Background Paper 4

Environment and Trade

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Environment, Trade and SARD: Concepts, Issues and Tools.
Background Paper 4: Environment and Trade.

INTRODUCTION

The linkages between international agricultural trade, environmental concerns and sustainable agriculture and rural development (SARD) are a growing focus of controversy and debate. There is growing concern for example, regarding the relationship between agricultural trade liberalisation under the World Trade Organisation (WTO) and policy measures taken to protect the environment and promote agricultural development.

As national economies are becoming increasingly intertwined in the global economy, the international policy frameworks that guide and constrain national policymaking are evolving rapidly. The 1992 Earth Summit, the 1994 WTO Agreements, the 1996 World Food Summit and numerous multilateral environmental agreements comprise the major international frameworks that are influencing government policies in the areas of international trade, environmental protection and sustainable development. These agreements and declarations have set in motion a dynamic process that is not yet entirely consistent or coherent in balancing the objectives — environmental, economic and social — of the world's diverse nations.

While it is clear that governments and various groups in civil society differ sharply in their interests and priorities regarding agricultural trade, environmental protection and sustainable development, it is imperative that the international community seek common ground in addressing these crucial challenges. A debate about trade and sustainable development brings in issues such as poverty, food security, social well-being, natural resources management and pollution control, and also provides a broadly endorsed framework for debate. Toward that end, this paper reviews the role of trade policy in the contributing to sustainable agriculture and rural development (henceforth referred to as SARD) as defined in the Den Bosch meeting that took place in 1991. In particular, the paper examines the framework of international agreements and understandings in which the trade-environment-SARD debate is being pursued and explores some of the concepts and tools underpinning the debate. The paper then highlights some of the key issues of concern for developing countries and concludes by identifying some of the principles underlying an effective policy framework for trade liberalisation and environmental protection within the context of SARD.

Trade Policy and Sustainable Agriculture and Rural Development

FAO defines sustainable agriculture and rural development (SARD) as: [6]

> *... the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations.*
>
> *Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable.*

[6] *Guidelines for the Integration of Sustainable Agriculture and Rural Development into Agricultural Policies*, FAO, 1997.

The principle of sustainability is that we pass on to the next generation a stock of resources that is at least as productive as the stock we have today. Policy objectives for SARD have been summarised as the pursuit of the goals of growth, equity, efficiency and sustainability. Growth is important to meet the food needs of growing populations with rising incomes and to provide continued sustainable livelihoods for rural people. Equity is important in terms of the relief of poverty and deprivation for this and future generations. Efficiency matters since we cannot afford to waste resources. Finally, sustainability has come into increased prominence with the recognition of the significant threats that exist to future welfare and the environment. Sustainability has many dimensions and interpretations, but in the context of agriculture, embraces food security, responsibility in resource use and environmental management, and the resilience of production systems to shocks and challenges.

Trade policy is only one aspect of the many policy options that affect sustainability. An effective policy set for SARD includes:

- General economic and social policies, of which trade policies are a subset.
- Policies to support agricultural and rural development, including agricultural production.
- Policies related to markets, including the establishment of market institutions.
- Policies aimed at establishing a democratic and participatory process for decision making.
- Policies designed specifically to influence natural resource use and protect the environment.

The policy framework for agriculture differs widely among countries and typically involves a combination of domestic instruments and border measures that may tax and/or subsidise producers and consumers of various products in different ways. The particular policy mix in a country influences the incentives facing the agricultural sector and consumers, and thus affects the pattern of agricultural production, consumption and trade. Policies aimed at supporting commodity prices (such as minimum guaranteed prices, import barriers and export subsidies) encourage farmers to produce more than they would otherwise. Excessive production, in turn, may cause unforeseen and necessary environmental degradation and/or depletion of the natural resource base (see Box). Changes in a country's policy set will alter the incentives to the sector, with consequent changes to the environment. Whether the environmental consequences of a particular policy change are positive or negative depends on a number of factors including, *inter alia*, the pre-reform policy set in the liberalising sector, the policy set in other sectors of the economy and the policy framework in other countries, as well as the type, degree and pace of policy reform. Given the intimate relationship between agricultural production and the environment, and the complexity of the policies surrounding agricultural production and trade, assessing the consequences of trade policy reform for the environment and SARD is far from simple.

Marine Fisheries: Subsidies and Sustainability

Most marine fisheries are seriously overexploited; preservation of some 60 percent of the major species requires urgent management of remaining stocks, including reduced fishing.[7] The number of persons employed in fishing has grown from 16.5 million in 1980 to 28.5 million in 1990, and has continued to grow since then although at a slower rate. Virtually all of the growth is in the developing world, especially in Asia, and most new fishers consider it an occupation "of last resort."[8] Nevertheless, three quarters of the world catch is handled by large-scale capital-intensive industrial operations that use advanced technologies to locate migratory stocks and complex landing and processing facilities.[9]

Many point to subsidies as a major cause of over-fishing. Some 80 percent or more of fisheries subsidies are offered by developed countries seeking to preserve employment in the fishing sector.[10] Subsidies range from grants and preferential credit or tax terms for ship-building and modernisation to price and tax reductions for fuel, bait, ice and other inputs; publicly-financed loans and grants for related infrastructure and services to income and wage support and payments for access to fisheries in other governmental jurisdictions[11] – all of which expand capacity. The resulting over-capacity then puts downward pressure on prices and helps increase demand at a time when supplies are dwindling and the costs of production – that is, the effort and cost of finding and landing scarce supplies – are rising.

Many are calling for the reduction of subsidies to the fishing sector and further cost internalisation as a means to cut back on demand. The WTO Agreement on Subsidies and Countervailing Measures could become the basis for addressing fisheries subsidies. At the same time, some argue that subsidies should be maintained to support the livelihoods of community-based fishing fleets and to invest in the sustainability of small-scale fisheries.[12] Under the 1982 UN Convention on the Law of the Seas (UNCLOS), coastal states have sovereign rights to manage fisheries resources up to 200 nautical miles from their shorelines. UNCLOS encourages coastal states to form regional fisheries management organisations to build the sustainability of the marine ecosystems in their jurisdictions.[13] In 1995, the FAO established a Code of Conduct for Responsible Fisheries[14] that provides a framework for the development of national management strategies.Trade liberalisation — as one component of a balanced policy set — can have a positive impact on the environment and sustainable development by reducing the economic distortions that arise from inappropriate trade subsidies and restrictions, thereby promoting a more efficient allocation and use of resources at national and global levels.[15] Such trade reforms would mean that prices better reflect the relative global scarcities of resources, sending more appropriate signals about these relative scarcities to producers and consumers and promoting more efficient and more sustainable behaviour. Efficiency means simply that resources are not wasted — that the minimum amount of resources are used to produce a given output — so production occurs in the location and in the manner that causes the least amount of environmental degradation. Furthermore, by promoting income growth, a more open trading system can help create the economic resources necessary to combat environmental degradation.

[7] Grainger, R.J.R. and S.M. Garcia (1996), "Chronicles of Marine Fishery Landings 1950-1994): Trend Analysis and Fisheries Potential," FAO Fisheries Technical Paper 359: Rome, pp.44-45.

[8] FAO (1999), "The State of World Fisheries and Aquaculture: 1998," Food and Agriculture Organization: Rome, pp.64-66.

[9] WTO (7 November 1997), "Environmental Benefits Of Removing Trade Restrictions And Distortions: Note By The Secretariat," World Trade Organization Committee On Trade And Environment, WT/CTE/W/67: Geneva.

[10] COFI (3-6 June 1998), "Issues of International Trade, Environment and Sustainable Development: Fisheries Management, Subsidies and International Fish Trade," FAO Committee on Fisheries COFI:FT/VI/98/4: Bremen.

[11] Steenblik, Ronald and Gordon Munro (1999), "Current International Work on Subsidies in Fisheries: A Survey," in A.Hatcher and K. Robinson (eds.) OVERCAPACITY, OVERCAPITALIZATION AND SUBSIDIES IN EUROPEAN FISHERIES, Centre for Economics and Management of Aquatic Resources, University of Portsmouth: United Kingdom.

[12] ICSF (May 1998), "Shades of Trade," and "Does Trade Always Make the Grade" in SAMUDRA.

[13] Deere, Carolyn (15 April 1999), "Sustainable Fisheries: Making the Links With International Trade," IUCN and ICTSD: Washington DC.

[14] FAO (1995), CODE OF CONDUCT FOR RESPONSIBLE FISHERIES, Food and Agriculture Organization: Rome.

[15] *Report on Trade and Environment to the OECD Council at Ministerial Level*, OECD 1995, OCDE/GD (95)63; "Environmental Benefits of Removing Trade Restrictions and Distortions," Committee on Trade and Environment, WTO, 7 November 1997, WT/CTE/W/67.

It is widely recognised that the potential environmental benefits of an open trading system rest on the condition that effective environmental policies are in place. The difficulties inherent in formulating and implementing appropriate environmental policies, however, are also widely recognised. Many environmental and consumer groups seek closer scrutiny of the environmental effects of international trade policies, and fear that trade agreements may encourage harmonisation of environmental policies at levels lower than those favoured in industrialised nations.[16] At the same time, several international environmental agreements contain provisions for the use of trade measures to enforce environmental policy goals — measures that may conflict with the principles governing the international trading system — and some developing countries are concerned that trade restrictions based on environmental grounds may be used unfairly to block their exports to developed-country markets.

