

## Resources & Environment



Natural Resources Conservation Service

# Agriculture, Trade, & the Environment: What Are the Concerns?

**M**ultilateral and regional trade accords have helped reduce trade barriers and promote U.S. agricultural exports. Concurrently, environmental awareness has increased in many parts of the world as concern has grown for maintaining and improving global and domestic environmental quality. The economic concerns motivating trade have sometimes clashed with environmental interests, as governments, businesses, environmentalists, and consumers advance their particular agendas.

**Industry groups**, including farm and food organizations, often express concern that domestic environmental regulations will impair their international competitiveness. If environmental regulations increase domestic costs of production, they argue, competing exporters should face similar constraints. Food processors are concerned by the myriad of environmental labeling, packaging, and other standards among countries. Industry groups also

question whether all foreign standards are legitimate or whether they are covert trade barriers.

Labeling and packaging standards include “ecolabeling” (reflecting environmental effects associated with production, consumption, and disposal of the products) and equivalency of standards for defining organic foods. Harmonization of such standards and rules has been raised at international forums as a means of addressing perceived impediments to competition.

**Environmental and consumer groups** generally support closer scrutiny of the environmental effects of multilateral and regional trade policies, and prefer an international consensus on resource conservation, sustainable development, and safer and healthier products. Some environmental and consumer organizations complain about the allegedly negative environmental effects of shifts in production and trade due to trade liberalization (e.g., transmitting higher world prices to farmers in some countries where environmental safeguards are lax could lead to cultivation of environmentally sensitive land).

Also, some environmental groups worry that international trade agreements will encourage harmonization of environmental policies at lower national standards than those currently in force in industrialized nations. Finally, some of these groups favor use of trade instruments to achieve their environmental policy goals (e.g., trade restrictions on products considered detrimental to the environment or whose production process is considered environmentally unfriendly).

**Developing countries** also are apprehensive about issues related to trade and environment. Developing country groups are concerned that their environmental standards and enforcement, if less strict than those of developed nations, may invite trade restrictions from developed countries. Less environmental protection may be the result of lower economic development levels, fewer resources, or greater absorptive capacities of the environment. But lower standards provide a

popular motivation for trade-related complaints from environmental and producer groups in developed countries.

The World Trade Organization (WTO), and its predecessor, have been involved in discussions over trade-environment linkages for several years. As part of the Final Act embodying the results of the Uruguay Round, participating Ministers agreed to establish a Committee on Trade and Environment (CTE). The committee will report recommendations to the first biennial meeting of the WTO Ministerial Conference in Singapore in December.

### *The Impacts of Trade Liberalization*

The implementation or reform of agricultural and trade policy creates a complicated set of environmental effects—some negative, some positive. The effect of freer agricultural trade on environmental quality depends on a number of factors, such as the mix of post-reform commodities, level of output, changes in production inputs, land use, technical change, and the capacity of the natural resource base to assimilate production impacts.

Freer trade improves market access for goods previously governed by quantity restrictions (such as quotas and other nontariff barriers) and aligns domestic prices closer to world prices. Resource reallocation occurs as prices adjust to more accurately signal market conditions and reflect the availability of resources such as arable land, labor, and other farming inputs. As prices change, farmers respond by altering their crop mix and their input use, buying or selling land, and investing in new machinery. In countries where reform leads to an increase in producer prices, farmers will respond by increasing output, placing more pressure on land use, and/or increasing chemical input uses.

Basic economic theory and empirical studies can provide a basis for understanding how trade liberalization and the environment interact. In accordance with economic theory, three separate mechanisms are related to the supply of products.

## Resources &amp; Environment

The *scale effect* describes changes in the level of economic activity (e.g., both economic activity and pollution levels may increase under freer trade). The *composition effect* characterizes intersectoral changes reflecting a country's comparative advantage (e.g., agricultural production may contract while industrial output rises). The *technique effect* portrays changes in production methods (e.g., adoption of modern high-yielding varieties). Each effect may have its own unique influence on the link between trade liberalization and environment.

In the longer term, there may be *dynamic effects* benefiting environmental quality. As market access improves, there is a greater likelihood of environmentally friendly technology transfer among trading partners. New technologies and 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, such as new pest-resistant seed varieties.

Economic growth is also recognized as a crucial factor in increasing the demand for environmental quality and in providing the means for remedial action. Empirical evidence suggests that demand for environmental quality increases with a rise in per capita income. Several studies have noted an inverted U-shape relationship between per capita income and pollution emissions—i.e., emissions increase at low-income levels, but begin to decline once income reaches a threshold.

Some trade policies—including agricultural trade policies—focus on economic goals without giving attention to environmental concerns. For example, price supports for grain in combination with export policies have influenced the location and concentration of livestock in several countries. Manure disposal problems stemming from confined animal feeding may potentially influence local air and water quality.

A case in point is the European Union's (EU) maintenance of internal grain prices artificially above world levels (which limits domestic grain feeding), while high-protein feed products—e.g., oilseed meal

## Montreal Protocol Limits Methyl Bromide Trade

The Montreal Protocol on Substances That Deplete the Ozone Layer restricts the import and export of chemicals that deplete the ozone layer. Included in the list of targeted chemicals is methyl bromide—a broad-spectrum pesticide. In the U.S., methyl bromide is used in agriculture for soil fumigation as well as commodity and quarantine treatment.

