

Forest Products Trade (Indicator 59)¹

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Extent to which economic framework supports. . . **Nondiscriminatory Trade Policies for Forest Products**

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Rationale and Interpretation

The interpretation of Indicator 59 reflects the assumption that free trade and nondiscriminatory trade advances sustainable management of forests. This review of information and information gathering capacity will not question this premise. Measures of the indicator over time should capture domestic trade policy impacts and trends of imports and exports in order to promote transparency in implementing trade policy. Indicator measures should capture also the use of tariff barriers (import and export duties), nontariff barriers (subsidies, export controls, below-market wages, transportation costs) and other factors that distort domestic and international markets. These types of distortions can lead to deforestation and forest degradation, providing strong disincentives to sustainable forest management. In addition, policies that distort the marketplace can obscure an understanding of factors, such as economic costs and benefits, affecting resource allocation and environmental impacts (Roundtable on Sustainable Forestry 1999, Forest Service 1997).

There are positive values that can be associated with increased trade liberalization that would likely result from nondiscriminatory trade policies. One positive value of trade liberalization is to increase investments in sustainable forest management. Reduced trade barriers and costs enable investors to shift resources from the payment of penalties and duties to enhancing product quality, including environmental quality in order to successfully compete in current global markets.

Indicator Appropriateness

Nondiscriminatory trade can be significantly influenced by the reciprocal will of governments to encourage a competitive and fair market for domestic industries. One way in which this occurs is to support policies that do not discriminate among other countries for trade in similar goods. Sustainable forest management is enhanced by the prospect of fair and competitive markets for forest products. Countries that develop a significant international trade component for their forest products industries rely on national policies to promote competitive participation in global markets through support for international agreements on the rules of trade.

The World Trade Organization (WTO) serves as the lead international institution that facilitates trade by setting guidelines and policies for dispute resolution as well as trade development among member countries (World Trade Organization 2001). The WTO and its member countries have defined nondiscriminatory trade practices as those practices that do not apply an "inequality of treatment accorded imports from different trading partners, as through preferential tariff rates for imports from particular countries or trade restrictions that apply to the exports of certain countries but not to similar goods from other countries." During preliminary assessments of Indicator 59 in the United States, *nondiscriminatory trade* implies tariff and nontariff effects on trade in wood products (nonwood forest resources that are traded and whose management contributes to sustainable forest management are omitted due to the difficulty in tracking, by trade data codes, wood material into other product categories such as horticulture, food, and chemical products). The WTO Ministerial Declaration of 2001 establishes three priorities under the trade and environment section as (1) a foundation of multilateral environmental agreements (MEAs) with respect to scope and application of regulations; (2) encouragement of information exchange and observer inputs; and (3) reduction or elimination of nontariff and tariff barriers (World Trade Organization 2001).

Conceptual Background

Nondiscriminatory trade practices form a crucial element of a country's overall trade policy with regards to sustainable economic development and sustainable resource management. The promotion of free and fair trade requires levels of mutual cooperation and exchange among countries. It also thrives under the reciprocal openness of borders under agreed upon international frameworks and institutions (Barbier and others 1994).

Trade practices can have indirect and direct affects on economic, social, and environmental elements of a country. Direct discriminatory practices are generally specific applications of tariffs that limit the flow of goods between countries. Provisions under the WTO and other trade agreements result in a level of monitoring and assessments of the legitimacy of trade systems. Other practices, however, are not as clear-cut. The most-favored-nation (MFN) status, for example, is bestowed upon a country that the United States finds to have the capacity and political will to participate in trade resulting in the reduction or elimination of tariffs (U.S. Department of State 2002a,b). However, some countries interpret the selection of specific countries for MFN as a form of indirect discrimination toward the non-MFN countries.

There are several types of nontariff barriers that may result in indirect impacts on trade. Subsidies by a government (i.e., tax incentives, R&D investments) can also be interpreted as barriers to free trade and a challenge to economic development. Categories of indirect measures that are indicative of trade imbalances include quantitative restrictions, measures influencing prices, health and technical standards, customs and administrative entry procedures, trade agreements, and ocean freight charges and regulations (Bourke and Leitch 1988). Measuring these impacts from trade requires a complex of data that reflect domestic actions under, and reactions to, U.S. trade policy.

