

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Environmental Assessment of Trade in the Context of SFM

**A Background paper for the Global Project: Impact Assessment of Forest
Products Trade in Promotion of Sustainable Forest Management**

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Draft Report

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Introduction

Starting in the early 1990's, the importance of assessing the relationships between trade and environment has gained increased recognition, both in governmental and civil society sectors. This recognition was initially linked to the increased concern about the state of the global environment, following the UNCED in 1992. Principle 17 of the Rio Declaration says that environmental impact assessments will be undertaken for activities likely to have significant impacts on the environment. The Ministerial Council of the Organization for Economic Development (OECD) recommended, in June 1993, to governments "to examine or review trade and environmental policies and agreements with potentially significant effects on the other policies area early in their development to assess the implications for the other policy area and to identify alternative policy options for addressing concerns". In 1994, the OECD developed general methodologies for conducting environmental reviews of trade policies and agreement and trade reviews of environmental policies and agreements (OECD 1994). In the same years, the North American Agreement on Environmental Cooperation, directed the Commission for Environmental Cooperation (CEC) to consider on an ongoing basis the environmental effects of NAFTA. In 1995, CEC started designing a framework to assist in anticipating important environmental impacts in the context of trade liberalization, and to develop policy tools to mitigate negative impacts and maximise positive ones (Commission for Environmental Cooperation 1999).

Since then, initiatives in this field have increased in number, and involved many stakeholders, led by international organizations, national governments, different sectors of the civil society, research institutions.

(see for example WWF International website at: <http://www.balancedtrade.panda.org>)

The interests and expectations of different stakeholders in the trade-environment-development nexus have been paralleled by improvement in methodologies and capacities and growing practice of impact assessment studies, including environmental impact assessment. Most countries have now specific requirements for conducting environmental impact assessment of project and activities.

In 2002, the FAO Forestry Department has started renewing its interest in the area of environmental assessment of forest use, including trade in forest products and services (see FAO's website at

<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=3285&langId=1&78733694>)

This paper presents the results of a desk study which has reviewed how environmental assessments of trade and trade-related issues have been applied in the forestry sector .

Definitions

The definitions given below have the aim to clarify some of the terms most currently used in the work and research dealing with assessing and evaluating the interactions between economic activities in general (including trade in forest products) and environmental changes.

These definitions are not meant to provide any judgement of the value or appropriateness of each of them.

Environmental assessment (EA) can be defined as the general process of assessing environmental impacts associated with human activities. It may include studies ranging from comprehensive (EIA) to more limited reviews (such as environmental audits, etc).

Environmental impact assessment can be defined as a tool to identify and assess the potential impacts of a proposed project (or activity), evaluate alternatives, and formulate appropriate mitigation management and monitoring measures.

Strategic Environmental Assessment (SEA): can be defined as a tool that promotes the incorporation of environmental considerations “upstream” from a project specific EA into policy and programme formulation.

Source: FAO Investment Centre Environmental Impact Guidelines (November 1999).

<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=3285&langId=1&78733694>

Sustainability assessments are tools for integrating environmental and developmental considerations into trade and investment policies. By involving both government experts and non-governmental stakeholders, sustainability assessments help determine how to maximise the positive effects and mitigate/avoid the adverse impacts of trade and investment policies. Sustainability assessments are more than just “environmental impact assessment of trade”. They should shape policies, put sustainability first, effectively involve stakeholders, change real outcomes. <http://www.balancedtrade.panda.org>

Sustainability Impact Assessment (SIA). A SIA is a process undertaken during a trade negotiation which seeks to identify economic, social and environmental impacts of the trade agreement. A SIA should help to integrate sustainability into trade policy by informing negotiators of the possible social, environmental and economic consequences of a trade agreement. SIAs should also provide guidelines for the design of possible flanking measures, the sphere of activity of which can exceed the commercial field (internal policy, capacity building, international regulation), and which will make it possible to maximise the positive impacts and to reduce any negatives impacts of the trade negotiations in question. (http://europa.eu.int/comm/trade/sia/seminar/index_en.htm)

Social Impact Assessment (SIA). Social impact assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programmes, plans, projects) and any social change processes involved by those interventions. The primary purpose of a SIA is to bring about a more sustainable and equitable biophysical and human environment. <http://www.iaia.org>

International initiatives, programmes, approaches and institutions related to trade assessments

This article is more concerned with the environmental aspects of the assessment of trade rather than the more encompassing sustainability aspects. It is recognised, though, that there has been a trend, since the first reviews were done, toward more comprehensive assessments.

