput while their economy was growing. For a second group of countries (Finland, Greece, and Spain) the increase in throughput was relatively low compared to their growth in GDP, i.e., growing environmental pressure as measured by throughput-proxies, but with dropping throughput intensities. In other countries the throughput rose at a rate sometimes close to that of the increase in GDP. However, if the throughput intensities of 1989 are compared with those of 1986, it can be seen that several countries (Belgium/Luxembourg, Italy, Japan, Spain, Western Germany, and the UK) showed an upswing in their throughput intensities. That is, their (approximated) throughput rose more than their increase in GDP, which is indicative of a period of relinking. The levels of aggregate materials consumption through time may show an 'N-shape' rather than an inverted-U curve. DE BRUYN/OPSCHOOR (1997) draw the conclusion that delinking does not appear as a process which prevails or persists under conditions of sustained growth.

To conclude from the empirical evidence ARROW ET AL. (1995) cautioned that it should not be inferred that economic growth is a necessary condition for increased environmental quality, that environmental effects caused by economic growth may be neglected, or that the resource base is sufficient to allow unlimited economic growth.

Also GROSSMAN/KRUEGER (1995) were careful in their analysis and concluded that economic growth will not automatically lead to higher environmental quality but via stronger pressure for stronger environmental policy. If countries import and export more and their ability for national regulation is diminished and there is no automatic mechanism for improvement at work (even for the few factors which were proven to have developed positively), international environmental regulation must be fostered.

The improvements achievable without determined environmental regulations would not suffice, since the way to the peak of the EKC for many countries still is a long one. Most of the world's population lies on the upward-sloping portion of the EKCs. This implies that, even if the EKCs are valid, income growth across the global population will increase environmental damage before it reduces it (EKIN, 1997). SELDEN/SONG (1994:158) found in a projection that "the global flows of all four emissions remain at or above their 1986 levels throughout the entire next century, even in the most optimistic scenarios". Such damage is clearly incompatible with the political commitments that have been made to achieve sustainable development and as stated in the preamble of GATT.

IV.3.2.2.2 Argument: Higher Income corresponds with higher Preference for Environmental Quality

After concluding in the last section that income growth does not automatically lead to less environmental degradation, the role of increased income on people as consumers, producers and citizens shall be investigated. On the one hand, consumers with higher incomes are willing to spend more for "green products". Apart of food markets (where large increases in market shares for "green" products can be observed and where alternative markets started to develop early) this effect has remained small and will be limited to consumer products. On the other hand citizens of relatively wealthy countries people are expected to exert increased pressure for environmental regulation.

The poor have little demand for environmental quality, and are constrained to degrade their environment by their present consumption needs. "As a society becomes richer its members may intensify their demands for a more healthy and sustainable environment in which case the government may be called upon to impose more stringent environmental controls" (GROSSMAN/KRUEGER, 1991).

In most cases where emissions have declined with rising income, the reductions have been due to local and national institutional reforms, such as environmental legislation and market-based incentives to reduce environmental impacts. A review of the available evidence on instances of pollution abatement suggests that the strongest link between income and pollution in fact is via induced policy response. Thus, the inverted-U relation gives evidence that in some cases

institutional reforms led private users of environmental resources to take account of the social costs of their actions (ARROW ET AL., 1995).

Thus, the key factor in determining the ultimate environmental effect of trade expansion is the responsiveness of remedial policies to increased income.

Which kinds of environmental regulations have been imposed or planned? Which instruments were used? Are they consistent with GATT?

■ Is the environment really a luxury good?

Economic theory states that as incomes increase, individuals are willing and capable to spend more (in absolute terms) for all normal goods, including environmental services such as cleaner air and water. Some authors even argued that individuals would increase their demand for environmental quality by a greater percentage than the per cent rise in income (e.g., COCHRANE/RUNGE). However, there has been a lack of systematic evidence to support the assumption of environmental quality as a "superior" good[11]. In a recent analysis of evidence from European countries, environmental quality was found to be a normal economic good for which demand rises less than proportionately with income, i.e. an income elasticity of about 0.4 (KRISTÖM, 1994). Separate studies of environmental pollution cases corroborate this general finding (e.g., CARON ET AL.). Since demand for pollution abatement policies appear to be quite income inelastic (at least beyond a certain threshold), it will increase with income, but to a lower extent than often argued.

Poor people, especially rural poor people, are often the most direct dependent on their environment, and its resources, and the most vulnerable to its degradation. Such people do not need to become richer to become concerned about the environment. Of course, it is not our intention to argue for keeping poor people poor. Decent income is certainly a determining factor of quality of life. However, the conclusion that higher income is a precondition for higher environmental awareness does not hold (EKINS, 1997). "There are some environmental problems where thresholds like survival are at stake. Here the willingness to avert damage is close to infinity and the level of per capita income only affects the capacity, not the willingness, to pay" (SHAFIK, 1994). Not surprisingly, therefore, especially where their survival may be at stake, many low-income societies have evolved both conserving and sustainable patterns of use of the resource on which they depend. Such patterns, however, depend on these societies preserving their control over the resources in question, yet they have little capability to defend them against outside expropriation. However in some cases where external agents degraded poor people's environments, such people became environmental activists (BRAOD, 1994, MARTINEZ-ALIER, 1995, GUHA/ MARTINEZ-ALIER, 1997).

11 A superior good is defined as an income elasticity larger than one, i.e., increased income leads to increased demand for the good in question by a percentage larger than the income increase (in percent).

Thus, income does not appear to be the main determinant for environmental legislation. Education and possibilities to organize are probably good alternative candidates. The mechanism of getting richer stimulates people to look for environmental improvement works for some situations, but not for others. "Action tends to be taken where there are generalised local costs and substantial private and social benefits. Where the costs of environmental degradation are borne by others (by the poor or by people in other countries), there are few incentives to alter damaging behaviour" (SHAFIK, 1994:770). Without adequate public policy also effective between nations, international trade increases possibilities to externalize costs of rich countries' consumption.

IV.3.2.2.3 Argument: Higher Income corresponds with less polluting Production Patterns

- **The composition effect**

The normal trajectory of economic development is that societies move from subsistence to more material and energy intensive patterns of agriculture to industrialization and then to more service-based economies. This development path is not brought about by policy but by increasing importance of capital accumulation and knowledge-based industries (EKINS, 1997).

With regard to the composition effect the evidence suggests (EKINS, 1997:822):

(1) that it adds to the scale effect at lower levels of income, that is, it causes environmental damage to increase faster than income, and

(2) that it acts against but does not fully counteract the scale effect at higher levels of income.

As the findings from LUCAS/WHEELER/HETTIGE (1992) showed for toxic pollution, the composition effect does not always work in the expected manner, particularly if international trade is important. They interpreted the finding that toxic intensity decreases with openness of the economy but increases with income as the workings of comparative advantage. "More open economies have had higher growth rates of labor-intensive assembly activities which are also relatively low in toxic intensity. Highly protected economies have had more rapid growth of capital-intensive 'smokestack' sectors" (HETTIGE/LUCAS/WHEELER, 1992). In this case, international trade seems to have accelerated the process towards less polluting production. However, the effect is not always that favorable.

- **The displacement effect**

Displacement instead of abatement of pollution is thus an alternative explanation, or at least another aspect which put the view of the increasing demand for environmental quality as a consequence of increased income. SAINT-PAUL (1994) suggested that poor countries are likely to be net exporters and rich countries to be net importers of pollution-intensive goods. Also

OPSCHOOR (1990) and STERN ET AL. (1994) have suggested that the observed inverted-U curves may be the result of changes in international specialization: poor countries may attract 'dirty' and material intensive production while richer countries specialize in 'clean' and material extensive production, without altering consumption patterns. If this is the case, environmental effects are being displaced from one country to another, rather than reduced.

In fact, import substitution related reductions in environmental pressure should not be counted as an environmental gain (OPSCHOOR, 1991). This is why DE BRUYN/OPSCHOOR (1997) chose consumption instead of production as an indicator of throughput.

Not only did LUCAS/WHEELER/HETTIGE (1992) find that toxic intensity decreased with openness of the economy, but also that the growth rate of the toxic intensity of manufacturing was higher in the poorest countries and increased through the 1970s and 1980s. This is consistent with the hypothesis that ”stricter regulation of pollution-intensive production in the OECD countries has led to significant locational displacement, with consequent acceleration of industrial pollution intensity in developing countries” (LUCAS/WHEELER/HETTIGE, 1992:80)[12]. LOW/YEATS (1992) agree with the displacement hypothesis at a moderate degree. However, it should be mentioned here that most empirical studies (e.g., TOBEY, 1990) have found rather limited evidence of displacement due to environmental regulation, at least at the moderate levels of current regulations.

When integrating this possibility the outcome of the composition effect (1) and (2) as found above, to some small extent may be due to the displacement of dirty industries from high-income to low-income countries because of stricter environmental regulations in the high-income countries, which erode their comparative advantage in these industries (EKINS, 1997).

Insofar as the composition effect is due to displacement, later developing countries will not be able to benefit from it, for lack of other countries to which environmentally intensive activities can be displaced (EKINS, 1997).

Which factors influence this tendency for displacement? Has it been initiated by the stricter environmental regulations and then brings these environmental regulations under pressure? Under what conditions may this occur, if at all? These questions were dealt with in Section IV.2.1.

12 These findings were based on analysis assuming constant technologies, i.e. they were only concerned with the composition effect.

■ Danger of freezing specialization patterns

In addition to the displacement effect which may bias the composition effect, a phenomenon known in the literature as the "Dutch disease"[13] can prevent economic structures from developing in the expected manner.

Comparative advantages are determined at a single point in time, but the long-term benefits of specializing in them depend on their dynamic effects on the economy. For example, two countries may at present have comparative advantages in bananas and chemicals, respectively. Specialization in bananas does little for technological innovation, the development of labor skills, or diversification into high value-added products. Specialization in chemicals usually performs well in all these areas. Where trade takes place on the basis of such unequal comparative advantages, the countries specializing in the least dynamic comparative advantages may find themselves locked into economic stagnation and the bottom end of growing inequality (EKINS, 1994). KRUGMAN (1990) has constructed a formal model[14] of such a situation by associating external economies with the industrial sector, claiming "this process ... captures the essence of the argument that trade with developed nations prevents industrialization in less developed countries" *(p. 93)*. In conventional trade models, countries should simply specialize in whatever is their comparative advantage. "In practice, however, there is widespread concern that the contraction of a country's manufacturing sector that follows natural resources discoveries is a bad thing. The worry seems to be that when the natural resources run out, the lose manufacturing sector will not come back" (KRUGMAN, 1990:114). And he finds that if the extraction orientation of the economy lasts long, all of the industries that move abroad in the short run will remain abroad even when the transfer ends. "The home country's market share and relative wages will turn out to have been permanently reduced by its temporary good fortune" (KRUGMAN, 1990:116).

In addition, the specialization trap constitutes a potential environmental problem. In an attempt to increase earnings, supply of primary products is increased, resulting in a downward pressure on prices, exacerbated by a low demand elasticity and a low income elasticity for many primary products. The obvious solution of processing the primary products and adding more value to them prior to export has often been restrained by the practice of trade barriers in developed countries. Under these conditions the downward pressure on primary product prices while a certain income still needs to be generated, will enhance natural resource depletion. Prices will not adequately reflect their value. Not free trade, but "forced trade" will result (DALY/GOODLAND, 1994).

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13 "The term Dutch Disease refers to the boom-induced rise in the real exchange rates and the associated relative decline in nonmineral traded-goods industries. It was coined to describe the effects on the Netherlands economy of the offshore gas discoveries in the late 1960s..." (DANIEL, 1992:93).

14 based on increasing returns to scale

IV.3.2.2.4 Argument: International Trade enhances the Transfer of cleaner Technology

Improved technology not only signifies increased productivity in the manufacture of old products but also the development of new products. With regards to the environment this distinction is important, as new solutions may lead to even higher improvements in material and energy efficiency. On the other hand, unknown new problems can emerge this way (e.g., use of new toxins).

Under conditions of international trade technological innovation is even more important than in a closed market economy. Developed countries must continually innovate, not just to grow but even to maintain their real incomes. For developing countries transfer of technology, in addition to its direct benefits, brings the indirect benefit of improved terms of trade (KRUGMAN, 1990).

Diffusion of improved technology prevents economic late-comers from requiring the same levels of materials and energy inputs per unit of GDP than older industrialized countries have needed in the past. International trade enhances diffusion of technology. Some authors suggested that this might allow developing countries to "dive through" the EKC.

With regard to the technique effect there are many examples of more efficient resource use, substitutions between resources, and containment of wastes. The most dramatic are the reduction of SO_2 in Japan, West Germany and France by the installment of flue-gas desulphurization equipment (Germany), a switch to nuclear power (France), and a combination of the two (Japan). Both alternatives however have secondary environmental effects (quarrying and transport of large quantities of limestone for flue-gas desulphurization, waste disposal, radioactive emissions, and risk of accidents for nuclear power) (EKINS, 1997). Thus, when appraising benefits from advances in technology these secondary effects always must be incorporated into an environmental assessment.

■ Uncertainty[15] and the Precautionary Principle

Many of the most intractable environmental problems are those in which the use of environmental resources in novel ways has effects that are highly uncertain in both their spread and duration. The greater the uncertainty of the effects of technologically innovative use of environmental resources, the greater is the difficulty in evaluating associated environmental damage or the marginal social costs. The wider and more durable the environmental effects of economic

15 Risk refers to probability distributions based on a reliable classification of possible events and uncertainty refers to events whose probability distribution does not exist or is not fully definable for lack of reliable classification criteria (VERCELLI, 1991:72). For the cases discussed in the following all that may be known is that the probability of distant but potentially catastrophic outcomes is positive, even if there is no information on the precise nature, timing or incidence of those.

activities are, the less is the scope for a market solution involving the allocation of property rights (PERRINGS, 1991).

The self-organizing biosphere is complex and non-linear. This is why it may be inherently impossible for science to discover the limits of the systems resilience. "It may be possible to burn all the fossil fuels, protect the coastlines from sea-level rise, convert the Amazon to a market garden, and cultivate wheat in Antarctica. But it may not. If it is impossible to know how far it is safe to perturb the system we live in without triggering a catastrophic collapse, then the only reasonable policy is not to perturb it more than it has been perturbed by natural phenomena in the past" (AYRES, 1995).

The class of problems for which the precautionary principle is advocated includes those in which both the level of fundamental uncertainty and the potential costs (or stakes) are high. These are mainly problems which "traditional science" is argued to be "inadequate" for and ethical judgments are argued to be "ubiquitous" (FUNTOWICZ/RAVETZ, 1990).

The precautionary principle implies the commitment to safeguard resources now against the potentially adverse future outcomes of some decisions (PERRINGS, 1991). The precautionary principle sets the stage, but the real challenge is to develop methods of determining the potential costs of uncertainty. For policy choices this implies that the focus should be on measures that preserve options whilst encourage learning (CHILCHILNISKY/HEAL, 1993). An example for an option-valuation approach was presented by BARANZINI/CHESNEY/MORISSET (1995).

In the Arrow-Debreu framework there is a set of exogenous "states of nature" whose values are random and represent the sources of uncertainty. Agents in the economy are allowed to trade commodities contingent on the values of these exogenous variables (called "state-contingent commodities", e.g., water in a drought compared to water in a flood). With a complete set of markets for state-contingent commodities[16], the first theorem of welfare economics holds for economies under uncertainty. Thus, a Pareto efficient allocation of resources can be attained by a competitive economy with uncertainty about exogenous variables. In practical terms the number of markets required often is so large as to make the contingent contract approach unrealistic (CHICHILNISKY/HEAL, 1993).

This approach can be applied, for example, to the trading of emission permits, an increasingly used tool of emission abatement policy. The recognition of uncertainty would require state-contingent emission permits, where the state is defined in terms of the frequency of climate-change related events (CHICHILNISKY/HEAL ,1993).

16 ARROW (1953) showed that not a complete set of contingent commodity markets, but only a mixture of securities markets and markets for non-contingent commodities is required.

The precautionary principle requires that allowance be made for the potential, though uncertain, future losses associated with the use of environmental resources. Artificially established markets for permits is one way to approach the uncertainty. However, it cannot be applied for all environmental problems and may not suffice. Parallel to developing such instruments the preservation of diversity (biological, social and technological) can allow different systems to co-evolve (NORGAARD, 1994). Depending on the resulting state/s different options may be best suitable. For agricultural systems, for example, this could mean to allow several modes of production to co-exist.

To sum up from the discussion above, it is clear that the combination of (negative) technique and composition effects is able to completely counteract the (positive) scale effect on environmental impact. It was also shown that emissions of SO_2 are the only impact of G7 countries for which this has unequivocally been the case. Also the potential problems with environmental events with a small likelihood of occurrence and a significant long-term impact need specific consideration, as international trade can increase these problems.

IV.3.2.2.5 Environmental Kuznets Curve and Agricultural Land Use

A recent study (JAMES, 1999) found an inverted U-shaped relationship between agricultural land use and per capita income[17]. The empirical analysis of land use data from 127 countries over the 1965-1994 period indicated that crop yields are negatively correlated with agricultural land use; population density and ownership security are positively associated with agricultural land use; and trade variables show no clear pattern. In this study JAMES identified turning points in cropland use at $1540 in per capita income and at $957 for pastureland use.

The conversion of natural ecosystems into agricultural land is usually associated with negative environmental impacts, including the loss of ecosystem services, aesthetic values, and in situ conservation of biological diversity (DAILY, 1997). If so, the composition effect, indicating lower agricultural land use with growing output (through a shift of output out of the agriculture sector or through productivity improvements reducing land use per unit of output or both), or the technique effect, which refers to yield improvements reducing land use per unit output, would lead to lower agricultural land use and thus less environmental impact as output rises.

With regards to environmental concerns this result has the following problematic implications: "While population growth appears to be the driving force of agricultural land conversion, the results of the study suggest that it can be mitigated through economic development and

17 Please note that the study does not distinguish between different agricultural production techniques (conventional agriculture, IPM, organic farming etc.). As the author notes, possible conclusions are limited, because only quantities of land categories are considered, while qualitative aspects of the land as well as the production technique are neglected.

agricultural intensification. However, intensification creates its own environmental problems, giving rise to a dilemma of environment and development. Agricultural intensification is associated with a reduction in on-farm diversity of crop species and wildlife, pollution from fertilizer and pesticide use, and the erosion of land and water resources. Low intensity strategies of agricultural development may reduce these types of environmental degradation, but lower yield trajectories imply losses of nature through increased land conversion" (JAMES, 1999). Furthermore for medium term strategies it is important to consider that agricultural expansion in the developing countries may follow a KUZNETS curve, but "how much biodiversity will be lost before the turning point is reached? " (JAMES, 1999). Thus, the crucial question is which ways are available to minimize these trade-offs in the first place.

To conclude, increasing income tends to reduce the agricultural land in use and therefore potential environmental degradation caused by agricultural production. However, the resulting intensification of agricultural production leads to an environmental counter-effect. The observed trajectory therefore is problematic in the medium term (until all countries reached the turning point) and in the long term (counter-effect as described above). These results suggest that enhanced effort to foster and maintain environmentally sound agricultural production techniques seem to be the only way out of this dilemma situation.

IV.3.2.2.6 Concluding Remarks

After we have seen that there are several reasons why the easy relationship more growth leads to higher environmental quality' does not hold, for better recommendations an analytic framework is necessary which takes into consideration the biogeophysical sphere.

There is an important distinction which should not be forgotten: for economic growth to benefit the environment, it is not enough for it to generate resources that *could* be spent to environmental protection. *They must actually be so*. This is the more important as international trade, although it probably does not lead to a race-to-the-bottom, it may avoid a race-to-the-top, i.e. hindering increased environmental protection (see Section IV.2).

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V. INTERNATIONAL TRADE – AGRICULTURAL AND ENVIRONMENTAL ASPECTS

V.1 International Trade on the Rise

Sigrid Stagl, Tobias Reichert

In 1997 some $5.3 trillion of goods were sent from one country to another (WTO 1998). While the global economy has been expanding at about 3 percent a year since 1950, the volume of trade has been rising at a compound annual rate of about twice that. Merchandise trade is now 16 times of what it was in 1950, while world GDP is only five-and-a-half times as big; the ratio of world exports to GDP climbed from 7 percent to 15 percent *(WTO)*. Particularly since the mid-1980s increasing growth rates of international trade of goods were observed. Between 1987 and 1997 the trade volume almost doubled in value, and the share of traded goods of total gross domestic product increased from 20.6 percent to 29.6 percent. On average the value of traded goods increased by 7 percent between 1990 and 1997 (WTO, 1998). Particularly high growth rates were observed in 1994 (13 percent) and 1995 (almost 20 percent). The sector with by far fastest growth was office and telecommunication equipment with an average growth rate of 13 percent between 1990 and 1996 (WTO, 1997: 65). Thus, exporting sectors are major sources of and driving forces for economic growth.

Besides the reduction in trade barriers and the economic opening of countries like China and Mexico, falling costs of getting goods to market are reasons for this increase in international trade.

Not only the volume, also the kinds of goods traded have changed significantly over the last decades. In 1900 "crude materials" and "crude food" made up 41 percent of America's exports, by value, and 45 percent of its imports. These products are heavy and bulky. The cost of transporting them is relatively high, compared with the value of the goods themselves; so transport costs had much to do with the volume of international trade. Today finished manufactured products, not raw commodities, dominate the flow of trade (WTO, 1998). As the costs of shipping matter less and less, distance becomes less relevant.

Another trend concerns the accelerating distribution of the production chain across the globe. Annual trade of (semi-)finished products comprises $800 billion which equals more than 30 percent of the world trade volume. Hence, trade with parts and semi-finished products increased considerably faster than trade with other goods. As a consequence the mutual dependence of countries increases through international trade and distribution of production sites (YEATS, 1996). Also foreign direct investments increased worldwide three times as fast as production.

The largest increase was, however, observed in the service sector. For example, a US insurance company can sell its products in Germany, financial transactions are increasingly carried out by international brokers, and the international consulting business is booming. In 1997 international trade with services was $1.3 billion which is about a quarter of the value of trade in goods (WTO, 1998). Between 1980 and 1997 trade with services tripled (WORLD BANK, 1999).

With decreasing transportation costs and increasing importance of product differentiation the share of similar products traded rose. For example, German cars are exported to France and vice versa, Danish cookies exported to the US and vice versa, and British butter exported to New Zealand and vice versa.

In 1998 the value of traded goods and services decreased for the first time in years as a consequence of the Asia crisis. This was mainly due to decreasing prices of oil and other raw materials. The prices of (semi-)finished goods also decreased, but by a much small amount. On average prices of all traded goods decreased by 5.5 percent. This could not be compensated by the increase in quantities by 3.5 percent, thus leading to a decrease in the value of total exports by 2 percent (WTO, 1999).

World trade in agricultural goods in the early 1990th has shown a yearly increase of 5 percent in average. This is slightly less dynamic then the development of the total world trade. It reached a value of US-$ 580 billion in 1997, i. e. 10.9 percent of the total global trade (WTO, 1998). 1990 this share has been 12.2 percent.

As far as agricultural trade is concerned, the increase in the value of agricultural products traded goes half-shares back to higher prices and higher quantities. While between 1990 and 1995 the export value increased by 32 percent, the quantity increased by 15 percent (see Table V.1-1, FAO 1997). Figures from FAO for 1996 and 1997 are not available yet.

Table V.1-1

Development of the world trade in agricultural products 1990-1995 (base: Æ 1989-1991 = 100)

year	1990	1991	1992	1993	1994	1995
exports in value[1)]	102	102	110	103	117	134
exports in quantities[2)]	99	102	108	105	109	114

[1)] average exports 1989-1991

[2)] average exports 1989-1991; exports of the respective year valued by average prices 1989-1991

Source: FAO (1997): FAOSTAT, statistical database, CD-ROM; Rome

The development of prices of agricultural products varied. Food prices increased between 1994 and 1996 by about 6 percent annually, decreased by 3 percent in 1997, and decreased by even 6

percent in the first quarter year of 1998 (WTO 1998). The most significant collapse was with grain (-23 percent in 1997 after preceding drastic price increases in 1995/96) and agricultural raw materials (-8 percent in 1997).

The general reduction in raw material prices (particularly oil), the Asia crisis and the strong dollar will probably lead to a lower value of total traded goods in 1998 (WILLIAMS, 1998:4).

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V.2 Demand Profile for a Sustainable World Economy

V.2.1 Sustainability - A Challenge for Future Economic and Social Policy

Theodor Quendler, Bernd Schuh

The confession to incorporate the principles of sustainable development has become a substantial part of almost every international organisation and agreement. The charta of the World Trade Organisation follows the same principle and has therefore stated in its Marrakesh agreement the following:

The **parties** to this Agreement,

> *"**Recognising** that their relations in the field of trade and economic endeavour should be conducted with a view to raising the standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development, (...)"*

Sustainability has therefore become a principle which seems to be widely accepted internationally. At the same time it is one of the most controversial concepts for which the huge number of definitions is a rather convincing sign. Especially the difficulties to operationalise the term "sustainability" is one of the major drawbacks for an implementation. Thus organisations and agreements are often criticised for not acting up to its principles although the general self-obligation has been agreed upon. This is also the case with the WTO which can be seen from the above mentioned agreement (for further criticism see IISD, 1996).

The following chapter will try to clarify the large variety of definitions of the *concept of sustainability* by pointing out their crucial aspects. Especially the distinction between "weak and strong sustainability" will be an important part. These definitions will then be applied within the agricultural sector. Finally a definition of sustainable agriculture will be tried to be found which reflects the "mind set" of this study although this might be difficult facing the single authorship of the other parts of the study.

V.2.1.1 A Short History of the Term "Sustainability"

In view of its basic significance for the subject matter of the present study, the following definitions of the concept are of interest: the English language offers several different meanings for the word "sustainable", as CHRISTEN indicates with reference to the Oxford English Dictionary. However, what is important is that a direct connection is drawn to agriculture and forestry: the term "sustain yield", for example, is defined as "the quantity that can be harvested from crop or population without depleting it in the long term". For the purpose of sustainability or a sustainable yield, this means that the crop should be harvested only in such quantities, or the extent of migration be kept within those limits that will ensure that the yield or population potential is not reduced or decreased (CHRISTEN, 1996; p. 67).

Referring to the use of this term in forestry, where it was used as early as in the 18th century, CHRISTEN then cites the definition contained in the textbook "Forstliche Betriebswirtschaftslehre" (Business Economics in Forestry) by SPEIDEL (1984), which defines sustainability as "the capacity of forestry enterprises to ensure the utilisation of timber, infra-structure and other goods for the benefit of the present and future generations in a continuous and optimum way". In order to do more justice to the ecological aspects of the forestry output, PETERS (1984) suggested in her doctoral thesis (Subject: "Die Nachhaltigkeit als Grundsatz der Forstwirtschaft. Ihre Verankerung in der Gesetzgebung und ihr Bedeutung in der Praxis." Sustainability as a forestry principle. Establishing its legislative basis and discussing its practical significance) the following definition: "Sustainability means to strive for and demand the continuous and optimum provision of all tangible and intangible forestry benefits for the use of present and future generations" (see CHRISTEN, 1996; p. 69).

In the period between 1972 and 1980, the term "sustainability" was mentioned by different authors in contexts where - for the first time - there was a basic understanding of the term as we know it (CHRISTEN, 1996; p. 68). These included also the publication of an article in the journal "The Ecologist" of 1972 where the concept is already used in a very comprehensive manner. In the same year, the "International Union for the Conservation of Nature" (IUCN) established, for the first time, the link between sustainable development and ecological issues. In subsequent years (1974 to 1979), a number of conferences were held on the subject that were specifically dedicated to issues concerning sustainable development. The books published after these events for the first time contain the word *"sustainability"* in the title.

As of 1978, the term then appears in various documents and agreements of the United Nations. A particular milestone, in 1978, is the publication of a document of the "United Nations Environmental Program" (UNEP) which mentions the idea and the concept in key places (CHRISTEN, 1996; p. 68). In a second phase, beginning in 1981, the use of the concept "sustainability" became popular. This trend has continued up to the present day and includes, inter alia, the WCED Report of 1987 ("The World Commission on Environment and

Development 1987: Our Common Future" / BRUNDTLAND Report), which contains the definition of sustainable development probably quoted most often: *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* With this definition in mind, we must create an economic and social system that can be maintained with sustainability, i.e. on a long-term basis, without depleting the natural prerequisites for life (such as soil, water, primary materials, fossil fuels) or affecting the basic conditions (such as the climate (ÖIR, 1996; pp. 14)).

Emerging from this initial definition of sustainability a variety of specifications and enlargements of the concept has been developed. But it seems to be rather useless at this point to quote a list of different definitions. It seems to be more helpful to discuss the contents and differences of the different definitions.

The following components are to be found in almost all of the definitions of sustainability in one or the other form: inter- and intragenerational justice; careful treatment of the resources and preservation of the production basis; preservation of the bio-diversity; perpetuation of economic existence and stability. These components will be explained in more detail in the context of agricultural sustainability in the following.

The central problem when trying to operationalise the concept of sustainability has been the question whether and to which extent there is substitutability between *manmade capital* and *natural capital*. Along this argument two schools of thought have been developed who define sustainability either as *"Strong sustainability"* or as *"Weak sustainability"*.

"Weak sustainability" is here understood as the requirement to keep capital (i.e. the sum of manmade and natural capital) intact (over time). Whereas *"strong sustainability"* is understood as the requirement to keep natural capital intact (over time) (EL SERAFY, 1995). Interest in the issue of substitutability arises therefore from the fact that the distinction between weak and strong sustainability is supposed to turn on the question of whether human made capital is in(de)finitely substitutable for natural capital. On first sight this seems to be a rather manageable problem but when analysing it more thoroughly the problems of the operationalisation of the concept into the real world economic system become visible.

The problems which can be identified are the following: It has always been known that human economic activity affects the natural world. But until recently it has been the habit of economists to regard this as an "external" phenomenon and not, strictly speaking, something with which economic theory should concern itself. The visible and sensible effects (e.g. global ecological disasters) of economic acting have finally led to more thinking in economic theory on how nature can be introduced into theory. This has been done in the form of treating nature as a good or capital - which means that ecological damages can be seen as denomination of natural capital or diminution of natural goods.

Critics (e.g. HOLLAND, 1997) now state that in this point of view misrepresentations in two ways can be identified: On the one hand human beings are construed as bundles of preferences seeking maximum satisfaction from the world around them; human nature is thus homogenised, not to say grossly simplified. On the other hand and correspondingly, nature is construed as a bundle of commodities, affording greater or lesser degrees of satisfaction which constitute its economic value (HOLLAND, 1997). The objective of policy under this conception is so to manage nature that it yields the maximum satisfaction in the long run; some versions of this policy objective go by the name of sustainability. Beyond this criticism is the ethical difficulty that our current economic and political system ignores the interests of the non-human world. In other words it is the claim of the arrogance to equate the world with the human world (HOLLAND, 1997).

It is therefore the above mentioned attitude which brings along the fact that although, and even because, the adverse impacts of human economic activity upon the natural environment now receive their due economic weight, it also becomes possible at the same time to offset these adverse environmental impacts against beneficial developments elsewhere. It is at this point that the issue of substitution begins to bite: the issue, namely, of the extent to which human-made capital can be supposed to substitute for, compensate or offset losses in natural capital. This leads us to a more thorough look at the problem.

V.2.1.2 The Issue of Substitution - Is there the Possibility at all to Substitute Man-made Capital for Natural Capital?

Whether two forms of capital can be substituted for each other depends on the ability of the substitute to serve the same purpose as the natural capital (in our case), which it replaces. This is depending on the capacity to specify the purpose as precisely as possible. In more common or garden contexts, the question of whether A is substitute for B will also depend upon what we want B for. To take the simple case of food, if it is nutritional properties we are interested in, then one apple may be as good as another. But if we are concerned about flavour, then we may think that there is no substitute for a Cox´s Orange Pippin. In the same way, in the dispute over whether human-made and natural capital are substitutable, the question must be asked: substitutable salva what? The same problem applies in the case of the two conflicting goals - to preserve bio-diversity in agriculture on the one hand and the treatment of agricultural goods as "*like products*" by the WTO on the other (see also Section III.2).

■ How large is the Degree of Substitutability?

A substitute is not usually supposed to have all properties of the original. If it were, it is difficult to see how anything could be a substitute for something else. One item is usually regarded as substitute for another if it is sufficient for the purpose. This introduces a further dimension of indeterminacy into the concept of substitution, in the light of which it is difficult to see how the issue of whether human-made capital can be substituted for natural is to be resolved. Even if we agree on the purpose, how good a substitute does something have to be to be sufficient for the purpose? The answer will radically depend on circumstance, and degree of toleration. Thus it will strongly depend on subjective weightings.

■ The Definition of "Human-made Capital" - Problems and Limits

Yet another question is what is to count as a human-made substitute, and in particular whether cultivated capital is to count as human-made. This question might be of special relevance in the context of agriculture. Is - to give a simple example - the consummation of a cultivated flower already a substitution of man-made capital for natural (i.e. a wild flower picked in the forest)? The limits and definitions of man-made capital against natural capital are not easy to be made - as can be seen from this example. We need to avoid two extreme answers which would tend to render the substitution question of little interest. The first would be to count as human-made everything which has been affected by human activity. Since it is probable that most of the planet has been affected in one way or the other by human activity, it would follow not only that substitution is possible but that, to a large extent, it has already taken place. The second would be to count as natural anything at all which is made of natural materials.

Since virtually everything ultimately derives from natural materials, it would follow that substitution was virtually impossible because no purely human-made substitutes would be available. The following explanation (HOLLAND, 1997) is based upon the Aristotelian distinction between "form" and "matter", which applies equally to living and non-living things. Human-made world would therefore be one in which there was nothing which owed its form entirely to nature, but only its matter: it would be a world in which there was no natural expression. This would of course be an extreme. The real world - in the sense of the cultivated world as it stands - is a mixture between the categories of natural and human-made. The domesticated cat - for instance - remains enough of its natural form to be capable of surviving in a feral state; it might still be thought of, therefore, as a natural being. Some breeds of domestic battery hens, on the other hand, require human assistance in order to reproduce - a fact we may take as indicating that it has lost its natural form. Genetic engineering is likely to thrust the cultivated world ever more towards the human-made side of the fence.

The precise picture of the limits of substitutability and thus the distinction between strong and weak sustainability is very difficult to draw. Critics of the concept say that it is therefore not

possible to differentiate weak from strong sustainability. Their arguments are the following: As we have seen, the claim that no human-made substitutes can be found amounts to the claim that nothing human-made can provide humankind with the same degree or kind of benefits as those provided by the elements of natural capital in question. But if this is true, then the loss of such natural capital would inevitable mean a decline in human welfare and would not therefore be countenanced by weak sustainability. Since, therefore, nothing which is not countenanced by strong sustainability would be countenanced by weak sustainability, the two positions are indistinguishable. Thus the idea that weak and strong sustainability differ in any important respect turns out to be a charade. Both concepts are suffering from the weakness that nature is seen as capital and therefore its protection is not secured. This is even more important as the limits to which natural capital might be reduced cannot be defined.

This criticism has been the starting point for a new school of thought, which is asking for "absurdly strong" sustainability. HERMAN DALY defines this **concept of sustainability** as... *"it is the view that no species should ever go extinct, nor any non-renewable resource should ever be taken from the ground, no matter how many people are starving"* (DALY, 1995)[1]. According to W. BECKERMANN[2] this definition could also be formulated in a wider sense thus demanding to *preserve intact the environment as we find it today in all its forms*.

As radical as these definitions may seem - they follow the attempt to find a definition of sustainability which includes all its aspects. This means that sustainability can only be operationalised if moral principles are included in a comprehensive way - e.g. the issue of a just distribution of power among the living generation. Another prerequisite would be a shift of human interests. It is perfectly possible that in the light of moral reflection people may come to reassess where their interests lie; and they may, in the light of reflecting upon the claims of the natural world, be prepared to come to some sort of accommodation between those claims and their own interests.

A different kind of objection to absurdly strong sustainability might be based on the fact that it eschews economic valuation of the natural world. This seems impractical. For economists, at least, are wont to suggest that we cannot get the measure of environmental losses until we can quantify them in some way, for example by comparing them with marketed commodities. Now there are two things we may wish to measure:

- Whether we have lost too much.
- How much we have lost.

1 This claim seems inhuman at first sight. But by a continuous destruction of the resource base of the planet future generations will generally go extinct.

2 W. BECKERMANN has stated this definition in order to criticise the idea of sustainability in general and not to ask for a modification of the concept.

The difficulty in this context is not the measurable loss but the suspicion of the existence of immeasurable losses which outweigh the first one by far. Under this assumption the loss of a species of wildflowers may be quantified in material values but the loss of beauty and diversity cannot be quantified.

We do not claim to be able to give the "right" definition of sustainability in this place but it seems to be necessary to keep all its conflicting aspects in mind when trying to find more "practical" solutions.

Therefore we would like to return to our starting point of this chapter - i.e. the problem to **operationalise the concept of sustainability** (in practical terms and political relevance). The above mentioned definitions seem to be rather vague for this claim. They are not clear enough to be translated into short term political recommendations for decision makers (on a local, regional, national or international level). For such a purpose the above mentioned definition of sustainable development quoted from the BRUNDTLAND report seems to be a good starting point. This definition has been modified by internationally operating environmental organisations (IUCN/UNEP/WWF) by emphasising the need for *"improving the quality of human life while living within the carrying capacity of supporting ecosystems"*. This definition is clearly more normative in nature and offers a test framework for resource policy, once a consensus on the *carrying capacity* has been achieved.

Although thus far no uniformly accepted definition has emerged **the basic intentions of the sustainability concept** are becoming increasingly clear: it aims at directing decisions of policy bodies and private actors towards a joint state of the economy (or society at large) and the ecology, such that the needs of current and future generations are fulfilled without eroding the ecological basis for a proper welfare and activity level of these generations (see also OPSCHOOR, 1994). **A normative orientation of sustainability** in general requires an assessment and evaluation framework which should be able to test actual and future states of the economy and the ecology against a set of reference values. This approach requires three important components in any sustainability analysis (NIJKAMP, 1997):

- A set of measurable sustainability indicators
- A set of normative reference values
- A structured impact and evaluation methodology for assessing future developments (as a result of behavioural processes, exogenous developments or policy responses).

Although these three items seem evident, it ought to be recognised that a **major problem of operationalising the notion of sustainable development** is its lack of specificity in concrete circumstances (e.g. particular regions or economic sectors). Sustainable development in a given region or sector is not necessarily sustainable elsewhere. Thus, apart from the intrinsic dynamics in the interpretation of sustainability (as a process with ongoing trade-offs between social,

economic and environmental goals), sustainability is context-specific and hence co-determined by needs and opportunities in a particular region or sector. This awareness in the meantime has led to a more flexible delineation of sustainable development by referring to regional or sectoral sustainable development, witness popular notions like "the sustainable city", "sustainable transport", "sustainable tourism" or "sustainable agriculture".

V.2.1.3 Substantive Dimensions of Sustainability and their Significance for Agriculture

In discussions revolving around the agricultural sector the term *"sustainable agriculture"* is increasingly being accepted, with the result that this topic has frequently been the subject of special events and specialised publications. In the USA, for example, a scientific journal called "Journal of Sustainable Agriculture" has been published for some years now. CHRISTEN relates to this issue in his work and also refers to the origins of the concept (CHRISTEN, 1996). However, this discussion is too lengthy to repeat it in full in the framework of the present study. In this connection, reference should be made once again to the definition of PETERS (1984): The author feels that this definition takes adequate account of the various aspects, such as the time factor, dynamics, social obligation, economic and ecological benefit, economic principle and ethical obligation.

Ethical principles are of particular importance in discussions about sustainability in forestry. In this connection, Christen quotes the following statements by OESTEN (1993), which particularly emphasise this point: "Sustainability is the normative delimitation of forest use based on our responsibility towards future generations. As a value judgement, the principle cannot be maintained; it can neither be identified in objective terms nor explained scientifically. Nevertheless, value judgements cannot be chosen arbitrarily or at random, but must be checked in depth for their validity as norms and their relevance as normative instructions (precision, consistency and content)." With this definition, the principle of sustainability becomes part of the tradition of philosophical considerations concerning obligations towards future generations (ethics concerning the future, fairness between generations), as described in detail by JONAS (1984), for example, in the book "Das Prinzip Verantwortung" (The Principle of Responsibility).

The following, in particular, are the main contents of different schools of thought or directions of scientific work in this connection (CHRISTEN, 1996; p. 74):

- Approaches to definition from the field of ecology: all these definitions primarily refer to *aspects of a moderate use of resources*, the prevention of destruction or pollution of the natural basis for production and to considerations regarding population density (acceptability). What is missing in most cases, however, are statements concerning socio-economic issues and the productivity of agricultural cultivation systems.

- Considerations on *economic sustainability* must, however, be seen differently and separate from the origin. Originally, reference exclusively was made to statements concerning the

relationship between production and consumption. As a rule, little attention was paid to statements regarding eco-systems, ecological balances and social concerns. First attempts to define sustainability can be found at the micro-economic level (business level) and at the macro-economic level (global development).

- A third source of many attempts at defining sustainability are taken from research work undertaken by social scientists. Here, the attempts at definition centre on assuring the *welfare* - and this is not defined in any further detail - *of the rural population*. Considerations relating to the development of the population and of the labour market, as well as their impact on welfare and poverty, are frequently the point of departure. Again, these definitions did not contain ecological aspects.

The definitions, presented in summary form, already are syntheses of the different sub-aspects and thus include *references to ecological, economic and social concerns of a sustainable agriculture*. Depending on the field of work of the different authors and/or the composition of the organisation in question, these three aspects are represented with varying emphasis in the different approaches to defining sustainability. Until a more specific definition has been found, various interest groups will, of course, try to establish a definition that fits their own individual needs (ALLEN, P. ET AL., 1991). LOWRANCE ET AL. (1986) made a compromise proposal in which the authors produce different definitions of sustainability with shifting emphasis, in keeping with the different levels of hierarchy in society - in this case agriculture. Taking the field level as a basis, the authors feel that sustainability can be defined in different ways.

In spite of a number of mutual relationships and dependencies between the different levels, highly deviating restrictions apply to the different levels (ALTIERI, M., 1984). By the different attempts at definition as regards *sustainable agriculture* or an *agriculture with potential for the future*, the *following six components* are most important, which to some extent also present an expansion of the different definitions under review (CHRISTEN, 1996; pp. 74):

- The ethical components, ethics for the future (*fairness between generations*, IG).
- Sparing use of resources, maintaining the basis for production and avoiding or reducing the strain on the environment (*basis for production*, PG).
- Preserving bio-diversity, as little interference as possible with natural eco-systems through agricultural production (*bio-diversity*, BV).
- Securing the economic viability of agricultural enterprises, improving the employment opportunities in agriculture and preserving the rural structure (*socio-economic component*, SK).
- Responsibility of agriculture for society as a whole in connection with guaranteeing food supplies and food quality (*social responsibility*, GV).

- Global component of sustainable development (*global component*, GP).

After a comparative examination of the different approaches to definition, CHRISTEN (1996; pp. 74) draws the following **conclusion**: the sparing use of the production basis (PG), the preservation of the bio-diversity (BV) and the social and economic component (SK) can be found in most definitions, although the weighting of the individual components varies (LYSON, T. A.; WELSH, R., 1993). The other components (global yardstick for sustainable agriculture and fairness between generations) can, however, only be found in a few publications. On account of their considerable political importance in the USA, CHRISTEN refers particularly to the definitions of sustainability in the American Plant Cultivation Society (ANONYMOUS, 1989) and the definition contained in the Farm Bill. Both definitions lack precise statements on the ethics for the future, as well as on the global components for a sustainable development. Only the definition by ALLEN ET AL. (1991) takes account of all the aforementioned sub-aspects.

In this connection, it is therefore also significant to realise that, in order to arrive at a definition of sustainability, it is important to belong to a specific social group. In this connection, CHRISTEN refers to American studies (DUNLAP ET AL., 1992). Whereas farmers will naturally underline the socio-economic aspect in their definition of sustainable agriculture (viability of the enterprise, preserving rural areas, etc.), scientists will put more emphasis on the bio-diversity component and the ethics for the future.

Irrespective of any possible influence by any specific group on the definition of the concept, the fact must be borne in mind that future generations throughout the world will also have to rely on the **potential of soil for production purposes**. This aspect is also considered to be one of the central tasks of agricultural research. Precisely the influence of different cultivation measures, on the one hand, and the impact of pollution and erosion on soils, on the other, are the subject of agricultural research. This conclusion is also confirmed in the opposite sense, since JONAS (1984) in his book "Das Prinzip Verantwortung - Versuch einer Ethik für die technologische Zivilisation" (Responsibility as a principle - An attempt to establish a code of ethics for a technological civilisation), where he makes particular mention of the food problem, referring to it as an example for "the tolerance limits of nature" that have already been reached today.

In the ongoing discussion of **sustainable development**, also FAO has developed its own definition of it by encapsulating the interest of agricultural activities. Sustainable development is in the practical FAO description to be conceived as *"environmentally non-degrading, technically appropriate, economically viable and socially acceptable"*. Later on this broad notion was put in a more precise context by specifying the features of a sustainable development as follows: "resource use and environmental management are combined with increased and sustained production, secure livelihoods, food security, equity, social stability and people's participation in the development process." This means clearly in the FAO view this notion refers to a *balance between environmental, social and economic objectives* to obtain maximum welfare while taking account of external factors (such as technology). NIJKAMP (1997) extends the above FAO

definition by describing *sustainable development* (in a given sub-sector of agricultural activity and in a given region) more precisely as: *"a balanced development policy for agricultural resources in the region concerned, to such an extent that a maximum level of welfare* (including quality of life) - now and in the future - *is achieved through a co-evolutionary strategy in which environmental constraints emerging from the regional carrying capacity or critical loads are taken into consideration.*"

Even this clearly specified description of sustainable development leaves us with certain difficulties for a proper implementation. Especially the above mentioned *"components of sustainability analysis"* - i.e. measurable sustainability indicators, normative reference values and a structured evaluation method - cause some trouble. In these contexts the largest deficits in research are to be identified. This will lead to difficulties on a political level when the evaluations of the results of the world trade negotiations will fall due - as agreed upon in the Marrakesh Agreement. Austria (as well as other signatory countries) will probably try to point out the negative impact of the world trade order on its agro-environmental situation (loss of environmentally friendly production methods) in order to justify a certain protection level. Thus it will be necessary to have such an instrument at hand, which is capable to measure such impacts. The existing indicator systems (e.g. OECD Agro-Environmental Indicators - OECD 1996) may be able to picture certain parts of the agro-environmental conditions but they lack the capacity to analyse political measures according to their cause-effect relations. Therefore a recommendation of this paper might be the development of such an instrument.