U.S. Agency Trade Responsibility

The United States participates globally to develop policies that support nondiscriminatory practices in forest products trade. A variety of domestic institutions maintain responsibilities and mandates for trade activities and strategies. U.S. leadership in the coordination of these agencies and programs increasingly reflect environmental linkages to trade and particularly for trade in products from natural resources.

The primary U.S. agency responsible for trade negotiations and Federal trade policy is the Office of the U.S. Trade Representative (USTR). The USTR administers trade policy as mandated by the executive branch of Government. Individual Government agencies on the department level are represented through a series of committee appointments to draft trade policy statements, trade agreements, and to carry out trade mandates according to guiding legislation and executive order. Bilateral and multilateral trade agreements fall under the purview of the USTR. A brief history of major trade policy developments provides a context for U.S. interpretations of trade priorities and strategies.

The U.S. Tariff Commission was established in 1916 and within the next decade, the concept of the MFN principle was formally instituted as part of the basic foundation of U.S. trade policy following more than 140 years of informal consideration of special trade relations with other countries (U.S. Department of State 2002a, b). The Reciprocal Trade Agreements Act of 1934 and the Trade Expansion Act of 1962 gave the President the authority to further trade policy through bilateral and multilateral negotiations, and thus the initial rounds of the General Agreement on Tariffs and Trade (GATT) began in Geneva, Switzerland, in 1947. A report in 1971 recommended a push for major trade negotiations, further formalized at the Tokyo Round of GATT in 1973. In 1975 the International Trade Commission (ITC) evolved from the former U.S. Tariff Commission in conjunction with the signing of the U.S. Trade Act of 1974 (U.S. Department of State 2002a, b). The first United Nations (UN) session on trade and

employment established the International Trade Organization (established 1946), as an initiative submitted by the United States (U.S. Department of State 2002a, b). The UN further facilitates the global dialogue on trade through the sessions of the UN Commission on Trade and Development.

Policy Trends Affecting Trade

Trade policy developments that affect the forestry and forest products sector occurs through increased transparency, effective governance (trade capacity), and environmental monitoring. Reliable and timely data must exist in order for countries to analyse the linkages between trade policies and whether forest resources production and consumption are sustainable. In 1996, the Harmonized Commodity Description and Coding System (Harmonized System 1996, HS96) was applied to the Standard International Trade Classification system reflecting the expanding number and types of traded products, including forest products (U.S. International Trade Commission 2002). This development contributes to increased transparency in tracking trade in forest products and understanding the role of technological change and through international market demands.

Currently, attention to illegal logging, corruption, and illegal wood trade highlights the importance of a country having strong institutional trade capacity to avoid the effects of these nontariff barriers to trade. Developments in the tracking of illegal trade in forest products can draw lessons from the experiences of the Convention on International Trade in Endangered Species (CITES) of 1973. Through scientific study and open debate among members of the convention, CITES "... regulates the international trade in wild animals and plants and their products when it is determined that this trade does, or potentially could, threaten their survival in the wild." The challenge of tracking and monitoring trade flows of forest products is difficult and may invite, counter-intuitively, increased investments in circumvention and corruption. Nevertheless, the costs of gross distortions in market dynamics that result from illegal activities are borne unsustainably by the resource base.

There are concerns that the adoption of certification systems by governments may result in nontariff barriers to trade. Systems of certification require that forest resource management meet certain standards so that the products made from those resources are considered environmentally friendly. The majority of certification efforts exist within the private sector and serves as marketing tools for companies (producers and consumers) to enhance their environmental image. The U.S. Government does not have a national public policy on certification per se. Various U.S. laws and regulations, national and subnational, provide a reasonable and effective system of promoting sustainable forest management on public lands while certification remains a voluntary, private market initiative.

Open Access to Markets

Policies exhibit data that indicate the ability of market participants to move freely through rational decisionmaking. In order for forest resource landowners, public and private, to make decisions that optimize the value of their objectives in forest management and conservation, there must be incentives to participate in resource markets under self-assigned risk levels. Sustainable resource management decisions reflect the ability of owners and users to expect high probabilities of success in meeting those objectives. Owners that decide to participate in commercial timber and wood products markets require some level of assurance that their investments will have a fair and competitive chance of paying off. Participants that depend on international trade in forest products to obtain that success must have government leadership in forming international policies that encourage free and fair trade. Trade must be based upon nondiscriminatory policies that can be reciprocated by other countries that serve as export markets for their products.

