

Environmentally Responsible Trade and Its Importance for Sustainable For- estry*

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ABSTRACT. This article focuses on the environmental component of trade, primarily foreign trade, which concerns the interests of many countries. It examines the reciprocal influence of foreign trade and the environment. The author defines environmentally responsible trade and formulates its main principles. She examines the development of trade in forest products globally and in Ukraine and evaluates the impact of different trade restrictions on the condition of forests and the forestry industry. Indicators of the efficiency of foreign trade from the economic and environmental perspectives are proposed. Underlining the need for enterprises to switch over to environmentally responsible trade, the author proposes instruments to achieve this end.

KEY WORDS. international trade, environmentalism, environmentally responsible trade, wood products, forestry industry, trade restrictions on wood products, certification of forests.

Introduction

Public concern over the negative impact of foreign trade on the environment developed first of all from the rapid pace of growth and liberalization of this trade. On the whole, the volume of the global econ-

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¹ General Agreement on Tariffs and Trade, 1947.

² Nordstrom H., Vaughan S. Trade and Environment. Report of World Trade Organization. — WTO, 2000 — p.127

omy increased fourfold over the past fifty years, while the volumes of world trade increased 12 times.

The environmental consequences of international economic integration and the rapid development of trade attending this process was not properly understood after the restoration of the system of world trade at the end of the Second World War. In the General Agreement on Tariffs and Trade (GATT, 1947), there were only indirect references to issues of environmental protection, including conditions for relief from liability (Article 20). Under the article countries were permitted to violate the usual rules of trade in those cases when it was necessary to protect the health of people, the life and safety of animals and plants, or in order to preserve natural resources, provided that such violation would not be caused by discriminatory measures against a certain source of import¹.

The first attempt to examine the reciprocal influence and impact on the environment of trade was made in the early 1970s during the preparations for the Human Environment Conference in Stockholm. The report prepared for this purpose dealt with issues of control over industrial pollution and international trade. The member countries of GATT were concerned that the subsequent reaction would create new barriers to trade or suspend the process of removing existing trade barriers. In November 1971, the Group on Environmental Measures and International Trade was set up² to examine any specific cases related to aspects of trade policies concerning pollution control and environmental protection.³ However, it was more of a defensive reaction in response to the results of the Human Environment Conference in Stockholm. This bureaucratic maneuver achieved its purpose — discussion on linkages between trade and the environment ceased and the issue was not brought to the attention of the WTO until the early 1990s⁴.

³ Nordstrom H., Vaughan S. Trade and Environment. Report of World Trade Organization. — WTO, 2000 — P.24. — 127 p.

⁴ Moltke K. Trade and Environment. The linkages and the politics. — Canberra, 1999 — P.3. — 85 p.

⁵ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

The second stage of the discussion occurred in the 1980s and revolved around the export of products prohibited from consumption by governments of exporting countries. The discussion was launched by the developing countries because of their concern about becoming a market for the sale of goods hazardous to human health and the environment. The importing countries could not only prohibit the sale of such goods on their domestic markets, but also frequently lacked the possibility of evaluating the degree of their danger. This problem was shifted to the exporting countries. But within the framework of GATT not a single amendment was introduced on this issue. Instead, the problem was partly dealt with the adoption of two conventions: the Basel Convention on the Control of Transboundary Movements of Hazardous Chemicals and Pesticides in International Trade⁵ and the Rotterdam Convention on the Prior Consent Procedure for Certain Hazardous Chemical and Pesticides in International Trade⁶. An important «landmark» at this stage was the tuna-dolphin conflict between the governments of the US and Mexico because of the latter's import of tuna into the US⁷. The US banned the import of tuna from the western tropical regions of the Pacific, since fishing tuna destroyed the population of dolphins. This debate spurred the public's interests in the problem.

The third wave of discussions on the reciprocal influence of trade and the environment began during the negotiations on establishing the North Atlantic Free Trade Area (NAFTA) during the final phase of the Uruguay Round. The greatest impact on the progress of the discussion at this stage was produced by the results of the 1992 UN Conference on Environment and Development in Rio de Janeiro, specifically the «Agenda for the 21st Century». The third stage of the «trade-environment» debate was more lengthy

⁶ Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals And Pesticides in International Trade.

⁷ Nordstrom H., Vaughan S. Trade and Environment. Report of World Trade Organization. — WTO, 2000 — p. 12. — p. 127.