V.2.1.4 A Working Suggestion for the Definition of Sustainability - Can Organic Farming be seen as a Synonym for Sustainable Agriculture?

As mentioned above it seems rather useless in the context of sustainability to add another definition to the thousand existing ones - especially regarding the lack of operationability of them all. Therefore it seems much more convincing to look for existing examples which have implemented the principles of sustainability. In other words, are there existing models of sustainable agriculture which will lead us to an operationalisable definition? As for the benefits of political decision makers it seems legitimate to highlight such models as innovative examples which could give rise to supporting environmental, agricultural and trade policy measures. We think that the practice of organic farming can be seen as an adequate existing example for sustainable agriculture.

It has to be pointed out that Austria takes a leading role in the application of organic farming methods. The success-story of organic farming may be quantified by the following figures: The number of organic farmers has been risen from 1.539 in 1990 to 22.000 in 1995 and is still steadily growing. Now, is it legitimate to say that this organic agriculture in Austria is an example of sustainable agriculture? We think that the *definition of organic farming*, which can be found in the "Codex-Richtlinien" (Chapter A8 of the "Österreichische Lebensmittelbuch") and

in the *"EU-Bio-Verordnung 2092/91" from July, 1994* could be *a possible approximation to the definition of sustainable agriculture.*

Without being able to go into details of the above mentioned regulations, which would go far beyond the scope of this paper, the following definitions should be quoted instead:

> "*Organic farming comprises all agricultural production methods, which cultivate the soil or livestock without using substances which mean a danger to live. They do this by employing measures of cultivation according to nature. The farm shall be seen as a complex system with all its interlinkages. Thus the goal is not to improve single parts of this system in their efficiency but to improve the farm as a whole. This might take longer but in the long run will be the more successful alternative.*"
>
> *Organic farming relies on three basic principles:*
>
> - *As far as possible the fertility of the soil is "self-produced" instead of bought.*
> - *The strength of the plants shall be improved instead of fighting diseases and parasites.*
> - *The productivity of the livestock shall not be improved at the expense of their health and natural duration of life."*
>
> (VERBAND DER ORGANISCH-BIOLOGISCH WIRTSCHAFTENDEN BAUERN, 1994)

An other definition can be found in WOODWORD ET AL. (1996), which states the *Basic Principles of Organic Agriculture:*

- *„To work as much as possible within a closed system, and draw upon local resources.*
- *To maintain the long-term fertility of soils.*
- *To avoid all forms of pollution that may result from agricultural techniques.*
- *To produce foodstuffs of high nutritional quality and insufficient quantity.*
- *To reduce to a minimum the use of fossil energy in agricultural practice.*
- *To give livestock conditions of life that conform to their physiological needs and to humanitarian principles.*
- *To make it possible for agricultural producers to earn a living through their work and to develop their potentialities as human beings.*
- *To use and develop appropriate technologies based on an understanding of biological systems.*

- *To use decentralised systems for processing, distribution and marketing of products.*
- *To create a system which is aesthetically pleasing to both those within and those outside the system.*
- *To maintain and preserve wildlife and their habitats.“*

It seems adequate to regard these definitions as the method of agriculture in accordance with the principles of sustainable agriculture. They shall be the basis for the recommendations and conclusions of this study.

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V.2.2 Agriculture, Trade and the Environment

Franz Weiß

Unfortunately there is not much scientific literature about effects of agricultural trade liberalisation on the environment. Existing theoretical papers simply use general models on trade and environment, and do not sufficiently consider special features of agriculture. The few empirical papers estimate the change of production quantities, and try to derive environmental effects from those changes. Some of the well known articles in connection with our topic are ANDERSON (1992) and LUTZ (1990). The following section presents the usual line of arguments, and its weaknesses.

Neo-classical welfare analysis of a trade liberalisation in case of externalities has already been presented in Section III. In short it says, that in case of negative externalities import countries gain more, while export countries gain less from a liberalisation of trade, than in case of no externalities. However, if the optimal environmental policy is adopted, the welfare effect is clearly positive for both importing and exporting countries. This can be demonstrated by the following graphs.

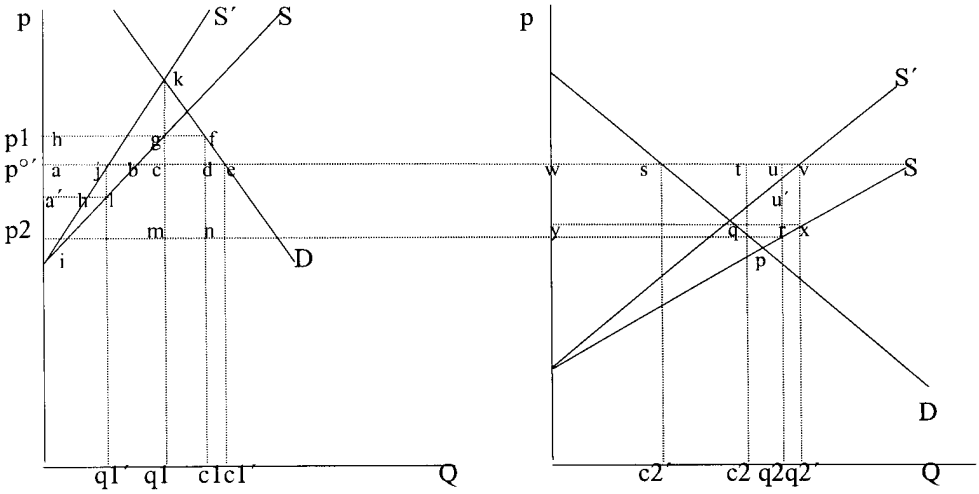
The left part of Graph V.2-1 shows *supply (S)* and *demand (D)* of importing countries, the right part for exporting countries. In case of negative externalities of production, the *social marginal costs (S')* are located above the *private marginal costs S.* Protectionist measures from importing countries lead to the high price level *p1* in importing countries, and the low price level *p2* in exporting countries. The volume of trade amounts to *c1q1=c2q2*. If those protectionist measures are removed without introducing environmental measures, the world market will end up with the equilibrium price level *p°*, which balances planned imports (*q1'c1'*) and exports (*c2'q2'*). In importing countries consumers gain *ahfe*, while producers lose *ahgb*. Moreover, the government loses receipts, in case of a duty *gfmn*. Finally, the countries gain by a reduction of environmental damages in the amount of *bgkj*. So, the net welfare effect for importing countries is *bjck+fde-cdmn*. In exporting countries the net welfare effect is *svqr-r'v'vu*. Since *cdmn=tuqr*, the total welfare effect depends on the net environmental effect *bgkj-r'v'vu*.

Suppose, simultaneous to trade liberalisation in both countries a Pigou-tax is introduced. Then a positive net welfare effect can be guaranteed, since social marginal costs do not exceed the price in any point. In Graph V.2-2 *p°'* will be the equilibrium price level, which is somewhat above *p°*. The net welfare gain for importing countries is *bcg+dfe-cdmn+ljgk*, for exporting countries it is *svu'rq*. Since *tuqr=cdmn*, the total net effect is positive. The environmental situation will improve in importing countries, but deteriorate in exporting countries. However, this is more than balanced by other welfare gains.

Graph V.2-1

Free Trade and environment without Pigou-tax

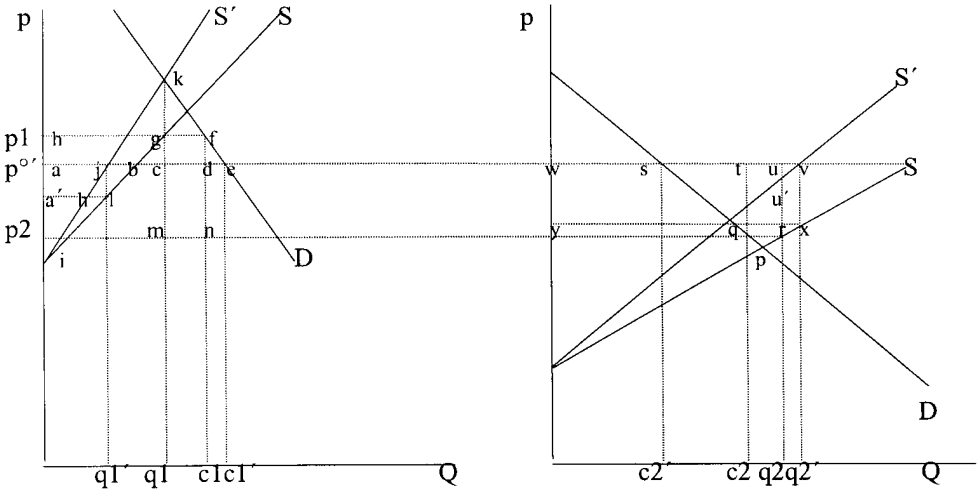
a) Importing countries *b) Exporting countries*



Graph V.2-2

Free trade and environment with Pigou-tax

a) Importing countries *b) Exporting countries*



One of the crucial assumptions of the above analysis is, that environmental effects can be determined by production quantities. For agriculture this is argued with production factors like chemical fertilisers and pesticides, which are supposed to be used more intensively when output increases. Since output rises with prices, decreasing prices lead to lower environmental damage via a decline in output. In order to get empirical evidence for this assumption ANDERSON (1992) contrasts PSE with the use of chemical fertilisers in different countries. Table V.2-1 shows, that countries with high producer supports use much more chemical fertilisers than countries with low producer supports. However, having a closer look to the countries, it can be seen that in all countries with low use of fertilisers either population density or per-capita income is very low, too. So, either land is very cheap, or farmers cannot afford chemical fertilisers. To conclude a positive correlation of price and chemical fertilisers from those data is therefore rather questionable. Moreover, it is not sufficient to confine ecological effects in agricultural production to the use of chemical fertilisers or pesticides.

Table V.2-1

PSE (producer support estimate), use of chemical fertilisers per ha arable land and permanent crops, per-capita income and population density

	PSE (79-89)	Chemical fertilisers kg/ha 1985	GNP ($) per Capita 1990	Population density
Argentina	-38	4	2 370	11.9
Thailand	-4	21	1 420	29.2
India	-2	50	350	271.3
Australia	11	24	17 000	2.2
Indonesia	11	94	570	96.3
New Zealand	20	30	12 680	12.9
Brazil	22	42	2 680	17.8
USA	30	94	22 240	27.2
Canada	35	50	20 440	2.8
Austria	36	255	19 240	93.7
EU 10	39	303	na	Na
Sweden	46	141	25 110	21.1
South Korea	61	376	5 400	439.6
Finland	62	210	23 980	16.5
Japan	68	427	25 430	329
Switzerland	71	437	32 680	164.7

Source: Anderson, K. (1992): Effects on the environment and welfare of liberalising world trade; resp. Harenberg Länderlexikon 94/95; Dortmund 1994.

There is no doubt that the use of variable production factors like chemical fertilisers and pesticides will increase with product prices in the short run, whereas other factors will remain constant. However, in the long run things are less clear, since all factors of production are variable, and price changes can lead to substantial changes in the product mix of farms and regions, and the production technology. For instance, a change in relative prices can force a farm or a region to specialise to certain products. Exactly this specialisation creates the efficiency gains according to the neo-classical trade analysis, but in terms of environmental damage the effects of specialisation can be much more important, than production effects. So, for instance the separation of animal and plant production will lead to higher use of chemical fertilisers in specialised cropping regions, while the problem of animal waste will increase in specialised regions with animal production. Both happens independently of a production change, but is nevertheless a result of price changes. Similarly, a change of relative prices can make ecologically sustainable crop rotations unprofitable, and so indirectly increase the use of chemical fertilisers and pesticides.

Graph V.2-3

Agricultural product prices and the environment

Graph V.2-3 tries to illustrate those interdependencies. According to usual theory, a liberalisation of agricultural trade leads to a relative price increase for those products, for which a country has a comparative advantage, and a relative price reduction for products with a comparative disadvantage. With declining prices the intensity of production will decrease, and therefore, due to a decline in valued marginal product, the use of chemical fertilisers and pesticides as well as livestock density will decrease either. Accordingly, a price increase will raise intensity. In contrast, the changes in price relations will favour specialisation, and so influence the factor use in the opposite way. The net effect is unclear. However, in small protectionist markets the price level for agricultural products in general will be higher, and relative prices are supposed to be less favourable for specialisation than in free large markets.

From these simple considerations it can be seen, that in order to assess social costs, it is not sufficient to look at quantities produced; at least the analysis has to be extended by information on prices. Moreover, natural conditions, like spatial aspects, information etc., play an important role, and so a neo-classical analysis in the above manner is always incomplete.

A further weakness of the model are the unrealistic behavioural assumptions. In an economy of consumers and producers with optimising behaviour, the cheapest technology would be chosen, since it would be irrational to forgo potential profits. However, in many cases farmers pursue a constant level of income, and as long as the old way of production guarantees this income level, they do not change behaviour (satisfying behaviour). In other cases the change of technology is refused due to a supposed lack of sustainability. So, if prices are high, a general adoption of new technologies will not necessarily occur. In contrast, declining prices force farmers to switch, and so price changes due to a liberalisation of agricultural markets can actually have much stronger environmental effects, than it would have in case of optimising behaviour. However, in this case other welfare effects of liberalising trade would be larger too.

Actually, we can observe that in the recent decades specialisation has increased, while the level of real prices has decreased. Conversely, one cannot observe that production intensity has decreased, as could be expected due to the long term decrease of agricultural prices. In order to separate the effects of price reductions from other factors, like technological development, environmental consciousness or information, a high econometric effort would be necessary. However, neither such empirical investigations, nor deepening theoretical studies exist. Therefore, it must be said, that the question, whether free trade in agriculture would be good or bad for the environment, cannot be answered with the information we have.

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V.2.3 Specific Case Agriculture: Agriculture - an Economic Sector which deserves Special Protection?

Bernd Schuh

As presented in the preceding chapters there are certain signs which allow for the hypothesis that Austrian agriculture seems to be endangered in its present form (see Sections III and IV of this study). Without claiming to be able to prove this hypothesis empirically within the framework of this examination the following potentials for jeopardising the Austrian agricultural sector - based upon statements in the above mentioned sectors of this study - could be identified:

Table V.2-2
Jeopardising potentials for the Austrian agricultural sector presently relevant

Potentially endangered aspects of Austrian agriculture	**Reasons for this endangerment which could be drawn from the current world trade order**
• Driving out of small scale agricultural structures • Consequently loss of typical Austrian anthropogenious landscapes source for regional identity • Risk enlargement in respect of food supply as well as natural hazards (following the formula: Risk enlargement = dimension of potential damage x probability of occurrence) • Raise of social pressure due to an increase of public transfer payments as consequence of an increase of unemployment in the agricultural sector	• Preferential treatment of agricultural production methods depending on economies of scope. • Basic assumption that every country should offer goods and services according to its relative competitive advantage (depending on the topographic and geographic framework).

Facing these *"jeopardising scenarios"* the following questions can be raised:

- Under which prerequisites (e.g. obeying of the GATT, observance of international agreements and obligations - like within the EU AGENDA 2000) Austrian agriculture could be protected at all?
- Which type of agriculture is worth to be protected in Austria?

These two questions should be tried to be answered in this chapter. Therefore a very general overview over the literature dealing with the special position of agriculture within national economies should be made first. Afterwards the particular situation in Austria - with its overall

small scale farming structure (for a detailed description see ÖVAF 1999) - will be dealt with. In this context the second of the above mentioned questions should be discussed more thoroughly: which type of agriculture produces the benefits which seem to be endangered by the world trade order (see Table V.2-2 above) in Austria? In other words: which type of agriculture ensures the best social protection of the farming households (in the sense of secured income), ecological benefits (in the sense of positive externalities) and aesthetic values which have been identified above as those values which have to be protected?

V.2.3.1 Arguments pro and contra a "Special Treatment" of Agriculture

The discussion about whether the protection of national agricultural production by means of policy measures is justified or not has a long tradition - not just in free trade negotiations. The two conflicting opinions in this context can be described as follows: On the one hand agriculture is seen as an economic sector like any other in the primary sector. Thus any risk and rigours typical for these sectors (e.g. climate changes, soil conditions) should be reflected by market prices. The fact that this seems to be prevented by national subsidies and governmental price controls is the main point of criticism of this school of thought. These arguments will be dealt with later on in the text.

On the other hand there are strong points to be found in literature which emphasise the fact that in case of agriculture indeed some special conditions have to be considered. These arguments should be summarised first:

The Austrian legislation has respected this line of thought in §1 of the agricultural bill *(Landwirtschaftsgesetz)* by stating that in the case of agriculture "naturally caused disadvantages compared to other parts of the economy" *(naturbedingte Nachteile gegenüber anderen Wirtschaftszweigen*) shall be assumed (ÖSTERREICHISCHES LANDWIRTSCHAFTSGESETZ, 1976 in its current version).

A vast amount of literature covers the reasons for the special treatment of agriculture. KREUL (1997) for instance mentions - in reference to the president of the German farming association *(Deutscher Bauernverband)* CONSTANTIN FREIHERR HERREMANN V. ZUYDTWYCK the following:

- Agricultural production other than industrial production or other than the other sectors in primary production, cannot be started or stopped just as you like; alterations of production take - biologically induced - longer time spans.

- Agriculture is the backbone especially of lowly populated regions. If farms are given up there this will cause negative effects not just for agriculture and its subsequent sectors but for the relevant region in general.

- Farms cannot be transferred to other places. They are bound to the belonging land, the buildings and the livestock.

- If the agricultural infrastructure of a region is destroyed in the first place, it will become expensive and difficult to rebuild it. On the other hand there are times foreseeable when unused ground will be required again for food and resource production.

- Farmers are preservers and protectors of nature and the environment. If they would not fulfil this task any longer, drastic after-effects for our traditional atropogenious landscapes would be the consequence.

- National nutrition procurement should still be one of the nations highest priorities - even if its necessity is not unanimously realised nowadays. Furthermore it would correspond to economic justice that the costs for this national food-procurement shall not be borne by the farmers alone but the general public as well.

In addition to this list BINSWANGER (1992) identifies the following reasons why agriculture should not be thrown into the same pot with all the other economic sectors and why it calls for special protection. Agriculture cannot participate in market processes and economic growth to the same extent as the rest of the economy. Because of its close relation to nature it will have to follow the natural conditions which may prevent such processes and growth paths. Consequently BINSWANGER underpins this argument by stating four reasons in detail:

1) The overall human demand for food is limited and cannot be extended indefinitely like is presumed for market goods in traditional economic theory. Thus the marketing prospects for agrarian products are limited as well.

2) Agricultural goods are - according to BINSWANGER - homogeneous goods, which implies that in general their quality is independent from the specific supplier they come from. So the market price becomes the primary criterion for the buying decision of the consumer. Therefore - and with the implicitly assumed fact that the market for agricultural products is a buyer-driven market - farmers are (almost always) competing in form of price competition. This implies that an expansion of the market share and with it an increase of the income of the individual household only seems possible, if the individual selling price is reduced. Whereas with processed goods a varied pricing strategy is possible due to product differentiations which consequently enlarge the income margins. Still this does not seem to justify unambiguously the argument that agriculture is a special case in economics. The criticism would follow the line that the above mentioned situation would hold true as well

for any other sector employed in primary production (e.g. mining and quarrying), where homogenous goods are produced. An other point could be the doubt whether the consumers of agricultural products really do not differentiate between different methods of agricultural production. The increasing demand for organically grown food, which is tendentially offered at higher prices, seems to be proof of the contrary. Moreover agricultural production tries to enlarge the depth of the product range within the single farm, which increases the net value added of the farm household.

However the other sectors of primary production - like sand and gravel - can fit the current market realities more easily than agriculture because they are not bound to long term production cycles like the latter. But this argument leads to the third reason BINSWANGER mentions:

3) As third reason BINSWANGER mentions the special production base of agriculture, which justifies a differentiated treatment of this sector. The agrarian production is bound to ecological cycles and the biological metabolism. This fact induces that the use of technical devices - i.e. of machinery, which is used to increase the yield - only is possible in a seasonal rhythm. Therefore machinery in agriculture has to be used rather inefficiently - compared to industrial production - which leads to a notorious overload of fixed capital costs of the single farm. Moreover the enlargement of cultivated land, which would also decrease the pressure by fixed costs, is not possible in many cases, because the land is not available - either because of the topographic situation or because of the density of settlements.

   Therefore BINSWANGER concludes that an exploitation of the soil - as the only alternative to increase yield and thus achieve coverage of fixed costs - seems the logical consequence. Market-economy supporting opinions (see STOCKER, 1991) do agree with the high fixed costs of agricultural production. But they think that the expansion of the farm sizes is still possible and ecologically feasible. Thus they do not recognise the special treatment of agriculture because of this argument. Still this opinion seems to be problematic in the case of mountainous areas and subtle structured landscapes.

4) Last but not least BINSWANGER introduces the typical way of farming as an argument to grant agriculture a special treatment in economy. The family owned farm, which is the prevalent farming structure in the Alpine area, shows a completely different business orientation as the manufacturing industry, which is generally organised as a company. This may not seem important at first sight. But while the agricultural "business" is income oriented, the industrial business is return-on capital oriented. BINSWANGER states that this difference is significant. While the work force of the farmer and his family as well as the available soil seems limited, the public company may enlarge its capital basis by continuous emissions of shares. Therefore the industrial business may grow endlessly (theoretically) compared to a farm.

As already mentioned STOCKER (1991) does not generally accept the notion of the special status of agriculture within economy. He distinguishes between peculiarities of the agricultural sector deriving from the economy in general and sector-internal ones. Let us look at the sector-internal peculiarities first: STOCKER starts with the presumption that the generally stated arguments to justify a special status of agriculture within the economy are not convincing. He refers to the following characteristics of agricultural production (according to SCHMITT, 1982):

Agricultural production is characterised by ...

- high fluctuations of output due to unstable weather conditions
- long periods of maturity of the cultivation methods
- limited possibilities to employ technical devices
- the law of diminishing returns
- slow capital turnover
- high perishableness of the products.

Now STOCKER assumes that a more thorough analysis of the arguments which promote a special treatment of agriculture seems to be appropriate. He states that a combination of the above mentioned characteristics is responsible for specific sector-internal peculiarities of agriculture. The high fluctuations of output in agricultural production due to unstable weather conditions as well as the rigidity of supply due to the perishableness of its products in combination with an especially low price elasticity of demand induce for example extreme and (often) aimless price oscillations. Thus they lead to a short- and medium term deviation from the inter- and intra-sectoral equilibrium (SCHMITT, 1982). Due to the specific character of the markets for agricultural products - i.e. the combination of two inelastic market functions (inelastic supply and demand curves), a relatively small movement of each of the curves leads to a relatively big price effect. STOCKER therefore assumes as a first characteristic of the agricultural sector that, while the output is relatively constant on the one hand, the prices are relatively unstable on the other hand. Thus he concludes that a stabilisation of prices by political measures seems necessary after all.

STOCKER identifies a further speciality of the agricultural sector in market entry barriers as well as barriers to leave the market. These are not to be seen as a reason for a special protection of agriculture but should be reduced by political interventions. STOCKER states - in agreement with BINSWANGER - the high burden of fixed costs in agriculture and classifies them as barriers to leave the market in the first place. This leads to the fact that farms which become unprofitable stay in the market. Consequently their non-exit means a market entry barrier for innovative and more competitive farmers on the other side (innovation can and should be understood as environmental innovation in this context). This situation prevents the economic growth of existing

- economically more successful farms - by farm land extension as well. which is - as already mentioned above - only possible to a certain extent regarding the topographic restrictions. Moreover it has to be pointed out that the economically more successful farmer does not necessarily have to be the more sustainably working farmer. But still STOCKER shows - in contrast to BINSWANGER - a possibility to escape at least potentially the dilemma of the scarcity of land, because he claims that political support should unequivocally help to eliminate those market exit- and entry barriers.

Apart from these intra-sectoral specialities STOCKER states macro-economic driving forces as well, which lead to a special position of the agricultural sector. In this context he puts special emphasis on the description of the market structure and its special characteristics: as already stated above the supply and demand functions for agricultural products are characterised by high inelasticities. The effects of the movements of the curves (i.e. a change in production technology) have been described above as well. Now the conditions of competition shall be introduced into the considerations.

The agricultural markets are very often referred to as ideal free markets: a huge number of agricultural suppliers meets a huge number of consumers of agricultural products. This picture lacks the empirical evidence of the actual conditions of agricultural markets. Although the number of agricultural suppliers is still huge enough to suppose an atomistic competition, the demand side does no longer meet this attitude: the concentration tendencies in the food processing industry as well as in the factor markets for agricultural production (e.g. petro-chemical industry, production of seed and fertilisers) have changed the market character considerably. In 1984 WÖHLKEN has already pointed out that "competition condition of the farmers vis à vis their partners in the market is characterised by an inequality of market-power which is caused by a dispersed supply on the one hand and a high concentration of the demand side and factor markets on the other hand" (own translation). These tendencies have become more significant during the last years, which should be illustrated by some examples:

- The top twenty multinational in chemicals are accounting for 90% of the turnover in pesticides world-wide.
- Furthermore those twenty enterprises dispose of direct and indirect control over 80% of the cultivated land world-wide disposable for agricultural production (DATA GREENPEACE, 1992).
- Eleven genetic banks altogether dispose of a genetic stock of half a million of varieties of useful plants and crops and are about to take our patents for each of them (DER STANDARD, 25.2.1998).

- Novartis - the biggest producer of pesticides world-wide (4,2 billion US$ turnover in agrochemicals in 1997) is at the same time market leader in bio-technology (e.g. genetically modified plants) (PANUPS Homepage, 1998).

- Nestlé - the market leader in the area of food processing industries - is amongst the top 10 multinationals world-wide (THE ECONOMIST, 01.1998).

- In Germany the market for fertilisers is dominated by three suppliers, which account for 75% of the market share (THOMAS AND VÖGEL, 1989).

Now STOCKER concludes that these market structures and market concentrations alone, which are not easily to be proven empirically anyway, do not justify a special and exposed status of agriculture. He argues that even if such structures are to be found, counteractions of the farmers would be the logical consequence (supposing full mobility of the production factors in agriculture). In detail the line of argument could be described as follows: An increase of prices for variable inputs of agricultural goods (because of monopolistic competition in the factor markets) leads ceteris paribus to a decrease of agricultural output via the reduction of inputs - given the condition of maximisation of profit, which states that factor price equals marginal output. Therefore the reduced agricultural supply leads to higher output prices (via the inelastic demand structure of agricultural products) and thus to higher farm household incomes (for a similar line of argumentation see also KÖSTER, 1981).

Although this argumentation shows some elegance it has to be stated that empirical evidence points out that farmers show an inverse supply behaviour in the first place and try to compensate decreasing prices by increasing output. Consequently this leads to rapid price fluctuations and therefore to uncontrollable (over-proportional) farm raptures instead of a reasonable structural change.

Looking at the two contradicting examples stated above in summary one can say, that economic theory delivers arguments for a special status of agriculture as well as against such a status. This means that - without clear empirical evidence for the cause-effect relations, which are asserted in the argumentations of BINSWANGER and STOCKER - no final judgement seems possible. It seems rather useful to develop instruments capable to picture the complex reality of the agricultural sector (with consideration of economic, ecological and social aspects alike).

V.2.3.2 Arguments promoting the Need to protect Agriculture

After this conflicting discussions about the special, exposed status of agriculture, some arguments should be listed which unambiguously call for the protection of a certain type of agriculture. These arguments are mainly based upon the principles of sustainability and suffer from weaknesses in operationalising and quantifying them.

In many cases general agricultural policy goals seems to be incomparable and incommensurable with general economic policy goals. While farms try to follow the principle of sustaining capital in the long run (i.e. the main focus lies on the aim to run a farm over as many generations as possible - thus practising economic and social sustainability) in other sectors of the economy (as long as the business is not owned privately) the principle of profit maximisation is prevailing (i.e. that economic benefits are used and consumed by a person immediately without considering whether the business or profession which has originally produced these benefits will go on in the long run).

Some of the above mentioned arguments have already shown implicitly that agriculture produces "by-products" during the production process which the farms are not paid for. In economic theory such benefits, which occur as by-products during the economic production process and which are consumed by the public without reward, are called positive externalities. Such effects are not exclusively to be found in agriculture and are therefore not to be seen as an argument for a special status of this sector. Still it seems unambiguously agreed upon that in the case of agriculture the extent of the effects and the number of beneficiaries seem to be rather remarkable. Therefore we will have a closer look at those "coupled-benefits" in the following:

- **Protection and preservation of the environmental media**

Above, we have dealt with the relevant question concerning agricultural production and its contributions to the protection and preservation of the environmental media - soil, water, air and bio-diversity in Section V.2.6.

- **Preservation of the cultural landscape**

Generally speaking, cultural landscapes are defined as the landscape shaped respectively influenced by human activity. The major part of the so classified land are certainly agricultural landscapes, which have been shaped by agricultural activity for centuries. The following values are typically derived from such landscapes (apart from the economic one):

- Leisure value (contribution of the landscape to human health and human wellbeing)
- Aesthetic, cultural and historical values
- Biological, ecological values.

Those values could only be sustained by an agricultural production method adapted to the specific landscape and its environmental conditions. They are to be seen as by-products, which cannot be de-coupled from agricultural activity.

- **Risk management**

As already mentioned above, prolonged agricultural production means a minimisation of risks in many ways. On the one hand it is a minimisation of the risk of food shortage due to a cut in food imports. Global climate change due to the anthropogenious greenhouse effect and increasing climate anomalies (flood, hurricanes) bring along the increasing risk of crop failures which do support the need for such a strategy. On the other hand it is a minimisation of the risk to loose know-how about agricultural production methods and specifically adapted cultivation techniques over time. The loss of such knowledge – in many cases only based upon working experience – could only be regained in the long run, which might lead to food shortages when production has to be abruptly started.

The risk of food shortage due to political unrest as well as the increasing risk of food shortage because of logistical break downs are underestimated as well nowadays. Still the tendency to centralise logistics of food stuff together with a decrease of national puffer stocks means an increase in national risk of food procurement catastrophes.

In the meantime the discussion about the settlement of the above mentioned coupled benefits of agriculture is established world-wide and rather controversial (for an overview see WTO, 1999). The major problem identified is the quantification of those benefits. This is due to the fact that in most of the cases weak comparability and weak commensurability of the underlying values have to be stated. While traditional valuation methods assume that different goals and values could be evaluated by a single measuring rod and moreover complete information about these values and goals will be available, multiple scales and uncertain information are prevailing in this case. The economic discipline of ecological economics has tried to face this challenge by developing methods approaching the problems of weak comparability and commensurability (for an overview see MUNDA in VAN DEN BERGH respectively MARTINEZ-ALIER, MUNDA, O´NEILL, 1997).

A more practical solution to integrate these benefits into national and agricultural accounting has been made by Norway during the ongoing world trade negotiations (see WTO, 1999): The so called "Provider-gets Principle" should be added to the general environmental policy principles (in Section VI solutions within the traditional policy frame - we will describe this principle in more detail).

If we now return to our introductory question and analyse how far the different agricultural production methods are capable to include these coupled benefits as well as the social benefits for all the people employed in agriculture, the following can be said:

First it has to be pointed out that all the above mentioned benefits are somehow related to the *principle of sustainability* - as described in Section V.2.1 above. In accordance with this principle all three dimensions of sustainability have to be involved when trying to reach the goal of sustainable agriculture. In other words, economically, ecologically as well as socially sustainable agriculture is more likely to show the above mentioned benefits than conventional

one. We will try to show this hypothesis in Table V.2-3 below, where we try to differentiate the methods of agricultural production according to the classification conventional vs. organic farming:

Table V.2-3

Conventional and organic farming - their capacity to reach the goal of sustainability:

Conventional Agriculture	• **Economic Sustainability**: this goal seems to be reached in those cases where long term farm succession takes place. • **Ecological Sustainability**: this goal seems to be reached overall in Austria - not at least due to the high acceptance of the Austrian agro-environmental programme (*ÖPUL*) (see also BMLF 1996); still some environmental media are polluted by conventional agriculture (e.g. water by nitrate concentrations), where the ministry for the environment (BMUF) stated some deficits (see 5. *Umweltkontrollbericht* - national control report on the environmental condition in Austria 1999). • **Social Sustainability**: the fulfilment of this goal seems to be connected with economic sustainability as far as family welfare is concerned; in respect of health care and higher health risk in agriculture the cause-effect relations have not been unequivocally proven yet; still the positive correlation between conventional agriculture and higher health risks are somehow claimed for (e.g. use of pesticides).
Organic Farming	• **Economic Sustainability**: this goal seems to be reached facing the increasing demand for organically produced foodstuff. • **Ecological Sustainability**: the fulfilment of this goal has been thoroughly discussed in Section V.2 above and seems to be proven unambiguously. • **Social Sustainability**: is at least to the same extent fulfilled as in the case of conventional agriculture.

Following the above mentioned line of thought that agriculture has to be granted a special status if positive externalities are achieved; and if these externalities are to the highest extent reached by specific methods of agriculture (i.e. those ones oriented on the concept of sustainability), then the preferences for those methods and their principles seem to be the logical consequence. In due course those conventional forms of agriculture, which at least try to implement parts of sustainable agriculture (e.g. participating in environmental programmes like ÖPUL) are still better off than entirely conventionally producing farms.

Of course it has to be stated that this list does not claim to be tested empirically and should be seen as working hypothesis in the sense of the research questions of this study. Besides, empirical evidence for those statements will be very difficult to be made as traditional methods of evaluation are hardly applicable in this case: either they use monetary units to measure the effects (e.g. national accounting, Cost Benefit Analysis) or they rely on physical mass flows (e.g. MIPS, ecological footprint). But in order to be able to verify the above mentioned hypothesis it would be necessary to include to a high extent quantitative as well as qualitative indicators with different scales of measurement (e.g. fuzzy sets, qualitative scales).

V.2.3.3 Conclusion

In summary one can say that in respect of the research question of this study no clear answer could be given whether or not agriculture in general should be nationally protected in its present form. In other words there are some convincing arguments which seem to justify a certain amount of special treatment and differentiation of agriculture - but in which ways and which types of agriculture?

It seems rather useful - facing the strong arguments which point out the positive externalities and high benefits of a sustainable type of agriculture - to attach the amount of protection of the sector to the (sustainable) production methods. The advantages of such a strategy are twofold: On the one hand it could be guaranteed that the argument of unqualified protectionism for the whole agricultural sector cannot be sustained. The fact that protection of home markets with an explicit environmental and public health goal are (still) accepted within world trade rules (see Section III of this study) seems to underline that point. On the other hand the goal of rewarding agriculture for producing socially accepted benefits will be achieved as well. Political measures which may help to implement such a strategy will be discussed in Section VI hereinafter.

Still in the long run it seems much more feasible to administer these benefits via the market mechanism - i.e. to include those performances into the market prices. The problems which may arise in this context are the following:

- **Social Justice**

The question in this context would be whether such a price adjustment will be socially acceptable. Facing the fact that in industrialised countries raising living standards go together with diminishing household expenditures for food and stagnating farm income seems to support the argument that higher prices for agricultural products could be justified. Of course we are aware of the fact that this could just be a rough estimation and further research would be needed to discuss the matter more thoroughly, but this would go beyond the scope of this study.

- **National macroeconomic goals**

The question in this context will be whether the increase of product prices in agriculture will be in conformity with a macroeconomic orientation to promote foreign trade. Surely such a step implemented in a single country will cause problems in international export markets. Thus the internationally concerted (or at least European) implementation of such measures seems advisable. Still the example of Switzerland seems to be rather encouraging in this respect: Switzerland has succeeded to achieve a very high degree of sustainable agriculture (59% of the land used for agricultural production is worked on sustainable - which means "organic farming and integrated production methods") in combination with a strong import protection of this sector without trying for an international harmonisation.

Additionally such an internalisation of benefits of agriculture and forestry into the prices will cause an increase of the share of agriculture and forestry in national accounting (BNP). On the first sight this may sound odd as traditional theory claims that industrialised nations go along with diminishing agricultural shares in national products. If taking into account that the overall national goals should be oriented towards sustainability this notion will have to be revised. The current situation shows that massive deficits are existing in our economies to achieve sustainability which consequently affect the agricultural sector as well and force agriculture and forestry into non-sustainability.

- **Control of the Market Structures**

Naturally the internalisation of the benefits from agriculture in the market prices will have to go along with securing of a fair market structure. This implies that imperfect competition (e.g. monopolistic competition in the factor-markets or in the processing markets) should be subject to state control measures.

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V.2.4 Reasons for Measures aimed at the Stabilisation of Production and Markets in the Agricultural Sector[1]

Theodor Quendler

Adequate food supplies are among the elementary basic needs of mankind. However, food production is subject to extremely strong fluctuations, given their strong dependence on weather conditions and the repercussions of natural disasters. With a view to securing food supplies, *measures to secure and stabilise agricultural production* are therefore of similar importance as maintaining an adequate infrastructure for storage, marketing and transport logistics (cif. comments under Chapter V.2.5.1). The USA therefore expressly refer to the *Food Security Act of 1985* when speaking about their agricultural legislation following the agricultural crisis in the early eighties. Although we can observe that several industrialised countries have been restructuring, with sustainable effect, the essential measures of their agricultural policy, they often do not completely abandon all instruments to secure food supplies. In the USA, for example, the strategic protection against possible bottlenecks ("food security") was restricted in connection with the 1996 FAIR Act; yet, at the same time, priority was given to higher direct payments in the framework of a globally oriented plan, in addition to expanding the food reserves for humanitarian purposes (these also include now also rice, corn and sorghum, in addition to wheat), which are of lesser importance regarding their quantities (HOFREITHER, 1997; pp. 25). Although these direct payments have no direct linkage to food security (which, moreover, is not of the same significance, since the USA are export-oriented), in nominal terms, an indirect contribution to stabilising food production and therefore, at the same time, to food security is made by providing farmers with secure incomes.

Questions of food security and secure farming incomes are therefore also always a subject of discussion regarding agricultural policies, especially when designing, and providing reasonable explanations for, the required market-regime and intervention measures. Researchers in the agricultural sciences are called upon to point to the relevant specific characteristics of agricultural production justifying such measures. A study of the European Commission, made with a view to a common policy for agriculture and rural development in Europe (EU, 1997; pp. 62) also describes these specific characteristics and compares the situation of this industry with that of other sectors.

In the opinion of the authors of this study (EU, 1997; pp. 62 ff.), the reasons for the introduction of public-sector measures aimed at the stabilisation of markets in the agricultural area are mainly due to the following characteristics (Table V.2-4):

1 The Sections V.2.4, V.2.5 and V.2.6 had been translated by Mrs. L. Katschinka, Vienna.

- A high risk due to dependence on weather conditions and the appearance of pests and diseases (mainly in smaller areas)
- A high investment and currency exchange risk (which concerns the sector as a whole - the latter risk will no longer apply on the single market once Economic and Monetary Union has become a reality)
- A - at times strong - dispersion of distribution to many small enterprises which are burdened by a large volume of immobile investment capital, and real-estate ownership conditions which make it difficult to conduct operations
- A fairly rigid linkage to a seasonally and biologically conditioned development and growth processes
- Producers who - on an individual basis - have at their disposal only inadequate resources and information
- The obligation to be able to supply day-to-day products on a regular basis.

H.W. POPP – in a comment to a pre-draft – referred to one further specificity of agricultural markets in this connection: On account of the low price elasticity between supplies and demand, and on account of the strong shifts in supplies, the prices for agricultural products are highly instable, with price fluctuations appearing, at the same time, that are disproportionally pronounced.

Since possibilities for attaining a short-term effect in steering production are restricted and because the markets are weak on account of a number of different factors, agriculture is radically different from other branches of the economy. Essentially, the special features in this connection can be explained by saying that farmers cannot adapt on a short-term basis to changing conditions in view of the close links with natural development and growth processes, while at the same time being extremely dependent on nature's unchangeable weather conditions.

This special position is further illustrated by the comparison with several other selected economic areas (Table V.2-4) and the relevant comments. As the authors of the study demonstrate, there are many productions where one, two or several of these speficic features are relevant, but not all of them at the same time. Farmers can and must solve these problems for themselves. There are different methods that can be used to assess and bypass the production and market risks, or at least to keep them within limits. This includes the cultivation of different field crops, technical precautions to reduce the risks caused by weather and disease, stock-keeping, Community measures, vertical integration in production and longer-term supply contracts.

Table V.2-4

Are farming structures and risk exposure different?

	Atomistic	Spatial diffusion	Weather risk	Pest and disease risk	Normal production cycle	Interest (i) and exchange rate (er) risk *)
Farming	Yes	Yes	Yes	Yes	6 months to many years, mostly yearly	Some exposure to i and er risk
Small retail shop	Yes	Less so	No	No	Weeks	No
Small builders	Yes	Less so	Yes	No	Up to 1 year	i risk
Small hotels B & B	Yes	Regionally concentrated	Yes	No	Weeks	Some face er risk
Restaurants etc. in holiday resorts	Yes	Regionally concentrated	Yes	No	Weeks	Some face er risk

*) Remarks: i ... interest rate risk; er ... exchange rate risk

Source: EUROPEAN COMMISSION (1997), Towards a common agricultural and rural policy for Europe. European Economy - Reports and Studies, No 5, 1997; p. 63

These are essentially organisational measures undertaken on a private basis in order to influence market conditions. Another possibility consists in positioning oneself increasingly on markets with future potential. Farmers in Europe have, as yet, not made sufficient use of such opportunities since (EU, 1997; pp. 62 ff.) - as the authors of the study indicate - public-sector involvement in such activities has so far allowed only little scope for doing so.

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Bibliography see Section V.2.6.

V.2.5 Important Factors influencing future Scenarios regarding Food Supplies, World Population and Environment

Theodor Quendler

V.2.5.1 Securing Food Supplies – a global political Challenge

Analysts agree that *current global food production* could be sufficient to feed the world's population, if it was distributed equally (OLTERSDORF & WEINGÄRTNER, 1996:45). In order to provide the necessary amount of energy (2500 kcal./day) and proteins (55g/day) for the approximately 6 billion persons living today even the total cereal production of slightly over 2 billion MT (1996) would be sufficient if it would be devoted to human nutrition only. In addition, of course there are other foodcrops that play an important role in human nutrition (OLTERSDORF & WEINGÄRTNER, 1996:46). Since the beginning of the 1980s until today global food production increased steadily at an annual rate of about 2 % which is slightly higher than the rate of population growth of 1,7 % (OLTERSDORF & WEINGÄRTNER, 1996:29) thus resulting in a slowly increasing per capita food production (OLTERSDORF & WEINGÄRTNER, 1996:27).

The developed countries of the North produce 45 % of world´s cereals while their share in world population is only 23 %, the difference is even more marked in the meat and milk sectors, where developed countries hold a share of 56 % and 68 % respectively (OLTERSDORF & WEINGÄRTNER, 1996:26, 108). On the other hand the major increases in world food production mainly took place in the developing countries especially in Asia, while it remained roughly constant in the developed world. Per capita food production consequently increased by 25 % in Asia and 38 % in China between 1980 and 1993. (OLTERSDORF & WEINGÄRTNER, 1996:110, KNIRSCH, 1997:11) This trend continues until today, as China increased per capita food production by another 40 % between 1990 and 1996 (FAO, 1997). In spite of these facts, more than 800 million people in the world suffer from inadequate access to food (BECK, 1997:27), mainly in sub-Saharan Africa and South-Asia.

Thus the analysis of *the reasons for food insecurity* was redirected from the imbalance between production and requirements, towards the ability or "entitlement" of individual households to get access to food. This approach was especially put forward by AMARTYA SEN since the beginning of the 1980s (KNIRSCH, 1996:10). Entitlements can have the form of either cash income to purchase food on the market, access to productive assets for subsistence production or (in emergency cases) through public assistance like food aid. Consequently most of the proposals for the eradication of hunger try to tackle the broader socio-economic problems which impinge on the food entitlement of individual hosehoulds taking less account of the (global) food production capacity.

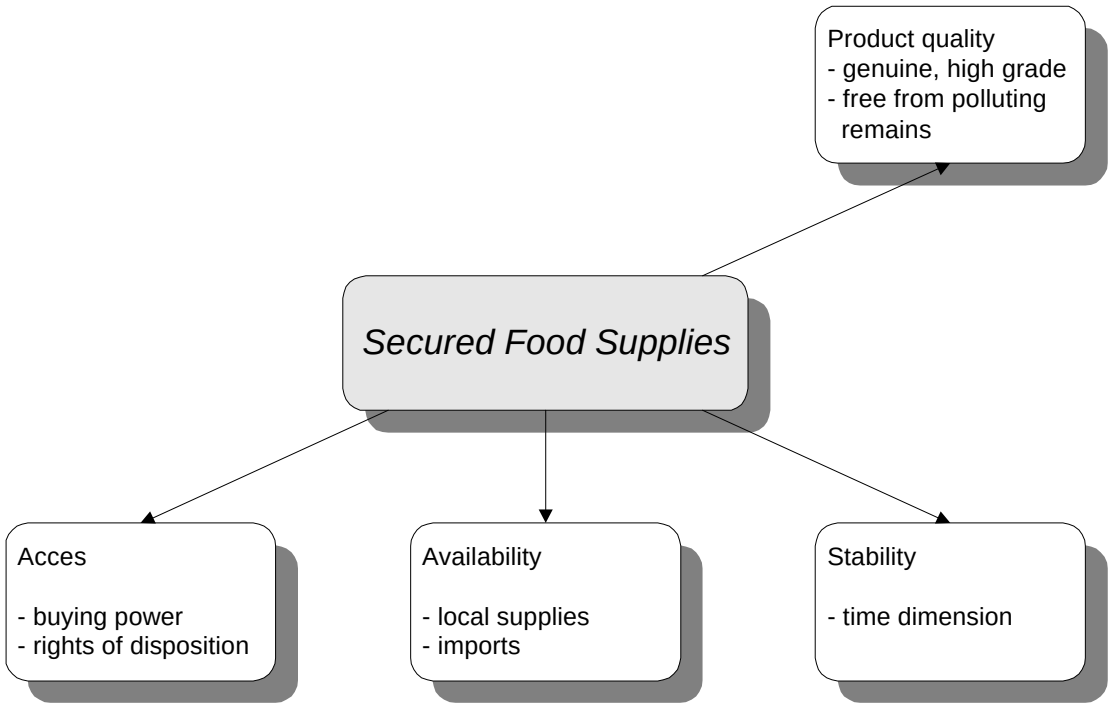
There are many *reasons for the regionally inadequate situation* regarding food supplies. According to JÜTTING and KIRSCHKE (1997; pp. 12), the main responsibility lies in a political and market failure, as well as with institutions that exist only in a rudimentary form and do not operate effectively. They also point out that in connection with policies for this sector, the "concept of securing food supplies" has to act as an interface between economic, social and agricultural policies.