Compliance with Tariff Reductions

A general goal of international trade agreements is to strive toward continually reduced tariffs on forest products. The reduction of tariffs is usually negotiated and phased in over a period of time. When tariffs are reduced, markets become more competitive (assuming no other barriers or nontariff discriminatory practices are put in place), trade increases, and economic development opportunities expand for participating countries. The United States currently has little to no tariffs on forest products imports from most countries.

Domestic Subsidies Affect on Trade

Countries that provide subsidies to an industry increase the lack of will and decrease the opportunity for the industry members to participate in markets under normal decision-making. Subsidies mask market dynamics, valuable information that participants must use to make good business decisions. A lack of data on market dynamics thus influences the possibilities of success and therefore minimizes the production and income potential for the country.

Labor Costs and Investment

Higher labor costs in any given sector influences business decisions such as the location of production units and therefore influences the flow of goods. Lower labor costs in conjunction with raw material costs of production influence the movement of investment from one country to the next. Industries will take advantage of lower labor costs to produce similar goods at lower cost, therefore increasing profit margins. The impact of production location choices directly influence which resources will be tapped as raw material into wood processing. The ability of a country to meet in a sustainable way raw material resource demands is directly impacted by decisions for investments by the industry. Increased investments in a country due to lower labor costs can result in a greater strain on local resources. Likewise, countries that maintain higher labor costs in a developed and technologically advanced industry will influence the shift of investments to lower cost areas. Meanwhile, the higher income populations may now have the luxury of "purchasing" other products and services from the forest through leisure activities, environmental concerns and support, asset management, and other cultural, religious, and social objectives, additional values that reflect sustainable forest management.

Current Conditions

The consumption and trade of forest products has increased substantially (approximately fourfold in real terms) over the last 30 years, and is projected to increase further in the years ahead. Forest products are broadly defined to include unprocessed wood products (for example, chips, logs, lumber), as well as highly processed wood products (for example, fiberboard, plywood) and paper products (for example, printing and writing paper). According to the UN Food and Agriculture Organization, world trade (imports and exports) of forest products totalled more than \$300 billion in 2000. Canada, the United States, Finland, Germany, and Sweden account for 50 percent of forest products exports. Similarly, the United States, along with four other countries (Germany, Japan, China, and the United Kingdom), account for almost 45 percent of forest products imports.

In 2001, the value of new construction put in place in the United States increased by 5.6 percent over the 2000 level, to \$861 billion, in large part due to the strength of the residential construction market. Residential construction traditionally accounts for a significant portion of the softwood lumber and structural panel products consumed annually in the United States. Residential housing starts totalled 1.60 million units in 2001, compared to 1.57 million units in 2000. Not surprisingly, consumption of many construction-related wood products increased in 2001. Near-record level of imports (\$15.1 billion) kept prices of wood products generally lower however in 2001, in spite of the strong construction market.

Imports of softwood lumber, primarily from Canada, and structural panel products from Canada, Brazil, and Chile accounted for almost one-half of total imports on a value basis (Howard [various dates]).

Canada remains the dominant provider of softwood lumber imports at a share of approximately 94 percent; yet, other countries in Europe, for instance, have slowly increased their participation in this market (Howard 2001). Hardwood lumber imports declined slightly in 2001 on a value basis compared to the previous year's sharp increases. Other solid wood products exhibited similar fluctuations, notably imports of softwood plywood, oriented strand board, hardwood plywood and fiberboard products. Paper and paperboard imports continue to show increases at the beginning of this decade (Howard 2001).

Given the high level of consumption of wood products in the United States, imports play a significant role in forest products trade. U.S. imports of industrial roundwood (much of it from Canada) surged during the past decade, increasing almost 30-fold, as the United States experienced an extended period of unprecedented economic growth, near record housing starts, and reduced availability of Federal timber in the U.S. Pacific Northwest, increasing from 246 thousand cubic metres in 1991 to 6,992 thousand cubic metres in 1999. Industrial roundwood is defined as sawlogs, veneer logs, pulpwood, chips and particles, and wood residues.

