

Committee on Trade and Environment

TRADE LIBERALIZATION AND THE ENVIRONMENT

A Contribution by the United States

1. As part of the Final Act embodying the results of the Uruguay Round of Multilateral Trade Negotiations at Marrakesh, the Ministers agreed to establish a Committee on Trade and Environment (CTE) to cover a programme of work and to report recommendations to the first biennial meeting of the Ministerial Conference of the WTO. At the WTO Ministerial Conference in Singapore in December the CTE will be expected to recapitulate the state of discussions, and to make recommendations. In this paper we focus on one of the key issues for market access, the environmental benefits of trade liberalization.

2. The U.S. appreciates the valuable papers tabled by Argentina and Australia concerning market access in the agricultural sector. They have provided the CTE with the foundation from which a consensus position can be gleaned. This paper is not meant to replace them in the discussion of these important issues, but to support and expand that discussion so that this common ground can be reached. Below is a discussion that relates to the issue of trade liberalization and the environment. While the points are most pertinent to the agricultural sector, the economic theory that supports them is relevant to almost all segments of any country's economy.

3. The effect of freer trade on environmental quality depends on what happens to the level of economic activity and associated pollution, the intersectoral changes in economic activity, and changes in production methods. The effects also depend on whether appropriate (optimal) environmental protection is already in place; well-designed and enforced environmental policies are more likely to ensure that trade liberalization will bring economic growth and gains in environmental quality. Over the long term, economic growth and higher incomes engendered by freer trade may lead to a greater social preference for and the resources available to achieve environmental improvement.

4. Removing agricultural distortions that affect the relative price of food products and farm input prices, along with the implementation of sound environmental policies that internalize environmental externalities, would change current economic incentives and benefit the environment. The CTE should endeavour to identify such win-win situations in other areas as well.

Proposition 1: Freer trade can contribute to an expansion of economic growth

5. Freer trade allows market prices to adjust and reflect the scarcity of resource endowments and promotes dynamic gains to an economy¹. Market prices under free trade signal "true" market conditions to participants in the global economic system, thus allowing for a more efficient resource allocation.

6. As market access improves, there is an expansion of trade in intermediate products and capital goods, essential building blocks in promoting economic growth. Importing capital goods provides the impetus for increases in productive capacity, and once the new capital is in place, the overall higher level of economy wide capital allows production of goods and services to expand.

7. Secondly, as market access improves, there is a likelihood of technological transfer across trading partners. New ideas developed in one country to enhance productivity can be transferred to other countries. This is especially important with the rapid advances in technologically specialized inputs, thus allowing countries to import intermediate products without needing to develop the products themselves. Countries can import intermediate products and develop their own output market "niches" in which they can achieve larger economies of scale by participating in an open global trading system. Imports of the intermediate products could enhance productivity in the production of the final products. This may also encourage innovation as a by-product of having the new capital and can spur development of new skills and knowledge in the workforce. In contrast, restrictive trade policies may result in lower benefits associated with research and development as resources are diverted to less efficient and productive activities, thus leading to lower rates of economic growth.

8. Thirdly, as market access improves, financial resources can more easily be transferred providing the wherewithal to undertake productive investment opportunities. Savings generated in richer countries can be invested in less affluent countries where there are comparative advantages in production of various agricultural or manufacturing goods.

Proposition 2: Economic growth, accompanied by sound environmental policy, can improve environmental quality

9. The effect of freer trade on environmental quality depends on several factors, such as the level of production, mix of post-reform goods, variable input use, land use, technical change, the assimilative capacity of the natural resource base, and the level of income.

10. Freer trade can increase the rate of economic growth, which on the one hand could harm the environment if polluting activity increases with growth but, on the other hand, could improve the environment to the extent that environmental costs are internalized and resources are reallocated to less polluting activities. Economic growth leads to increases in research and development which, in turn, generates innovation and can lead to adoption of more environmentally friendly technologies.