When discussing policies aimed at securing food supplies and their instruments, the authors take as their basis the World Bank definition (World Bank, 1988) regarding the term *"secure food supplies"*, which can be found in the publication "The Challenge of Hunger in Africa" (1988), where it says that *"food supplies are secured if all people have access to sufficient foodstuffs at any time in order to be able to lead an active and healthy life"*. As the authors explain, this addresses the following three dimensions in particular: access to food, the availability of food and the stability of food supplies.

On account of the greater awareness for health issues, the traditionally high quality requirements regarding food (and fodder; e.g. statutory food and fodder requirements) have gone up even further. We must therefore add the factor "product quality" to the three components mentioned before (see Figure V.2-1).

Figure V.2-1

The Concept of "Secured Food Supplies"



Source: Presentation by JÜTTING, J. and KIRSCHKE, D. (1997); as indicated above, p. 13, based on: WORLD BANK (1988), The Challenge of Hunger in Africa. Washington D. C.; as indicated above; extended by the factor "Product quality".

To a decisive extent, the *"access to food"* is determined by the existing buying power, but at the same time also by a society's rights of disposition. In many countries, particularly in the Third World, people do not have the necessary buying power in order to be able to purchase sufficient quantities of the food that is, in fact, available. In addition to the economic factors, there may also be social, cultural and political organisational patterns that make access to food difficult. This especially applies to women and children.

The *"availability of food"* to a very large extent is determined by production aspects, i.e. the possibilities of increasing the local supplies. In addition, food imports can also secure supplies for the population. In this connection - so the authors state - one can also speak of "securing food supplies through one's own effort". This will be the case whenever the imports required parallel to the local production can be financed autonomously.

The time factor is part of the *"stability in food supplies"*. It is of special importance since there tend to be close links between food production and seasonal changes, as well as the dependence on weather conditions, including the risks emerging from regional natural disasters. However, we also often encounter structural nutritional deficits as a result of a misguided agricultural policy. Depending on the existing initial situation, specific measures must be taken to ensure a stable food supply. However, the importance of production aspects for improving the nutritional situation of the population and the possibilities of influencing them are known to a large extent. JÜTTING and KIRSCHKE (1997) state, however, that there are gaps in knowledge and research as regards the question how to better organise the access to food at the level of households and individual persons.

The questions regarding *"product quality in food supplies"* points to the importance of leading a healthy life. This is also clearly an indication that – implicitly – attention must be paid to the production methods for food. An interpretation of this aspect implies that everybody should have access to the kind of food that is least harmful to his/her health. This implicitly relates to both, the food substances that may be detrimental to health (pesticides, fungicides, other residues from plant breeding and stock farming) and the production and processing methods for food (intensive vs. extensive farming, mass breeding vs. species-specific breeding, feeding practices etc.).

Excursus to BSE and other diseases:

At this point the reader certainly expects some remarks concerning the problem of bovine spongiforme encephalopathitis (BSE):

The limits of technical systems are usually earlier conceivable as those of biological systems, since negative consequences of the latter usually derive with later and more uncertainty.

To feed ruminants like pigs in order to drive them to utmost performance entails the risk of detrimental mutations. It is a well known general fact that physical, chemical and biological stress are promoters of negative changes.

It is therefore not surprising that the German Holstein Friesian BSE-cow, discovered in autumn 2000, stems from a herd with yearly milk yield of 18,000 l.

An analogy can be seen in the so-called <Hamburger Disease>. This intoxification is due to verocytotoxigenic Escherichia coli, which develops in the stomach of ruminants. The growth of this microorganism seems to be fostered when cattle feed is based on concentrates. Therefore some US-Universities are already recommending to feed roughage some month before bringing beef cattle to the market.

In this context the question should be posed whether or not the short term maximisation of physical and monetary gains are allowed to be the overruling goals. The wellbeing of plants and animals should not only be an ethical obligation, it is apparently also a long term condition of food safety.

Above examples recommend strongly that it has to be permitted to discriminate in relation to PPM's (see Section III.2).

In this context it should also be noted that the now strongly favoured raising of animals in large free herds also entails risks, since diseases are usually recognised later and epidemical outbreaks are more difficult to deal with.

The mode of production seems also to have a major influence on atopic diseases. Food allergies centre around wheat and cow-milk. The usual therapy is to change over to triticum spelta (an old not overcultivated grain) and to sheep- or goat-milk. Wheat and cows are those food delivering organisms, which are pushed to utmost "productivity" by breeding, cultivation and feeding. Risk research has so far not addressed this field of diseases, which is gaining epidemic character.

Therefore risk assessment and the application of precautionary principle should be future guiding rules.

In conformity with the assessment of other experts, JÜTTING and KIRSCHKE (1997) state with regard to the definition of stable food supplies that this embodies the basic conclusion that *hunger and stable food supplies constitute a problem of accessibility rather than of supplies* (especially BRAUN, J. V., 1995). In view of the complex problems involved, strategies so far have not fulfilled the expectations regarding an improvement to the food situation of the different countries of the Third World. JÜTTING and KIRSCHKE (1997; pp. 13) classify recent experience with accompanying social measures in several countries aimed at cushioning the necessary economic reform measures as rather disappointing. The empirical case studies showed, as the authors state, "that, in view of the dimension of the problem, the accompanying measures do not meet the requirements", which - in the opinion of the authors - is primarily due to the imprecise nature of the target, the sluggish implementation and the restricted effectiveness and efficiency of the measures taken.

V.2.5.2 Food Security is not only a Problem of the Quantity produced

Seen in detail, the *problem of food security* is linked to numerous ecological, social and economic factors, as well as micro- and macro-economic aspects that go far beyond agriculture and food economics and also relate to *the entire economic and social order*, especially fairness in

distribution. Although economic growth may continue and sufficient food supplies may be available, food security or malnutrition among the poorest groups of the population may persist, or even grow, if the market-economy system - combined with a decline in social transfers - leads to a deterioration in living conditions among these groups. The ability to link economic growth and structural reforms to the fight against poverty therefore continues to be a political challenge of major dimensions, which - incidentally - does not only concern the developing and the reform countries, as was stated by PEVETZ (1997; p. 528).

Food production and access to food are decisively influenced by regional, national and social conditions. While - expressed in purely mathematical terms - there is 18 % more food for everyone today than there was 30 years ago, approximately 20 % of the population in the developing countries (i.e. about 800 million people) are suffering from hunger and malnutrition (FAO data), on account of the unbalanced distribution of food resources. The focus of the problem has clearly shifted from Asia to Africa. Among the populations suffering from malnutrition of nutritional deficiencies, 37 % can be found in sub-Saharan Africa, 24 % in South Asia, 16 % in East Asia, 13 % in Latin America and 8 % in Northern Africa. The regional difference also becomes clear when looking at the average per-capita food intake. While it grew by 18 % between 1972 and 1992 in all developing countries (from 2,135 to 2,510 kcal), the food supply deteriorated in 43 African states. Altogether, the per-capita food intake in the developing countries continues to be some 25 % below that of the industrialised countries (DER FISCHER WELTALMANACH '97; col. 971).

Deficiencies in food supplies can mainly be found in those developing countries, where

- the volume of local production is too small and
- where lack of foreign exchange (to import food) or insufficient means of transport or storage prevent the transport from surplus areas to regions with inadequate food supplies.

Even within a region or a larger state, for example in parts of Africa, there are often problems due to *a lack of purchasing power and traffic infrastructure*, which would require a balance between the surplus areas and those with scarce food supplies that would be in line with the aforementioned "concept of food security". What is therefore needed is not only an increase in local production in countries with inadequate agricultural output, but also the creation of jobs outside agriculture in order to raise the buying power, as well as to improve transport and storage possibilities. The latter especially concerns countries that also supply agricultural products to world markets (for example coffee, cocoa, vegetable primary industrial materials) and often partly have to rely on imports to secure their food supplies.

Those countries in which *armed conflicts* seriously affect the production and distribution of food constitute a special case. In recent years, famines were often caused or aggravated by civil wars (e.g. in Somalia, Sudan, Rwanda, Burundi, Angola, Liberia, Afghanistan, etc.).

Even within the developing countries, agricultural production also presented a very varied picture in recent decades. According to FAO estimates, the total world food production increased by some 30 %, or by some 3 % per person, between 1980 and 1994. For the developing countries the respective values are 43 % and 14 %. Especially those countries with a big population, such as China (85 % and 52 %), India (68 % and 25 %), Indonesia (90 % and 48 %) and Brazil (56 % and 20 %), showed favourable results. In Africa, however, the per-capita production quantity decreased by some 5 % (on account of the dramatic population growth and an increase in production of only approximately 41 %), and in Latin-America, too, several states were able to increase their per-capita production of food only slightly or not at all (for example Argentina, Venezuela, Peru, Guyana, Paraguay, as well as almost all countries of Central America).

According to experts (FAO, WORLD BANK, development-aid organisations), despite all the regional differences in many developing countries the main reasons for the insufficient food production and supply, which often occur at the same time, are the following (DER FISCHER WELTALMANACH '97; col. 974):

- In addition to *a low production output* for natural reasons, the last decades also experienced a widespread reduction in soil fertility, as a consequence of wrong or excessive farming, erosion or deforestation.
- In addition to *the low productivity of agriculture* due to a lack of modern technologies and suitable farming methods and machines, high-quality seeds and sufficient fertilisers, production in many developing countries is also low for economic and social reasons. In addition, performance-inhibiting agricultural regulations exist that result in unfair leasing conditions and a dearth of land for small farmers, which in turn are the consequence of the ownership structures (big land owners), etc.
- *Performance-inhibiting agricultural regulations*, insufficient promotion, sometimes even deliberate neglect of agriculture and rural areas on the part of governments, who give preference to the urban-industrial population. A typical manifestation of such features are the often inappropriately low prices for food, which are fixed by the government of many African states in order to be able to supply urban populations with cheap food products. In consequence, farmers have no financial incentive to produce more and thus limit themselves to satisfying their own needs.
- In many developing countries *the basic infra-structure for transporting and storing food is missing* (lack of marketing structures, insufficient means of transport in the consumption centers, high harvest and post-harvest losses due to pests, spoilage, weather conditions, lack of storage and conservation facilities, etc.), and at the same time

governments do not have the financial resources or buying power to be able to import food.

- Finally, in many countries it is *the absolute poverty of large parts of the population* which prevents them from obtaining the necessary provisions, although markets offer an adequate supply of food items. Promoting the economic development of such regions by creating jobs and sources of income and thus also buying power also helps to reduce the lack of food supplies.

At its *"World Food Summit"* in November 1996, when discussing *the necessary measures to secure global food supplies*, the FAO assumed that there would be a world-wide yearly increase rate for food productions of 1.8 %, and in the developing countries of 2.6 %, over the next few decades. With this, the number of chronically under-nourished people would decrease from the current figures of 780 to 800 million to 640 million (of which, however, 300 million alone would be in Africa) by the year 2010. Since such an increase would give rise to fears concerning first ecological damage in view of the limited natural resources and the areas to be used in cultivation, there is a need to curb the population growth, to accept a radical reversal to more sustainable forms of agriculture that would be less of a strain on the environment, and to provide for more integration into the world's agricultural markets.

V.2.5.3 Development of World Population and Food Security

In early 1997, the world's population amounted to 5.85 billion. Although the growth rate has come down and will continue to decline, the number of inhabitants is rising by more than 86 million people per year. While it took 123 years for the world population to double from one to two billions, subsequent increases of one billion inhabitants followed at ever shorter intervals of 33, 14 and finally 13 years. According to estimates, the next billion will be added at an interval of only 11 years (DER FISCHER WELTALMANACH '98; col. 1212); very close to this preview in 1999 the world population has reached the 6 billion mark.

In spite of a rapid decline of fertility, measured as a global average, **world population growth** is expected to continue for several decades to come (FISCHER & HEILIG, 1996:1). This is due to the fact, that high population growth in the past has resulted in a "young" age structure of the world population with many women and men entering the reproductive age in the years to come thus counteracts the lower number of children per couple (FISCHER & HEILIG, 1996:6). The United Nations expect a global population of 9,4 billion in 2050 as the most likely scenario, if fertility decreases at a slower pace, population will grow to 11 billion persons in 2050. Even in the most likely scenario population growth in absolute terms will remain at the current level of 80 million persons per year up to the year 2015 and afterwards gradually decline to 50 million persons per year in 2050. If fertility remains on a higher level in some populous countries, the annual increase in population will rise to 100 million per year in 2050 (FISCHER & HEILIG, 1996:2).

The population will continue to grow only slowly in *the industrialised countries*. In many countries of Europe, such as Germany and Italy, figures are even expected to go down over the next three decades. During the period 1995 to 2025 it is anticipated that the population of the Russian Federation will decrease from 147 million to 138.5 million (similar predictions have been made for the Ukraine, Belarus, Bulgaria and Hungary). An important exception to the trend prevailing in the industrialised countries are the United States, where the population will probably grow from 263 million to 331 million between 1995 and 2025. The global population growth between 1995 and 2025 will mainly take place in the developing countries.

Almost all of the increase in world population of 3.2 billion people will be contributed by *developing countries*, where Asia will take the largest part (2 billion) due to its already large population, although Africa will experience the highest growth rates and double its population until 2025 (FISCHER & HEILIG, 1996:3). The UN projects most of the population growth to occur between today and 2025, while between 2025 and 2050 the growth rate is expected to be much lower. Of course these long term projections are much more uncertain than those for the next 30 years (FISCHER & HEILIG, 1996:3), as they have to assume the reproductive behavoir of persons who are not even born today. Additional uncertainties arise if one takes into account changes in mortalitity due to improvements in medicine on the one hand and the emergence of new diseases like Aids on the other (FISCHER & HEILIG, 1996:8).

In most developing countries, especially in Asia, **food and cereal demand** is expected to increase at a much higher rate than population due to changed food consumption patterns (PINSTRUP-ANDERSEN ET AL., 1997:11). Higher incomes lead to a change in diets towards a greater diversity of ingredients especially an increased consumption of fruits vegetables and meat. The higher consumption of meat will affect the demand for cereals as wheat and coarse grains are used for animal feed, the latter especially in developing countries. Consequently developing countries are expected to double their demand for cereals for animal feed between 1993 and 2020 (PINSTRUP-ANDERSEN ET AL., 1997:11) with the largest increases for coarse grains of which the most important one is maize. Global demand for cereals will rise by 40 % between 1993 and 2020 as a result of the combined effects of continuing population growth and increased and higher meat consumption reaching 2.48 billion MT (PINSTRUP-ANDERSEN ET AL., 1997:10).

These unprecedented increases in world population and food demand give reason to review the question if (potential) food production will continue to be sufficient to feed, at least theoretically, the increasing world population or if in the future food insecurity will not only be triggered by a lack of entitlements, but an insufficient food production too. Although most projections of future developments in the world food situation expect the increase of the per-capita food supply to continue (FAO 1996 cit. BECK, 1997:27, PINSTRUP-ANDERSEN ET AL., 1997: 9), others are much more pessimistic and regard *the global food shortage as one of the major challenges in the next century* (BROWN, 1997:43-74). The crucial question in this respect is, if the natural resources for

agricultural production, mainly land/soils and water, can be utilized in a manner to provide for the increasing food needs without being overexploited and subsequently degraded.

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V.2.6 Environmental Issues and their Significance for Agriculture and the Food Industry

Theodor Quendler, Tobias Reichert

V.2.6.1 Environmental Management - a Challenge for International Co-operation

By *"environment"* we mean all processes and areas where interactions between nature and civilisation take place, including all elements of nature which influence - or which are themselves influenced by humans (see "DER FISCHER WELTALMANACH '97"; col. 1119). Changes in the environment may be due to natural or anthropogenic (human) causes. Changes caused by humans often happen at exceptional speed compared to other, natural processes, thereby exerting undue pressure on the adaptability and repair mechanisms of natural systems. The consequences these have on the stability and availability of life-sustaining systems are felt further down the road than anticipated or intended.

As most environmental issues are of global concern, they are increasingly being discussed at an international level, and since the early '70s they have been anchored in the UN institutions. (1972: Conference on Human Environment, Stockholm; establishment of the UN Environmental Programme UNEP, headquarters: Nairobi, Kenya). The UN Conference on Environment and Development (UNCED), held in Rio de Janeiro, Brazil, in 1992, is generally regarded as the climax of international environmental activities to date. It was there that the 178 participating countries decided that *"sustainable development"* would become their joint political principle for all future discussions on environment and development, both globally and nationally. This standard term was officially laid down in the "RIO DECLARATION" in 1992 and was accepted by all participating countries as a joint political goal. It implies that everything must be done to increase the chances of survival for today's world population, whilst not curtailing the chances for future generations. Sustainable development as an interactive process of social, ecological and economic development looks at global environmental issues in relation to poverty and development, and seeks ways towards a global solution.

The *"Climate Framework Convention"* and the *"Convention on Biological Diversity"* (both binding in international law) as well as the Forest Declaration, the Rio Declaration and AGENDA 21 (none of these are binding in international law) were all adopted at the so-called "Earth Summit" in Rio. This provides a comprehensive action programme for the 21st century. At the same time the Commission for Sustainable Development (CSD) was established to monitor and support implementation of the decisions taken in Rio. The Global Environment Facility (GEF) was set up to finance the programme, the costs of which are estimated at USD 600 billion per annum. The fund is affiliated with the World Bank and is also controlled by the UN Environmental Programme UNEP and the UN Development Programme UNDP.

In 1997, five years on from the "RIO CONFERENCE", the environmental discussion entered a phase of critical analysis of the progress made with implementation. Late in June 1997, an Extraordinary UN General Assembly was held in New York with the participation of 115 heads of state and government from all over the world. They took stock of how far *implementation of the decisions taken at the "Earth Summit" of 1992* had proceeded and laid down the environmental and development priorities for the years to come. A host of balances and reports were presented by official national and international institutions (including the country reports) as well as by NGOs. An important analysis in this context was provided by UNEP's first report on the *Global Environment Outlook*, 1997 (GEO1). The UN Secretary General's *"High Ranking Advisory Council for Sustainable Development"* submitted an interdisciplinary report on the subject.

V.2.6.2 Problems of Agriculture and Food Industry - not exclusively an Issue concerning World Trade

The majority of reports on this issue agree that despite the progress made in the last decade the state of the environment still is deteriorating. Also, since even the most urgent of tasks is hampered by strongly opposed interests of some of the players involved it is almost politically impossible to put the necessary measures into practice, furthermore the financial support for these measure is insufficient. A critical examination of the environmental issue must necessarily include the following points (DER FISCHER WELTALMANACH '98; col. 1175):

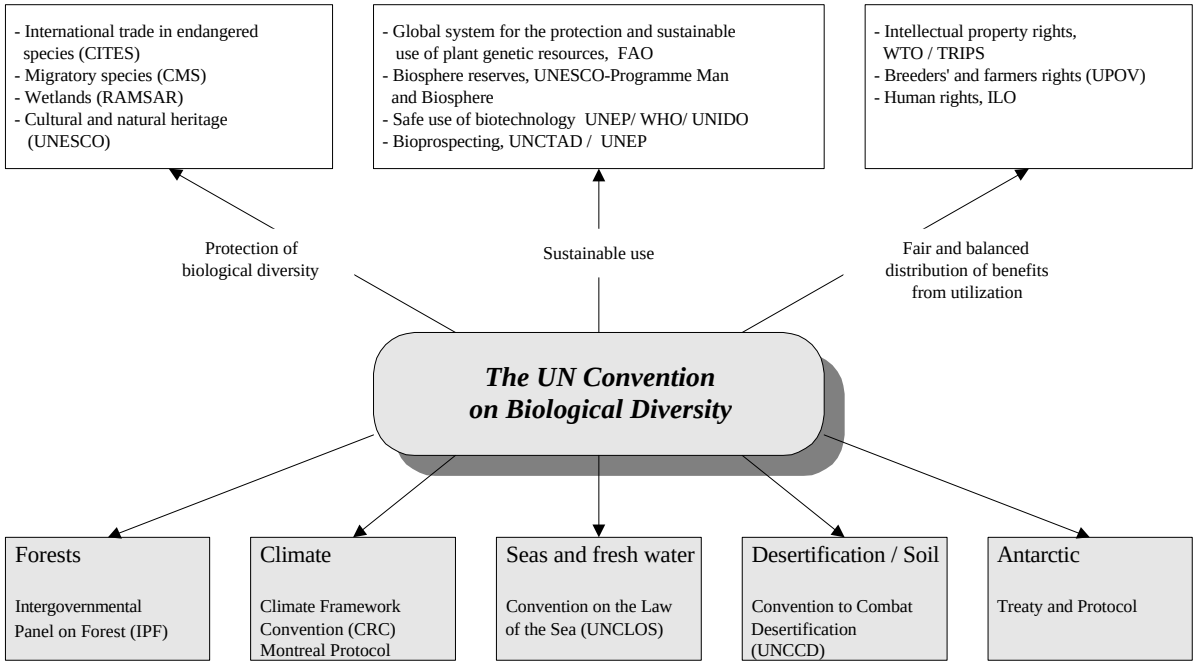
- The '90s have brought no improvement in the disparity between rich and poor, which is still increasing at unchecked speed. The gap between the richest and the poorest fifth of the world population has doubled in the last 30 years. 1.3 billion people earn less than USD 1 a day, 60 % of the world population earn less than USD 2 a day.
- Air pollution has become a serious health risk, 1.5 billion people are threatened by it. 1 billion people do not have clean water, and 2 billion people live without sanitary facilities.
- Less than one quarter of all mankind is consuming three quarters of the world's resources while producing three quarters of all solid waste.
- The population of 13 of the 15 primary varieties of edible salt water fish is being depleted rapidly.
- Emissions of carbon dioxide (CO_2), the major greenhouse gas, have increased by 10 % to 40 % in many developing countries. CO_2 emissions world-wide are increasing at unchecked speed.
- 4.6 million hectares of rain forest are still disappearing each year. Between 150 and 200 species are becoming extinct every day.

First signs of success are *a number of important conventions, all of them binding in international law*, which came into force in the wake of the RIO CONFERENCE (following a sufficient number of national ratification processes). These include the **Climate Convention** signed in Rio (3/1994), the **Convention on Biological Diversity** (12/1993), as well as the **Convention to Combat Desertification** (12/1996) and the **Convention on the Law of the Sea** (UNCLOS; 11/1994) prepared as part of the 3rd UN Conference on the Law of the Sea.

In connection with the *Convention on Biological Diversity*, the following Figure V.2-2 gives an overview of the large number of international instruments regarding the different biospheres, as well as of the many different, relevant interactions and the complexity of the problems in this connection. On an international level, conventions regarding the *"sustainable use"* of natural resources, as well as a "just and balanced distribution of the advantages derived from the use" of biological-technical progress are increasingly gaining in importance, in addition to the corresponding *measures for the protection of the environment, species and habitats* in the narrower sense (especially the "protection of the biological diversity") (Figure V.2-2). In connection with the agricultural and food sciences, in particular, it is necessary to give growing consideration to aspects of sustainability and the protection of natural resources and the environment, as well as the global and regional diversity of plant and animal life, when using the natural resources.

Figure V.2-2

The Convention on Biological Diversity - its interactions with other international agreements



Source: "Development and Peace", 1997, quoted from: DER FISCHER WELTALMANACH '98; column 1203 ff.

If the state of the environment is to improve, it is of paramount importance that the contracting states draw the right conclusions and take *all measures*, at least step by step, *necessary to implement the conventions* they signed. Great store is set on the growing number of local initiatives for sustainability, which is also seen as proof of people's increasing environmental awareness. In this respect diminishing powers of the state have created an unfavourable situation, for it is now more important than ever to find new ways of mobilising the public and raising the awareness of trade and industry. In addition, what is particularly positive in this connection is that, in recent times, questions of sustainability, the environment and the moderate use of resources is given increased attention – also in connection with the world trade order (cif. in this connection especially Chapter III.1.3.8 - contribution by SENTI). On account of the major challenges in this respect, there is, however, ground to fear (and not only for the sake of environmental protection) that the business community, society and politicians do not always pay the necessary attention to these aspects.

It should be mentioned at this point that it is an indivisible responsibility to *secure our natural heritage and to use our natural resources*. It cannot be passed on to a handful of interest groups. Engineers, scientists and the business community cannot ultimately exculpate themselves from this all-encompassing responsibility. From this perspective, the international conventions on the different environmental aspects cannot be regarded in isolation. In view of the fact that the body of knowledge regarding these very complex interactions has dramatically grown in recent times, and that we can also expect a considerable increase in the demand for food and natural process materials, the business community and politicians must also assume their full share of responsibility in this respect. Moreover, it is necessary, on the one hand, to create more global awareness for environmental questions; yet, on the other hand, answers to these questions must be applied in those places where the problem arises. In other words, ultimately on the national and regional level. This requires, however, that the necessary scope of action is given, or secured, to these operators, in connection with the business community and international trade.

With a view to the foregoing, we will try, in the following, to give a global overview of the current situation for selected *areas that are of importance* in this connection *(soil, water, biological diversity)*, in keeping with the present body of knowledge. When considering the great diversity and the regional differences, this overview will, however, be quite incomplete. Furthermore, the overview cannot be completely balanced in all (factual and regional) aspects, since it is only an itemization.

V.2.6.3 Soils - the very Basis for Agriculture and the Food Industry

■ The current situation

Soil is a highly complex system made up of physical, chemical and biological elements. It is the habitat and life-sustaining system for a large variety of plants, animals and micro-organisms. By storing water, transforming and transporting substances it constitutes a major control function in the cycle of nature. It is continuously exposed to a variety of weather conditions, soil organisms, vegetation and, last but not least, the activities of mankind, all of which leave their mark. Its very existence and quality are seriously threatened by today's economic developments and the growth of world population (for details see elsewhere). Yet to safeguard a sufficient food supply for mankind (see Chapter V.2.5.1 "Securing Food Supplies (...)") we must ensure that the fertility of our farmland is maintained (DER FISCHER WELTALMANACH '97; col. 1129).

In 1993, 32 % of the 130 million km² of *ice-free land* were covered by forests, 11 % were farmland and 26 % pastures. The remaining 31 % were largely made up of uncultivated grassland, wetlands, or have been apportioned to human settlements and transport infrastructure (DER FISCHER WELTALMANACH '97; col. 1130). According to the only world-wide survey of soil to date, in 1990, 15 % of all ice-free land was observed to have been severely damaged by human activities. In other words, 38 % of farmland, 21 % of permanent grassland and 18 % of all forests and savannahs were affected. Of this damage, 56 % was caused by water erosion, which means that soil is worn away by precipitation and flowing water. Another 28 % was caused by wind erosion, which means that soil material is shifted by the force of wind (Table V.2-5).

The degree of soil deterioration, its nature and its causes, varies from place to place. In Oceania, 16 % of arable land is damaged, in Central America the share is as high as 75 % (25 % in Europe). From 11 % of North American to 31 % of African permanent grassland, and from 1 % of North American and up to 38 % of Central American forests and savannahs are affected.

The loss of fertile farmland and the continuous increase in the world's population are seriously threatening the global food supply (see "Securing food supplies"). Between 1961 and 1993 the average amount of arable land per capita diminished from 0.41 hectares to a mere 0.24 hectares. This is most strongly felt in developing countries, where in 1993, the arable land available per capita was down to as little as 0.16 hectares, which is well below the size necessary to produce the average minimum requirements of plant energy (0.17 to 0.3 hectares).

Table V.2-5

Amount and kinds of soil degradation in different continents

	Total	Share of:	Share of degraded area on different land			Share of the different kind on total degraded area			
	area	degrad. area	arable land	perman. grass-land	forests & savan-nahs	water erosion	wind erosion	physical degra-dation	chemical degra-dation
	mio. km²	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Europe	9.50	23	25	35	26	52	19	17	17
North America	18.85	5	26	11	1	63	36	1	<1
Latin America	21.91	14	51	14	14	55	15	4	25
Africa	29.66	17	65	31	19	46	38	4	12
Asia	42.56	18	38	20	27	58	30	2	10
Oceania	8.82	12	16	19	8	81	16	2	2
World	**130.13**	**15**	**38**	**21**	**18**	**56**	**28**	**4**	**4**

Quelle: WBGU, UN-Umweltprogramm (UNEP); cit. after: DER FISCHER WELTALMANACH '98; col. 1189 f.

■ Availability of agricultural area and the potential for improved yields

In a recent study, the International Institute for Applied Systems Analysis (IIASA) undertook *an assessment of the extent of land with crop production potential in developing countries* (FISCHER & HEILIG, 1996:9). It was estimated, that total land resources were 2.76 billion ha, of which 860 million hectares have been already under cultivation in the beginning of the 90s, 275 million ha are classified as protected areas or used for habitation and infrastructure and about 1.06 billion ha is classified as forest or wetlands (FISCHER & HEILIG, 1996: Appendix, Tab. 6). If all protected areas and forest and wetlands are to be preserved, about 575 million ha of new area could be used for crop production. Of these however, 247 million ha are classified as "problem areas", 41 million ha as low and 98 million ha as uncertain rainfall area. The remaining 190 million ha are good rainfall (132 million ha) or naturally flooded areas (58 million ha) which can be expected to have on average the highest production potential.

These shares roughly reflect the pattern of areas already cultivated with one important exception: While the share of good rainfall area in the area already under production is 31 %, it is only 23 % for hitherto not utilised areas. Consequently, the share of problem areas is 30 % for utilised and 43 % for non-utilised areas. In very broad terms, the potential increase of area under crop production of 40 % can be compared to the expected population increase of 65 % between 1995 and 2050 (FISCHER & HEILIG, 1996:13), showing that an increase in per hectare yields is

necessary to allow the present per capita food production to continue. This is even more so, as it can be assumed, that the areas already under production are more fertile than those not yet utilised (BONGAARTS, 1997:39). In addition, most of the areas suitable for crop production that are neither farmland nor covered by forests are pastures and if these are converted into farmland more crops will be needed for animal feed to maintain at least current levels of livestock production.

The regional distribution of additional land resources (excluding protected areas, forests and wetlands) is rather uneven with 41 % located in South and Central America and 49 % in Africa leaving only in 10 % in Asia, mainly Eastern Asia. of which more than three quarters are classified as problem areas (FISCHER & HEILIG, 1996: Appendix, Table 6B). As the largest growth of population in absolute terms (1.3 billion people until 2025 (FISCHER & HEILIG, 1996: Appendix, Table 2)) is expected to occur in Asia, especially in South Central Asia, crop yields in this part of the world have to increase extraordinarily if a high increase of food imports shall be avoided (FISCHER & HEILIG, 1996:13). Theoretically Africa could meet its food requirements up to the year 2025 with constant yields in spite of a more than doubling population, as less than half of the area suitable for crop production (excluding forests and wetlands) is currently utilised. As rapid population growth is expected to continue until 2050, yield improvements have to contribute to meet the increasing demand. Latin America is the only region, which will have reserves in terms of area for crop production in the foreseeable future.

From a theoretical point of view, it should be possible to further increase cropping yields as the net primary productivity (NPP) of agriculture is considerably lower than that of natural ecosystems (10-20 % in many parts of the world) (WBGU, 1994:73). Only agricultural systems with high external inputs of fertilizer and pesticides approach and sometimes exceed the natural NPP. These systems often lead to severe environmental problems. If it would be possible to increase the NPP of agricultural production to only 50 % of the natural NPP on average ,the global food situation could be improved considerably without an increase in the area under cultivation (WBGU, 1994:76).

■ Causes for this threatening situation - soil degradation as an important handicap

However, there are limits to the expansion of food production, which is needed in order to secure food supplies, because current agricultural practices lead to soil erosion and consequently soil degradation and loss of productivity in all regions of the world. The only comprehensive overview on this issue is the *„Global assessment of soil degradation"* (GLASOD) coordinated by the International soil reference and information centre (ISRIC), which has been published in 1990 (OLDEMAN, 1997:24, WRI, 1992:112). Of the then 8.7 billion ha utilized for crop production, livestock grazing or forestry 1.96 million ha or 22.5 % were to some extent degraded, 13.9 % suffered from moderate severe or extreme degradation, meaning that the restoration of these soils

requires more inputs than average farmers can provide.[2] These facts are even more alarming, as GLASOD assesses only degradations which occured since 1945 (WRI, 1992:112).

The types and reasons for soil degradation, as well as its extent, vary from region to region. Unsurprisingly densely populated continents like Asia and Europe show higher rates of soil degradation, than the more sparsely populated Americas and Oceania. An important exception is Africa where 29.8 % of all utilized area is degraded, the highest share of all continents in spite of a comparatively low population density. The regional distribution of degraded areas can be obtained from Table V.2-6.

Table V.2-6

Soil erosion in different continents

	total utility area	From it: total of degraded area		Among them: middle and highly degraded area	
	mio. ha	mio. ha	in %	mio. ha	in %
Europe	741.0	218.9	29.5	158.3	21.4
North America	1.188.0	95.5	8.0	78.7	6.6
Latin America	1.763.0	297.2	16.9	199.4	11.3
Africa	1.661.4	494.2	29.8	320.6	19.3
Asia	2.681.0	747.0	27.9	452.5	16.9
Oceania	688.0	102.9	15.0	6.2	0.9
World	**8.722.4**	**1.955.7**	**22.4**	**1.215.7**	**13.9**

Quelle: WRI, 1992: 112-117 und OLDEMAN, 1997: 24; compilation by the author

The causes for soil degradation may vary within the smallest of areas: more often than not degradation is due to a combination of causes influencing each other (Table V.2-7). To give a rounded and simplified idea of the global situation: more than 90 % of soil degradation world-wide is caused simultaneously and in equal shares by deforestation, over-pasturing and farming. GLASOD distinguished between five different causes of soil degradation (WRI, 1992:114-115):

- *Overgrazing by livestock* which decreases vegetation and thus exposes soil to wind and water erosion, in addition trampling leads to soil compaction. Overgrazing is the most pervasive cause of soil degradation (35 % of all degraded land), occuring mainly in arid and semi-arid areas.

2 Coordinated by International Soil Reference and Information Centre (ISRIC) and published 1999 (OLDEMAN, 1997: 24; WIR, 1992: 112)

- *Deforestation*, which exposes soils to wind and water erosion through the removal of tree coverage, includes logging and the conversion to agricultural or industrial area. Accounts for 30 % of all degraded area.

- *Agricultural activities*, like insufficient use of fertilizers and shifting cultivation with too short fallow periods lead to a loss of nutrients and subsequently loss of fertility. On the other hand, the application of too much fertilizer or manure leads to soil acidification and water pollution. Utilization of heavy machinery leads to soil compaction and poor management of irrigation to salinization. Faulty agricultural practices are responsible for 28 % of global soil degradation.

- *Overexploitation of fuelwood*, strips the land of vegetation and exposes it to wind and water erosion, causing 7 % of global soil degradation with the highest prevalence in dry areas.

- *Industrialization* with the resulting accumulation of industrial waste and acidification of soils by airborne pollutants accounts for only 1 % of global soil degradation but is much more important in Europe (9 %).

Table V.2-7 shows the causes of soil degradation on various continents.

Table V.2-7

Causes of soil degradation in the various continents, shares in %

	Agriculture Activities	Overgrazing	Deforestation	Overexploitation of fuelwood	Industrialization
	Share at the total degraded area in %				
Europe	29	23	38	<1	9
North America	66	31	4	-	<1
Central America	45	14	23	18	<1
South America	26	28	41	5	<1
Africa	24	49	14	13	<1
Asia	27	26	40	6	<1
Oceania	8	80	12	-	<1
World	**28**	**34**	**30**	**7**	**1**

Quelle: WBGU, 1994; cit. after: DER FISCHER WELTALMANACH '98; Col. 1189

Growing intensification of farming is recognized as one of the main causes for soil degradation in many industrial countries. Industrial agriculture is characterized by an increasing use of heavy machinery, consolidation of farmland, monocultivation of plants with a high yield, excessive use of fertilizers and pesticides, as well as intensive irrigation. While these measures have markedly increased productivity and crop yields, they have at the same time taken their toll of soil and

related eco-systems. Agricultural activities for example account for about one quarter of total degradation in most parts of the world, with the important exceptions of Oceania (8 %) and North America where about two thirds of the degradation is caused by agricultural activity.

Of special importance is the fact, that about 25 % of US cropland is eroding faster than is considered „sustainable“ by the Soil Conservation Service (1 t/ha/year - PIMENTEL, 1991). According to information by PIMENTEL (1991; p. 3), a soil erosion of 18 t/ha/year must be expected on average for arable land in the USA, with twice as much soil erosion occuring on intensively used farm land, as in Iowa and Missouri. North Americas „bread-basket" extending from the midwest of the USA through the Great Plains into Canada is exposed to wind and water erosion and soils have already lost some of their original fertility (WRI, 1992:116).

The causes of soil degradation differ considerably between regions. The overgrazing for example is the most important cause in the arid and semi-arid areas of Oceania (Australia) and Africa. *Over-grazing by too many cattle* is the cause of desertification of large areas, particularly in the arid regions of Africa, which in turn is destroying much of the vegetation and soil in those parts of the world. In the Sahel alone 1.5 million ha of arable land are lost each year. Apart from natural influences such as fluctuations in precipitation, steppe formation and desertification are largely due to the social and economic developments of recent times: population growth - the Sahel has a growth rate of 3 %, one of the highest worldwide -, displacement of the rural population to meagre, ecologically fragile areas, as well as large-scale growing of cash crops (often as monocultures) on soil rich in nutrients have brought about an abandonment of traditional, ecologically adapted forms of farming.

Deforestation takes the lead in Latin America, Asia and (Northern and Eastern) Europe, where large forest areas are exploited for commercial logging. *Deforestation*, particularly in tropical regions, but also in Amazonia, in India and on the island of Borneo, has caused irreversible damage to the soil and the entire eco-system. Extensive wash-out of nutrients and soil densification have made impossible regeneration and reforestation. This is particularly true in the case of mountain forests. Tibet, for example, has lost 45 % of its forests since 1965, which is seriously upsetting its water balance. About half of the world population is indirectly dependent on Tibet's water, as seven of Asia's largest rivers have their springs there.

■ Consequences for international co-operation

Far-reaching international *agreements on soil protection* have yet to be proposed. The "United Nations Convention to combat desertification in countries experiencing serious drought and/or desertification, particularly in Africa" (UNCCD) signed by 100 states in Paris in 1994 does not prescribe any programmes or transfer of funds from industrial to developing countries. However, it does contain several new approaches in international law, such as the "demand-oriented transfer

of technology": participating countries may decide on their own form of problem solution, where the local population is called upon to participate in developing and implementing action plans to combat desertification. The first follow-up meeting in January 1995 ended without result. The Convention will come into force upon ratification by at least 50 states (late May 1996: 31, Germany and the EU have not ratified to date).

V.2.6.4 Water as an Environmental Factor in Agriculture and Plant Production

■ The current situation

Water is a vital prerequisite for most biological processes on the earth. It is involved in soil formation and the shaping of landscapes. Fresh water is the single most important food for humans and the basic ingredient for the production of all other foodstuffs. *The growing scarcity of the world's fresh-water resources* is seriously damaging eco-systems, it is setting limits on food production, putting people's health at risk and is giving rise to a number of regional conflicts over the distribution of water. Pollution of groundwater, flowing waters and the oceans is also affecting water resources world-wide.

Water supply is determined by the fact that 97 % of all water is sea water, which covers 70 % of the surface of the earth. Two thirds of the remaining 3 % fresh water are stored as ice, either in glaciers or in the polar regions. Of the one third left, the greater part occurs as ground humidity or depth water and as such is inaccessible to man. Less than 0.4 % of all water is found in rivers, lakes and groundwater reservoirs, and can be utilized by man (DER FISCHER WELTALMANACH '97; col. 1145).

The water cycle, which is generated by the sun, provides eco-systems and land areas with an annual 110 000 km³ of fresh water in the form of precipitation. Most of this evaporates immediately. 42 700 km³ run down the rivers of the earth. Of the estimated 12 500 km³ available annually for direct use, almost 50 % are already being used today. Thus for 1995 the per-capita availability of fresh water from rivers was calculated at 7 300 km³, 37 % less than in 1970. The reason for this is the population growth, and as it continues, as production increases and individual needs become more sophisticated, this already dire situation will come to a head.

Human influence on the water cycle is, as KATZMANN put it in a presentation recently (1998), both intentional and unintentional. Planned interventions include flood protection, water reservoirs, water drainage, irrigation, canalization, dams, sewage treatment plants, etc. Unplanned interventions are caused by emissions which change the climate or the ocean currents, or by the release of chemicals which accumulate in the food chain, or by nutrients from waste water or agriculture which have a longer life than is generally assumed.

■ Marked increase in the use of fresh water for agricultural purposes

The exploitation of water resources by humans has increased dramatically since the beginning of this century. Between 1900 and 1995 global water consumption grew more than six-fold, i.e. it increased twice as quickly as the world population over that period. This rapid growth is largely due to an increase in irrigated agriculture as well as an increase in industrial and private utilization. Agriculture is by far the largest consumer, accounting for 70 % of all water used. Irrigated agricultural land already supplies 40 % of the world's growing demand for food on a surface area of only 17 % of all agricultural land (DER FISCHER WELTALMANACH '98; col. 1206).

The expansion of food production in recent decades, including the "green revolution", is generally seen as a direct consequence of increased irrigation. According to these sources *water consumption in agriculture* has risen by 60 % since 1960. The problem this entails is that more and more groundwater resources are being tapped, which are renewed at a very slow pace but at the same time represent the single most important source of drinking water.

Empirical studies have shown that a country's water supply starts to become sparse when the extraction of fresh water exceeds the water supply annually renewed by precipitation and supply from other countries by 10 %. 20 % to 40 % are considered the midrange; an excess of more than 40 % implies that a country is suffering high water scarcity. Approximately 460 million people (more than 8 % of the world population) live in countries with high water scarcity, 25 % in countries with medium water scarcity. Together, these make up one third of the world population, and 80 % of this group live in countries with a low per-capita income. In other words, water scarcity is primarily affecting the poorer regions of the world, where it is often hampering the necessary economic improvements (DER FISCHER WELTALMANACH '98; col. 1206 f.).

This global aggravation of water-related issues has led to a number of initiatives to promote the implementation of sustainable forms of water management at an international level (DER FISCHER WELTALMANACH '98; col. 1211). AGENDA 21, the amended water policies of the World Bank of 1993, and most recently the report on global fresh-water resources submitted by 10 UN organisations in April 1997, all of which are pleading for a consideration of the rules formulated during the **International Conference on Water and the Environment** in Dublin (Ireland) in 1990:

- **Fresh water** is a finite resource indispensable for life, development and the environment.
- **Management of water resources** should include all target groups (e.g. consumers, planners, and politicians).
- **Women** play a prominent role in the supply, management and protection of water resources.

■ Water must be considered an **economic good**.

Similar claims were raised at the first Water Forum held at Marrakesh, Morocco, in March 1997. The World Water Council was given the task of preparing a global survey on water and environment. On the basis of the results of this survey the 2nd Water Forum, planned for the year 2000, is to distribute concrete proposals for actions to the national governments (DER FISCHER WELTALMANACH '98; col. 1212).

One particular problem connected with fresh-water resources is that, in contrast to climate conditions which occur globally, they must always be considered national or regional goods. *Some countries are highly dependent on neighbouring countries for their fresh-water supply*, which, in cases of water scarcity, can often be a cause of international conflict. To protect fresh-water resources and their exploitation, national and trans-national strategies must be developed and international agreements be signed, particularly for rivers shared by two or more countries.

■ Water - a bare and often overused resource

Like with land, *demand for water will continue to grow* with population and economic development (PINSTRUP-ANDERSEN ET AL., 1997, 23). Today, 28 countries with a total population of more than 300 million people have annual renewable water resources of less than 1600 cubic meters per person and year, and are thus regarded as being under „water stress". These figures could increase to 50 countries with a total population of about 3 billion people. The demand for water is expected to shift from agriculture to industrial use, which accounts for 80 % of the additional withdrawal in developed countries, and will be growing much faster than agricultural use in developing countries. In several parts of the world water withdrawal for irrigation purposes has already lead to considerably lower groundwater levels and lower amounts of water in downstream river areas, endangering aquatic ecosystems especially in river deltas and reducing the availability of fish for human consumption (POSTEL, 1996: 74 ff.).

Some areas with serious **reductions in groundwater levels** are Mexico and the southern parts of the USA where in the latter most of the water is used for the cultivation of fruits and vegetables, eastern and some parts of southern India and northern China where water is utilised for the irrigation of rice and wheat (POSTEL, 1996: Tab. 3.1.). Some rivers suffered water withdrawals which prevent them from reaching the oceans in the dry seasons of the year. This holds true for many rivers in Asia including the Ganges in India and the Rio Colorado in the USA/Mexico. These developments put serious *constraints on the possibilities to increase the irrigated area*, consequently growth in irrigated area is expected to decline from an average annual rate of 1,5 % during 1982-93 to only 0.6 % during 1995-2020 (PINSTRUP-ANDERSEN ET. AL., 1997, 24). The largest increase in irrigated area is expected in India, where public and private investments

remained comparatively high. In Africa area under irrigation will increase by 50 % until 2020 albeit from a very low basis.