Parties to the 1995 Montreal Protocol agreed to a production phaseout schedule for methyl bromide, with a 25-percent reduction in 2001 and a complete phaseout by 2010 for industrial countries. Restraints on developing countries are less severe. Current U.S. domestic regulations are more restrictive than the Montreal Protocol—specific provisions of the Clean Air Act addressing ozone depletion call for a ban on production and importation of methyl bromide starting January 1, 2001.

Other countries have regulated production or use of methyl bromide as well. The Netherlands phased out the use of methyl bromide for soil fumigation in 1992 because of ground water concerns. Denmark will ban all agricultural uses of methyl bromide in 1998, and Sweden is expected to follow a similar schedule. The European Union and Canada will cut agricultural uses by 25 percent in 1998. A number of other countries are contemplating regulatory action to control methyl bromide use and production.

Considerable loss in export and import dollars in both domestic and foreign markets are likely. Japan requires that all U.S. cherries and apples be treated with methyl bromide as a condition of import. The U.S. requires that all grapes imported from Chile be treated with methyl bromide before entering U.S. commerce.

Within the U.S., the economic impact of eliminating methyl bromide would be felt most strongly in the agricultural industries of California and Florida, since they are the primary users. Potential crop losses would likely occur in those crops using methyl bromide—strawberries, tomatoes, peppers, grapes, cherries, nuts, and tobacco—if suitable alternatives are not developed.

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and corn gluten—enter at world prices. This has encouraged livestock operations to concentrate in areas near densely populated seaports, especially in the Netherlands, northern Germany, the Bretagne region of France, and the Po Valley of northern Italy.

The protein-rich feeds, although purchased for their energy value, have resulted in nitrogen-rich manure making proper disposal a serious concern. An excessive amount of nitrogen in surface waters—whether from lagoon spills, effluent runoff, or excess fertilizer application—can cause algae to grow at an accelerated rate, limiting other plant growth and eventually depleting the

oxygen dissolved in the water. This process—called “eutrophication”—often results in clogged pipelines, fish kills, and reduced recreational opportunities. Above a certain concentration, nitrate can also affect the potability of drinking water.

Were the EU's livestock production to locate closer to field crop activity, field disposal would present both an economically beneficial use of manure, as well as a preferred disposal method (depending partly on soil types and tillage practices). In 1991, the EU adopted the Nitrate Directive, intended to regulate regional animal densities by 1999. In addition, reductions in grain price supports—initi-

## Resources & Environment

ated in 1993/94 as part of ongoing EU agricultural reform (partly in anticipation of Uruguay Round compliance rules)—may affect feed composition and the location of livestock.

While such policies may limit manure pollution, their effects on the structure and competitiveness of EU livestock production are unclear. A recent study, incorporating the influence of the new directive, indicates that EU beef exports could be reduced by as much as a third and that the EU could change from a net exporter of pork and poultry to a net importer. This illustrates the need to coordinate trade and environmental policies, rather than designing one to offset the ill effects of the other.

### *CTE Decisions Likely To Affect Agriculture*

The CTE will address several issues that are critical to agriculture and agricultural trade. The CTE will examine the compatibility of trade rules of the WTO and Multilateral Environmental Agreements (MEA's), which take priority in the event of a trade dispute. Use of trade measures in MEA's, and dispute settlement involving WTO members that may not be members in the MEA, will also be addressed. Examples of MEA's affecting agriculture include the Convention on Biodiversity (the U.S. is a nonmember) and the Montreal Protocol (which bans ozone-depleting substances such as methyl bromide—a widely used agricultural fumigant—and calls for their eventual elimination).

The CTE will also be expected to recapitulate the state of discussions and to make recommendations on the following issues:

- the practice of national environmental reviews—i.e., reviewing a nation's trade agreements for their environmental effects;
- importer access to the specifics of national ecolabeling programs, and possible trade restrictions resulting from the use of ecolabels or packaging standards (use of ecolabels—e.g., organic labels or best management practices labels—on agricultural food products and packaging standards for food items could present market access problems);
- improving transparency in international trade by establishing a data base of trade-related environmental barriers affecting all sectors, including agriculture—e.g., a sanitary and phytosanitary ban on the use of agricultural chemicals;
- establishing a data base to facilitate notification by countries of domestically prohibited goods—e.g., banned agricultural chemicals;
- addressing market access issues by considering the environmental effects of removing trade distortions in specific sectors, including agriculture; and
- protecting intellectual property rights in transferring environmental technology.

### *Trade Liberalization & Environmental Policies*

Trade liberalization and environmental goals can work in tandem. Trade agreements can help remove policies that support or protect environmentally harmful practices. They can also help establish common health or environmental standards on traded goods. Trade liberalization can also contribute to economic growth, a crucial factor in increasing demand for environmental quality indirectly via higher incomes.

Harmonization of some environmental policies and product standards can facilitate trade but are best done only to the extent that harmonization promotes standards in accordance with social benefits and costs in individual countries. Since trade agreements are designed to remove or reform trade-distorting policies, and not to provide disincentives to pollute, they may not be the best way to remedy most environmental problems.

While some international trade accords have attempted to ensure the environmental goals of the signatory nations, unilateral or coercive use of such measures may be open to WTO challenge. International agreements focused specifically on the environment are the preferred, although often more difficult, method of achieving gains in international or transboundary environmental goals.

In the case of agriculture-related environmental concerns, the problems often may be sufficiently local that a trade measure does not constitute a well-targeted, cost-efficient approach. Targeted environmental policies are preferred, on global efficiency grounds, to restricting trade.

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