11. Economic growth is recognized as a crucial factor in increasing the demand for environmental quality. Empirical evidence suggests that higher per capita income is positively correlated with a greater demand for environmental quality. Several studies have noted an

¹More details on the links between trade and economic growth, of which this proposition is largely based, can be found in *The Economist*, "Economic Growth: The Poor and the Rich", May 25, 1996, pages 23-25; Paul M. Romer, "Endogenous Technological Change," *Journal of Political Economy* 98:5 part 2, October 1990; and Steven Husted and Michael Melvin, *International Economics*, Harper and Row, New York, 1990.

inverted-U shape relationship between per capita income and pollution emissions; emissions increase at low-income levels, but once income reaches a threshold, emissions begin to decline.

Proposition 3: Eliminating market distortions leads to more rational and efficient use of market resources, thereby supporting sustainable development

12. The preamble to the Agreement Establishing the World Trade Organization sets out as a principal objective of the WTO "the optimal use of the world's resources in accordance with the objective of sustainable development". This objective is built upon the recognition that, beyond the benefits that may be engendered by the growth and wealth creating effects of trade, trade liberalization can have more direct positive effects on the environment by leading to more efficient and rational use of resources.

13. The degree to which such efficiency gains lead to environmental benefits is dependant on numerous complex factors. However, the opportunity for such benefits seems most clear with respect to natural resource based products. Eliminating market distortions that cause natural resources to be undervalued relative to their market or social value leads to a more efficient use of such resources, thereby directly supporting increased environmental quality. The agriculture sector has already been identified in the Committee as an area that is particularly capable of producing such results. It would be useful for the Committee in its continuing work to identify other areas with similar potential for win-win situations.

14. It should be recognized that the full realization of the benefits of efficiency gains requires that market and policy failures that adversely impact the environment must also be addressed through appropriate environmental policies.

Proposition 4: Opening agricultural markets contributes to a more efficient allocation of resources and may improve environmental quality

15. Because agriculture deals so directly with the land and other natural resources, removing market distortions in the agricultural sector holds great promise of leading to environmental benefits.

16. Within the context of agricultural trade policy reform, the most important characteristic of a policy is the degree to which it distorts trade. In agriculture, trade distortions arise from both domestic and trade policies. It is often difficult to separate trade policy from domestic policy, as trade goals are often achieved through domestic policy instruments or domestic goals are achieved through trade instruments. To understand how distorting policies affect the environment and to assess how environmental quality is affected by trade reform, one must clarify the effects of policies by examining their effects on crop mix, input use, technological change, and investment in the agricultural sector.

17. Trade and agricultural policies subject to reform can be divided into broad classes: pricing policies, income policies, marketing subsidies, and structural policies. Pricing policies, which are used to raise or lower producer returns to farming, also affect crop mix, the location of production, and input use -- all of which directly and indirectly affect environmental quality. For example, pricing policies predominantly found in higher-income countries typically raise domestic prices relative to world prices. These higher prices may encourage chemical overuse, mechanization, and land conversion, all of which can harm the environment. In contrast, some low income countries protect consumers through low food prices that effectively tax farmers and discourage production. Artificially low agricultural prices may discourage sustainable farming

practices and may encourage migration to urban centres placing further environmental stress on heavily populated areas.

18. Pricing policies and income supports have other, less obvious effects. For example, commodity price supports are capitalized into land values, which can result in input intensification as land prices increase relative to the prices of other inputs such as fertilizers and pesticides. Farmers who substitute lower priced chemicals for land may contribute to water and soil degradation and increase concerns about food and farmworker safety, although degradation due to extensification may be reduced. Input intensification can also occur when land is constrained by commodity programme requirements to be set aside. Set-asides induce scarcity of land, which increases land prices relative to the prices of other inputs; relatively higher land prices also act to slow natural exit from the sector. Consequently, government intervention increases the use of inputs and natural resources.

19. Input subsidies, which reduce the cost of chemicals, irrigation, or credit, can also have negative environmental effects. Subsidized chemical prices can encourage chemical overuse, which can lead to surface and groundwater pollution, soil contamination, eutrophication, reduced soil fertility, food contamination, and human exposure to chemicals. Overuse or improper use of irrigation can lead to salinization of water and soil, increased nitrate pollution of ground water, depletion of water supplies and contributions to water logging, soil erosion, and landscape degradation.