Imports have also been the centre of several trade disputes, most notably with Canada. The softwood lumber dispute with Canada is one of the United States' most complex and longest running bilateral trade disputes (dating back to October 27, 1982). There have been repeated countervailing duty investigations into alleged Canadian subsidies in the softwood lumber sector. Consultations in late 1994 and early 1995 led to the United States-Canada Softwood Lumber Agreement. The Softwood Lumber Agreement that was signed on May 29, 1996, was retroactive to April 1, 1996. On April 2, 2001, immediately following the expiration of the United States-Canada Softwood Lumber Agreement, the Coalition for Fair Lumber Imports (and others) filed countervailing duty (CVD) and antidumping (AD) petitions with the DOC and the U.S. International Trade Commission. On March 22, 2002, DOC announced its final subsidy determination, finding a subsidy rate of 18.79 percent. DOC also found that Canadian companies were selling products into the U.S. market at below fair value, and imposed antidumping duties ranging from 2.18 to 12.44 percent. Products manufactured in the Maritime Provinces are exempt from the countervailing duty, as are products of certain manufacturers who rely entirely on logs sourced from the Maritime Provinces or Maine. On May 2, ITC announced its final injury determination, finding a threat of material injury in both the countervailing duty and antidumping investigations of Canadian softwood lumber.

Overall, however, the United States has some of the lowest tariff rates in the world (U.S. International Trade Commission 2002). From 1989-1999, average U.S. tariffs on all primary goods remained stable at about 2.0 percent and declined from 6.1 percent to 4.2 percent for manufactured goods. Only countries such as Singapore, Australia, Hong Kong, and Switzerland show lower (or no) tariffs or similar declines during that same period. Examples of general U.S. wood products tariffs range from mostly 0 to 8 percent on some plywood products (U.S. International Trade Commission 2002).

U.S. wood products exports after a modest increase in 2000, declined sharply in 2001, from \$6.2 billion in 2000 to \$5.2 billion in 2001, because of continued weak economic conditions in Japan and several other Asian markets. U.S. wood product exporters were also hurt by the strong dollar. Significant declines were registered in most markets and most product sectors in 2001. China was the only major market to show any degree of strength in 2001.

U.S. producers are increasingly facing increased competition at home and abroad, not only from longtime competitors like Canada and Northern Europe but also from producers in Estonia and Latvia, Chile, Malaysia, and Brazil. With the breakup of the former Soviet Union, Estonia and Latvia have emerged as two of the leading suppliers of logs, chips, and, lumber. Russia has reemerged as a leading

producer and exporter of logs. Russian exports of logs and chips totalled 27.4 million cubic metres in 1999, primarily to Finland, China, and Japan. U.S. exports of softwood logs to Japan have dropped by more than 60 percent during the past decade. Nevertheless, were it not for the United States' plant health regulations requiring heat treatment of unprocessed wood products prior to import, it is quite possible that the United States would also be a significant importer of Russian logs. The United States requires heat treatment of logs from Russia. The economics are such that heat treatment is not a commercially viable option.

A similar situation can be seen in other commodities. The United States is the world's largest producer of lumber and plywood, but, even here, U.S. producers are facing increasing competition. Finland has doubled its plywood production over the past decade. China, Malaysia, and Brazil now account for almost one-quarter of the world's plywood production. Brazilian softwood plywood producers are even beginning to make some inroads into the U.S. domestic market. And as noted earlier, we are seeing more and more softwood lumber in the U.S. market from European suppliers (Austria, Finland, Germany, and Sweden), as well as from Chile and New Zealand.

Cross-Cutting Conditions

There are issues that overlap with the measurement of nondiscriminatory trade policies in the context of encouraging sustainable forest management and conservation in the United States. The interpretation of trade data reflects cross-functional relationships with the analysis of supply and consumption trends for forest resources and forest products. The estimation of "apparent" consumption is the net of imports plus production minus exports. Shifts in trade from one region to another that occurs from changes in trade policies may reflect, *inter alia*, responses to resource supply concerns as well as potential challenges to domestic industry development. The determination of whether policy changes meet the standard of nondiscrimination requires input from supply/consumption linkages in U.S. markets.