The main international, national and NGO initiatives related to the assessment of the economic, environmental and social impacts of trade are mentioned below, roughly sorted chronologically.

- Organization for Economic Cooperation (OECD) –Environmental and Trade Reviews
- Commission for Environmental Cooperation (CEC) Analytic Framework for Assessing the Environmental Effects of the North American Free Trade Agreement (NAFTA)
- United States, Canada and Norway national initiatives
- UNEP- Integrated Assessment of Trade and Trade Related Policies
- WWF - “Sustainability Assessment of Trade” Project
- European Commission - Sustainability Impact Assessment of Proposed WTO Negotiations
- Secretariat of the Convention on Biological Diversity – Impacts of trade liberalization on agricultural biological diversity

The main objectives of these trade assessments are to inform the process of decision making of trade policy formulation and the negotiation position of countries. Since the OECD guidelines developed in 1994, these various initiatives have progressively built upon each other and there is a fair degree of convergence in the approaches and methods. However, differences exist, and some of them are introduced in the next paragraphs.

The first aspect, already mentioned is whether these initiatives are environmental assessments only (OECD, CEC) or have the broader approach of the sustainability (EU and WWF) and integrated assessment (UNEP). Recent developments show that there is a trend toward these broader assessments.

Another point is that all the initiatives above have a “*trade first*” vs “*sustainability first*” approach, that is, they start with the economic changes that are affected by trade policies and then try to link these to environmental effect. (The environment first-approach would start from the environmental perspective and then incorporate the economic analysis in the study.)

These various initiatives have all developed some sort of frameworks for establishing *causality links* and correlations between trade and environment, in other words, to analyse ways in which trade can affect the environment.

The various initiatives differ for the *subject/scope* of their assessment: the Commission for Environmental Cooperation assesses NAFTA specific rules; OECD methodologies apply to national trade measures and trade agreements among countries; EU focuses on specific trade measures; WWF methodology applies to different types of trade policies, changes in trade policies and measures and UNEP ‘s approach applies to different trade policies. The *timing*, that is, when is the assessment

is conducted (ex- ante, ex- post), how long-range effects are considered are other elements of difference in the approaches: for example, the CEC assessment are ex-post (evaluating the effects of NAFTA), while the EU's SIA is done ex-ante to predict possible impacts.

Other important aspects are the requirements for *stakeholder participation* in the assessment process; and provisions for *monitoring, follow up and policy prescriptions*: for example suggesting accompanying measures to minimise impacts (flanking measures).

Table 1 summarises the features discussed above and other elements.

