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Environmental Issues and Food Security Aspects in the Ongoing WTO-Negotiations on Agriculture

by

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Table of Contents

Table of Contents	1
Abbreviations	5
Summary	7
0. Introduction	15
1. Environmental Problems in Agriculture	17
1.1 The Situation in OECD Countries.....	17
1.2 The Situation in Developing Countries	18
1.3 Conclusion.....	19
2. Environment, Food Security and the Importance of Agricultural Trade	21
2.1 The Debate on Trade and Environment and its Significance for the Agri-cultural Sector	21
2.1.1 Ecological Effects of International Trade and Principles of Environmental Policy	21
2.1.2 Environmental Measures in the Agricultural Sector and their Role within the International Trade System	23
2.1.3 International Agreements to Protect Agricultural Resources	25
2.2 Agricultural Trade and Food Security.....	28
2.2.1 The Role of Food Imports	28
2.2.2 Dumping, Export Subsidies and Displacement of Small Farmers from Local Markets	30
2.2.3 The Significance of Domestic Support Measures in Developing Countries	31
3. Relevant Provisions in WTO Agreements	32
3.1 The WTO Agreement on Agriculture	32
3.1.1 Market Access.....	32
3.1.1.1 General Provisions.....	32
3.1.1.2 Exceptions and Preferential Treatment for Developing Countries and LDCs	33
3.1.1.3 Flexibility in Applying the Agreement	33
3.1.2 Export Subsidies	33
3.1.2.1 General Provisions.....	33
3.1.2.2 Support for Net-Food-Importing Developing Countries (NFIDCs) and Least Developed Countries (LDCs)	34
3.1.3 Domestic Support.....	35
3.1.3.1 General Provisions.....	35
3.1.3.2 Environmental Provisions – Agri-environmental Programmes	36
3.1.3.3 Special and Differential Treatment for Developing Countries and Provisions Concerning Food Security.....	36
3.1.4 Evaluation	37

3.2	The TBT Agreement	38
3.2.1	The Core Principles.....	38
3.2.2	The Scope – Especially with Respect to Environmental Labels.....	39
3.3	The SPS Agreement	39
3.3.1	Fundamental Principles and Scope	39
3.3.2	The Precautionary Principle and the SPS Agreement	40
3.4	Art. XX GATT	42
3.5	Conclusion – Agriculture, Environment and Food Security in the WTO Context	42
4.	The Agricultural Policy of the EU and the Planned Agricultural Turnaround in Germany	44
4.1	Agenda 2000 and the Agricultural Turnaround	44
4.2	Potential Conflicts with WTO Provisions	46
5.	The Role of the Environment and Food Security in the Ongoing Negotiations on Agriculture – Proposals by Member Countries	49
5.1	Developing Countries.....	49
5.2	The Cairns Group and ASEAN	51
5.3	USA	52
5.4	The EU, Switzerland and Norway	52
5.5	Japan and Korea	53
5.6	Non-Governmental Organizations	54
5.7	Conclusion.....	56
6.	Recommendations	57
6.1	Food Security and Development	57
6.1.1	Measures to Offset the Higher Level of Subsidies in Industrialized Countries	58
6.1.2	Increasing the Flexibility of Agricultural Policy in Developing Countries – the Development Box.....	59
6.1.3	Improvement of Market Access	59
6.1.4	Support for LDCs and NFIDCs	60
6.2	Protection of the Environment and Health.....	61
6.2.1	More Scope for Environmental Programmes in the Agreement on Agriculture	61
6.2.2	Consideration of the Precautionary Principle under the SPS Agreement	62
6.2.3	No Restriction on the Labelling of Food Under the TBT Agreement	62
6.3	Animal Welfare	62
6.4	Trade-Policy Measures	63
6.5	The Negotiations on Agriculture and the “Development Round”	63
7.	References	65

Annexes:

Annex 1: Overview of the negotiating proposals on the environment and food security	69
Annex 2: Domestic Support, Green Box and Agricultural Environmental Measures	77

Tables:

Table 1: International Environmental Agreements Affecting Agriculture	27
Table 2: Environmental Policy and WTO Agreements	43
Table 3: Food Security and WTO Agreements	43

Abbreviations

AMS	Aggregate Measurement of Support
AoA	Agreement on Agriculture
ASEAN	Association of Southeast Asian Nations
BMELF	German Federal Ministry of Nutrition, Agriculture and Forestry (since 2001: BMVEL)
BMU	German Federal Ministry of Environment, Nature Conservation and Nuclear Safety
BMVEL	German Federal Ministry of Consumer Protection, Nutrition and Agriculture
BSE	Bovine Spongiform Encephalopathy – “Mad Cow Disease”
Caricom	Caribbean Community
CUTS	Consumer Unity and Trust Society
DCs	Developing Countries
EEAC	European Environmental Advisory Council
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot and Mouth Disease
GATT	General Agreement on Tariffs and Trade
GMOs	Genetically modified organisms
IISD	International Institute for Sustainable Development
IMF	International Monetary Fund
LDC	Least Developed Countries
MFN	Most Favoured Nation
NFIDC	Net-Food-Importing Developing Countries
NTC	Non-Trade-Concerns
OECD	Organization for Economic Co-operation and Development
PPM	Processes and Production Methods
PPP	Polluter Pays Principle
PSE	Producer Subsidy Equivalent – yardstick used in determining the level of state support for agriculture
RSPB	Royal Society for the Protection of Birds (UK)
SDT	Special and Differential Treatment – applies to DCs in the WTO
SIDS	Small Island Developing States

SPS	Sanitary and Phytosanitary (Measures)
STE	State Trading Enterprises
TBT	Technical Barriers to Trade
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
WFP	World Food Program
WTO	World Trade Organization

Summary

At the beginning of 2000, the World Trade Organization (WTO) commenced negotiations on the continuation of the liberalization process in international agricultural trade. This step was agreed upon as early as at the creation of the World Trade Organization in 1995; however, it had been largely ignored by the broader public after the spectacular failure of the WTO ministerial conference in Seattle in December of 1999. Nevertheless, a large number of WTO members, among them a majority of Developing Countries, have tabled detailed and far-reaching demands.

The focus of these demands was on further opening of agricultural markets to Developing Country exports, reducing subsidies in Industrialized Countries and for increased consideration of concerns to the majority of Developing Country members regarding food security. Environmental concerns do not play a central role in the negotiations.

This study attempts to identify those sections of the WTO agreements, in particular the Agreement on Agriculture (AoA), the Agreement on Technical Barriers to Trade (TBT) and the Agreement on Sanitary and Phytosanitary Measures (SPS), that will have to be amended in order to avoid contradictions to the goals of food security as well as protection of the environment and health.

1. Environmental Problems in Agriculture

Agriculture has far reaching effects on the environment, both in the Industrialized Countries of the OECD (Organization for Economic Cooperation and Development) and Developing Countries.

Agriculture in the **Industrialized Countries** has become heavily specialized and industrialized since the 1950s. Contamination of soils and water with pesticides and fertilizers grew rapidly. Diversity of plants and animals decreased due to the specialization on a few high yielding varieties and breeds. At the same time the habitats of many wild species were diminished. The specialization of farms and international trade in feedstuffs has interrupted nutrient cycles on farms and at regional levels. Consequently crop producing farms rely on the intensive use of mineral fertilizers, while manure resulting from intensive animal production causes environmental problems in their respective areas.

In **Developing Countries**, the picture is more differentiated. In some countries and regions intensification leads to problems similar to those in Industrialized Countries. This is especially true with irrigated agriculture, where over-utilization of freshwater reserves occurs in many regions. On the other hand, inappropriate farming methods result in insufficient nutrient supply, hence leading to the loss of soil fertility (soil-mining).

Certain forms of agriculture also result in **positive environmental effects**. Examples are the conservation of traditional cultural landscape and traditional plant

varieties and livestock breeds. In the international discussion this is referred to as the **multifunctionality** of agriculture, which also covers positive effects on food security and rural development. Due to the different environmental problems, internationally uniform policy recommendations are not possible.

2. Environment, Food Security and the Importance of Agricultural Trade

International trade affects the environment in different ways. The necessary **transportation** of goods leads to negative effects from emissions and the utilization of area for infrastructure. Besides that, four different effects are distinguished in economic literature, all of which can have positive as well as negative consequences for the environment: **Product effects** occur when the traded products themselves have an effect on the environment. In agriculture, the spread of plant and animal diseases through imported goods can be quoted as a negative example. **Technology effects** occur when imports facilitate the utilization of new technologies. In agriculture, the change in farming practices with regard to the use of pesticides and fertilizer which is facilitated by the import of these inputs and seeds adapted to them is a case in point. Environmental effects can be positive as well as negative. **Scale effects** occur when international trade affects the level of economic activity in a certain sector. An example in the agricultural sector is the expansion of production beyond national demand in exporting countries and lower production in importing countries. The environmental effects depend on how far the resulting intensification and extensification processes are adapted to ecological conditions. **Structural effects** occur when the composition of goods produced in a country is altered through international trade. An example in agriculture is higher production of export crops such as cotton and coffee instead of staple foods for domestic consumption. Environmental effects depend on whether the exported products are more or less suitable to the ecological conditions than those produced for the domestic market.

The ecological effects of liberalizing agricultural trade depend heavily on the **environmental framework conditions** in the importing and exporting countries. In its final declaration, the UN Conference on Environment and Development (UNCED), held in 1992 in Rio de Janeiro, defined principles for environmental and development policy. The most prominent ones in the debate on trade and the environment are the polluter pays principle and the precautionary principle among others. To counter ecologically problematic effects of international trade in agriculture, **three environmental policy instruments** are frequently applied: **Product standards** specify certain characteristics a product has to meet in order to be marketed in a country. They relate to domestic as well as imported products. The WTO Agreements recognize the application of those standards. However, certain conditions regarding transparency in application and scientific justification have to be met. The latter can lead to conflicts with the precautionary principle, which calls for effective measures to be taken to avoid serious environmental damages even when scientific proof of the causes of the damages has not yet been established. Standards for processes and production methods (**PPM standards**) define requirements for processes by which products are

made, even if these have no direct effects on the properties of the product itself. The aim is to avoid the use of environmentally harmful production processes. In the WTO it is generally not allowed to apply those standards to imported products. **Subsidies and border protection** aim to prevent the loss of agricultural production in marginal areas and of possible positive aspects of multifunctionality in these areas. The WTO allows for targeted subsidies for agri-environmental programmes and rural development, if they meet certain requirements.

Several **international environmental agreements** were concluded in the follow-up of UNCED, which are also of relevance to agriculture. However, as a rule they do not define precise standards and conditions for agricultural and environmental policy. Concerning soil protection, the **Convention to Combat Desertification** and **Agenda 21** only call for the development of national action plans to eliminate the reasons for inappropriate land use. Agenda 21 is not binding by international law. Hence the measures defines to protect freshwater resources through the limited use of chemical inputs in agriculture and the development of water saving farming practices are recommendations only. In the **Kyoto Protocol for Climate Protection**, the provision most relevant to agriculture is the recognition of forests and grassland as carbon sinks in that it creates incentives to increase these areas. The **“Biosafety Protocol” to the Convention on Biological Diversity**, has a direct relation to agricultural trade. It recognizes explicitly the right of countries to invoke the precautionary principle to justify the restriction of imports of genetically modified organisms.

International trade affects food security at all levels. According to the definition of the UN Food and Agriculture Organization (FAO) food security has three dimensions: **Availability, Stability and Access**. Food has to be available in sufficient quantities to meet the need. Supply has to be stable to ensure that seasonal fluctuations do not result in a reduction below need. Finally all parts of populations and individuals need access to food.

Especially in countries where yields vary widely, international trade can contribute to the **stability of supply**, but world market prices are subject to large variations. Many experts expect a stabilization of prices in the long term as result of the liberalization measures agreed in the WTO. Imports can only be financed on a sustainable basis, if they are matched with sufficient **export capacities**. However, the traditional agricultural exports of Developing Countries face, and have faced for decades, a trend towards declining prices, while non-traditional exports such as fresh fruit and vegetables face high protectionist barriers in Industrialized Countries' markets. In addition it is not clear how far Developing Countries, especially the poorer ones, will be able to match the high and further increasing **standards regarding food quality and health** in Industrialized Countries and gain access to their markets. World market prices for many agricultural products, especially basic foodstuffs such as grains, are depressed as a result of **subsidized exports** mainly from the EU and the USA. Many farmers in Developing Countries cannot cover the cost if they have to market their products at these low prices and as a result are driven out of their local markets. Hence their food security is directly threatened. In addition, the opportunity to import grains at low prices creates an incentive for governments in many Developing Countries to neglect domestic production of basic foodstuffs.

It is **necessary** to support agriculture and especially small farmers in Developing Countries through a variety of measures. Improved extension and infrastructure are as important as better access to inputs and the stabilization of output prices.

3. Relevant Provisions in WTO Agreements

The **Agreement on Agriculture**, which came into force in 1995, sets rules for three main areas: **Market access** can only be regulated with fixed tariffs. **Export subsidies** had to be reduced but are permitted at the reduced level. Different categories of **domestic support** measures were developed which are commonly referred to as “boxes”. Measures which fall into the Amber Box are qualified as trade distorting and had to be reduced by 20 %. The measures consist mainly of payments which are directly linked to production and guaranteed prices above the world market level. Blue Box (payments in the framework of production limiting programmes) and Green Box measures however can be expanded without limitations. The Green Box consists of measures which are deemed to have no or at most minimally trade distorting effects. Payments in the framework of agri-environmental programmes also belong to this category, but they are only allowed to compensate for additional costs which arise from the participation in such a programme.

In all areas there are provisions on **special and differential treatment for Developing Countries**. Besides longer implementation periods and lower reduction commitments for tariffs and subsidies, Developing Countries have the right to support low income resource poor farmers through the provision of inputs at subsidized prices. Overall, however, the agreement is tailored to fit the interests of industrialized countries, allowing the continuing usage of their agricultural policy measures.

The **Agreement on Technical Barriers to Trade** (TBT) requires that technical regulations and standards shall not be unnecessarily restrictive to trade. At the same time it is recognized that such regulations are legitimate to pursue objectives like protection of the environment. The Agreement is limited to **product standards**. Standards for processes and production methods and corresponding labelling are not covered by the TBT agreement, according to the prevailing interpretation.

The **Agreement on Sanitary and Phytosanitary Measures** (SPS) specifies the TBT Agreement with regard to health and plant protection. It defines stricter requirements for the necessity of standards and **calls for the application of internationally agreed standards**. If national standards are to be set on a higher level, scientific proof has to be established that this results in an increased level of protection. This constitutes a contradiction to the precautionary principle. This became most obvious in the WTO's dispute settlement ruling against the import ban on hormone treated beef in the EU.

Art XX of the GATT (General Agreement on Tariffs and Trade) also plays a central role. Trade restrictions which are based on PPM standards are generally in contradiction to GATT rules. Art. XX allows for deviations from these rules under narrowly defined conditions, inter alia if it contributes to the conservation of exhaustible natural resources.

4. The Agricultural Policy of the EU and the Planned Agricultural Turnaround in Germany

The reform of the agricultural policy of the EU, agreed upon in the framework of Agenda 2000, contains **two sets of measures**. Basic standards which aim at the reduction of environmental damages from agriculture are made mandatory. Agri-environmental programmes shall compensate and encourage additional services with positive environmental effects.

The “**agricultural turnaround**”, announced by the German government, aims at strengthening the protection of consumers, the environment and animal welfare. Agricultural policy shall be redesigned to concentrate support to those farms which apply production methods that are environmentally sound and conserve resources. To achieve this, subsidies linked to production shall be further reduced and the money freed shall be used to finance direct payments linked to environmental criteria. In addition support for organic agriculture shall be increased and a comprehensive labelling scheme for food and its ingredients shall be introduced.

Many of the measures proposed in the agricultural turnaround are not in conflict with the **provisions of the WTO**. This is mainly due to the fact that the Blue Box allows for great flexibility in the conditioning of direct payments. However, many countries are calling for the elimination of the Blue Box in the on-going negotiations. The stricter criteria of the Green Box are in conflict with the measures proposed in the agricultural turnaround more frequently. Even the already existing agri-environmental programmes are not in full compliance with the criteria as they do not rule out payments beyond the compensation of additional costs. If incentives were to be strengthened, the problem would increase further. Another conflict could arise with the labelling of products according to production methods compatible with environmental and animal welfare requirements. This is especially the case for quality seals which concentrate on specific standards such as the abandonment of cage rearing of hens. Equally problematic is the compensation of costs that arise from the application of higher animal welfare standards.

5. The Role of the Environment and Food Security in the Ongoing Negotiations on Agriculture – Proposals by Member Countries

Developing Countries are very active in the current negotiations. They submitted many proposals and participate actively in the discussions. Important issues in many proposals are **food security** and **support for small farmers**. In order to achieve these aims many countries are calling for special provisions in the framework of a “development box” or a “food security box”. In contrast to the existing “boxes”, which refer to domestic support only, the explicit aim of this is to also achieve increased flexibility in border protection for products with importance to food security. Other demands concern improved **market access** for products from Developing Countries and the effective implementation of the decision to support Net-Food-Importing Devel-

oping Countries made in 1994. The proposals made by **Japan and Korea** regarding food security point to a similar direction. Japan even wants to increase flexibility in border protection for all countries. The **Cairns Group**, an alliance of competitive agricultural exporters, reacts only on specific aspects of the demands. It emphasizes the negative effects of subsidized exports and calls for a special safeguard mechanism against them. So far the **EU** has addressed the demands of Developing Countries only rhetorically and made no specific proposals concerning food security. The proposal made by the **USA** could even result in reduced flexibility for Developing Countries. A broad spectrum of **Non Governmental Organizations** supports demands for far reaching rights to protect and support small farmers and food security as well as for comprehensive measures to counter subsidized exports. In addition there are detailed proposals to establish an international fund to promote agriculture in Net-Food-Importing Developing Countries.