Other Montreal Process indicators that include crosscutting information with Indicator 59 are linked to the value of internalizing costs and benefits of trade policies within measures of impacts on sustainable forest management. Measures such as Indicator 45-average wage rates, Indicator 48-appropriate land tenure, Indicator 44-employment, Indicator 46-community viability, and Indicator 38-value of investments (changes in demand) will reflect responses to trade flows that are dependent upon forest resource supply and management decisionmaking in the United States. It is through the dynamics of these cross-functionalities that nondiscriminatory trade practices can impact results.

Information Adequacy

The United States has a long history of trade and economic development research, both in academia and Federal research collaboration. Many econometric models are robust at the gross scale, but less so on a finer scale where significant impacts are driving links between and trade policies. The lack of a clear guiding national strategy for trade analysis is reflected in autonomous approaches for trade research in forestry and forest products.

The social and political challenges to measuring this indicator are similar for the United States as in most countries. There are sensitivities to conducting some of the required studies regarding trade data, especially for other countries and U.S. industries. To some extent, there are domestic antitrust laws that govern the sharing or discussion of individual company data that would hinder efforts to collect data. Politically, trade actions are often taken for legitimate purposes, but nevertheless often perceived as discriminatory. Responses to trade actions in the United States are often divided along a number of philosophical and pragmatic lines such as between producers and consumers, developers and environmentalists, or different tenure holders.

On an economic level, there is not yet a clear and coordinated priority in the United States to commit resources to the measurement of economic and institutional trade issues. A shift in priorities will be required to provide the level of consistent, comprehensive and national level trade analysis necessary to contribute to the knowledge of overall trade policies and their impacts.

One of the institutional challenges facing the United States with regards to trade impacts is that there are studies and analyses available, but no one public entity has responsibility for tracking or compiling information and measurements. Some of the hurdles we face are finding, identifying, and assessing the conclusions of the various reports and studies in order to establish a minimal level of consistent tracking of trade developments and impacts. The Forest Service has no mandate, nor any Federal agency, to undertake these reviews; however, we anticipate a push to build these analyses into future work as international trade issues demand increased attention and debate.

Recommendations

Early analysis on the status of Indicator 59, suggests that there is increased attention and support to understand the linkages between trade and impacts on the environment in the United States. The United States has the world's leading compilations of national trade data and a variety of public and private institutions compile and analyse components of trade activities and trends. The efforts vary and are in many ways disjointed, thus projecting a less than national emphasis on comprehensive trade strategies. Subsequently, the United States has only a recent history of adopting institutional strategies or guidance to ensure consistent implementation of trade analysis reflecting environmental and resource management impacts.

The most current effort is the 1999 Executive Order 13141 that requires the Council on Environmental Quality (CEQ) and the USTR to conduct an environmental review of all natural resource trade agreements, both bilateral and multilateral (U.S. Trade Representative 1999a). The implementation of the new trade policy will contribute data and methodologies to assist in the measure of Indicator 59 in the future.

There are additional changes that the U.S. Government and national forestry community can institute to improve the ability to maintain consistent development and implementation of nondiscriminatory trade policies in the United States. Many of these recommendations were developed during a 2-day workshop on C&I by forestry and forest products stakeholders in Denver, CO, in 2000. The emphasis of the Denver workshops was data availability, access, appropriateness and analysis. Nevertheless, the discussions among experts, in research and utilization of the data, reflect a priority of needs in the institutions and structures in the United States that must be improved to fully measure this indicator.

A synopsis of the components of data and analysis of nondiscriminatory trade policies generated from the workshop is in the following section. This discussion is not an exhaustive description of the status of measuring Indicator 59; however, it provides a foundation for continued improvement in the measurement of trade policies and their impacts on forest management.

Data Analysis and Approaches

The analysis of trade data goes beyond direct measurement of trade flow changes and market implications. It is difficult to assess whether a country's economic framework will fully support sustainable forest management if measures such as the internalizing of costs and benefits are not provided. Many of the current analytical approaches are designed to reflect, albeit on aggregate levels, the implications of trade policy changes through the linkages of social and environmental variables that reflect sustainable forest management characteristics.