20. Other policies such as excessively high tariffs, tariff escalation, and state trading enterprises can have distortionary effects similar to subsidies.

21. An "excessively" high tariff exists when the final price of a commodity is "significantly" affected by a tariff to the extent that trade in the commodity is restricted. Some existing tariff rates could be considered excessively high. Such tariffs alter relative prices and act as a trade barrier for foreign producers. The increase in domestic production to meet demand could be more environmentally damaging than production by foreign producers. The most common methods of increasing agricultural production include the increased use of agricultural chemicals - fertilizers and pesticides - on existing agricultural land and increasing agricultural acreage by ploughing under marginal and virgin lands, clear cutting forests, and draining wetlands.

22. Tariff escalation occurs when a higher degree of protection (through tariffs) exists for intermediate and finished goods than exists for primary commodities. Raw commodities may be imported at zero or low tariffs, yet the nominal rate of tariff increases at each stage of production. Some tariffs applied to agricultural products are a form of reverse tariff escalation in that tariffs on unprocessed commodities are higher than tariffs on processed goods. Such protection impedes market access for foreign exporters of raw commodities, and affects the use of resources in the country imposing the tariff. Such a policy could place pressure on domestic agricultural and natural resources to meet demand (since imports of raw commodities in the case of a reverse tariff escalation are reduced). Tariff escalation has the opposite effect by encouraging raw commodity exports from other countries which could lead to resource exploitation in those countries.

23. State trading enterprises (STEs) exist in most major agricultural trading countries. Statutory powers accorded STEs allow some to operate as monopsonists and monopolists, having exclusive rights to purchase and sell commodities for domestic and/or export markets. Such exclusive rights allows STEs to extract rents not otherwise available to competing commercial firms.

24. Certain policies of STEs may alter the patterns of agricultural production. Direct or indirect subsidies to STEs by governments, such as secured loans at below market rates of

interest, subsidies paid out by governments to cover deficits on payment guarantees made by STEs to producers, tax benefits, and transportation subsidies may affect relative prices and distort production. Also, STEs with exclusive import rights may limit market access from foreign competition affecting internal prices and create a misallocation of resources. Like subsidies and tariffs, these distortions could result in pricing that may not reflect private market conditions and could shift productive resources leading to detrimental effects on the environment.

Proposition 5: Agro-environmental policies that internalize environmental externalities contribute to a more efficient allocation of resources and improve environmental quality

25. An externality is a harmful or beneficial side effect that occurs in the production, consumption, or distribution of a particular good. Production of an agricultural good may generate a harmful environmental externality if, in the production process, wastes are produced as a byproduct. A beneficial externality exists when agricultural production results in positive amenities. These are environmental externalities if they affect the well-being of others and the agricultural producer does not pay the costs of the waste cleanup or receive compensation for the benefits of the amenity provided.

26. An externality often occurs when there are ill-defined or poorly enforced property rights, for example, when resources such as ground and surface water or air over a city are owned by the community or by no one. Externalities also tend to occur when those affected are widely dispersed and difficult to identify (Pearce and Turner, 1990)². Markets may fail to reflect the cost to the community of the externality.

27. Agricultural practices can cause both negative and positive externalities. Farmers do not bear all the costs associated with agricultural production, such as soil erosion, water depletion, surface and groundwater pollution, deforestation, loss of wildlife habitat, and chemical misuse and contamination. On the other hand, they do not reap the benefits of recreational and other amenities that may be produced.

28. Market failure occurs in a competitive environment when market prices differ from social costs (private costs of production plus environmental or "external" costs or benefits). Producers or consumers may have little incentive to alter activities that contribute to pollution or to adopt environmentally beneficial technologies because these external costs do not enter their private costs of production. Policies in the form of regulations (such as standards, bans, and restrictions on input use) and incentive-based mechanisms (such as taxes, subsidies, and marketable permits) can be implemented as corrective measures.