Table 1: Matrix of approaches

	OECD	CEC	EU	WWF	UNEP
Environmental vs sustainability Assessments	environmental	environmental	sustainability	sustainability	integrated
Trade first vs environment first	economic assessment of the trade agreement or measure	broad economic, environmental, social and political context followed by economic and other direct effects of NAFTA, including institutional effects	Trade measures	Economic changes of major trade measures	economic effects of trade measures
Causality and correlation	Product effects, scale effects, structural effects, technology effects, regulatory effects	Production management and technology, physical infrastructure, social organization	Causal chain analysis. Preliminary assessment to identify potentially significant and non-significant impacts, and to differentiate between impacts of greater and lesser significance,	scale effects, structural effects, products/technological effects, socio-economic effects, environmental effects regulatory effects (including feedback effects)	scale effects, structural effects, products/technological effects, socio-economic effects, environmental effects regulatory effects
Subject and scope	Trade measures and agreements	NAFTA (including rule changes institutions, trade flows, investment and other conditioning factors)	Trade measures (includes a screening process and a scoping phase)	Social and environmental impacts of trade liberalisation	economic, social and environmental impacts of trade-related policies and agreements (ranging from a specific trade measure to multilateral agreements)
Timing	Varies depending on the trade measure of agreement, but generally should be conducted early in the policy-making process	ex-post	ex-ante (includes scenarios to compensate for uncertainty)	Early in the negotiation process (ex-ante) but usefulness of ex-post for lessons learnt	ex post assessments (except one case, China, where an ex-ante assessment was done)
Participation	Varies. Reviews will be carried out by government officials. Consultation is recommended	Work undertaken by a multidisciplinary team with consultation. No requirement for participation apart from institutional obligation of CEC	Developed in consultation with EC and stakeholders	Sustainability assessments should be transparent and participatory	Assessment are done by a multidisciplinary team, recommends participation, recommend stakeholder participation
Quantitative vs qualitative assessment	Mix of methodologies including models, case studies and others	Case studies incorporating qualitative and quantitative approaches	Suggests a mix of quantitative methodologies, along with case studies and social science methods	Relies primarily on qualitative analysis, acknowledges potential of models with caution	A mix of qualitative and quantitative methodologies, macro and micro-level analysis.
Sectoral approaches	Case studies might be used. Recommends development of criteria	Applies to sector studies, includes criteria for selection and upstream and downstream effects into other sectors	Includes case studies in possible approaches	suggests use of sector studies and includes criteria for selection	makes use of sector studies and includes criteria for selection of priority sectors
Indicators for assessment	Suggests preliminary indications within broad topics of pollution effects, health and safety effects and resource effects	includes indicators from air, land, water and biota and indicates criteria for selection of these and additional indicators	core sustainability indicators: economic, social and environment	propose qualitative judgements to assess impacts	use social, economic and environment indicators
Monitoring, follow-up and policy prescription	Importance of monitoring results and following up and suggesting policy responses	No provision for policy recommendations	Acknowledges the need for mitigating and enhancing measures to reduce or eliminate significant negative impacts, and includes criteria and a method for selecting such measures	Includes a prescriptive analysis with policy recommendations	Prescriptive analysis with policy recommendations

(Adapted from WWF report of the International Experts' meeting on sustainability assessment of trade liberalization, Quito, Ecuador, March 2000). This recent WWF study presents in clear and comprehensive way a synthesis of the different initiatives and their approaches. The report, together with other relevant, comprehensive information on all past and ongoing initiatives, approaches, and methodologies is found on the WWF Sustainability Assessment of Trade website. The site can be accessed at the internet address: <http://www.balancedtrade.panda.org>

Specific forest studies under the above initiatives

The forestry sector and the characteristics of production and trade of forest products have not received much interest in the large body of literature on trade and environment, as compared, for example, to the agricultural sector (for example the crop and livestock sectors have been much more studied in terms of the relationships between trade policies and environmental impacts).

Of the approaches mentioned above none has been specifically developed to address the forest trade and environment linkages and only 2 studies (by CSDDH in Mexico and UNEP in Tanzania) have actually applied the specific trade assessment methodologies to the forestry sector. These studies do an ex-post assessment of the impacts of trade policies (and the general economic liberalization policy related to them) on the wood forest products sector (timber and charcoal principally).

Box 1

Guerrero, M. T., De Villa, F. 2001... May 2001. The Forestry Industry in the State of Chihuahua: Economic, Ecological and Social Impacts Post-NAFTA. Comisión de Solidaridad y Defensa de los Derechos Humanos and Texas Center for Policy Studies in Mexico. Presented at the symposium on Understanding the linkages between Trade and Environment sponsored by the North American Commission on Environmental Cooperation (CEC), in Washington DC on 11 October 2000.

This study examines how NAFTA has influenced the forestry and forest product industries in the state of Chihuahua.

Methodology: it applies the CEC Final Analytical Framework for assessing the environmental effect of NAFTA on the forestry and forest products sector (logging operations, sawmills and manufacturing of particle board, plywood, wood crates, consumer and industrial pulp and paper products).