⁸ Moltke K. International environmental management, trade regimes and sustainability. — Winnipeg: IISD, 1996. — P.

⁹ Nordstrom H., Vaughan S., Abhyankar S., Sørensen J. Trade and Environment. Special Studies 4. — WTO, 1999. — P.16.

and had a much greater impact on the GATT/WTO system, because it was caused by a more decisive action from diverse sources: the growing importance of international regulation of environmental requirements; work within GATT/WTO on intellectual property rights, sanitary and phytosanitary standards; modification of technical barriers to trade; and a multitude of notable disputes with an environmental background. Gradually environmental issues and the problems of sustainable development penetrated the WTO sphere and its considerations. Conclusions from the third stage can be expressed as follows: taking into account environmental factors can undermine the sources of trade efficiency, but ignoring these factors can diminish trust and positive perception⁸; also, until there is an agreement on the management of and relationship between trade and the environment, there will always be the risk of trade degrading the environment⁹.

At the fourth stage of the debate the following results can be singled out:

- establishment of the Sustainable Trade and Innovation Center in 2000 to bring into accord the interests of countries-producers and countries-consumers, permitting the former to apply innovation technologies to achieve sustainable trade and development¹⁰;
- the fourth meeting of WTO ministers (Doha, November 2001) designed a new approach to trade, specifically to concentrate on development, aiming to stimulate and strengthen it;
- the UN Conference on Finance for Development (Monterrey, March 2002) emphasised the importance of safe and predictable financial assistance of trade and the establishment of new capacities;
- the Earth Summit on sustainable development (Johannesburg, September 2002) and the world's leaders recognized the importance of trade for sustainable development, stressed the need to concentrate further efforts on the support of balanced trade and frame interrelated trade, environmental and sustainable de-

¹⁰ <http://www.epe.be> — офіційна сторінка Центру збалансованої торгівлі та інновацій (official website of the Sustainable Trade and Innovation Center [STIC]).

velopment policies, emphasized the importance of evaluating relationship between trade, the environment and development, and called on all countries to voluntarily evaluate the reciprocal influence of these components¹¹;

- the Earth Summit was followed by a meeting in Kankouni in September 2003, a «Day of Sustainable Trade», which was organized by the UN Trade Commission to exchange views of all interested parties on the relationship between trade and sustainable development¹².

A study of the evolution of views on the reciprocal influence of international trade and the environment suggests that sustainable development at a minimum requires a consideration of the consequences of trade on the environment and the introduction of corresponding amendments to international agreements and policies of states.

Analysis of Recent Publications and Studies

The extensive study of the impact of international trade on the environment is comparatively new - only since the 1990s. Scientific studies in forestry are few and are primarily concerned with the expanding exports of forest enterprises with priority on economic aspects but not on environmentally related ones. This is misplaced since forest resources are limited. Indeed, the principles of forest policy are not complied with, and it is not advisable for Ukraine to become a timber export. The importance of eco-mindedness in the foreign trade of forestry enterprises is necessitated by the preservation of forest resources and sustainable forestry.

From the analysis of works on the reciprocal influence of foreign trade and the environment it can be concluded that business representatives are interested in the continued liberalization of trade, while environmentalists are against it. The opinion

¹¹ http://www.iisd.org/standards/trade_standards.asp — сторінка Міжнародного інституту сталого розвитку (International Institute of Sustainable Development).

¹² <http://europa.eu.int> — офіційна сторінка торговельної комісії ЄС (official website of the EU Trade Commission).

of the majority of economists is reflected in the observation of W. Kweizer and F. Vinunz to the effect that trade liberalization was always among the most frequently offered recommendation for the transition economies of eastern Europe. The opening of economies promises not only material gain, but would also ensure the support and advice to the reformers themselves by bring them closer to current business practices and a market economy¹³.

Such scholars as M. Wolfe¹⁴, W. Kweizer, F. Vinunz, D. Findlay¹⁵, I. Akimova¹⁶, S. Johnson¹⁷, K. Steininger¹⁸, and M. Young¹⁹ single out the following reasons behind the importance of foreign trade as a strategy of economic development of countries:

- any internal drop in demand as part of an economic decline during the transition to a market economy can be alleviated by access to foreign sales markets;

¹³ W.Kweizer, F.Vinunz. Ukraine's Integration into the World Economy. In What Way, How Fast, and What For?. *Ukraine on the Way to Europe*. Edited by L.Hoffman and F.Miollers. Kyiv. Fenix Publishers, 2001, p. 91.