There are considerably fewer proposals concerning **the environment**. Korea wants direct payments to be allowed in unrestricted amounts if they are directed towards farmers who deliver public goods such as environmental protection and the conservation of cultural heritage. Norway and Jordan argue that they need border protection to maintain their agriculture and its multifunctional features. The EU and Switzerland deem the current provisions of the Green Box appropriate to pursue environmental objectives. The EU however is calling for payments to compensate for costs of higher animal welfare standards to be allowed as well. The US wants to tighten the criteria for the Green Box in order to minimize trade distorting effects. Many Developing Countries and individual members of the Cairns Group want to introduce an overall limit for domestic support, which would also affect payments in the Green Box and the Blue Box. Many countries are call for the elimination of the Blue Box. Non-Governmental Organizations especially from the environmental sector are demanding a combination of the Green and Blue Boxes, and allowing only those measures that effectively serve environmental protection purposes.

6. Recommendations

The Agreement on Agriculture in the WTO already provides some starting points for the integration of food security and environmental protection. However, the **rules have to be improved urgently**. In particular, the criterion of being “at most minimally trade distorting” should no longer be decisive for the admissibility of support measures. Instead, the central question should be whether measures are effective to promote non trade concerns.

The rules of the Agreement on Agriculture have to **respect the fundamental differences between the agricultural sectors in Industrialized and Developing Countries**. Export subsidies have to be eliminated completely within a few years. In addition easier mechanisms for protection against dumping have to be established. If Industrialized Countries export products which benefit from domestic support measures they should recoup the subsidy through an appropriate export levy. Otherwise the importing countries should have the right to levy countervailing duties.

Developing Countries must be given more scope in agricultural policy through the **introduction of a Development Box**. Domestic support measures, especially for the stabilization of prices should be allowed without limitations if they are targeted towards disadvantaged producers. The necessary complementary border protection has to be allowed too. A fund should be established to support Net-Food-Importing Developing Countries. During periods with high world market prices it should finance food aid for vulnerable parts of the populations. If world market prices are low, the fund should finance programmes to **promote small farmers and subsistence farmers**.

Market access for Developing Countries has to be improved. Exporters and authorities have to be supported in adapting the products to environmental and health standards in the industrialized countries which constitute the major markets. This is especially necessary if the standards exceed internationally agreed levels.

In order to improve respect for **the environment and health** in agricultural trade, not only the Agreement on Agriculture but also the TBT and the SPS agreements need to be reformed. As a first step, the Agreement on Agriculture's limitation of payments in agri-environmental programmes to the amount of additional costs should be dropped. This would allow for real incentives. Payments for higher animal welfare standards on the other hand should be permitted, but limited to the compensation for additional costs. The **criteria for the Green Box and the Blue Box** have to be modified so that ecologically inefficient payments are not allowed in unlimited amounts. On the other hand environmentally effective programmes should be permitted even if they have trade distorting effects.

The **precautionary principle** has to be strengthened in the SPS Agreement. Trade restrictions established in the framework of the Biosafety Protocol must not be subject to dispute settlement in the WTO. **Labels concerning production methods** have to be respected in the TBT Agreement. Developing Countries have to be supported in setting up appropriate certification organizations. Those labels could form the basis for additional tariff reductions in the EU's Generalized System of Preferences which already takes ecological criteria into account.

7. The Negotiations on Agriculture After the Last WTO Ministerial Conference

The results of the **fourth ministerial conference of the WTO in Doha**, laid out in the ministerial declaration of November 2001, raise few prospects for short- to medium term progress towards achieving the necessary ecological reforms in the international agricultural trade regime. The **paragraphs on the negotiations on agriculture** only confirm that non-trade concerns will be taken into account as provided for in the Agreement on Agriculture. The EU failed in large parts to introduce its agenda on trade and environment. The paragraphs on trade and environment do not even mention the precautionary principle, and the question of environmental labelling is referred to the Committee on Trade and Environment for further discussions.

The move by the EU and the USA, against the opposition of a majority of Developing Countries, to extend the competencies of the WTO to new issues like **investment and national competition policy** in the framework of a “new round” has destroyed urgently needed confidence for the delicate negotiations on environmental concerns. The demand by many Developing Countries to review and adapt existing agreements, summarised under the phrase “implementation issues”, has clearly been addressed inadequately.

A fundamental reform of the existing WTO agreements, however, is necessary not only from a development but also an environmental point of view. Should the EU and the USA insist on the decision made in Doha to launch negotiations on new issues like investment and competition, an environmental reform of the WTO will not be an opportunity for the foreseeable future.

0. Introduction

The BSE crisis that also hit Germany at the end of 2000 has raised strong concerns among the public about the effects of intensive agriculture, predominant in Germany and the EU, on the quality of food and the protection of health and the environment. The German government responded by **announcing a turnaround** in agriculture: that is, moving away from mass production to less intensive, more environmentally benign production methods and a higher degree of transparency with regard to the quality of products. Initial steps towards that goal were taken by the EU when it introduced reforms under the Common Agricultural Policy in 1992 and, more recently, within the framework of Agenda 2000, which strengthened environmental and regional policy measures and established them as the “second pillar” of agricultural policy, in addition to market regulations. The agricultural turnaround is to support the consistent implementation of this approach in Germany and to contribute to its further development at the European level.

Since the **integration of trade in agricultural products in the World Trade Organization (WTO)** in 1995, the European Union is not in a position to choose its instruments of agricultural policy independently. Instead, it is bound by the commitments it made in the WTO Agreement on Agriculture. This is of particular importance, since the Agreement on Agriculture also governs internal policy measures, such as subsidies to the agricultural sector.

Current negotiations in Geneva focus on the **further development of the Agreement on Agriculture** towards increased liberalization and market orientation of agricultural trade as well as on the reduction of agricultural subsidies. At the same time appropriate consideration shall be given to non-trade concerns, such as food security and environmental protection. Most Developing Countries demand that the aspect of food security be given more weight, because, as they have stated, the current agreement is insufficient in this respect. For the EU, these negotiations could provide an opportunity to press for sufficient scope in the realm of environmental policy to render WTO rules compatible with the objective of ecologizing agriculture.

The **present study** analyzes the provisions of the WTO with respect to the most important non-trade concerns – protection of health and environment as well as food security – and develops recommendations for adapting the Agreement on Agriculture and other specific agreements. Moreover, it deals with the issue of animal welfare, which has been ignored by the WTO thus far.

The **first section** outlines the ecological problems of agriculture in Industrialized and Developing Countries, clearly showing that there are several different causes. While the excessive use of production inputs, such as fertilizers and pesticides, leads to problems in most Industrialized Countries, in Developing Countries it is a lack of nutrients that often results in the depletion and erosion of soil.

The **second section** deals with the links between international agricultural trade, environment and food security, discussing principles of environmental policy and measures to implement them in relation to the international trade system. The

discussion will concentrate on the precautionary principle, standards for production methods and ecologically motivated subsidies. Within the context of food security, the role of food imports, dumping and domestic support measures will be illustrated.

The **third section** describes the provisions of relevant WTO agreements, especially the Agreement on Agriculture as well as the Agreements on Technical Barriers to Trade and on Sanitary and Phytosanitary Measures and Article XX of the GATT agreement. Clearly, there are opportunities for the inclusion of health protection, environmental and food security concerns. However, some sensible measures are not permitted or are subject to inappropriate restrictions.

Section 4 focuses on the agricultural environmental policy of the EU and those elements of the German agricultural turnaround that have been identified so far. The analysis of the instruments applied or proposed by Germany and the EU identifies potential conflicts with the WTO agreements in critical areas.

The proposals made by WTO member states in the current agricultural negotiations are set out in section 5. The majority of those Developing Countries that are active in the negotiations have presented specific demands with respect to food security. By contrast, only very few countries address environmental concerns directly. The EU's position is also quite defensive in this regard, which is surprising given the fact that the WTO conformity of the EU's agricultural environmental programmes may clearly be questioned.

The **sixth and final section** contains specific recommendations for amending the Agreement on Agriculture and other WTO agreements to accommodate food security, health and environmental concerns. Central among them is that "at most minimal trade distortion" should not be made the central criterion for the permissibility of agriculture-policy measures. Instead, the effectiveness of the measures in achieving non-trade objectives should be brought to the fore. In order to make food supplies more reliable, many countries will have to provide more incentives for the production of basic foodstuffs. The resulting "distortion" of production and trade is a fully intended effect. The precautionary principle will have to be incorporated into the SPS Agreement more efficiently and the TBT Agreement must not restrict the labelling of agricultural products with respect to production methods. In addition, labels and compensatory payments should also be recognized for the purposes of animal welfare.

The EU will be able to implement the **necessary reforms**, as outlined in this paper, only if it is open to demands from other members to eliminate export subsidies and if it accommodates the call from Developing Countries for improved food security. More far-reaching changes to environmental policy will be possible only within the framework of a comprehensive revision of the existing agreements, as demanded by many Developing Countries. The expansion of WTO competencies in the so-called "Development Round", adopted in Doha in November 2001 by the Fourth Ministerial Conference, will likely be counterproductive in this context, as it adds new topics to the ones controversially discussed in previous negotiations, thereby complicating future negotiation processes.

1. Environmental Problems in Agriculture

1.1 The Situation in OECD Countries

Between 1970 and 1990, OECD countries markedly intensified and specialized their agricultural sectors with respect to all inputs. The use of energy and machinery grew by about 40%, and mineral fertilizers by 25% (OECD, 1994: 19). As for the EU, the use of mineral fertilizers (measured in terms of nutrients) went up from 5 million tons in 1950 to more than 20 million tons per year in the 1980s; it fell again in the 1990s to 16 million tons per year (EU, 1999: 8). The trends for pesticides are similar. These trends have led to serious problems with respect to the most crucial agricultural resources and environmental goods.

- **Soil quality** is decreasing for the following reasons:
 - Erosion, caused by intensive mechanical cultivation and the long periods of time during which soils are left without a protective plant cover, especially in the case of “row crops” such as corn and beets (Brink and Baumgartner, 1989: 17),
 - Compaction, mostly caused by use of heavy machinery (ibid.),
 - Contamination by heavy metals (primarily from non-agricultural sources) and pesticides (Brink and Baumgartner, 1989: 18),
 - Acidification, caused by intensive use of nitrogen fertilizers (OECD, 1994: 24).

Since soil constitutes the most important agricultural resource, the very loss of soil fertility has direct economic consequences for farms. Estimates of the costs arising from diminished returns in Australia and Canada amount to several hundred million US dollars per year (OECD, 1994: 20).

- **Water quality** is deteriorating for the following reasons:
 - Over-fertilization through nitrogen and phosphate inputs stemming from the intensive use of mineral fertilizers as well as from the inappropriate treatment of animal excrements from factory farming (OECD, 1994: 20),
 - Introduction of pesticides into groundwater (OECD, 1994: 30),
 - Excessive use of groundwater resources in arid areas where more water is used for irrigation purposes than can be replenished (Steenblik et al., 1998: 131)
- **Air pollution** occurs as a result of the following:
 - Odor pollution especially from intensive manure management,
 - Emission of gases that contribute to the warming of the earth's atmosphere (greenhouse effect). While carbon-dioxide emissions are relatively low compared to other sectors such as the manufacturing sector or transportation, agriculture accounts for a large share of methane and nitrous oxide emissions (BMELF, 1997: 133). Especially problematic are ruminants and manure management in intensive livestock farming.

- **Biodiversity** is threatened by the following:

- Destruction of natural wildlife habitats, such as wetlands or forests, as a result of agriculture, and the destruction of small biotopes on agricultural lands such as ponds and hedge rows as a result of land reallocation (Brink and Baumgartner, 1989: 13),
- Loss of diversity in cultivated plants and livestock breeds as a result of concentration on the cultivation and breeding of few high-yield crops and species (Brink and Baumgartner, 1989: 15),
- Changed supply of nutrients through mineral fertilizers and manure, resulting for example in the destruction of the habitat of plant species that require soil conditions low in nutrients (EU, 1999: 15)

The loss of biodiversity is seen as an external effect by agricultural producers, as it does not affect yields directly. However, the decline in crop plants and livestock breeds limits the genetic potential for future successful breeding (Brink and Baumgartner, 1989: 15).

The pollution of soil and water by excessive inputs of nutrients has been caused by the increasing specialization of agriculture (Steenblik et al., 1998: 139f). Traditional mixed farming, that is, both crop and livestock farming, is being marginalized. While those traditional farms were able to use their own waste and manure for fertilization, farms specializing in plant cultivation have to rely on mineral fertilizers. At the same time, intensive livestock farming, especially poultry and pig, creates so much manure that soils can no longer absorb the enormous amounts of nutrients contained in the waste. The balance between animal and crop farming has, therefore, been upset. The effects stemming from the specialization of farms and entire regions are often further aggravated by the fact that animal fodder is imported, which raises the total nutrient input even further.

Apart from the negative effects already mentioned, especially those resulting from intensive agriculture in OECD countries, one other aspect of agricultural production takes center stage in the heated discussions at the agricultural negotiations: the “multifunctionality” of agriculture. In contrast to industrial production, certain forms of agriculture are attributed not with negative but with positive external effects. For example, they contribute to the conservation of traditional cultural landscapes that provide unique habitats for animals and plants, thus contributing to biodiversity, and help prevent erosion and flooding, e.g. through terracing of steep slopes (EU, 1999: 16).

1.2 The Situation in Developing Countries

The environmental problems related to agriculture, as well as their causes, are often quite different in Developing Countries.

- **Risks to soil**

Soils and soil fertility in Developing Countries are especially threatened by the unsustainable utilization of natural conditions (WRI, 1992: 115f). This includes

inappropriate agricultural practices, such as insufficient use of fertilizers and shifting cultivation with fallow periods that are too short (soil mining) as well as poorly controlled irrigation. Overgrazing by livestock, which reduces vegetation and exposes soil to wind and water erosion; in addition, the weight of animals leads to soil compaction. Deforestation as a result of commercial logging, excessive use of firewood and the development of new areas for farming exposes soil to wind and water erosion.

- **Risks to groundwater**

The most pressing environmental problem as regards water in Developing Countries is the pumping of groundwater, which increased drastically in the course of the “Green Revolution”. The term “Green Revolution” describes the intensification of agriculture especially in East and South Asia. The introduction of high-yield crops with a higher demand for water and nutrients and a greater susceptibility to disease left no other choice but to expand irrigated areas and the use of production inputs. In different parts around the world, the use of water for irrigation purposes has already led to significantly lower groundwater tables and reduced water levels in rivers. This puts at risk the ecosystems of river deltas and diminishes fishing opportunities (Postel, 1996: 74 ff). Some rivers, like the Ganges in India, cannot sustain such high rates of water withdrawal; in fact, in dry periods they often do not reach their natural estuaries anymore.

- **Effects on the climate**

Agriculture’s biggest effects on the climate stem from methane emissions from wet rice cultivation and from the conversion of forests to agricultural land. This destroys a crucial carbon-dioxide sink. The burning down of forests releases large amounts of carbon dioxide.

- **Risks to biodiversity**

The most important centers of biodiversity, both with respect to wild species and cultivated plants, are located in Developing Countries. For example, the warm and humid rainforests, which cover only about 7% of the earth’s land surface, are home to 90% of land-based biodiversity. The conversion, especially of such forests, for the purposes of land development and additional agricultural land therefore constitutes a major interference (Pagiola et al., 1998: 38 ff).

Agricultural biodiversity is declining too. The advance of new, more efficient varieties of cultivated plants has brought about a drastic decline in biodiversity in agriculture. In 1949, China cultivated 10,000 varieties of wheat; in the 1970s, only 1,000 of them still survived. In India, the number of varieties of rice in use has dropped from 30,000 in the 1950s to only 50 today. 90% of the global harvest of food is spread among just over 100 plant species (Fischer Weltalmanach 2000: 1283 ff).

1.3 Conclusion

It follows, therefore, that the ecological problems related to agriculture experienced by Industrialized and Developing Countries are by no means identical – in some

cases, they are direct opposites: while most industrialized states grapple with over-fertilization as a result of mineral fertilizers and intensive manure management, soil fertility in Developing Countries is declining because of insufficient supply of nutrients. This problem is further aggravated by the export of animal fodder from Developing Countries to Industrialized Countries. Internationally uniform measures to tackle environmental problems are, therefore, not possible.

2. Environment, Food Security and the Importance of Agricultural Trade

2.1 The Debate on Trade and Environment and its Significance for the Agricultural Sector

2.1.1 Ecological Effects of International Trade and Principles of Environmental Policy

International trade has a multitude of effects on the environment. The literature identifies four basic effects (UNEP/IISD, 2000: 35):

- **Product effects** – when international trade changes the market shares of products whose use has a direct impact on the environment. A negative example is the import of toxic pesticides which damage eco-systems. A positive example is the import of cars with catalytic converters (see also technology effects).
- **Technology effects** – international trade also affects the technology transfer between trading partners. As technology transfer also occurs in the form of imports of capital goods, some overlapping with product effects is possible. A positive example is the increased utilization of renewable energy through the import of solar panels or wind turbines. The import of chainsaws can have negative effects as this can accelerate deforestation.
- **Scale effects** – international trade can lead to increased production in certain sectors due to specialization and, thus, to economic growth. Production increases when certain resources are used more efficiently and/or more intensively. A negative example is the increased exploitation of resources such as soil and water through intensified agriculture. On the other hand, economic growth also leads to a higher demand for environmental quality, which can result in a change in political priorities.
- **Structural effects** – international trade can change the spectrum of products manufactured in a country, thus changing also the way in which resources are used. An example is the increased production of export crops like coffee and flowers at the expense of basic foodstuffs such as millet and corn. This affects soil erosion as well as the use of fertilizer and pesticides.

In addition, transportation, which is necessary for trade, precipitates several environmental problems. Examples include carbon-dioxide and other critical emissions, and noise pollution. The necessary infrastructure also claims land that otherwise would serve wildlife as habitat or is of high recreational value especially for metropolitan areas.