INTERNATIONAL AGREEMENTS ON TRADE, ENVIRONMENT AND SARD

The past decade has seen significant progress in the development of international policy for sustainable development, starting with the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, Brazil. This conference, also known as the "Earth Summit," gave birth to two binding treaties – on biodiversity and climate change – and Agenda 21, a non-binding but comprehensive plan for global sustainable development. In 1994, the Uruguay Round of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT) reached a conclusion in Marrakesh, Morocco, establishing the World Trade Organisation (WTO) and setting forth binding agreements on agriculture, food and plant safety and health, technical regulations and intellectual property rights, among others, with significant implications for sustainable agriculture and rural development. The 1996 World Food Summit culminated in a seven-point Plan of Action for the eradication of food insecurity, which included commitments related to trade and sustainable development.

The central documents of the Earth Summit, the WTO Agreements and the World Food Summit recognise a synergy between trade and sustainable development. Agenda 21 states: "Environment and trade policies should be mutually supportive," adding that "Governments should strive… through relevant multilateral forums, including GATT….[t]o *make international trade and environment policies mutually supportive in favour of sustainable development*…"[17] The preamble to the WTO Agreements states that Members should conduct their trade and economic relations with the goals of raising standards of living, ensuring full employment, promoting a large and steadily growing volume of real income and effective demand, and expanding production and trade in goods and services, "*while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development....*"[18] The World Food Summit Plan of Action identified sustainability as a critical component of food security and recognised the importance of ensuring that "food, agricultural trade and overall trade policies are conducive to fostering food security for all through a *fair and market-oriented world trade system.*"[19]

Despite the consensus view that sustainable development requires, *inter alia*, a fair and open trading system and effective measures for environmental protection, each body of international law has its own priorities which may conflict with other international laws and agreements. The most fundamental principles of the WTO for example, prohibit unjustified

[16] "Exploring the Linkages Among Agriculture, Trade, and the Environment: Issues for the Next Century," USDA Economic Research Service, May 1996, AER Number 738.

[17] UNCED (1992), AGENDA 21, Chapter 2.19.

[18] (15 April 1994), "Agreement Establishing the World Trade Organization," Uruguay Round Final Act: Marrakesh.

[19] World Food Summit Plan of Action, Commitment 4.

discrimination among the products of other Members in order to ensure a transparent, equitable and predictable trading system. On the other hand, potentially discriminatory trade measures form the basis of much national environmental law, and several multilateral environmental agreements invoke such measures to enforce rules aimed at changing the behaviour of producers and exporters. How to reconcile these differing priorities is one of the major challenges facing the international community.

The World Trade Organization and the Uruguay Round Agreements

Twenty-eight separate agreements make up the WTO Agreements, also known as "The Final Act" embodying the results of the Uruguay Round of multilateral trade negotiations under the General Agreement on Tariffs and Trade (GATT), concluded April 15, 1994. The Final Act established the World Trade Organization, and the WTO Agreements entered into force in January 1995.

The right of Members to adopt measures for the protection of the environment is affirmed in the original GATT 1947 and in a number of provisions of WTO Agreements. The basic articulation of this right is found in GATT Article XX which states that nothing in the Agreements may infringe upon the right of countries to adopt and enforce measures necessary for the protection of the life or health of humans, animals or plants[20] and measures relating to the conservation of exhaustible natural resources.[21] This right is subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between Members where the same conditions prevail or a disguised restriction on international trade. Transparency is a key component of the conditions under which such measures may be used. Towards this end, members must ensure that their regulations are publicised in a reasonable manner and are explained and justified in terms of the relevant WTO provisions.

The original GATT 1947 recognised the potential of technical regulations and product standards to obstruct trade and consequently established rules for their use. The broader relationship between international trade and the environment, consisting of both the impact of environmental regulations on trade and the impact of trade on the environment, was recognised by the GATT in the early 1970s. Disciplines on the use of technical regulations and product standards were more fully developed during the Tokyo Round of trade negotiations (1973-79), and the resulting "Standards Code" strengthened the principles of non-discrimination and transparency. During the Uruguay Round (1986-93), trade-related environmental issues were once again addressed and resulted in a number of agreements and decisions that are discussed below. Meanwhile, the growing importance attached to environmental concerns, particularly in developed countries, has created pressure for the use of more stringent environmental protection measures—including trade-related measures. Developing countries, on the other hand, have expressed concerns about the potential abuse of trade-related environmental measures to restrict market access for their exports.

GATT/WTO Principles Regarding Trade-Related Environmental Measures

A number of GATT articles are of direct relevance to trade-related environmental issues, including Articles I and III on non-discrimination. The GATT principle of non-discrimination has a fundamental bearing on the formulation and enforcement of environmental policies by WTO Members. Non-discrimination has two components: the most-favoured nation (MFN) clause contained in Article I and the national treatment clause contained in Article III. Under the MFN clause, WTO Members are required to treat the products of each Member "no less

[20] GATT 1994, Article XX, Chapeau and Paragraph (b).

[21] GATT 1994, Article XX, Chapeau and Paragraph (g).

favourably" than the products of any other Member. Thus, the MFN clause means that no Member may discriminate against another.[22] The national treatment clause means that once goods have entered a market, they must be treated no less favourably than equivalent domestically produced goods. With respect to trade-related environmental issues, the principle of non-discrimination ensures that national environmental protection policies are not adopted with a view to arbitrarily discriminate between like products of foreign and domestic origin or between like products imported from different trading partners. Thus, the principle of non-discrimination helps in preventing the use of environmental policies as disguised restrictions on international trade.[23]

The WTO Agreements provide for more specific types of environmental protection in a number of places, including *inter alia*, the agreements on agriculture, sanitary and phytosanitary measures, technical barriers, and intellectual property rights. The precise formulations of these provisions differ slightly; but, in general terms, such measures are subject to the following conditions:

- They must be necessary to achieve the desired level of protection.
- They may not constitute arbitrary or unjustifiable discrimination between Members.
- They may not be used as disguised trade barriers.
- They are to be based on scientific principles risk assessment methods.
- They should be the least trade restrictive, consistent with achieving the desired level of protection and recognising the risks associated with non-compliance.
- Members should adhere to the principle of transparency in the adoption and enforcement of such measures.
- Members should provide technical assistance to other Members, particularly to the developing and least developed countries, in complying with such measures for market access.

The Agreement on Agriculture

The Agreement on Agriculture (AoA) is one of the 28 agreements that emerged from the Uruguay Round GATT negotiations. Before the conclusion of the Uruguay Round, most agricultural trade took place outside the normal rules governing other trade, thus well-established GATT prohibitions on the use of export subsidies and import bans, for example, did not apply to agriculture. These and other trade-distorting policies were widely used in agricultural trade. The AoA brought agriculture into the international trade system, establishing rules to reduce the degree of policy distortions in agricultural markets and to enhance their fairness and transparency. The AoA contains commitments in the areas of market access, export subsidies and domestic support that mark the first step toward bringing agricultural trade under a set of internationally agreed rules. These commitments, although modest, could have implications for the environment and SARD to the extent that they stimulate changes in the pattern of agricultural production and trade. The Preamble to the AoA states that commitments under the reform programme were made taking into

[22] Important exceptions to the MFN principle include, *inter alia*, the provision of preferential market access for developing countries (GATT Articles XXXVI and XXXVII) and the formation of customs unions and free trade areas (GATT Article XXIV).

[23] "Summary of the History of the Trade and Environment Debate in the WTO," Trade and Environment Division of the WTO, 1999.

consideration the non-trade concerns of Members, including the need to protect the environment, and Article 20 of the AoA calls for the continuation of the reform process, taking into account Members' non-trade concerns (see box).

Non-Trade Concerns and "Multifunctionality" in the WTO

The next round of multilateral trade negotiations is set to begin at the end of 1999. Article 20 of the AoA embodies the commitment of Members to pursue the "long-term objective of substantial progressive reductions in support and protection resulting in fundamental reform" taking into account the "non-trade concerns" of Members. Non-trade concerns (NTCs) are central to the debate on the further liberalisation of agriculture.[24] The only NTCs explicitly mentioned in the AoA are food security and environmental protection, however, some WTO Members have argued that the definition of NTCs should be broadened to encompass such "multiple functions" of agriculture as the preservation of rural landscapes, the economic viability of rural areas and social cohesion. The current debate focuses on two issues: the appropriate definition of NTCs and the appropriate policy responses to NTCs.

Norway has argued in a paper submitted to the WTO that key NTCs are food security, environmental protection and the viability of rural areas, and that such concerns could justify the use of production-distorting supports.[25] Japan[26] and the Republic of Korea[27] have noted their support for multifunctional agriculture in papers submitted to the WTO Committee on Trade and Environment, emphasising the ecological functions of terraced rice production and food security respectively. Critics of this approach, such as the Cairns Group, express reservations that "the terms 'multifunctionality' and 'non-trade concerns' are being used as post-facto justification for continuing high levels of trade distorting protection of agriculture."[28] The Cairns Group and others have commented that agriculture is not unique in providing multiple functions, and that while governments are free to design their domestic policies to support the multiple functions of agriculture, they should not be permitted to pass the costs of their policy choices onto the rest of the world through trade distorting policies.

How the WTO will resolve the potential conflicts inherent to "taking into account…non-trade concerns" as further liberalisation is negotiated remains to be seen. Recognising the delicacy of these debates as well as the numerous linkages between environment and development, the WTO organised back-to-back High Level Symposia on Trade and Environment and Trade and Development in March 1999. Presentations and discussion were informal, but it was clear in both cases that there is no consensus regarding instruments to properly link environmental protection with sustainable development through trade policy.[29]

The general expectation has been that the implementation of the AoA will lead to an expansion and shift of world agricultural trade that would, on balance, create additional market opportunities for the developing countries. For the most part, the actual changes agreed in the AoA are rather modest and are being implemented over an extended period, thus any shift in the pattern of agricultural production and trade resulting from the AoA would likely be small and gradual. In terms of the environment and sustainability, the AoA would be expected to have positive effects at the global level as subsidies and barriers that distort production and trade are reduced.