V.2.6.5 Bio-diversity - a Key-Requirement for future oriented Agriculture and Plant Production close to Nature

■ **Background, major threats and their causes**

"Bio-diversity" as a term encompasses the entire range of fauna and flora, the diversity of eco-systems as well as the diversity of individual species. Protection of this biological diversity means a clear commitment to its intrinsic value (Convention on Biological Diversity) but also a recognition of *the diversity of phenotypes as a basic prerequisite for the stability of eco-systems and their output*, which humans ultimately depend on. Bio-diversity is also an economic resource which is being fought over more than ever before. Even though its vital importance has been recognized, it is being depleted at great speed (DER FISCHER WELTALMANACH '98; col. 1200).

The loss of bio-diversity is due to humans alone. In many cases this irreversible damage is caused by a combination of different factors. By far the biggest contributor today is the destruction, change or fragmentation of living space being transformed into pastures, agricultural land, settlements, roads and railways, industrial land or land for tourist infrastructure.

As yet, there is no comprehensive documentation of *the loss of living space world-wide*. Individual surveys, however, clearly show the extent of damaging influence attributable to humans. In South America, for example, more than one fifth of all forests and savannahs have fallen prey to human activities since the Europeans first arrived in 1492. According to the only global survey to date of the destruction of plant life, more than 50 % of natural eco-systems world-wide have been impaired by moderate to extensive human interventions. The greater part of these activities has taken place in Europe, where only 10 % of all natural living space has remained relatively unharmed.

The expansion of modern-day commercial agriculture and the introduction of new varieties of plants have caused *a loss of genetic diversity* of economic plants. In the course of the "Green Revolution", new, more productive, yet less resistant varieties were introduced, which, while raising food production figures as such, also brought about a drastic reduction in the natural diversity in the fields, as pesticides and artificial fertilizers were now used more intensively (DER FISCHER WELTALMANACH '97; col. 1143).

Other causes for the loss of plant species are:

■ Pollution from industry

- Over-exploitation of wild animal and plant populations as raw material or for food purposes
- Unintentional killing of sea animals caught in commercial fishing nets
- Accidental or deliberate import of exotic species or pathogens
- Consequences of increased greenhouse emissions generated by humans as well as degeneration of the ozone layer
- Tracking down and deliberate extermination of parasites with often unanticipated consequences for eco-systems.

Forests play a vital role in *"maintaining biological diversity"*. An estimated 50 % of all species on this planet are native to forests in the humid tropics. Many species are limited to very small areas and specific locations, which means that destruction of the forests necessarily results in a reduction of biological diversity. At the same time the chances of discovering new plants for cultivation or substances for use in medicine are markedly diminished. Aside from large-scale deforestation in some regions carried out to make way for agricultural land, moderate latitudes are primarily confronted with so-called new forest damages caused by a combination of exhaust gases, soil degradation, heat stress and a high game population, which all together have long-term effects on the resistance of trees.

The growing importance of international tourist activities is also seen as a source of serious risk. Eco-systems responsible for maintaining bio-diversity, such as coasts, small islands, coral reefs, dunes, and also high mountains, forests and fresh-water eco-systems, are increasingly exploited for tourism. The loss of natural living space in the Mediterranean, which as the world's main tourist destination is attracting 35 % of all international tourists each year, is considered particularly drastic.

- **Dangers for the diversity of species and the genetic potential**

There is a very big diversity of plant and animal life. According to most recent sources, some 250,000 of the altogether 300,000 more advanced plants have been described so far (EL BASSAM, 1998; cif. Figure VII.1-5, Bio-diversity as a Resource). The humid-warm tropical rain forests, which only cover some 7% of the land surface, accommodate up to 90% of the species living on land (DER FISCHER WELTALMANACH 2000; col. 1283).

In connection with biological diversity, growing importance is attached to genetic diversity or variability within a species (diversity of varieties in plants, for example), in addition to the diversity of eco-systems ("mapping out species and their natural habitats on the world's surface") and the diversity of species ("variety of different species"). *The many different anthropogenetic*

interventions into nature's household have a sustainable impact on the biological diversity. It is also of importance, at the same time, that the diversity of plant and animal species is distributed very unevenly, when looking at the world at large. The humid-warm rain forests, for example, cover only about 7% of the land surface, yet accommodate up to 90% of the different species living on land. Altering the use of these lands, especially of forests, to develop the land and to obtain additional areas to be used for agricultural production, is therefore a substantial intervention. The conversion of other natural habitats to agricultural utilisation is also a sustainable intervention into nature's household. Naturally grown plant types are being replaced by anthropogenetically modified, cultivated plants, wild animal species are driven away, and insects and micro-organisms are reduced in numbers by pesticides (PAGIOLA ET AL., 1998; pp. 38).

It can be assumed that *the rate at which plant and animal species become extinct has rapidly increased* and that the process of losing species has considereably accelerated in more recent times. On account of new breeding methods and the forceful penetration of new, high-performing varieties of cultivated crop, we must expect a major decline in the agricultural bio-diversity. For example, in the course of substituting the traditionally grown varieties by a fewer, high-performing varieties the genetic diversity on fields and rice paddies has decreased considerably, and the continuing genetic erosion in connection with cultivated crops is regarded as a major issue ("loss of genetic information"). As experts have indicated, this development will lead, among other things, also to enormous risks in connection with food security, since the loss of genetic diversity results in constraints on the potential of cultivated plants to adapt to changing conditions, such as changes in climate or new diseases (DER FISCHER WELTALMANACH '97; cols. 1142 and foll., and PAGIOLA ET AL., 1998; pp. 38).

In the meantime, the scope of the danger to which a number of animal and plant species are exposed has been documented in several studies. We know, on the basis of geological research, that species become extinct on account of natural factors, such as, for example, a change in climate or the appearance of new, dominating species. These are referred to as rates of natural extinction. The rates of extinction that have been observed so far are, however, far above these values by several magnitudes. For example, 67 mammals and 126 bird species disappeared from the earth during the past 400 years. It must be assumed, however, that the actual rates of extinction are probably higher, since only documented species were counted. Estimates regarding the loss of species during the forthcoming 50 years lie between 10 and 50% of the total number of species. The daily loss of species is indicated to range from 70 to 300. In comparison to the natural rate of extinction this means an acceleration factor of 1,000 to 10,000. (DER FISCHER WELTALMANACH ’99; cols. 1206 and foll.).

However, within the different species there is also a loss of bio-diversity. This affects not only wild species, as was mentioned before, but also species used in agriculture and forestry. Especially in the course of replacing the traditionally grown varieties ("local varieties") by a few

high-performing varieties, agricultural biological diversity, i.e. the biological diversity on fields and rice paddies, has declined dramatically. In the USA, for example, 95% of the cabbage varieties, 91% of the corn varieties, 94% of the pea varieties and 81% of the tomato varieties have been lost during the past hundred years. Of the 10,000 types of wheat, cultivated in China in 1949, only 1,000 survived until the seventies. In India, the number of rice varieties grown went down from 30,000 in the fifties to only 50 at present. 90% of the food crop worldwide comes from less than 100 different plants (cif. Figure VII.1-5, Bio-diversity as a Resource). There are many reasons behind this development, ranging from an agricultural policy that puts too much emphasis on production growth, to demographic changes and the concentration of farmland ownership in the hands of a few (DER FISCHER WELTALMANACH 2000; cols. 1283 and foll.).

■ Important measures on the international level

Since the early fifties, several dozens of multilateral conventions have been adopted that were totally or partly drafted with a view to protecting biological diversity (cif. Figure V.2-2, Chapter V.2.6.2). The most comprehensive agreement to date for the protection of our biological diversity is the Convention on Biological Diversity, signed in Rio de Janeiro in 1992 (Bio-Diversity Convention – CBD). In connection with protecting biological diversity, the following three agreements are currently considered to be the most important ones:

- The *"Ramsar Convention on Wetlands of International Significance"*, which was adopted in 1971 and entered into force in 1975. Its goal is to protect and sustainably develop such areas. In consequence, some 600 "Ramsar areas" were identified worldwide in a first step, covering a total of 37 million ha and intended to secure habitats for migratory birds. In the meantime, 114 states have signed this convention. The objective is to increase the number of protected wetlands to 977 and total surface of 71 million ha. At the 7th conference of the signatory states in May 1999 in San José (Costa Rica), the importance of wetlands, especially also for the protection of fresh-water reserves was emphasized. It was pointed out that their worldwide decline was increasingly becoming an environmental and safety problem. Considering this development, a resolution was adopted that is intended to bring about an additional, rapid increase in the number of Ramsar areas to about 2,000 (DER FISCHER WELTALMANACH 2000; col. 1288).

- The *"Washingtom Convention on the Protection of Species"* (CITES), which was adopted in 1973 and also went into force in 1975. It restricts trading with more than 48,000 endangered animals and plant species. In reaction to the increase in illegal imports, the EU adopted more rigorous regulations in June 1997 to control the trade with endangered species. Between 1990 and 1994, the EU ranked first worldwide regarding (banned) imports of wildcats (1,500 animals, 44% of the internationally documented numbers), parrots and cockatoos (800,000, 44%), as well as alligator, caiman and crocodile leather (35%). In contrast to that, the ban on trade with ivory was relaxed on the occasion of the

10th conference of signatory states in Harare (Zimbabwe) in June 1997. As a result of the ban, imposed against poaching and for the protection elephants, the elephant population, especially in southern Africa, had grown beyond an ecologically supportable level. (DER FISCHER WELTALMANACH '99; col. 1209)

- The *"Bonn Convention"* on the protection of migratory species of wild animals (CMS Convention on Migratory Species of Wild Animals), dating back to 1979, which in the meantime has already been signed by 65 signatory states. The convention relates to the special protection of our common natural heritage of migratory animal species, such as migratory birds, bats, seals, etc. From the European perspective, the entry into force of the African-Eurasian Water Fowl Agreement (AEWA), but also the signing of the European Bats Agreement (EUROBATS) by several additional contracting states is worth mentioning. Austria, however, has not yet acceded to these agreements.

- The afore mentioned *"Bio-Diversity Convention"* of 1992, which 172 states have ratified up to March 1998. The goal of the Convention is a sustainable utilisation, as well as a balanced (bilateral) distribution of the benefits (profits) resulting from such a utilisation, in addition to preserving the biological diversity. The second follow-up conference, held in Jakarta in November 1995, agreed, among other things, on a reporting obligation concerning the respective national situations with regard to biological diversity (first reports due in 1998). The question continues to be unresolved as to how and to what extent countries of origin (often developing countries) of genetic primary material are to share ("farmer's rights") in the profits (mostly earned in the industrialised countries) obtained from their utilisation (medicines, selected plants, etc.)

In connection with implementing the Bio-Diversity Convention, agreeing on *a protocol of biological safety* ("Biosafety Protocol") was the central issue of the negotiations at the extraordinary conference held in Cartagena, Columbia, in February 1999. For the time being, however, negotiations have failed on the core issues of commodities (agricultural bulk goods), labelling and the relationship between the Protocol to the international trade agreements. The Protocol is intended to establish internationally applicable safety regulations for the export and import of GMOs (genetically modified organisms) and labelling requirements for transports. The especially contested subject is whether the obligation to obtain a permit, as well as the safety regulations should also apply to agricultural bulk goods (such as genetically modified corn or rape), whenever they are exported as food or fodder. The exporting countries of agricultural produce (USA, Canada, Australia, Chile and New Zealand – the so-called MIAMI Group) call for exemptions for these products.

Far-reaching compromise solutions by the EU under the German presidency, which were supported by the group of like-minded countries (G-77, without Argentina, Uruguay and Chile), were rejected by the MIAMI Group and negotiation of the Protocol was postponed. We can expect a resumption of the negotiations concerning the Biosafety Protocol, which is considered to be urgently required from the perspective of global environmental protection and with a view to

the future importance of the Bio-Diversity Convention, in the year 2000 at the earliest (on the occasion of the 5th conference of signatory states of the CBD in Nairobi, Kenya, May 2000; DER FISCHER WELTALMANACH 2000; cols. 1287 and foll., and information by Dipl.-Ing. Schneider, Federal Ministry of the Environment, Youth and the Family, who participated in the congress).

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V.3 Analysis of the current Developments in International Agricultural Trade

Tobias Reichert

V.3.1 Remarks concerning the Procedure and the Database

In this part the development of trade and production patterns of major agricultural products since the end of the 80s is analysed. In this period the Agreement on Agriculture in the WTO entered into force and the European Union and the United States implemented fundamental reforms in their domestic agricultural policies. These developments were mutually re-enforcing. The data were obtained via the FAOSTAT statistical database. Besides global data, specific countries were selected regarding their importance as producers, consumers and suppliers to world markets. These countries are:

- Argentina and Australia as major exporters of temperate agricultural products,
- the USA which are the main supplier and produce a major share of global output in many products,
- the European union as the second big actor on the world market
- and of its members:
  - France as the major exporting country in the European Union
  - Austria as an example for a smaller EU member with less favourable conditions for agricultural production
- India and China as the most populous countries which were largely self-sufficient in the past and whose stronger orientation towards world markets could induce major changes there
- Kenya was chosen as representative for African countries depending on food imports at least in periods with adverse weather conditions.

In order to reduce the influence of short term external shocks like weather conditions on the statistical results three year averages were created (88-90; 91-93; 94-96). In the last period some effects of the Agreement on Agriculture might be observed. It is useful however to look at a longer period before as some of the results of the URUGUAY Round were already implemented in advance as part of the domestic policy reform programmes. Shortly before the conclusion of this research production data for 1997 and 1998 were released, they are given as indicators for the most recent trends.

V.3.2 Developments of World Trade in major Agricultural Products since the Completion of the URUGUAY Round

V.3.2.1 Cereals

The area under cereal production declined by 1.6% in the beginning of the 90s, which can be explained by the increased attractiveness of oilseed-production and the implementation of land set-aside schemes in the USA and the EU. Since the mid 1990s a marginally increasing trend can be observed, which is mainly due to a strong expansion in exporting nations like Argentina and Australia. The increase in the area under cereal production in the EU can be explained by the reduction of the set aside quota from 17.5% to 5% (OECD, 1998:23)

Table V.3-1

Area under cereal production

Cereals total.	area in 1.000 ha				Change in %		
3-year -∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
world	**707 392**	**696 063**	**700 807**	**700 843**	**-1.60**	**0.68**	**0.01**
Argentina	8 794	8 370	9 523	10 202	-4.82	13.77	7.13
Australia	13 737	13 007	14 910	15 991	-5.31	14.63	7.25
USA	61 584	62 748	62 936	63 399	1.89	0.30	0.74
EU-15	**40 651**	**37 746**	**36 207**	**38 100**	**-7.15**	**-0.04**	**5.23**
France	9 242	9 038	8 430	9 206	-2.21	-6.73	9.21
Austria	954	856	821	843	-10.28	-4.09	2.66
India	103 378	99 965	100 044	99 730	-3.30	0.08	-0.31
Kenya	1 867	1 799	1 792	1 928	-3.64	-0.39	7.61
China	91 459	91 073	90 065	92 278	-0.42	-1.11	2.46

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

The trend towards a further increase in cereal production continued after the conclusion of the URUGUAY Round, but a marked relocation of the production can be observed. Argentina and Australia show the highest production increases, in line with the developments in area, the USA also expand their production. The decline of cereal production by 1.5% in the EU between 88-90 and 91-93 is a result of the CAP-Reform which can be seen by the fact that the trend which was increasing until 1991 was reversed and cereal production in the EU dropped from 197 million MT in 1991 to 177 million MT in 1994. The increasing production in India is besides regularly monsoons based on the careful reforms of the agricultural policy, which allowed to increase domestic prices to world market levels by less strict export restrictions thereby creating production incentives. Currently, the effects of the economic reform programme on the agricultural sector in India are regarded as minor (RAO, 1997: 3, 11). The large fluctuations of

cereal production in Kenya are mainly due to climatic factors. The strong increase in production in all observed countries is a reaction to the high cereal prices in 1996/97 which were a production-incentive. The more export-oriented the cereal sector of a country, the more pronounced is the increase in production. In the EU the afore mentioned reduction in set-aside area adds to this effect. The expansion is larger in the export-oriented French agriculture than in the EU average and much higher than in Austria.

Table V.3-2

Cereal production

Cereals total	Production in million MT				Change in %		
3-years-∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**1 849.1**	**1 910.8**	**1 979.9**	**2 080.7**	**3.34**	**3.62**	**5.09**
Argentina	20.2	23.9	26.6	36.5	18.15	11.24	37.45
Australia	22.4	24.1	26.5	31.0	7.48	9.89	17.03
USA	267.7	297.7	324.0	345.9	11.25	8.81	6.78
EU-15	**189.3**	**186.4**	**188.5**	**210.5**	**- 1.50**	**1.08**	**11.71**
France	56.3	58.9	56.6	65.6	4.71	- 3.98	15.91
Austria	5.2	4.5	4.5	4.6	- 14.36	- 0.04	2.13
India	192.4	198.3	214.6	223.5	3.04	8.26	4.13
Kenya	3.1	2.6	3.2	3.0	- 15.07	24.32	- 8.40
China	374.6	402.5	423.0	447.4	7.44	5.10	5.75

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

In spite of the higher production, international trade in cereals declined slightly by 1.6% thus reducing the share of trade in total production from 12.7% to 12%. This reverses the trend of the early 90s when trade grew faster than production. A driving force was the sharp decline of EU exports to third countries (EU 15 excl. int. tr.) which were nearly 30% lower. The USA as the major exporter increased their exports by 3.9% gaining a market share of almost 40% Australia increased its cereal exports by 21.7% to nearly 16 million MT, while India tripled its exports to 3.9 million MT. China reduced its exports by more than 60% and at the same time increased its imports by nearly 20% thus demanding more than 15 million MT from the world markets in 94-96 up from about 5 million MT in 91-93.

Table V.3-3

Cereals exports

Cereals total.	Exports in 1.000 MT			Change in %	
3-years-∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
World	**230 893**	**242 127**	**238 082**	**4.87**	**-1.67**
Argentina	9 149	12 390	11.912	35.42	-3.86
Australia	14 274	13 133	15 983	-8.00	21.70
USA	100 280	88 435	91 840	-11.81	3.85
EU-15	**57 400**	**62 867**	**55 792**	**9.52**	**-11.25**
EU-15, excl. int. tr.*)	30 570	33 001	23 407	7.95	-29.07
France	29 420	32 148	27 515	9.27	-14.41
Austria	1 092	708	703	-35.18	-0.71
India	488	971	3 921	98.77	303.95
Kenya	147	217	201	47.73	-7.08
China	4 774	11 549	4 510	141.92	-60.95

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Regarding the prices for cereals, projections differ between a modest increase due to a rising demand in Asia, Middle East and Latin America (OECD, 1998: 21), and slight decreases due to a shift in demand towards other foodstuffs (PINSTRUP-ANDERSEN ET AL., 1997: 16). However, most of the analysts agree, that the price peaks in 1995/96 were a short run phenomenon, a view that is supported by the fact that prices have already declined again (PINSTRUP-ANDERSEN ET AL., 1997: 16). Considerable uncertainties exist in forecasting the future volatility in world cereal prices, as contradictory factors will be affecting it. Lower cereal stocks tend to increase price volatility as production shortages cannot be buffered by the dissolution of stockholdings (PINSTRUP-ANDERSE ET AL., 1997:17). On the other hand, more liberal agricultural and trade policies make producers more responsive to price signals, thus higher prices subsequently lead to higher production. This is not only true for cereal but also for livestock producers who are about to reduce cereal utilisation for feeding purposes, thus releasing grain for human consumption The more efficient functioning of global markets is expected to partially offset the risks for food security connected with lower stocks (OECD, 1998: 22).

Wheat

Global wheat production decreased from the 1991-93 average of 558.6 million MT by 1.1% to 552.5 million MT on average in 1994-96, while areas at the same time remained constant (-0,02%). There has been a marked shift in the location of world wheat production. In Argentina, Australia and India wheat production increased by 23.8, 10.7 and 12.3% respectively. Growth in

China and the EU was slightly smaller with about 3% while area under wheat cultivation decreased by 5% in both. In spite of an increase in area by 1.6% US harvests declined by nearly 1% due to adverse weather conditions, one of the factors leading to the price peaks in 1996/97.

Table V.3-4

Wheat production

Wheat	Production in 1.000 MT				Change in %		
3-year -∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**543 718**	**558 584**	**553 225**	**601 951**	**2.73**	**-0.96**	**8.81**
Argentina	9 844	9 611	12 135	13 100	-2.37	26.26	7.95
Australia	14 405	14 500	16 667	20 636	0.66	14.95	23.81
USA	59 681	62 072	61 566	69 183	4.01	-0.82	12.37
EU-15	**85 673**	**88 614**	**91 014**	**99 191**	**3.43**	**2.71**	**8.98**
France	31 402	32 059	32 459	36 675	2.09	1.25	12.99
Austria	1 442	1 239	1 265	1 347	-14.07	2.10	6.45
India	50 043	55 862	62 742	67 638	11.63	12.32	7.80
Kenya	223	157	310	251	-29.49	97.45	-19.03
China	91 492	100 851	104 027	117 645	10.23	3.15	13.09

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

FAO estimates on the impact of the URUGUAY Round on agriculture predicted an overall growth in global wheat output which would be slowed by the reduction of subsidies but still be positive. The reduction in output cannot be explained by developments in the countries from the sample, of which all except the USA showed higher wheat production. Global wheat production shows an increasing trend in the most recent years with 584.9 million MT in 1996, reached a peak of 612 million MT in 1997 and returned to the predicted trend in 1998 with an estimated production of 595 million MT. Compared to 94-96 all observed countries except Kenya showed production growth of at least 8%. Australia recorded the highest growth rate with nearly 24%.

Global wheat exports decreased by a more marked 6.8% from 110.6 million MT in 91-93 to 100.6 million MT in 94-96, thereby reducing the share of trade in total production from 19.8 % to 18.2%. This also reverses the trend of the early 90s when wheat trade grew faster than production. This corresponds with the FAO projections that the results of the URUGUAY Round will underline the tendency towards slower growth in international wheat trade. Again the decline in EU exports to third countries is the most marked one, but the USA reduced its exports too (Table V.3-5). The fact that cereal stocks declined in spite of lower exports can be explained by the higher utilisation of wheat as feedgrain after the reduction of the EU guarantee price (OECD, 1998:22).

Table V.3-5

Wheat and Flour exports (in wheat equivalent)

Wheat and Flour-exports	Exports in 1.000 MT			Change in %	
3-year -∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
World	**111 495**	**122 521**	**114 168**	**9.89**	**-6.82**
Argentina	4 643	5 787	5 206	24.63	-10.04
Australia	11 499	9 936	11 761	-13.60	18.37
USA	36 430	35 428	32 399	-2.75	-8.55
EU-15	**33 298**	**38 101**	**33 213**	**14.42**	**-12.83**
EU-15, excl. int. tr.*)	20 555	22 057	15 654	7.30	-29.03
France	17 801	20 149	16 092	13.19	-20.14
Austria	566	348	337	-38.57	-3.16
India	56	235	605	319.64	157.30
Kenya	0	43	1	-	-98.46
China	8	183	475	2282.61	160.22

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

India increased its exports by two thirds which still account for only 0.6% of total production. Australia increased its exports by 18.9% and thus exported more than 70% of its wheat production. Argentina's exports declined by 10% due to a poor harvest in 1995 which reduced quantities available for export in 1996, while the record harvest of 1996 will only affect 1997 exports. Then a doubling of wheat exports from Argentina to 10.7 million MT is expected (OECD, 1998:71). These developments again are in line with FAO projections which predicted higher production in Argentina and India and higher exports from Australia and Argentina while the EU and the USA would reduce their exports due to lower export subsidies. China – the only important importer in the sample – reduced its imports by nearly 7%.

Rice

Global rice production increased by almost 5% to 550 million MT, thus showing the strongest increase of all cereals. The corresponding increase in area under rice cultivation on the other hand was just under 0.7% or 1 million ha. In the sample only China, India and the USA are relevant rice producers. In India production increased by 9.3% or 10 million MT to 120 million MT accounting for about two-thirds of the total increase, this was accompanied by an 2.3% increase in area under rice cultivation. US-production increased by 10% albeit from a much lower basis to 8.2 million MT. Chinese production decreased by 1.1% to 185 million MT while the area under rice cultivation decreased more sharply by 4% to 31 million ha. In 1997/98 production growth in India and the US slowed down while China showed a strong increase (+ 7%).

World trade (exports) in rice increased by 29% to 19.5 million MT, increasing the traded share of world production to a still minor 3.5%. India tripled its exports to 2.8 million MT, while Chinese exports declined by one third averaging 741 000 MT between 94 and 96. Together with a sharp increase of more than 700% in imports China became a net rice importer in the volume of 200 000 MT.

These developments are closely in line with the FAO projections (FAO, 1995:9) which predicted an annual increase in rice output of 1.8% that would not be affected by the outcomes of the URUGUAY Round. The increase in world trade in rice has been forecasted by FAO too, mainly due to the opening of markets in East Asia namely Japan (FAO, 1995:10).

Coarse grains

World production of coarse grains shows a continuously increasing trend during the whole period observed which gained even more strength in 1997/98 as a result of higher world market prices in the years before. Argentina had the most dynamic development and doubled its production between 1988-90 and 1997/98. It also increased the area under coarse grain cultivation by one third between 1994-96 and 1997/98, while on a global level the area declined slightly. EU production slumped by nearly 6% in the early 90s as a result of increased land set aside and higher wheat production. Therefore the continuation of the CAP-Reform and the implementation of the Agreement on Agriculture led to a stabilisation of area and production on a low level rather than inducing major changes. As in the case of wheat the taking back of the land set aside programme led to a considerable increase of coarse grain production in 1997/98. The effects of the CAP-Reform are more pronounced in France where production and area declined only in the middle of the 1990s. The high cereal prices in 1996/97 reversed the stagnating or declining trend in production in many countries. Notable exceptions are Kenya and China which had a strong growth in production in 94-96. In India the trend towards production of wheat and rice at the expense of coarse grains slowed down and the area under coarse grain declined by only 1% as opposed to 7% an 8% in the preceding periods leading to slight recovery of production. It is interesting to note that growth in US production slowed down in spite of favourable world market prices and the removal of production limiting programmes.

TableV.3-6

Coarse grain production

Coarse grains	Production in 1.000 MT				Change in %		
3-year-∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**797 595**	**827 989**	**851 222**	**904 878**	**3.81**	**2.81**	**6.30**
Argentina	9 354	13 807	13 601	22 229	47.61	-1.49	63.43
Australia	7 202	8 764	8 825	9 031	21.69	0.70	2.33
USA	200 861	228 220	254 174	268 589	13.62	11.37	5.67
EU-15	**101 567**	**95 665**	**95 103**	**108 677**	**-5.81**	**-0.59**	**14.27**
France	24 759	26 729	23 986	28 596	7.96	-10.26	19.22
Austria	3 777	3 230	3 203	3 467	-14.47	-0.84	8.22
India	32 958	32 244	30 899	30 968	-2.17	-4.17	0.22
Kenya	2 796	2 408	2 865	2 657	-13.89	18.99	-7.27
China	101 286	114 445	131 499	128 868	12.99	14.90	-2.00

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

World trade (exports) in coarse grains expanded with 1.8% slightly slower than production, leaving the traded share nearly constant at 14%. In spite of the huge increases in production China turned from a net exporter of 3.7 million MT on average in 1991-93 to a net importer of 6.6 million MT on the 1994-96 average. Kenya increased its net imports by 80 000 MT to 320 000 MT. On the other hand India increased its (net) exports by more than seven and a half times to 552 000 MT although reducing its production, while Australia increased its exports by 32% to 3.7 million MT in spite of a 3.2% drop in production. In the USA (9.7%) and France (-10.5%) changes in exports were broadly in line with production changes.

Table V.3-7

Coarse grain exports (1000 MT)

Coarse grains	Exports in 1.000 MT			Change in %	
3-year -∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
World	**106 093**	**116 186**	**118 329**	**9.51**	**1.84**
Argentina	4 434	6 430	6 417	45.00	-0.19
Australia	2 416	2 815	3 713	16.51	31.91
USA	61 252	52 529	57 611	-14.24	9.67
EU-15	**23 069**	**23 504**	**21 341**	**1.89**	**-9.20**
EU-15, excl. int. tr.*)	9 709	10 593	7 470	9.10	-29.48
France	11 575	14 450	12 938	24.84	-10.46
Austria	525	368	373	-30.01	1.36
India	7	64	552	855.00	766.49
Kenya	147	173	200	18.18	15.58
China	4 236	10 247	3 294	141.88	-67.86

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Like in wheat and rice markets actual developments matched the forecasts from FAO, which predicted higher production and exports in North-America while both were expected to decline in Europe. East Asia was expected to increase production and imports due to higher demand especially for animal feed.

V.3.2.2 Oilseeds

The area under oilseed cultivation increased tremendously by 14% between 1991-93 and 1994-96 (Table V.3.8). Of the countries in the sample however, only Argentina, India and France recorded important growth in oilseed area (while it declined in the EU). The expansion of oilseed area is therefore caused by the fast-growing oil-palm production in Southeast-Asia.

Production of oilcrops (in oil equivalent) grew even stronger than the cultivation area. The major reason is the higher demand for edible oils in Southeast-Asia. Production in the EU stagnated in 1994-96 after having increased by 9% in the early 90s. the major reason is the bilateral Blair House agreement with the USA in which the EU agreed to restrict subsidies for oilseeds production. Growth in Indian oilseed production is partly due to the fact that it is effectively protected, contrary to cereals, so that domestic prices are above the world level (RAO, 1997, 3).

Table V.3-8

Area under oilseed production

Oilseeds	area in 1.000 ha				Change in %		
3-year -∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	306 887	321 552	366 822	n.a.	4.78	14.08	n.a.
Argentina	8 308	8 440	9 917	11 475	1.59	17.49	15.71
Australia	1 110	1 423	1 230	1 554	28.16	-13.51	26.25
USA	33 213	34 922	36 067	35 784	5.15	3.28	-0.78
EU-15	**10 001**	**10 715**	**10 599**	**10 730**	**7.14**	**-1.08**	**1.24**
France	1 926	1 719	1 924	2 081	-10.73	11.90	8.20
Austria	70	132	90	104	88.81	-31.29	15.50
India	29 245	33 437	36 160	38 311	14.34	8.14	5.95
Kenya	90	99	98	122	9.74	-1.30	24.91
China	32 798	35 106	36 081	n.a.	7.04	2.78	n.a.

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Table V.3-9

Oilseed production (in oil equivalent)

Oilseeds	Production in 1.000 MT				Change in %		
3-year -∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**71 952**	**78 539**	**91 412**	**99 369**	**9.15**	**16.39**	**8.70**
Argentina	2 320	3 707	4 531	5 218	59.80	22.23	15.17
Australia	210	179	328	692	-14.84	83.33	111.08
USA	10 691	12 177	14 178	15 949	13.90	16.44	12.49
EU-15	**5 837**	**6 362**	**6 339**	**7 493**	**9.00**	**-0.37**	**18.21**
France	1 725	1.563	1 748	2 091	-9.40	11.89	19.59
Austria	59	63	109	79	6.17	73.62	-27.60
India	7 118	8 086	9 052	9 588	13.60	11.94	5.92
Kenya	28	23	33	36	-19.21	47.61	7.80
China	8 914	10 277	12 136	11 806	15.28	18.09	-2.72

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Trade data are available for oilseeds, i.e. soybeans, rapeseed and sunflowerseed, tree-products like palmoil are not considered. Quantities are given in total amounts not in oil-equivalent. A strong growth in oilseed trade can be observed since the late 1980s. Especially Argentina and the

USA as important exporters recorded very large gains. The decline in Argentinean exports can be explained by the extraordinarily high figures in 1991 which increase the average for the corresponding period. The EU as the major importer of oilseeds showed a similar growth in imports.

Table V.3-10

Oilseed exports

Oil seeds	Exports in 1.000 MT			Change in %	
3-year -∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
World	**35 060**	**39 018**	**46 777**	**11.29**	**19.89**
Argentina	1 514	3 750	3 366	147.67	-10.22
Australia	172	230	390	33.85	69.94
USA	16 699	19 771	23 135	18.40	17.01
EU-15	**3 863**	**3 781**	**3 995**	**-2.11**	**5.65**
EU-15, excl. int. tr.*)	65	360	457	455.30	26.88
France	2 444	1 886	1 869	-22.85	-0.89
Austria	76	43	58	-44.32	36.29
India	107	98	175	-7.63	77.95
Kenya	1	10	5	-	-47.48
China	1 801	1 394	1 091	-22.61	-21.72
EU- Imports:					
EU-15, excl. int. tr.*)	14 077	15 456	18 706	9.80	21.02

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Prices for edible oils increased strongly in the early 90s and since then fluctuate on a high level. The OECD expects that this level will be maintained in spite of a further growth in production. The main reason given is the further expansion of demand for oils and oilcake as animal feed in (South-)East-Asia, mainly China. However, in its projection the OECD expected an end of the Asian Crisis which is not yet on the horizon.

V.3.2.3 Meat

Bovine meat

Global production of bovine meat increased by 4.3% from 51.1 million MT in the average from 1991-93 to 53.3 million MT in the 1994-96 average. This is in line with FAO-projections of a modest increase in beef production. The by far strongest growth rates were recorded in China which aims at satisfying its fast growing demand for bovine meat through domestic production. It is interesting to note that production in Argentina is steadily declining as pastures are converted into more profitable farmland (OECD, 1998:37). While production in the EU was still slightly increasing in 94-96, France which is comparatively export-oriented recorded a decline of 16%. The sharp decline in EU production in the preceding years is a result of the BSE-crisis.

Table V.3-11
Bovine meat p**roduction**

Bovine meat	Production in 1.000 MT				Change in %		
3-year-∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**51 881**	**51 175**	**53 185**	**53 916**	**-1.36**	**3.93**	**1.37**
Argentina	2 553	2 688	2 437	2 293	5.26	-9.33	-5.91
Australia	1 585	1 792	1 791	1 847	13.06	-0.07	3.10
USA	10 659	10 569	11 461	11 620	-0.85	8.45	1.38
EU-15	**8 599**	**8 883**	**9 077**	**7 827**	**3.31**	**2.18**	**-13.77**
France	1 804	2 002	1 682	1 664	10.97	-15.98	-1.09
Austria	218	237	226	227	8.55	-4.50	0.07
India	1 147	1 226	1 318	1 378	6.89	7.53	4.55
Kenya	239	228	245	270	-4.33	7.30	10.20
China	931	1 623	3 537	4 254	74.27	117.95	20.26

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

World exports increased by 1.7% to 6.6 million MT, leaving the traded share of total production roughly constant at 12.5%.

Significant changes took place in the USA, which is the largest single producer of bovine meat with a share of more than 20% of world production. US production increased by 9% from 10.6 million MT in 1991-93 to 11.5 million MT in 1994-96. Exports increased by 37.7% to 738 000 MT. Imports to the USA declined at the same time by 14.8% to 878 000 MT, resulting in a shift from a negative trade balance in bovine meat of $ 200 million in 1991-93 to a positive balance of $ 890 million in 1994-96. Production and exports in Australia remained constant at

1.8 million MT and 1 million MT respectively. Exports from Argentina rose by 46,9% to 357 000 MT while production declined by 8 % to 2.5 million MT. The drop in Argentinean production was triggered by higher returns for crop production and dairying, but production is expected to increase in the medium term (OECD, 1998:37). India boosted its exports by 63.5% to 145 000 MT while production increased by 5.4% to 1.3 million MT. China more than doubled its production to nearly 3.8 million MT thus increasing its share in world production from 3.2% to more than 7%. Chinese exports decreased by 41% to 96 000 MT while imports increased by 15% to 72000 MT so China remains a net exporter of bovine meat. The most marked changes were recorded in the EU which had increased its exports by 43% in 1991-93 and saw a decline by 16% in 1994-96. The reduction in export subsidies as prescribed by the Agreement on Agriculture seems to play a decisive role.

Table V.3-12

Bovine meat exports

Bovine meat	Exports in 1.000 MT			Change in %	
3-year-∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
Welt	**5 529**	**6 558**	**6 787**	**18.60**	**3.49**
Argentina	314	243	357	-22.80	47.25
Australia	807	1 014	1 017	25.61	0.30
USA	403	536	738	33.00	37.62
EU-15	**1 495**	**1 644**	**1 199**	**10.01**	**-27.06**
EU-15, excl. int. tr.*)	826	1 184	994	43.40	-16.05
France	474	562	511	18.64	-9.19
Austria	57	53	52	-7.56	-1.89
India	58	89	145	53.76	63.91
Kenya	1	1	0	50.00	-100.00
China	138	163	96	18.64	-41.02

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Pig meat

World **pig meat** production increased by 8 million MT or 10.8% between 1991-93 and 1994-96 to 80.5 million MT. In the most countries of the sample production of pig meat increased. The biggest increase in relative terms occurred in India where production was boosted by 165% to 421 000 MT, but by far the largest increase in absolute terms occurred in China where production jumped 28.2% to 35 million MT, i.e. an amount of 43.4% of global production. A slowdown in growth is expected bur it is likely to main remain the global average. Production

increases in the other countries of the sample were around 5%. Unlike in other sectors no fundamental reversals of production trends could be observed which can be explained by the fact that pig meat production was less protected and supported even before the URUGUAY Round.

Table V.3-13

Pig meat production

Pig meat	Production in 1.000 MT				Change in %		
3-year-∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**68 306**	**72 657**	**80.509**	**84 158**	**6.37**	**10.81**	**4.53**
Argentina	169	158	158	119	-6.13	-0.42	-24.52
Australia	307	325	343	332	5.64	5.65	-3.35
USA	7 083	7 609	7 958	8 179	7.42	4.59	2.78
EU-15	**15 478**	**15 463**	**16 062**	**16 656**	**-0.09**	**3.87**	**3.70**
France	1 808	2 021	2 151	2 260	11.80	6.43	5.07
Austria	519	522	532	529	0.64	1.91	-0.63
India	383	159	421	461	-58.52	164.78	9.38
Kenya	5	5	5	5	0.00	0.00	0.00
China	22 351	27 252	34 945	38 575	21.93	28.23	10.39

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

World trade (exports) decreased by 7.1 % while the investigated countries showed strongly increasing exports. The traded share in global production declined from 3.6% to just under 3 %. The USA more than doubled their exports to 315 000 MT and became with imports decreasing by 6.3% a small net exporter of 19 000 MT. France increased its exports by nearly two thirds to 439 000 MT and turned from a net importer of 102 000 MT in 1991-93 to a net exporter of 55 000 MT in 1994-96. Chinese exports increased by 22.7% to 552 000 MT thus gaining a share 10.2% of global exports. Austria showed huge increases in both, imports and exports which might be due to its accession to the EU while India and Kenya had virtually no international trade in pig meat.

As has been projected by FAO, China was able to meet its quickly expanding domestic requirements and to increase exports slightly. The emergence of the USA as a net exporter has been expected by FAO too, but the predicted reduction of net exports of the EU did not occur (INTERNATIONAL BOVINE MEAT AGREEMENT, 1997; Tab. 25).

Table V.3-14

Pig meat exports

Pig meat	Exports in 1.000 MT			Change in %	
3-year-∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
World	**4 003**	**4 431**	**5 437**	**10.70**	**22.68**
Argentina	3	0	1	-88.89	300.00
Australia	8	7	8	-16.00	9.52
USA	93	155	315	67.63	103.00
EU-15	**1 878**	**2 127**	**1 948**	**13.24**	**-8.42**
EU-15, excl. int. tr.*)	293	255	170	-12.97	-33.20
France	167	269	439	60.88	63.52
Austria	6	6	47	0.00	729.41
India	0	0	1	-	-
Kenya	0	0	1	-	-
China	354	450	552	27.09	22.58

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

V.3.2.4 Milk

Growth in global milk production is quite small since the late 1980s. China, India and Argentina show rates at the two digit level. Special attention should be India which replaced the USA as the second largest milk producer. In the US production grows slowly while the EU which accounts for nearly one quarter of global milk production shows a sight decline as a result of the quota regime.

However, trade in milk products (measured in the quantity of milk contained), expanded rapidly in the period observed. Especially Australia doubled its exports between 1988-90 and 1994-96 exporting more than 40% of its total production. US exports also increased strongly in the early 90s while exports from the EU to third countries declined by 11% in line with the lower production. Like in production a change in trends cannot be observed since the URUGUAY Round.

Table V.3-15

Milk production

Milk	Production in 1.000 MT				Change in %		
3-year-∅	88-90	91-93	94-96	97/98	88-90 / 91-93	91-93 / 94-96	94-96 / 97/98
World	**536 390**	**531 208**	**536 948**	**546 011**	**-0.97**	**1.08**	**1.69**
Argentina	6 391	6 712	8 586	9 552	5.03	27.92	11.26
Australia	6 420	7 032	8 591	9 495	9.54	22.17	10.52
USA	66 020	67 890	70 068	71 380	2.83	3.21	1.87
EU-15	**130 607**	**125 893**	**125 150**	**123 703**	**-3.61**	**-0.59**	**-1.16**
France	27 036	26 500	25 959	25 063	-1.98	-2.04	-3.45
Austria	3 362	3 307	3 165	3 048	-1.63	-4.30	-3.68
India	51 532	58 683	65 667	72 000	13.88	11.90	9.64
Kenya	2 442	2 312	2 318	2 445	-5.30	0.25	5.47
China	6 666	7 941	9 267	10 813	19.13	16.70	16.68

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

Table V.3-16

Exports of milk products (in milk equivalent)

Milk equivalent.	Exports in MT			Change in %	
3-year-∅	88-90	91-93	94-96	88-90 / 91-93	91-93 / 94-96
World	51 512	55 284	61 518	7.32	11.28
Argentina	390	157	212	-59.74	34.85
Australia	1 734	2 396	3 519	38.20	46.87
USA	1 818	2 033	2 123	11.85	4.41
EU-15	**38 610**	**39 301**	**45 536**	**1.79**	**15.87**
EU-15, excl. int. tr.*)	14 009	12 467	11 918	-11.01	-4.40
France	6 985	7 802	8 551	11.70	9.61
Austria	38	321	431	748.87	34.02
India	5	10	46	114.55	353.62
Kenya	10	21	14	109.47	-32.05
China	32	29	69	-10.78	141.82

*) excluding internal trade

Source: FAO, FAOSTAT Statistical Database 1997 and http://apps.fao.org

V.3.3 Results and Conclusions

V.3.3.1 Some Effect of the URUGUAY Round can be identified; the Importance of Food Security and Ecology will Increase

The decisive factor for the developments on the world markets for agricultural products were the changes in the domestic agricultural policies of the trade superpowers EU and USA. This can be seen by the fact that the greatest changes took place in markets for products were market interventions were reformed most fundamentally, namely the market for cereals, while in sectors where the policies remained unchanged (e.g. milk) world markets in broad terms remained unchanged.

Due to the limitations in production and export subsidies the EU retreated from many markets which it had gained through its aggressive price policy in the 80s. This opened opportunities for competitive agricultural exporters like Argentina and Australia to (re-)enter these markets. They are the major beneficiaries of the restrictions on the subsidy-competition between the EU and the USA. The trend towards slower growth or even a decline in trade in many products shows that in the 80s and early 90s trade was created artificially which would not haven taken place due to differences in production costs. This indicates that the AoA-provisions limiting export subsidies went further and were implemented more consequently than those dealing with market access. The high world market prices certainly play a role in the lower trade volumes, while in themselves they were partially caused by the reforms in agricultural policies.

Given the actual data the environmental effects of these changes are difficult to assess. The decline in traded quantities is positive from the viewpoint of lower transports. The regional shifts in production are much more difficult to assess, as intensive agriculture causes environmental problems in all areas. The only region where those problems seem to be less pronounced is Oceania (Australia). Therefore the shift of agricultural production to this area can be seen as a positive development. On the other hand the conversion of pastures to farmland can lead to a rapid acceleration of erosion problems. The same reasoning holds for Argentina.

Decreasing production in Europe is expected to have positive effects following mainstream analysis. But as production decreases roughly at the same rate as does agricultural area, it can be expected that production intensity and the resulting environmental problems in the cultivated areas will remain constant. Furthermore, there is a danger that production even intensifies in areas with favourable conditions. Production growth in the USA might lead to greater problems, as many areas already suffer from a loss of soil quality. Higher world market prices for cereals could lead to a shift in the agricultural policies in many developing countries, where in the past production of staple crops has been put on a disadvantage against export cash crops like coffee or tea and recently against fruits and vegetables. This development is desirable from the viewpoint of food security. The ecological effects might be less clear as the replacement of perennial crops

like coffee and tea through annual crops like maize might lead to higher soil erosion, if there is no locally adapted production technology.

V.3.3.2 Key Players and their Interests

■ CAIRNS-Group

The CAIRNS-group of major agricultural exporters –in a way led by exporters of temperate agricultural products – is in the forefront of the countries which want to set a very tight framework for agricultural policies. It has benefited from reduced competition with subsidised exports from the EU and the USA and now aims at market access to those big trading blocks which it does not get under the current agreement. In their "Vision" for the WTO Agriculture negotiations adopted at a ministerial meeting in April 1998 in Singapore, the CAIRNS-group came up with concrete and far reaching demands for each of the subjects dealt with in the AoA. Export subsidies should be prohibited and eliminated totally. All forms of circumvention have to be ruled out especially the subsidisation of agricultural export credits. Market access should be further increased with tariffs as the only form of protection. Tariffs should be lowered, especially the existing tariff peaks and tariff escalation for processed products should be diminished. Tariff rate quotas should be administered in a way which does not diminish the size and value of the market access opportunity.

Another point not mentioned in the "vision" but by several CAIRNS-group representatives is that the special safeguard provision in the AoA should be eliminated and the general safeguard provisions of the WTO should apply to agriculture. In the field of domestic support all amber-box and Blue box-measures should be abolished, and Green box-measures should be closely reviewed to ensure that they are transparent, targeted and fully decoupled from production. This rather tough stance towards liberalisation seems to be slightly softened regarding special needs of developing countries, as the principle of special and differential treatment is underlined in the "vision", but no details given how this special treatment could look like. At the ministerial meeting of the CAIRNS group in August 1999 these positions were confirmed and partly hardened. The WTO should treat agricultural products like any other product (DOW JONES NEWSWIRES, 1999). The CAIRNS-group emphasises that it is in the interest of all developing countries to reduce subsidies in the industrialised countries. With this position it hopes to gain new membership among developing countries.