Apart from transportation, all these effects can be either positive or negative, depending on the sector, the national situation and, in particular, environmental policy. In case of the liberalization of agricultural trade, the situation can be described as follows:

- The liberalization of trade in agricultural products will hardly bring about any positive product effects, because production inputs such as pesticides or agricultural machinery are not covered by the provisions of the Agreement on Agriculture. Negative product effects threaten to arise especially from imported foodstuffs and vegetable raw materials that may be contaminated with residual pesticides or that transmit animal and plant diseases.
- Technology effects may arise from the import of seeds, for example. Imported high-yielding or genetically modified varieties can change cultivation practices, e.g., the way in which pesticides and fertilizers are used. This may have positive or negative effects on the environment.
- Scale effects, of significant proportions, would have to be expected in the event of a complete liberalization of agricultural trade. Especially Industrialized Countries, where agriculture is fiercely protected and subsidized, could be faced with a marked decline in production. The ecological consequences are not clear: intensification of production reduces pollution by pesticides and fertilizers. However, the reduction is not spread out evenly across all agricultural areas, but differs from region to region. In geographically favorable locations, this may even result in further intensification, while in marginal areas cultivation could cease completely – both with potentially negative effects on the environment. The expected intensification and expansion of production in some Industrialized and Developing Countries bring with them certain problems, especially if natural areas such as tropical rainforests are converted to agricultural land or if pastures are changed to farmland thereby leading to a higher risk of erosion.

Positive scale effects will not occur. The effect of a higher aggregate income in terms of an increased demand for environmental quality and, thus, an improved environmental policy, will be of limited size in the case of an isolated liberalization of agricultural trade. In Industrialized Countries, the share of agriculture in the overall national product is very small. African Developing Countries, where this share is still quite high, are expected to stand little chance, over the medium term, to gain from a liberalized agricultural market. In addition, positive environmental effects of a higher per-capita income have been observed so far only with relatively high income levels, and most Developing Countries are still far from reaching such levels. It should also be noted that the distribution of income growth is a decisive factor: if only a few, who are already wealthy, benefit from such growth, there will be neither positive social nor ecological effects (UNEP/IISD, 2000: 37)

- Structural effects of trade liberalization can also be positive or negative. This depends on whether more environmentally intensive products (e.g., cotton) or environmentally friendly products (e.g., millet) are produced following liberalization. The disruption of nutrient cycles and the ensuing local undersupply and/or oversupply of nutrients may be interpreted as a negative structural effect, because the import of animal fodder allows entire regions to specialize in animal fattening.

The various ecological effects of the liberalization of agricultural trade will depend, to a large extent, on the environmental-policy framework of each trading partner. In 1992, the UN Conference on Environment and Development adopted a declaration that defined principles of environmental and development policies. According to

UNEP and IISD (2000: 8f), the following principles are of special importance in the discussion on trade and environment:

- **Prevention:** it is better to prevent damage than to remedy existing damage.
- **Precaution:** where there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
- **Subsidiarity:** decisions should be taken in a decentralized fashion; provided that this does not impede the effectiveness of such decisions.
- **Common, but differentiated responsibility:** the fight against global environmental problems requires the participation of many countries. However, not all of them bear the same responsibility for the occurrence of these problems, and they all have different resources for facing up to these challenges.
- **Openness:** meaning transparency and public participation in the decision-making process.
- **Polluter-pays-principle:** prices should reflect all ecological costs; i.e. the polluter should bear these costs or any expenses necessary to avoid such costs.
- In addition, the **principle of sustainability** requires that the interests of future generations be taken into consideration.

2.1.2 Environmental Measures in the Agricultural Sector and their Role within the International Trade System

In the international debate on agricultural trade and environmental protection, three sets of measures are discussed to counteract problematic product and technology effects as well as scale effects. Structural effects play no part in this context.

- a) Standards regarding product characteristics seek to prevent negative product effects on the health of consumers and the environment in the importing country. Products that do not comply with such standards must not be imported. The WTO allows such measures in principle, but defines conditions for their implementation in the TBT Agreement (Agreement on Technical Barriers to Trade – cf. section 3.2) and the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement – cf. section 3.3). Recently, this has brought about a number of prominent disputes within the WTO, such as the case of hormone-treated beef between the USA and the EU. Especially controversial is the question as to what extent the precautionary principle may be applied in the setting of standards.

The Precautionary Principle

The precautionary principle has been playing an increasingly important role in international environmental agreements since the mid-1980s. It is also (as “precautionary approach”) included in Article 15 of the Rio Declaration and contains the following elements (Stilwell, 1999):

- Risk prevention is given preference over risk management.
- Reversal of the time sequence: measures will be taken before scientific evidence has been obtained.

- Reversal of the burden of proof: in order to prevent any state-imposed restriction of an activity (e.g. application of new technology), the party pursuing such activity must prove the harmless nature thereof. Usually, in market economies, the rule is that state regulations must be justified, i.e., potential risks of the restricted activity must be proven.
- The measures taken to limit a risk are considered legitimate. Anyone who proposes different measures will have to prove that such measures are more effective.

Of course, a statement like “the product/process has no risks for the environment” can never be “proven” scientifically, it can only be refuted. Science can only determine the probability of the facts being correct. At the political level, therefore, broad consensus among scientists about the risk assessment is seen as “evidence”. However, in the case of very complex (global) environmental problems, such consensus is either impossible or may be reached only over the long term. The risks to the environment and health are so immense in many cases that it would be irresponsible to hold off on political measures until such scientific consensus is reached. So, the precautionary principle will be applied if serious or irreversible damage to the environment has been identified even though its probability or significance is difficult to determine on the basis of science. Thanks to having been mentioned in the Rio Declaration and its application in a number of international environmental agreements and national laws, the precautionary principle can truly be seen as one of the most important principles of sustainable development.

- b)** Standards regarding production methods (Processes and Production Methods - PPM) are intended to counter negative technology effects and scale effects. As long as such standards are only applied to a country's national agricultural sector, they do not present a problem from a trade policy perspective. If the application of PPM standards to imported products is designed to prevent negative technology effects (for example, the use of especially harmful pesticides) or scale effects (e.g. deforestation of primary tropical forests in order to expand agricultural land) abroad, this is generally in conflict with the rules of the WTO. There is also the question of whether a country has the right not only to value the protection of the national environmental goods of another country, but also to enforce higher levels of protection by means of coercive measures if it concludes that either the (ecological) interests of certain segments of the population or future generations in that country are not given adequate consideration (Hofreither, 1998)? This question comes up, in particular, in cases where the use of resources serves the production of export goods (for example, the production of palm oil in Indonesia or soy in Brazil). In the case of cross-border environmental problems, international coordination is clearly useful and necessary. When it comes to agriculture, such problems are mainly water contamination (transboundary rivers, shared water supplies) and the emission of greenhouse gases. Since no attempt has yet been made to enforce standards in these areas through trade measures, there have so far been no disputes on this within the WTO. One alternative to direct trade-policy measures is the (obligatory) labelling of products, which allows consumers to make informed purchasing decisions that also reflect preferences for environmentally friendly production processes. The most prominent example in agriculture is organic farming. In the context of the WTO, labelling in this area is regarded as a potential technical barrier to trade within the scope of the TBT Agreement (cf. section 3.2).
- c)** Subsidies and border protection are used to counter “negative scale effects” that would result in the complete elimination of agriculture in some regions, especially in marginal locations. Therefore, citing the concept of “multifunctionality”, countries such as Norway, Switzerland, the EU, Japan and Korea are arguing that full liber-

alization of agricultural trade is not desirable. Apart from ecological objectives such as biodiversity and conservation of cultivated areas, food security is most often cited as argument in favor of protecting national agricultural production. Among the proponents of multifunctionality, however, there is no agreement on the type of domestic support that the agricultural sector would have to receive in order to achieve these goals. The role of price guarantees and tariff-based border protection is especially controversial. The WTO Agreement on Agriculture allows subsidies for, inter alia, agri-environmental programmes and regional development (cf. section 3.1.3.2).

2.1.3 International Agreements to Protect Agricultural Resources

Risks to the natural environment have been given increased attention by the world public since the 1970s. The UN Conference on Environment and Development, held in 1992, emphasized the significance of international cooperation in facing up to this challenge. International environmental agreements of particular importance to agriculture were first adopted in the framework of the UNCED and the follow-up process.

a) Soil

Far-reaching international agreements on the protection of soils have yet to be concluded. In July 1994, more than 100 countries signed the "Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa" (Desertification Convention) in Paris. It requires the governments of concerned countries to develop national initiatives to ensure the sustainable management of land and water resources. To achieve this, it is essential to also improve living conditions, especially in Developing Countries. Hence, the local population must be included in the development of these programmes. The convention requires Industrialized Countries to support Developing Countries that do not have sufficient means to implement these action plans. However, it does not contain any specific commitments concerning financial transfers. It remains to be seen whether new concepts in international law, such as "demand-oriented technology transfer", will prove their worth in practice.

Chapter 14 of Agenda 21, "Promoting Sustainable Agriculture And Rural Development", contains a section (E) on land conservation and rehabilitation (BMU, 1992: 113-115). The measures and instruments proposed therein are primarily linked to the education of land users as well as the elimination of "physical, social and economic causes" of inappropriate land-use management (BMU, 1992: 114). It is assumed, therefore, that land users have a self-interest in using the land in a sustainable fashion and that they are prevented from doing so only by unfavorable framework conditions. The soil convention proposed by many scientists also concentrates on these issues (Tutzinger Projekt, 1997: 116). This means there are not as yet any binding international standards for the implementation of land-conserving agriculture.

b) Water

Here too there are no legally binding agreements under international law. However, in Chapter 18, section C, "Protection of water resources, water quality and aquatic ecosystems", Agenda 21 explicitly calls for the following:

- Identification and application of best environmental practices at reasonable cost to avoid diffuse pollution, namely, through the limited, rational and planned use of nitrogenous fertilizers and other agrochemicals (pesticides, herbicides) in agricultural practices (BMU, 1992: 168);
- Development of agricultural practices that do not degrade groundwater (BMU, 1992: 168);
- Prevention of aquifer pollution through the regulation of toxic substances that permeate the ground and the establishment of protection zones in groundwater recharge and abstraction areas (BMU, 1992: 169);

c) Climate

The UN Conference on Environment and Development adopted a “Framework Convention on Climate Change”, which only contains very general commitments. The most critical of these for the agricultural sector is the commitment to protect and enhance greenhouse-gas sinks (Goldberg, 1994: 101). The burning and logging of large areas of forest is in contradiction to this commitment.

The Kyoto Protocol, concluded in July 2001, obliges developed country Parties to reduce their emissions of greenhouse gases, including methane. But the reduction efforts are focused on the most important gas – carbon dioxide. This has only indirect effects on agriculture. Reducing the number of livestock, especially cattle, however, would contribute to climate protection. The use of sustainable farming techniques and the building of carbon-dioxide sinks, such as plantations and grassland, could gain in importance as possible measures to help achieve the reduction targets, and this may create an incentive to afforest marginal agricultural land. However, conservationists see the danger that unspoiled natural areas will be turned into farmland in order to move towards reduction targets.

d) Biodiversity

With the Convention on Biological Diversity there is an agreement that is legally binding under international law. It does not contain any detailed standards, but only general objectives. However, the binding goal of the “sustainable use of biodiversity” and the obligation “to adopt measures relating to the use of biological resources to avoid adverse impacts on biological diversity” (cit. according to: Vaughan, 1994: 134) can be interpreted to mean that certain practices will not be permitted. These include, for example, the complete destruction of forests, draining of wetlands or destruction of fauna and flora by intensive use of pesticides (Vaughan, 1994: 133f).

The potential negative consequences of genetically modified organisms are dealt with under the Biosafety Protocol, which is part of the Convention on Biological Diversity. This Protocol defines rules for transboundary movements of genetically modified organisms (GMOs). There are two primary goals (Mayer, 1998):

- The transfer, handling and use of GMOs must not cause any negative effects on the conservation and sustainable use of biological diversity.
- Risk analyses must consider any risks to human health arising from GMOs.

The central instrument in this regard is the Advanced Informed Agreement (AIA), which requires that exporters of GMOs inform the importing country prior to any

exports. On the basis of the AIA, the importing country must either authorize such imports or request more information within 90 days. Based on such information, the competent authorities of the importing country must carry out a scientifically sound risk assessment. They can also ask the manufacturer carry out such a risk assessment himself, and to bear the costs. If considerable risks cannot be ruled out with sufficient certainty, imports can be prohibited by invoking the precautionary principle (CUTS, 2000: 3f). The Biosafety Protocol is, thus, the first legally binding agreement under international law to incorporate the precautionary principle.

The FAO administers a separate “International Undertaking on Plant Genetic Resources”, which aims to conserve plant genetic resources in agriculture. It deals primarily with the establishment and maintenance of gene banks as well as the creation of incentives for farmers to use and improve traditional varieties. As for the conservation of animal genetic resources, FAO has prepared a strategy that is currently being discussed at the international level.

In summary, only Agenda 21, which is not legally binding under international law, contains international guidelines regarding water that expressly call for the setting of standards. But even it does not set such standards itself, but merely recommends the definition of national standards. The Conventions on climate change and biodiversity, both legally binding under international law, are even more general in that they only provide for non-defined “measures” for the conservation of greenhouse-gas sinks and biotopes. The Convention on Biological Diversity is somewhat more precise, because it (implicitly) calls for the preservation of the existing structure, for example of forests, whereas the Framework convention on Climate Change focuses only on the binding of carbon dioxide (BMELF, 1998:108). The least precise rules are those on soil protection. For animal welfare, no global agreement exists as yet. When it comes to environmental protection and resource conservation, countries are apparently less willing and able to enter into specific commitments than they are in the field of international trade (see section 3).

The following table is a summary of the most important agreements.

Table 1: International Environmental Agreements Affecting Agriculture

Environmental medium	International regulations	Measures/standards
Soil	Agenda 21 (not binding), Convention to Combat Desertification (binding)	Information, framework conditions, national action plans
Water	Agenda 21 (not binding)	Best environmental practices, monitoring of toxic substances
Climate	Framework Convention on Climate Change (binding) and Kyoto Protocol	Conservation and improvement of carbon sinks. Reduction of methane emissions
Biodiversity	Convention on Biological Diversity incl. Biosafety Protocol, FAO Undertaking on Plant Genetic Resources	Sustainable use of biological resources, prevention of negative effects on biodiversity, risk assessment and precautionary principle in dealing with GMOs

Source: Own compilation

2.2 Agricultural Trade and Food Security

At the World Food Summit in Rome in 1996, the heads of state and government reaffirmed the right of everyone to have access to “safe and nutritious food, consistent with the fundamental right of everyone to be free from hunger.” By 2015, the number of undernourished people is to be cut by half, to 400 million, through national and international efforts (FAO, 1996). The Food and Agriculture Organization of the United Nations (FAO) defines food security as follows: “Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” This definition contains three dimensions (Konandreas, 2000: 3):

- **Availability:** food supplies must be sufficient to meet consumption needs.
- **Stability:** availability must be ensured at all times. Seasonal fluctuations or years of low-yield harvests must not result in supply dropping below consumption requirements.
- **Access:** food must be available in sufficient quantities not only at the national level. Sections of the population with low incomes and few resources must also have access to sufficient quantities of food.

After all, problems of food security always affect individuals, so they need to have adequate access (own production, monetary income, transfers) to food. But also at the level of nation-states, this problem is similar: the available foreign exchange must be sufficient to finance any import requirements exceeding national production.

The liberalization of international trade can affect food security at all levels: trade flows between countries, as well as price ratios between food exports and imports, and the opportunities of producers and consumers of food to generate income or find employment.

2.2.1 The Role of Food Imports

In principle, there are two strategies for achieving food security at the national level (Konandreas, 2000: 3):

- **Self-sufficiency** – the aim is to meet the requirement fully or as much as possible by domestic production;
- **Self-reliance** – in addition to domestic production, capacities are created to finance imports.

International trade is crucial for the latter strategy: it can contribute to food security by supplementing national production and evening out erratic fluctuations. This is especially true of countries where national production fluctuates a lot due to climatic conditions and is on the verge of achieving self-sufficiency (von Urff, 1992: 102). International trade can offset fluctuations in supply, which would lead to drastic internal price fluctuations due to the low price elasticity of demand. However, the world agricultural markets are subject to strong price fluctuations too; so, imports do not necessarily bring about more stable prices (Konandreas, 2000: 3). Last but not least, the classic argument for international trade rings true, that it leads to more efficient

use of resources worldwide. So, under the theory of comparative advantage, food should be imported if this is more cost-efficient than producing it domestically and if the world market for (agricultural) export products is ready to “absorb” them (von Urff, 1992: 99). Therefore, preference should be given to the strategy of self-reliance over the one of self-sufficiency, not only for economic reasons. Cost disadvantages frequently also reflect less favorable natural production conditions. In this case, self-sufficiency could lead to an excessive use of resources, such as soil and water, and, thus, to ecological damage. Two conditions have to be met to ensure that food imports contribute to actual improvements in food security, (Konandreas, 2000: 4):

- The global market must be a reliable source of affordable food imports. According to Konandreas (2000: 6f), the Agreement on Agriculture will, at least over the long term, help reduce the instability seen on the world markets in the past. Reasons for this include the ban on quantitative import restrictions and rules on export restrictions that have been introduced for the first time. These provisions stabilize and increase demand and supply so that fluctuations can be evened out in a larger overall market. Reduced state intervention will reduce public stockholding, with only part of it being picked up by private storage. But privately held inventories will generate a more direct reaction to price signals. The destabilizing effect of reduced inventories will thus be offset to some degree. The effect of a relocation of production triggered by liberalization is unclear, as it would depend on the extent of production fluctuations in the new cultivation regions, compared to the previous ones. The net effect of these developments is seen to have a stabilizing impact on prices and quantities over the long term; in the short to medium term, however, the fluctuations may increase. The various forms of direct and indirect export subsidies for foodstuffs that are still being granted by Industrialized Countries are a further uncertainty factor. A change in this policy in the course of an “agricultural turnaround”, especially in the EU, could trigger a much stronger increase in the world-market prices for these products than the one induced by the existing Agreement on Agriculture.
- The aspect of sufficient export capacity for the purpose of financing food imports is more problematic. Between 1993 and 1995 Least Developed Countries (LDCs) had to spend on average 32% of their total export income for food imports (1988-1992: 31%), the average of other Developing Countries is less than 20%, and falling (Vrolijk, 2000: 12). The terms of trade for the traditional export products of Developing Countries, which are still of great importance for many LDCs, have been declining for decades. The highest growth rates among agricultural exports from Developing Countries are those of non-traditional export products such as fruit, vegetables or processed goods (Konandreas, 2000: 5). These product groups, even after the conclusion of the Agreement on Agriculture, are still subject to various forms of protectionism by Industrialized Countries: seasonally adjusted tariffs for fresh produce, tariff escalation for processed goods as well as high quality and health standards. In view of current crises in Europe’s agriculture (BSE, FMD), there will be likely more of the latter, rather than less (Buntzel, 2001: 4), thus rendering market access for products from Developing Countries even more difficult. So far, public attention has focused on animal production, which is immediately affected. It cannot be ruled out, though, that crops will also be affected. The

debate revolving around genetically modified plants is already giving us a first glimpse of things to come. In addition, the current crisis of European agriculture could lead to increased demand for regional products and specialties. The impact on the export opportunities of Developing Countries and LDCs is hard to fathom: if trade-relevant standards were to be changed from the current criteria of classes (minimum size, minimum weight, flawlessness) towards criteria geared to the production process (organic farming), more and better market opportunities would open up for niche suppliers from these countries. This would be true for LDCs in particular, because under the EU's Generalized System of Preferences, LDCs are exempt from tariffs and quota restrictions with respect to all products (except rice, sugar and bananas). In contrast, strategies that focus on production for export to a "mass market" in Industrialized Countries seem to be especially risky for Developing Countries and LDCs at this point.