[24] European Union (24 September 1998), "Contribution of the European Community on the Multifunctional Character of Agriculture," World Trade Organization AIE/40: Geneva; Tanikon Seminar (June 1998), "Summary Report on Multifunctional and Sustainable Agriculture (with reference to the next WTO Round)," Swiss Federal Office of Agriculture: Bern; Rome Declaration (1996), World Food Summit Plan of Action: Rome.

[25] Norway (2 June 1998), "Non-Trade Concerns in a Multifunctional Agriculture: Implications for Agricultural Policy and the Multilateral Trading System," Paper Submitted by Norway, World Trade Organization AIE/22: Geneva.

[26] Japan (15 February 1999), "Environmental Effects of Trade Liberalization on Agriculture," Submission by Japan, World Trade Organization WT/CTE/W107: Geneva.

[27] Republic of Korea (22 September 1998), "Non-Trade Concerns in Net Food-Importing Countries," Paper from the Republic of Korea, World Trade Organization AIE/39: Geneva.

[28] Australia (4 September 1998), "Non-Trade Concerns," Paper Submitted by Australia, World Trade Organization AIE/36: Geneva.

[29] Murphy, Sophia (20 March 1999), Personal notes from the WTO High Level Symposia on Trade and Environment and Trade and Development, Institute for Agriculture and Trade Policy: Minneapolis; ICTSD (March 1999), "WTO Holds first-Ever High-Level Meetings on Sustainable Development But Environment and Development Agendas Still Don't Mesh," BRIDGES Vol.3 No.2: Geneva.

Market Access

Members agreed to prohibit the use of non-tariff barriers (NTBs) and to convert such barriers to equivalent tariffs, on the principle that a tariff-only regime provides a more transparent and predictable trading environment. Members also agreed to gradually reduce the resulting tariffs from a 1986-88 base period by a simple average of 36%, and a minimum of 15% per tariff line, over a 5-year implementation period. Developing countries had the option of offering ceiling bindings without following the formal "tariffication" process, and an overwhelming majority of chose this option. Developing countries were also given a longer time period to achieve the agreed reductions, and the least developed countries were exempt from the reduction commitments. Many developing countries chose to offer a single flat rate of binding for all agricultural products. For several developing countries, the bindings were set at relatively high rates, e.g. at 100% or more but these bound rates are substantially higher than the rates currently applied (e.g. during 1995-98 period).

There is evidence that several developed countries set their base tariffs (specific and *ad valorem*) for some major agricultural products at significantly higher rates than their tariff equivalents during the base period[30]. This has been particularly the case in products such as dairy products, sugar and grains. Furthermore, making use of the simple average formula adopted in the AoA, many countries have made smaller cuts on commodities that are most directly in competition with their own domestic production. Dairy products and sugar stand out as striking examples in this regard. In general, tariffs on temperate products have received less reduction compared with tropical products, for which tariffs in most of the OECD countries were already low. Other market access issues have probably acted to further limit the immediate impact of the AoA on agricultural production and trade. These include*, inter alia*, issues related to the administration of minimum access quotas, tariff escalation and tariff dispersion, the prevalence of specific duties and the use of special safeguards.

The potential benefits of trade liberalisation for developing countries, including improvements in environmental protection and sustainability, depend crucially on expanding access for their products to the markets of developed countries. In turn, it has been suggested that developing countries should receive environmentally enhancing technologies on favourable terms to enable them to correct existing environmental problems and to adopt more benign production patterns.

Export Subsidies

The AoA disciplines on export subsidies have been recognised as being potentially one of the more effective measures that could bring about a shift in trade flows. Members agreed to cap and gradually reduce their use of export subsidies, both in quantity and value terms. The commitments stipulate a reduction in outlays on export subsidies by 36% from base period levels (1986-90). In addition, the quantity of subsidised exports must be reduced by 21% over the implementation period. To the extent that export subsidies have tended to encourage environmentally damaging patterns of agricultural production, disciplines on their use would be expected to improve the allocation of resources in the agricultural sector both within individual countries and at the global level and to promote more sustainable patterns of production.

The reduction in the use of export subsidies, although presenting some potential difficulties for net food importing developing countries, should prove beneficial for developing country exporters. With the reduction of export subsidies there would be less subsidised exports on

[30] Ingco (1995).

the world market, and as a result exports would likely take place at higher prices, thus providing improved market opportunities for the more efficient non-subsidising exporters. Generally, greater improvements in market opportunities are expected in traditionally heavily subsidised markets: e.g. dairy products, wheat, beef, and sugar.

To address the potential difficulties for food importing countries, WTO Members adopted, as part of the Final Act, the "Ministerial Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries." The "Decision" embodies the commitment to ensure that the implementation of the Uruguay Round does not adversely affect the availability of food aid at a level which is sufficient to continue to provide assistance in meeting the food needs of developing countries. Ministers further agreed to ensure that any agreement relating to agricultural export credits makes appropriate provision for differential treatment in favour of least-developed and net food-importing developing countries.

Domestic Support

The domestic support provisions under Article 6 of the AoA on Domestic Support Commitments and Article 7 on General Disciplines on Domestic Support are the most relevant to the issue of agricultural trade and the environment. The commitments stipulated in the AoA were aimed largely at easing developed country trade conflicts and, in particular, at the removal of policies that had resulted in overproduction in the past. The intent was to discipline and reduce domestic support while at the same time leaving some scope for governments to design domestic agricultural policies in the face of, and in response to, the wide variety of the specific circumstances in individual countries. The approach agreed upon is also aimed at ensuring that the specific binding commitments in the areas of market access and export competition are not undermined through domestic support measures.

Under the AoA, the disciplines on domestic agricultural support seek to quantify the domestic policies that distort agricultural production or trade, using the *Aggregate Measurement of Support* (AMS), and gradually reduce the value of the AMS over time. Three categories of policies were exempt from reduction commitments: direct payments to farmers under production-limiting programmes (often referred to as "Blue Box" measures), support amounting to less than a given "*de minimis*" level and support having minimal production or trade distorting effects (the so-called "Green Box" measures). The Green Box measures have the most direct bearing on issues regarding environmental protection and sustainable agricultural development, but all three have implications for production, and hence for the environment.

Blue Box measures provide exceptions from the reduction commitments for direct payments under production limiting programmes, provided such payments are based on fixed area and yield or are made on 85 percent or less of the base level of production, or for livestock payments are made on a fixed-number of head.

De minimis exemptions allow any support for a particular product to be excluded from the reduction commitment if, for developed countries, that support is not greater than 5 percent of the total value of production of the agricultural product in question. In addition, non-product-specific support that is less than 5 percent of the value of total agricultural production is also exempt from reduction. In the case of developing countries the *de minimis* ceiling is 10 percent. In addition, developing countries may exclude from their AMS calculations those "investment subsidies … and agricultural input subsidies generally available to low-income or resource-poor producers" in developing countries. This "special and differential treatment" (Article 15) is accorded to them in the interests of their "particular needs and conditions," according to the AoA.

Certain types of domestic support measures, called "Green Box" policies, were exempt from reduction commitments because they were considered to have no, or at most minimal trade-distorting effects or effects on production. Four types of Green Box policies are related directly or indirectly to environmental management.[31]

- **General services** include programmes that provide services or benefits to agriculture or the rural community, but that do not involve direct payments to producers or processors. These include but are not restricted to research in connection with environmental programmes, pest and disease control, inspection services for health and safety purposes, and infrastructural services associated with environmental programmes.[32]

- Payments for relief of formally recognised **natural disasters** resulting in a loss of more than 30 percent of the average production over a specified period. Such payments may be used to compensate farmers for the loss of income, land or other production factors due to the natural disaster in question and shall not exceed the total cost of replacing such losses and shall not exceed the level required to prevent or alleviate further loss.[33]

- Payments under **environmental programmes**. Eligibility for such payments must be determined as part of a clearly-defined government environmental or conservation programme and be dependent on the fulfilment of specific conditions under the programme, including conditions related to production methods or inputs.[34]

- Payments under **regional assistance programmes** for producers in disadvantaged regions. Each such region must be a clearly designated contiguous geographical and administrative area considered as disadvantaged on the basis of neutral and objective criteria arising from more than temporary circumstances. The amount of such payments in any year after the base period must not be linked to the type or volume of production (other than to reduce that production) or the level of domestic or international prices. Payments must be generally available to all producers in eligible regions and must not exceed the extra costs or loss of income involved in producing in the designated area.[35]

The AoA Green Box exemptions are available to both developed and developing countries, but the submissions for most developing countries state simply that their domestic supports are exempt from reduction commitments, without specifying whether the exemption is based on the Green Box or on provisions for Special and Differential Treatment. Thus for most developing countries, it is not possible to determine whether they operate programmes that would qualify under environmental Green Box exceptions.

Of the 99 developing countries (as classified by the WTO) that submitted supporting tables relating to commitments on domestic support, only 40 reported sufficient detail to enable an assessment of the types of domestic support they provide. Of these, 36 claimed programmes that could be indirectly related to environmental protection, such as disaster relief, quarantine and inspection services and related research activities. Only 11 developing countries claimed direct environmental programmes, with soil conservation activities being the most frequently cited. In contrast, of the 13 developed countries that submitted supporting tables, 12 claimed

[31] "Green box" policies, detailed in Annex 2 to the AoA, are excluded from AMS calculations and reduction commitments. In this context, the term "green" does not refer to environmental issues, although some environmental policies are included in the "green box".

[32] AoA, Annex 2, Paragraph 2 (a, b, e and g).

[33] AoA, Annex 2, Paragraph 8.