¹⁴ Wolfe M. Trade expansion remains the engine of growth // *Financial Times*, 1999 — 29 October — P. 5.

¹⁵ Findlay D. Comparative advantage. — *The World of Economics*, New York: WW, Norton, 1991. — P. 99.

¹⁶ *Eksportna orientatsia ta ii vplyv na restrukturyzatsiu pidpryemstva krainy. Ukraina na shliakhu do Yevropy*. [I.Akimova. Export Orientation and its Impact on the Restructuring of a Country's Enterprises. *Ukraine on the Way to Europe*. Edited by L.Hoffman and F.Miollers. Kyiv, Fenix Publishers, 2001, pp. 205—215].

¹⁷ Johnson S. Environment and free trade // *Ecological Economy*. — 1992. — No. 7. — P. 7—15.

¹⁸ Steininger K. Reconciling trade and the environment: towards a comparative advantage for long-term policy goals // *Ecological Economy*. — 1994. — No. 9. — P. 23—42.

¹⁹ Young M. Ecologically accelerated trade liberalisation: a set of disciplines for environment and trade agreements // *Ecological Economy*. — 1994. — No 9. — P. 43—51.

²⁰ G.Daily. Above Growth. *Economic Theory of Sustainable Development*. Translated from English. Kyiv, Intelsfera Publishers, 2002, p. 312.

²¹ French H. Costly tradeoffs: reconciling trade and the environment. *Worldwatch* paper 113. — March 1993.

²² *Okhrana okruzhayushchei sredy i togovye protsesy. Ekonomicheskiye instrumenty re-sheniya ekologicheskikh problem na regionalnom i mezregionalnom urovne. Ekologicheskaya ekonomika i upravleniye: Trudy uchasnikov obrazovatelnoi programmy ekologicheskogo menedzhmenta dlya rabotnikov mestnykh administratsiy Ukrainy*. [V.Sabadash. Environmental Protection and Trade Processes. Economic Instruments for Dealing with Ecological Problems at the Regional and Interregional Level. *Ecological Economics and Management: Papers of the Participants in the Educational Programs of Ecological Management for Workers of Local Administrations of Ukraine*. Sumy, Mriya-1 Ltd., 1997, pp. 60—64)].

- international trade promotes products that are more inexpensive and of higher quality;
- foreign competition is capable of devastating domestic monopolies;
- foreign trade is a growth factor, because technologies are exchanged simultaneously.

At the same time economists who studied the impact of globalization through the liberalization of trade on the environment, such as G. Daily²⁰, H. French²¹ and V. Sabadash²² single out the following arguments against deepening trade liberalization:

—the benefit from foreign trade is cancelled out by high transportation costs, greater dependence on distant sources of supply and markets, as well as a narrowing in the citizens' choice to make a living;

—higher competitiveness (as one of the arguments for free trade) truly contributes to the appearance of inexpensive products. But in some cases reduction in cost is achieved not by higher efficiency, but by externalization of costs at the expense of lower standards;

—trade liberalization frequently results in the conclusion of agreements that may be used to evade more stringent domestic legislation;

—countries without strict ecological standards enjoy advantages on the world market and influence countries with strict ecological norms, demanding them to ease requirements for international trade;

—free trade results in a greater geographical isolation of production benefits from environmental expenses related to increases in resource flows.

But it would be incorrect to consider that international trade impacts only negatively on the environment. Such views are evident in the works of such scholars as N. Andreyeva, S. Vaughan²³, S. Johnson²⁴, R. Lee²⁵, K. Moltke²⁶, H. Nordstrom²⁷, N. Robins²⁸, S.

²³ Nordstrom H., Vaughan S., Abhyankar S., Sørensen J. Trade and Environment. Special Studies 4. — WTO, 1999.

²⁴ Johnson S. Environment and free trade // Ecological Economy. — 1992. — No. 7. — P. 7—15.

²⁵ Lee R. Process and product: making the link between trade and the environment // Environmental Affairs. — 1994. — No. 6. — P. 320—347.

²⁶ Moltke K. Trade and Environment. The linkages and the politics. — Canberra, 1999 — 85 p.