2.2.2 Dumping, Export Subsidies and Displacement of Small Farmers from Local Markets

The 1980s and early 1990s were generally characterized by very low world market prices for agricultural products. This was mainly due to the intensive subsidization of production and exports in the EU and the USA. While this eased the burden on the balance of payments of some food-importing Developing Countries, it had negative effects on the food security of most Developing Countries (Konandreas, 2000: 5). At artificially low prices, many farmers in Developing Countries were not able to cover their costs of production. Subsidized grain exports, especially wheat, are also displacing traditional coarse grain such as millet and sorghum in Africa and thus driving producers out of their local markets (von Braun et al., 1995: 90). Other prominent examples are subsidized beef exports from the EU to Western and Southern Africa. The EU, with its exports to wealthier countries in those regions, especially Cote d'Ivoire and South Africa, displaced traditional suppliers in the neighboring countries Burkina Faso and Namibia. In Burkina Faso, for example, this affects nomadic cattle farmers that finance purchases of grain from settled farmers by selling cattle (Wolpold-Bosien, 1999: 145f). The strong decline in export income put the food security of this population group in acute jeopardy. The practices of the some private traders, who conquer new markets through dumping, i.e., the sale of agricultural products at prices lower than the costs of production, can have similar effects. The world markets for grain, in particular, are dominated by a few large companies.

The most harmful effect of export subsidies on food security is in all likelihood the resulting incentive for the governments of Developing Countries to neglect investment in agriculture and, in particular, in the production of basic foodstuffs. This corresponds to the development-assistance policy of exporting Industrialized Countries, which, to varying degrees, concentrates on food aid, but almost never on strengthening the local production of basic foodstuffs and, especially, grain (von Braun et al., 1995: 60).

2.2.3 The Significance of Domestic Support Measures in Developing Countries

The inadequate public support for agriculture in Developing Countries is even more serious in view of the structural problems, which require urgent government intervention to achieve or ensure food security. Past experience as well as the analysis of current problems shows that approaches in the following areas are especially promising:

- Improvement of physical infrastructure in order to facilitate access to product and input markets (Pearce 1997: 14),
- Improvement of the marketing structure at institutional level in order to prevent the formation of private oligopolies or monopolies as governmental marketing institutions withdraw (Pearce 1997: 18),
- Improved access to agricultural inputs, at subsidized prices if necessary, especially in less developed regions where transportation costs make up a large part of the final price (Pearce, 1997: 14),
- Expansion and improvement of agricultural extension programmes (Pearce 1997: 17),
- Improved access to loans, especially for groups that are excluded from formal credit markets (primarily women), at subsidized interest rates if necessary (Pearce, 1997: 16, von Urff, 1992: 103),
- Stabilization of product prices, because price instability is frequently seen as one of the main obstacles to agricultural investments to enhance productivity (FAO 1997: 192, IIED 1996: 62, von Urff, 1992: 102)

3. Relevant Provisions in WTO Agreements

Trade in agricultural goods within the WTO is mainly regulated by the Agreement on Agriculture (AoA), a supplementary agreement to the GATT. From an environmental-policy point of view, the Agreement on Technical Barriers to Trade (TBT Agreement) and the Agreement on Sanitary and Phytosanitary Measures (SPS Agreement), which also apply to agricultural products, are of similar significance. In the following section, those provisions of the agreements that are relevant to the environment and food security will be analyzed in greater detail.

3.1 The WTO Agreement on Agriculture

Agricultural trade is subject to some exceptions from the rules that are binding for trade in other goods. A “peace clause” prevents dispute settlement procedures being initiated against measures which are in line with the provisions of the AoA, but are regarded as trade distorting under general WTO rules. The areas regulated under the AoA are mainly market access, export subsidies and domestic support mechanisms. Each allows special rules for Developing Countries (DCs) and least developed countries (LDCs).

3.1.1 Market Access

3.1.1.1 General Provisions

The WTO member states had to “convert” all instruments used in restricting market access, such as import bans, quantitative restrictions and variable tariffs, to fixed tariffs (tariffication) when the AoA entered into force in 1995. In addition, the level of tariffs had to be reduced by 36%, as an average across all products, by 2000. If this average was achieved, individual tariffs had to be decreased by only 15%. Market access at reduced tariffs has to be given for products that, following tariffication, are subject to tariffs so high as to effectively prevent imports. This must apply to the current quantity of imports and up to 2000 to at least 5% of domestic consumption. (Herrmann, Kramb, Mönnich, 2000: 11)

The special safeguard clause (Art. 5 of the AoA) allows all WTO members to levy additional duties on sensitive products if the imported quantities exceed a certain level or if the import prices fall below a certain level. In contrast to the general safeguard mechanism of the GATT agreement (Art. XIX), the safeguard clause does not require proof to be provided that the imports cause serious injury to domestic producers. However, the clause only applies to products for which border protection was converted to ordinary customs duties in the framework of the Uruguay Round. This means that this instrument is not available to the many Developing Countries that converted quantitative restrictions into duties, or eliminated them completely, prior to

the conclusion of the Uruguay Round as part of structural adjustment programmes of the IMF.

3.1.1.2 Exceptions and Preferential Treatment for Developing Countries and LDCs

Preferential treatment for Developing Countries with respect to border protection is limited to the provision that they must reduce the average of their tariffs by only 24% (at least 10% for individual products). They have until 2004 to do so, while Industrialized Countries completed their reduction in 2000. Least developed countries (LDCs) are exempted from these reduction commitments under Art. 15 of the Agreement on Agriculture, but are not allowed to raise their tariffs above the bound levels.

Developing Countries are required to provide a minimum market access of at least 3% of domestic consumption by 2004. Even though this level is below the Industrialized Countries' level, the potential effects on the markets for basic foodstuffs are more marked in many Developing Countries. A large share of these products is not traded but consumed by the farmers by way of subsistence production. The share of the minimum import volume in the volume of products actually marketed is, therefore, frequently much higher than 3% and may affect market prices considerably.

3.1.1.3 Flexibility in Applying the Agreement

What is more important for many Developing Countries than the preferential treatment provided for by the agreement, is the fact that they were able, at the conclusion of the Uruguay Round, to bind their tariffs at a level higher than the ones they actually use. This allows them to lower the bound tariffs without having to change their tariff policy. If the tariffs remain below the levels prescribed by the WTO, they can even have a variable tariff policy in order to protect their domestic markets from fluctuations in world-market prices. Currently, this is still true for most Developing Countries, because they set their bound tariffs at relatively high levels of, on average, 50-100%. If the current agricultural negotiations bring about additional reductions in the bound tariffs of Developing Countries, the WTO obligations will limit their scope for border protection in real terms. This already applies to products for which some Developing Countries neglected to set higher tariffs during the Uruguay Round. Those Developing Countries that did not join the WTO until after the Uruguay Round were frequently urged during the accession negotiations to bind their tariffs at levels that would reflect the actual practice. This is why they do not have any margin for tariff increases.

3.1.2 Export Subsidies

3.1.2.1 General Provisions

Export subsidies must not be increased, and no new subsidies may be introduced. Budgetary outlays must be reduced by 36% by 2000; the volume of subsidized exports must be lowered by 21%. However, this applies only to direct export subsidies in the form of payments to exporting companies. Indirect export subsidies, for

example, by way of cheaper loans or governmental export-credit insurance (an instrument heavily used and expanded in the USA) are not covered at all. The Agreement on Agriculture merely refers to OECD negotiations on regulating such credits, which have not been concluded yet.

It bears mentioning that the AoA regulates and thereby allows subsidies that are expressly prohibited in the WTO Agreement on Subsidies and Countervailing Measures (Art. 3). Countervailing measures are severely restricted by the so-called “peace clause” (Art. 13 of the Agreement on Agriculture), which exempts agricultural products from the provisions of the Agreement on Subsidies and Countervailing Measures until 2003. Any country that wishes to keep subsidized exports out of its market will have to go through a complex procedure to show that its farmers have suffered harm. Countries that are pushed out of non-Party markets have no recourse whatsoever.

3.1.2.2 Support for Net-Food-Importing Developing Countries (NFIDCs) and Least Developed Countries (LDCs)

Art. 16 of the Agreement on Agriculture promises NFIDCs and LDCs (most of which also fit into the first category) support with respect to possible negative consequences of the AoA. These would mainly take the form of higher costs for food imports as a result of the reduction of export subsidies. A separate decision “on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net-Food-Importing Developing Countries” (Marrakech Ministerial Decision) lists the following support measures:

- A sufficient level of food aid is to be provided under the Food Aid Convention;
- The international financial institutions IMF and the World Bank are to give special consideration to the needs of NFIDCs and LDCs;
- The needs of NFIDCs and LDCs are to be taken into account in agreements on export credits;
- Full consideration is to be given in the context of aid programmes to requests for technical assistance to improve agricultural productivity and infrastructure.

The weakness of the decision stems from the fact that the measures have not been operationalized and that they are merely recommendations directed at the bilateral and multilateral donors of development and food aid (UNCTAD 2000: 11). The donors believe that their support was sufficient even before the conclusion of the Uruguay Round; this is why this decision has had no practical effects yet. Food aid for NFIDCs and LDCs dropped by as much as 27% between 1995 and 1996, even though world-market prices saw a dramatic rise at that time. Even during the following years, when world-market prices were going down again, the import bills of the countries concerned remained at a level higher than prior to the conclusion of the Uruguay Round. Apart from a decline in food aid, this is also due to the fact that as a result of the reduction of export subsidies exports to some countries are not subsidized as much as to effect sale below world-market prices.

3.1.3 Domestic Support

3.1.3.1 General Provisions

Under the Agreement on Agriculture, “market distorting” forms of support, referred to as “Amber Box measures”, are to be reduced. This concerns, primarily, domestic prices guaranteed by the government that are above world-market prices and direct payments to farmers linked to production volume (e.g., “premiums” for each bovine slaughtered in the EU). The reduction commitments are calculated on the basis of the Aggregate Measurement of Support – AMS. The calculation of the AMS includes all income and material support that farmers receive beyond the sale of their products at world-market prices and that are not excluded pursuant to other provisions of the Agreement on Agriculture. Total AMS support had to be reduced by 20% in Industrialized Countries by 2000. This rule did not apply if it did not exceed the “de-minimis” level of 5% of total domestic production output.

In order to distinguish between the different forms of support, they are classified as “boxes” – a term not used in the agreement itself, but in almost all comments related to the agreement; it is now used also in official WTO documents and the negotiation proposals of members. In addition to the “Amber Box” measures that need to be reduced, there are “Green Box” and “Blue Box” measures that are excluded from the AMS calculations and are, thus, exempt from the reduction commitments.

The “Blue Box” (Art. 6.5 of the Agreement on Agriculture) includes direct payments under production limiting programmes. A prominent example are the land set-aside schemes of the EU.

The “Green Box” (Annex 2 of the Agreement on Agriculture) contains all those measures that are assumed to have no or at most minimal trade-distorting effects. The measures must be publicly funded and must not have any price-supporting effects. Permitted measures, and the conditions on which they may be applied, are described in Annex 2 to the Agreement on Agriculture. The most important measures mentioned in Annex 2 are:

- Provision of general services such as infrastructure and extension
- Decoupled direct payments and income support
- Programmes for producer and resource retirement
- Environmental and regional assistance programmes

In a way similar to the approach applied to export subsidies, the Agreement on Agriculture allows subsidies for the purpose of domestic support which are defined as “actionable” under the Agreement on Subsidies and Countervailing Measures. According to this agreement WTO members whose domestic industries have suffered “injury” from competition with subsidized exports, may demand the elimination of such subsidies. According to Art. 13 of the Agreement on Agriculture however, this is not possible for measures which meet the criteria of the “Blue” and “Green Box”, or for “Amber Box” measures for which the mandatory reductions were implemented. Countervailing duties against products subsidized with “Amber” and “Blue Box” measures can however be imposed if there is proof of injury to domestic agriculture. “Due restraint” must however be shown in initiating any countervailing duty investigations.

Subsidies that meet the criteria of the “Green Box” are exempt from all countervailing measures. Support as part of the “Blue Box” and special and differential treatment for Developing Countries (see below) is exempt from the dispute settlement process only if the level of such support does not exceed 1992 levels.

3.1.3.2 Environmental Provisions – Agri-environmental Programmes

Paragraph 12 of Annex 2 is the only section in the Agreement on Agriculture that expressly deals with environmental objectives. Payments must be dependent on the fulfillment of specific conditions under clearly defined government environmental programmes, including conditions related to production methods or inputs. In contrast to all other “Green Box measures” (except for regional assistance, which is also subject to this restriction), the amount of payment, according to paragraph 12 b, is limited to the extra costs or loss of income involved in complying with the programmes.

3.1.3.3 Special and Differential Treatment for Developing Countries and Provisions Concerning Food Security

Some authors refer to the preferential treatment of Developing Countries within the context of domestic support as “special and differential treatment box” (Art. 6.2. of the AoA). It allows investment and agricultural input subsidies where they benefit low income or resource poor producers. In addition, domestic support to encourage diversification from growing illicit narcotic drugs is exempt from reduction commitments. The de-minimis exemption for Developing Countries is 10%. “Amber Box subsidies” which exceed this limit must be reduced by 13.3% by 2004. LDCs are not required to reduce their support, but they are not allowed to raise it above the de-minimis threshold.

Furthermore, the “Green Box”, which is open to all WTO members, contains measures relevant to the issue of food security. These are mainly the ones listed in the following paragraphs of Annex 2 to AoA:

para. 2 General services -

- 2. a) Agricultural research
- 2. d) Extension services
- 2. g) Infrastructure such as electricity, streets, water

para. 3 Public stock-holding for food security purposes -

as long as the volume and accumulation of stocks corresponds to predetermined targets related solely to food security and public purchases and sales are made at market prices. Developing Countries may also buy at administered prices; the difference between the acquisition price and the world-market price, however, must be accounted for in the AMS.

para. 4. Domestic food aid -

provided that eligibility to receive the aid is subject to clearly defined criteria, and the government buys food at market prices. Providing food at subsidized prices with the objective of meeting food requirements of poor in Developing Countries is considered to be in conformity with the provisions of the agreement.

3.1.4 Evaluation

So far, the AoA offers relatively large scope for agricultural policy measures, albeit mainly to the benefit of Industrialized Countries.

The conversion of quantitative restrictions into duties was used by many Industrialized Countries to introduce high tariffs, resulting in the deterioration of market access for some products (FAO, 2000: 3). They also took advantage of the scope allowed in tariff reduction by lowering tariffs that had already been low by 100% in order to be able to maintain higher tariffs on “sensitive products”. As a result, tariff protection became more uneven, with clear “peaks” of up to more than a hundred percentage points for certain products. The EU bound its tariffs for rice at 360 % and for sugar at 297 %. Japan’s tariffs for all major cereals are bound at 500 % or higher. There was no regulation of the distribution of quotas for minimum market access at reduced tariffs. Some Industrialized Countries use this to assign tariff quotas to suppliers that are clearly unlikely to be able to deliver the specified quantities. So, actual market access is being eroded further (Herrmann, Krumb, Mönnich, 2000: 11). The literature on the Agreement on Agriculture does not contain any indications that this particular leeway is used to protect products that are especially advantageous from an ecological point of view, that is, to counteract negative structural effects.

Industrialized Countries, especially the EU and USA, used the leeway offered within the context of domestic support by reallocating it to Blue Box and Green Box measures and hence expanding, instead of reducing the overall level of support for their agricultural sectors. They are able to do this, because spending on these measures is not subject to any restrictions. Even though, for example, direct income transfers decoupled from production do not constitute direct production incentives, they still allow farmers to sell their products at prices that do not fully cover production cost and, therefore, would not secure sufficient income for them. This gives them an advantage over farmers in Developing Countries that solely depend on market prices, which are adjusted to accommodate world-market prices that are frequently lower and unstable. In this context, Developing Countries and NGOs speak of “dumping through the backdoor”.

This flexibility also applies, in principle, to Developing Countries and has been used by a majority of them with respect to the provisions on market access. In the area of domestic support, the situation is, however, more difficult. The central criterion of the Green Box, and of the Blue Box, which is of no interest to Developing Countries anyway, is that the measures are publicly funded. As their budgets are chronically deficit-ridden it is difficult, if not impossible, for Developing Countries to finance them. Less spending-intensive measures, such as price guarantees for producers, are part of the Amber Box and hence included in the AMS calculations. Upon conclusion of the Uruguay Round, the AMS of most Developing Countries and all LDCs was below the de-minimis level. In practical terms, this forms the permissible upper limit for agricultural support by way of Amber Box measures.