Questions addressed:

- Does the economy-wide liberalization associated with NAFTA intensify pressure on companies to reduce their costs associated with environmental compliance? Is government enforcement adequate to prevent adverse environmental effects that might be associated with increased production triggered by NAFTA?
- Has NAFTA led to reorganization in Chihuahua, concentrating production in sectors where it takes place most efficiently? Or has this have had further negative impacts on social organization and biodiversity?
- Do or can NAFTA liberalized rules of trade impede or enhance the implementation of sustainable forestry practices in Chihuahua?

The study analyses NAFTA effects on tariffs and non-tariffs measures related to trade in wood and wood products, and provisions of the NAFTA Environmental Side Agreement. It examines the post-NAFTA trends in wood and wood products and the links between production patterns and social and environmental consequences (for example, the degree to which the underlying socio-political structure in forest ejidos contributes to unsustainable logging practices, the responses of the Sierra's indigenous people to perceived threats to their forest and the response by the government to enforce environmental and forestry laws). The quantification of the environmental impacts of changes in forestry industries following NAFTA rules and practices is made difficult by the limited availability of environmental data and indicators (indicators considered are: deforestation and biodiversity, water quality and sedimentation).

Trends in forest production and forest product industries. wood production (particularly pine) has increased substantially since Mexico's entry into NAFTA, and both export of wood and wood products and imports from US have increased as well. There has been consolidation of forest industries and increase in number of private sawmills. Forest ejidos have remained impoverished suppliers of raw wood, with pressure on forests intensifying greatly in the past few years; Effects of tariff reductions (imports of pulp and paper have increased rapidly since NAFTA and Chihuahua producers are under pressure to keep production prices low to maintain their competitiveness in the Mexican market. This dynamic could put pressure on the forest industry to oppose environmental regulations that increase their costs by making raw wood more expensive or by imposing additional environmental control on pulp and paper operations. Effects of NTB provisions: may adversely affect the ability of Mexico to create and/or foster markets for sustainably produced wood and wood products (particularly true for technical standards and government procurements). The interpretation of the investment provision of NAFTA Chapter 11, the case of Metalclad, pose a threat to Mexico's ability to adequately regulate forestry or forest products operations of companies

from the US and Canada. Adequacy of Mexican forestry environmental laws and their enforcement: the authors found that there are substantial deficiencies and that the response from Government to the complaints by civil society about illegal activities has been inadequate.

Overall conclusions: the study demonstrates the complexity of attempting to determine how NAFTA has influenced the forestry and forest products industry in Chihuahua and how, in turn, these changes affect the environment and peoples of the Sierra Tarahumara. Export/Import and other trade data show some clear post-NAFTA trends in production, these trends are significantly influenced by domestic economic conditions and prices (the report says that the current trends in forest and forest product industry in Chihuahua are driven as much or more by domestic economic conditions than by NAFTA related tariff reduction - although these conditions are not un-related to the general neo-liberalized policy to which NAFTA is linked- . Increased exports are more linked to prices than reduction of tariffs which were already very low. Production in forestry seems also to be highly linked to Mexico's domestic demand for forest products (particularly paper, furniture and construction): imports are supplying a greater portion of Mexico demand due to inefficiencies and undercapacity of Mexican forest product industry). The analysis of environmental effects is hampered by lack of pre- and post NAFTA comprehensive environmental studies: the absence of this information makes it extremely difficult to quantify the degree to which changes in forest production and harvesting patterns have affected the forest and other natural resources.

Despite the complexity of the analysis and the difficulties of quantifying environmental impacts, the authors believe that the findings of the study can be used to assist the Mexican government and forest managers, including ejidos, to move towards sustainable forest management.

UNEP 2002. Integrated Assessment of Trade and Trade-Related Policies: A Country Study on the Forestry Sector in Tanzania. Centre for Environmental Economics and Development Research (CEDR), Dar-es-Salaam, Tanzania. UNEP. August 2002

The study examined the effects of trade liberalization on the forestry sector (economic and social effects and deforestation).

Methodology: the study has followed the approach outlined in the UNEP reference manual for the Integrated assessment of Trade-related policies. It is an ex-post analysis of a set of specific trade liberalization measures using a qualitative data assessment validated by primary data collection whenever possible, applied to a specific sector.