29. Environmental regulations may reduce environmental degradation but also may raise production costs and reduce competitiveness in the short term. In the long term, though, the impacts are more positive as firms adjust and innovate. A study by the U.S. Office of Technology Assessment (1992) indicates that some firms have adapted to regulations in ways that have offset any early cost disadvantage and, over the long run, they have even benefited from the regulations³. Runge, Houck, and Halbach (1988) find an example of induced innovation in

²Pearce, D., and R. Turner, *Economics of Natural Resources and the Environment*. Baltimore: The Johns Hopkins University Press, 1990.

³Office of Technology Assessment, U.S. Congress. *Trade and Environment: Conflicts and Opportunities*. Background paper for Congress of the United States, Washington, DC, 1992.

agricultural irrigation⁴. Deteriorating quality of groundwater associated with the overuse of water through central-pivot irrigation technologies in the U.S. plains states has induced institutional changes (taxes, subsidies and regulations) directed at improving the quality of groundwater. The regulations, in turn, altered factor values and imposed costs on producers, inducing a change in factor use and the subsequent choice of alternative technologies.

30. Thus, changes in relative factor prices stimulate innovative activities, not only by private producers, but by public research institutions, in efforts to remedy the constraint imposed by the policy-induced factor scarcity. Runge et al. (1988) argue that environmental regulation can act as a signaling mechanism that stimulates research into environment-conserving technologies. In their irrigation and groundwater example, the regulations limiting water use increased its scarcity value and stimulated research into more efficient "drip irrigation" technologies.

31. Environment-saving technological change allows more goods to be produced with less damage to the environment. Such technological change can allow the country to experience an improvement in environmental quality without a corresponding loss in crop production. Opening agricultural markets to freer trade increases the opportunity for technology transfers between countries.

32. When there is a market failure to internalize environmental externalities, non-commodity linked subsidies also can serve as an environmental policy instrument. Non-commodity linked subsidies that provide compensation to produce less pollution or to employ environmentally "friendly" technologies, such as payments to farmers to engage in soil conservation, particularly of highly erodible land, and water-quality improving practices, represent a "pay to conserve" approach used in some developed regions. These subsidies compensate producers for adopting environmentally preferred practices which may be higher-cost technologies.

Conclusion: Free trade and environmental policies can work in tandem to achieve social benefit, economic growth, and environmental quality

33. It is clear that a combination of trade liberalization and efficient, complementary environmental policies can be beneficial to society in meeting its goals of economic growth and environmental protection. It is also clear that in addressing environmental concerns, sound environmental policies directed at those unique nationally specific environmental problems are always preferable to trade restrictions.

34. Free trade and sound environmental policies can work together to achieve the goals that benefit our societies. The message must go forward to the Ministers that:

- in the interest of economic growth and security, market distortions must be reduced;
- greater market access through trade liberalization can lead to a more efficient allocation of national resources and towards sustainable production;
- environmental externalities, both positive and negative, need to be internalized so that an efficient allocation of resources can be achieved;

⁴Runge, C., J. Houck, and D. Halbach, "Implications of Environmental Regulations for Competitiveness in Agricultural Trade," *Agricultural Trade and Natural Resources: Discovering the Critical Linkages*. J. Sutton, ed. Boulder, CO: Lynne Rienner Publishers, 1988.

- freer trade coupled with efficient, complementary environmental policies are mutually beneficial and can increase the welfare of society;
- the CTE should, in its continuing work, seek to identify areas of strong potential for win-win situations wherein trade liberalization leads to environmental benefits.

35. The CTE has a mandate to provide to the Ministers at the Singapore Conference a report concerning the programme of work examined by the committee. This report should not just reflect the research and discussion that has taken place, but should point the way toward a solution to this problem. The CTE needs to present to the Ministers a strongly positive report recommending that they endorse these principles so that as a world body, we can all move toward the common goals of sustainable growth and development, while maintaining and enhancing environmental quality.