The Agreement on Agriculture gives Developing Countries relatively large scope for supporting agriculture and the production of basic foodstuffs through the provision of public services and inputs. But there are restrictions regarding the stabilization of prices and the protection against subsidized imports. According to Timmer (1998),

stable prices are however an essential precondition for supplementing public investments with private efforts, e.g., labor input into soil-improvement measures. The existing options for action are not so much the result of explicit rules as they are of the scope that exists in implementing them, for example, the difference between applied and bound tariffs. A further reduction of tariffs while maintaining all the other rules would severely narrow this scope for Developing Countries, while Industrialized Countries would still be able to apply their agricultural policy measures.

3.2 The TBT Agreement

The TBT Agreement was created in view of the fact that, during the 1970s, technical regulations and standards were increasingly seen as non-tariff barriers to trade – and in fact used to that end in many cases. The guidelines, thus agreed upon, for preparing, publishing and monitoring regulations and standards are intended to minimize trade-restricting effects.

3.2.1 The Core Principles

Article 2.1 of the TBT Agreement reiterates the non-discrimination rule of Art. III GATT (Housman and van Dyke, 1995: 49), i.e. in respect of technical regulations, imported products must not be accorded treatment less favorable than that accorded to like products of national origin. According to Article 2.2., technical regulations must not create unnecessary obstacles to trade. Regulations with trade restricting effects are only allowed if they are necessary to fulfill legitimate objectives: the protection of human, animal and plant life or health and the environment. Pursuant to Article 2.4, regulations and standards are to be prepared, as far as possible, on the basis of relevant international standards. In addition, existing regulations should be harmonized internationally and/or mutually recognized. The other provisions of the agreement are mainly of a procedural kind, ranging from the obligation to publicly announce new regulations prior to their introduction and the right for Members potentially affected to make comments, to mechanisms for verifying compliance with the standards (Housman and van Dyke, 1995: 53). Annex 3 to the TBT Agreement defines a “Code of Good Practice for the Preparation, Adoption, and Application of Standards”. This code, under Art. 4.1 of the TBT Agreement, is binding for the standardizing bodies of the central governments of each member. Also, local and regional as well as non-governmental standardizing bodies should sign the code too. For that reason, governments are called upon to take non-specified “reasonable measures” to ensure that these bodies adopt the code. This is a novelty, because for the first time the WTO, being an intergovernmental organization, sets (non-binding) guidelines for the activities of non-governmental organizations (Mootal, 1999). Whether and to what extent it is possible to use the WTO dispute settlement process to investigate a case of suspected discrimination by a standard defined by a non-governmental standardizing body is still unclear. Essentially, the code also requires non-governmental organizations to base their standards on the good practice and transparency rules laid down for government agencies.

3.2.2 The Scope – Especially with Respect to Environmental Labels

The question of whether standards for processes and production methods (PPM standards) are to be included in the TBT Agreement has been controversial since the plurilateral forerunner of the current agreement was concluded in the 1970s. The Uruguay Round did not reach consensus on this question either. The definitions of the terms “technical regulations” and “standards” in Annex 1 to the agreement are merely compromises:

Technical regulation:

Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is 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.

Standard:

Document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics of 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.

These definitions show that standards and technical regulations, for WTO purposes, are defined as product standards in a slightly broader sense. Processes and production methods are only given consideration if they are directly related to product characteristics. One controversial issue is whether the agreement allows (obligatory) labelling for production processes. In sentence 2 of the definition, labelling is mentioned without the adjunct “product-related”. According to some WTO members, the word “also” indicates that this provision is an additional one and that the labelling of production processes is “also” covered under the TBT Agreement (WTO, 1995: par. 21). This phrasing is a compromise struck among those WTO members that wanted to incorporate a clear and unambiguous reference to labels based on product-related PPMs and those that wanted to exclude such reference in equally unambiguous terms. It follows, therefore, from the negotiation history of this agreement that there was no agreement as to the treatment of such labels when it was signed. According to the WTO Secretariat, it can be concluded from this their inclusion was not agreed. So far, (environmental) labels based on PPM standards have not been subject to any WTO dispute settlement procedures. Hence there are no decisions by panels or the appellate body which could serve as guidance for interpretation.

3.3 The SPS Agreement

3.3.1 Fundamental Principles and Scope

The SPS Agreement serves to specify the TBT Agreement with respect to sanitary and phytosanitary measures. The fundamental principles of non-discrimination and minimal trade restriction are therefore identical. In addition, the SPS Agreement refers explicitly to Art. XX b GATT (cf. Section 3.4) by postulating that measures that are

allowed under the SPS Agreement also comply with this article of the GATT Agreement.

Annex A of the SPS Agreement defines sanitary and phytosanitary measures as follows:

Any measure applied:

to protect animal or plant life or health within the territory of the Member from risks arising from the entry, establishment or spread of pests, diseases, disease carrying organisms or disease causing organisms;

to protect human or animal life or health within the territory of the Member from risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs;

to protect human life or health within the territory of the Member from risks arising from diseases carried by animals, plants or products thereof, or from the entry, establishment or spread of pests; or

to prevent or limit other damage within the territory of the Member from the entry establishment or spread of pests.

The definition shows that only protective measures within the territory of a member state are recognized under the SPS Agreement. Standards and regulations on processes and production methods are covered in this context. By limiting protective measures to those that address issues within the importing country, the scope is automatically limited to product-related standards of processes and production, for example, sanitary regulations regarding abattoirs.

The SPS Agreement defines more precise requirements for the necessity of standards than the more general TBT Agreement. For example, Art. 2.2 states that all measures, both those to be introduced and those to be maintained, must be based on sufficient scientific evidence. Article 3 calls for harmonization and the application of international standards, and deems these to be scientifically justified. A level of protection exceeding that defined under international agreements is permitted only if it is scientifically justified. In assessing risks, the methods developed by the relevant international organizations are to be applied or at least be taken into account.

3.3.2 The Precautionary Principle and the SPS Agreement

As for the precautionary principle, it is important to note that under Art. 2.2 of the SPS Agreement a measure may be implemented only if it is based on scientific principles and is not maintained without scientific evidence. This contradicts the precautionary principle. However, Art. 2.2 contains a reference to Art. 5.7, which states that members may provisionally adopt sanitary and phytosanitary measures in cases where scientific evidence is insufficient. Members are expected to seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary or phytosanitary measure accordingly within a reasonable period of time. It is still unclear whether this provision adequately reflects the precautionary principle.

So far Art. 5.7 of the SPS Agreement has been invoked in three disputes: “fruit” – where Japan stopped imports of fruit from the US to avoid the introduction of harmful insects, “hormone-treated beef” – where the EU stopped imports of beef from the US because of hormones used there for animal fattening which it considers to be carcinogenic, and “salmon” – where Australia stopped imports of fresh salmon from Canada to prevent transmission of diseases. The arbitrating bodies came up with different interpretations, but in each case they rejected the implementation of trade-restricting measures.

In its judgement on Japan’s import ban on US fruit, the appellate body of the WTO dispute settlement mechanism interpreted the pre-conditions for provisional measures under Art. 5.7 as follows (Stilwell, 1999: 39f):

1. The relevant scientific evidence is insufficient. This condition is clearly in accordance with the precautionary principle. However, there must be an identifiable risk of serious or irreversible damage rather than a purely theoretical one.
2. The measure is based on available information. This condition can also be seen as being in accordance with the precautionary principle because it does not require obtaining of additional information and even less so scientific evidence of risk.
3. The obligation to “seek to obtain” additional information is not to be construed as an obligation to provide scientific evidence, either. Additional information may also be requested from the importers of the potentially harmful product, who would then have to prove the harmlessness of the product. This, too, is largely in line with the precautionary principle.
4. The appellate body did not define the “reasonable period of time” within which any measure would have to be reviewed. A flexible definition geared to the availability of scientific evidence would correspond to the precautionary principle.

This interpretation, which is relatively closely oriented to the precautionary principle, is in stark contrast to the judgement in the dispute over hormone-treated beef between the EU and the USA. In it, the EU is criticized for not having provided any evidence of the harmfulness of a certain hormone. At the same time, the appellate body accepted the decision of the USA and Canada not to release any information on potential health risks; both claimed that such information was classified as business secret. The burden of proof, in contrast to the precautionary principle, is shifted here to the regulator and not the company wishing to introduce a new substance. The decision was strongly influenced by the fact that the Codex Alimentarius Commission of the FAO and WHO had found that the existence of hormone traces in beef does not represent a risk to health. So, the EU would have had to submit a risk assessment to justify a higher level of protection.

Environmental groups see the danger that national standards which go beyond international recommendations may be undermined by the WTO (Cameron 1999: 261). The incorporation of the precautionary principle in the WTO is one of the demands of the European Union for a new round of WTO negotiations.

3.4 Art. XX GATT

Regulations related to production processes may be applied to imported products only in exceptional, narrowly defined cases. Essentially, they violate the provisions of the GATT agreement and are allowed only in view of the exceptions under Art. XX, which permits the contravention of the principles of “most-favored nation” and “non-discrimination” only if, among other things, it:

- (b) [is] necessary to protect human, animal or plant life or health,
- (g) [relates] to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

Such measures must not result in arbitrary and unjustifiable discrimination or any disguised restriction of international trade.

It is possible, especially under Art. XX (g), to differentiate between products on the basis of the ecological effects of their related production processes. This became apparent in the decision of the appellate body regarding the shrimp/turtle dispute between the USA and several Southeast Asian countries. The USA was granted the right (on condition of non-discrimination between countries) to allow only such shrimp to be imported that were caught in trawls equipped with devices that exclude endangered sea turtles. To what extent this decision is also applicable to PPM standards in agriculture is still unclear, because the appellate body did not address the issue of whether Art. XX may also be applied to protect resources within the national territory of another state.

3.5 Conclusion – Agriculture, Environment and Food Security in the WTO Context

The WTO Agreements do not in principle preclude environmental measures or measures related to food security. The agreements actually contain provisions that give member states scope for formulating such policies. But they do not cover all those instruments that would be meaningful and necessary from the perspective of environment and development policy. Even those measures that are allowed are often subject to rather restrictive conditions, designed to avoid trade-restricting effects, which, however, renders the practical implementation of these measures very difficult.

This is especially problematic in view of the institutional imbalance between the international trade system and the international environmental regime. While the WTO dispute settlement mechanism is relatively strong, many environmental problems have gone unaddressed, i.e. there are no binding international agreements. Even where binding agreements exist, implementation mechanisms are only poorly developed. The same is true of food security. As a result, environmental and food-security policies are almost exclusively left to national governments to be dealt with – the multilateral WTO system at best permits such policies only on strict conditions but does not take an active role in promoting them. So, there is a risk that sensible measures may not be implemented in order to avoid countermeasures of other WTO members that believe their trading opportunities to be restricted.

The following tables show the status of various instruments of environmental policy and food security in WTO treaties:

Table 2: Environmental Policy and WTO Agreements

Instruments	WTO provisions
1. Unequal treatment of products for trade purposes due to	
a) product characteristics and/or production processes that affect product characteristics	Allowed subject to conditions, TBT/SPS Agreements
b) production processes that do not affect product characteristics	Not allowed under Art III GATT, exceptions possible under Art. XX GATT
2. Labelling of products according to their ecological characteristics (eco-labelling) due to	
a) product characteristics and/or production processes that affect product characteristics	Allowed subject to conditions, TBT Agreement
b) production processes that do not affect product characteristics	Permissibility unclear; interpretation of TBT, prevailing opinion put permissibility in doubt
3. Consideration of environmental-policy principles within the WTO framework (polluter-pays principle (PPP), precautionary principle)	Precautionary principle is limited under SPS, PPP for polluting processes abroad is possibly covered under Art. XX; so far no known case.
4. Relationship between international environmental agreements (with trade-policy aspects) and the WTO	Unclear; interpretation Art XX GATT
5. Subsidization of production processes that yield environmental goods (conservation of landscape by farmers)	Possible to a limited extent under the Agreement on Agriculture

Source: own compilation

Table 3: Food Security and WTO Agreements

Instruments	WTO provisions
1. Improvement of the physical infrastructure	Allowed as "Green Box measures"
2. Better access to agricultural inputs, if necessary at subsidized prices	Allowed as an SDT measure, Art. 6.2
3. Improvement of the marketing structure at the institutional level	Allowed
4. Developing agricultural extension services and making them more efficient	Allowed as "Green Box measures"
5. Better access to loans, particularly for groups who are excluded from the formal credit market, primarily women, if necessary at subsidized interest rates	Allowed as an SDT measure, Art. 6.2
6. Stabilization of product prices, including by border protection	Generally not allowed; only within the framework of the de-minimis clause and the bound tariffs, which should be reduced further.
7. Protection against subsidized imports	Only if a determination of damage is made, not possible in the case of Green Box subsidies

Source: own compilation

4. The Agricultural Policy of the EU and the Planned Agricultural Turnaround in Germany

4.1 Agenda 2000 and the Agricultural Turnaround

In its communication to the Council and the Parliament, “Directions towards sustainable agriculture”, the EU Commission introduces two sets of measures designed to improve the ecological effects of agriculture. They were incorporated into the reform of the Common Agricultural Policy under Agenda 2000 (EU, 1999: 20):

- Basic environmental standards that help reduce ecologically harmful effects of agriculture are to be made mandatory for all farm operations. Farmers will not be compensated separately for complying with such standards. The member states of the EU are given the possibility to make general support, such as non-crop specific area payments, contingent on compliance with minimum standards. This “cross-compliance” can thus be used as an additional instrument for sanctions.
- The costs of measures which go beyond the application of “good agricultural practice” and which strengthen the positive environmental effects of agriculture are to be compensated under agri-environmental programmes, and incentives are to be created. Under the concept of “modulation”, member states can reduce the support given to large farms and use the funds thus freed up for agri-environmental programmes as well as regional-development initiatives – provided that the national spending for such measures is increased as well.

The European Commission’s proclaimed aim – to make environmental and regional policies a central element of agricultural policy – has only begun to be realized. Annex 2 shows that agri-environment programmes that fulfill Green Box criteria so far have accounted for only just under 6% of the EU’s total domestic support.

As a consequence of the BSE crisis in Germany at the end of 2000, the federal government announced an initiative called “agricultural turnaround”. The protection of consumers, the environment and animal welfare is to be given greater weight in German and European agricultural policies. The fight against BSE is only a short-term goal in this reorientation of agricultural policy. In June 2001, the ministers of agriculture and the environment of both the federal government and German states met for a joint conference where they adopted the “pillars of a viable agricultural and consumer policy”. To date, this document is the most comprehensive paper on the objectives and instruments of the agricultural turnaround (Umwelt, 2001: 482ff). Long-term goals and perspectives include making the German agricultural sector more competitive and making full use of the land in an environmentally benign manner. Cultivated land, according to the document, will be conserved and developed further in line with the idea of multifunctionality. In view of the reduction of marketing guarantees and production subsidies granted by the government, the quantity and quality of production will have to be linked more closely to demand. In addition, it

emphasizes the growing importance of alternative and additional employment opportunities in the areas of nature conservation, conservation of landscape, tourism and the production of renewable resources.

In the decision, cross-compliance and modulation are cited as meaningful ways to attach greater weight to the principle of sustainability. Germany, however, has not taken a final decision yet as to the application of these measures. A joint working group of the federal government and the Länder has been formed to address any open issues relating to modulation. As for cross-compliance, there is agreement that in the event of non-compliance with good agricultural practices, livestock payments and area payments in production limiting programmes (direct payments under the Blue Box) should be reduced or eliminated completely.

For the purposes of enhancing food safety and consumer protection, food should be labeled in a “complete and easy-to-understand fashion, including a full declaration of all the ingredients.” This would include the introduction of registered quality labels and regional marks of origin, to be subsidized with public funds. A state label for organic farm products pursuant to the EU Regulation on Organic Agriculture was introduced in September 2001 (BMVEL, 2001). Imported food must at least meet the same standards as apply to food produced within the EU; this includes genetically modified food and animal fodder.

In order to ensure that agricultural production is undertaken in a manner compatible with environmental protection requirements, and livestock production in a manner compatible with animal welfare requirements, more attention should be paid to natural substance cycles, which should be closed whenever possible. Specific measures according to this decision include the following:

- An attractive, comprehensive and adequately funded range of agricultural environmental programmes as well as the strengthening of contract-based nature conservation.
- Ongoing development and more precise definition of good agricultural practices as well as increased education and counselling on environmentally sound agriculture.
- Greater area-linking of livestock farming and the use of welfare-friendly animal husbandry and production techniques as a condition for support to farmers ; improvement of regulations on animal husbandry.
- In addition the position of organic farming is to be strengthened considerably through the promotion of marketing, information and advertising campaigns supported by the federal government and the Länder, the introduction of the state eco-label and funding for processing and production of organic products.

The ministers call for further improvements to the European agricultural policy. This is to ensure that, in the future, subsidies will go primarily to farms that meet the following criteria: minimum areas per livestock unit, animal husbandry compatible with animal welfare requirements, and sustainable and market-oriented agricultural production that complies with environmental protection requirements and protects the resources. To this end, the “second pillar”, consisting of environmental and regional development programmes, is to be developed into the central tool of agricultural policy. This would be financed by the reduction of traditional spending on market

organization, especially on export refunds and stockholding and processing aid. Direct payments are to be further decoupled from production. For this purpose, compensatory payments for crops and headage premiums should be replaced by a uniform system of non crop specific area payments.

According to the ministers, the ongoing WTO negotiations should be used to “secure internationally” higher standards of consumer protection, social security, environmental protection and animal protection. Specifically, they say that it ought to be possible to “adequately compensate” farmers for such costs that arise from complying with mandatory high standards. The decision does not specify the instruments with which these goals are to be achieved.