■ USA

The **USA**, a driving force in the formulation of the current AoA, are altering their agricultural policies towards decoupled support especially in the grain sector. President Clinton in his address to the WTO ministerial conference in 1998 announced his commitment to "pursue an aggressive market opening strategy in every region of the world". In April 1999 US-Secretary of State for

Agriculture, Dan Glickman, named the seven most important goals for the US in the WTO negotiations on agriculture (BUREAU OF NATIONAL AFFAIRS, 1999):

- Elimination of export subsidies
- More transparency in the operations of state trading enterprises
- Further tariff reductions
- Reduction in domestic support
- An agreement on trade in biotechnology products which allows for the protection of consumers while avoiding trade barriers not based on sound science
- Stronger participation of developing countries into the negotiations and greater sensibility for their needs.

During a meeting of the agriculture committee of the Senate in late June 1999, Glickman mentioned the same points with the notable exception of the further reduction in domestic support. Instead he explicitly mentioned the discussions he had with different representatives of the agricultural sector, which had influenced the governments position. He sees a necessity to find a balance between the aims of reducing trade distorting subsidies and to protect farmers and the agricultural sector from the consequences of exceptionally low prices. In a speech before the same committee later in the year Glickman said that the current regulations in the FAIR-Act with fixed and decreasing annual payments are not adequate to farmers' needs. At the same time the US government tries to avoid that agricultural export credit guarantees are treated as export subsidies. Therefore disciplines for these schemes seem to be unlikely, although the current text of the AoA calls for them.

A broad alliance of (commercially oriented) farmers unions, agricultural traders and industrialists, the so-called "Seattle Round Agriculture Committee" presented a detailed list of demands in May 1999 (INSIDE US-TRADE, 1999). It mainly calls for a continuation of liberalisation efforts from other WTO members, mainly the EU. Other countries should make further commitments and move towards the US before it should make further concessions by itself. Obviously many of the members of the Committee are interested in saving the possibility for short term support measures like the compensation payments given in 1998 for low prices. In parts of the US-agribusiness there seems to be at least a partial diversion from the liberalisation-only strategy followed during the URUGUAY Round and immediately afterwards. A main reason for this is the aim of the Committee to obtain a broad-based membership.

However, the National Farmers Union with a membership of 300 000 mainly smaller farms, did not join the Committee. Instead it supported the proposals of President Clinton to include social

and environmental aims in the WTO negotiations. It sees it as means to protect its members' interests. Obviously the smaller farmers are more sceptical about their competitiveness on "free" world markets and therefore have reservations against an unconditioned liberalisation.

In spite of these more differentiated positions of specific sectors, there seems to be a general convergence with the position of the CAIRNS group. This could result in a very powerful alliance in the forthcoming agricultural negotiations. Some points of divergence remain however, mainly in the fields of export credit guarantees and domestic support where the USA aim at less stringent regulations and state-trading enterprises which account for an important share of CAIRNS-group exports, and should continue to do so from their perspective. In central issues like the elimination of export subsidies and increased market access the objectives are similar which puts pressure on the EU, Japan and smaller net food importing industrialised countries.

■ Japan and Norway

Japan and Norway are the net food importing industrialised countries most distinctly pleading for their interests of protecting their agricultural sectors. Norway introduced the concept of "multifunctional agriculture" which states that important tasks like food security, preservation of the landscape and rural development cannot be separated from agricultural production. Therefore the approach of the AoA to allow only decoupled support for agriculture was not appropriate. The Japanese government fully founds its position on this concept. Consequently it demands the legality of subsidies for production and the maintenance of restrictions on market access. The position paper on the negotiations on agriculture does not even mention the terms "liberalisation" and reduction (of tariffs and subsidies). Tighter rules for agricultural exporters are demanded regarding both: restrictions on exports and export subsidies.

■ EU and member states

The EU, the main counterpart of the USA in the negotiations of the URUGUAY Round, came under pressure after its half-hearted decisions for further reforms of the CAP. The Commissioner for Agriculture initially commented very defensive on the decision: It represented the current position of the EU and would be defended as good as possible in the WTO negotiations. Only after massive criticism from the CAIRNS-group he toughened its stance by saying that the outcome of the WTO negotiations had to be compatible with the EU policy. The EU countered the demands for the elimination of all special provisions for trade in agricultural products by citing Art 20 of the AoA which calls for taking account of non-trade concerns like food security and environmental protection. However, the original proposals of the EU-commission which had aimed at a stronger link between support for agriculture and its environmental and regional services were not put into practice.

The position of the EU aims at three points

- Maintenance of the Blue box, the peace clause and the special safeguard mechanism;
- improved market access for EU products, reduction of support for exports including export credit guarantees and marketing boards, reduction of domestic subsidies while at the same time maintaining the Blue and the Green box - all these are seen as long term aims which would not be fully reached during the next round of negotiations.
- Expanding possibilities to support multifunctional agriculture (in the framework of the Green box), quality and safety of food and animal welfare.

The EU position is contradictory in the sense that it asks for the maintenance of protection and support for its own agriculture while on the other hand calls other countries to open their markets for their products which stem from the subsidised production. This limits the value of its support for multifunctional agriculture which might not be separated from production but does not justify (subsidised) exports.

To date the position of the EU shows the greatest similarities with the net food importing industrialised countries like Norway and Japan while the latter can support the multifunctionality argument more convincingly as they do not have any interest in exporting.

- **The role of developing countries.**

Pakistan presented a paper to the General Council of the WTO which contains quite specific aims. The AoA should be reformed in a manner that minimises the possibilities of industrialised countries to protect their agricultural sector, while at the same time increasing developing countries' possibilities to offer such protection. Therefore the immediate elimination of all forms of domestic support, product specific subsidies and export subsidies shall be decided. Developing Countries should be excluded from these commitments in the fields of import controls and domestic support for the production of basic foodstuffs. Industrialised Countries are asked to set up a fund to support net food import developing countries when import bills increase.

This position is closely in line with a **Group of 77** internal strategy paper from 1998. It can be concluded that Pakistan has taken the role of a speaker for those developing countries which do not belong to the CAIRNS-group. **India** stresses that agriculture accounts for 70% of the jobs provided in India and few have opportunities to find other employment. Therefore sudden shocks in this sector had to be avoided. India regards a safeguard mechanism against (subsidised) imports as necessary, even when domestic prices are normally lower than world market prices. India does not plan to reduce its subsidies as a result of the WTO negotiations. The case for special protection and support for agriculture in developing countries is also supported by UNCTAD.

Most of the **developing dountries with strong export interests** are members of the CAIRNS-group and are more active in the Committee on Agriculture than other developing countries. They employ specialists for agriculture in their Geneva missions. In principle they share the free trade positions of the CAIRNS-group especially towards industrialised countries. Regarding the special needs of net food importing developing countries at least some members of the CAIRNS group are much more open. Differences in the level of development should be taken care of and justify higher domestic support. The special safeguard clause might be maintained as an instrument of special and differential treatment. On the other hand developing countries should stop asking for new exceptions and deal offensively with the trend towards liberalisation.

The **net-food importing developing countries** themselves are quite passive. Many of them just started with implementing their commitments in the AoA and are reluctant to take on board new ones. The WTO Agreements in general are seen as extremely complex which hinders developing countries to benefit from its provisions. This was especially so for the Agreement on Subsidies and Countervailing measures. Support was given by the WTO secretariat but not through bilateral development assistance. The special and differential treatment provisions often were of very limited use as they were in fields of minor importance or could not be financed (e.g. subsidies). Grace periods were often not used to adapt to liberalisation but after inaction concluded with an appeal for a new grace period. Other representatives saw the special provisions in the AoA as sufficient, but also point at the lack of finance to exploit them. They call for the international community to give additional funds to developing countries for this purpose.

V.3.4 Recommendations

The impact of international trade and trade policy on the environment is multi-faceted and not entirely positive or negative. This is due to the fact, that national agricultural policies nowhere focus on ecology and only in a few countries they focus on food security.

In order to facilitate *the implementation of environmentally sound forms of agricultural production,* fundamental changes in domestic agricultural policies supported by appropriate trade policies are required (HINCHCLIFFE ET AL., 1996:71):

- The pattern of agricultural development has to be shifted from high-external-input approaches towards better management of biological processes
- Agricultural research and extension services have to be redirected in the same manner, including participatory approaches.
- Rural infrastructure in developing countries has to be improved.

- Farmers who face real adjustment costs when converting to a more sustainable agriculture should be offered transitional support. This is especially important in developed countries, where farmers who hitherto applied high amounts of external inputs will suffer yield losses.
- Access to (internal) markets has to be ensured and positive price incentives have to be created. Investments in more sustainable forms of agriculture and increased productivity will only be undertaken if it is financially worthwhile.

  In most developing countries *raising farmgate prices* is the most important step in the right direction, as farmers have been taxed (directly or indirectly) in the past. In developed countries, where agricultural price support has been a common pattern for decades, a redirection of support towards environmentally sound production methods is required, making them more remunerative than current high input practices. Current world market conditions may constrain the possibilities for those price incentives, especially in a more liberal trading environment. Some analysts expect world cereal prices to decline, thus, incentives for farmers and governments to invest in cereal production decrease, rather there is an incentive to switch to other, more profitable crops (PINSTRUP- ANDERSEN ET AL, 1997:12).

Therefore the international trading system should allow for *domestic agricultural policies* which promote:

- investments in higher production and intensity in sustainable production systems in developing countries, including incentives through higher and stable producer prices,
- more environmentally friendly and extensive forms of agriculture in the developed countries, including incentives which go beyond the compensation for additional costs currently permitted,
- trade policy instruments like export subsidies which lead to lower world market prices and artificial competition for producers in importing countries shall be eliminated.

The current approach to redirect incentives and support for agriculture from price policies to direct payments is highly questionable in the face of severe budgetary constraints in both developed and developing countries. On the other hand, no comprehensive concept for price policies avoiding the detrimental effects of the ones applied until recently has been developed yet.

On the trade policy level there seems to be *an opportunity for an alliance* between those industrialised countries which support the concept of multifunctionality and the majority of developing countries which see agriculture and food production as the basis for food security and rural development rather than an export sector. If this coalition materialises and is able to defend its case against the well organised liberalisation interests of the USA and the CAIRNS-group

crucially depends on the EU's approach. It has to focus its practical policy much more consequently on the multifunctional aspects of agriculture.

In the trade policy framework this means:

- elimination of export subsidies in short period;
- no demand for increased market access especially not to developing country markets;
- support for net food importing developing countries.

Domestic support has to be guided much stronger by environmental and social goals. In order to achieve these aims it is necessary to promote the use of agricultural surpluses in the non-food sector (renewable raw materials) in addition to the present measures to decrease production by quantitative limitations and lowering of inputs.

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V.4 WTO and AGENDA 2000

Heinrich Wohlmeyer

V.4.1 Preliminary Remarks

The forthcoming elaboration of the sphere of influence of the major players participating in the upcoming WTO negotiations would make it appear sensible at this point to add an appendix regarding the issues of the WTO and AGENDA 2000. At the same time, it must be pointed out that the orientation and the instruments of EU agricultural policy have not undergone basic changes in the face of AGENDA 2000. The major instruments, such as market regulation premiums, export refunds, structural measures, environmental programmes and income supports have remained intact. However, significant quantitative shifts have taken place and will continue to do so in the future. While the former two support measures will (have to) be reduced, the latter are being increased. Programs for rural development were added that were intended to provide additional income for farmers in view of the decreasing prices in their core farming operations. Thus, significant quantitative changes have taken place, but there cannot be a claim to a basic change of course.

Furthermore, the final figures for the individual programmes and the extent of national supporting measures have not yet been determined. This would mean that it was not yet possible to make quantitative estimates. This is why Section VI "Solutions to Existing Problems" was not changed after passing of the AGENDA 2000. However, the following appendix deals with the current situation, its long-term effects, and the consequences for the upcoming negotiations in the scope of the coming round of negotiations. The same applies to the concluding remarks (Section VIII).

The compromise found within the EU regarding AGENDA 2000 was determined by several driving forces. On the one hand, these mainly included the internal **budget crunch** and the upcoming **EU expansion towards the East**, and on the other hand, the "**MILLENNIUM Round**" **in the WTO**, which everyone tries to be prepared for. With regard to the latter, it is expected that the USA and the CAIRNS Group will succeed in ensuring increased market access (by reduction of tariffs and supports) that will lead to price imbalances in international trade to the disadvantage of the EU member countries, since a higher domestic price level cannot longer be secured.

The related constraints have been sufficiently analysed by S. TANGERMANN,[1] so that reference can be made to them.

1 S. TANGERMANN: Reform der EU-Agrarpolitik und WTO-Verhandlungen: in Agrarwirtschaft Vol. 47 (1998) 12, pp. 443-452.

While TANGERMANN considers the present system of world trade in its given form to be unchangeable as it were, the following remarks on dynamics will not be made from the point of view of the competitor, who is locked into the system, but from the point of view of someone questioning the advantages ***and*** disadvantages of the present world trade system in a manner similar to that already illustrated in Section II.

In particular, it must be emphasized there will be increasing sharp *competition regarding cost and system* (refer to Chapter II.2.2.2(i)) in a world trade situation, where tariffs alone are available as a trade policy instrument and where they are subjected to reduction. This has been preprogrammed by the leading powers in the agricultural market. Under the circumstances of global competition, if one side optimizes the net production function and externalizes costs in order to improve its competitive position, while the other side practices multifunctional farming taking into account the requirements of nature protection, the latter will lose out.

Multifunctional agricultural production, which serves sustainability and simultaneously renders a series of services for the general public, naturally incurs higher production costs due to its consideration of the environment. To this must be added the short-term orientation of the market, whereby the long-term aspects are generally ignored. The latter includes, in particular, the foodstuff demands of the coming generations which would make it seem imperative to maintain the production readiness of disadvantaged regions or those with a marginal yield. The securing of a broad biological basis is the prerequisite for achieving this object. This again is the precondition for ecological stability, or securing the basis of life in general and maintaining a greater diversity of supply options for future generations. However, the short-term dynamics[2] accepted within the WTO and acknowledged as a given fact by the EU, force out of production those agricultural production systems which adhere to a multifunctional concept of sustainability, as long as vehement countermeasures are not undertaken. Therefore following this brief elaboration of the situation, these are dealt with in detail.

Added to the above problematic issue of different agricultural models, there is the problem of agricultural systems that differ according to location and display various combinations of production factors and varying externalities, on account of differing natural sites, as well as varying consideration of the environment. The tacit assumption of global agricultural trade policy

2 The speech held by the Director General of GD1 for Foreign Affairs, Trade Relations with North America, the Far East, Australia and New Zealand, J.F. BESELER, on 14-6-1999 in Vienna, indirectly adheres to this logic. Although environmental protection and multifunctionality of agricultural production were mentioned, they were seen in the context of the constraints on the short-term competitive situation, and concessions made to current economic interests were considered unavoidable. However this mind-set turns reality upside down, since the absolutely imperative ecological infrastructure is forfeited in favor of a social superstructure. This short-term view overlooks, that those realities have to be protected first on which others are built upon (finding principle of applied ethics).

The same tendency is represented in a strategic paper of the GD1 dated 15-6-1999, (The EC Approach to the Scope, Structure and Time Frame of Future Negotiations), in which the Committees on Trade and Environment (CTE) and Trade and Development (CTD) only are attributed an advisory function, while separate working groups were proposed for the short-term strategies.

that there can only be one single production strategy on a worldwide basis, therefore is not justified factually.

V.4.2 The Core and the Tragedy of AGENDA 2000

1) Basic Orientation (Core)

Since agriculture is now treated "like any other industry" in the WTO (GATT),[3] and the instruments of trade policy have been reduced to tariffs that are subjected to continuing reduction, the national margin for influencing the general conditions of the agricultural economics is becoming smaller and smaller. In "realistic" evaluations of the upcoming round of negotiations, it is therefore assumed that only a policy of adapting to the prevailing world trade system will be possible.

For pragmatic reasons, the major rules of the world trade system are no longer questioned, since they are considered a political taboo. However, the danger is that the deplorable state of affairs that has developed now begins to overshadow the good aspects of the world trade system, and it is thus losing its broad political acceptance. If a policy is to be future-oriented, it should never exclude criticism and calling into question.[4]

The consequences of a policy of adaptation are the stepwise reduction of prices for agricultural produce in the EU in all sectors to come closer to world market prices (without taking into account the corresponding production circumstances and costs). At the same time, the intervention system for stabilizing prices will have to be forfeited for the most part, since extremely low world market prices (the agricultural markets are subjected to extreme price fluctuations) and generally abolished tariffs would cause the intervention mechanism to collapse. This would take place, since foreign goods would also take advantage of the intervention mechanism (agricultural goods are homogenous goods as a rule). Such a process would exceed the available budgetary means. This explains why AGENDA 2000 intends to discontinue state interventions for the most part, and will be limited in the future to emergency measures in the case of price collapses and to be known under the term of "security network." All regulations for meat, milk and grains, as well as oil and protein rich plants, are in accordance with the above. For example, volume increases for milk and the announcement that the quota regulations might possibly expire in the year 2006 or 2008 actually partially create the price reductions that are not

3 This is incorrect, since the application of the principle of equal treatment requires that things, which are not the same, should be treated according to their difference in order to receive "equal" (like) treatment. Due to their multifunctional integration in the biosphere, agriculture and forestry, as the economic sectors nearest to nature, cannot be treated the same as a factory for ball bearings, e.g. With regard to the biosphere, the latter can be conceptualized as a closed system for the most part, while agricultural production is an open system which undergoes multiple interactions with the environment (especially soil, water, flora and fauna).

4 This passage was written before the demonstrations in Seattle on the occasion of the inaugural speech of the "MILLENNIUM Round". The demonstrations confirmed the reservations expressed.

formally decreed (since they cannot be politically enforced at present). Likewise, the prices for beef threaten to sink from 2.78 Euros to 1.56 Euros in the scope of the future "security network" intervention regulations.[5]

However, this creates a dilemma for EU agricultural policy, namely, area covering husbanding of nature in densely populated cultural landscapes, which is also called for by nature and environmental protection, threatens to become impossible to finance in the face of budget crunches. Yet this is the central objective of the large-scale agricultural exporters – namely to force domestic agricultural produce out of the currently strongest buying market in the world. Determination and control of EU agricultural policy[6] by outside forces will be briefly elaborated in the following.

2) Conflicting Objectives (Tragedy)

Agricultural policy in Europe (still) has not admitted to society, and particularly its own farmers, the fact that it is at the mercy of world trade, and it continues to promise that multifunctionality[7] and incomes are secured for the future in the most part.

The corresponding expectations of the farmers became clear during the past negotiations concerning AGENDA 2000. Particularly the instruments of price policy and volume restriction were still considered to be effective, and were therefore heavily debated, and their further implementation was considered a success.

However, the traditional agropolitical instruments for regulating price and income have mostly become paralyzed – if not counterproductive in the given competitive context – in a world market which is currently controlled by those agricultural exporters disposing of a great abundance of land. The latter is particularly valid for volume limits on the production levels of individual enterprises. These can be implemented for the purpose to achieve equilibrium on the market and in order to meet ecological objectives without reducing competitiveness on the domestic market, as long as the trade policy regime can secure domestic preference and the related higher costs. However, since price competition will take full effect in the future (continued tariff reductions), reductions of production volume no longer fulfill the objective, because they lead to an increase in cost per unit which in turn reduces competitiveness on the world market dominated by large-

5 Refer to the information brochures of the Austrian Federal Ministry for Agriculture and Forestry, "Reform der GAP – Ergebnisse", dated 26-3-1999 and the Presidents' Conference of the Agricultural Chambers of Austria "EU-Agrarreform: alle Ergebnisse", in Der Österreichische Bauer, No. 4a, April 1999.

6 Also refer to H. WOHLMEYER, "Der getriebene Sektor, in: Umweltstandort Deutschland; Gewerkschaftliche Monatshefte 47th Issue, Vol. 3, Bund-Verlag, Cologne, 1996.

7 According to the propagated "European Model," agriculture and forestry should be multifunctional, sustainable and competitive; they should preserve the landscape, conserve natural regions and make a significant contribution to the vitality of the rural countryside; however at the same time, they should ensure our qualitative and quantitative food security and well as affording comprehensive protection for the environment and its fauna.

structured forces.[8] The EU is running into the same dilemma which has become very evident in the Austrian dairy products sector. Austria banked on production limits and reductions in order to save on export supports and satisfy ecological requirements. This had to lead to an increase in the cost per unit in primary production and processing. At the same time, market access was being prepared for without taking into account that even immediate neighboring regions (e.g. Bavaria)[9] have far smaller production costs on account of greater volumes. This resulted in reduced competitiveness which is now the subject of general complaints.

This problem is apparent in the EU in practically all sectors of agricultural production. If sustainable adjustments of the basic regulations are not implemented (refer to Section II.2, sections VII and VIII, in particular), the only instrument remaining on hand is a complicated system of direct payments. This is not only difficult and expensive in terms of administration, but also difficult to grasp for the general public. Thus the danger is given that this will continue to lose political acceptance. In addition, the call is being made for non-production-related direct payments in the WTO. This is why non-EU member Norway, whose agricultural production renders a large number of external services, suggested that the "polluter-pays" principle is added to the "provider-gets" principle.

In this connection, it appears necessary to add several *basic remarks* on the topic of the *permissible subsidies* in the WTO:

- The USA and the CAIRNS Group call for Green box measures to be strictly non-production related. According to this mind-set, all production-related measures are automatically Red, Amber or Blue box measures, meaning, they belong to those measures which are prohibited from the onset or those which will be subjected to contestation in the present round of WTO negotiations. Despite all the obvious vested interests in this manner of procedure, one major difference also lies in the *concept of nature protection*. Those countries with a large area of land per capita consider nature protection as exclusion of farming in the region concerned. In particular, this has manifested itself in the continuing international debate on nature reserves in the IUCN (International Union for Conservation of Nature). In densely populated regions, however, man is seen as an element of the natural countryside, and his sustainable activities are integrated in nature protection.[10] However, this kind of nature protection requires leeway for production-related measures. The public demand for such services should not be

8 Seen from this point of view, binding diverse production-related premiums to reference volumes and establishing upper limits, *i.e. de facto* the freezing of production volumes, also worsens the competitive position on the long term in as far as the present world trade system still adheres to the ruling that prohibits countervailing measures.

9 Bavaria is a region of approx. the same size, but it is more advantageously situated with an production quota of around 7 million tons per year, while Austria only has 2.4 million tons per year. In addition, Austria did not receive any "specific quotas" (i.e. special contingency) in the scope of the negotiations concerning AGENDA 2000, although it is dependent on dairy production due to its high percentage of alpine regions. The last resort to alleviating this problem lies again in "direct payments" for reducing the discrepancy.

10 For an example of this, refer to the most recent model of nature protection in the province of Lower Austria, Office of the Lower Austrian Provincial Government, Section for Nature Protection, 1999.

classified as a "subvention," due to the nature of the issue. However if this incorrect classification is maintained for purposes of negotiation tactics, then the Green box should at least be open for such production-related measures.

- A further compromise in the direction of more appropriateness would be a greening of the Blue box, meaning that payments for production-related performances made in the name of multifunctional agriculture should be accepted.[11] This will be one of the hottest and most unavoidable issues in the coming round of negotiations. However, it should be remarked that the long-term objective of a sustainable global economy should be "true prices," meaning prices which cover the currently externalized costs. The simpler, more sensible and more efficient solution would be to prescribe standards, whereby the costs would be reflected in the market price of the goods or services. Yet as long as there are no trade policy measures to compensate against the competition of goods and services that were produced or rendered without having to consider comparable protective limits, the helping hand of public demand for socially desirable services is still necessary.

In recognition of the above briefly elaborated weaknesses, AGENDA 2000 puts more emphasis on the opportunity for income generation in the scope of the general development of rural areas. However, this requires that general economic policy is aimed towards decentralization and networking, and that institutional regulations – such as financial compensation for the services rendered by rural communities[12] - should provide a reliable long term basis for rural development. In this connection there has been very little initiative for any political implementation throughout Europe. Institutional supporting measures within the EU are lacking. The means provided for development of rural regions[13] are threatened to be submerged in the mainstream, if *accompanying institutional changes* are not undertaken, apart from a few initiatives that are based on a particularly advantageous local framework.

Another basic remark should be made regarding the latter. In the scope of a generally sustainable[14] concept of societal design, surface area and agricultural goods will become scarce. Agricultural policy will then primarily have to concentrate on skimming off socially undesirable differential rent, instead of providing emergency relief for survival and utilization of surpluses.

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11 Examples of this are the compensatory payments, dependant on different preconditions, for keeping ruminant livestock in alpine regions or observing manifold crop rotations in crop production.

12 The German Council of Experts on Environmental Issues (SRU) brought up the issue of ecological financial adjustment (SRU: Konzept einer dauerhaft umweltgerechten Entwicklung, Sondergutachten; Wiesbaden, 1996).

13 30 370 million Euros for the period from 2000 to 2006 – which is somewhat more than 10% of the total funding available for agriculture (297 740 million Euros). Refer to loc. cit. FN 4.

14 Refer to the following studies:

J. JÄGER, A. LIBERATORE, & K. GRUNDLACH (Eds.): Global Environmental Change and Sustainable Development in Europe, European Commission, Brussels/Luxembourg, 1995.

R. U. AYRES & P.M. WEAVER (Eds.): ECO-Restructuring – Implications for Sustainable Development, United Nations Univ. Press, Tokyo, 1998.

R. LOHSKE, T. BÖHMER ET AL. (BUND/Miserior Ed.): Zukunftfähiges Deutschland- Ein Beitrag zu einer global nachhaltigen Entwicklung, Birkhäuser Verlag, Basel/Boston/Berlin, 1996.

In analogy to good business management systems, EU agricultural policy should thus take place on three levels:

a) On the level of *operational* survival under the presently existing framework.

b) On the level of *strategic* planning which is aimed at necessary future objectives and ensures that operational agricultural policy does not compromise the former (orientation of present agricultural policy according to a "backcasting from the future").[15]

c) On the level of *consistently conceptualizing a sustainable framework* in order that desired human behavioral patterns are taken over by all mankind (global sustainability) and they can be sustained for as long as desired (intergenerational compatibility).

At present an operational deadlock dominates almost all political sectors. Economic policy is depreciating into competition policy in a system which is no longer questioned.

It is therefore imperative to take the *general conditions* into consideration, and not only the sources of financing.

In the following Figure V.4-1, a summary will be made of the field of tension created by the built in agenda for the upcoming round of trade negotiations and the position of the main agricultural stakeholder, the USA.

15 This term was coined by L.A. JANSEN. Also refer to his article "Sustainable Development – A Challenge to Technology" in the chapter: Sustainability and Eco-Restructuring – How to Implement It in Sustainability – Where Do We Stand? SUSTAIN, Graz, 1993.

Figure V.4-1

The European Model of Agriculture (MEA), the WTO and the USA: Objectives and Conflicts

WTO Objectives in the MILLENNIUM Round	**Apparent Objectives of the Main Stakeholder, the USA**	**Objectives of a Multifunctional European Model of Agricultural**
Further market liberalization through: • reduction of tariffs • removal of export subsidies • increased market access • reduction of domestic supports • Green box strictly non-production-related (decoupling of premiums from production) • expected contestation of the Blue box Non-trade concerns are in the state of being articulated in the scope of the recognizably evolving, change of values. Presently exclusively production-related mind-set.	Clearly unilaterally market-oriented alignment:[1] Classical strategy of conquering the market with any means. In particular, opening up of the strongest buying market in the world for US agricultural production by contesting the European model of agriculture[2] Major means: In addition to forcing through the built in agenda of the AoA, as elaborated in column 1: a) Seemingly non-production-related supports, which are comparable to massive cost reductions and thus turn the competitive field in favor of the USA. b) Opening up of the markets for agricultural products which have lower production costs through using genetic engineering and productivity increasing chemicals (e.g. growth hormones). Normally unvoiced internal objectives:[3] Force the competitors on the world market out of the game within seven years in order to gain full control of the world foodstuff market as the major stakeholder.	EU position with partially contradicting major objectives: On the one hand, striving with all means to remain competitive as a global player in the world agricultural market, on the other hand, attempt to implement the objectives of multifunctional agricultural production. In accordance with the latter, agriculture and forestry should: • husband the landscape and preserve nature, • protect the environmental compartiments, biodiversity, soil and water, • respect habitats and animal rights • ensure long-term quality and security of food supply. Simultaneously, agriculture should remain competitive under the given circumstances, as well as economically and socially justifiable. The instruments presently permitted by trade policy hardly provide the means for achieving the objectives desired by the population. Unconditional competition of agricultural systems, which optimize nothing but their production functions, leads to loss of competitiveness. In the scope of multifunctionality and "provider-gets principles",[4] additional services to be paid for separately should be accepted for compensation in the framework of the Green box or the Blue box after greening it, in spite of being production-related.

1) Refer to the statement made by the American Secretary of Agriculture DAN GLICKMAN at the "*Canadian Agricultural Trade Conference"* in Ottawa on 19 April 1999 (Release No. O173.99 of the USDA)
2) Refer to the statement made by the American Secretary of Agriculture dated 11-3-1999 on the EU's AGENDA 2000 (Release No. 00099.99 of the USDA) on the resolutions passed by the EU Ministers of Agriculture on the same day.
3) Source: personal contacts with farmers
4) The public demand for services in the interest of the general public must not be qualified as subsidy.

V.4.3 Required Initiatives

If the European model of agriculture is to be implemented, and if the special case set by countries like Austria (mountainous with small-structured farms), is to survive within the EU, then the following initiatives are imperative in addition to the solutions elaborated in Section VII.

1) Initiatives Required on an International Scope

In order to work against the dynamics of the WTO[1] which tend to "rationalize" small scale European agriculture to death, several general conditions must be quickly recognized in order to ensure a minimum of leeway for action. They include:

a) recognition of the multifunctionality of agriculture and forestry in the scope of the OECD and the WTO, whereby the related consensus in Chapter 14 of AGENDA 21 should be refered to;

b) recognition of the provider-gets principle (compensation for services in the interest of the general public);

c) recognition of the necessity of production-related Green box measures.

These initiatives should be considered indispensable and should be incorporated into the position of the EU for a *comprehensive round* of negotiations, as elaborated in an informal discussion paper of the EU-Commission dated 1-6-1999.

In addition, effort should be made in the institutional **negotiation field** in order to ensure that long-term interests oriented towards the prosperity of the general public are given a fixed place on the agenda. In addition to the nine proposed negotiating groups, it is imperative that a negotiation group should examine the WTO agreements regarding future sustainability in the **light of the UNCED** 1992, the international agreements relevant to world trade and the general legal developments that have been concluded or taken place in the meantime. Otherwise, the course the WTO is taking runs the danger of being compared to that of the Titanic, since it is overlooking the "*ecological and social icebergs*" ahead. This committee could be given the name of "Negotiating Committee for Basic Issues."

Furthermore, a subordinate "Working Group for Multifunctionality" should be considered essential in the "Negotiating Committee for Agriculture." If such a group is not set up, these basic

1 The position of the main stakeholders is quite clear. Europe has the strongest buying market for food products. Any reduction of European production increases the opportunity to export. Since long-term aspects are barely taken into account on the world market, they argue that they can make available a (short-term) cost-effective supply, which would cause an increase in the consumer's rent. This seductive offer is made in contrast to a future scenario of an absolute food shortage (not only caused by distribution). The latter requires that production readiness has to be maintained everywhere.

issues are threatened with neglect in the scope of every-day trade policy dealings, since major exporters favor a sectoral manner of procedure.

In addition, however, the following basic conditions should not be forgotten in the interest of future sustainability, namely:

- The possibility of *supporting the established higher costs for environmentally compatible agricultural production* and the higher costs incurred in disadvantaged regions by means of border tariffs in conformity with the aim of fair competition. This would currently appear utopian, however over the long term it is indispensable, i.e. *ceterum censeo*. On the long term, as previously remarked, true prices (which reflect true costs) cannot be replaced by the aid of budget funds in the interest of the general public, since this would overtax the budget and also results in steep bureaucratic expenses.

- Since domestic market regulations will be eliminated for the most part, a reshuffling of the Commodity Agreements in adapted form with the opportunity to maintain buffer stocks[2] should be considered for securing an international security intervention mechanism in order to avoid extreme price fluctuations. This was originally planned in the framework of the ITO, however it was voted down by the USA. Since the national buffers and emergency stocks are being eliminated in the present global cost efficiency race, the international community is called upon to set a common initiative.

- Finally, it must be considered that the high price flexibility of agricultural markets strongly pleads for *quantitative control instruments* as ultima ratio. Minor surpluses can cause massive price collapses, and minor shortages can cause prices to climb suddenly. Even the WTO will not be able to ignore this fact on the long term. In order to avoid unnecessary hardships and the destruction of existences and sustainable production capacities required for the future, quantitative instruments should be implemented under certain circumstances in order to ensure the prosperity increasing development of agricultural markets.[3]

In addition, the EU should make an internal contribution towards reducing the price risks by improved market organization. In particular, this entails the *establishment and support of futures markets in the agricultural sector* (refer to the following item 2).

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2 Also refer to H. WOHLMEYER: Trends in Post-1945 Commodity Agreements, dissertation at the University College London, London 1964.

3 The legendary Agricultural Commissioner of the EU, SICCO MANSHOLT, who passed away in 1995, in his old days vehemently defended the prudent use of quantitative steering instruments in order to make up for socially and ecologically disadvantageous developments on the agricultural markets. (The author had the privilege of having personal conversations on the topic with this grand old figure of European agricultural policy. Mansholt has been converted from a Saulus to a Paulus by his long political experience with respect to the use of quantitative regulations in agricultural markets).

2) Improved Private Market Organization at an EU Level

According to the principle of giving priority to market-conform instruments in order to achieve economic and social objectives, the problem of high price fluctuations and risks in the agricultural sector should be countered with the means best conforming to the market. One way of approaching this is through market organization. The opportunity to institutionalize security with functioning forward exchanges is particularly attractive. Forward exchange markets no longer exist in Europe, for the most part. However, due to the small-structured system of European agricultural production, a bundling of the generally small volumes offered (production cooperatives, etc.) is required with standardized (exportable) qualities and storage in order to achieve marketable quantities. Targeted structural EU supports could begin here. Cost reductions could increase the attractiveness of access to forward exchange markets, similar to support given to cover natural risks (e.g. crop insurance). This strategy should be accompanied by corresponding state control mechanisms, in order to prevent speculative abuse of the forward exchanges.

3) Devising Improved Basic Arguments and Dissemination of Relevant Information

The evident ecological and social deficits and threats are overwhelming, yet they are ignored within the WTO.

Therefore the interrelationships should be elaborated in order that the required measures can be better justified. In this connection, better funding is needed for research into the requirements of sustainable, multifunctional management of agricultural ecosystems suited to the location, in contrast to those which serve immediate competitiveness.

4) Closer Relationship between Mankind, Nature and Environmental Protection[4]

In the scope of these non-trade concerns, not only multifunctionality must be supported, but the following initiatives should also be undertaken:

a) Call for a *worldwide taxation of petroleum products at the value of their replacement*, as well as abolishment of the tax exemption for international shipping lines and international airlines. The same is valid regarding the provision of traffic and transportation infrastructures at the cost of the community (e.g. airports, harbors and roads). This would eliminate one of the most significant factors (refer to Section VII.2.1), which hinders sustainable allocation of production factors.

b) Insist that *taking into account of the production method* is imperative for efficient protection of nature and the environment. The fear of abuse can be countered by continuing in the

4 This is called for in the above cited informal strategic paper dated 1-6-1999 in the section on environment.

tradition of the dispute settlement procedures that already prescribe an examination of production methods, as well as of the regulations concerning technical trade barriers which also deal with the issue of production methods in detail.

c) There are similar fears concerning the introduction of *countervailing duties* to ensure the compensation necessary for establishing fair competitive conditions *in the case of extreme cost distortions through low ecological and social standards.* A panel of independent experts and a consensus to dedicate the collected means for an international development fund that could be used to finance measures in the countries concerned could abolish the basis for the above fears (also refer to the footnote in Figure VII.1-4).

5) Supporting Initiatives on a Domestic Level

In order to enable countries like Austria to maintain their small-structured, site-oriented agricultural production in the context of EU AGENDA 2000, and the contours of the upcoming trade negotiations can be upheld, the following measures appear suitable in the scope of the Green box in addition to the measures already implemented.[5] For the most part, these could be tied to measures for rural development in the scope of AGENDA 2000.

5-1 In the infrastructure sector, the assumption of the costs for the establishment and maintenance of the *rural road network* by the state, province or community appear seemingly obvious, since the current market prices cannot cover these costs. In addition, the rural road network is used by the general public, for the main part. It is naturally more than the farmers in Alpine regions can handle, if they are called upon to upkeep the desired infrastructure in order to ensure access to the regions used for recreational purposes. It should furthermore be taken into consideration that all citizens – even those who live in remote regions – have the right to public services. A traffic and transportation infrastructure certainly counts among the essential public services.

5-2 The provision of affordable *water, power and telecommunication* lines is also imperative. The basic principle in this connection should be that the rural population is not disadvantaged in comparison to the population in urban agglomerations. This is of particular importance, since the urban centers are given preference for private telecommunication services. This gives rise to the risk that rural areas are decoupled from the developments elsewhere, and the commonly cited option of decentralized subsidiary gainful employment is unfeasible due to the high costs.

5 The Green box covers everything from research to social measures. It has a broad enough thematic scope in order to provide sufficient leeway to achieve those objectives which are considered socially imperative. Only a national consensus is required in order to make corresponding use of this leeway.

5-3 It is particularly important for rural development to establish regional *supply systems on a local basis*. Research and development of appropriate technologies, pilot projects and infrastructures are the basic necessities in this regard. Low distance supply systems not only reduce the volume of traffic, they also ensure that local material flows are closed cycles and they contribute to protecting biodiversity of cultural landscapes in a dynamic way. In the event of supply problems or crises, they also ensure increased reliability of supplies.

5-4 With regard to Austria's still valid declaration of permanent neutrality, as well as essential emergency supplies in the face of increasing political and ecological instability, *storage of goods should be increased for the purpose of food security.*

The following is imperative in order to ensure a minimum of supplies in the event of a crisis:

a) The decentralized storage of wheat, whereby would appear sensible for farmers to store an additional yearly ration of feeding wheat in foodstuff grade in rotation (supply of carbohydrates and a portion of protein).

b) The decentralized storage of hard cheeses amount to the volume of the annual production (supply of protein and fat).

This strategy has proven itself over the course of history. It was already employed by the Roman armies (grains and cheese as storable goods for ensuring basic food supply), and by shipping navigation before the invention of cooling systems, whereby the latter also made use of bacon as a supply of protein and fat.

Such a programme also has the advantage that decentralized storage can be made use of in a dual strategy together with authorization from the authorities for measures reducing price fluctuations (open market policy).

Based upon the preconditions set by AGENDA 2000 and the contours of the upcoming WTO negotiations, a series of supplementary measures needs to be implemented on several levels in order to counteract the non-sustainable dynamics of the world market. The countermeasures taken to promote sustainable development towards the prosperity of the general public will be extremely difficult as long as the rules and regulations of the overall economy and the global economy are not consequentially oriented along the requirements of a sustainable social concept.

V.4.4 Remarks on the Agricultural Trade Conflict EU versus USA

The fact that the USA has been displaced from many markets through the aggressive export policy of the EU, instead of channeling surpluses into the large area of renewable raw materials, has also served to make the USA aggressive. The opportunity was missed to make a "grand deal" with the USA in the line of "we don't get in the way of your export deals, and you respect our different concept of agricultural production and the measures necessary to protect it." Now the USA and the EU are in considerable difficulty, since the development of the world markets in the agricultural sector was far too optimistically overrated.

The imbalance of income distribution (only approximately 25% of the world's population have profited from global economic growth over the past fifteen years – Human Development Report 1996), the decoupling of the "least developed countries" from international development, and the wasting of foreign currency for purposes other than food supply (e.g. armament), have resulted in the level of demand failing to increase as expected. The prices decreased according to the high price flexibility inherent in the agricultural markets, and the American farmers, who had been granted complete freedom of production by the FAIR Act, came under great pressure which is still currently evident and persistant.

In his speeches regarding a supplementary budget in order to stock up the farm loan programmes, the American Secretary of Agriculture uses already an extraordinarily dramatic language covering everything from the "farm crisis" to the "intolerable pressure on family farmers".[6] In consequence, an even tougher line can be expected in foreign policy, since on the one hand guilty parties are being sought to be made responsible for the misjudged dynamics caused by uncontrolled markets and, on the other hand, the idea is to demonstrate to the hard-pressed farmers that someone is doing his utmost for them accordingly.

Therefore this round of negotiations is expected to be dramatic – particularly for the EU (one of the worldwide strongest markets in terms of purchasing power). The only path out of the <mutual prisoners dilemma> points towards an ecological design of the general economy.[7]

V.4.5 Alliance with the Developing Countries

The fact that the USA and Europe are at the mercy of the petroleum refiners' interests, who are hindering a break away from the syndrome of agricultural surplus caused by fossil inputs, threatens to lead to further escalations in the agricultural sector. This will not only affect the trade conflict, but also the methods of production. In turn, this gives rise to constraints and models that

6 Refer to e.g. "Statement of the Secretary of Agriculture DAN GLICKMAN on Supplementary Budget Request," Washington, D.C., 29 April 1999.

7 Also refer to H. WOHLMEYER, Agro-Eco-Restructuring: Potential for Sustainability in Eco-Restructuring, R.U. Ayres & P.M. Weaver (Eds.), United Nations University Press, Tokyo/New York/Paris, 1998.

are counterproductive with regard to sustainable and improved development in the developing countries.

The four steps towards sustainable improved development documented for Europe by D. SENGHAAS are generally valid:[8]

- achievement of a well functioning agricultural sector (secure food supply)
- development of auxiliary businesses and related industries
- development of an independent industrial sector
- establishment of a services sector

These four steps can only be circumvented or leaped over with great difficulty.

The international leading model for agriculture also requires a corrective course. The developing countries are dependent on small-scale, site-oriented, diverse, agricultural production, which is nearer to horticulture than to large scale agriculture. Those production patterns, emanating from countries with a great wealth of land, foodstuffs and fossil energy carriers should not be forced upon the developing countries. The latter is definitely not a future oriented pattern for an even more densely populated earth, which will have to provide adequate supplies despite a radical reduction of fossil inputs in the foreseeable future. Europe could be a model and provide support in this issue, however the precondition is that it abolishes its own inconsequential actions. It should be a living example for appropriate development policy and should mediate the fact that sustainable development requires orientation towards abundantly available solar energy (available through modern technology), closed organic material cycles, cascade-like utilization of energy and materials, as well as the prerequisite of decentralization and networking.[9]

Finally, it should be communicated that economic diversity is also imperative for ensuring creative and mutually stimulating developmental dynamics. A unilaterally export-oriented policy based upon just a few products not only increases the risk in the case of a market collapse, it also leads to macro-economic stagnation.

If the EU is credible in following such a strategy as above, it will also find good partners in the majority of the WTO member countries, i.e. the developing countries.

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8 D. SENGHAAS, Von Europa lernen: Entwicklungsgeschichtliche Betrachtungen, 1982; und Europas Entwicklung und die Dritte Welt: Eine Bestandsaufnahme, 1986; both pub. by Surkamp Verlag, Frankfurt/Main.

9 Also refer to H. WOHLMEYER, Ecological Guidelines for Strategic Management: Lecture to the Austro-Japanese Committee for the 21st Century, Vienna, August, 1995.

V.4.6 FAIR Act 1996 and AGENDA 2000

During the preliminary negotiations for the envisaged "MILLENNIUM Round", European agricultural policy was branded backwards and protectionist by the American trade representative to the WTO in Geneva as well as in the prearranged concept of the diplomatic services and the media (also refer to Section VIII.3, footnote 136). This campaign was supported by the "matter-of-fact opinion" of the mainstream economists, who present the American agricultural policy as the ideal prototype in general. The outcome is that American agricultural policy is considered the "generally and ultimately valid standard," by which European and worldwide agricultural policies are to be measured. Therefore a brief commentary will be made regarding this manner of procedure:

- Those leading economists, who consider themselves bound by the neoclassic theory, argue that it would be best if the European agricultural markets were completely surrendered to the world market, since this would be the only way to ensure optimal allocation of resources and optimal price formation.

The fact is stubbornly ignored that this cannot be expected due to market imperfections as well as sociopolitical overtaxing of the markets[10] – it is even partially impossible[11] - so that one must speak of a corresponding fundamentalism. The "high priests" of the neoclassic theory are driving agricultural policy onwards without taking into account the argument that basically useful strategies were abused in the past,[12] and are now condemned in a sweeping judgement, as well as that regulation solely by means of the market price is not efficient in the long term due to the high elasticity of prices of agricultural produce and without pointing out that the main reason for the present miserable state of agricultural markets is the global plundering of fossil organic stocks, which in its nature is limited to be a short-term affair. It is the latter which forces farmers exclusively into the foodstuff sector,[13] helps to increase production in favorable locations through

10 The anonymous market cannot inherently develop and realize all goals that serve economic welfare. It can only develop its short-term optimizing function within prescribed regulations.

11 Also refer to Chapter II.2.2.2 and Figures II.2-3 as well as II.2-4.

12 Characteristic examples of such cases of abuse are:

a) The continual favoring of advantaged areas, since these have more powerful lobbies. This favoring also led to wellknown, uncontrollable surpluses, since the farmers in preferred sites are capable of competing in terms of volume.

b) Transport cost compensation by transport cost pooling for milk was conceptualized for the benefit of remote Alpine regions. In Austria, however, it was also used for reducing the price of long-distance transports, instead of only to support Alpine or other peripheral regions. This led to an unreasonable distribution of labour between eastern and western Austria at the expense of the public.

13 It was even tried to invade the food stuff sector, as demonstrated by the Single Cell Protein (SCP) strategy that was based on petroleum products and propagated in the 1970s. It was doomed to fail, however, due to the obvious physiological incompatibility of the nucleic acid of SCP.

high external inputs and facilitates cheap traffic so that agricultural goods can be arbitrated around the globe.[14]

Above all, there is a hashful keeping very quiet about the fact that the new American agricultural policy has pitifully failed, although it was adorned with too many neoclassic laurels in advance. The practical rejection of all quantitative control measures, and the sole aim of conquering world markets[15] has led to an agricultural misery in their own country, which Europe and the rest of the world should never wish to become a part of.