²⁷ Nordstrom H., Vaughan S. Trade and Environment. Report of World Trade Organization. — WTO, 2000 — 127 p.

Kharichkov²⁹ and some others. International trade relative to the environment has the following positive effects:

- economic growth resulting from international trade promotes the allocation of additional financial resources to protect the environment;
- economic growth promotes higher standards of living and, accordingly, environmental consciousness;
- international trade promotes the distribution of environmentally clean products as well as resource-saving and cleaner technologies, which is undoubtedly positive for both exporting and importing countries;
- international trade of commodities - provided their prices fully reflect environmental expenses - can promote the implementation of the sustainable development concept.

Relying on these bodies of work, a definition can be formulated, which explains the substance of the term **environmentally responsible trade**, as well as the main principles on which it is based. Environmentally responsible trade is trade that brings economic and environmental benefits and does not cause negative environmental consequences to countries, business entities or associations trading with one another. The main principles of environmentally responsible trade are as follows: economic advantage; eco-mindedness; training (information) of consumers and formation of demand.

Each of the above principles needs a detailed examination. It goes without saying that for the participants in international trade *economic advantage* remains the main criterion for whether or not to be involved in the process. Foreign trade should provide an enterprise an appreciable economic effect

²⁸ Robins N., Roberts S. Environmental responsibility in world trade // Materials of the British Council International Conference. — London, 1998 — P. 34—39.

²⁹ *Vliyaniye ekologicheskogo faktora na formirovaniye sovremennoy sistemy mezhdunarodnykh otnosheniy*. [N. Andreyeva., S. Kharichkov. The Impact of the Ecological Factor on the Formation of the Current System of International Economic Relations. *Regional Economics*. 2004, No 2, pp. 142—153].

and be much more efficient than trade on the domestic market.

But, apart from this principle, participants should endeavor to see an *eco-mindedness* in trade. For sectoral enterprises this principle may be reflected in not using wood from the most environmentally and publicly valuable forests, not supporting illegal trade in wood, or else not using wood (or products thereof) if it was procured without proper documents or is of a species, the commercial logging of which (principal use) is prohibited. It would also require tracing the origin of the procured wood, communicate information about it to the lumbering site, use of wood from forests following sustainable management, assign persons who would be responsible for sustainable management, and make enterprises and consumers buy wood from certified forests.

To make environmentally responsible trade a reality, all parties concerned should be engaged in this process. Their *training and awareness* should be a precondition for engaging consumers in the process of a balanced trade. To some extent this can be achieved by various programs and trainings, or by certification and environmental marking, or else with the assistance of specially established organizations promoting corresponding products. All this should become the basis for *creating demand among consumers* for the products that are referred to as safe for the environment as much as in terms of its manufacturing and usage as for its recycling. Taking into account the specifics of the forestry industry, the priority will be the creation of demand in wood or wood products originating from forests following sustainable economic management and compliance with the required environmental standards throughout the entire processing cycle.

World Trends in the Trade of Forest Wood Products

As forestry and trade in timber are becoming ever more global, forests and wood processing enterprises, concessionary rights to logging and con-

tracts for management of the forest industry are becoming mostly the property of foreign companies. As for trade, apart from the growing volumes of exports and imports, there is also a growing number of exporters and importers of various types of timber. The rules and conditions of forest management and trade are established under the influence of the interests of different countries (e.g., the criteria and indicators of sustainable forest management, the Global Convention on Biodiversity, and the proposals on the types of global instruments of forest policy, etc.).

Access to foreign markets is restricted by a string of formal trade barriers. However, experts of the United Nation's Economic Commission for Europe³⁰ believe that the pressure of usual tariff and non-tariff barriers will ease considerably (as a result of the Uruguay Round negotiations in 1994). Instead, there will be a gradation on the basis of ecological factors. Not so long ago the European Union suggested to introduce into the Generalized System of Preferences (GSP) additional preferential benefits of 20% for those countries exporting products to the EU who comply with internationally recognized environmental standards. The granting of advantages is based exclusively on the product certificate system, i.e. a producer can receive certain benefits³¹ only after receiving a certificate of environmental safety.