Trade liberalization measures which have directly or indirectly impacted the forestry sector: elimination of official prices and introduction of market based prices; removal of export taxes; abolition of export licensing system; abolition of import licensing system: these measures have affected mainly the flow of forest products (have led to a significant increase in volume production and exports of forest-based products - negative environmental effect, more pressure on forest lands). Other measures, such as rationalization of import tariff rates; elimination of registration requirements for exporting companies; introduction of a retention scheme for exporters, have mainly affected the inputs used in the sector and enhanced importation of finished wood products (increased importation of better technology in wood production - positive environmental effect - technology that uses less wood).

The analysis focuses on **economic impacts**: product impacts, technology impacts, production, management and technology trends and scale impacts, and lack of specific forestry data made it very difficult to infer the link between trade environmental degradation (in this case deforestation).

Positive impacts: increased value added in forest products (mostly because of the use of wood for construction in domestic markets)

Negative impacts: results of the increased intensity of the economic activities in the sector triggered by demand for forest products from other expanding export- oriented economic sectors. These indirect effects include: loss of soil fertility, decline of forest productivity, increased forest invasion and social migration to the forest margins, and increased human health problems. With available data it was very difficult to quantify these impacts and establish causal links with trade-related policies.

The study recommends a set of policy packages to minimise negative effects of trade liberalization and maximise positive ones: pollution control agreements, forest product charges, control of licences issues to operators in forests, forest products certification, use of fines and penalties.

Some difficulties related to the study: how to isolate the effects of trade liberalization from other measures; difficulty to quantify direct and indirect effects; lack of consistent and comprehensive data in forestry and economic variables which reduces seriously the capacity to analyse/evaluate the environmental impacts.

A sustainability impact assessment of the forestry sector is being started by the Institute for Development Policy and Management, University of Manchester under the framework of the SIA programme of the European Union. Country cases will be carried

out in Russia, Malaysia, Indonesia, Brazil and Cameroon and results will be available in 2004. (C. George pers. comm.)

The very limited application of the above approaches in the forestry sector doesn't mean that the relationships between forest products trade and environment have not been studied or researched at all. Various studies on the potential effects of trade liberalisation on the forestry sector exist, and a few are somehow based on the approaches developed under the initiatives above.

The point which is made here is that these studies are mainly of a speculative and inferential nature, and are based on expert knowledge, or other literature (rather than on empirical data), as far as the causality links between trade and environmental parameters is concerned. These studies help identify the most relevant issues related to the impacts of trade liberalization on forests and the differing views and perceptions of different stakeholders.

A closely related issue, the impacts that environmental regulations and pressures have on the trade in forest products, has been comparatively better studied. In this category fall, for example, the studies which look at the effectiveness and impacts of trade-influencing measures taken with environmental justification, such as the bans on exports of logs, etc.

In what ways can trade measures (including further liberalization) impact the environment?

The North America Commission for Environmental Cooperation identifies 6 hypotheses on the effects of NAFTA induced liberalization:

- Can reinforce existing patterns of comparative advantage and specialization, concentrating production and transportation where it takes place more efficiently (concentration in larger firms, with high visibility which can adopt higher/social environmental standards) or conversely in areas unsupported by adequate physical infrastructure or institutional capacity to handle that growth. [This is what the study by Sizer et al 1999 argues, that especially in tropical countries, (where forests have the highest social, cultural and environmental value), this second hypothesis is probable].
- Economy wide liberalisation can intensify competitive pressures, and this in some case can lead firms to lower inputs, in part reducing environmental protection or pressuring the governments to reduce environmental standards.... [Race to the bottom in the absence of offsetting interventions].
- Liberalization could lead to economic growth that promotes modernization and reduces environmental stress: competitive market pressure can hasten capital and technological modernization. Favouring producers with new efficient and clean plants and equipment
- Liberalization in specific sectors can lead to substitution of imported environmentally superior products for domestic alternatives. Conversely, some liberalization could may lead to a surge in imports that disrupt domestic

- production, employment, traditional technologies, and social institutions required to maintain the environmental infrastructure
- Liberalization can affect corporate practice and government policy by creating an upward movement of environmental standards and regulations toward a common regional norm (of course North America)
 - NAFTA and its institutions (including CEC) could engender a regional awareness and sense of responsibility that reduce the possibility of not caring for poor environmental performance

The framework for understanding the links between trade and environment is based on processes of production, physical infrastructure, social organization and government policies.