[34] AoA, Annex 2, Paragraph 12

[35] AoA, Annex 2, Paragraph 13

Green Box exceptions for programmes indirectly related to the environment and, of these, 8 claimed direct environmental programmes.[36]

The disparity between developed and developing countries in their usage of the environmental exemptions reflects the greater financial resources available for environmental programmes in developed countries and, perhaps, a higher priority given to environmental concerns. It may also reflect the lack of institutional and administrative capacity in many developing countries to operate such programmes and to prepare the necessary documentation under the AoA. Given the large number of developing countries for which detailed supporting tables are unavailable, it is possible that this analysis underestimates the prevalence of Green Box compatible environmental programmes in developing countries. Nevertheless, this disparity lends support to the fears expressed by many developing countries that the environmental exceptions to Article 6 mainly benefit the developed countries.

There are several potential problems in the Green Box exemptions for environmental programmes. The first relates to the term "environmental" which is not defined in the AoA, and thus may lead to confusion as to what are considered valid environmental exceptions to Article 6. It is widely accepted, for instance, that an environmental payment that helps prevent soil erosion by retiring fragile land from production would be considered a valid exception. On the other hand, it is unclear whether a payment which helps to preserve the amenity value of a traditional agricultural landscape would be considered a valid environmental exception. Whether the environmental exceptions in the Green Box are meant to protect such rural agricultural environments or purely natural environments has not been resolved.

A concern for all Green Box policies regards how to assess and monitor the use of such policies to ensure that they have no more than a minimal effect on production and trade. The concept of "minimal effect" is not defined in the AoA. Subsidies of any type, including those given for environmental purposes, may provide advantages to domestic producers and have some effect on trade, at least in the long run. Thus the issue is to what extent and under which conditions environmental subsidies can be allowed and how their use can be evaluated with a view to limiting distorting effects on trade and production.

Other WTO Agreements Related to Trade and the Environment

Many of the other WTO Agreements have direct or indirect implications for trade and the environment. Those most relevant to trade and SARD are discussed below.

The Agreement on Technical Barriers to Trade

The TBT Agreement recognises that countries may enforce technical regulations and product standards that are necessary for the protection of the environment or for the life or health of humans, animals or plants. The Agreement on TBT applies to agriculture as well as manufactured goods, however it does not cover sanitary and phytosanitary regulations, which are treated in the Agreement on Sanitary and Phytosanitary (SPS) Measures. Broadly speaking, the TBT Agreement requires that such measures be supported by scientific evidence and be applied in a manner consistent with the principles of non-discrimination and transparency. Specifically, the TBT Agreement requires countries to ensure that products imported from any Member are treated no less favourably than similar products of national origin; that technical regulations are not prepared, adopted or applied with a view to or with the effect of creating unnecessary obstacles to international trade; and that technical

[36]Supporting tables relating to commitments on agricultural products in Part IV of the Schedules. G/AG/AGST/1-4.

regulations are no more trade-restrictive than necessary to fulfil a legitimate objective, taking account of the risks non-fulfilment would create.[37]

The Agreement on the Application of Sanitary and Phytosanitary Measures

The SPS Agreement affirms the right of members to adopt measures necessary for the protection of human, animal or plant life or health subject to the requirements that such measures do not constitute arbitrary or unjustifiable discrimination between members or disguised barriers to trade. This means for example, that a country may not require products from other countries to satisfy higher health standards than those required of local products. SPS measures are to be applied only to the extent necessary to achieve the desired level of sanitary and phytosanitary protection and must not be maintained without sufficient scientific evidence. Members must ensure that their sanitary and phytosanitary measures are based on the relevant scientific evidence taking into account an assessment of risks and the relative cost effectiveness of alternative approaches to limiting risks. The SPS Agreement seeks to further the harmonisation of sanitary and phytosanitary standards and affirms the principle of equivalence of different methods that can be demonstrated to provide the appropriate level of protection.[38]

The SPS Agreement stipulates as “necessary” those national SPS measures which conform to relevant international standards, guidelines or recommendations. It cites the Codex Alimentarius Commission, the International Office of Epizootics and the International Plant Protection Convention as international institutions whose standards would be considered SPS-compliant. Anticipating the possibility that some countries would have more stringent standards, the SPS Agreement also stipulates that Members have the right to maintain higher standards if there is sufficient scientific justification and if the higher standards are based on an appropriate risk assessment procedure. If the relevant scientific evidence is insufficient, they must seek to obtain the information necessary for a more objective assessment of risk and then reconsider their regulations in that light. These terms clearly place the burden of proof for maintaining national standards that are more stringent than the relevant international standards on those Members with higher standards. In addition, in formulating such measures, Members are also committed to take into account the special needs of developing countries, particularly least developed countries, so as to maintain opportunities for their exports.

At its four-year review, the WTO Committee on Sanitary and Phytosanitary Measures concluded that the SPS agreement had helped “to avoid potential trade conflict,” although several very high profile disputes did arise, for example, relating to the use of artificial growth stimulants in beef production. The review emphasised the importance of transparency in notifying WTO Members of domestic regulations, the problem that developing countries often lack the financial and technical resources to adopt and maintain international standards, and the need for further work on technical issues.[39]

The Agreement on Trade-Related Aspects of Intellectual Property Rights

The TRIPS Agreement requires all WTO Members to provide for the patenting of any inventions in all fields of technology, for products and for processes, and prohibits discrimination against patent-holders whether products are imported or produced locally. Specifically in agriculture, Members are required to provide for plant varietal protection either

[37] Agreement on TBT.

[38] SPS Agreement.

[39] WTO (11 March 1999), "WTO Committee Completes Review of Health-Related Agreement: Says Almost Four Years of 'SPS' Implementation has Clarified Trade Issues," World Trade Organization Press Release, Press/124: Geneva.

by patents, a *sui generis* system or a mixture or both. It allows countries to exclude an invention from patentability if the prevention of its commercial exploitation is necessary to protect the life or health of humans, animals or plants or to avoid serious prejudice to the environment. Specifically, Members may exclude from patentability plants and animals other than microorganisms and biological processes for the production of plants or animals other than microbiological processes.[40]

Developing countries have until 2000, and the least-developed until 2006 with additional extensions if necessary (Articles 65 and 66), before being obliged to implement the terms of the Uruguay Round TRIPs Agreement. Several Members, led by India, have expressed serious concerns in the WTO concerning the relationship of TRIPs to the Convention on Biological Diversity (CBD). The perceived conflict between the plant patenting requirements of the TRIPs Agreement and the CBD, which obliges most of the same governments to protect the rights and knowledge of traditional and local communities, has engendered a vigorous debate. TRIPs does allow Members to devise an alternative to patents that legally protects the breeders of plant varieties which could include protections for farmers and traditional communities,[41] but Members opting for this alternative bear the burden of proof whether or not their national regimes are "effective."

The Committee on Trade and the Environment

In addition to the provisions of the GATT/WTO Agreements, which are legally binding on Members, a Ministerial Decision was adopted during the Uruguay Round that addresses environmental issues related to SARD. The "Ministerial Decision on Trade and the Environment" created the Committee on Trade and Environment (CTE) with the aim of making international trade policies and environmental policies mutually supportive. The CTE is open to all WTO Members. The Decision affirms that "there should not be, nor need be, any policy contradiction between upholding and safeguarding an open, non-discriminatory and equitable multilateral trading system on the one hand, and acting for the protection of the environment, and the promotion of sustainable development on the other...." The Decision limits the role of the WTO in coordinating trade and environmental policies to its "area of competence in trade policy and those trade-related aspects of environmental policies which may result in significant trade effects for its members."

The CTE was instructed to identify the relationship between trade measures and environmental measures, to assess the environmental benefits of removing trade restrictions and distortions, and to make appropriate recommendations regarding whether modifications of the provisions of the multilateral trading system are required to enhance the positive interactions between trade and the environment and to avoid the use of protectionist trade measures. The mandate of the CTE includes, *inter alia*, trade measures for environmental purposes, including those related to multilateral environmental agreements; charges and taxes for environmental purposes; and requirements for environmental purposes relating to products, including standards and technical regulations, packaging, labelling and recycling. Furthermore, the CTE was instructed to assess "the effect of environmental measures on market access, especially in relation to developing countries, in particular to the least developed among them...."

[40] TRIPS Agreement, Section 5, Article 27.

[41] OAU (March 1998), "Model Draft Legislation on Access to Biological Resources and Community Rights," Organization for African Unity Scientific, Technical and Research Commission.

Multilateral Environmental Agreements

Of the some 200 MEAs currently in force, about 20 contain trade provisions, including the Montreal Protocol on Substances that Deplete the Ozone Layer and the Convention on International Trade in Endangered Species (CITES). To date no legal challenges have arisen within the WTO over trade provisions applied pursuant to an MEA. Trade sanctions imposed unilaterally on environmental grounds have been challenged and over-turned in the WTO, and the potential exists for friction related to the trade provisions of some MEAs. The basic concern here is possibility that an MEA could require signatories to impose trade measures that, in the context of the WTO, are considered to be unjustified discrimination.

One of the most difficult issues to reconcile between the WTO and MEAs involves the use of trade measures to enforce regulations on production and processing methods (PPMs) discussed more fully below. The WTO allows Members to regulate trade on the basis of product characteristics under the SPS and TBT Agreements, but GATT Article III prohibits discrimination among the “like” products of Members. The question is whether a PPM that does not affect the characteristics of the final product, a product-unrelated PPM, can form the basis of a legitimate trade restriction. It is not clear whether products that differ only in the method used in their production or processing would be considered “like” products under the terms of the WTO. If so, trade measures designed to address product-unrelated PPMs would violate GATT Article III. It is possible — but not assured — that such measures could be justified under GATT Article XX General Exceptions for measures necessary to protect life and health or to preserve exhaustible natural resources.