4.2 Potential Conflicts with WTO Provisions

As explained in section 3, the disciplines set by the WTO also concern environmental policy for the agricultural sector. The following passage, therefore, will take a closer look at the relevant provisions contained in Agenda 2000 and the decisions regarding the agricultural turnaround to see whether they are compatible with the relevant WTO agreements.

- The reduction of the traditional market-organization spending is in line with the goals of the Agreement on Agriculture; the same is true of the decoupling from production and direct payments. Uniform area-based payments could even meet the Green Box criteria for non-product-related income support.
- Education and counselling of farmers on environmentally friendly practices also comply with the Green Box provisions.
- The mandatory labelling of food ingredients is allowed under the TBT Agreement if it is undertaken in a manner that is transparent and non-discriminatory vis-à-vis imported food. There is considerable potential for conflict, however, with respect to the mandatory labelling of genetically modified plants, animals and products thereof, as planned by the EU.
- Cross-compliance and modulation of direct payments as well as making direct payments contingent on area-linking of livestock farming seem unproblematic – provided that these measures meet the criteria of the Blue Box and that the Blue Box itself remains part of the Agreement on Agriculture.
- The structuring of the existing agri-environmental programmes in Germany and other EU states poses more of a problem. To comply with the requirements of the Agreement on Agriculture, the evaluation process would have to be improved and operational objectives would have to be defined. Most EU states do not have indicator concepts or (operational) performance standards to appropriately assess performance in relation to the objectives. Moreover, many measures seek to achieve several goals, of which controlling effects on the environment is only one. In order to fully meet the criteria of the Green Box, premium would have to be differentiated according to the actual yield reductions. In the case of almost 50% of agri-environmental measures, premium are not differentiated at all (Wiggerthale 1999: 84). The system of premium would have to be regionalized, which would

result in income reductions in regions with lower productivity. If agri-environmental programmes are expanded and the incentive component of such programmes is enhanced to make them more attractive, even greater inconsistencies with the requirements of the WTO will be likely.

- The WTO provisions do not pose a direct obstacle to raising national standards. The problem, however, is the compensation for the ensuing costs as demanded as part of the agricultural turnaround. Duties on products that are produced with lower environmental standards would be in contradiction to the principle of non-discrimination. Compensating the costs arising from the application of good agricultural practices through direct payments would not only contravene the principles of Agenda 2000, it would also be problematic in respect to the conditions for agri-environmental programmes laid down in the Green Box, because such compensation would benefit almost all farm operations. Making direct payments contingent on compliance with standards of good agricultural practice may be seen as a type of compensation and would, at this point, not be considered controversial since it would meet the criteria of the Blue Box. It would be quite different if direct payments were linked directly to the costs of such standards and if they would then have to be differentiated according to products and increased as production goes up. As such they would contravene the criteria of the Blue Box.
- Whether the promotion of organic farming by means of an eco-label guaranteed by the government is in conflict with the provisions of the TBT Agreements is still a controversial issue (cf. section 3.2). But as long as products thus labeled are only niche products, competing exporters will find it difficult to show proof of any obstacles to market access.
- There could be a greater potential for conflict with regard to a “second label” which has been proposed for non-organic farm products that meet higher environmental and animal welfare standards than prescribed under the law or good agricultural practices. It is likely that at least some of these standards will be closely tailored to meet German or European conditions, thus making it impossible or useless for producers in other countries to comply with such standards. That “second label” is also intended to gain a significantly higher market share than the eco label. This way, the potential problems regarding market access would be more substantial for importers that have difficulties obtaining that label.
- As for animal welfare standards, an additional problem is that animal protection is not included in the Agreement on Agriculture as a legitimate goal under the heading of non-trade concerns. What makes this issue even more controversial is the fact that such standards would not normally affect the quality of the end product in any measurable manner. As a result, they are not included in the scope of the SPS or TBT Agreements; hence, the principle of non-discrimination in Art. III GATT applies. Under this principle, no distinction should be made between products from livestock production compatible with animal welfare requirements and products from livestock factories. If animal protection standards are raised in the EU only, for example, by way of the planned ban on battery cages for laying hens, European suppliers will be at risk of being crowded out by cheaper imports. The objective of banning battery cages may be considered as unsuccessful if the EU ends the practice of keeping laying hens in battery cages, while Brazil con-

tinues to do so and then exports eggs to the EU. Therefore, the EU has introduced a proposal in the ongoing agricultural negotiations on how to deal with this problem without having to resort to import quotas. Apart from labelling, which is subject to the same problems as the “second label”, the EU wants to expand the Green Box to include payments designed to offset the additional costs for higher standards of animal protection.

So, the planned turnaround in agriculture, like the environmental-policy measures under the Common Agricultural Policy, engenders a number of problems with respect to the World Trade Organization. The most critical conflicts concern the formulation of agri-environmental programmes as well as the compensation for the additional costs of higher standards, especially in the area of animal welfare, and most labelling initiatives. The implementation of the measures indicated in the context of the agricultural turnaround will, therefore, require changes to or, at a minimum, the reinterpretation of provisions of the Agreement on Agriculture as well as the TBT and SPS Agreements.

5. The Role of the Environment and Food Security in the Ongoing Negotiations on Agriculture – Proposals by Member Countries

Quite in contrast to the Uruguay Round, a large number of Developing Countries have participated actively in the ongoing negotiations on the further liberalization of agricultural trade since they started in early 2000. The second phase of the negotiations has now been completed, and 125 of the 140 WTO members have submitted their own proposals or statements. Of the 45 formally submitted negotiating proposals, 24 were from Developing Countries, four from the Cairns Group, in which Developing Countries make up the majority and continue to gain influence, as well as four from transition countries, several of which have the status of Developing Countries. The vivid participation of Developing Countries has resulted in “food security” playing a prominent role in the negotiations. Fewer proposals have been submitted on environmental aspects. An overview of all the negotiating proposals in respect to the environment, food security and development is given in Annex 1, which will illustrate this point.

5.1 Developing Countries

It is especially Developing Countries that frequently form loose associations of stakeholders to submit joint proposals. Many countries are involved in several proposals by various groups and some have submitted individual proposals as well. These proposals are surprisingly homogeneous with respect to the issue of food security: the various coalitions differ in their focus, but almost all demand forms of domestic support that go beyond those allowed currently under the Agreement on Agriculture. Most of them also call for further border-protection measures in order to be able to improve their food-security policies. As for the environment, however, their demands differ greatly; they range from the reduction of environmentally motivated subsidies, the maintenance of the status quo in this area, to increased flexibility, at least for Developing Countries. In the following, the proposals are analyzed according to their respective subject matter. Countries and groups of countries that emphasize a given aspect are named.

The African Group, Egypt and Jordan call for the creation of a fund to compensate LDCs and NFIDCs for a portion of their costs of importing food at world-market prices if they exceed a certain level. In addition, they demand binding commitments for increased technical and financial assistance with the aim of strengthening local production. As for food aid, the proposals demand that such aid be provided in the form of grants only and in a manner that ensures that domestic production is not disrupted. The Small Island Developing States (SIDS) are demanding an international

food reserve. From their point of view, restrictions on export support must be accompanied by additional measures to promote NFIDCs.

When it comes to border protection, almost all Developing Countries agree that the options available to them to protect their agriculture must be increased. Many countries are calling for a special safeguard mechanism for Developing Countries that allows quantitative restrictions and variable tariffs. The tariffs on certain products (basic foodstuffs) should be exempted from commitments on tariff reduction and minimum market access. Another demand is that it should be possible to increase the bound tariffs for such products. The SIDS demand that small Developing Countries be generally exempt from tariff-reduction commitments. The most far-reaching proposal was submitted by the “like-minded group”, a group of 11 Developing Countries around Pakistan, which calls for a “positive list” approach in the agricultural sector. It envisages that Developing Countries should be required to apply the provisions of the Agreement on Agriculture only to those products for which they have expressly made commitments to that effect.

Developing Countries are also unanimous in calling for improved market access for their exports. This is necessary, they say, from the point of view of food security, as well, as the export receipts are needed to finance food imports. Hence the tariffs on export products from Developing Countries should be reduced. Preferential market access should be improved and bound in the WTO in order to ensure that the preferential tariffs for Developing Countries cannot be withdrawn unilaterally by developed countries. Swaziland is calling for continued preferential market access for small Developing Countries even at fixed prices and quantities. The tariff quotas for minimum market access, according to most proposals, should be allocated to Developing Countries by way of preferential treatment. One frequent demand is for support to increase export capacities. Caricom demands that a fund be established for Developing Countries to bring their export products in line with international standards and the protection of geographical designations of origin.

Similar to border protection, all the proposals submitted by Developing Countries call for greater scope in the area of domestic support, both generally and specifically for the purpose of increasing food security. The proposals differ in the extent of the changes they demand from the current rules. Egypt limits its demands to the expansion of domestic support within the framework of the Green Box. Several other proposals call for negative product-specific support that exists in many countries in the form of prices below the world-market level to be set off against positive, non-product-specific support so as to increase the scope for the latter. The “like-minded group” around Pakistan is calling for the de-minimis exception to be doubled for Developing Countries, to 20% of the value of domestic production. Many proposals demand that support for “key products”, especially basic foodstuffs, be exempt from reduction commitments. India, the African Group and Jordan call for all measures to be exempt from reduction commitments that support small and subsistence farmers, alleviate rural poverty and promote food security. One possible way of implementation, as proposed by India, is to exclude product-specific support for poor farmers from the AMS calculation and, thus, to allow it without any restrictions. The proposal of the “like-minded group”, that Developing Countries should apply the provisions of the Agree-

ment on Agriculture only to those products for which they have entered into express commitments, is again the most far-reaching one.

Most of the proposals that refer to environmental policy have a common goal: to reduce the overall level of support in Industrialized Countries, which is seen as having market-distorting effects. The “like-minded group” certainly stands out for its proposal, the most far-reaching one so far: abolish the current system of “boxes” entirely. Industrialized Countries should only be allowed to give subsidies of up to 10% of the value of total agricultural production; 20% should be allowed for Developing Countries. Egypt, too, seeks to limit the total amount of payments under the Green Box, but does not mention exact figures. India wants to eliminate direct income support from the Green Box, but maintain the concept including the regulations for agri-environmental programmes. Mauritius cites environmental protection as a vital function of its agriculture. To ensure its continuation, it says, it will need stable export receipts. In its negotiating proposal, Jordan gives one of the few truly convincing examples of multi-functionality: olive groves are almost the only form of agricultural activity in the arid mountainous regions of the country, thus constituting a crucial source of income for poor sections of its population. Since Jordan has almost no natural forests, olive groves also serve as vital areas of recreation and contribute to the protection of soils from erosion during the rainy season. In view of relatively high production costs, tariff reductions for olive oil threaten the existence of this production method. Jordan, due to the tight situation of its national budget, is unable to grant direct income support; as a result, the only option it has to support olive farmers by way of higher prices is to resort to border protection and its trade-distorting effects.

5.2 The Cairns Group and ASEAN

Seventeen Industrialized and Developing Countries with strong agricultural export interests co-operate in the Cairns-Group. Members are Canada, Australia, New Zealand, South Africa, Argentina, Bolivia, Brazil, Chile, Costa Rica, Guatemala, Colombia, Paraguay, Uruguay, Indonesia, Malaysia, Philippines and Thailand. The latter being the four largest economies of the Association of Southeast Asian Nations (ASEAN). The Cairns Group played an important role in the Uruguay Round and is pressing for a far reaching liberalization of agricultural trade in the on-going negotiations.

Export restrictions such as export taxes or bans should be reduced in order to ensure that LDCs and NFIDCs have access to food imports. Developing Countries, however, should be allowed to restrict exports of raw materials – as long as Industrialized Countries maintain tariff escalation on processed products. A special safeguard mechanism should be set up for Developing Countries to protect against subsidized imports and protect small and subsistence farmers. In the context of domestic support, ASEAN calls for “effective autonomy” for Developing Countries so that they can promote food security. Adequate incentives to develop the agricultural sector of Developing Countries must be possible on a long-term basis as well. The Cairns Group limits its proposals to the expansion of the Green Box to include food security concerns, the maintenance of existing SDT provisions (input and credit subsidies,

10% de-minimis) and increased technical assistance. In its specific proposals ASEAN does not go beyond these points, either. ASEAN and Canada, like Egypt, call for an upper limit to the Green Box spending of Industrialized Countries. The Cairns Group is demanding a detailed review of the current Green Box criteria to ensure that the measures allowed do not distort trade.

5.3 USA

The USA advocates the continuation of food aid under the existing rules – in order to support LDCs and NFIDCs. In addition, in the negotiations regarding disciplines for export credit programmes, which it would like to see to take place outside the WTO, special provisions should be agreed upon for exports to Developing Countries. In order to reduce the risk of supply shortages on the world market, there should be stronger disciplines on the use of export restrictions.

Products from Developing Countries should be given special consideration in tariff reductions.

With respect to domestic support, Developing Countries should be given the right to apply additional measures based on certain criteria within the framework of the Green Box that are at most minimally trade-distorting. But the measures subsequently listed – support for higher productivity of subsistence farmers, investments, infrastructure, domestic marketing, risk management and access to new technologies – do not exceed those currently contained in the Green Box and the SDT Box. On the contrary, the proposal seems to indicate a tightening of the conditions.

According to the USA, the provisions under the Green Box are adequate to address environmental concerns too. The general criteria of the Green Box should be reviewed in order to ensure that they are at most minimally trade-distorting.

5.4 The EU, Switzerland and Norway

The EU is extremely critical of the practice of food aid: it claims that it is frequently misused by donors to reduce surplus stocks; if it is granted by way of loans, it will also increase the debt burden of the recipient countries. Therefore, the rules should be tightened: food aid should only be given in the form of grants and in a manner that does not harm the agricultural sector of the recipient countries.

The most vulnerable Developing Countries should be allowed to maintain border protection in order to give them sufficient time to adapt to the liberalization of agricultural trade. But the EU does not state any criteria for the definition of this group. LDCs are already exempted from all reduction commitments under the existing agreement. Norway wants to make the special safeguard clause available to all Developing Countries.

Preferential market access for Developing Countries should be stabilized and rendered predictable. The EU fails to specify how this should be achieved. Norway's specific proposal states that tariff quotas for minimum market access should be

granted to Developing Countries by way of preferential treatment. The improved protection of geographical designations of origin and specialties demanded by the EU would also increase the opportunities for Developing Countries to occupy niche markets in Industrialized Countries.

As for domestic support, the Green Box criteria should give greater consideration to poverty alleviation and food security in Developing Countries. The de-minimis clause for Developing Countries should be revised, in the opinion of the EU. Norway specifically proposes to raise the de-minimis threshold for this group of countries.

Like the USA, the EU and Switzerland believe that the Green Box provisions in the area of the environment are sufficient to pursue ecological objectives. However, the EU states that the review of the criteria should not only ensure minimal trade distortion, but also the protection of the environment. But the only specific proposal of the EU in this regard refers to animal welfare: payments to offset the costs for complying with higher standards of animal welfare should become as much part of the Green Box as agri-environmental programmes. In addition, labelling according to animal welfare standards should be allowed. Norway argues that, because of its adverse climatic conditions, it is unable to preserve its agricultural sector solely on the basis of a combination of production at world-market prices and direct payments pursuant to the criteria of the Green Box (and the Blue Box). It says that direct payments account for over 2/3 of farm income. Therefore, Norway calls for the maintenance of border protection and price support. For products intended for export, the options for support should however be limited more strictly than for products aimed at the domestic market.

5.5 Japan and Korea

Japan proposes that the creation of an international food reserve to support LDCs and NFIDCs should be considered. Export restrictions should be disciplined more strictly in order to reduce instability in import supplies.

Japan is the only country to propose that there should be more scope for all countries to take food security concerns into account when setting tariff levels and granting market access. Korea has proposed this only for basic foodstuffs in Developing Countries.

As for domestic support, Korea proposes that all countries should be allowed to give direct payments to farmers in order to maintain the production of basic foodstuffs. In addition, Developing Countries should be allowed the possibility to adopt measures for increasing their production, especially investments in infrastructure, without any limitations. If these measures are directly geared to food security, they should be exempted from reduction commitments, even if they distort trade.

Regarding the environment, Korea demands that direct payments for “public goods” such as the environment and cultural heritage be permitted in unlimited amounts. It also wants to see the precautionary principle strengthened in the assessment of food safety and in the risk assessment of genetically modified organ-

isms. Japan is calling for allowing stricter rules on quarantine and inspection as well as improved consumer information through mandatory labelling.

5.6 Non-Governmental Organizations

The world's largest association of small farmers' organizations (La Via Campesina) believes that nation-states should be fully free to decide which policy to pursue to ensure food security and which role international trade should play in this context. They reject, on principle, the multilateral provisions of the Agreement on Agriculture based on the idea of free trade and market-oriented national agricultural policy. Hence they demand that the agricultural sector shall be fully exempted from the WTO rules. At the same time, they call for international agreements to end export dumping outside of the WTO, e.g., within the framework of UNCTAD. Einarsson (2000: 38f) reaches similar conclusions in a study for Swedish development and environmental organizations. The WTO should not impose on its members any restrictions to border protection and domestic support for their agriculture. Of course, it is not possible to justify all protective and domestic support measures by invoking the objectives of environmental protection and food security, but the WTO, according to Einarsson, is not the right organization to make the necessary distinctions. As long as there is no adequate international mechanism, such decisions would have to remain the responsibility of the nation-states. Therefore, the WTO should be limited to the task of preventing export dumping.

Dumping and export subsidies, according to almost all NGOs, are essential causes of non-sustainable production and trade flows. For this reason, they advocate an immediate ban on all such practices. This refers not only to direct measures such as export subsidies or export credit programmes, but aims to prevent farm exports from being sold at prices below the full costs of production. A proposal submitted by the US Institute for Agriculture and Trade Policy envisages simplifying the complex WTO anti-dumping rules by using the production costs for farm products which the OECD has calculated for its members as a yardstick (GETS, 2001: 6). Importing countries should automatically be allowed to adopt anti-dumping measures if the export prices fall below these costs. At the same time, provisions should be added to the AoA that would limit the dominant market position of agricultural trading companies and, thus, create more opportunities for companies from Developing Countries. The demands of Einarsson (2000: 38) and the Forum on Environment and Development (Forum Umwelt und Entwicklung; 2001: 4) have a similar thrust: products from markets where farm production is supported – regardless of the measures – may be exported only if such support is offset by export duties or similar measures, and this should be based on the support measure “producer subsidy equivalent”, also calculated by the OECD, which includes various forms of support that are excluded from the AMS calculation.