In a practically identical way, the OECD identifies 5 relevant categories of types of effects through which trade impacts economic activities and subsequently the environment (this approach is also followed by UNEP):

Product effects: associated with trade in specific products which can enhance or harm the environment;

Technology effects: changes in the way the products are made depending largely on the technology used;

Scale effects: these are associated with the overall level of economic activity or macro-economic effects resulting from the trade measures/agreement: positive ones are from higher levels of economic growth (accompanied by environmental policies), negative ones are when higher economic activities, trade or transport bring increased pollution or faster draw-down of resources;

Structural effects: changes in patterns of economic activities or the micro-economic effects resulting from the trade measure or agreement. Positive structural is when efficient allocation of resources and efficient patterns of productions are promoted; negative is for example when environmental costs and benefits are not reflected in the price of the traded goods;

Regulatory effects: associated with the legal and policy effects of trade measures or agreements on environmental regulations, standards and other measures. Positive ones are when trade measures and agreement take care to maintain ability of government to pursue appropriate environmental measures (see the whole dispute about NTB, SPS); negative when this ability is undermined by the provisions of the trade measures or agreement.

The OECD methodology also identifies the following broad categories of effects on the environment:

Pollution effects (changes in emissions of noxious substances into the air, water or land, including solid wastes);

Effects on health and safety (changes in the raising or lowering protection of human, animal and plant life and health: sanitation, potable water, chemical substances in foods, spread of pests, and environmental-related diseases such as the toxic effects of hazardous waste;

Resource effects: (changes in the use of energy or natural resources: changes in the destruction of habitats and ecosystems, changes in the depletion of species, changes in land use patterns.

Environmental effects can be national, transboundary or global, and these levels are all interrelated.

Specific trade-related policies/measures which have been analysed in terms of their environmental impacts in the forestry sector:

Trade liberalisation, trade distortions and trade agreements are the three broad areas of trade-related policies which have been the scope of environmental assessments in general, not limited to forestry.

All of the three areas have been considered in the forestry “trade-environment debate”, which has revolved mainly around the following issues:

- Elimination, reduction of tariffs and tariff escalation
- Non-tariff measures (which have been included as trade barriers in the context of trade negotiations) which have been grouped in the following categories (Sizer et al. 1999.): quantitative restrictions on imports: phytosanitary standards (for example the use of toxic fumigants, etc); technical regulations designed to protect human health and safety; labelling requirements; requirements for recycling and waste recovery; subsidies, tax breaks and export promotion, and other financial support measures; export restrictions
- Bi lateral and regional trade agreements
- Trade-distorting policies (subsidies, export bans, etc)
- Impacts of multi-lateral environmental agreements (much on CITES, some on CBD, much less so on UNFCCC and UNCCD) on trade of forest products;
- Impacts of agricultural liberalisation on forests: changes in land uses.

What challenges as far as the interactions between trade and SFM are concerned?

The review of the literature on environmental assessment of trade would support the thought that impact assessment has the potential to be a useful tool for the integration of trade and environmental policies and not only predict/quantify negative impacts. EA of trade-related policies can enhance stakeholders understanding of the implication of multilateral trade rules on sustainable development and environment, and can represent a negotiating tool for resolving environmental conflicts around trade and SFM.

However, the experiences in carrying out rigorous and comprehensive assessment of the environmental impacts of trade in forest products have been limited to date. It is therefore not appropriate here to generalize conclusions from these about the potential of environmental assessment of trade assessment to mediate between objectives of trade and of SFM. Furthermore, FAO is new to these issues (and institutionally never been

particularly interested/involved in the debate or international developments) and this does not put us in the best position to recommend or suggest ways ahead (all of the information in this paper here has been taken from other sources).