The Montreal Protocol on Substances that Deplete the Ozone Layer

The Montreal Protocol entered into force in 1989. The Protocol incorporates various trade measures as a means of meeting Parties’ obligations on the consumption and production targets for controlling ozone-depleting substances (ODS). Under the Protocol, Parties banned imports and exports of the controlled substances with non-Parties. As well as banning trade with non-Parties in the substances themselves, the Protocol also banned trade with non-Parties in products containing ODS. These measures provided important incentives for countries to join the Protocol and have not resulted in any challenge under the WTO. Parties also considered but rejected banning imports from non-Parties of goods manufactured using the controlled substances. This option would have constituted a trade restriction based on a non-product-related PPM, and could have faced a challenge under the WTO.

The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

Established in 1975, the CITES, restricts or prohibits trade in endangered animal and plant species. It requires that any trade in such species among Parties or with non-Parties be conducted under strict controls, including certification that the exchange will not endanger the survival of the species and will not damage the health and safety of the specimen. Thus far, there has been no challenge of the CITES in the WTO, and the terms of the CITES appear to be consistent with the GATT Article XX General Exceptions.

The Convention on Biological Diversity (CBD)

The CBD entered in to force in 1993 and membership now includes more than 150 countries. The CBD is a legally binding commitment to secure the conservation and sustainable use of biological diversity, and the equitable sharing of its benefits. It recognises the sovereign rights of states over their biological resources and requires the parties to protect and promote the rights of communities, farmers and indigenous peoples relative to their biological

resources and knowledge systems. In particular, it stipulates that access to biological resources can only occur with the "prior and informed consent" of states. The CBD requires that access to the biological resources of developing countries occur on a *quid pro quo* basis with technology transfer from the industrialised countries (Article16), emphasizes that benefits arising specifically from the commercial use of communities' biological resources and local knowledge be shared equitably, and affirms that the exercise of intellectual property rights must "be supportive of and not counter to" the convention's objectives to conserve and sustainably use biodiversity while equitably sharing the benefits.

To ensure that these objectives are met, the convention sets out broad obligations which parties must implement: they must establish rules governing access to biological resources, systems recognizing the rights of local communities, mechanisms ensuring the transfer of appropriate technologies, and procedures for "the safe handling, use and transfer of living modified organisms." The relationship between the CBD and the WTO is not entirely clear, as neither has been challenged by the other, but it is possible that there could be conflicts with the TRIPS Agreement.

Convention on Climate Change

The 1992 Framework Convention on Climate Change stipulates that measures "taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or disguised restriction on international trade." Its successor, the 1997 Kyoto Protocol, would, if ratified, require the countries responsible for the major sources of six greenhouse gas emissions to reduce such emissions by 5% from 1990 levels by 2008-2102. Under the Kyoto Protocol, countries could implement any number of policies, some of which, such as a carbon tax, raise clear PPM issues: the carbon content of coal, oil, natural gas and nuclear power, for example, is quite different even though the energy output is bioophysically identical. Since a tax on carbon content, even if enacted globally, would result in a preference for the latter fuels over the former, a carbon tax could be considered contrary to WTO rules prohibiting discrimination among "like" products.

Similarly, proposals for energy taxes in the European Union and, globally, proposals made during the climate change negotiations by Norway, Argentina, New Zealand and others for direct cost internalisation via energy taxes and the elimination of subsidies to the energy, transport and agriculture sectors have not been accepted[42] due to the economic dislocation and competitive disadvantages they would generate. One mechanism to offset the problem of international competitiveness is a "border tax adjustment" that would level the playing field for domestic producers by remitting the value of the energy tax on their exports; similarly, a border tax adjustment could be levied on the imports of foreign products. However, the former raises complications with trade rules when the tax is based on an input, energy consumption in industrial processes, rather than on the product itself.[43] And the latter could be considered a violation of the National Treatment provision, although a GATT panel in the past accepted such adjustments providing they did not have the effect of protecting domestic producers.[44]

[42] Cameron, James et al (1997), "Implementing the Climate Change Convention: Trade Law Implications on the Road to Kyoto and Beyond," Foundation for International Environmental Law and Development (FIELD)and Global Environment and Trade Study (GETS): London, p.31.

[43] GATT (17 June 1987), Panel report, "United States: Taxes on Petroleum and Certain Imported Substances," L/6175, BISD 34S/136,161: Geneva.

[44] GATT (19 June 1992), Panel report, "United States: Measures Affecting Alcohol and Malt Beverages," DS23/R, BISD, 39S/206,276: Geneva.

Potential Conflicts between MEAs and the WTO

Multilateral Environmental Agreements (MEAs) are regarded by the WTO as the preferred vehicle for handling transboundary environmental issues, at either the regional or global level, because unilateral solutions run the risk of arbitrary discrimination and disguised protectionism. The WTO argues that trade measures are not the most effective policy instrument to use in MEAs, but acknowledges that in certain cases they can play an important role, particularly where trade is directly linked to the environmental problem. Disputes about consistency with WTO provisions may arise when an MEA requires its signatories to apply trade measures against non-signatories for failure to comply with the MEA. If a non-signatory of the MEA is a WTO Member and the trade measures called for by the MEA are not also justified under the provisions of the WTO, such trade measures would violate the WTO principle of non-discrimination and could be actionable within the WTO dispute settlement process.

One set of concerns relates to the role of the WTO in "dictating" the terms and conditions that may be negotiated in MEAs. According to this view, some environmental problems are so important and the risks associated with inaction so severe that the WTO should not restrict MEA negotiators in finding multilateral solutions to environmental problems—even if such solutions involve the use of trade measures that are inconsistent with WTO principles. According to other views, the WTO provides adequate scope for environmental protection and the parties to MEAs should not be allowed to override the existing balance of WTO rights and obligations. In this regard, the WTO Secretariat has argued that "this issue cannot be taken lightly, since the obligations in question are those of non-discrimination, the absolute cornerstone of the WTO legal system, and the principal means of protecting the rights of weaker and poorer members of the multilateral trading system."[45]

In discussions at the WTO CTE, several Members have noted that there may be legal conflicts between the rules and obligations of the WTO and those of the MEAs. Although no disputes as yet have been formally filed, these Members argue that it would be prudent to find an acceptable legal accommodation in any case. Various proposals have circulated, including for example, to agree on an official "Understanding on Interpretation" that would recognise the validity of certain trade measures taken under an MEA or for WTO members individually to seek a "waiver" from their WTO obligations when they decide to discriminate against imports under the terms of an MEA. Another possibility would be to amend the relevant WTO agreements so as to recognise certain MEAs, comparable for example to the recognition in the SPS Agreement of the Codex Alimentarius Commission.[46]

Technical regulations and product standards—including those applied for environmental purposes—are subject to the rules and disciplines of the TBT and SPS Agreements. As discussed above, countries may establish stricter environmental regulations and product standards than provided for in the relevant international standards if they are justified on scientific grounds and are neither discriminatory nor unnecessarily trade restrictive. More than 350 national environmental standards have been notified under the TBT Agreement, and some 1000 technical standards have been notified under the SPS Agreement (through 1998). Among these are national measures applied to implement MEAs such as the Montreal Protocol and CITES; import prohibitions on products or processes harmful to the environment; standards and regulations on air, water and noise pollution; energy and soil conservation measures, recycling requirements, plant and animal health standards, and so

[45] WTO website.

[46] Sampson, Gary (February 1999), "Trade, Environment and the WTO: A Framework for Moving Forward," ODC Policy Paper, Overseas Development Council: Washington DC.

on. There are several issues of concern to developing countries in this area, not least of which is the potential for such measures to become *de facto* trade barriers.

CONCEPTS AND TOOLS

In a well-functioning market-based economy, prices register the relative scarcity of resources and the preferences of consumers (at a given income level), and serve to allocate resources efficiently among competing uses. However, the market alone cannot lead to an optimal resource allocation unless social as well as private costs and benefits are fully reflected in product prices. Because of its close linkages with the environment, agricultural production creates environmental costs and benefits — called "externalities" — that are not reflected in market prices. Furthermore, markets do not exist for many of the externalities, positive and negative, associated with agricultural production. Farmers may pay less than the full social costs associated with their production if, for example, animal wastes from intensive livestock operations cause environmental damage that is borne by society as a whole rather than the individual producer. Similarly, farmers may receive less than the full social value of the benefits created by their activities if, for example, hedgerows and ponds conserve plant and animal biodivesity. These "market failures" can result in inappropriate patterns of production and consumption unless a judicious mix of economic and environmental policies are used to correct them.

Identifying and Measuring Externalities

There are formidable challenges in identifying and measuring the externalities associated with agriculture and in designing appropriate policy responses for them. In practice, policies adopted for one goal may lead toward misallocation of resources, with environmentally damaging consequences. For example, input subsidies intended to promote domestic food security may lead to the excessive use of the subsidised input. Such domestic "policy failures" in one country may have adverse consequences for other countries either by directly harming the environment or by distorting world price signals and causing a misallocation of resources at the global level. Furthermore, such policies are subject to "rent seeking" behaviour and "policy capture" by which the beneficiaries of a particular policy will attempt to perpetuate it for private gain despite its costs to society as a whole. In the international arena, countries may attach different priorities and valuations to the environmental externalities associated with agricultural production, depending on factors such as their level of economic development, the structure of their agricultural system and the role of agriculture in their society. Given these complexities, the challenge is to balance the legitimate environmental concerns against the benefits deriving from an open, equitable and non-discriminatory international trading system.

Risk assessment and risk management

Risk assessment and risk management are important concepts in balancing the needs of consumers and producers. Over the past several years, the Word Health Organization (WHO) and FAO have engaged in joint efforts to advise Codex and member countries on how to better assess and manage food safety risks, in part to prepare for implementation of the WTO SPS requirements. In 1995, a joint FAO/WHO consultation of experts agreed there are four steps to risk assessment: hazard identification, hazard characterisation, exposure assessment, and risk characterisation. They devoted considerable attention to issues of uncertainty and variability in data and its evaluation.[47]

[47] WHO (1995), "Application of Risk Analysis to Food Standards Issues: Report of the Joint FAO/WHO Expert Consultation, WHO/FNU/FOS/95.3: Geneva.