The most common approaches to analysis of trade data are spatial equilibrium econometric models that reflect historical and projected trends under alternative policy and technology scenarios (Boyd 1983). The United States hosts a wealth of expertise as trade research centers in forest products, such as the Center for International Trade in Forest Products (CINTRAFOR), the University of Wisconsin-Madison, the University of Washington, and Purdue University. The United States is also a member of the International Institute for Applied Systems Analysis (IIASA) research collaboration on global forest sector analysis, including trade. One of the more recent applications of forest products trade analysis is the Accelerated Tariff Liberalization (ATL) study, conducted by U.S. Government and university collaboration (U.S. Trade Representative 1999b). The ATL is a one-time study of the potential impacts of reductions in tariff rates on forest products in the Asia Pacific region, including environmental implications reflected in the projections of changing harvest levels.

Analytical approaches require the establishment of a baseline of data and information that, in itself, is a valuable measure of trade potential and the underlying resource requirements to reach that potential. How do those requirements impact sustainable forest management goals and possibilities? Trade models enable the analysis of policy impacts, such as the removal of tariffs (trade liberalization) on trade flows and related resource supply and management opportunities.

The political sensitivity of trade is analysed by approaches that use content analysis of news articles, public response to trade issues, and other social drivers that impact decisions which in turn are linked to sustainable forest management potential. More recently, some qualitative studies track the developments in the United States and other countries with regard to certification schemes and the potential for them to serve as nontariff barriers. Case studies are also used to gain an understanding of trade capacity developments in countries in order to preview potential impacts of U.S. trade policy changes on sustainable forest management.

Data Analysis and Requirements

What is the variable or combination of variables that can be used for measuring the effectiveness or existence of nondiscriminatory trade policies for forest products? Like many other institutional indicators, the information required goes beyond strictly quantifiable data. Although much of this information discussed below is in existence, the analysis of the information is lacking in such a way as to measure this indicator adequately. For this reason, the discussion of applicable data suggests not only the type of data but also the need for strategic analytical approaches to process the information.

Annual Import and Export Data

Time series analysis of basic annual import and export data for the United States would provide a foundation to follow trends in trade flows and reflect changes in trade policies or specific trade actions. Trade data coupled with production data also provide a basis for determining consumption patterns as a link to supply trends and potentially sustainable forest management.

Technical Barriers to Trade

The Agreement on Technical Barriers to Trade (TBT), established under the WTO, requires that members of the WTO assure that their legal and regulatory guidelines do not constitute barriers to free trade. An analysis of compliance of forest products standards with the Code of Good Practice of the TBT would provide a view of U.S. commitment to nondiscriminatory trade policies in forest products (International Organization for Standardization 2002).

Domestic Legislation Affecting Trade

A survey of domestic legislation affecting trade would provide the legislative and regulatory provisions that encourage or discourage nondiscriminatory trade policies for forest products. Four pieces of legislation provide examples: (1) The Jones Act of 1920, which provides regulation of inter-coastal shipping of goods such as lumber, thus impacting resource demand and supply balances domestically and with neighboring producers (Boyd 1983); (2) The Forest Resource Conservation and Relief Act of 1990 (FCSRA) prohibits exports of raw logs from Federal land harvests in the western region (west of the 100th Meridian) (U.S. Code 1993); (3) The Export Trading Company Act of 1982 promotes the development of export trading associations and the expansion of export trade in general (U.S. Congress 1982); and (4) The Foreign Sales Corporation Act provides tax reduction incentives to U.S. companies operating in other countries in order to promote exports by relieving the tax on some of the profits from those exports (Export FSC International 2002).

Countervailing, Anti-Dumping and Safeguard Actions

The WTO and regional trade agreements generally enable individual parties to maintain discretion in the development and application of domestic trade laws and regulations. A tally of actions by the United States under appropriate laws would not in itself establish less than nondiscriminatory practices regarding trade imports. Subsequent and successful challenges to the application of domestic trade regulations, however, could occur through bilateral, regional, or WTO provisions. There is a need for an analysis of the trends in the number of countervailing duty, antidumping and safeguard actions by the United States for forest products. This information would measure to what extent the U.S. issues bilateral actions under domestic laws that might be challenged as discriminatory or prohibitive to free trade.