The few conclusions in box 2 resulting from the review of forest-trade literature show that concerns about negative social and environmental impacts triggered by trade policies and practices are real, that direct and indirect linkages exist and that these are very complex.

Box 2

- The trade and environment debate has settled into the assumption that trade in itself has no direct environmental links. Trade policies and practices impact the environment via changes in levels and patterns of production and consumption of forest
- Compared to macroeconomic policies and trade-distorting policies, trade liberalization policies have proved less influential in determining production and consumption effects and consequently environmental effects.
- Trade policy initiatives in the forestry sector have benefitted very little from analysis of the potential socio-economic impacts they might have.
- It is difficult to link changes in the forestry sector directly to trade liberalisation.
- Efficiency improvement that result from trade liberalization may have either negative or positive consequences for the environment depending on the specific circumstances
- The main problem in forestry is the weakness of empirical data. Many conclusions are drawn on an inference basis. Findings, forecasting, etc are based on various environmental economics theories (comparative advantage, externalities, the Environmental Kuznet curves which link income level and environmental degradation...)
- In trying to assess the impacts from an environmental point of view, questions of particular relevance are the conditions under which increasing timber values protects the forests or encourages exploitation, the determinants of the distribution of production across secondary, primary and plantation forests in different regions, the degree to which plantation production is likely to substitute for production from other sources. This means also to look beyond the macro-economic level (whether and how much trade liberalisation will result in increased logging) to determine how it will affect geographical/regional production and consumption patterns
- Changes in trade regulations are likely to have an effects on the volume of trade and therefore on levels of production of at least some forest products.
- Among the most important environmental changes brought by changes in trade policy there are the changes in land uses (by altering production in sectors that compete with forests for land)
- To the extent that trade encourages overall economic growth, downstream product industries may experience a trade-induced boom which can put additional pressure on the forest. At the same time, increasing incomes may generate greater demand for environmental services produced by the forests. Environmental Kuznet curves-: Environmental degradation increases with income at low income levels and decreases with income at higher level. However, no robust conclusions have emerged regarding relation between income levels and forest cover.
- Basic framework for assessing readiness of countries to trade liberalization from an environmental and social perspective. Criteria:
 - existence of selected forest protection policies
 - existence of selected forest protection laws
 - enforcement

Some environmental impacts of trade liberalization: increased consumption of wood products from poorly managed forest; overexploitation of tree species; trade pressure on less-protected forests; shifts to plantations; expanding trade with countries that subsidize logging (eliminating subsidies would reduce logging in more inaccessible areas); restricting consumer access to information; government procurement; spread of invasive species

The objective of doing trade impact assessment is to find ways to formulate mutually supportive policies by deepening the understanding of the complex relationships between trade and (in the case of forests) forest and trees use/depletion, and by putting stakeholders (governments and civil society) in the position to access this information and inform their negotiation position.

Three aspects are mentioned here which are considered relevant for SFM:

- *the integration of the work on criteria and indicators for sustainable forest management in environmental assessment of trade*

It has been argued that in assessing trade impacts, forests should be considered differently from other sectors because of their very high biological, cultural, and social values. These important values of the forests are reflected in the concept of SFM and in the work done to develop and agree on criteria and indicators for SFM at local, national and international level.

All the frameworks and approaches developed to assess the impacts of trade rely on the use of indicators of environmental or social or economic sustainability. However, this study has found an important gap at this level: there is no link, in the studies reviewed, to the existing C&I for SFM developed under national and international initiatives, nor to principles and standards for forest and forest product certification.

A useful path to follow would be to see how this convergence can be encouraged, and in this, the lessons from other sectors (such as agriculture and fisheries) can be useful. For example, the work of the OECD on the development of agri-environmental indicators for policy purposes in assessing the environmental effects of trade, and the work of the CBD secretariat on the impact of trade-liberalization on agricultural bio-diversity can provide useful indications.

- *the issue of capacity building*

There exist a clear problem of capacity in the countries to carry out impact assessment of trade and trade-related policies. This aspect is widely recognised and considered a priority by all main actors in this field (UNEP, WWF International, and EU for example).