In 1997, a joint consultation of experts focused on risk management – defined as the "process of weighing policy alternatives in the light of the results of risk assessment and, if required, selecting and implementing appropriate control options, including regulatory measures."[48] Subsequent consultations focused on the communication of risks before, during and after a problem is identified[49] and on microbiological hazards, including bacterial, viral, fungal, parasitic, and other micro-organisms that pose risks to the food supply.[50]

Risk Assessment in the Beef Hormone Case

The ongoing "beef hormone case" illustrates the difficulty of balancing consumer and producer interests. On the one hand, the European Union has determined that the growth-promoting hormones fed to beef cattle pose an unnecessary health risk to consumers and banned the use of such hormones in domestic beef production as well as imports from the United States and other countries where they are used. On the other hand, the United States has charged that the ban is not based on sound science and is a disguised barrier to trade.

The WTO's dispute panel and Appellate Body affirmed the EU's right to establish its own levels of protection, but deemed that an adequate risk assessment had not been conducted. The ruling called the EU's existing risk assessments "too generic," relating to the effect of hormones generally, not the effect of ingesting meat from cattle raised with the hormones, and insufficient to outweigh other "overwhelming evidence." The decision did affirm, however, that the SPS Agreement does not "exclude *a priori*, from the scope of a risk assessment, factors which are not susceptible of quantitative analysis" including "risks in human societies as they actually exist…in the real world where people live, work and die."

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Summarised from the 16 January 1998 "Appellate Body Report on EC Measures Concerning Meat and Meat Products (Hormones)" published by the WTO at <http:www.wto.org/wto/dispute/hormab.pdf>.

FAO has applied the principles of risk assessment and risk management in preparing standards for phytosanitary measures under the auspices of the International Plant Protection Convention. In 1995, the FAO Conference endorsed guidelines for pest risk analysis[51], requirements for the establishment of pest free areas[52], and a code of conduct for the import and release of exotic biological control agents.[53] Standards for export certification systems[54] were endorsed in 1997.

Valuation and monetisation

Methodologies to define monetary values for the environmental and social impacts of a given production method or policy option can also contribute to the identification of strategies for internalising costs and limiting environmental damage. Several efforts to monetise environmental impacts have been made, yet such studies are limited in the factors that can

[48] FAO (1997), "Risk Management and Food Safety: Report of a Joint FAO/WHO Consultation," FAO Food and Nutrition Paper No.65: Rome.

[49] FAO (1998), "FAO/WHO Expert Consultation on Risk Communication," http://www.fao.org/WAICENT/FAOINFO/ECONOMICS/riskcomm/HTTOC.htm.

[50] FAO (1999), "Draft Principles and Guidelines for the Conduct of Microbiological Risk Assessment," ALINORM 99/13A, pp.20-25

[51] FAO (1996), "Guidelines for Pest Risk Analysis," International Standards for Phytosanitary Measures," D/W1125E/1/5.96/2000: Rome.

[52] FAO (1996), "Requirements for the Establishment of Pest Free Areas," International Standards for Phytosanitary Measures," D/W1127E/1/5.96/2000: Rome.

[53] FAO (1996), "Code of Conduct for the Import and Release of Exotic Biological Control Agents," International Standards for Phytosanitary Measures," D/W1126E/1/5.96/2000: Rome.

[54] FAO (1997), "Export Certification System," International Standards for Phytosanitary Measures," ISPM Publication No.7, D/W7470E/1/12.97/1500: Rome.

be included in an analysis. These can be major elements of the life cycle impacts of a particular product or processing method – ranging from raw material extraction and geographical and land use factors to numerous secondary pollutants and waste disposal. Social impacts such as job factors, tax policies and subsidies relative to each fuel type may not be evaluated at all. Valuation techniques also differ from analysis to analysis and their results may not be fully comparable.[55]

A criticism of monetisation is that value is relative in differing cultures and that not all value can be expressed in monetary terms. While avoiding the extinction of a species or the destruction of habitat is often characterised as having "infinite" value, the failure to establish monetary values – and internalise it through taxation, liability or other economic instruments– lowers these values to essentially zero.

In 1995, FAO published a manual on "The Economic Assessment of Production-Related Environmental Impacts" specific to agricultural commodities.[56] First, the manual discusses the environmental impacts of ten major crops, from cultivation to processing and treatment before considering a variety of techniques for quantifying these impacts. Emphasising that results are highly "location- and farming-system specific and may not apply to other locations even for the same crop," the FAO analysts use the dose-response method to monetise (in 1994 values for U.S. dollars) the environmental costs of maize farming in South Africa. The exercise found that degradation on farmers' lands amounts to an annual depreciation of US$125 million, with another US$99 million in annual environmental costs resulting from sedimentation of dams and increased costs of water purification. The analysts note that their calculations for off-site effects, such as the movement of eroded soil down a watershed, "are much cruder and broader" than those for on-site effects. Acknowledging that, like other such studies, "some potentially important effects are omitted from the exercise, thus underestimating the size of the environmental damage," they conclude that "comparatively simple methods, making eclectic use of data, can provide round numbers useful to agricultural policymakers."

A series of studies by the FAO examined the environmental impacts of producing specific agricultural commodities under various production methods and evaluated the potential impacts of environmental measures on competitiveness and trade.[57] In general, these studies found that the environmental measures currently associated with agricultural production in the major producing countries have minimal effects on their production costs or relative competitiveness, but that more stringent regulations and enforcement could raise production costs significantly for certain commodities. In the case of oilseeds, it was estimated that production costs for soybeans and sunflower could increase by as much as 25 to 35 percent under more stringent environmental regimes, reducing the competitiveness of these products relative to tropical oils. For grains, however, these studies found little potential impact on the relative competitiveness of the various crops and producing regions because their abatement costs would be similar. Each of these studies noted the complexities involved in evaluating the environmental effects of agricultural production and the trade effects of environmental measures due to the wide range of production methods, environmental conditions and related policies prevailing around the world.

[55] Pesso, Carlenrico (1994), "An Overview of the Life Cycle Approach to Product/Process Environmental Analysis and Management," Organization for Economic Cooperation and Development: Paris.

[56] Winpenny, James and Robert Willis (1995), "Economic Assessment of Production-Related Environmental Impacts," Food and Agriculture Organization ESC/Mis.94/7: Rome.

[57] FAO, "Environment, Sustainability and Trade Linkages for Basic Foodstuffs," Commodities and Trade Division, 1996.

Natural Resource Valuation Concepts and Techniques

Natural resource analysts have identified five types of values. Of these, only direct and indirect use values can be readily monetised although other values are easily recognised.

1. Direct use values are those derived from the direct use of goods and services. Direct valuation techniques estimate the monetary value of environmental externalities, positive or negative, by assessing the preferences of individual persons using various methods. Direct valuation techniques include:

    - "Contingent valuation" uses surveys or other information-gathering tools to ascertain individuals' "willingness-to-pay" for an increase in the benefits – such as paying a higher price for organic foods – or their "willingness-to-accept" compensation to forego the benefit.
    - "Hedonic pricing" elicits people's preferences through market information, establishing surrogate markets when necessary. The "property value approach" assumes housing values reflect a community's evaluation of local environmental conditions. The "wage differential approach" assumes the labour market reflects occupational health and safety conditions. The "travel cost method" infers peoples' "willingness-to-pay" for environmental goods and services from the time and expense entailed in travelling to obtain them. This can apply to holiday travelling to beaches or parks or to trips required to obtain essentials like firewood.

Indirect use values include all the ecological functions within a system, such as flood control provided by coastal wetlands. Indirect valuation techniques compare conditions before and after environmental damage, first identifying a causal "dose", such as pollution, before ascertaining a "response." Direct valuation techniques can then be applied to the "dose-response" relationship. For example: Changes in production due to environmental quality can be measured using actual market prices or close substitutes, such as the impact of soil erosion on farm yields. Indirect valuation techniques include:

- The costs of health care and "foregone earnings" due to absenteeism or premature death can be used to calculate the impacts of air pollution and other environmental conditions.
- "Opportunity costs" can be calculated on the basis of the alternative use, such as valuing a stand of trees according to the market value of the timber if they were cut.
- "Preventive expenditures" rely on estimates of the actual costs entailed in preventing or mitigating damages before they occur.
- "Replacement costs" estimate the actual costs of restoring environmental conditions after damage has been done.
- "Shadow projects" entail remediation of damage but indirectly, such as investing in afforestation to sequester carbon and offset carbon emissions elsewhere.

3. Option values are assessments of risk avoided to ensure future goods and services: the value of future genes for plant breeding, for example.
4. Existence values are an expression of intrinsic value as in the case of a rare habitat.
5. Bequest values are those reflecting the desire to preserve certain non-use aspects of a system for future generations.

Excerpted from "Economic Valuation of Natural Resources" in *Integrated Coastal Area Management and Agriculture, Forestry and Fisheries*, 1998, FAO, pp. 72-73.