Therefore, neither Europe nor other countries with ancient civilizations should allow themselves to be intimidated, nor should they deny this fact out of politeness. Neither should they conceal the fact that American agricultural policy does not practice what it preaches, since in addition to the current agricultural legislation, the permanent legislation ex 1938, 1948 and 1949 still remains valid in the background. In the case of a crisis, thus there remains one last legal recovery net for American farmers, which does not exist in Europe. To this have to be added the numerous measures of the federal States of the USA.

V.4.7 Position of the CAIRNS group

The philosophy of the CAIRNS group goes even beyond the American concept. It demands unconditional liberalisation of world agricultural trade and brands all public payments for agricultural performances in the common interests as illegitimate subsidies. In this context the group refers to the OECD PSE-calculations, the critique of which has been discussed in Section III.3. The leaders of the group Australia, Canada, New Zealand and the large South American States tend to expand their pattern of production over the total globe. This is to say that agricultural production systems, which are based on an ample resources of land, are put on countries with high population and scarce endowment with productive land per head.

Their position is further based on the following major assumptions:

- The present cost externalising transportation system will exist for ever.
- The not sustainable system of fossil and atomic energy supply will be kept up.
- The risk of distorted or interrupted supplies has not to be calculated.
- Long term absolute shortage of food are Neo-Malthusian fears.

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14 The author found Saudi Arabian quality wheat in Singapore, although the Saudis imported wheat from the USA at the same time. Yet Saudi Arabia is not a country with surpluses; according to FAO nutritional statistics, it is among the undernourished regions.

15 "The strategic goal was to increase exports by 50% between 1994 and 2000" (M. HOFREITHER, loc. cit.). Such a goal cannot be achieved from the start without simultaneously ensuring a well-balanced world development and fair income distribution (also refer to Section VIII on Institutional Benchmarking), since the buying power is otherwise insufficient.

It should be rather clear that all four assumptions can not be maintained. Assumption one and two are incompatible with sustainable development, since the present transportation and energy supply system is mainly based on non renewable resources and is supported by subsidised provision infrastructure and limitation of liability in case of damage.

Assumptions three is neglecting the risks of natural hazards, war, terrorism and break down of supporting logistic systems. Supplies have become even more vulnerable since public reserves and buffer stocks have been abandoned in the course of liberalisation and deregulation. Thus the security of basic local supplies has become indispensable.

Assumption four contradicts all long term prognoses (population increase; long term shortage of fertile soils and water - see section V.2.6; risks of climate change, etc.).

The repeated claim of the CAIRNS group that unconditional trade liberalisation leads automatically towards reduction of poverty and environmental improvement cannot be sustained. The Human Development Reports of UNDP show clearly that the gap between poor and rich has widened dramatically under market condition without social or ecological limitations. The same holds for the increasing ecological deterioration and the clearing out of rural areas.

Thus the position of the CAIRNS-group cannot be seen as unquestionable as it seems at first sight.

V.4.8 What will be the future agricultural paradigm?

The punctum saliens of the underlying conflict is a clash of two agricultural paradigm. The clarification, what will be the appropriate agricultural paradigm in the long run, constitutes the central challenge in the agricultural negotiations. Will it be the industrialised type of agriculture in the regions, which were colonised by Europeans in the last five hundred years, or will it be a site oriented and more horticultural type of husbanding nature?

All countries with a shortage of land - especially the islands and the oasis - have developed bio-diverse, circular oriented and more labour intensive production systems. Since room and resources are limited on the "space ship earth" the latter model is probable the more appropriate one.

The European agricultural model tries to find a compromise between both. Because European agriculture is so divers in climate, geological conditions, structure and cultural background the formulation of one consistent model is hardly possible. This can be interpreted as a lack of precision in comparison with the clear position of the CAIRNS-group and the USA. But such a judgement neglects the fact that a sustainable and multifunctional design of agricultural supply systems has to lead to a bouquet of site oriented solutions. The transfer of the paradigm of large scaled agriculture, which optimises the production function, would result in depopulated rural

areas, curb sustainable rural development and entail a loss of local culture. In a multiple performance design also meta-economic goals have to be incorporated. One of those goals should certainly be a wide distribution of ownership of land. Co-operative models and income combination can compensate the micro-economic disadvantages of smaller farms on the one hand and contribute to a vital rural development on the other.

Since in most developing countries there is an essential need for balanced rural development, the European model should be mutatis mutandis more appropriate for a sustainable development of these regions than the model of the leaders of the CAIRNS-group and the USA. The latter model will hardly bring the necessary employment and income for regions, where a large part of the population is still engaged in the realm of agriculture.

VI. THEORETICAL PROPOSITIONS FOR HARMONISING SUSTAINABLE AGRICULTURE AND FREE TRADE

VI.1 Solutions within the Existing Theoretical Framework - Environmental and Trade Policy Measures

Bernd Schuh

VI.1.1 Inter-Linkages between Agricultural and Environmental Policy - or why Environmental Policy Measures are relevant in Agricultural Policy

The aim of this study - as has been shown so far - is to point out ways and means how to formulate agricultural policy and free trade with agricultural products under the precondition of sustainability. In Chapter V.2.1 we have described how sustainability can be defined and have emphasised that economic, ecological as well as social aspects are equally concerned. We have also repeatedly stressed the point that sustainable agriculture - as long as national policy has agreed to follow this goal - will need political support and strategic measures to ensure implementation. The reasons have been deducted from the fact that sustainable agriculture seems to produce those social and environmental benefits for society which make them eligible for rewarding them by policy (see also Chapter V.2.3 above). It seems obvious to us that many different policy fields have to be involved in order to design a comprehensive policy mix (e.g. agricultural, social, environmental and fiscal policy to name just the most important). Still the political core fields to guide agriculture towards sustainability are without doubt the integration of environmental and agricultural policy.

As stated above as well, it seems much more reasonable to find solutions first to guide national agriculture towards sustainability and thus building the basis of a long term agricultural strategy and to think then how far this policy is in conformity with the current world trade order. Austria has shown some very ambitious attempts in this direction by implementing the agricultural environment programme (ÖPUL). It goes along with the principles of national security and the precautionary principle (for an explanation see below) to develop a national strategy first and then adapt it (in case of trade-offs) to the requirements of international agreements. Therefore in this chapter we will first try to give an overview of the goals of agricultural respectively environmental policy and then try to show whether and where possible conflicts between those goals may occur. Then the possible instruments of the specific policy will be listed with special consideration of those relevant for our research question. Finally we try to embed those policy fields into the frame of the world trade order - following our dialectic line of arguments. In other words - we will try show potential conflicts between sustainable agriculture on the one hand and the principles of free trade on the other.

Last but not least a taxative list of environmental and agricultural policy instruments will be given, which meet the two goals - i.e. to guide Austrian agriculture towards sustainability and to meet the requirement to be in conformity with the world trade order.

■ Agricultural policy goals

Since the mid eighties the Austrian agricultural policy has been attributed to be "eco-social" (öko-sozial). The concept of an eco-social agricultural policy, which Austria has been following ever since, comprises the following goals (see also HOLZER, RASCHAUER, 1991):

- The *economic productivity*: development of an efficient agricultural and forestry production, high quality of food and timber processing; efficient marketing of agricultural products - especially facing the European Common Market.
- The *ecological orientation*: Protection of forests, soil, and water from the pollution from industry, traffic and settlements but also correction of the agricultural production methods as far as they are environmentally unsound.
- The *social balance*: By setting an adequate agricultural policy frame and helping less favoured farms and regions by direct transfer payments and subsidies, the small scale, family owned farms should be protected from a ruinous cut-throat competition.

Looking at the coalition agreements of the Austrian governments during the eighties and nineties the high relevance of agriculture, forestry, the food processing sector and water management has been pointed out. The central functions of the Austrian farmers have been defined therein as follows (look for example at the coalition agreement of the socialist and conservative government from 1990).

Austrian farmers should therefore ...

- Procure the natural resource base.
- Procure the national food security and the production of renewable resources and energy.
- Cultivate the rural areas and sustain the settlements.
- Preserve the cultural landscapes and the tourism values of these areas.
- Practice a soil and environmentally protective method of cultivation.
- Practice forestry in a way which should prevent natural disasters.

In order to be able to fulfil all these tasks a further declared goal of agricultural policy is to grant the farmers an income, which allows them participation in the general national increase in welfare. This leads to the fact that agricultural policy in Austria - as well as in all western industrialised countries - has become an income policy for the farmers, where they benefit from

administered prices and income subsidies to reach a justified income (for criticism see also STOCKER, 1991).

■ Environmental policy goals

In respect of the theory of environmental policy (BEAUMOL and OATS, 1989, WICKE, 1991) there are some common goals to be identified: Above all it has to be assumed that - like all policy measures of a country - environmental policy should try to maximise social welfare of a country.

Environmental policy thus tries to ...

- adjust market failures - i.e. to internalise negative environmental or social externalities (see also Chapter IV.2.2c);
- build up incentives to act environment-friendly and socially sustainable;
- give correct information about environmental impacts of certain goods - as prices do not have adequate ability to convey full information with every product, additional information systems are necessary.

In order to meet these goals environmental policy uses different types of instruments, which will be dealt with later on in this chapter. Still all of these instruments have in common certain basic principles (WICKE, 1991):

Polluter Pays Principle

Is simply the notion that those who cause environmental pollution should pay for its effects, either by employing ways to avoid the pollution or by providing compensation payments.

Precautionary Principle

It states that environmental policy and other policy measures should be taken in such a way that even environmental danger which may occur in the future is taken into consideration. It also comprises the notion of sustainable use of resources and natural heritage thus assuring the supply of a sound environmental basis for future generations.

Co-operation Principle

It assumes that all parties involved in and affected by environmental problems should participate in environmental policy design. The reason for this is rather clear: it helps political actors to get information from all the stakeholders of environmental measures and to manage political decision making processes in a more transparent way.

Community Care Principle

It is the weakest principle of the above mentioned and should only take place if the Polluter Pays Principle is not applicable (out of various reasons: e.g. the type of pollution does not allow to identify a polluter). It simply states that the public sector should stand in for damages caused by overuse of the environment by economic action. According to the beneficiary principle (which is simply the opposite of the polluter-pays principle) the one who is affected by pollution should pay for a reduction of the burden.

While obeying these principles, every country tries to implement its *optimal policy mix* by introducing different environmental policy instruments (e.g. taxes, command and control measures). This means of course that there is no general optimal policy mix for all countries. The selection and tuning of the individual policy mix is overall depending on some general basic conditions:

- Geographical, climate and demographic conditions and structures of the country;
- Size of the country;
- Political regime - i.e. in which way political goals are set and executed;
- General political and strategic orientation of the country;
- Economic basis.

This means that it has always be borne in mind that when speaking of an optimal environmental policy mix this could be a unilateral point of view only.

So far we have described the environmental policy for a single country under the precondition that there is autarchy in the design of environmental policy measures. What does national environmental policy link with international trade?

■ Policy Goals and Solutions

The interrelationship between the environment on the one hand and agriculture respectively forestry on the other could be characterised by high complexity. In other words - from the above listed goals of the two policy fields it becomes obvious that many interlinkages and potential fields of conflict exist between those two areas. STEMBERGER (1988) has listed those interrelations between environmental concerns and agriculture respectively forestry briefly in the following:

- Agriculture and forestry should be used as an instrument to preserve a landscape with a high cultural and recreational value.
- Agriculture and forestry are an economic sector suffering from environmental degradation.
- Agriculture and forestry are potential pollutants and cause environmental problems as well.

Especially the second and third point of this list include potential conflicts of goals. The best example could maybe be found in the per se conformity of goals of environmental and agricultural policy to achieve environmental protection and sustainability. In reality however the statistics of penalties due to a violation of the environmental criminal law show somehow different figures. According to a study by WEGSCHEIDER (1985) 43% of all the environmental criminal proceedings in Austria have declared agricultural production methods responsible for a violation of the law. Although these figures may have become less alarming for the last decade, the last report on the environmental condition of Austria by the Austrian Environmental Agency (UMWELTKONTROLLBERICHT, 1999 UBA) shows that agriculture still accounts for the major part of the nitrate pollution of ground water reserves in Austria.

The income orientation in agricultural policy produces some trade-offs with sustainable agriculture as well. On the one hand the system of politically administered prices potentially leads to preferential treatment of large scale farms located in favoured production areas, whereas small scale farms in less favoured regions are potentially worse off. But as those small scale farms in many cases are the driving forces of sustainable agriculture this practice may lead agriculture into the wrong direction (for a more thorough discussion see BINSWANGER, 1988).

On the other hand these policy measures help to support structural conservatism, which may lead to a one-sided specialisation which contradicts biological diversity and thus the concept of sustainability as well. In other words - as this politically administered price policy does not take into consideration the ecological conditions of the single farm but does concentrate just on the income of the farm, un-ecologically intensifying of agricultural production could be the consequence (see PRIEBE, 1988).

But also the first of the above mentioned functions of agriculture - i.e. the preservation of the cultural landscape - may lead to goal conflicts. As already shown in Chapter V.2.3 above, the problem in this case is not caused by supporting agriculture in the wrong way but by not supporting agriculture at all. In this case hardly any reward is given to the positive externalities (ecological and cultural coupled products) in form of transfer payments from society to those who produce these benefits. Consequently the introduction of another environmental policy principle could be considered. According to the "Provider-gets Principle" (see also WTO, 1999) those who provide environmental benefits (above a referential extent) which are demanded for by society should be awarded for. This means in principle it could be seen as an enlargement of the polluter-pays principle. The instrumentalisation by political means could be done in several forms - e.g. taxes, voluntary agreements.

Where are further solutions to be found to solve these conflicts of goals? In order to answer this question we will have to look at the instruments available in the specific policy areas (agriculture and environment). As already mentioned above the prevention and elimination of policy goal conflicts in environmental policy depends on the specific policy mix of a country.

In agricultural policy - as mentioned as well - the mayor emphasis lies on fiscal instruments. This implies that there are just a few non-fiscal instruments like command and control measures or structural planning measures apart from the large number of direct payments, subsidies or administered prices. PEVETZ (1978) distinguished the following agrarian policy areas and their environmental correlation in detail:

- *Agricultural market and agricultural price policy:* the correlation to environmental questions can be found in the context that those policies have strong influence on the production methods, the intensity of soil use and the sequence of crops.

- *Economic structural policy in rural areas*: the environmental influence could be identified via the change of farm sizes and the number of farms in a region but to the same extent in relation to the production structure and production intensity of the specific farm as well as the production methods and the diversification of the pasture.

- *Agricultural production control:* the link to environmental policy could be identified in promoting the production of environmentally friendly alternative crops (e.g. oil seeds, grained-legumes,...)

- *Governmental investment support:* the content and target groups are specified by the ministry, the countries (Bundesländer) and the agricultural interest groups (Landwirtschaftskammern) and could be lead towards investments supporting certain environmentally friendly production methods.

- *Transfer payments for landscape preservation:* in Austria this instrument is used in economically and topographically less favoured regions (alpine areas – Bergbauernzuschuß) but also for certain environmentally friendly measures within the Austrian environmental agricultural programme (ÖPUL).

Environmental policy uses a wide variety of instruments which could be either fiscal measures (e.g. taxes, fees, transfer payments, subsidies) or non-fiscal measures (e.g. command and control measures, voluntary agreements, eco-labelling) (for a more detailed description see also WICKE, 1991). If those two policy goals and group of instruments (i.e. environmental and agricultural policy) are put together the following measures to achieve both - environmental and agricultural policy goals – could be mentioned (HOFREITHER, 1990):

- Information and motivation instruments to achieve a voluntary change of production methods.
- Influence on the economic condition of the farm household (price policy, taxes and fees, supportive measures) will lead to an economically driven change of acting.
- Change of the legal framework (command and control measures, legal sanctions) will lead to a forced change of production methods and acting.

VI.1.2 Embedding of these two Policy Fields (Environment and Agriculture) into the World Trade System

There are three main factors linking environmental policies and international trade (ULPH, in FOLMER and TIETENBERG):

- International trade affects both the extent and the patterns of production and consumption of goods in different countries, so if these activities have detrimental effects on the environment of the countries where consumption and production take place then trade will affect the environment. Equally, policies designed to ameliorate detrimental effects on the environment of production and consumption will affect the pattern of international trade.

- Production and consumption activities in one country could affect the environment of other countries - as the acid rain problems of Europe and Northern America. While such trans-boundary pollution problems could arise in the absence of any trade between countries, if there is trade between the affected countries, then countries may use trade policy as a weapon to reduce their exposure to trans-boundary pollution.

- International trade policies may be used to enforce international environmental agreements, not necessarily with a view to directly affecting the pollution generated by that country but simply as part of a package of sanctions for failing to join or comply with an international environmental agreement.

Apart from the above mentioned it is also to be taken into account that environmental policies can be used as protectionist measure (see also Chapter IV.2 - *Race to the top*) or as a competitive advantage of a single country (see also Chapter IV.2.1 - *Race to the bottom*).

So what are generally the problems caused by these links? How does the traditional trade theory see these issues and what are the possible points of critique against their argumentation?

Traditional trade theory tries to separate effects caused by trade policies and environmental policies. It just points out that there are certain tendencies which try to combine them under the overall goal of liberalised trade. The traditional line of arguments could be described as follows:

- Under the precondition that externalities occur in the economic process it does not seem desirable to practice political laissez-faire. In this context the danger arises that the economic benefits and advantages due to liberalised free trade may be overcompensated by its environmental and social damages. The theory of targeted environmental policy (see BHAGWATI ET AL., 1971) suggests in this case to implement a **"First best policy"** by eliminating the externalities which are responsible for the environmental degradation instead of restricting free trade. If assuming in due course that such an optimal

environmental policy is possible at all then the positive welfare effects of free trade should be achieved as well. As mentioned above this optimal environmental policy does not have to be necessarily the same for all countries - the specific national resource base or national policy preferences may lead to individual solutions. Consequently the conclusion of traditional trade theory follows the line that attempts to introduce internationally harmonised environmental standards will prevent that some countries may use their competitive advantage in using their environmental resource base. This would lead to a macro-economic sub-optimal solution as well as to even larger environmental degradation.

This line of thought could be criticised in many ways:

- First it has to be noted that the sufficient information of the consumers, which is a prerequisite to achieve an optimal distribution of goods and services in the market, does increasingly not take place (or just to a very limited extent) because of the complex world trade flows. On the other hand this would mean that internationally harmonised and recognised environmental standards would raise the security of consumers by making a minimum of information available.

- Second the long term implications of this type of world trade should be taken into consideration: A country which decides not to follow these environmental standards (or which decides to accept more environmental degradation within its borders) certainly achieves a competitive advantage in the short run by being able to trade goods and services which could be produced at lower costs by using environmentally problematic methods. By obeying the overall principle of free trade it will not be possible by the other countries, which do follow those standards, to counteract by implementing protection measures like tariffs or national subsidies. Thus the countries following this strategy will be encouraged to continue. In the long run - especially when taking into account the interests of future generations - the consequences will be that this polluting methods will be intensified and the resource base of the specific country and in due course of the world will be endangered.

Traditional trade theory has taken into consideration these critical remarks by suggesting a **"Second best policy"***:* It means that in case when environmental incentives/rules cannot be implemented in specific markets, then environmental policy should seek compensation by introducing measures in other (related) markets. The reasons for not being able to implement a "first best policy" could be that the polluter-pays principle is not applicable because too many polluters are to be found or the polluter is not to be identified. However in most of the cases the second best policy measures are employed in the form of taxes on products or consumers instead of related to trade itself. This brings along the problem that such measures are often classified as protectionist measures and therefore are confronted with the threat of conflicts with the world trade order regulations (e.g. GATT).

Generally speaking the traditional trade theory does not note the danger of a "race to the bottom" as long as the theoretical presumption is accepted that consumers as well as producers compete in a free market where the state has as little influence as possible. New streams of theoretical thinking in trade theory try to include the fact (which seems much closer to reality) that imperfect competition seems more the rule than the exception in international trade into the theoretical concepts. They assume that producers are more likely in a position to use market power in their favour. In this case the countries are inclined to practice a so called "strategic trade policy" (see HELPMAN AND KRUGMAN, 1989) which aims at directing benefits from international trade towards their national producers. Within this **"strategic trade theory",** which is in general based upon the business theory of competitive advantage by MICHAEL PORTER (1990), two ways of achieving such an advantage could be identified: First the country could select "ecological dumping" as national strategy as described above and try to use up its natural resources in the short run. Second it could go for environmental innovative behaviour and try to profit from a first-mover advantage in the medium and long run. It seems obvious to us that this second strategy should be followed facing the overall goal of achieving sustainability.

VI.1.3 Policy Instruments suitable to guide Agriculture towards Sustainability and in Conformity with the present World Trade Order

The next chapter will try to give a taxative list of agricultural and environmental policy instruments which meet the requirement of being in conformity with sustainable agriculture and the world trade order. We do not claim that this is a complete list of such measures. It has to be noted furthermore that the specific instruments are facing different political applicability. This list was based upon the criteria of sustainability and the above mentioned problems but were not checked for the likelihood and ease of their employment.

VI.1.3.1 Fiscal Measures

■ Fiscal support and subsidies

As these instruments have been accused for being indirect protectionist measures during the preparatory negotiations of the MILLENNIUM round their suggestion seems to be quite problematic. A precise connection of these payments with environmental benefits provided by agriculture or direct payments according to the "provider-gets principle" seems as well feasible as possible. By doing so the argument of one-sided preferential treatment of farms with favoured conditions of soil and topography could be prevented and a guiding effect towards the introduction of organic farming could be achieved at the same time.

■ (Eco-) Taxes

Well recognised studies (see e.g. DIW, 1998) show that the implementation of ecologically motivated taxation of a single country without waiting for an internationally concerted action could be feasible and in conformity with the world trade order. The benefits for agriculture to be lead towards sustainability could be twofold in this case. On the one hand the higher burden on fossil fuels will bring along advantages for the sustainably oriented farms which try to replace those fuels (e.g. by billion mass energy). On the other hand the production factor labour will be less burdened and thus the higher labour-intensity necessary in organic farming will be facilitated. To sum it up - such an instrument will help to reduce market failures due to un-ecological price signals.

VI.1.3.2 Non-fiscal Measures

■ Command and Control measures, voluntary agreements

Command and control measures in environmental and agricultural policy as well as in all the other policy fields should be the least preferred instruments to be implemented. The reason could be found in the difficulties to administer those measures but also in the relative high economic burdens to implement them. Still they seem to be rather efficient in trade policy. As long as they are equally applied for all agricultural products (home made as well as imported ones) even the claim that they are protectionist measures does not appeal. A well known area of employment is the ban of genetically modified foodstuff from the market. The discussion whether those measures are justified or not is still a very intense one. Still an employment of such measures without waiting for precedent cases seems feasible and would be in accordance with the national precautionary principle of environmental policy.

If such command and control measures are meant to bear too high risk, the instrument of consumer information in form of eco-labelling seems to be a reasonable alternative. The EU-regulation to classify ecologically produced food and the corresponding guidelines for their

production and processing could be seen as an eco-label according to WTO regulations. Unfortunately the discussion about the general acceptance of such labels is still going on within the WTO (for an overview of the debate see CALDWELL, 1996).

Eco-labels are still – at least by some opinions – classified as technical barriers for trade (TBTs). But as long as the basic principles of free world trade are obeyed when implementing such a label (e.g. most favoured nation clause) an introduction should be possible. This means that in the case of the European label for ecologically produced food that it has to be applied for imported foodstuff as well as long as the regulations for production and processing are met to the same extent as by the European products. This might - of course - cause some problems for the administration of the labelling process (e.g. control of the production over time), but as said before, these suggestions are not be made with the claim of being applicable straight away and without any problem.

■ Consulting and Information

These instruments cause the least problems in respect with their conformity with the world trade order. Still they are very important in respect of the acceptance of the overall goal of sustainability. Especially Austria has furthermore a very encouraging record of success during the last years: the consulting and training of organic farmers by their interest groups (Biobauernverbände) could be seen as successful example to induce a momentum of changing the mind sets of a group of stakeholders. Therefore an investment into such measures by the state could be a further incentive for a change of production methods as well as consumption patterns.

■ Regional policy measures

Further important instruments of agricultural and environmental policy are regional policy and regional planning. As already mentioned earlier in this study one of the features of sustainable agriculture is the attempt to close the regional circuits of mass flows. Agriculture could therefore be supported by policy measures to achieve this goal. This could be done in the form of a stronger regional autonomy - according to the subsidiary principle or in the form of municipal autonomy. These measures could also be classified to be in conformity with the existing world trade order.

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VI.2 Ecological Economics as a new Integrative Approach

Sigrid Stagl

While most people can agree that sustainable development is an entirely proper objective, the problem is how to translate the pursuit of sustainable development into sensible policy prescriptions. In particular, it is a problem that "...our global trade institutions (especially GATT) have evolved as if there were no environmental linkages to trade" (WHALLEY, 1991:188). Why such a view is insufficient was laid out in Section IV.3 and the argument was given empirical foundation in the discussion of the Environmental Kuznets Curve (Chapter IV.3.2.2).

"While the WTO seeks to preserve the good, it sometimes seems to ignore the bad" (ELLIOTT, 1995). The most fundamental difference between the orthodox economic and the ecological economic view is probably the importance given to 'the good' and 'the bad'. As (potential) environmental damage is considerable, for ecological economists changing current trade regulations is crucial to foster sustainable development.

In general, the view of ecological economists differs from that of conventional economists in four main points: (a) the acceptance of biogeophysical limits to economic growth, (b) the importance given to threats from irreversible processes in combination with uncertainty, (c) the explicit integration of unintended (monetary and more importantly physical) side effects into production theory, and (d) a conception of the environment as a basic infrastructure rather than a luxury good.

In order to remain within **biogeophysical boundaries**[1], countries need to (be able to) respond to environmental feedback effects. "An economic order that leads towards a state where activities do not go beyond the ecological limits must incorporate an organizational structure ensuring that ecological feedback information influences the behavior of the economic agents. This ecological feedback information, however, occurs at various levels. Ecological effects can be observed at the local level by the individual and the local community, but in most cases the ecological effect also has an aggregated dimension (regional, national or global) that the individual alone cannot observe" (STEININGER, 1994:24).

Ecological economists criticize the argument that economic growth enhances environmental sustainability for another reason, namely that its validity depends on the resources generated by growth being able to repair the environmental damage their generation has caused. Where there is **irreversible** damage to the environment, with no scope for reparation (e.g., when species are

1 For a reasoning of the necessity to take biogeophysical boundaries into consideration and an approach how they may be incorporated into economic theory see section IV.3.1.

made extinct), this clearly does not hold (EKINS, 1997:75). While conventional economists usually accept this objection, the perceptions diverge on the importance of such irreversibilities. Irreversibility in combination with uncertainty advises for caution: "It is a fundamental problem that decisions have to be taken under conditions of huge uncertainties and risks. Human understanding of the functioning of earth systems is still very primitive, and some decisions may create irreversible ecosystem losses" (DAILY ET AL., 1991). "The international regulatory framework should, as far as possible, reduce the likelihood of making severe mistakes" (STEININGER, 1994:24).

Another crucial point in ecological economics is the **inevitability of waste as an unintended output of production**: Georgescu-Roegen's model of production is based on the fundamental distinction between flows and funds. The fund elements, durable agents of production that are maintained in the production process, act upon, transform, or produce the flow elements. If an element is a flow or a fund depends on the duration of the process. It is important to distinguish a fund from a stock: while a stock can be used up at an arbitrary rate, the decomposition rate of a fund, i.e., the use of the fund until it is worn out, is largely determined by its physical structure. A fund is not consumed, but its services are used. The funds of production in Georgescu-Roegen's model are the classical factors (Ricardian) land, capital and labor. They transform the input flows of intermediate products and natural resources into the intended output flow of products and the unintended output flow of waste. The inevitability of the waste flow results from the laws of thermodynamics. Because of wear and tear – also a consequence of the entropy law – the capital equipment needs an input flow of maintenance to be kept intact (GEORGESCU-ROEGEN, 1984). This framework of production which allows to distinguish between input factors with different characteristics and explicit regard of unintended side-products may be better suited than the neoclassical theory for the analysis of today's production processes.

When the environment is seen as a luxury good like jewelry or works of art, it is to be enjoyed only after the necessities of life have been secured. However, the **environment** is much more like **a basic infrastructure** on which all economic activity depends (especially in poor countries), and damage to its integrity constitutes economic problems in the long run.

With this in mind, ecological economists conclude that international trade is potentially better than autarky, but whether this is really so, depends on the conditions prevalent (by the way, PAUL SAMUELSON was similarly cautious in his famous 1962 essay). "Trade is not necessarily regarded as something inherently good, something that should be defended in all cases. Therefore, it is not appropriate to pose the problem as a conflict between interests in preserving the trading system on the one hand and environmental concerns on the other. Instead, it is a more open question as to what are the relations between trade and the environment" (RØPKE, 1994:14). EKINS (1997:57) also expresses skepticism when saying "... trade theory gives no ground for assuming that, in general, trade liberalization will necessarily be beneficial for all the countries concerned".

While conventional and ecological economists agree on the existence of externalities, ecological economists consider them as pervasive. With regards to externalities, the GATT approach is to consider trade as a magnifier rather than a source of externalities. Often the example of transportation is given. Ecological economics adds to points here: the magnifying effect may be more important than conventionally thought, as the accumulative effect must be taken into consideration. As emissions like greenhouse gases add up in the atmosphere, due to the fact that the accumulation rate is higher than the decomposition rate, the negative impact of every marginal unit of emissions increases. The other reason why ecological economists give more weight to externalities is that in some cases (e.g., the systematic undervaluation of natural resources in developing countries) the trading system is more than a magnifier, therefore, the question of internalization of external costs cannot be separated from the question of the relations between trade and environment (RØPKE, 1994).

For these reasons, trade which "occurs according to market or competitive advantage, not real comparative advantage, may lead to misuse of the world's resources" (YOUNG, 1994:43). By 'competitive advantage' he refers to "advantage according to market price, whilst 'comparative advantage' includes an assessment of environmental considerations and other parts of the social equation not commonly included in market prices" (YOUNG, 1994:44). The terms are often used interchangeably.

Two other points for which RØPKE argues that ought to be taken into consideration when evaluating the net benefits of international trade: "First, wants are to a great extent formed by the structural conditions of everyday life. Social and physical structures in local communities may reduce material wants, e.g., local concentration and integration of different economic activities may reduce transport requirements. Local communities may thus reduce environmental problems related to the scale of the economy. Second, economic and political independence and the possibilities of influencing the conditions of life on the local level are directly correlated to the degree of economic decentralization. And decentralization entails a higher degree of self-sufficiency. In this way decisions can be made relatively closer to the people affected by them. People may perceive feedback loops much easier" (RØPKE, 1994).

Ecological economists maintain that trade has beneficial effects for sustainability only, if it occurs within an institutional framework that explicitly accounts for the natural capital on which social and economic development depend. Without this framework, it is more likely that the increased pressures for resource exploitation arising from free trade will exacerbate environmental problems. STEININGER (1994) shows in his model that the implementation of new environmental regulations becomes more urgent when trade barriers are lifted. Thereby, trade policy is not considered the best environmental policy, but it has to be adjusted to allow for the first best environmental policy: to implement direct environmental regulation at the level where the problem occurs (global, regional, national and/or local). In this sense, several suggestions were made.

- "Unless environmental policy is accorded higher priority than trade policy by accepting the legitimacy of trade restrictions to secure environmental benefits, it will not prove possible to reorient economies towards environmental sustainability" (EKINS, 1997:70).
- Role of regions/space – arguments for diversity within a region/country: FRIEDRICH LIST'S infant industry argument.
- According to OECD justification for differing national environmental policies: differences in the assimilative capacities and social preferences.

Such measures could be: 1. implementation of countervailing duties on countries with more lenient regulations (the **lax standard** could be seen **as** an **unfair** (nature-)**subsidy**) (STEININGER, 1994), 2. implementation of domestic **subsidies for environmental control cost** (STEININGER, 1994), and 3. admittance to distinguish by **production processes** in well specified situations of global concern like maintaining indirect use values (e.g., essential ecological functions that preserve climatic conditions and option values associated with biodiversity and other similar concerns) (YOUNG, 1994).

To realize theses measures in a transparent, open and non-protectionist manner, the following means have been suggested:

- **Product life cycle analysis**: quantification of the cumulative impacts generated by a product from the point where materials are extracted from the earth to the final disposal of the remaining wastes back into the earth. For product regulation the "border to grave" portion of the life cycle information is considered, and for process regulation the relevant part is the portion concerning "cradle to border". Using such a physical inventory system, countries could agree upon the actual size of counterbalancing measures introduced for various products. For the cases where countries would not succeed in agreeing on actual measures, the physical inventory could alternatively form the basis of a more consumer-oriented regulatory system: an ecolabelling system. However, considerable problems exist as the administrative demand is high and in general there are no truly unambiguous criteria for comparing physical emissions in different countries (STEININGER, 1994).
- **Balancing disparities in environmental expenditures on a cost basis:** In order to allow national governments to determine environmental quality levels independently, it should be allowed to shelter domestic production from foreign 'environmental competition' by charging import levies according to the size of the control cost differences; the country could also subsidize exports by the same amount. Obtaining environmental quality would still be a decision on the use of one's resources for that objective, but these resources would no longer leak excessively to other countries as they do under the current regulatory framework, thus preventing most environmental action. This could be achieved by changes of Articles III and XVI of GATT. A problem remaining is the

attribution of environmental costs. It might be practical for this measure to distinguish between global, regional and local environmental externalities. It would be mostly the latter which could be dealt with the measure suggested above. For regional and global externalities international cooperation is indispensable (STEININGER, 1994).

- **Ecologically-accelerated trade liberalization agreements:** A separate "Code on process standards and environmental agreements" could be prepared. It would express the nature of trade-related environment provisions consistent with GATT, and would establish a handshaking mechanism between international trade policy and international environmental policy. Thereby, the trade-influencing dimensions of international agreements on the environment would become more contestable and more transparent. The abuse of trade measures to achieve environmental objectives and vice versa would become harder. To make it an innovation-friendly and rather acceptable framework, the "ecologically-accelerated trade liberalization agreements" "would need to, (a) give tariff-free and quota-free access to all products produced in a manner consistent with the agreement, which, for example, might require full application of the Polluter-Pays Principle in the production of cereals; (b) be restricted to production practices and processes associated with traded products produced from conditionally-renewable resources like fish, meat, cereals or timber, and production processes involving the use of CFCs, the production of CO_2 and other similar substances that have (or might have) a significant adverse impact on global environments, (c) have open membership and be signed by at least three countries, (d) only be valid if it can be shown that, consistent with the agreement, at least one firm is obtaining tariff-free and quota-free access to the markets of a participating country, and (e) entitle any country or firm whose resource and environmental practices are consistent with the agreement to obtain tariff-free and quota-free access for all agreement-consistent products including related value-added products" (YOUNG, 1994:48n).

  In addition to such arrangements institutional changes like increased openness to outside views during the dispute settlement process and consulting of environmental scientists in this process if environmental problems are involved seem necessary to achieve higher sustainability.

Most suggestions by ecological economists have in common the idea that policy analysis can be approached from a cost-effectiveness perspective, combined with one or multiple criteria other than efficiency. Physical indicators in addition to monetary variables will then be considered.

To conclude, since the economy is embedded in the social and the biogeophysical sphere instead of uniformly liberalizing, a trading framework is favored which, while multilateral, non-discriminatory, rule-based and global, promotes open markets only on the basis of clear social and ecological norms.

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VII. CONCLUSIONS AND PROPOSALS FOR SOLUTIONS

Theodor Quendler, Franz Weiss & Heinrich Wohlmeyer

VII.1 Necessary Further Development of the Legal Framework and its Application including Discernible Tendencies

The objective of this study is to identify the strengths and weaknesses of liberalized world trade, to examine whether the WTO Agreements afford the opportunity to react to undesirable developments and, if this is not the case, to propose the further development required in this series of agreements. In the previous chapters, the goal was to elaborate the WTO Agreements and their inherent problems, as well as to illustrate why free trade does not automatically lead to increased prosperity. In the following chapter, the opportunities for adapting interpretation as well as feasible changes in the WTO agreements are to be indicated in order to be able to specifically counteract the undesirable developments that were identified.

Basically, recommendations for action are only useful if there is clarity regarding the objectives to be followed. Objectives are very diverse, and it is hardly possible to formulate a complete list of useful and necessary objectives for a sustainable global economy, which also finds consensus. The following elaborations are therefore limited to those widely accepted aspects which form the core of this study and are particularly frequently found to be in conflict with the WTO agreements. These are the aspects of *sustainability, environmental protection* and *security of food supply* – issues that concern long-term, efficient economic design and a secured level of prosperity.

VII.1.1 Basic Orientations

The base of action for sustainable economic policy and trade policy, in particular, should correspond to evolved **general inventory** of law and legal understanding, as well as integrate essential goals in connection with social, economic and ecological developments. These aspects are both necessary in order to ensure social sustainability. However, the regulations of the WTO (GATT) have not yet been fully developed in this respect. Therefore the leading principles, which are part of the legal system of "civilized nations,"[1] need to be highlighted. This can take place by recognizing *general legal principles* along with a *reorganization of the priority of the objects of legal protection*. In addition, it should also be taken into account that welfare-enhancing social strategies require a diverse and well-balanced scope of objectives.

1 The "General Principles of Law Recognized by Civilized Nations" were incorporated into the CHARTA OF THE UNITED NATIONS (UN Charta, Statute of the International Court of Justice, Article 38, par. 1c).

■ In particular, it is imperative to apply the **funding principle** in decision making, meaning that those basic elements,[2] upon which others are built, have to have priority in terms of protection. In particular, this means that securing the physical existence "for all people and at all times" has to take priority.[3] In concrete terms, this means that

- securing our ecological basis, and
- the long-term security of food supply, both quantitative and qualitative, as well as in case of crisis, war or other disturbances in supply

must be top-priority goals.

Securing our ecological basis implies that sustainable methods of husbanding nature have to be practiced and supported. However, this requirement is in conflict with the short-term market calculus, as a rule. Unconditional free trade, without any limitations to ensure the long-term security of our ecological basis, can lead to a <competition of long-term self-destruction>, since the agricultural world markets are particularly characterized by intensive price competition. Among others, this results in the externalization of environmental costs at the expense of future generations. First beginnings to harness market powers in order to secure sustainable food supply are apparent, among others, in the Convention for Combating Desertification and Droughts in Africa in particular and the discussions regarding an international convention on soil protection, as well as the current efforts to develop international standards for sustainable agricultural production.

In this context, it should be remarked that in its entirety, the report of the *Conference of the United Nations on Environment and Development 1992* dwells upon the **priority of protecting the basis of life**. In Chapter 38, the report calls on all organizations in the body of the United Nations to collaborate, and in Chapter 39, it calls for the further development of the *International Law on Sustainable Development* under special consideration of the equilibrium between environmental and developmental issues. In the latter chapter, the need for clarifying and improving the relationship between existing international instruments or agreements in the environmental sector and relevant agreements or instruments in the economic and social sectors is pointed out. This would urge forward the still *missing link between the agreements in the social and environmental sectors and the economic agreements*, particularly with the WTO, and calls for the protection of the basis of life to be given priority.

2 In philosophy, reference is made to "realities" in this regard.

3 The ROME DECLARATION ON WORLD FOOD SECURITY dated November 1996, speaks of the priority human right of sufficient food supply for all people at all times, which must be ensured through economic policy. All member states declared themselves in agreement with this priority.

The *precondition for security of food supply* for all people at all times requires, on the one hand, maintaining the foundations of domestic production and, on the other hand, trade policy regulations which include the obligation to secure supplies in exchange for market access rights. The most suitable institutionalization for the above would be modernized *commodity agreements* with equality of votes for the producer and the consumer countries.[4] Such agreements could also counteract the present trend reducing *buffer stocks* forced by price competition, which would contribute to increased food security in times of crises as well as to avoiding extreme price fluctuations.

■ Furthermore, the broad recognition of the **principles of caution, precaution, and plausibility** can be seen as an outcome of human rights. As a rule, the term "*scientific evidence*" currently has a relatively narrow interpretation: *proof of inflicted damage and proof of a direct causal chain* are demanded.[5] Such thinking is rooted in traditional neighborhood rights; however it does not correspond with modern scientific concepts. In complex systems, one can only count on plausible probabilities, as a rule, since simple causal chains cannot usually be identified.The BSE crisis is a classic example of how dangerous a manner of procedure this is. In this case, *scientific evidence* was demanded to the point that not only was great harm done to humans and animals, but also to the economy due to market collapses.

While the American legal system permits, almost to excess, litigation cases to be fought for damages to health caused by smoking; according to the same country's attitude, it is unthinkable to take precautionary measures in international trade corresponding to the principle of precaution. It is very clear that two different standards are being applied here. The **establishment of a thorough precautionary legal practice** is called for.

This precondition would ensure that a party fearing damage would no longer be in the intolerable position of having the duty to produce evidence since, as mentioned above, such evidence is very difficult and expensive to procure in complex systems. For example, in the health sector, syndromes and disguised symptoms, the function of chemical substances in promoting sickness, and the long-term effects of physiological impairments have to be taken into account. The application of the principle of precaution therefore appears to be called for. The same applies to changes caused by genetic engineering, since the exact spectrum of effects is difficult to identify. Phenomena such

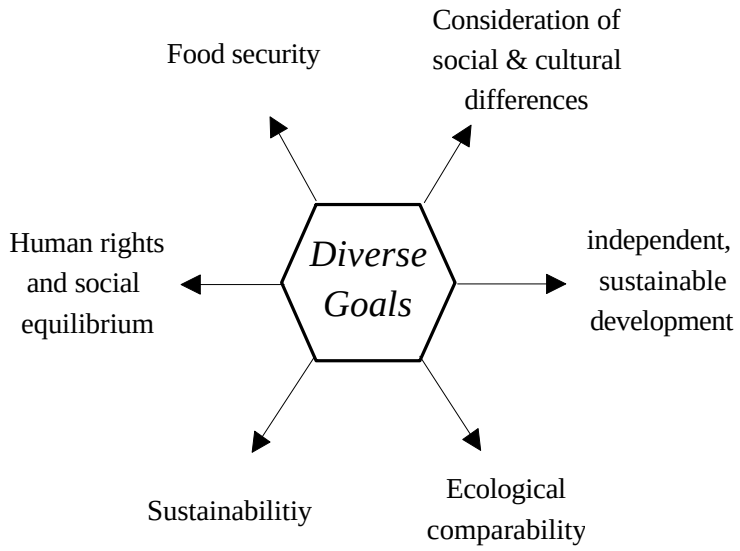
4 The original draft of the ITO (International Trade Organization) planned to have commodity agreements such as these. However, after the American veto, only the core agreement of GATT remained. The commodity agreements under the auspices of the United Nations are different from those of the League of Nations in that they always have equality of votes for the producer and the consumer countries.

5 One example of this is the speech held by the American Counselor for Agricultural Affairs at the American Embassy in Vienna, ALLAN MUSTARD, on the occasion of the full assembly of the Association of Agricultural Enterprises in Austria on 12th February 1997. In his speech, he rejected any ecological approach regarding the use of total herbicide-resistant plants, and upheld the assumption that this is harmless as long as no damage can be established in the direct causal chain.

as pleiotropy (multiple effect) or the effect on established biocenosis must not be ignored. When respecting human rights, it is inadmissible not to allow to react to plausible dangers with precautionary countermeasures, until there is proven evidence of damage. Other behaviour would constitute extreme contempt of humankind, since it takes deliberately into account that damage will ensue, possibly including "human sacrifice"."[6]

- With reference to the **multiple objectives**, a global economic hexagon,[7] the objectives of which are all to be striven towards simultaneously, must be added to the traditional economic hexagon (refer to Figure VII.1-1).

Figure VII.1-1
Diversity of Global Economic Goals



These global economic goals are long-term goals, for the most part. However, they are neglected in everyday trading due to its short-term orientation, as elaborated above (Section II.2). Above all, future sustainability means securing our ecological basis through consideration of the organizational principles of the biosphere and the integration of mankind's doings in the limited system of the earth. The current fossil-fueled global economy cannot satisfy these demands. This

6 The thalidomide cases could serve as a hypothetical example of the logical consequence of such behavior. According to this practice, the supposition that the individual ontogenesis could be affected is insufficient, instead a crushing number of crippled children would have to be brought forth as evidence, in order to provide concrete proof of damage including a sufficiently documented causal chain.

7 As a rule, this constitutes the demand for full employment, securing of the basis of existence, monetary stability, well-balanced foreign trade, long-term balanced budget and qualitative economic growth.

makes it all the more imperative that the world trade system allows for *independent welfare models* which aim towards sustainable development. In the interest of global prosperity, this should not only be tolerated but actually supported.

This necessity goes along with the requirement that **ecological, social and cultural differences should be taken into consideration**. Cultures are the result of man's long-term experience in living with their contemporaries and the environment. The present world trade system disregards this experience and attempts to solve all the global economic problems with one single, simplified approach. This inadmissible reductionism also applies more strongly to the agricultural sector since the URUGUAY Round. The very same production goals are assumed for the entire global agricultural and forestry production. As a rule, however, the functions served by the agricultural sector far exceed that of production alone. Furthermore, varying patterns of cultivation and production result according to the site orientation. The latter is the consequence of the climatic and geological situation, as well as land available.[8]

Sustainable farming implies diversity and differentiation. This is the only means of achieving **environmental compatibility** and sustainable development. Based upon this holistic comcept of sustainability, the indispensable goal of **food security**, which originates from basic human rights, can be realized in the form of site oriented production readiness. If the basis of life is secured (refer to the funding principle), then the other human rights can also be realized along with a good social balance in the scope of social evolution.

VII.1.2 Necessity of external Guard Rails

As already elaborated, a reinterpretation or adaptation of regulations is required, in part, in order to achieve sustainably oriented world trade dynamics. However, the WTO (GATT), which primarily considers itself an advocate of global competition, should not be overtaxed in the process. Instead it is imperative to formulate a socially and ecologically sustainable framework for the world market. Yet, the WTO must be expected to not only respect this, but also to support it. This lies in its own interest, since the WTO is also dependent on long-term, broad-scoped acceptance.

As elaborated in the above sections, global free world trade can only fulfill its function of increasing prosperity, if it adheres to regulations aiming at public welfare. However, since the currently leading neo-liberal political argumentation still claims that markets develop optimal regulations by themselves,[9] expectations are formed which clearly overtax the markets. As the

8 Densely populated regions call for different multifunctional land management than regions which have a sparse population density and great reserves of land.