Box 3

Some lessons/issues for effective capacity building (source: George, C. 2001. Capacity building for trade impact assessment: lessons from the development of environmental impact assessment. Impact Assessment and Project Appraisal 19:4 pp. 311-119))

“Most of the adverse environmental (and social) impacts that can results from increasing international trade result from distributional effects among and within countries. Many of these can be avoided/ minimised by informed negotiation between countries. For this capacity in carrying out impact assessment is essential.”

Winning support and integrating trade impact assessment into policy formulation

Effectiveness of mitigation

Building the necessary expertise

Consultation, participation and review

Monitoring and corrective action

- *Lastly, it is important to keep in mind the inherent weaknesses of impact assessment in general to explain complex relationships such as those linking forest utilization (including trade in forest products) and forest sustainability.*

Bibliography and further readings

Bourke, I.J. International trade in forest products and the environment. Accessed on Internet on 7/08/03 at <http://www.fao.docrep/v7850e03.htm>

CBD Secretariat. 2002. Assessing the impact of trade liberalization on the conservation and sustainable use of agricultural biological diversity. UNEP/CBD/COP/6/INF/2. Consulted 12 August at <http://www.biodiv.org/doc/meetings/cop/cop-06/information/cop-06-inf-02-en.doc>

CBD Secretariat. 2002. Changing biodiversity, changing markets: links between agriculture, trade and biodiversity. http://www.cec.org/files/pdf/ECONOMY/agritrade-biodiv_EN.PDF

Commission for Environmental Cooperation. 1999. Assessing environmental effects of the North America Free Trade Agreement (NAFTA): an analytical framework and issues studies.

FAO Investment Centre Environmental Impact Guidelines (November 1999).
<http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?siteId=3285&langId=1&78733694>

Ferrantino, M. 1999. Modelling the effects of trade liberalization on forest cover: some methodological issues. Paper prepared for a workshop on Methodologies for Environmental Assessment of Trade Liberalisation Agreements. OECD Headquarters, Paris, October 26-27, 1999.

Gallagher, K., Ackerman, F. and Ney, L. 2001. Environmental review of trade agreements: assessing the North American experience.
http://www.cec.org/files/pdf/ECONOMY/enviroreviews_EN.pdf

George, C. 2001. Capacity building for trade impact assessment: lessons from the development of environmental impact assessment. Impact Assessment and Project Appraisal 19:4 pp. 311-119.

Guerrero, M. T., De Villa, F. 2001. The forestry industry in the State of Chihuahua: economic, ecological, social impacts post-NAFTA. Texas Center for Policies Studies.

OECD. 1994. Methodologies for environmental and trade reviews. OECD, Paris.

Prestemon, J. 2000. Public open access and private timber harvests: theory and application to the effects of trade liberalization in Mexico.

Rice, T., Ozinga, S. Marijnissen, C. Gregory, M. 2000. Trade liberalisation and its impacts on forests, an overview of the most relevant issues. FERN.

Ruddell, S., Stevens, J. and Bourke, I. J. International market access for forest products. Accessed on Internet on 8/08/03 at <http://www.itto.or.jp/newletter/v9n1/15.html>

Sedjo, R and Simpson, R.D. 1999. Tariff liberalization, wood trade flows, and global forests. Resources for the future. Discussion paper 00-05

Simula. 1999. Trade and environmental issues in forest production. IDB Environment Division Working Paper. Consulted 12 August at <http://www.iadb.org/sds/doc/1306eng.pdf>

Sizer, N., Downes, D. and Kaimowitz, D. 1999. Tree trade: liberalization of international commerce in forest products: risks and opportunities. World Resources Institute. Forest Notes. November 1999.

Tomberlin, D., Buongiorno, J. and Brooks, D. 1998. Trade, forestry and the environment, a review. Journal of forestry economics 4:3. 1998.

UNEP. 2001. Reference Manual for the Integrated Assessment of trade-related policies.

US Trade Representative. 1999. Accelerated Tariff liberalization in the forest product sector: a study of the economic and environmental effects. Accessed on Internet on 8/09/03 at <http://www.ustr.gov/releases/1999/11/forest.pdf>