The state-of-the-art of valuation is evolving. The goal of life cycle assessment (LCA) can entail exceedingly complex calculations. First there are the production externalities ("product-related PPMs" – see below) Can one accurately monetise the relative energy costs of different fuels, the relative toxicity of different chemicals, and the costs of different irrigation systems relative to their respective supply and treatment systems versus rain-fed crops? How should a maize crop plowed by a bullock be compared relative to one plowed by a tractor burning imported petroleum-based hydrocarbons? Similarly, there are considerations relating to the environmental services relative to an environmental cost. Should, for example, the positive externality supplied by the bullock's manure, which displaced the externalities of mineral fertilisers be counted? One might also consider whether the crop was grown in a fertile river valley or on a mountain slope. If a slope, was it terraced? Likewise, the relative costs of harvesting, processing, packaging, and shipping crops grown in a specific location and consumed in another could also be considered. Some of these can accrue in one country and some in another; there is a need to differentiate costs from the "cradle to the

export border" and from "import border to grave."[58] Should the consumption externalities of processing, marketing and disposing of manufactured food products and their manufacturing inputs and wastes be considered? Each of these elements of the food system can have differential effects by location; there is as yet no convention for comparing these effects across political jurisdictions.

Issues of Concern for Developing Countries

The debate surrounding agricultural trade liberalisation and environmental protection is complicated by the fact that the perspectives of developed and developing countries are often quite different. This difference in perspective relates not only to their differing circumstances and priorities but also to the potential for differential impacts of a given policy. Some issues of concern to developing countries are explored below.

Compliance Costs

The costs of compliance with environmental measures—particularly with the standards applied in export markets—is an issue of concern for developing countries, because compliance costs may be higher for them than for developed countries, placing them at a competitive disadvantage. The costs of compliance with the standards applied in export markets will reflect the degree to which these standards differ from those that prevail in the supplier's market. Because many developing countries apply lower technical standards than developed countries, they may face higher compliance costs in meeting the standards applied in developed-country export markets, even when such standards are strictly non-discriminatory.[59] Furthermore, research has shown that environmental standards can be effective strategic policy instruments because they can be set such that the low cost producer optimally chooses not to comply, allowing the high cost producer to monopolise the standardised segment of the market.[60] Thus, it is important for policymakers to consider how much scope there should be for the imposition of unilaterally determined standards—which could impact negatively on trading partners even when they are non-discriminatory—rather than internationally negotiated standards.

Production and Processing Methods

An issue that has arisen in the WTO is the extent to which trade restrictions may be imposed against the method used to produce goods, so-called "product-unrelated" production and processing methods (PPMs); that is, against PPMs that may generate negative production externalities but that do not affect the quality or safety of the final product.[61] Thus, a regulation on the use or disposal of a pollutant that is released during the production process but which does not affect the product itself (such as regulations on the treatment of animal wastes) would be a product-unrelated PPM requirement. The TBT Agreement clearly applies to regulations regarding "product characteristics or their related processes and production methods,"[62] but PPMs that are unrelated to the final product are not explicitly covered by the WTO Agreements.[63]

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[58] UNCTAD (6 October 1994),"International Cooperation on Eco-labelling and Eco-certification Programmes and Market Opportunities for Environmentally Friendly Products," United Nations Conference on Trade and Development, TD/B/WG.6/2.

[59] Spencer Henson and Rupert Loader, "Impact of sanitary and phytosanitary standards on developing countries and the role of the SPS Agreement," Centre for Food Economics Research, University of Reading, 1998.

[60] Matoo, WTO, 1996.

[61] South Centre, "The WTO Multilateral Trade Agenda and the South,"1998.

[62] TBT Agreement, Annex 1, Paragraph 1.

[63] Except the products of prison labour, which may be regulated on the basis of GATT, Article XX (e).

With respect to product-unrelated PPMs, the main problem in trade policy arises when an importing country wishes to impose PPM requirements on a production process that occurs outside its jurisdiction. Some countries may wish to impose PPM requirements on foreign producers either to "level the playing field" for their domestic producers who are required to comply with the PPM measures, or because they feel that this is the "right" policy to be pursued on environmental grounds. The key issue, from the perspective of the WTO, is whether one Member can use trade measures to enforce its own environmental preferences or requirements on others.[64]

The OECD has published a "checklist for assessing PPM-based trade measures and alternatives," to ascertain whether they are "necessary" to meet "legitimate" objectives. The checklist includes:

- Motivation: How will a particular measure affect "like products" inside or outside domestic jurisdiction? Are there cultural, ethical or value preferences that may not be universal? Is the measure protectionist?

- Feasibility: Can foreign producers and exporters manage, technically and economically, to comply? Can the customs office monitor it fairly?

- Effectiveness: Will the measure achieve the intended objective? Does it have an unintended impact? Is it flexible enough to accommodate different environmental circumstances in exporting countries?

- Efficiency: Is it the most cost-effective way to meet the intended objective? What are the economic costs of alternatives? How severe a cost is imposed on less developed countries? [65]

Eco-labelling

Labelling and certification of products according to consumers' preferences – voluntary environmental, social, health and agro-ecological labels – are now commonplace, but are an issue of concern to developing countries. Eco-labelling involves the use of special labels to indicate that a product conforms to certain environmental standards. Some national governments or regional groups operate eco-labelling systems, such as the Japanese Eco-Mark, the Canadian Environmental Choice and the Nordic Swan, while consumer groups, industry associations or non-governmental groups operate others. The important issues for developing countries are whether such systems incorporate unrelated PPMs and whether they conform fully to the WTO principles of non-discrimination and transparency.

In order to provide a marketing advantage, the requirements for an eco-label must be more stringent than the usual standards for the product in question. Once an eco-labelled product gains wide consumer acceptance in a given market, however, the requirement for the eco-label may become the *de facto* standard for the product.[66] If the eco-label requirements are not in accordance with WTO principles, they may function as discriminatory trade measures.

[64] OECD, "PPMs: Conceptual Framework and Considerations on Use of PPM-Based Trade Measures," OCDE/GD(97)137.

[65] OECD (1997), "Processes and Production Methods (PPMs): Conceptual Framework and Considerations on the Use of PPM-Based Trade Measures," Organization for Economic Cooperation and Development OCDE/GD(97)137: Paris.

[66] OECD, "Eco-labelling: Actual Effects of Selected Programmes,"OCDE/GD/(97) 105.

Dolphins and Turtles in the WTO

Two trade disputes illustrate the significance of the unrelated PPM issue. The "tuna-dolphin" case, handled under the old GATT dispute settlement procedure, involved a dispute regarding a U.S. ban on the importation of tuna caught with purse seine nets in the eastern Pacific Ocean. In this region, dolphins and tuna are often found together, and purse seine nets can trap dolphins as well as tuna. The U.S. Marine Mammal Protection Act sets dolphin protection standards for the domestic American fishing fleet and required countries exporting tuna to the U.S. to follow the dolphin protection standards set out in U.S. law or face an import ban. The U.S. argued that the ban was necessary and justified on the basis of GATT Article XX (b and g) which allow the use of trade measures for the protection of animal health and exhaustible natural resources. In 1991, Mexico and other countries challenged the U.S. regulation. The dispute panel ruled that the U.S. could not ban imports of tuna products from Mexico simply because Mexican regulations on the way the tuna was produced did not satisfy U.S. regulations. The panel also ruled that the U.S. could require "dolphin safe" labelling of tuna products, because such labels would apply equally to imported and domestic tuna.

More recently, the "turtle-shrimp" case involved U.S. regulations aimed at protecting several endangered species of sea turtles. U.S. regulations require all domestic shrimp trawl vessels to use approved Turtle Exclusion Devices (TEDs) where there is a likelihood that shrimp harvesting might threaten sea turtles. In 1991, the U.S. imposed an import ban on shrimp from exporting nations that failed to achieve U.S. certification regarding their shrimp harvesting methods. Essentially this certification required commercial vessels to use TEDs comparable to those used in the U.S., with exceptions for artisanal fisheries. The import ban was challenged by Malaysia, India, Pakistan and Thailand, who charged that the ban violated WTO rules and could not be justified under the General Exceptions in Article XX of GATT 1994. The final Appellate Report to the WTO Dispute Settlement Body found that the U.S. import ban was within the scope of measures permitted under Article XX and that it qualified for provisional justification under Article XX(g) for the protection of exhaustible natural resources. Nevertheless, the Appellate Report found that the U.S. measure failed to meet the requirements of the chapeau of Article XX[67] and therefore could not be justified.

The International Standardisation Organization (ISO) has defined a typography for labels on environmental qualities. Type I labels evaluate a product's environmental impact and offer a seal indicating superiority on all counts. Type II labels are offered by a manufacturer which claims qualities such as "biodegradable" or "recyclable". Type III labels, preferred by business representatives, are broadly informational and do not imply preferences, allowing consumers to judge for themselves.

Since 1989, the International Federation of Organic Agriculture Movements (IFOAM) has produced standards for ecological agriculture and include guidelines for coffee, cocoa and tea, use of organic inputs. IFOAM has published "Criteria for Certification Programs" and manages an accreditation program that determines equivalency amongst organic agriculture certification programs. While not offering its own label, the standards are promoted in more than 70 countries where national and regional bodies certify and label organic produce.

Whether labelling schemes will help or hinder sustainable agriculture and rural development is still an open question. Meeting the criteria for certification and the certification process itself can be expensive, and standard-setting processes may lack required expertise; sometimes, certifying institutions are captured by private interests. A survey of eco-labelling programs conducted in 1995 found developing countries participated in just 1% of the trade for product categories eligible for the Scandinavian eco-label, 6% of the trade in these products with Canada, and 45% of the European Union's total imports of these goods.[68]

[67] The chapeau of Article XX states that such measures must not be "applied in a manner that would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade...."

[68] UNCTAD (2 June 1995), "A Statistical Overview of Selected Eco-Labelling Schemes," Note by the Secretariat of the United Nations Conference on Trade and Development," TD/B/WG.6/Misc.5.

Diverging Views on Eco-labelling

The European Union maintains an eco-labelling standard for paper products that enforces limits on sulphur dioxide. Several countries have argued that the standard is inappropriate and unfairly favours Scandinavian producers.