Invasive and Alien Species Import Restrictions

Invasive and alien species continue to increase in their level of threat to the full range of biological, social, and economic values that are derived from forest resources. A 1999 study at Cornell University (Environmental News Network 1999) estimated that the United States suffers approximately \$123 billion annually from alien species of insects, diseases, and nonindigenous species. Under international trade laws and agreements, countries have the right to set standards with regards to safety and health. The challenge within the context of sustainable forest management is to maintain sustainability with adequate protection while not reducing sustainability by attaching discriminatory policies on trade that leads to revaluing forest resources for nonforest uses. The use of international guidelines for sanitary and phyto-sanitary regulations on trade have potential as barriers to trade or to be applied in a discriminatory fashion. An analysis of the number of Animal and Plant Health Inspection Service actions that affect trade in the United States would provide a measure of potential discriminatory policies.

Cross-Sectoral Influences on Trade Policies

External influences on trade policies (external to the forestry sector) include influences from linkages to policies and trends in other sectors such as agriculture, transportation, commerce, and environment. Cross-sector linkages are difficult to define and quantify. Nonetheless, increased analysis of cross-sector impacts on the forestry and forest products sectors are needed as land use changes occur often and the opportunity costs of holding land in forest cover rises.

Environmental Measures to Affect Forest Management

The last decade has included a shift in the investment of environmental measures to affect forest management on the ground through existing trade linkages. Producers and owners (often public

agencies) of forest resources find increased presence of certification in the market as a means to encourage sustainable forest management. Quantitative research in the area of certification is, however, lacking for the forest products sector (International Tropical Timber Organization 1990).

Tariff Liberalization

Trade policy of the United States has consistently promoted free trade throughout various administrations. There is, however, a growing debate on the net impacts of trade on natural resources and environmental goals. Does tariff liberalization in the forest products sector encourage unsustainable forestry practices in individual countries? Does tariff liberalization promote efficient use of resources so that increased investment leads to high levels of conservation and the ability to afford the costs of environmental protection? Few studies have provided conclusive insight into this debate. Several leading studies in econometric analysis of national, regional, and global forest products trade have included some attention to the environmental impacts of shifts in trade flows, particularly with regards to the associated shifts in production levels (i.e., harvesting) that may occur as a result of the projected trade flows. Debate remains among these limited number of studies about the definition of an environmental impact, data supporting the studies and the scope of the research. Certainly, these and other issues can be addressed with future empirical work in this area; the results of which would provide data on the extent to which U.S. trade policies promote sustainable forest management.

Internalized Costs and Benefits

Internalized costs and benefits may affect final results of environmental impact analysis. Trade data and related information are often provided at relatively high levels of aggregation. Thus, analysis of trade policies and their impacts are difficult to complete for specific issues or concerns. Often, the total benefits and costs associated with trade policy changes omit the reflection of environmental values such as biodiversity benefits or net positive carbon storage shifts.

NAFTA Environmental Agreement

The North American Free Trade Agreement (NAFTA) contains guidelines and rules for actions under the environmental agreement of NAFTA (commonly referred to as the environmental side agreement)(North American Free Trade Agreement 2002). The NAFTA is a trilateral trade initiative between the United States, Canada, and Mexico implemented in 1994. NAFTA removes barriers to trade and investment among the three countries. Under NAFTA, the challenge exists to strike a balance between free trade and investment and the promotion and development of domestic economic development agendas. The environmental agreement provides for challenges to a party's level of enforcement and administration of its domestic environment laws. A measure of the number of actions taken under the side agreement against the United States would provide an indication of not only the strength of U.S. environment and trade laws but also the effectiveness of these laws through enforcement. Sustainable forest management goals could be directly affected by the degree to which the United States applies its own environmental legislation and regulations.

Consistency and Priority of Nontariff Measures

A variety of nontariff measures such as quotas, investment incentives, and tax credits, may reflect less than nondiscriminatory commitments for free and fair trade by a country. An analysis of U.S. nontariff measures in the forest products sector, and trends of their use over time, would provide additional understanding of the extent to which our commitments to nondiscriminatory trade are consistent and a priority. For example, data and analysis of U.S. subsidies in the forestry and forest products sector (for example, trucking, road construction) would identify areas in need of further enhancement of competitiveness to support fair trade.