In order to implement the Marrakech Decision to support LDCs and NFIDCs, ActionAid (2001: 12) proposes that a fund be created that would have two functions: when the world-market price levels are at a, to be defined, “normal” level, it would support national food production or, if this is not economically or ecologically viable,

export production in general, i.e. not only agricultural. If import prices exceed the “normal” price levels, LDCs and NFIDCs would receive financial aid to be able to finance imports or, in the event of a global shortage of supplies, to buy stocks from a global public food reserve that would have to be set up. The financial resources of this fund and the individual contributions of developed countries and agricultural exporters should be defined under the AoA so that non-implementation would trigger trade measures by LDCs and NFIDCs (withdrawal of market access, not only for the agricultural sector). The support provided so far under the Food Aid Convention should be incorporated into the fund, as should the promised compensation for higher import costs. Similar demands have been made by many other NGOs (Einarsson 2000: 42, Forum Umwelt und Entwicklung 2001: 2).

Almost all NGOs agree in their demands that Developing Countries need to be given better access to the markets of developed countries. In particular, farm products from least developed countries (LDCs) should be exempted from tariffs and quotas. Given their limited export capacities, it is unlikely that this would have significant effects on the agricultural markets of developed countries (Einarsson, 2000: 43). The NGOs feel that other Developing Countries, too, should also be granted preferential terms for market access – on a mandatory basis. In a study for the British Royal Society for the Protection of Birds (RSPB), Crompton and Hardstaff (2001: 90f) say that this should be linked to the support for sustainable production methods and to the question of how far this would disrupt the production for the domestic market and what consequences it would have for small farmers.

There is wide consensus among NGOs that Developing Countries should be given more rights to protect their agricultural markets if they need to do so in order to achieve the aims of food security and support for small farmers. The same is being said with respect to increasing their rights in the area of domestic support.

As far as domestic support is concerned, Crompton and Hardstaff call for the Blue and Green Boxes to be merged and for a review of their criteria. Eventually, they say, only those measures should remain that effectively serve the goals of environmental protection and food security in Developing Countries. This would have to be ensured by monitoring and reviewing the effectiveness of the measures. In agreement with the Forum Environment and Development (Forum Umwelt und Entwicklung; 2001:4), they call for specific measures to that end: abolish paragraph 12 b in Annex 2 of the Agreement on Agriculture, which limits the amount of payments under agri-environmental programmes to the extra costs involved in complying with them. The payments should be based on the social value of the environmental services rendered by farmers, not on the costs required to produce them.

The provisions on border protection should also allow environmentally motivated measures; Crompton and Hardstaff (2001: 84f) propose three possible measures:

- Developing Countries and Industrialized Countries with low levels of domestic support should be given the right to protect their markets from imports that are produced in a non-sustainable manner.
- Tariffs between WTO members should be calculated on the basis of sustainability indices between importing and exporting countries. However, no generally accepted indices are available yet.

- Farm products that are produced in a sustainable manner should be imported on preferential terms. The General System of Preferences of the EU already contains initial approaches in this regard.

Eurogroup for Animal Welfare has submitted detailed proposals on animal welfare (2001):

- Cost advantages resulting from lower animal-protection standards should be offset by countries with higher standards by means of import duties; these would have to be set in a transparent process.
- Compensation for the costs of animal welfare measures should be allowed under the Green Box. Paragraph 12 a in Annex 2 of the Agreement on Agriculture should be amended accordingly.

5.7 Conclusion

The proposals presented show that non-trade concerns play an important role in the ongoing negotiations. The focus is clearly on food security, and numerous Developing Countries have submitted far-reaching and detailed proposals that reflect the opinions of most non-governmental organizations. The Industrialized Countries and the Cairns Group felt obliged to signal (at least, rhetorical) cooperation. Whether this will lead to substantial concessions remains to be seen. Especially the proposal by the USA, upon closer scrutiny, aims at limiting the flexibility of Developing Countries, rather than increasing it.

On the other hand, only few governments have tabled proposals to increase the scope of environmental policy in the Agreement on Agriculture. Even though the existing agri-environmental programmes of the EU do not fully comply with the criteria of the Green Box, the demands raised in that context are limited to animal welfare. So, Korea and Norway are the only countries to call for improvements with respect to environmental concerns. The most specific proposals have been submitted by non-governmental organizations, which, as a first step, want to abolish the rule that payments for agri-environmental programmes need to be limited to the offsetting of cost. In its negotiating strategy, the EU focuses more on the continuation of export subsidies and the Blue Box than on direct measures to promote non-trade concerns, which does not make its position more credible.

6. Recommendations

Given the express reference to non-trade concerns, which is also reflected in the practical provisions, the Agreement on Agriculture of the WTO offers some possibilities for including sustainability aspects in international agricultural trade. Nevertheless, the current rules need to be improved upon urgently.

The primary problem is that the permissible support measures which can be adopted to promote objectives such as food security and environmental protection are closely tailored to the needs and means of Industrialized Countries. The most crucial criterion is that of “at most minimal trade distortion”, which precludes interventions in price formation, but allows for direct payments from the national budget provided that they are “decoupled” from production. If this criterion is met, it will not matter anymore whether the payments are actually used to pursue environmental protection or food security. In addition, the Agreement on Agriculture allows Industrialized Countries, which have promoted their agriculture by means of highly controversial methods, including export subsidies, to continue these practices – at a reduced level. At the same time, other countries’ options to protect their markets from such subsidized products are considerably restricted. It also limits the scope for incentives to apply environmentally friendly and ecologically valuable production methods. In contrast to completely unconditional payments, this is seen as having a potential for distorting production and trade.

An Agreement on Agriculture based on the idea of sustainability must not have the principle of “at most minimal trade distortion” as its central criterion to decide on the permissibility of support and border-protection measures. Rather, such decision should be based on whether a measure is effective and appropriate to promote non-trade concerns. This is especially true of food security, for which most Developing Countries need, and demand, more flexibility and international support. Cooperation on the part of Industrialized Countries would not only be justified in itself, but would also be politically necessary in order to achieve reforms in the provisions related to environmental protection and conservation of resources.

6.1 Food Security and Development

Industrialized Countries, and especially the EU, must follow up on their promises to fight hunger by taking action within the WTO and with respect to development aid. A credible strategy must be targeted at four main issues (cf. Reichert, 2001: 23f):

- Due to great differences in subsidization, there is no equality of opportunity between the agricultural sectors of Developed and Developing Countries.
- Developing Countries must be allowed to also use “trade-distorting” measures to support their agriculture. Such measures should be targeted at the promotion of marginalized groups and food security.
- Preferential treatment in market access must be made more binding and accompanied by support to build up export capacities.

- LDCs and other countries with low income and food deficits need international support to develop their agriculture.

6.1.1 Measures to Offset the Higher Level of Subsidies in Industrialized Countries

Real equality of opportunities between Industrialized and Developing Countries in agricultural trade is not likely to come any time soon. Industrialized Countries will have to take this into account by agreeing to modify the Agreement on Agriculture as follows:

- Export subsidies are eliminated within a few years (no more than three), and state-funded export credits and credit programs must be designed in such a way that they are free of any elements of subsidization. The logic behind state-funded export credits must be called into question in view of the highly developed private financial sector in the Industrialized Countries. As long as these measures are applied, Developing Countries must not be required to open up their markets any further.
- The domestic subsidies allowed under the Agreement on Agriculture have to be treated as “actionable” as defined in the Subsidies Agreement. In addition, the provisions of Art. 6.1. of the Agreement on Subsidies and Countervailing Measures, which terminated in January 2000, should be reinstated. This Article states that serious prejudice shall be deemed to exist, if the subsidies exceed 5% of the production value. It thus allows a countervailing duty to be imposed without the provision of evidence of serious prejudice, which would take a burdensome administrative effort. This simplification should at least be available for Developing Countries, as an element of special and differential treatment. The subsidizing country could then demonstrate the “non-prejudicial nature” of its support in order to avoid countervailing measures.
- Their dominant position on the world market enables the largest agricultural trading companies to engage in dumping practices to gain access to new markets for their products. The production costs calculated by the OECD provide a suitable yardstick to determine instances of dumping. If the export prices fall below these costs, anti-dumping measures should automatically be allowed.
- An alternative to the right to adopt protective measures against subsidized exports would be for all countries that provide domestic support to their agricultural sector to impose a duty on the exporter of a product that is equal to the amount of its support. This way, domestic support could help increase the competitiveness of production on the domestic market, but not for exports or on the world market. Such duties may be calculated on the basis of the Producer Subsidy Equivalent (PSE) defined by the OECD, which takes into account all support payments for the agricultural sector that exceed world-market prices.

6.1.2 Increasing the Flexibility of Agricultural Policy in Developing Countries – the Development Box

Price policy and price-stabilizing measures are, in view of the limited financial capacities of Developing Countries, important instruments to promote the agricultural sector. Like other domestic support measures, they should focus on disadvantaged producers, who are frequently affected by food insecurity. Therefore, Developing Countries should be permitted to do the following:

- To take into account negative product-specific support (“taxation”, e.g., through administered prices below the world-market level) when calculating the AMS and, thus, to increase flexibility with regard to non-product-specific measures. However, this should be linked to the requirement that they eliminate the negative support within a certain period of time.
- To apply the de-minimis clause only to the aggregate AMS, and no longer to specific products. This would allow them to raise the support for some products above the de-minimis threshold if the sum of total support for all products does not exceed 10% of the value of the total agricultural production.
- To exclude positive product-specific support that is specifically tailored to small farmers (e.g., state-funded purchasing programmes at fixed prices for this group only) from the calculation of the AMS. Art. 6.2 of the Agreement on Agriculture should be amended accordingly.
- To double the product-specific de-minimis threshold for basic foodstuffs to 20%. This should apply to countries that do not export such products.
- To raise the tariffs on their most important basic foodstuffs and their substitutes if they have bound them at a low level. In addition, these products should be exempt from the reduction commitments.
- Furthermore, a special safeguard mechanism should be introduced for those products that are not classified as basic foodstuffs, which may be protected by high tariffs, but that are crucial to food security for other reasons, e.g., because a large number of small producers depend on such products.

6.1.3 Improvement of Market Access

Industrialized Countries continue to protect large parts of their production by applying extremely high tariffs. Farm products are largely exempted from the Industrialized Countries’ generalized systems of preferences. However, LDCs are subject to preferential terms, as a result of which the tariffs applicable to most products are not considered major barriers to trade anymore. For this group, special measures are required in order to support investments in their export capacities:

- Tariff preferences for farm products must be expanded considerably and fixed within the WTO. The possibility to withdraw them unilaterally, which has existed up to now, is a barrier to investments in potential export sectors of Developing Countries.

- Producers and supervisory authorities, especially in LDCs, must be supported in their efforts to adapt their export production to the health and safety standards applied in Industrialized Countries.
- Representatives from affected sections of the population, primarily small farmers and farm workers, must be involved in the decision on the usefulness of increasing export production. The consultative capacities of the FAO and UNCTAD in this regard must be increased.

6.1.4 Support for LDCs and NFIDCs

It is urgently necessary to operationalize the Marrakech Decision to support LDCs and NFIDCs. This should result in a fundamental reform of the way in which food aid is allocated as well as significantly higher development aid for the food production in Developing Countries. One workable solution would be the creation of an international fund that would be financed by the following countries:

- Countries that have, in the past, supported their exports. They should make the largest contributions (EU, USA),
- Countries that open up their agricultural markets within the framework of the Agreement on Agriculture and, thus, contribute to greater demand on the world market (Switzerland, Japan, Norway),
- Countries that have been able to increase their farm exports due to reduced competition with subsidized products and improved market access (Cairns Group).

The individual contributions of the countries should be fixed within the WTO, like import tariffs. This should be done using fixed US-\$ amounts that would be adjusted to price increases annually. The amount of the contributions could be based on the reduction in spending on export subsidies or imports and/or the increase in export receipts or on the spending on domestic support, graduated according to their trade-distorting effects.

It would be conceivable, for example, that Industrialized Countries pay 2.5% of their spending on Green Box, 5% of their spending on Blue Box and 10% of their spending on Amber Box measures into a fund to restructure and develop the markets of LDCs. This would also put pressure on those countries to convert their market-distorting subsidies to less market-distorting ones. The contributions should not vary with variations in world-market prices. The latter should instead influence how the funds are used:

- If world-market prices are low, programmes should be financed to promote the productivity of, in particular, small farmers and subsistence farmers in order to increase domestic food production. In countries where this potential seems to be largely exhausted, support may also focus on export production in order to finance imports.
- At times of higher world-market prices, part of the fund should be used to buy food aid, from the affected region, if possible, which would then be given to the recipient countries by way of grants. The aid should benefit, through targeted programmes,

(semi) subsistence farmers that have to rely on the purchase of additional food as well as needy groups in urban areas. At the same time, support for those farmers that produce marketable surplus could be reduced in such times.

The fund should be managed by the FAO in cooperation with UNCTAD, UNDP and the WFP, which would develop national programmes, in cooperation with the recipient countries, to increase food security.

6.2 Protection of the Environment and Health

Not all of the WTO rules relevant to environment and health protection in agricultural trade are contained in the Agreement on Agriculture. Important aspects such as standards for products and production as well as their labelling are covered under the TBT and SPS Agreements. Therefore, these agreements should also be clarified and/or amended. This might be done within the framework of a comprehensive review and revision of all WTO agreements, which many Developing Countries are calling for.

6.2.1 More Scope for Environmental Programmes in the Agreement on Agriculture

Similar to measures to promote food security, the effectiveness for achieving the objective should be the central criterion for environmental measures, rather than “minimal trade distortion”; scientists have raised this point as well. The European Environmental Advisory Council (EEAC 2001) points out that positive environmental measures cannot, as a rule, be decoupled from production completely; therefore, they can also affect trade. In an enviro-economic analysis of AoA rules for environmental programmes, Edwards and Fraser (2001: 321ff) of the University of Melbourne concluded that in many cases it is more effective to base payments on the social value of the environmental goods provided than on the costs related to their production.

- As a first step, paragraph 12 b in Annex 2 to the Agreement on Agriculture should be deleted in order to allow for incentive elements in agri-environmental programmes. At the same time, income support, “decoupled” from production and environmental requirements, should be included in the Amber Box.
- In the longer term the Blue Box should be “ecologized”. Area-based subsidies should still be allowed if they are tied to environmentally friendly production methods and extensification. In addition, ecologically inefficient short-term set-aside programmes should be classified as Amber Box measures to be reduced.
- Furthermore, greater scope for state support in the marketing of organic products and regional marketing should be created, e.g., for prices guaranteed for a limited period of time. Export subsidies should be excluded from that in explicit terms.

6.2.2 Consideration of the Precautionary Principle under the SPS Agreement

The most crucial problem in regard to the SPS Agreement is the subordination of the precautionary principle to international standards, especially those of the Codex Alimentarius Commission, which exclusively represent the scientific mainstream. Therefore:

- The precautionary principle must be further strengthened within the framework of Art. 5.7; in the event of a well-founded assumption of risk, it must also be possible to exceed existing international standards. In addition, the principle of reversal of burden of proof will have to be reinforced, and the “reasonable period” for reviewing measures should be based on the emergence of new findings, rather than on a rigid timeframe;
- Trade restrictive measures, adopted on the basis of the Biosafety Protocol of the Biodiversity Convention, must not be made subject to the arbitration process of the WTO;
- Developing Countries, especially LDCs, must be given support to adapt their production processes and control and inspection procedures to international standards. Industrialized Countries that raise their standards to levels exceeding those that have been internationally agreed upon, thus restricting market access for Developing Countries, must finance measures that would enable producers concerned to adapt to the new standards.

6.2.3 No Restriction on the Labelling of Food Under the TBT Agreement

At this time, it does not seem to be realistic to expand the TBT Agreement, as a whole, to non-product-related PPM standards. In view of the fact that there are very few international PPM standards for agriculture, there is no agreement on which standards would justify trade-restrictive measures. Any changes to the TBT Agreement should, therefore, be focused on the following:

- The fundamental admissibility also of mandatory PPM-based labels should be determined. This must expressly include labels for genetically modified organisms and related products.
- The award of such labels should be subject to general requirements concerning the transparency of the criteria. The definition of the purposes of labelling must remain with member states.
- In this context, too, Developing Countries must be given support to set up their own adequate certifying bodies, especially with respect to positive labels such as those for organic farming.

6.3 Animal Welfare

Animal welfare aspects have remained unaddressed by the WTO so far. Essentially, they should be incorporated into the Agreement on Agriculture and the TBT Agreement, similar to environmental measures.

- Payments to offset the costs of far-reaching animal-protection standards should be admissible under the Green Box. It would make sense to limit them to the actual additional costs. Annex 2 to the Agreement on Agriculture should be amended accordingly. Amending paragraph 12a would not be appropriate if paragraph 12b, as demanded, were deleted.
- Labels with respect to animal welfare standards applied in production must be allowed under the TBT Agreement.

6.4 Trade-Policy Measures

The reforms to the WTO agreements recommended in this paper all have a common aim: to eliminate the barriers which the current provisions create to national measures in the areas of environment and health protection and animal welfare. However, it is much more difficult to define the manner in which trade policy and, in particular, the WTO could play an active role in promoting these objectives. This would require a differentiation of farm products according to the ecological effects of cultivation and transportation and would, thus, contravene the principle of non-discrimination. The general preference systems of Industrialized Countries allow a certain degree of differentiation, at least in relation to products from Developing Countries. In this regard, the EU approach of granting additional preferences for especially environmentally friendly products is to be welcomed. So far, however, it does not envisage granting additional preferences for certified organic products. In the ongoing negotiations there are few starting points, if any, for broadening the scope for trade-policy measures outside the preference systems. Therefore, the EU should focus on the following:

- Extend the additional preferences in the framework of the GSP also to certified organic products from Developing Countries and
- Accelerate the development of internationally agreed-upon standards for sustainable agriculture and relevant indicators.