Canada has objected to the standard's preference for plantation-grown paper over that of virgin forests. Chile has claimed that its pulp industry meets stringent international standards for chlorine-free bleaching, effluent treatment, water consumption, energy sue and sustainable forestry management while exceeding domestic regulatory standards – although the recycled fibre content does not meet the EU's criteria. Brazilian officials have argued that in preferring a high waste content, the same standard excludes paper produced from sustainably managed plantations fuelled by hydropower.

No formal complaints against the EU's eco-labelling program have been filed with the WTO, however, and some suggest that voluntary eco-labels would not be subject challenge since they do not create a legal obligation.

In 1992, there was a successful challenge against mandatory labelling. Austria had imposed mandatory labels and levied a 70% tariff on imported timber products from tropical forests. Although the Austrian law dedicated the revenues gained from the tariff plus $17 million in new and additional funds to compensating disadvantaged exporting countries, Malaysia and other timber exporters from throughout the world threatened to file a complaint with the GATT, charging it was discriminatory, protectionist and a hidden barrier to trade. Austria subsequently rescinded the tariff and the mandatory label on tropical imports, although a voluntary label for all timber products remains in effect.

Excerpted from "Ecolabeling: Consumers' Right-to-Know or Restrictive Business Practice?" by Kristin Dawkins (1996), in Wolfrum, Rudiger (ed.) *Enforcing Environmental Standards: Economic Mechanisms as Viable Means*? Max Planck Institut, Springer-Verlag: Berlin.

Despite a broad base of support and rapid progress in many countries, it is probably too soon to ascertain whether international accreditation programs will succeed in expanding markets for sustainable producers of the South and act as a significant force for sustainable agriculture practices. In part, it will depend upon the capacity of the organisations to generate sufficiently large volume in sales. In part, it will depend upon the credibility of each operation and its capacity to attract suppliers and monitor their performance while ensuring their access to consumers willing to pay adequate returns to meet their additional costs. And in part, it will depend upon whether the WTO can effectively balance the interests of consumers and producers as well as the interests of those member countries gaining and losing revenues as a result of shifts in trade.

Harmonisation

Harmonisation of environmental standards at the regional or global level may be appropriate, especially when the environmental problem being addressed has transboundary or global effects. Harmonisation as implemented by the WTO encourages governments to adapt national standards to those set by designated international experts. Critics make the case that these experts often lack diversity in their expertise—diversity across professional disciplines and diversity across political jurisdictions. Some observers regard a country's environmental regulatory system as an integral part of its comparative advantage and thus consider harmonisation undesirable, particularly when there are no transboundary environmental effects associated with the issue being regulated.[69] Developing countries are concerned that harmonisation may adversely affect their competitiveness in global markets.

POLICIES FOR TRADE AND SUSTAINABLE DEVELOPMENT

International agricultural trade, environmental protection and sustainable development can be complementary forces, but capturing the potential synergies among them requires careful analysis and deft policymaking. The MFCAL Approach underscores the value of linking sustainable development concerns with the environmental, economic and social issues

[69] OECD, "PPMs: Conceptual Framework and Considerations on Use of PPM-Based Trade Measures,"OCDE/GD(97)137.

associated with agricultural trade. The SARD framework is already well developed as reflected in Agenda 21 and summarized in the first section of this paper. A base of principles for addressing the trade aspects can be useful in the search for common ground. The following principles, drawn from the 1997 Rio +5 Forum[70] and from discussions within the WTO Committee on Trade and Environment, take as their departure three basic assumptions.

First, the need for poverty alleviation is fundamental. Sustainable development and environmental protection cannot be achieved worldwide while massive poverty persists. Poverty alleviation is a central objective of development and a key concern for environmental policies. Wealth created by trade is an essential means to achieving this end. Economic growth, continued economic reforms, and a substantial increase in the transfer of financial resources and technology from rich to poor countries are vital for achieving poverty alleviation.

Second, domestic and international environmental policies are of paramount importance for all aspects of sustainable development. These policies rely principally on cost internalisation as a means of environmental protection. As internalisation progresses, the risk that economic activities—including trade and development—may contribute to environmental degradation is reduced. The environmental repercussions of trade and development policies must be addressed in ways that are consistent with the continued promotion of sustainable development.

Third, barriers to trade can create impediments to the achievement of sustainable development, particularly for developing countries. Trade liberalisation is an important component of progress toward sustainable development for all countries. Developed country import barriers and subsidies that distort production and trade make poverty alleviation more difficult for developing countries and may cause them to accelerate rates of natural resource exploitation by preventing diversification. The contribution of trade liberalisation to sustainable development is enhanced by policies that respect environmental and social policy goals.

Some principles for an effective policy framework for agricultural trade, environmental protection and sustainable development include the following:

- Efficiency is a common interest for environment, development and trade. An activity is efficient if it uses the minimum amount of resources to achieve a given output, or alternatively, achieves maximum output from a given amount of resources. Applied in a broad context, efficiency helps to allocate scarce resources, such as raw materials and energy, and limits the demands placed on the regenerative capacity of the environment. Efficiency also applies in the context of policy making. It is important that policies be designed to achieve the desired goal at the minimum cost to society. The WTO principle that policy tools should be the least trade-distorting possible, consistent with the policy objective, is based in part on efficiency. Increased efficiency is the fundamental argument in favour of trade liberalisation.

- Internalisation and market based incentives. Efficient resource use requires that the prices paid by producers for inputs and by consumers for final goods and services accurately reflect their full costs. Many goods are not priced to reflect full costs due to

[70]International Institute for Sustainable Development. Rio +5 Forum; Rio de Janeiro, Brazil; 13-19 March 1997.

such factors as unpaid environmental costs and price-distorting subsidies and trade barriers. Such price distorting policies should be eliminated and the full accounting of environmental costs included, in order for the price system to operate more effectively.

- Regulation. Cost internalisation is not always possible or appropriate as a policy tool, especially in cases where the environmental losses in question are irreplaceable — such as extinction of species or serious damage to the regenerative capacity of ecosystems — or in reflecting costs to future generations. Traditional forms of regulation may also be valid forms of intervention that can lead to greater efficiency and environmental protection.

- Equity relates to the distribution both within and between generations of physical and natural capital as well as knowledge and technology. Inequity and poverty contribute significantly to environmental degradation and political instability, particularly in developing countries. When basic needs are not met, the poor may have no choice but to live off whatever environmental resources are available. At the same time, past use of natural resources already limits the choices available to present generations, particularly in developing countries. Trade liberalisation can contribute to greater equity through the dismantling of trade barriers that harm developing countries. Non-discrimination is an aspect of equity that is fundamental to the operations of the international trading system.

- Environmental integrity. Trade and development should respect and help maintain environmental integrity. This involves recognition of the impact of human activities on ecological systems. It requires respect for limits to the regenerative capacity of ecosystems, actions to avoid irreversible harm to plant and animal populations and species, and protection for valued areas. Many aspects of the environment—for example, species survival or the effective functioning of biological food chains—have values which cannot be adequately captured by methods of cost internalisation, highlighting the need for other policy instruments.

- Science and precaution. Science is the basis for much economic development and what we know about the environment. Since understanding ecological processes is central to valuing environmental damage, science is also a fundamental prerequisite for cost internalisation measures. Good science must underlie any trade measures that seek to protect environment and health. Our understanding of ecosystems, however, is still highly uncertain. Ecosystems are characterised by thresholds — critical points beyond which relationships change dramatically, triggered by events such as the extinction of a critical species in a food chain or an overloading of pollutants. Uncertainty, coupled with the reality of threshold effects and irreversibility, argues for maintaining a margin of safety that prevents catastrophic effects.

- Subsidiarity is the principle that decisions should be taken at the closest possible level to the affected public and at the lowest level of jurisdiction encompassing all those affected. It follows from the recognition that diversity and tolerance are among the attributes of a healthy society. International policies should be adopted when this is more effective than policy action by individual countries or jurisdictions within countries. In the context of trade and sustainable development, where issues of a global dimension have significant and varied effects at the local level, subsidiarity may provide a mechanism that equitably accommodates legitimate differences among countries.

- Openness comprises two basic elements: first, timely, easy and full access to information for all those affected; and second, public participation in the decision-making process. Experience has confirmed that openness is an essential ingredient in formulating and implementing effective policies. Openness is important in minimising the risk of “protectionist capture”, that is, that trade policies will be manipulated in favour of

inefficient producers at the expense of others. While structures for openness are increasingly evident in dealing with problems at the national level, there has not been a comparable development for issues of an international nature. As people worldwide devote increasing attention to such issues, there is a need to find forms of participation appropriate to the different international organisations and negotiations.

- International cooperation. Sustainable development requires strengthening international systems of cooperation at all levels, encompassing environment, development and trade policies. The need for such cooperation is driven by the international character of many forms of environmental damage. The need for rules-based cooperative systems of trade is intensified by advances in information technology that make possible a more global economy. In the end, the competition implied by more open markets and liberalisation cannot succeed without cooperation.

THE WAY FORWARD

The Members of the WTO are set to launch a new round of multilateral trade negotiations in November 1999. The reform process in agriculture is predicated upon the belief that a market rid of policy distortions and market failures would lead to a more efficient allocation of resources and more sustainable patterns of production. Trade liberalisation is a tool, not a goal in itself; but it is an important tool in support of sustainable development. The built-in agenda for the negotiations on agriculture, contained in Article 20 of the AoA, states the "long-term objective of substantial progressive reductions in support and protection resulting in fundamental reform ... taking into account ... non-trade concerns...." The AoA specifically mentions "the need to protect the environment" as one of these non-trade concerns, and several WTO Members have made it clear that environmental issues will be central to their negotiating positions in the next round. The MFCAL approach can point the way forward by helping to ensure that policy decisions on trade liberalisation, environmental protection and sustainable development by are taken in a more coherent and mutually supportive manner.