National and Sub-national Procurement Requirements

National and subnational procurement requirements by domestic governments (national and local) underscore the linkage between consumption choices for products made from forest resources and sustainability limits of exporting countries. The percentage of recycled content in paper products and certified wood content are two examples of how procurement policies may reflect goals. At the same time, these policies can be considered nontariff barriers that form a level of discriminatory trade policies if targeting specific countries or regions.

Domestic Processing Requirements

One commonly perceived trade barrier is the implementation of a country's regulations regarding processing requirements. These requirements assure employment and income for labor, while adding value to industries through the promotion of downstream processing. Increased internal processing of wood can reduce demand for logs per unit of output with increased wood recovery and multiple product outputs. On the other hand, increased capacities in wood processing and attractive foreign exchange from exports of downstream products may encourage unsustainable harvest levels, thus contributing to unsustainable forest management practices. An understanding of domestic processing requirements will indicate potential policy applications linked to unsustainable or unfair trade.

Bilateral Trade Agreements

Bilateral trade agreements are an increasingly common tool in U.S. trade policy that fosters free and fair trade, cooperation, and partnerships to address mutual goals in a region or with neighboring countries. These agreements also create specific opportunities for countries to anticipate the impacts of trade flows and changes with respect to the agreement. Thus, countries can provide specific provisions, monitoring and assessment of progress toward, economic, social, and environment objectives. The implementation of the Executive Order 1341 adds a new dimension to and enhances the development of trade agreements.

Institutional Linkages to Data Inadequacy

The inadequacies of data to support measurement of nondiscriminatory trade policy linkages to sustainable forest management range from the simple lack of data or data collection to the more complicated institutional developments that require strategic planning of data and information management. Some data are not being collected, even though consistent with the mission of existing public agencies or other institutions to collect the data. In other cases, the data are collected but coverage is inadequate or the United States requires a change in protocol for data collection to provide more relevant and informative data. Institutional decisions must be made with regards to the existing data gaps in areas such as:

- *Tracking forested areas under certification schemes:* No one single entity is compiling these schemes.
- *External costs and benefits that are not being internalized:* Data are not collected or are not under any institution's mission; methodologies and linkages are not well understood.
- *External influences on trade policy:* Uncertainty of the extent to which it is implemented.
- *Number of nontariff barriers:* A one-time study, but not conducted regularly enough nor with adequate coverage.
- *Impacts of tariff liberalization:* A one-time study, but not conducted on a regular basis.
- *Number of APHIS actions:* Need systems in place to track regularly. These actions are published in the Federal Register, but no one entity has a mandate to summarize them.

- *Survey of domestic trade legislation*: Protocol changes are required to meet the needs of users. It is possible that these changes come under multiple agency missions, but it is not clear which ones.

Applicable Data and Data Sources

Available and applicable data sources to analyse and assess the level and impacts of nondiscriminatory trade policies in the United States are described in Table 1. The listing is not all-inclusive, but does represent the majority of the national sources of critical data and information for the analyses suggested above.

Table 1. Organizational Sources of Information for Assessing Nondiscriminatory Trade Policies in the United States

Organization	Description of Data	On-Line Access
United States Customs	Tariff schedules	www.customs.ustreas.gov
International Trade Commission (ITC)	Countervailing, antidumping and safeguard actions database, competitive studies	www.usitc.gov
Asia-Pacific Economic Cooperation (APEC)	Country studies of nontariff barriers, tariff rates	www.apec.org
USDA Foreign Agricultural Service	Import-export data	www.fasonline.gov
International Tropical Timber Organization (ITTO)	Studies on certification and labeling of wood products	www.or.jp/inside/download/Certification_Schemes.doc
World Trade Organization (WTO)	Trade policy reviews by country	www.wto.org
North American Forestry Commission (NAFC)		www.fs.fed.us/global/nafc/welcome.html
North American Free Trade Act (NAFTA), Commission on Environmental Cooperation	Country reports	www.nafta-sec-alena.org
Department of Commerce, Bureau of Census	Industry database on value of shipments, employment, wages	www.census.gov/epcd/www/97EC31.HTM
Forest Service Forest Products Laboratory	Periodic publication on trade, consumption, production and prices	www.fpl.fs.fed.us/econ/Publications.htm#Stat
World Bank	Trade databases, country reports, tariff statistics	www.worldbank.com

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