9 Refer to the World Development Report 1996 of the UNITED NATIONS' DEVELOPMENT PROGRAM (UNDP), Oxford University Press, 1996. On the one hand, this explains that economic growth does not automatically also mean improved quality of living, and on the other hand, that the economic development is very

history of the period between World War I and World War II shows (the 1930s), the danger results that a good horse, which is only lacking reins, is exchanged for a bad one.

In making policy recommendations, the above-mentioned self-image of the WTO should be given due respect. It understands itself as an institution which ensures a functioning market, and emphasizes this repeatedly. The basic principles of liberalization, most-favored nation treatment, and reciprocity, as well as national treatment, have proven themselves (refer to the following Table).

Objectives and Tasks:	According to the preamble of **GATT 47**, through facilitating global free trade by means of 'developing the full use of the resources of the world' in all countries, the aim is to attain an increased standard of living, employment rate and real income.
The following principles apply in view of the objectives:	1. **Principle of Liberalization:** Reduction of tariffs an non-tariff trade barriers, particularly limits on volumes of imports and exports; 2. **Most-Favored-Nation Principle** (principle of non-discrimination): Tariff and trade benefits, which are allotted to any country in particular, should be to the advantage of all member states; 3. **Principle of National Treatment**: Foreign and domestic 'like products' must be treated equally. However, it is necessary to steer market orientation in a sustainable, welfare-enhancing direction by means of target setting agreements and directives (refer to Figure VII.1-4). In addition, it is also possible to further develop the current legal code through reinterpretation. In order to support an appropriate legal development, the WTO should remain open to this. Later sudden, inevitable adjustments are connected with steep financial losses, as a rule. 4. **Principle of Reciprocity**: trade privileges granted by the member states to each other, must be equivalent

According to the Preamble of GATT 47, it was the goal of the governments to orient their trade and economic relations towards the "full use of the resources of the world," which was interpreted to mean <unhindered access to resources> in keeping with the current world view, instead of protection of the natural resources and the environment. A Ministerial Declaration of 1986 made on the occasion of the Uruguay Round only mentioned the "fullest liberalization of trade in natural resource-based products." The issue of the environment was not up for discussion.

A formal reinterpretation of GATT in the direction of environmental protection policy did not take place until the DUNKEL Report towards the end of 1991. In the preamble of this report,

asymmetrical in the scope of an increasingly strongly liberalized global economy. The gap between the richest and the poorest countries has increased over the past fifteen years from around 30:1 to over 60:1, meaning it has doubled. One hundred countries had no economic growth over this time period, and the income in 1995 was lower than in 1980 in 70 countries (in 43 countries even lower than 1970!). Only one quarter of the global population profited from the spectacular growth and became wealthier.

"developing the optimal use of the resources of the world at sustainable levels" is proposed as the objective in connection with trade and economic relations instead of "the full use of the resources of the world." The new orientation in the sense of the DUNKEL Report was only incorporated in the preamble of the agreement to establish the WTO in a weakened form: According to R. SENTI (Section III.1.1), it was not incorporated as an equivalent goal in the preamble like increasing the standard of living or securing full employment were, but was subordinated under the goal of "expanding production and trade." This does not do justice to the **funding principle**. The **demand must be made that this is taken into account in the upcoming round of WTO negotiations**.

Yet the WTO preamble does not constitute a directly applicable law. According to Senti, however, the chosen formulation expresses a consolidation of the concept of environmental protection in contrast to GATT 47, which should not be underestimated in view of the interpretation of the agreements. Various recent panel decisions confirm the tendency to increasingly take consideration of environmental and health aspects in these decisions. Significant points in connection with this reinterpretation are, in particular:

- the application of the terms 'product' and 'like product'
- the understanding of extraterritoriality in the WTO's environmental protection policy
- the increasingly environmental orientation of objectives in contrast to that of primarily unconsidered economic growth

The **scientific concretization of the general conditions required for world trade to increase prosperity** should be one of the **main supporting tasks** at the upcoming WTO negotiations.

VII.1.3 The WTO in Development – Demonstrative Description according to individual Panel Decisions

The new orientation regarding the afore-mentioned problematic issues is expressed particularly in very recent individual panel decisions (refer to Figure VII.1-2 and VII.1-3 with concern to significant panel decisions on product likeness and extraterritoriality). In addition to considering environmental protection aspects in the year 1978 for the evaluation of product equality or inequality (fuel consumption as a burden on the environment caused by cars), health and moral aspects were the deciding factors in product differentiation of beer with varying alcoholic content in 1992.

Although the advocates of free trade have a completely contrasting view from those of environmentalists, it is to be expected that environmentally relevant aspects will be increasingly taken into consideration when interpreting and applying the valid WTO regulations in connection with changing basic values. This is already becoming apparent in current practice and discussions, for example in the definition of "product likeness," in recognizing the environmental relevance in use and consumption of a product (according to Senti, it is to be expected that the next step to follow will be to take production and processing methods into account), or the

recognition of production and processing methods as criteria for determining product likeness with extraterritorial ramifications. Examples of this are the panel decisions "Tuna/Dolphin II" dated 1994 and "Shrimp/Turtle" dated 1998.

Figure VII.1-2

Interpretation of Product Likeness and Extraterritorial Ramifications According to the GATT Working Group of 1970

Definition of Product Likeness and Similarity	In 1970 a GATT working group determined that product likeness is to be clarified from case to case with regard to border tariffication. The following criteria are relevant in this respect: • utilization of the final product in a certain market, • varying consumer behavior from country to country, as well as • characteristics and qualities of the product itself. Several panel decisions have cited this definition of the term, for example the Panel Decision on the "US Car Guzzler Tax" and the Decision on "Japanese Tax Law on Wine and Other Alcoholic Beverages."
Dispute US/EG regarding the "US Car Guzzler Tax" and environmental protection and interpretation of product likeness	Since 1978, the United States has been taxing certain cars with a tax based on the corresponding fuel consumption (Car Guzzler Tax). According to the EG, this varying taxation violated the understanding of product likeness anchored in GATT. In contrast, the USA took the position that cars are different products due to their differing fuel consumption and their varying burden on the environment, despite them having the same physical characteristics, the same components and serving the same purpose. The panel decision on the Car Guzzler Tax recorded in its decision that Article III only serves to hinder legal differences in goods for the purpose of protecting domestic automobile manufacturers. GATT does not prohibit its members from pursuing different political goals. Differentiation between the goals and the effects of the measures taken was important for the panel.
Panel decision of 1978 with reference to product inequality	Following an appellate review, the GATT panel came to the following decision: The American goal was not the protection of the domestic automobile industry, but taxation of cars with high fuel consumption as an incentive to purchase cars that consume less fuel and a contribution to conserving fossil fuels. According to the panel decision, a country is quite at liberty to pursue a political goal by differential treatment of foreign suppliers and offers. The taxation of cars according to fuel consumption doesn't alter the competitive conditions, and is not equivalent to protecting domestic production. Foreign cars with a higher fuel consumption are therefore not to be considered equal to domestic cars with a lower consumption, meaning they are not like or equal products.
The problem of environmental protection in extraterritorial regions	In the "Tuna/Dolphin I" dispute dated 1991, the United States defended its ban on imports of tuna from the eastern tropical Pacific region with the argument that such a measure was necessary in order to prevent the extinction of dolphins. According to the Washington Biodiversity Treaty, a country is actually obligated to ban the import of endangered animal species.
Panel Decision Tuna/Dolphin I **dated 1991**	The GATT Panel agreed that Article XX(b) of GATT only referred to the protection of human beings, animals and plants in a country's own national territory. This view resulted from the historical interpretation of the Article in the 1940s. The extensive interpretation of Article XX(b) by the United States would result in each country having the right to determine the level of protection implemented in other countries.

Figure VII.1-3

Interpretation of Product Likeness and Extraterritorial Effects According to the New Orientation since the early 1990s

Definition of Likeness and Similarity of Products	In panel decisions of the past years, the criteria of health and environment are being increasingly taken into account. In the definition of product likeness, this tendency is also apparent. The major points of new interpretation are: • the issue of products and like products • environmentally relevant aspects regarding consumption, production and processing • the expansion of environmental protection to include extraterritorial regions
Dispute US vs. Canada re: US taxes on alcoholic beverages / 1992 and relevancy of health aspects	In the dispute on American alcoholic beverages in the year 1992, one of the questions pertained to whether beer having a low alcohol content is the same product as beer having a high alcohol content. However, Canada considered the product differentiation according to alcohol content and the resulting differential treatment to be a breach of the GATT Agreement.
Panel Decision re: US taxes on alcoholic beverages /1992	The GATT panel ruled in its decision that GATT was not pursuing the goal of harmonizing internal levies and legal regulations, rather merely trying to hinder a unilateral preferential treatment of domestic products. The Panel came to the decision that even if beers with a high or low alcoholic content can be considered very similar, they must be regarded as different products based upon the aspects of health and morals.
Environmental protection aspects in Process and Production Methods – (PPMs)	Traditional GATT stipulations do not allow for any differentiation of goods based upon different processing or production methods as long as the differences are neither manifest nor presumed in the products themselves. This legal view derives from the fear that considering different processing and production methods would prepare the field for trade protectionism in the evaluation of product equivalence.
Professor Senti's commentary	If products are divided into different consumption categories because of their varying burden on the environment, and consumers do not regard them as equal products, then there is only one more small step left towards product differentiation based upon different processing and production methods. This is even more so the case, if one considers that the text of the WTO Agreement also includes the wish that the health of human beings and animals, as well as the state of plant protection rights, are to be improved 'in the territories of all members,' and the text of the Agreement does not stipulate that it is only the physically determinable differences in the final product which can play a role in product evaluation, whereas criteria such as different processing and production methods or related ethical aspects can not. The discussion concerning this issue has not yet been resolved; however a "beginning" tendency in this direction can be registered.
Validity of environmental protection in extraterritorial regions	The US Tuna-Dolphin II panel decision from 1994 concerning the same dispute was revised in as far as Article XX(b) does not mention any geographical restrictions for the protection of environmental resources. A country is justified in taking measures for the protection of extraterritorial environmental resources, if these measures are necessary.
Panel decision on Tuna II dated 1994	The revised panel decision may not be interpreted to mean that a country can determine the level of protection or environmental regulations outside of its own territory or make legal rulings for another country. But, based upon this precedential ruling, any country is free to define a product according to environmentally relevant and idealistic criteria which demand certain processing and production methods in the country of origin.
continued on next page...	

Figure VII.1-3 (continuation)

Interpretation of Product Likeness and Extraterritorial Effects According to the New Orientation Since the Early 1990s

Panel Decision on Shrimp/Turtle dated 1998	The WTO Appellate Body emphasized that "like products" are to be treated in the sense of the traditional interpretation based on physical product characteristics; according to Article XX(g) regarding measures for conservation of non-renewable natural resources, an exception to this principle is permitted (in this case for the protection of turtles as an endangered species). In accordance with the preamble of Article XX, an exception from the prohibition of "unjustifiable discrimination" is permitted, in as far as this is necessary to achieve a well-founded protection goal. In the appellate report, discrimination of shrimp imports in connection with fishing techniques is therefore considered justifiable, and this is even explicitly demanded.

Permissibility of Trade Measures based upon Process-Related Methods

Basically, the report made by the WTO's Appellate Body prohibiting shrimp imports (1998), if the fishing method does not make provision for protecting endangered sea turtles, emphasized the traditional interpretation of like products being defined according to their physical product characteristics. However, Article XX permits an exception to be made to this principle. Since the relevant case deals with a measure for protecting a non-renewable natural resource (sea turtle), in connection with limiting domestic consumption (the prescribed fishing technique also applies to American fishers), Article XX (g) is pertinent. The prohibition of "unjustifiable discrimination" in the preamble of Article XX is to be interpreted to mean that it is permissible to make an exception to the central principles of GATT (the non-discrimination of like products in this case), however, only in as far as this is required to achieve the goal of protection. The Appellate Body ruled that the USA was not applying the import ban according to the regulations in Article XX. Among others, it was criticized that it was even forbidden to import shrimp from those producers, who used the techniques required by the USA, but came from a country where this is not legally prescribed. The point of interest is that the Appellate Body considers the discrimination of shrimp according to fishing technique (production method) to be justified, and even explicitly requires it.

The emerging development is of deep-lying significance for the agricultural sector, since products made in processes, which excessively use natural resources or endanger them, could then be given different treatment in international trade. This problem is particularly relevant with regard to the irretrievable loss of soil, irrigation overtaxing the water regeneration cycle, reduction of biodiversity and consumption of fossil fuels (refer to Section V.2.6 in this connection).

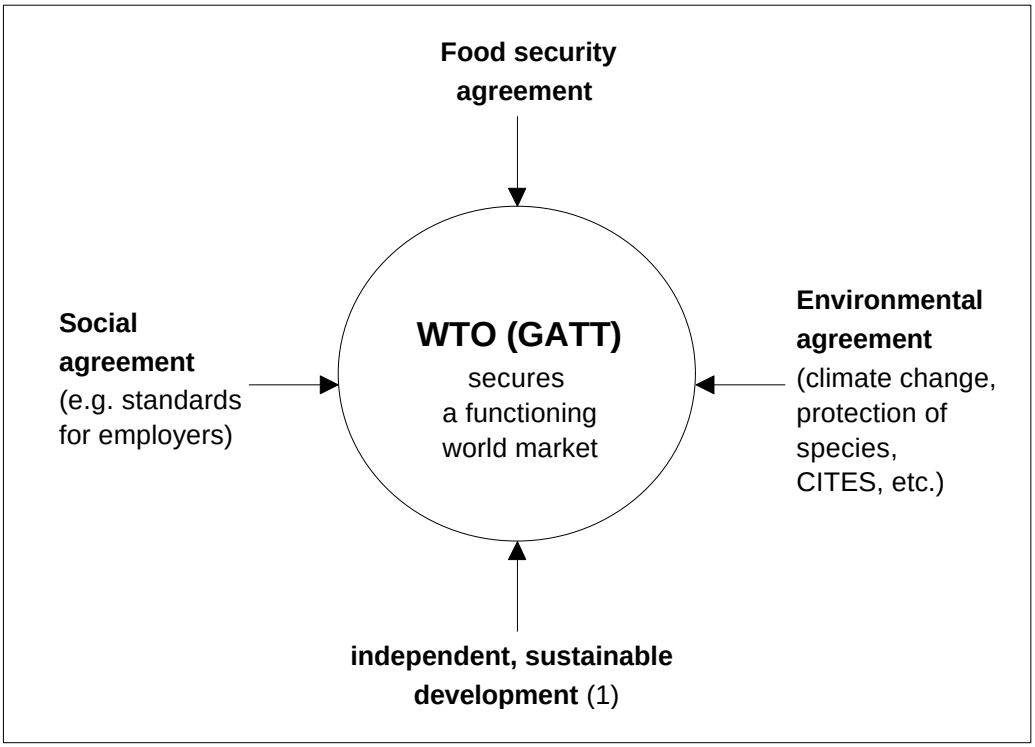
VII.1.4 Framework Agreements are indispensable nonetheless

The above list of panel decisions is valid concerning individual cases, however this cannot eliminate the basic deficits in the present world trade system or its application. As already mentioned, since it cannot be generally expected that the market develops rules on its own in the

interest of public welfare, the general economy of resources, as well as the future generations, external limitations are required. In the national sphere social and ecological future oriented regulations were also introduced from *outside* as general market conditions. It is thus necessary to maintain control of the markets by means of various **framework agreements** in order to ensure that it cannot create havoc, but is able to fully develop its welfare-enhancing properties (refer to Figure VII.1-4).

Figure VII.1-4

The World Trade Organization (WTO) in the Field of Tension between Economic, Social and Ecological Demands (protection of the basis of life, security of food supply, as well as of the economic and social development)



(1) An agreement on an **International Development Fund**, which should be funded from the countervailing duties paid to compensate for different social and ecological standards, could be the core of a future global financial adjustment system, similar to the national systems of public finances, which were the prerequisite for eliminating the former "trade barriers" such as tolls, batch rights and market prerogatives, etc.

With regard to agriculture, an ***international food security agreement*** appears indispensable, since this is how to ensure that the long-term aspects of food security and fairness of distribution can be taken into account. Such an agreement could be made topical and pushed forward in the scope of the Strategic Framework for FAO 2000-2015 as well as in the 8th Session of the UN Commission on Sustainable Development in the year 2000.

Analogous initiatives should also be taken up for the social sector, as well as for protection of the environment and the other common resources of the earth. However, a well-balanced approach towards ecological, social and economic objectives requires the elimination of the present imbalance of power between the WTO and other organizations. While the WTO can quickly react with severe sanctions, most of the other organizations have to rely on moral appeals.[10]

In principle, there are two possibilities in this concern: either the agreements are made in the scope of the WTO and are binding for all member states, or the WTO confines itself to tolerating sanctions in connection with other international agreements. The qualitative difference between the two variants lies in the fact that some countries have little interest to enter into such agreements in latter case. In the first case, in contrast, the necessary incentives are available, since trade concessions can be tied with adhering to such agreements.

VII.1.5 Legal Development through Case Law and authentic Interpretation

In addition to framework agreements, authentic interpretation provides additional leeway for legal adjustments. Since GATT and the WTO are based upon the Anglo-American legal tradition, their further development in the form of case law[11] is implicitly intended as a continuing task. In addition, increased attention should be given to further development through authentic interpretation which, as a rule, allows sufficient leeway for legal adjustment to social imperatives. This was also the practice in Articles II, XXIV and XXVIII regarding the establishment of the World Trade Organization. The man who drafted the Austrian federal constitution, Hans Kelsen, already referred to this in the foreword to his work "The Law of the United Nations" in 1949 shortly after the birth of the United Nations.[12]

In this connection, it should also be argued that the GATT and now the WTO, including "GATT 1994," have been considered a regulatory and organizational body within the legal system of the United Nations since their establishment.

GATT 1947 was an annex to the final act of the second convention of the Preparatory Committee for the Conference of the United Nations on Trade and Employment, and it was understood to be a "special" United Nations Organization.[13] The same applies for the WTO. The legal interpretation and understanding should therefore be oriented to this framework. This particularly applies to the Universal Declaration of Human Rights dated the 10th December 1948. Whenever

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10 A typical example of this is the INTERNATIONAL LABOR ORGANIZATION, which has no means of intervention when its social standards are breached.

11 This means that a step-for-step legal development takes place according to the tradition of English common law through paradigmatic decisions made in individual cases.

12 H. KELSEN, The Law of the United Nations: A Critical Analysis of Its Fundamental Problems – Preface on Interpretation, Frederic A. Praeger, New York, 1951.

13 Refer to B. MEYER's Enzyklopädisches Lexikon, Vol. 24, p. 143, Bibliographisches Institut AG, Mannheim, 1981.

there is evidence that trade policy interests and trade practices contradict the basic principles of human coexistence and human dignity, then human rights must be given priority.

The *right to security of food supply* and *the right to well-being* (Article 25), anchored in the *Universal Declaration of Human Rights*, can serve as examples. The latter is closely connected to an intact environment and harmonious cultural landscapes.

Especially the following articles would deserve **authentic interpretations**, to:

- Article VI Anti-dumping and countervailing duties
- Article XVI Subsidies
- Article XX(b) Protection of human, animal or plant life or health
- Article XX(g) Measures for conserving exhaustible natural resources

With regard to Article VI and the **Agreement on Implementation of Article VI** of GATT 1994, it should be made clear that undercutting ecological and social standards, the distortion of exchange rates or other kinds of provable system competition do justify countervailing measures. On the long term, it is unthinkable that social and environmentally related interests are persistantly ignored, if severe political damage, (also to the world trade system), and ecological threat are to be avoided.

Correspondingly, it must be clarified in **Article XVI and the Agreement on Subsidies and Countervailing Measures** in the scope of the final act of the Uruguay Round that lower social and ecological standards, as well as the (conscious) distortion of exchange rates, are the equivalent of systematic subsidies for the export industry. At the same time it should be made clear that compensation for requested services in the interest of the general public – particularly in the agricultural sector – does not constitute a subsidy. The designation of payments made for services rendered in the interest of the general public as "subsidies" reminds one of an economic and political understanding which does not take into account the Universal Declaration of Human Rights and the development of public welfare-oriented social systems.

This last statement also applies to the interpretation of **Article XX(b)** regarding the **protection of human, animal or plant life or health**. This paragraph was initially interpreted only in veterinary and phytosanitary terms, meaning that the goods concerned could only be banned from free trade if they were declared spoiled or contaminated by the health officers. In the meantime, however, it is becoming increasingly accepted that a country is obligated in the name of human rights (also for future generations), to take measures against recognizable and plausible damage to the environment and the life and health of human beings, animals and plants, if this threatens to take place in connection with certain goods or services, or has already taken place (protection of systems). The advocates of a restrictive interpretation point out the extensive vagueness which would leave the field open to abuse. However, the fear that uncontrollable protectionism will thus

ensue is unjustified, since sufficient control and dispute settlement systems have already been developed in the WTO.[14] It is, therefore, only a question of political will, to enforce a change of course away from an inconsiderate culture, which takes for granted damage to third parties as a byproduct of "business as usual," towards a culture that takes careful consideration of the above-mentioned factors.

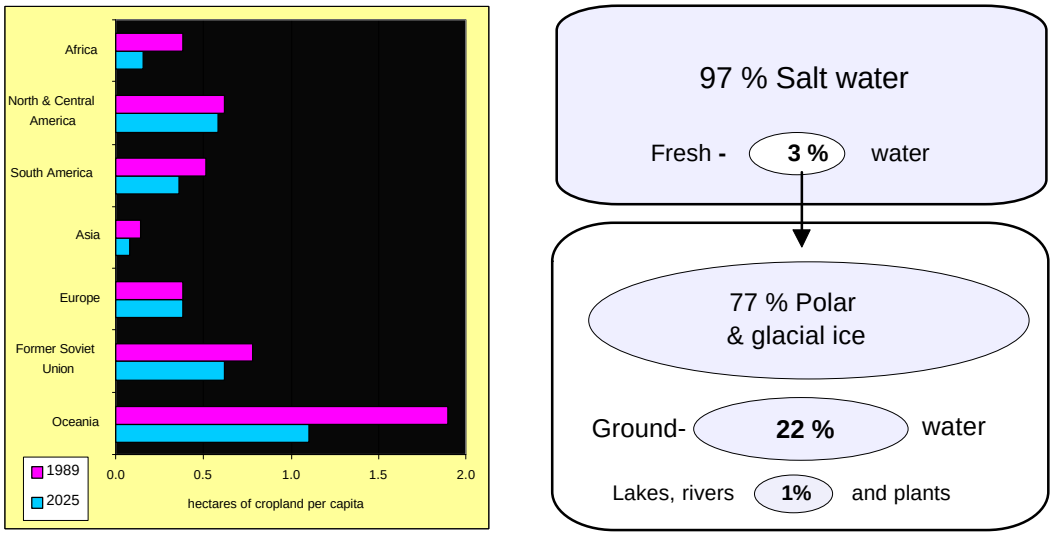
Article XX(g) regarding measures relating to the conservation of exhaustible natural resources was originally based upon non-renewable mining resources (mineral and fossil organic resources). In the light of the latest findings of ecological research it is, however, the renewable resources (foods and non-foodstuff) which must be seen as sustainable basic resources. Any utilization of the related ecosystems, which surpasses their regeneration capacity, adversely affects mankind's natural basis of life. *Limitations on agricultural utilization, which serve to ensure the capacity for regeneration*, must therefore qualify as measures for conserving non-renewable natural resources, and thus justify measures affecting foreign trade policy, in as far as imports endanger this strategy.

The degree to which the ecological situation demands the protection of the non-renewable natural resources of soil, water and biodiversity is not only indicated by the annual reports of the relevant international organizations, but also by the latest scientific documents, such as the Proceedings of the International *Conference on Sustainable Agriculture for Food, Energy and Industry* (1997). The following graphic charts elaborate the imperative nature of giving priority to protecting the non-renewable resources that form the basis of life (Figure VII.1-5).

14 Also refer to the Agreement on Technical Barriers to Trade made in the scope of the URUGUAY Round, which is almost insurmountable in terms of fine details.

Figure VII.1-5

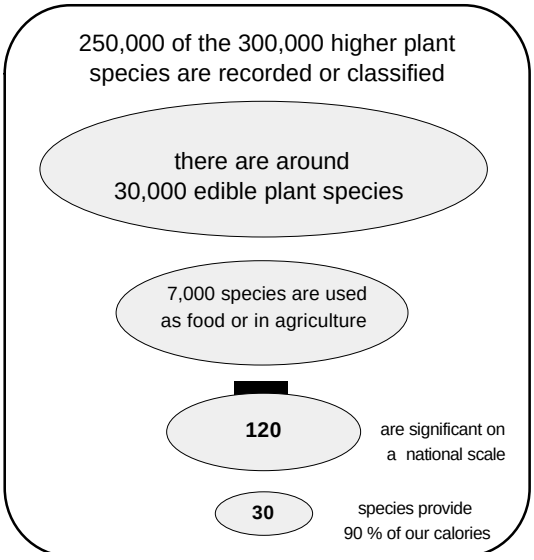
Exhaustible Natural Resources: Soil, Water and Biodiversity – their Protection as Duty and Challenge



Land Resources **Water Resources**

Biodiversity Resources

Source: El Bassam, N. "Fundamentals of sustainability in agricultural production systems and global food security" in: Sustainable Agriculture for Food, Energy and Industry. Proceedings of the International Conference at FAL, James & James, London, 1998 (Graphics modified).



VII.2 Improving the Acknowledgement of Social, Health and Environmental Aspects

Section VII.2 is divided into three parts: The first part shows, in what way free trade could be a problem for sustainability. The second part investigates, whether and how the WTO in the current form, hampers the solution of those problems, and the third part tries to sketch the potential room of action, in order to improve the situation.

VII.2.1 Essential Problems

With respect to what has been elaborated in preceding chapters the following can be said:

1) **Sustainability**[1] as a basic requirement of economic activities

In the long run just those processes are reasonable, which are sustainable. In order to guarantee the welfare of future generations we therefore need a selection of sustainable over non-sustainable processes. Since the market is guided by short-term aspects and uncertainty, it cannot overtake this task. So, the incentives for actors are frequently wrong, and the resulting negative selection of processes leads to a waste of resources and the switches are shifted in the wrong direction for future development. In many cases such a development does not only harm those countries which follow a short-sighted policy, but also those, which pursue a sustainable production. This is because sustainable economic structures are trusted aside by the competing short-term oriented structures. However, as was shown in Section IV, not each process can be reversed, or a reversal can be prohibited by extraordinarily high costs. In such cases actions should be guided by the principle of precaution.

2) **Global environmental problems**, concerning the World's "**Common Goods**"

In case of global environmental problems, like the greenhouse effect, or the overuse of global resources, a solution cannot be expected from national governments, since they do not have much incentive to put sanctions on environmentally harmful behaviour within their own territories. In order to induce countries to change their behaviour, means of sanctioning are required.

3) Different **environmental and social levels**

National environmental and social standards usually differ substantially according to the state of economic development, preferences, and political systems. Those differences can be seen as part of comparative advantages, and a shift of economic activities towards countries with low

1 See Sections IV and V.2.1

standards can be reasonable and efficient. However, problems arise, if structural unemployment and high capital mobility keep national governments from introducing efficient standards, because they fear that firms could move abroad and exaggerate the problem of unemployment. Moreover, there is an incentive to lower own standards in order to reduce the own unemployment on the cost of other countries. As could be shown in Section IV.2, governments are trapped in a prisoner's dilemma, and the outcome might be inefficient.

4) **True Cost of Transport**

An efficient level of international division of labour can just be met, if the monetary costs of transport reflect all costs which are created by transport. If transport is too cheap, the result is not only an inefficiently high level of transporting activities (with all its external cost), but also an inefficiently high level of specialisation, concentration and division of labour, and therefore an inefficient allocation of resources. So, the gains of a further liberalisation of markets are very doubtful, as long as social costs of transport are not internalised.

VII.2.2 Does the WTO Limit an Effective Environmental Policy?

The WTO-framework is based on the principle of sovereign nations. Therefore the environmental policy, which applies for the production within the national territory, is determined by national governments as well. However, if national rules shall apply to the import, sale or use of foreign products within the own territory, those rules may only be based on **product properties**, but not on processes. While products can be excluded from free trade, when they are harmful in use, this is not possible, if they are harmful in production.

So, currently it is neither possible to sanction environmentally harmful processes out of the own territory, nor to promote environmentally friendly processes, by means of trade policy. Since home products are in direct competition with foreign products, this makes it hard for national governments to protect sustainable structures. Even the **border-balancing of indirect taxes**, which is permitted in principle, does not help to solve this problem, since the extra duty must not exceed the rate of a comparable home product, and comparability is once more based on product properties, and not on the process. So, a foreign product, which was produced in an environmentally harmful way, cannot be taxed higher than a comparable foreign or home product, which was produced in an environmentally friendly way, as far as product properties are the same.

Just in few cases **international environmental agreements** yield the legal base for trade sanctions, since usually they can just be applied to those countries which have subscribed them. However, apart from WTO-negotiations those countries, which would be strongly affected by agreements, do not have much incentive to subscribe, since they have few to gain. Moreover, even

in case of existing agreements there is frequently few incentive to behave in line with them, since WTO does not permit trade sanctions.

Article XX of the GATT treaty states that "(...) nothing in this Agreement shall be construed to prevent the adoption or enforcement by any party of measures (...) necessary to protect human, animal or plant life or health (...) (or are) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption". However, this is "(...) subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade". So, in case that other measures exist, which could be used to pursue the same objective, but which are less trade distorting, those measures have to be preferred. Due to a very fuzzy formulation and a conservative way of interpretation, most attempts to sanction non-sustainable processes on the base of Article XX, so far have been without success.

What Article XX misses, is a clear regulation, under which conditions it permits, to base discriminating measures not just on product properties, but also on processes. Moreover it has to be determined, when protective measures need not relate to the own territory, but can also relate to the territories of other countries. A general interpretation of Article XX in that way would not be reasonable and hard to be pushed through. However, it would be sinful in case of products, which have the same properties, but are very different in processing, and those processes differ substantially according to their

- contribution to **global environmental problems**
- contribution to the **protection of global resources**
- contribution to a **sustainable economic development**

VII.2.3 What could be changed?

From the purely technical point of view there are three alternatives: Firstly, Article XX[2] could be revised; secondly, the TBT-agreement[3] could be extended to production processes; thirdly, a special "agreement for sustainable economic development" could be signed. In order to prevent improper use, the term "sustainability" has to be defined in an operational way, and instruments of evaluation have to be developed. Examples for such instruments are the Ecological footprint, the Sustainable Processing Index (SPI), the Material Intensity per Service Unit (MIPS) or the Land Intensity per Service Unit (FLIPS).

2 See also Chap.III.1.3 and Chap.VII.1.5
3 see also Chap.III.2.5

Moreover, the **room of action** has to be defined, and there are different ways, how this could be done:

Firstly, countries could be permitted to impose **protective measures unilaterally**, and the burden of proof could be put on those countries, whose trade interests are affected. This would be an effective internalisation of the principle of precaution. However, in order to prevent improper use, measures would have to be based on processes, and not on the country of origin, and would have to be accompanied by at least equivalent restrictions of the production in the sanctioning country.

Just in a few cases an exact **discrimination by environmental costs**, according to the Producer-Pays principle, will be possible. Theoretically, avoidance costs of process-related environmental damages could be estimated, and then be treated like subsidies. For example, in case of greenhouse gases a combination with tradable emission permits (according to the KYOTO Agreement) would be possible. So, the amount of the subsidy could be determined by the market value of those emission permits multiplied by the amount of emissions.

Similarly, the **border-balancing of indirect taxes** could be extended to emission-related taxes, at least in case of carbon dioxide. So, duties could be imposed on products crossing the border, if equivalent taxes were imposed on home products. Those duties could correspond to the equivalent fee on the most environmentally harmful comparable domestic product, but obligatorily be changed to the adequate level, if the producer proves lower emissions.

Another possibility would be a discrimination according to internationally or mutually accepted **environmental labels**. This means, that products with labels would no longer belong to the same product group as products without labels. So, it would be left to a country's own decision, to treat products, which have been produced in a sustainable manner, in a different way than products, which have been produced in an environmentally harmful way. Compared to common standards, which would be obligatory for all, this system leaves more freedom to countries. An international administrative board could determine the requirements for the labels, and the producers would have to prove that they meet them. Similarly to SPS and TBT, where international guidelines of product properties have been developed, international guidelines of production processes could be pursued on the basis of such labels. Especially in agriculture, where environmental labels are already very common, this would be a realistic alternative even in the short run.

In order to prevent competition by environmental and social standards a system of **dynamic minimum standards** could be pursued. Frequently it is argued that a general harmonisation of standards were not sinful, since the demand for environmental goods and social security is supposed to rise with income. However, a harmonisation of minimum standards for countries with similar state of economic development would consider this argument. So, three groups of countries could be built, industrial countries, intermediate countries, and developing countries, for which minimum standards could be negotiated just within the groups. In order to avoid an

agreement on the lowest level, those standards should not be static, but be increased to an objective level in a fixed time period. This objective level should at least correspond to the average level at the beginning of this period. A special agreement should determine, that countries are allowed to impose equivalent sanctions on a country, which does not meet those minimum standards. So, it could be guaranteed, that no country acts as a free rider within his group, and tries to export the own unemployment to other countries via low standards. Dynamic income limits could guarantee, that countries have to switch between groups, if this is justified by the development. However, for those switchers adequate periods of transition would have to be defined.

True Costs of Transport could be approached in two different ways: on the one hand, environmental cost factors for different fuels could be determined by an international expert group, and it could be left to national governments, how to internalise those costs on their territories. Countries refusing internalisation could then be charged with equivalent duties. The advantage of this method is the efficiency, the weakness is the fact, that it does not only affect transport in connection with international trade, but also trade of persons and national trade, which is not a matter of WTO. So, additional obstacles would have to be removed, which are not connected to the objective of efficient international trade. On the other hand the internalisation could be approached by duties. Such duties, which should correspond to the difference between actual and total fuel costs (environmental costs included), could be permitted as an exception of the principle of non-discrimination. The weakness of this strategy is the fact that to a certain degree foreign products are discriminated against home products, even if the distance of transport is the same.

In general money from discriminative measures could be paid into an **International Development Fund**, instead of flowing into national budgets. The Fund could then be used in favour of those countries which increase their environmental and social standards. So, incentives for fiscally motivated protectionism could be removed, and incentives for policies in favour of a sustainable development would be created.

VII.3 Agriculture: A special Case

Proposals of the preceding sections are independent of the sector, and would affect large parts of world trade. The agricultural sector requires a special treatment, since it differs substantially from other sectors. Moreover agricultural trade is regulated by a special agreement, the Agreement on Agriculture. Similar to the URUGUAY Round, agriculture will play a key role in the coming round of WTO-negotiations. However, this agricultural part should not be seen independent of the general part. In contrast, presumably the widely pursued **opening of agricultural trade** might yield the only effective lever, in order to achieve an **integration of**

sustainability matters into the WTO framework. So, further concessions in agricultural trade should in general be refused, as long as there is no willingness to deal with this problem.

The following sub-sections deal with the question, which parts of the agricultural agreement are supposed to be more, and which are less important for long-term efficient agriculture. A more detailed analysis on this aspects would require data and models, which are not available. Therefore, the following recommendations are exclusively based on qualitative considerations.

VII.3.1 Non Trade Concerns

Until today **Non Trade Concerns** (Part XII Art 20 of the Agreement on Agriculture) are a more or less undefined legal term. Therefore, a clarification of this widely used term in the next round of WTO-negotiations seems to be an urgent tasks. The following topics should in any case be considered:

- **Food Security** by conserving a **minimum** "**production capacity**" even in disfavoured regions
- **Ecological Security** by a manifold agriculture
- Saving the **economic viability of rural areas** by locally adapted cultivating systems. A **multi-functional agriculture** is an essential part-strategy in order to achieve this objective.

For the definition of Non-Trade concerns in the WTO framework it could be referred to the report of the Expert Group on Environmental Law of the World Commission on Environment and Development, Environmental Protection and Sustainable Development, because it contains very concrete proposals for both general guidelines and institutional aspects[4].

In order to achieve a sustainable and long-term efficient development of the agricultural sector, in order to guarantee the self-supply with basic foodstuffs, and in order to prevent an abandonment of traditional cultural landscape, the following preconditions should be met:

- Farmers deciding to apply sustainable production methods should not be economically disadvantaged as a result of this decision
- Farmers in disadvantaged regions should be enabled to continue cultivation
- Services from agriculture to the public should be paid

4 Expert Group of Environmental Law of the *World Commission on Environment and Development*, "Environmental Protection and Sustainable Development, Legal Principles and Recommendations", Graham & Trotman/Martinus Nijhoff, London/Dordrecht/Boston 1986.

Within limits, the current WTO-framework allows governments to pursue those objectives by subsidies, since direct payments under the Green box are not submitted to the general obligation to subsidy reduction. Similarly, Blue box-measures, (i.e., CAP-premiums) need not be reduced according to the Agreement on Agriculture. However, other subsidies, like export subsidies, and restrictions of market access, like duties and quantitative restrictions, have to be reduced. This trend is supposed to continue also in the coming round of WTO-negotiations.

The following section reflects the importance of those rules and instruments with regard to the above objectives.

VII.3.2 Domestic Support[5]

A) Green box measures

Green box measures are all those payments which are listed in Annex 2 of the Agricultural Agreement. Such payments have to "(...) be provided by a publicly-funded government programme", and must not "(...) have the effect of providing price support to producers". In general non-farm related payments are allowed for defined purposes, and farm-related payments are allowed in form of direct payments, if "(...) they are determined by clearly-defined criteria such as income, status as a producer or landowner, factor use or production level in a defined base period" but not "(...) in any year after the base period". In addition, some special forms of farm-related direct payments are permissible, like investment supports, payments through environmental programmes, or regional programmes in disfavoured regions.

For Austria the most important programmes covered by the Green box are the ÖPUL-programme and the structural measures (especially the support payments for disfavoured and mountain regions). In 1998 those Green box-measures amounted to 18,3 bill. ATS, which is 66% of all agricultural support payments, and the agreement of the AGENDA 2000 is supposed to cause a further increase[6].

Reductions of the Green box should especially be prevented for non-farm-related payments (It.2; Annex 2 AoA), environmental programmes and regional programmes in disfavoured regions (It. 12 and 13; Annex 2 AoA).

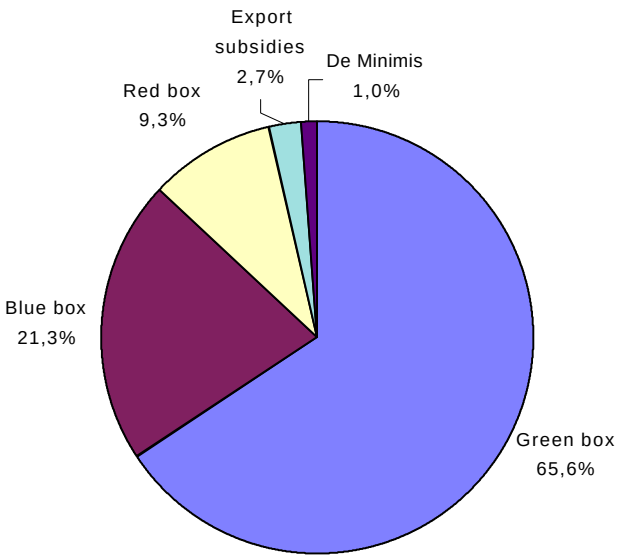
In case of environmental programmes the amount of permitted payments is currently confined to the additional cost or the income loss due to the ecological measure (It.12 (b); Annex 2 AoA). An increase of this upper limit to the monetary value of an ecological measure (value of ecological

5 see ORTNER, K.M., GATT-Verpflichtungen für die Landwirtschaft. Der Förderdienst 42 (1994) 5; 145-152.
6 See Section V.3.5

improvement) would extend the room of action, and allow governments to install active incentive schemes. Moreover, the full compensation of the cost difference to environmentally harmful technologies could be allowed, if such technologies are permitted in competing home or foreign farms. This is, payments could be based on national standards of the most important competing countries, and so an incentive would be created for those countries, to increase their standards as well. Under the current framework, payments are based on own national standards, and so countries with high standards have a disadvantage.

Figure VII.2-1

Austrian Agricultural payments 1998 classified according to the Agreement on Agriculture[7]



Source: BMLF (1999): Grüner Bericht 1998

Thematic expansions of environmental programmes would be required for measures in favour of "the well-being of animals" and the "sustainable cultivation of energy plants". Under the current framework, payments for those objectives are not covered by the Green box. The "well-being of

7 see Grüner Bericht 1999 (Förderungen für die Land- und Forstwirtschaft, ohne Forstliche Förderungen):
Green box: land payments (land retirement); livestock payments (premium for extensive livestock keeping); environmental measures; structural measures; quality improvement; research and education; slaughter-premium; payments for natural disasters; other payments.
Blue box: land payments (all others); livestock payments (all others).
Red box: product payments; subsidies for storage, manufacturing and marketing; degressive payments; currency balancing payments.
De Minimis: hail insurance; subsidies for livestock insurance.

animals" could be improved by subsidies for more adequate forms of livestock keeping, while subsidies for the cultivation of energy plants could help to reduce greenhouse gases.

A narrowing of the term "conservation programme" in it.12 should be avoided, since currently payments like the "premium for mowing steep meadows" are justified under this item. A more narrow interpretation of the term could lead to problems. Another possibility would be the introduction of a further item in Annex 2, which allows the payment for community-services, even if they are directly connected to agricultural production. So, the aspect of multifunctionality could be emphasised and explicitly integrated into the agreement.

Under the regional programmes it is currently not allowed to connect payments to actual livestock, but just to the livestock of a base period (see It.13(b); Annex 2 AoA). However, in order to compensate higher costs of farmers in disadvantaged regions, payments must somehow be connected to production. Moreover, payments which can just be connected to the livestock of a base period, lead to the paradox, that farmers can stop farming and nevertheless get payments. Should the Blue box be cancelled, regional programmes could be expanded by payments connected to actual livestock, but limited to the livestock of a base period. So, both an incentive to increase production and the waste of money to phantom-farms could be avoided.

B) Blue box measures

Blue box measures are regulated in Article 6 of the Agricultural Agreement. Similar to the Green box measures they are exempted from the obligation of reduction. Blue box measures are "(...) direct payments under production limiting programmes", which are "(...) based on fixed area and yields" or "(...) on a fixed number of head", or which "are made on 85 per cent or less of the base level of production". Within the European Union this is especially important for CAP-premiums. However, not all CAP-premiums are Blue box measures. So, the payments for land retirement and extensive livestock keeping are Green box measures, while product premiums belong to the Red box. In case of Austria Blue box measures amounted to 6 billion ATS in 1998, which is about 21% of total agricultural supports, and they will further gain in importance according to the AGENDA 2000.

Since CAP-premiums were historically designed as compensation payments in connection with the CAP-reform in 1992, they differ between regions according to average yields. So, the favoured regions of Europe receive the highest share of the payments, and it can hardly be argued that CAP-premiums support disfavoured regions. Similarly, CAP-premiums hardly support sustainable production measures, since except for the land retirement production is not submitted to any restrictions. So, both from regional-policy and ecological point of view it would be desirable to tie payments to ecological production methods or disfavoured location. The attempt to define CAP-premiums as compensation for services of a multifunctional agriculture or higher

environmental standards within the European Union can just be successful, if those services and standards are operationalised, and the resulting costs and income losses are quantified.

If, according to general expectations, the Blue box will come under pressure in the following round of WTO-negotiations, there would be different alternatives.

On the one hand, Blue box measures could be tied to ecological production methods and/or disfavoured location; on the other hand the money currently used for CAP-premiums could be used for environmental and regional programmes of the Green box. In both cases Blue box measures could be sustained for farms with sustainable production methods and farms in disfavoured locations. However, in case of a pure money shift from CAP premiums to regional and environmental programmes it should be checked in advance, whether there is still enough room for additional payments. The above mentioned changes in the Green box could be claimed in connection with a cancelling of the Blue box.

Finally, the free money could also be used for pure income transfers. The handicap of this alternative is, that under the current framework such payments could not be tied to a continuation of farming activities. Therefore, a weakening of this regulation (It.6e; Annex 2), like allowing to tie payments to a minimum production, could be claimed.

C) Other Subsidies (Red box)

Other forms of subsidies than those listed in the Green box, the Blue box, or those which do not exceed 5% of the production value of the supported product, have to be reduced by 20% compared to the average between 1986-88 until the year 2000. However, not each subsidy has to be reduced, but just the "Aggregate Measure of Support" (AMS), which includes price support borne by the consumers as well. In 1995 price support amounted to 11.4 billion ATS in Austria[8]. Payments of the Red box amounted to 2.5 billion ATS in 1998, which is 9% of total agricultural supports. Due to AGENDA 2000 price support of grains and beef will be reduced, and the end of degressive compensation payments will lead to a 50% reduction.

Changes would be desirable in connection with the calculation of the AMS. An inclusion of environmental costs into the AMS would be a first step to declare weak environmental standards as what they are from the economic point of view: Veiled subsidies to a non-sustainable agriculture. Avoidance costs could be determined as the monetary value of environmental damage of the actual situation compared to a "state of techniques"-scenario, and then be added to AMS.

8 See ORTNER, K.M., Internationale Stützungsmaße für die Landwirtschaft: PSE und AMS, in Monatsberichte über die Österreichische Landwirtschaft Nr. 9, 1996, pp. 371.

VII.3.3 Export Subsidies

According to the Agreement on Agriculture, export subsidies have to be reduced by 36%, and the amount of subsidised exports by 21% until the year 2000. In 1998 export subsidies amounted to about 3% of total payments in Austria. From the ecological perspective export subsidies are not desirable, since they can promote overuse of home resources, while opposing the objective of a sustainable agriculture in foreign countries by putting world prices under pressure. Similarly, food security can hardly be used as an argument for overproduction. A further reduction of export subsidies would therefore hardly have negative effects on the above mentioned objectives, if higher production costs due to higher ecological standards or disfavoured locations could be compensated.