6.5 The Negotiations on Agriculture and the “Development Round”

The last section clearly demonstrated that the ongoing negotiations within the framework of the Agreement on Agriculture are not sufficient to meet the need for ecological reforms of the international agricultural-trade regime. To achieve this, it will also be necessary to interpret other WTO agreements more exactly and amend them where required.

However, the outcomes of the fourth WTO ministerial conference in Doha in November 2001, as set out in the ministerial declaration, raise few prospects for short- to medium-term successes in this area.

- Paragraph 13 which deals with the negotiations on agriculture merely confirms that, “non-trade concerns” will be taken into account as provided for in the AoA. Whether animal welfare is to be included in the list of non-trade concerns will con-

tinue to be a topic of heated debate. There is marginal progress on special and differential treatment for Developing Countries. It is recognized explicitly for the first time that special rules might be appropriate to address the special concerns of Developing Countries regarding food security and rural development. Although this falls short of agreeing to start negotiations on the integration of a “Development Box” into the AoA, it gives at least a starting point to follow up on these demands. The statement that negotiations should be conducted “with a view to phasing out all forms of export subsidies”, is mainly of symbolic value as the EU agreed to this aim for the first time. It is however sufficiently vague to make sure that the elimination of export subsidies is not the necessary result of the current round of negotiations. It seems to be of greater importance that the term “all forms of export subsidies” also covers the preferential export credit schemes and certain types of food aid employed by the US. Up to now these are not covered by the AoA.

- The EU failed to make substantial progress on the larger part of its environmental agenda. The paragraphs on trade and environment (paras. 31, 32, 33 and 51) fail to mention the precautionary principle, and the question of labelling for environmental purposes is referred to the Committee on Trade and Environment. It has been on the Committee’s agenda since 1995, without any outcome so far. At least the CTE was asked to report to the next ministerial conference including a recommendation on whether negotiations on this issue are necessary. It was agreed to start negotiations, in a very limited manner, to clarify some aspects of the relationship between multilateral environmental agreements and WTO rules. The agricultural sector is affected by this mainly as regards the conflict between the Biosafety Protocol and SPS Agreement (cf. sections 2.1.3 and 3.3.2).

The move by the EU and the US, against the opposition of a majority of Developing Countries, to extend the scope of the WTO to new issues like investment and competition in the framework of a “new round” is detrimental to the mutual confidence urgently needed for the delicate negotiations on environmental issues. The demand by many Developing Countries to review and revise the existing agreements, summarized under the phrase “implementation issues”, was, in contrast, responded to with a declaration which contains little more than appeals to Industrialized Countries and reporting mandates to various WTO committees.

A fundamental reform of the existing WTO Agreements is necessary not only from a development, but also from an environmental point of view. If the EU and the US insist on concentrating the negotiations on “new issues” such as investment and competition, there will be hardly any chance to achieve this in the foreseeable future.

7. References

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Annex 1: Overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
Cairns Group on export competition (G/AG/NG/W/11)	Subsidized exports undermine sustainable production methods in Developing Countries. All forms of export support need to be abolished	Subsidized exports hurt local production in food-importing countries	Subsidized exports reduce incomes in exporting countries. Rural poverty increases and more people move into cities. Marketing and transportation subsidies should continue to be allowed in Developing Countries.
Canada on market access (G/AG/NG/W/12)	-	-	-
11 Developing Countries ¹ on special and differential treatment and a Development Box (G/AG/NG/W/13)	-	In Developing Countries: "key products", especially basic foodstuffs, should be excluded from liberalization. It should be possible to raise the tariffs on these products.	Setting up a Development Box with the following elements: the de-minimis exception for domestic support in Developing Countries should be doubled to 20%. The rules of the AoA should only apply to those products for which Developing Countries enter into explicit commitments ("positive list"). Every form of dumping must be banned.
11 Developing Countries ¹ on the Green Box (G/AG/NG/W/14)	Elimination of the Green Box, including environmental subsidies. Increase the de-minimis threshold to 10% for developed countries	Development-Box	Development Box
USA: comprehensive negotiating proposal on long-term agricultural reform (G/AG/NG/W/15)	Existing Green Box rules are sufficient, criteria should be refined further in order to ensure minimal trade distortion. Additional flexibility for Developing Countries to promote sustainability and protection of resources.	Continuation of food aid under existing rules. Special export-credit programmes for importing Developing Countries. Stronger disciplines for export restrictions.	Additional criteria for support programmes for investments, infrastructure, domestic marketing, risk management, access to new technologies, improved productivity of subsistence farmers. Products of Developing Countries should be given special consideration in tariff reductions.

¹ Cuba, Dominican Republic, Honduras, Pakistan, Haiti, Nicaragua, Kenya, Uganda, Zimbabwe, Sri Lanka and El Salvador

Continuation (1) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
EU on the Blue Box (G/AG/NG/W/17)	-	-	-
EU on food quality (G/AG/NG/W/18)	-	-	Better protection of geographical designations of origin and specialties will increase the opportunities for Developing Countries to occupy niche markets in Industrialized Countries
EU on animal welfare (G/AG/NG/W/19)	(to be agreed upon) multilateral agreements on animal protection should be recognized by the WTO. Suitable labelling to simplify consumer decisions. Compensation for the additional costs arising from higher standards of animal protection.	-	-
EU on export competition (G/AG/NG/W/34)	-	Food aid is often misused to justify the reduction of surplus in Industrialized Countries. The rules for this should be tightened, and the impact on agriculture in Developing Countries should be taken into account.	
Cairns Group on domestic support (G/AG/NG/W/35)	-	Expansion of Green Box to include food-security concerns, enhanced technical assistance	Existing SDT provisions (input and credit subsidies, 10% de-minimis) should be maintained, technical assistance extended
11 Developing Countries² on market access (G/AG/NG/W/37)	-	-	Tariffs on tropical products should be especially reduced. Variable tariffs should be allowed only as an SDT measure for Developing Countries

²Cuba, Dominican Republic, Honduras, India, Nigeria, Kenya, Pakistan, Uganda, Zimbabwe, Sri Lanka and El Salvador

Continuation (2) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
Cairns Group on market access (G/AG/NG/W/54)	-	-	Reduction of tariff escalation on processed products. Tariffs on tropical products should be lowered further. Developing Countries should be given preferential access to tariff quotas. Special safeguards for small farmers and subsistence farmers as well as protection against subsidized imports.
ASEAN on SDT (G/AG/NG/W/55)	Upper limit for Green Box subsidies of Industrialized Countries	Green Box needs to be more focused on food security. Developing Countries need "effective autonomy" to promote their food security.	Adequate incentives to develop the agricultural sector in Developing Countries must be made possible for the long term. The promotion of diversification must be excluded from reduction commitments. Existing SDT provisions must be maintained. Developing Countries should be granted special safeguards regarding market access.
12 transition countries ³ on additional flexibility for domestic support (G/AG/NG/W/56)			Special provisions for transition countries: no reduction commitment for investment, interest or general farm subsidies
EU: comprehensive negotiating proposal (G/AG/NG/W/90)	Review of the Green Box criteria to ensure minimal trade distortion as well as an adequate level of environmental protection, animal welfare and rural development. The precautionary principle should be applied to food-security issues.	Green Box criteria should take better account of poverty alleviation and food security in Developing Countries. Food aid should be given only in grant form as well as in forms that do not harm the agriculture of the recipient countries. Food aid on a credit basis must be rejected, because it would increase the debt burden.	The most vulnerable Developing Countries should be allowed to continue border protection measures to give them sufficient time to adapt. Trade preferences of Industrialized Countries should be stabilized and made predictable. The de-minimis clause for Developing Countries should be revised .

³ Albania, Bulgaria, Croatia, the Czech Republic, Georgia, Hungary, the Kyrgyz Republic, Latvia, Lithuania, Mongolia, the Slovak Republic, Slovenia

Continuation (3) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
Japan: negotiating proposals (G/AG/NG/W/91)	General references to public goods and positive external effects. The safety of food should be increased through stricter quarantine and inspection. Consumers should be better informed by proper labelling.	All countries should consider food-security aspects when setting tariff levels and granting market access. Developing Countries should be given broad scope for border measures to promote food security. The same should be true of domestic support to promote domestic production for domestic consumption. International food supplies should be examined.	-
Canada on domestic support (G/AG/NG/W/92)	An upper limit should be introduced for all forms of domestic support including the Green Box. At the same time, countervailing measures against Green Box subsidies should be prohibited.	-	-
Switzerland: negotiating proposal (G/AG/NG/W/94)			Special flexibility for NFIDCs and countries that are less integrated in the world market. Improved market access for these countries
Swaziland on market access for small Developing Countries (G/AG/NG/W/95)	-	Small Developing Countries should be allowed to protect, in particular, small farmers and basic foodstuffs against the competition from imports.	The existing market access for small Developing Countries should be maintained, including in the form of guaranteed quantities at guaranteed prices. Tariff escalation should be reduced.
Mauritius: negotiating proposal (G/AG/NG/W/96)	Referred to as NTC. Developing Countries need other instruments to achieve this. They need stable export receipts to finance this.	Secure export receipts to pay for necessary imports. Secure transportation and storage capacities. Promotion of domestic production. Exempt certain products from reduction commitments. International food reserves. Restrictions on export subsidies must be accompanied by measures to promote NFIDCs.	All measures for poverty alleviation must be excluded from reduction commitments. Access to technologies incl. seeds to increase competitiveness. Preferences must be maintained. Competitive exporters should not crowd out SIDS from their traditional markets.

Continuation (4) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
Small Island Developing States⁴ : negotiating proposal (G/AG/NG/W/97)		A special safeguard mechanism for small farmers against rising imports of basic foodstuffs should be set up. New mechanisms should be established to implement the technical assistance promised in the Marrakech Decision. After natural disasters, all AoA commitments should be suspended.	Non-reciprocal tariff preferences for farm products from SIDS should be improved and fixed in the WTO. SIDS (also when concluding free-trade agreements) should not be required to make reciprocal concessions with respect to agriculture. SIDS should be given a fixed share of tariff quotas. Technical assistance to help comply with standards.
Korea : negotiating proposal (G/AG/NG/W/98)	Direct payments for “public goods” such as environmental protection and the protection of cultural heritage should be unlimited. The precautionary principle should be applied when determining food safety and assessing GMOs.	Direct payments to farmers to maintain the production of basic foodstuffs and support for production increases in Developing Countries, especially investments in infrastructure should be allowed without any limitations. No reduction of measures to improve food security in Developing Countries even if they distort trade. Increased border protection for basic foodstuffs in Developing Countries.	Increase permitted export support in Developing Countries.
Mali : negotiating proposal (G/AG/NG/W/99)			Duty-free market access for the following products: fruit and vegetables, livestock and meat, hides and leather, cotton. Elimination of export subsidies in Industrialized Countries for fruit and vegetables (immediately), rice (by 2010). Reduction of domestic support for cotton in Industrialized Countries. Maintenance of the STEs of LDCs for cotton. Support for the rice sector in LDCs.

⁴ Barbados, Cuba, Dominica, Jamaica, Mauritius, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago

Continuation (5) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
Caricom ⁵ on market access (G/AG/NG/W/100)			Preferential market access should be bound in the WTO. Reduction of MFN tariffs for export products of Developing Countries. Small Developing Countries should be allowed access to tariff quotas. Geographical designations of origin should be protected. A fund should be established to help Developing Countries adapt to international standards. Small Developing Countries should be excluded from tariff-reduction commitments. Special safeguard provisions should apply to all small Developing Countries.
Norway: negotiating proposal (G/AG/NG/W/101)	Agricultural production and NTCs such as environmental protection are complementary products that cannot be separated. Therefore, measures affecting production will be necessary. The Green Box should be maintained.	The Marrakech Decision should be implemented efficiently.	Duty/quota-free access for essentially all LDC products. Tariff quotas should be allocated primarily to Developing Countries. Expansion of the special safeguard to include all Developing Countries. Increase the de-minimis threshold for Developing Countries. Expansion of Green Box to include SDT provisions.

⁵ Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, Suriname

Continuation (6) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
India: negotiating proposal (G/AG/NG/W/102)	Maintain Green Box for environmental protection (in contrast to other measures)	All measures taken by Developing Countries to alleviate poverty, for rural development and diversification should be exempted from reduction commitments. Product-specific support for poor farmers should be excluded from the AMS calculation. Negative product-specific support should be set off against non product specific support measures. Developing Countries should be allowed to apply adequate tariff protection, to increase the bound tariffs on certain products and should be exempted from minimum-market-access commitments. A special safeguard provision should be set up for Developing Countries, including quantitative restrictions.	Reduction of tariff peaks and tariff escalation in Industrialized Countries. Tariff quotas should be preferentially allocated to Developing Countries with a per-capita income of less than \$1,000/year. Existing exceptions for marketing and transportation subsidies for exports from Developing Countries should be maintained. The preferential treatment of Developing Countries under the Subsidies Agreement should also apply to subsidies for farm exports.
Poland: negotiating proposal (G/AG/NG/W/103)	Flexibility in the implementation of the commitments in the area of NTCs incl. environmental protection and the protection of cultural heritage.	Flexibility in the implementation of commitments in the area of NTCs incl. food security.	Additional flexibility preferential market access for LDCs and "many" Developing Countries.
Morocco: negotiating proposal (G/AG/NG/W/105)	Global fund to finance multifunctionality in Developing Countries		Tariff reduction in Developing Countries depending on the elimination of subsidies in Industrialized Countries. A safeguard clause for Developing Countries. No commitment to reduce domestic support.
Turkey: negotiating proposal (G/AG/NG/W/106)	Maintenance of the Green Box; clearer definition of the requirements.		Tariff reduction in Developing Countries depending on the elimination of subsidies in Industrialized Countries. Industrialized Countries should eliminate tariff peaks and tariff escalation as part of a general tariff reduction. The de-minimis exception for Developing Countries should be increased.

Continuation (7) of the overview of the negotiating proposals on the environment and food security

Document	Negotiating proposals on ...		
	environment	food security	development
Egypt: negotiating proposal (G/AG/NG/W/107)	Reduction of payments under the Green Box; examination of trade-distorting effects	Implementation of the Marrakech Decision: increased technical and financial assistance to strengthen local production. A special fund should be established to compensate NFIDCs for a portion of their costs of import- ing food at world-market prices.	Adaptation/increase of the bound tariffs of Developing Countries to counter subsidized imports. Increase of domestic support within the framework of the Green Box.
Nigeria: negotiating proposal (G/AG/NG/W/130)	-	Increased support for NFIDCs. More rights for DCs to support small farmers and sub- sistence farmers through domestic meas- ures.	DCs should be allowed to raise their domes- tic support above the de-minimis threshold. Special safeguard provision only for DCs.
Burkina Faso: negotiating proposal (G/AG/NG/W/185)	Taking into account the “multifunctionality” of agriculture	Make implementation of the Marrakech Deci- sion binding. Setup of a revolving fund to support LDCs and NFIDCs. Food aid only in grant form and in forms that do not disrupt internal markets. Recognition of the necessity of protecting small farmers and food security. Special safeguard mechanism for LDCs.	Duty-free market access for farm products of LDCs. Support for LDCs in adapting to SPS standards. Special safeguard mechanism for LDCs.

Source: own compilation

Annex 2: Domestic Support, Green Box and Agricultural Environmental Measures

The member states of the WTO are required to report their total agricultural support payments to the WTO Secretariat every year (notification). Between 1995 and 1998, 47 countries reported Green Box measures, 20 of which notified the WTO of measures under agri-environmental programmes. The following table shows the support measures of the most important Industrialized Countries.

Country / Year	Total domestic support	AMS	Blue Box	Green Box			Share of environ. in support
				total	of which environ. programmes	Share of environ. in Green Box	
EU	(ECU/Euro million)					(%)	(%)
1995	90,476.1	50,026	20,845.5	18,779.2	2783.3	14.8	3.1
1996	95,421.6	51,009	21,520.8	22,130.4	4223.7	19.1	4.4
1997	89,149.8	50,194	20,442.8	18,166.8	3,687.0	20.2	4.1
1998	86,733.4	46,683	20,503.5	19,168	4965.1	25.9	5.7
Japan	(Yen billion)					(%)	(%)
1995	6,713.1	3,507.5	0	3,169.0	80.7	2.5	1.2
1996	6,185.1	3,329.7	0	2,818.1	133.3	4.7	2.2
1997	5,858.6	3,170.8	0	2,651.7	132.9	5.0	2.3
1998	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Norway	(NOK million)					(%)	(%)
1995	21,004.4	9,786.0	7,113.3	4,101.1	180.4	4.4	0.9
1996	21,891.4	10,529.0	7,246.3	4,116.1	161.0	3.9	0.7
1997	21,575.6	10,526.0	7,375.1	3,674.5	180.0	4.9	0.8
1998	22,654.9	10,885.5	7,880.3	3,889.1	187.8	4.8	0.8
USA	(US\$ million)					(%)	(%)
1995	60,926.1	6,213.9	7,030.4	46,401	234	0.5	0.4
1996	58,875.9	5,897.7	0	51,825	279	0.5	0.5
1997	58,295.7	6,238.1	0	51,252	266	0.5	0.5
1998	60,398.2	10,391.9	0	49,824	297	0.6	0.5

Differences between the total amount of support and the sum total of the individual components result from the de-minimis values.

Source: WTO Secretariat, author's own calculations

The overview shows that the EU is the one WTO member that makes the most intensive use of agri-environmental programmes – with an upward trend. In 1998, they accounted for more than one quarter of the total Green Box measures. Their share of total domestic support almost doubled to 5.7% in 1998 from 3.1% in 1995, but this still represents only a small portion of total domestic support and is actually less than the spending on export subsidies. The ecological benefit of set-aside programmes, which are part of the Blue Box criteria, is considered to be small (OECD, 1998: 28).