VII.3.4 Import Restrictions[9]

The Agricultural Agreement states that quantitative import restrictions and non-tariff measures have to be replaced by tariffs, and tariffs on average have to be cut by 36% until the year 2000. Each tariff has to be reduced by at least 15%. Moreover, for all products a minimum access of 5% of domestic demand has to be guaranteed. In case of sensible products additional tariffs can be imposed, if a certain level is not exceeded.

As shown in Section V.2.2 a final conclusion, whether Austria would gain or lose from a further liberalisation of agricultural markets, cannot be drawn from purely theoretical considerations. However, a detailed empirical analysis would be beyond the scope of this study. What can be said is, that protective tariffs can be superior to a free trade situation, as long as true transport costs are not reflected by transport prices. Moreover, we can expect a further reduction of tariffs to speed up the closure of farms in disfavoured regions, and to disfavour cost-intensive sustainable production methods, as long as the problems of Section VII.2 are not solved. *So, a further opening of agricultural markets should in any case be tied to a solution of those problems*, which means that the WTO-framework has to be fit for a sustainable world economy.

9 See ORTNER, K.M., GATT-Verpflichtungen für die Landwirtschaft. Der Förderdienst 42 (1994) 5; pp. 145-152.

VIII. FINAL REMARKS

Heinrich Wohlmeyer

The present effort, made by a small team with limited means, to elaborate and scrutinize the current state and dynamics of world trade, as well as its weaknesses and strengths concerning the agricultural sector, while taking the position of small countries like of Austria into special consideration, should be concluded with several basic remarks significant for the long-term orientation as well as the current negotiations.

VIII.1 Considering the Colliding World Views (Paradigms) as Background

When comparing the annual reports of the WTO with those of the UNDP (Human Development Reports), one is confronted with contrasting intellectual worlds. The former ignores social and economic distress, and pronounces that fast-growing world trade is the motor of the global economy and will drive it to increased prosperity. Its performance criteria are the classic growth indicators (particularly GNP). Since world trade fulfills the vital function of a motor, they claim it should be given even more unconditional liberty, so that its inherent welfare-enhancing capacity might take better effect. However, the UNDP reports of an ever-widening gap in world development and unspeakable suffering that cries to heaven.[1] Its indicators are mainly taken from the social sector (HDI, GDI). They indicate that economic and social asymmetry is on the increase. The rich are growing increasingly rich and the poor are becoming ever poorer; social and ecological destruction is increasing dramatically. Business as usual is thus unjustifiable, if the major part of the future generation is not to be driven into a situation comparable to that of the 1930s (the Great Depression).

The helpless character of the preliminaries to the WTO MILLENNIUM Round[2] illustrates that these two world views are clashing together. The preliminary diplomatic talks to the Ministerial Conference in Seattle, which had the objective of formulating an agenda for the negotiations over the next three years, were compared to the compiling of an inconsistent shopping list. The one

1 The HUMAN DEVELOPMENT REPORT 1996 states (p. 8) "The imbalance in economic growth, if allowed to continue, will produce a world gargantuan in its excesses, and grotesque in its human and economic inequalities." The Report of 1999 states that the gap between rich and poor, both between nations as well as within each nation, has increased dramatically, and recommends that the advantages of globalized markets must be oriented towards public welfare by means of corresponding governances.

2 In an article in the Financial Times dated 12-11-1999, p. 8 under the headline of "EU's Tactics Anger US and CAIRNS Group," on the one hand, it was alleged that the concept of multifunctionality constituted protectionist tactics, yet a diplomat from a developing country was cited: "I've never seen as much disagreement as there is now."

side comprises those who still adhere to a world view of unlimited possibilities and pursue the maximization of free business interests, which as a rule only serve a select few who understand how to make their interests appear a part of global public welfare. The other side comprises those countries where policy makers have already recognized the limitations of the planet earth, and who are trying to take into account the welfare of the largest number of people possible. They are usually depreciatingly censored as "socialist or semi-socialist countries" (OECD), although politics oriented towards public welfare should be expected from all countries in keeping with the usual Sunday vows.[3]

The clash between these two contrasting world views culminates in the agricultural sector. The USA and the Cairns Group condemn any suggestion regarding the holistic integration of agricultural production and a long-term sustainable concept of world development as being protectionist, and the ancient civilizations, such as Europe, India and Japan, realize the destruction of their centuries-old cultures, which are expressed in their farming methods and their agrarian landscapes, as well as the endangered security of food supply for the coming generations. The quidelines for sustainable development (AGENDA 21) agreed upon in Rio de Janeiro 1992 (UNCED), which also call for multifunctional agricultural production in Chapter 14, seem to be forgotten.

If this basic conflict is not resolved, then the MILLENNIUM Round will not contribute towards a sustainable system of world trade, rather it will only leave behind a trampled field after an exchange of current interests. The proposals made in this study can only find acceptance, if the intellectual mind-set of the politically powerful nations is changed. The following examples of developments in the USA illustrate that it is not unlikely that this will take place in the long term:

- The inaugural speech made by the American Trade Representative, CHARLENE BARSHEFSKY on 1-11-1999 "Toward the New Round" in the Foreign Press Center in Washington, D.C. is bursting with declarations of statesmanship-like orientation towards public welfare. It is obvious that a good measure of hypocrisy is behind this statement, when it is compared with the practice of trade policy. However it has to be evaluated positively, since the hypocrite already recognizes the expected standards.[4]
- The American economist RAVI BATRA launches a logical, frontal attack on American free-trade policy in his book "The Myth of Free Trade." He proves that 80% of American employees have become poorer over the past 20 years, and explains that unconditional free trade is the major reason for the major economic problems and the reduction of mass prosperity in the USA. This particularly applies to the budget deficit, the unemployment

3 Also refer to the statement made by an American Trade Representative cited below.

4 The English economist JOHNSON (London School of Economics in the 1960s) expressed this in a seminar as follows: "**Hypocrisy is the homage vice is paying to virtue.**"

veiled by underpaid and part-time jobs, the disappearing middle class, the destruction of the environment, and the fusion craze, which has not brought on an increase in efficiency, but only serves to strengthen the market power. The latter leads to an undermining of the order of competition either favoring the formation of a monopoly or an oligopoly. He therefore recommends competitive protectionism. On the background of improved outside protection, large group corporations should again be divided into smaller, more flexible units, which compete among each other (securing competition) on the one hand, and on the other hand, politics would again attain supremacy over economics, since it would no longer be driven by the global economy or excused by it (recovery of the power of social organization). BATRA speaks of an *"agrification"* of American industry through free trade. Over the past two centuries, the agricultural sector has undergone great increases in area and work productivity that have led to lower prices and incomes – which is the opposite of the outcome expected by the individual farmer. This is due to inelastic demand. Industry has experienced the same phenomenon, (great increases in productivity and sinking income), since the onset of the American government's free-trade policy (turning point in 1973). However, in this case it is not the inelastic demand, but the free trade which has destroyed all attempts to achieve a higher income through increased productivity, because of the unequal starting position of the foreign competition.

- The environmental awareness movement has also made its new world view known since its beginnings as a grass roots movement. HART Environmental Data of Massachusetts[5] lists the amount of food produced and consumed locally as a relevant criterion for examples of sustainable community indicators. This illustrates that thinking in locally compatible cycles is becoming accepted as the prerequisite for sustainable management of the earth.

Pertaining to a non-sustainable world view, a further very dangerous guiding principle needs to be overcome, which poses a great threat concerning the conservation of our natural basis of existence. It is SCHUMPETER's thesis of creative destruction as the motor of development which, although it is valid in the industrial trade sector, has catastrophic ramifications in the environmentally related sectors. It is primarily propagated by the international financial world which is interested in using the concentrated capital for investments. It states that economic progress can only be achieved if the old is continually destroyed and replaced by the new and improved.[6] If this guiding principle is applied to the management of natural resources, a disaster

5 This is a recognized environmental consulting enterprise.

6 An impressive declaration in favor of *"creative destruction"* was delivered under acclaim and without raising opposition by the President of the Federal Reserve Bank of New York, Vice President of the Federal Open Market Committee and President of the Basel Committee on Banking Supervision, WILLIAM J. MCDONOUGH at the 5th International Financial and Economic Forum in Vienna on 11-11-1999. The attending banking community was so elevated, that a discussion regarding the limits of the application of his theorem in the basic sector of agriculture was rendered impossible. – In order to give a complete picture, it should also be remarked that the financial world, which determines global economic dealings, also adheres to a second principle which cannot be upheld in a limited system, namely the compound interest rate. It implies infinite growth. Basic mathematics thus proves the unavoidable nature of crises. These are all the more severe, the more globalized and uncontrollable the system becomes. Yet, this pattern is globally increasing and intensifying. Asked

is preprogrammed. Ecosystems are both very conservative and sensitive. The preservation of the interacting compartments of ecosystems (refer to the Convention on Biodiversity and AGENDA 21) must be given higher priority than economic development. The objectives set up in existing conventions, and particularly the objectives of AGENDA 21, should be followed much more zealously in the upcoming negotiations. That should enable purposeful use of the scope of interpretation (also refer to Section VII.1 Required Further Development of the Legal Framework).

With regard to AGENDA 21, as already mentioned, it should also be taken into account that the first programme section of Chapter 14 (Promoting Sustainable Agriculture and Rural Development) already calls for an *"Agricultural policy review, planning and integrated programming in the light of the multifunctional aspect of agriculture, particularly with regard to food security and sustainable development."* The current dispute of USA and the CAIRNS Group versus the EU, Japan, Norway and Switzerland as to whether the *aspect of multifunctionality* is worth discussion, or whether it is a protectionist invention of the Europeans and Japanese, is impossible to understand in this light.

The increasingly discernible cultural conflict can be characterised by the following contradictory societal goals; they make clear how we have to counteract the negative attitudes of globalisation:

- Viewing the world as an entrusted garden (<agri-culture>) - in contrast to short time market oriented <land use>.
- Utilising the world as an entrusted vulnerable resource - in contrast to the modern fossil driven extraction and throughput economy.
- Providing social roles for all members of society, which can give individual satisfaction, according to their abilities and in line with the respect of freedom and human dignity.
- Striving for an optimal physical and psychical well-being of humans and other living beings in contrast to going to the limits of the physical and psychical carrying capacity of individuals, social systems and ecosystems – thus practising a <borderline exploitation society>.
- Taking full responsibility for the well-being of future generations, without the possibility of trade-offs with them in contrast to maximising present resource consumption and disregard of the precautionary principle.

The following modified OECD-graphic relating to a cautions and responsible use of the natural resource base (Figure VIII.1-1) shall point out the importance of a central guiding idea (“physical and psychical well-being”) for forming political practise.

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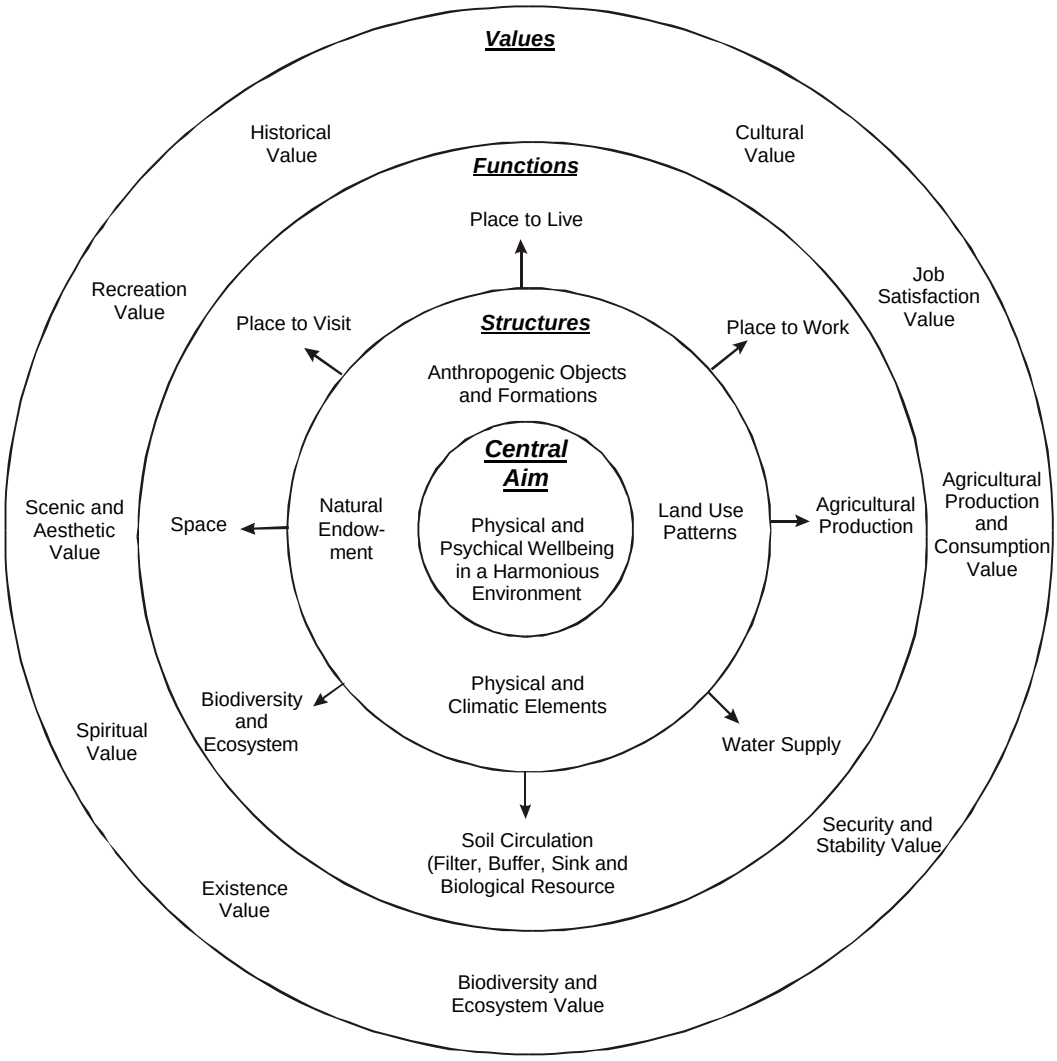
whether he was not aware of this, an internationally active banker answered, "We'll play the game as long as possible, since there's no alternative."

Figure VIII.1-1

Landscape Management with the Central Aim "Physical and Psychical Well-being"



Source: BERGSTROM, 1998 and OECD: Environmental Indicators for Agriculture: Methods and Results –The Stocktaking Report Landscape, March 2000, modified by Austrian Association of Agriculture Research

The present short term oriented patterns of economic activities to a large extent entail social and ecological damage.

social	-	*economic*	-	*ecological*
damage	←	*value added*	→	*damage*

These patterns are widely induced by the economic selection criteria imposed by the present world trade order.

The measures proposed in this study can contribute to turn the dynamics towards a net welfare enhancing process, which combines better economic performance with increasing social and ecological well-being.

social	+	*economic*	+	*ecological*
value added	←	*value added*	→	*value added*

VIII.2 Can isolated Negotiations for the Agricultural Sector be justified?

If the principle of sustainability is recognized as having the highest priority and general validity, then agricultural negotiations can only be held competently in the context of a holistic economic design. In addition, the course set in the URUGUAY Round stipulating that the agricultural sector must be taken into account in all negotiation deals, should also apply in the reverse case in order to ensure a good balance.

The separate agricultural negotiations, currently scheduled to be held due to the given circumstances, will take into account the built-in agenda according to Article 20. The rationale behind this Article is that the difficult field of agriculture should be dealt with first in order to ensure that the general negotiations, in which the agricultural sector has played an essential role since the URUGUAY Round, are not delayed unreasonably. Since the general negotiations have been postponed for an undetermined period, it can be assumed that the time pressure has lessened also on the agricultural sector. Threatening negotiating partners that the Peace Clause will expire does not seem justified in this light. Instead, the time schedule for the agricultural negotiations, which the USA and the CAIRNS Group insist upon, should be questioned with reference to the *clausula rebus sic stantibus*.

Tearing the agricultural negotiations out of their broader context gives rise to the eminent threat that the entire weight of the bargaining power will be concentrated on the agricultural sector, in particular that of the USA. This would mean that the negotiation dynamics are mainly determined by the agricultural model of those countries that have an abundance of land and short-term export interests. Furthermore, there is the danger that concessions will be made in the agricultural sector for the purpose of keeping things quiet in other sectors. This would turn the agricultural sector into a pawn or bartering object of trade politics. This constellation threatens to lead to irresponsible concessions being made in that sector which is most closely linked to nature and therefore most ecologically sensitive.

VIII.3 On Evaluating the Success of the URUGUAY Round in the Agricultural Sector

In Article 20 of the Agreement on Agriculture dated 14th April 1994 in the scope of the URUGUAY Round, it is resolved to resume negotiations one year before the end of the implementation period, whereby the following is to be taken into account:

- experience with implementing the reduction commitments
- effects of the reduction commitments on world trade in agriculture
- non-trade concerns
- special and differential treatment of developing countries
- the goal of introducing a fair and market-oriented system of trade in agricultural produce
- the reduction of supports and support measures (with reference to the preamble of the Agreement)
- further commitments required in order to achieve the above mentioned long-term goals.

The USA and the CAIRNS Group reduce this evaluation of past global economic development on the agricultural markets to the sole factor that the member states only need to be monitored with regard to whether they have upheld the commitments they have agreed upon (market access, domestic support and export competition). However, this reductionist interpretation is discernible neither in the text of the agreement, nor in the above applied context (AGENDA 21). Instead it would appear necessary to achieve agreement on the evaluation criteria. This should not be too difficult, since the criteria are available in the form of AGENDA 21. From it especially the following criteria can be shown:

- social, ecological and economic sustainability as the highest priority goals;
- consideration of the multifunctionality of agriculture and forestry;
- preservation and support of the autochtonous food security[7];
- sustaining agricultural production in disadvantaged regions, particularly in developing countries;
- preservation and support of biodiversity as well as the integration of agriculture and forestry in diverse harmonious cultural landscapes;

7 In this connection, the increasing crisis susceptibility of the large, established systems has to be taken into account (also refer to Chapters II.2.3.6 and V.2.3 above).

- preservation and support of viable rural communities;
- To this purpose, a "programme to integrate environmental and sustainable development with policy analysis for the food and agriculture sector" should be established (AGENDA 21, item 14-8).

No such analysis or evaluation presently to be sen; however the lobbyists of the different interest groups are entering into the negotiations with all the more vehemence.

The *"Sustainability Checklist for Project Evaluation"*, which was developed for the EU (EC) in the scope of the Five Year Assessment of the special research programme *"Agriculture, Fisheries, Forestry and Agro-Industry"* of Directorate General XII (Science, Research and Development), VI (Agriculture and Rural Development) and XVI (Fisheries) could provide additional orientation for determining evaluation criteria (Report EUR 17593 of the European Commission, Luxembourg 1997), as well as the EU directive on *Strategic Environmental Assessment* (SAE). A workshop held by the *European Environmental Advisory Councils* (EEAC) on 12-11-1999 in Amersfoort (Netherlands), which discussed the problem, also offered its expertise in conducting the required evaluation. Although there is no lack of expertise, there is apparently a lack of political will. The criteria named in Chapter V.2.1.3 for organic farming as well as the Agri-Environmental Indicators (AEI) discussed by the OECD also provide orientation for developing suitable evaluation criteria. However, the core should remain the consensus of objectives found in AGENDA 21.

Available for conducting an *evaluation that does justice to the present state of science and research* is the instrument of **multiple criteria analysis** which was developed over the past few years[8] and is still under development.[9] This new approach to evaluation constitutes the attempt to make available an improved decision-making basis for policy makers by systematically examining the field of evaluation from several angles and also taking into account "incommensurable factors and uncertainties in the analysis," among others.

In order to increase the pressure for an evaluation oriented towards general welfare, the speedy establishment of a *concerted action* of experts from all the Old-World and developing countries

8 For example, refer to G. MUNDA, Multi-Criteria Evaluation as a Multidimensional Approach to Welfare Measurement, in J. VAN DEN BERGH & J. VAN DEN STRAATEN (Eds.) 1998. Economy and Ecosystems in Change – Analytical and Historical Approaches, Edward Elgar, Cheltham.

9 A corresponding concept-oriented research project (elaboration of a model) being conducted in Austria is the development of an instrument for the evaluation of agropolitical measures (in view of sustainability) under special consideration of the world trade system commissioned by the Federal Ministry of Science and Transportation.

is required. In the scope of this action, a proposal concerning evaluation criteria should be elaborated at short range.[10]

Furthermore, the **period required for evaluation** must be taken into account. Changes in agriculture and forestry are long term due to the nature of the matter. The setting up of evaluation periods, such as those common for industry, would be inappropriate. The evaluation period should therefore be extended by another five years to a minimum length of ten years in order to prevent premature judgements. The issue at hand is too grave. It is also clearly evident that the evaluation period is too short in view of the conclusions in Section V.3 (System Dynamics of World Trade) and the previous Section VII (Conclusions and Proposals for Solutions). However, it is already possible to derive plausible scenarios. This applies particularly to agriculture and forestry in disadvantaged or mountainous regions, which would be eliminated in the scope of unconditional competition, even though these regions are also required in order to provide long-term food security in addition to their other vital functions. The same applies to environmentally compatible agricultural systems with higher social and environmentally related costs, as well as to those which provide essential services to public welfare, such as protection from natural disasters. Without compensation for the related additional costs, these agricultural systems would disappear leading to irreversible damage to society.[11]

While evaluating previous experience, it should be in clearly stated that recent agropolitical experience has already unequivocally shown that the domestic strategy of the USA (FAIR Act 1996), which was fully coordinated with the (international) GATT strategy has miserably failed (securing of *non-production-related lump-sum payments* and an 85% limit for reallocation of the expiring *deficiency payments* into decoupled Green box payments). Now farmers are confronted with the greatest crisis since the end of World War II, which is apparent from the massive financial support that has become necessary over and above the FAIR Act 1996. Nothing can be changed about this dramatic fact by blaming the Europeans, ("the strongest buying market doesn't grant us sufficient market access and is pushing us out of third markets using export subsidies"), and an aggressive strategy at the onset of the MILLENNIUM Round.[12] American policy has systematically reduced the agro-economic instruments to tariffs and the elimination thereof in the

10 Since the negotiations will be in progress until after the American presidential elections, it would still be possible to achieve quite a bit in this regard.

11 This was also recently stated by the Danish regional and environmental researcher J. PRIMDAHL, also the President of the Danske Naturradet, at the Montanas/Portugal.

12 This should not hide the fact that the EU pressed the USA so hard with its export policy in the past that the USA became aggressive.

WTO negotiations. Quantitative regulation of supply was demonized.[13] At the same time they completely eliminated quantitative regulation of their domestic production.[14] However, this ignores a basic finding of agricultural policy. Agricultural markets are characterized by superproportional price fluctuations. It is only possible to establish a market equilibrium through prices at the cost of avoidable social misery and an unnecessarily high loss of viable enterprises. Even the most liberal agricultural policy-makers, such as the late SICCO MANSHOLT, recognized this and therefore professed themselves advocates of quantitative measures. The neo-American school, however, thinks it need not take into account this experience, and has fundamentally placed itself in the hands of the market as sole regulator. Perhaps this bitter lesson can still open the eyes of American politicians for a pluralism of instruments[15] and managed trade. Commodity agreements with equal holdings for both producing and consuming countries were planned in the originally projected International Trade Organization. However they were hindered by an American veto.

This new orientation could lead to a rediscovery of the forgotten findings and initiatives of the period during and after World War II. At that time there pioneering research was done in renewable natural resources and primary energy sources, until the fossil fuel industry, which dominates American politics, was able to bring about the suspension of these activities. Then the concept would be able to take root that, in order to survive, American farmers do not have to destroy the existence of ecologically compatible farming around the globe. If the consumption of non-renewable fossil fuels were taxed according to the cost of replenishment or the cost of alternative technology, they could supply the market of organic raw materials and primary energy carriers within a broad-scoped strategy of eco-restructuring.[16] Applying an intelligent strategy, production complexes could be designed in order to be efficiently convertible to use non-edible plant components as "feed stock" if necessary. This would be an effective method of buffering the fluctuations in the foodstuff market and would take into account long-term changes in demand.

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13 In this connection, it should be remarked that the USA succeeded in passing a quantitative limitation of European vegetable oil and protein production in the Blair House Agreement, since this was in their own interest.

14 Refer to M. HOFREITHER, Inhalte und potentielle Konsequenzen des FAIR Acts 1996, in Berichte über Landwirtschaft 75 (1997), p. 23-24, Landwirtschaftsverlag, Münster-Hiltrup 1997; the maintenance of smaller programs, such as the "Environmental Conservation Acreage Reserve Program" hardly makes a difference.

15 One of the fundamental principles of economic policy is that desirable objectives, as a rule, can only be achieved with a converted application of a bundle of instruments. It contradicts this principle to only permit tariffs in trade policy. Other instruments and combinations of them would have a less trade distorting effect than having to use one single instrument to the utmost limit, because nothing else is available. An economic policy-maker told me in a personal conversation: "I am terrified by this policy of tariffication."

16 Also refer to H. WOHLMEYER, Strategies for the 21st Century: Sustainable Development within the Boundaries of a Small Planet – Deficits, Goals, Limits, Instruments and Chances. Statement made on the occasion of the preparatory conference of the EU Ministers' Council "Sustainability 21", Helsinki, 6 November 1999. Furthermore, refer to the comparison of scenarios in Figure II.2-6.

This applies similarly to EU policy. The EU should also utilize its surpluses as a renewable natural resource, instead of attempting to force the USA and the Cairns Group out of their long-established markets. However, it is grotesque that such a strategy is also being torpedoed by the American oil companies.[17]

Therefore American policy is not without alternatives. However, if it continues to stick to its stubbornly fundamental stance, then the future will not only be bleak for American farmers, but also for the negotiators in the framework of the WTO. It would be a worthwhile task for the Commission on 21st Century Production Agriculture, set up in the scope of the FAIR Act 1996, to take into consideration the above-mentioned possibilities.

VIII.4 Learning to understand the Plurality of Interests

Undoubtedly, the most powerful agro-political stakeholder in the coming WTO-negotiations is the United States. Its problems are a negative balance of current transactions and a broad-scoped break-away from economic sectors which formerly dominated the world, such as the optical industry and consumer electronics, as well as the threatened big industries, such as the iron and steel industry or the automobile and aviation industries. The economic strengths of the USA presently include the media and telecommunication industries, information technology and the arms industry, as well as agribusiness. The latter is considered to hold a unique selling position (USP) due to the bountiful availability of land, which would appear to be secured on a long-term basis. The USA therefore reacts aggressively in this sector as would a driven person.

This situation can only be alleviated by enabling a transformation towards sustainable development through the above-mentioned intellectual and economic rethinking. If the USA pursues a policy, which makes it no longer dependent on fossil fuel imports,[18] the balance of current transactions would be decidedly improved, and at the same time the surpluses on the agricultural market would be absorbed. It thus becomes imperative to look for partners in the

17 A French tax exemption for diester fuel (diesel from vegetable oils) was successfully opposed by the oil companies, because it supposedly distorted the competitive situation. This is all the more noteworthy, since oil companies enjoy significant tax privileges themselves, and because a tax exemption has a similar effect to that which a tax would have that was levied according to the cost of replenishment or the cost of alternative technology.

18 Studies under the CARTER administration have proven that the potential for mobilizing renewable energy resources at the current state of technology is twelve times that of the current fuel consumption, although this figure is approximately three times higher in the United States than it is in Europe. There is sufficient potential available in order to cover both the energy sector as well as the field of organic raw materials.

Countries adopting this strategy before it is too late will be able to act on the leading edge, since the conversion from plundering fossil fuels, which destabilize the ecosystem of our Earth, to using cycle-oriented natural chemistry and solar energy (directly or indirectly through biomass and water), is only a matter of time.

USA in all sectors suffering under the current politics, as well as to limit the influence of the fossil fuel industry.

Knowing the United States, it is also necessary to go into a dichotomy in their argumentation and strategy. The USA follows a tradition of deficiency payments in the major commodities.[19] This means that domestic **and** foreign prices are brought to approximately the same level. The calculation of the present lump-sum payments in the scope of the FAIR Act 1996 goes back to the deficiency payments.

This strategy still has the following advantages:

- it requires no formal export subsidies
- food can also be made available cheaply to the poor classes of society
- the foodstuff industry has access to cheap resources without the costly and time-consuming formalities of inward processing (suspension or draw back).

In contrast, the EU was able to pursue a different strategy with its fairer income distribution and its better social network. Domestic prices were maintained at a higher level (community preference), and only the exports were subsidized to achieve world market price levels. Considerable differential rents and absurd production incentives for advantageous regions and large enterprises have ensued, resulting in surplus production and dumping[20] on the world markets, since differentiation was neither made domestically between favorable production conditions nor according to the varying sizes of enterprises. Due to this failed policy, the baby is being thrown out with the bathwater, and the entire EU agricultural policy is discredited. At the universities, in particular, almost only critics can be found, whose arguments usually end with demands to adjust to the American model.

However, it has to be stated that the best conceived agricultural policy must aim towards internalizing the costs incurred into the prices in the interest of the general public. It should be taken for granted that such a policy has to be accompanied by concrete regulations and monitoring of performance.

At the same time, public demand in the interest of general welfare should set in wherever the costs of the desired services cannot be internalized in the product prices, whereby it lies in the nature of the matter that these will usually be services which are connected with production.

19 The difference is paid between the market price and a "fairly" negotiated target price.

The slavish adherence to the strategies of the United States and the Cairns Group must therefore be questioned in principle – independently from the failure of current American agricultural policy (refer to Section V.4.6).

Simultaneously, an awareness campaign is required in the United States in order to ensure that the traditional "dominating" minorities cannot further propagate their own interests in the name of public welfare.[21]

This takes us to a further pattern in American politics. Just as Americans (must) try to morally justify their domestic politics in the name of the tradition of the Pilgrim Fathers, the same is being attempted in terms of foreign politics. The interests of the Yankee Traders are veiled in the guise of crusaders for peace, freedom, justice and prosperity; and since this is a crusade, it is taken for granted that they have to be armed and must make use of their arms when necessary.[22]

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20 Whoever sells more cheaply abroad than on the domestic market, fulfills all the characteristics of classic dumping, if no serious factors rule this out (such as cost-increasing impositions and different tariffs).

21 Refer to the American bishops' pastoral of the year 1987, loc.cit.

22 In this connection, the author lists a few typical cases from his own experience:

a) The American Counselor for Agricultural Affairs at the American Embassy in Vienna, ALLAN MUSTARD, declared on the occasion of the full assembly of the Union of Agricultural Enterprises in Austria on 12th February 1997 in a speech *entitled "The Future Role of European Agriculture in the Field of Tension created by Global Changes – The American Viewpoint"* that European agriculture has three characteristics, it is expensive, expensive and once again expensive at the cost of the European consumers, who have to be freed from this burden. This constitutes a crusade for the European consumers, who have recently resisted authorizing the import of cheap genetically modified foodstuffs, although A. MUSTARD claimed that glyphosate is organically decomposable, soy beans grow on practically weed-free fields (he omitted mentioning the effects on the soil life), and the cost reduction would benefit the consumers.

b) The American ambassador in Vienna, KATHRYN W. HALL declared at the beginning of November 1999 (refer to "Die Presse" 11-11-1999, p. 28) that "over 80% of world-wide agricultural export subsidies are made by the EU." In the upcoming WTO round, the EU's export subsidies and the product-related EU supports will be the core issue of American criticism. "The EU's agricultural subsidies distort the global market dramatically." In this context, the above-mentioned difference in support systems is simply concealed, and the press is given the impression that Europeans are the original sinners on the world market. In addition to withholding this information, the insider knows of other things which go unmentioned: The Food Stamp Program (for poor people) already constitutes the major task fulfilled by the USDA (United States Department of Agriculture). It allows a massive discrimination of foreign goods. The *foodstuff, transportation and storage regulations* of the individual states also constitute massive discrimination against foreign wares, in part. These administrative protectionist measures on a state-level have not yet been compiled or sufficiently analysed. To this must be added the well-known *Export Credit Program*. Then the Ambassador also made reference to the OECD's support calculations, whose American design and doubtful approach have already been dealt with in Section III-3. At the same time, it was dogmatically stated that consumer and environmental protection do not officially count among the core negotiation issues at the WTO round. However, this all supposedly would serve the general increase of prosperity.

c) According to a press briefing made by the American Secretary of Agriculture, DAN GLICKMAN, dated 16-11-1999 at the WTO in Geneva, it is evident that he simply disqualifies the *topic of multifunctionality* as a new form of protectionism. "Each country is trying to maintain an agricultural structure that enables as many farmers as possible to stay in business. That is a fact. This isn't called multifunctionality everywhere, but that's what it basically amounts to." In accordance with this, only the United States is in possession of the correct theory and a clear conscience, which was the tone of presentation chosen by the American ambassador at the WTO in Geneva.

It is therefore in the interest of good and well-balanced international cooperation to demystify the vested interests and rid them of their ideological disguise, in as far as they do not constitute generally recognized basic values, such as human rights.

The pure reduction of social life to business (the purpose of business is business), can neither be justified in terms of social politics nor in terms of welfare economics (refer to the citation in the previous footnote regarding the exemption of consumer and environmental protection). In this cause, human rights simply must be demanded in addition to protection of nature and the environment.[23] If this is done carefully and consequentially, American citizens will support such politics as well. However, the first step is to throw doubt upon the dogmatic legitimacy of the American policy.

It should also be understood that the present General Director of the WTO, MIKE MOORE from New Zealand, adheres to the first of the previously elaborated world views, and regards himself as the protector of competition in the present non-sustainable oligarchic framework. It will also be necessary to convince him that sustainable development requires changes in the trade political regulations.

Finally, and not least of all, the interests of the "developing countries"[24] need to be understood, whereby it must be stated from time to time that exploitative elites do not speak in favor of public welfare anymore there, than it does in the "West." The latter fact also deems it necessary that other groups (NGOs), organizations and initiatives (UNDP, UNCTAD, UNEP, UNESCO, FAO, and WHO) are involved in the talks in order to ensure that the results are fair and long-lived. More than anything, developing countries need the freedom of autonomous development. The development of all advanced civilizations clearly illustrates that the basis of any successful development and political independence rests on a well-organized and diversified agricultural production. This basis developed further into the ancillary agricultural trades and the industries connected with agriculture (refer to the successful history of Europe).[25] It should be made clear that this concept is also sustainable, because it inherently leads - for ecological and human biological reasons[26] - to a coupling of agriculture and forestry with the remaining economic sectors (solar energy and cycle-oriented use of resources as well as manageable, socially satisfactory community structures). Such an alliance of trust with the "developing countries" is

23 Quote from 1-1-2000 by Prof. F. VOGTMANN, President of the German Federal Office for the Protection of Nature.

24 The author considers the term "developing countries" to be a remainder of colonial arrogance. MAHATMA GANDHI'S concept of subsistential modesty and cultural wealth would lead to permanent underdevelopment according to the common view.

25 Above all, refer to D. SENGHAAS, loc. cit. and Section V.4.5.

26 H. ZEIER, loc. cit.

only possible, if the "developed countries" are a good example themselves and give sustainable development a convincing chance in their own territory, while also giving the people concerned a chance to cast their vote.

Since the (alleged) interests of the "developing countries" are now often being used as an excuse, it would serve to improve the general confidence in the majority of the WTO (GATT) members, to call several points by name:

- The leading global agricultural commodities are grains and beef. The "developing countries" are not stakeholders regarding either of the above. Instead, there is a struggle for power among the industrialized countries: the Cairns Group, the EU and the USA. The policy of increasing agricultural production with high external input (especially fossil fuel), while simultaneously excluding agriculture and forestry from the fuel and natural resource markets, has rendered the current value of grains less than that of hay. This in turn encourages poultry and pig farming, which again has a negative effect on the beef market and promotes consumer behavior that cannot be upheld over the long term, since vegetarian food will have to satisfy direct human consumption demands in the long run. The "developing countries" should therefore refuse to be hooked into such a non-sustainable food chain. On the contrary, all "developing countries," and particularly those dependent on food imports, should aim at developing their own basic production to satisfy domestic needs in terms of the main nutrients (carbohydrates, proteins and fats), while simultaneously exporting specialities or indigenous fruits at good prices.

- The export-oriented "developing countries," which have partially specialized themselves in a few particular export products, should give higher priority to their own domestic food supply. This shouldn't be too difficult, since exports of "colonial goods"[27] (i.e., exotic fruits) can be replaced by those of basic foodstuffs. The advantages of diversified agricultural production, a more favorable rural development, the establishment of a domestic foodstuff industry and distribution chain, as well as security of food supply in case of a crisis, definitely prevail over highly fluctuating exports.

However, an essential prerequisite for such an agricultural policy is, that these countries are freed of their debts, so that they are no longer forced on the short term to export at any price, while at the same time not having the means to develop their own domestic foodstuff industry.

27 The author recalls this expression being in common use in his youth. This old term has now been replaced by the term "exotic fruits."

VIII.5 Institutional Benchmarking – Conditio sine qua non

The widening gap in society is well documented.[28] Poverty, unemployment and social exclusion are globally on the increase. Starvation and malnutrition have not been eliminated either. According to United Nations estimates, around 830 million people were still suffering from starvation or malnutrition in 1998.

Yet a new solidarity is being heralded all the more loudly, which can supposedly benefit from the democratic effects of global trade and the Internet.

In reality, the following social developments are apparent:

- Market power is being concentrated in the hands of a select few (plutocratic oligarchy).
- The infrastructures for the Internet and other telecommunication systems are not available to the poor, in particular.
- The demanded hyperflexibility and hypermobility are destroying established communities of solidarity and hindering the establishment of new ones.[29]
- The permanently demanded global mobility of capital and labor force creates isolation and anonymity in human relationships.

It is clear that solidarity no longer can thrive on such a basis. This leads to the conclusion that spontaneous solidarity among the different peoples will decrease in the future.

It is therefore all the more imperative to *institutionalize solidarity*, such as in the classic welfare-state strategy. In keeping with the obligatory solidarity at the national level,[30] the same concept must also be established and implemented stepwise on an international scope.

The establishment of a global telecommunications infrastructure could be financed with an **information transfer fee** as a means of counteracting one of the grossest modern inequalities. The same is valid *mutatis mutandis* for a **water consumption tax** which should also be applied internationally.

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28 Particularly by the Human Development Reports of the UNITED NATIONS DEVELOPMENT PROGRAM (UNDP).

29 Refer to R. SENNET, loc.cit.; in the scope of a symposium at the Austrian Broadcasting Corporation (Radio) on 9 – 10 November 1999, SENNET even spoke of "signs of a cultural shattering of solidarity in Europe and the United States."

30 E.g. obligatory health, accident and pension insurance; financial compensation in favor of disadvantaged regions; availability of infrastructures at public cost; future basic income.

Taxation of destabilizing, non-supply-related **financial transfers** could go to contribute towards consolidating the national budget as well as to provide strategic development aid ("Tobin tax").

Concerted **taxation of fossil fuel consumption and other nonrenewable resources** at the cost of recycling or alternative technology would put an end to the economizing carousel in budget drafting that goes to the expense of public services.

Finally, the **countervailing duties required to hinder undercutting of ecological and social standards**, levied to avoid the undermining effect of system competition, could serve to set an incentive for improvement, if they were made an obligatory contribution to an international development and equalization fund.

All this could lead to **solidary international fiscal adjustment**, which would not only ensure fairness of distribution, but would also – if it follows the principle of subsidiarity – result in a policy that brings work to the people instead of forcing them to chase after it and, in turn, would make communities worth living in.[31]

Global economic policy will have to be evaluated by institutional benchmarking, if it is to do justice in providing prosperity and well-being for mankind.[32] Trade policy must promote this using encouragement as an incentive instead of repression.

In the above it has only been possible to list a few control units required for a welfare enhancing economic control system. Regarding their concrete formulation and consolidation, extensive scholarly and political work is still required. If the present round of WTO negotiations intends to make a claim to public-welfare-oriented geopolitical policy, then the above points must be dealt with in a **negotiation committee for basic issues** (also refer to Section V.4.3).

The above market-conform means of reorienting resource consumption towards sustainability as well as tapping and securing new sustainable sources of public revenue through trade policy not only make it possible to lessen the burden of unemployed *work force*, but also to call for the desired public *services provided by farmers* to be made available at cost coverage.

Above all, the already grotesque discussion will finally come to a halt as to whether we can still afford a *welfare state and federalism*, although we are now wealthier than our predecessors were.

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31 So much is said about the quality of living, yet the basic requirements for leading a happy life are disregarded. These basic requirements include the need for a secure and transparent social structure, which forms a home together with an ecologically protective environment.

32 Refer to WOUTER VAN DIEREN (ed.): "Taking Nature into Account", Springer, New York, 1995, p. 165ff. "Indicators for Measuring Prosperity."

If, however, according to the arguments of the "realist" mainstream,[33] the welfare state is dismantled, federalism is buried and the agricultural landscape becomes a wasteland simply because we honor a system where income is accumulated in the hands of a few and is no longer accessible for public benefit, this deal being secured by international agreements, then it will predictably come to sudden corrective actions. Such social disruptions threaten to jeopardize the very same legal foundation on which those favored by the present system now rely upon.[34]

Sustainable social organization will thus have to be evaluated according to the institutionalization of social rules which lead to an ecologically compatible and socially symmetrical evolution.

VIII.6 The need for social legitimacy

Since there is no empirical evidence for the permanently alleged direct correlation of an increase in the volume world trade and the welfare of a maximum of people, the present world trade order will be questioned whether or not it serves only minority, which is exploiting human and natural resources with increasing effectiveness but also with increasing social hardships and ecological risks.

It can be hoped that a rethinking of the so far fundamental positions will take place when great old people like Alan Greenspan, the present chairman of the US Federal Reserve Board is reflecting on the alarming consequences of <brutal competition>.

As in the evolution of national, socially and ecologically harnessed market systems, the present world trade order will also need a reform in the direction in more social and ecological responsibility. It will have to question supply systems and production chains with respect to their social and ecological compatibility. It will have to provide financial adjustments, i. e. redistribution mechanisms, for the disadvantaged part of world society and it will have to adopt a longer term perspective as to the provisions of the most essential goods to humanity, i. e. food and water. There are serious doubts that the present mainstream supply systems and the related technology in the field of agriculture and forestry are appropriate for meeting future needs of humanity. The horticulture model with more labour intensity, more diversity, better local

33 A classic example of this argumentation is constituted by the guest commentary of the internationally recognized Viennese economist E.W. STREISSLER in "Die Presse" dated 7-1-1997, p. 2, entitled "Eine neue Sozialpolitik nach dem Euro." In it STREISSLER conclusively demonstrates that there will be a "poor working class," whose wages will sink "under the minimum for bare existence," and a "minimal, barely life-sustaining basic security for the old-aged," as well as that we will have to "limit the public expenses for the terminally ill" in the final months of their lives. According to this mind-set, the present system of "downwards competition" is taken for granted. Following the Anglo-American pattern, economists only analyze the chains of effect. The financial world's view has bidden farewell to national economic policy.

34 Whoever delves into the history of the Russian and Chinese revolutions and of the interwar period (1930ies) can learn relevant lessons from it.

adaptability and especially a higher productivity per surface unit will certainly provide the better long term solution (see also paragraph V.5.8), but it is in conflict with the dominating production systems.

VIII.7 The Courage to call for Change

In Section II.2, a parable was elaborated (Utopia by THOMAS MORE), in order to illuminate the problem of system competition. Concerning the courage to unwaveringly contradict the current mainstream necessary for any change to take place, a true incident will be described that also has the air of a parable. The late Austro-American "Philosopher of the Human Scale," LEOPOLD KOHR, held his last lecture in Austria at the University of Technology in Vienna around ten years ago. The author was requested to assist the old man, and if required, to support his statements with technical remarks regarding appropriate technology. During KOHR's presentation, a group of students interrupted his lecture and stated accusingly "Professor KOHR, what you are saying here contradicts everything that we have heard from other professors in our lectures, seminars and practical labs, as well as reality as we see it."

KOHR, who was partially blind, directed his gaze upon the group and simply asked: "Do you believe in the story of Noah and the Ark?" A long discussion ensued and culminated with the decision to let the story stand as a "working hypothesis."[35] KOHR was satisfied with that. The students were surprised at his willingness to compromise. Yet their surprise grew, when Kohr drew his conclusion: "Ladies and gentlemen! My dear young friends! If our working hypothesis is correct, then we are all descended from a 'nut,' who opposed the mainstream and did things that were highly uneconomical in the eyes of society, since constructing the Ark didn't have any current market value (...)." After a moment of shocked silence, KOHR continued with his lecture on the future of a decentralized and intelligently networked world of a human scale.

Shouldn't we be building an Ark again today?

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35 If the author had known about the research of the paleoanthropological team at the University of San Diego (California), he would have been able to give KOHR support for his "working hypothesis." This research has confirmed that something so terrible must have happened to *homo sapiens* around 500,000 years ago, that this species was reduced to a population of maximally 1,000 individuals. This evaluation was made possible by comparing the DNA of mitochondria (mtDNA), which are not sexually inherited, but are passed on from the mother to her sons and daughters. This DNA can be considered a "biological clock", since its changes through mutation are primarily a function of time.

If the variance of mtDNA is compared in chimpanzees, (their genome is 98.4 % identical with the human), the results are highly surprising. The variance in a social group of 55 chimpanzees is higher than that in the entire human population despite differences of skin color and physiognomy. The variance in gorillas is approximately the same as that in chimpanzees. (For further details, refer to "New Scientist" Vol. 163, No. 2199, 1999.) The collective memory of an existentially threatening catastrophe thus would seem to be founded. The building of Noah's Ark would fit into such a dramatic picture.

The Internet could provide the opportunity to make this topical and bring about a change of consciousness.

Small countries like Austria do not have enough "spare change" to balance the interests in international negotiations, but they can "export" good ideas. They should do this with self-confidence. Austria can refer to its Marginal Utility School and the first progressive income tax system based upon the former, which were able to revolutionize the world of economics. The same is valid for its Codex alimentarius in the nutritional sector, which also became a world model.

Why shouldn't small countries put up their detailed and conclusive economic position for discussion on the Internet? Couldn't a wave of sympathy and political support from the grass roots contribute to changing on the long term the currently repressive political landscape?

Convincing ideas are stronger in the long run than apparently established power structures.