With respect to wood products, two agreements are singled out that intend to ease international trade in these types of products. These agreements lay down rules that harmonize national and international standards to simplify the procedure of foreign trade:

1. The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) to facilitate the improvement of the conditions of environment inspection; and

³⁰ Environment and trade. A Handbook. — The United Nations Environment Programme, Division of Technology, Industry, Economics and Trade Unit and the International Institute for Sustainable Development, 2000. — p. 12. — p. 96

³¹ Bach C. International trade principles and incentives for sustainable forest management. — Brussels: UNECE, 2002/

2. The Agreement on Technical Barriers to Trade (TBT Agreement) that restricts the application of technical barriers and standards others than those concerning human health, safety and quality of products, as well as environmental protection.

Examining trends on the world market of forest wood products during the past 20 years, it is worthwhile mentioning the effects of the Uruguay Round negotiations. Among the most important are the changes in import duties: tariffs for the majority of forest wood products were reduced on average by one-third; most of the developed countries abolished tariffs on such products as paper and cardboard as well as products from the furniture industry; the escalation of tariffs slowed down substantially; preferential tariff limits were abolished and single customs rates were applied; and countries assumed tariff obligations, i.e. obligations to support tariff rates at the set level³².

In the opinion of such specialists as E. Barbier³³, I. Bourke³⁴, S. Vaughan³⁵ and M. Simula³⁶, trends in trade restrictions related to the forest sector can be grouped as follows (see Table 1):

³² Bourke I.J. The Uruguay Round results — an overview // Tropical Forest Update — 1996. — No. 6(2). — P. 12—15.

³³ Barbier E. Impact of the Uruguay Round on international trade in forest products. — Rome: FAO. 1996. — P. 4—6.

³⁴ Bourke I., Leitch J. Trade restrictions and their impact on international trade in forest products. — Rome: FAO, 2000.

³⁵ Vaughan S., Ali D. Policy effectiveness and MEAs. Environment and Trade Series #17. Geneva: UNEP, 1998. p. 43.

³⁶ Simula M. Trade and Environmental Issues in Forest Production // Environmental Division Working Paper. — 1999. — April. — 38 p.

Table. Trends in the change of barriers impacting on international trade in timber³⁷

Type of restriction	Direction of change			
	1965–1979	1980–1985	1985–1998	з 1999 року
Import duty	reduction	reduction	reduction	reduction
Import quotas	growth	without change	without change	without change
Complete or conditional bans	growth	without change	without change/growth	without change/growth
Licensing of imports	growth	without change/growth	without change/growth	growth
Antidumping/ compensation customs duty	growth	growth	without change/growth	without change/growth
Standards	growth	without change/growth	growth	growth
Government procurement	growth	without change/growth	without change/growth	without change/growth
Marking	growth	without change/growth	without change/growth	growth
Control over prices, taxation, etc.	growth	growth	growth	growth
Export quotas, bans	growth	growth	growth	growth
Environmental marking, certification	insignificant	insignificant	growth	growth

The reduction in import tariffs may considerably worsen trade because of the effect of other forms of trade barriers, as presented in Table 1: bans and restrictions on export of logs by developing countries to encourage local enterprises to raise the degree of processing; restrictions and bans of developed coun-

³⁷ Supplemented by the author on the basis of WTO and World Bank publications.

tries on the production and import into these countries of timber that are harmful to the environment; quantitative restrictions on the import of wood products manufactured in violation of the principles of sustainable development; government interference in trade; and the use of environmental marking and «green» certificates as non-tariff barriers.

Rapid liberalization of trade and its resultant growth in trade volumes and economic globalization is the reason behind the controversy around the harm foreign trade has been causing to the environment. Opinions about liberalization of trade are fundamentally different. Advocates of expansion (enlargement) of trade believe protectionism to be one of the obstacles to international trade. Others see liberalization as an obstacle to sustainable development in general and to sustainable forestry in particular. In their opinion protectionism can be an important aspect of policy to remove the pressure on forestry and reduce the volumes of logging.

It is worthwhile paying special attention to world trends in the application of regulatory instruments in foreign trade, their compliance with requirements of sustainable development, international rules for conducting foreign trade, and its impact on sustainable forest management.

An example of *import restrictions* can be the quotas on boards and wood particleboards imported into EU countries. There are also tariff quotas or tariff restrictions on printed matter, particleboards, beaverboards, building timber, and some types of furniture products. In the EU countries restrictions have been introduced on the import of tropical wood originating from forests that are managed in violation of the principles of sustainable development³⁸.

Although restrictions on imports are among the most evident barriers in international trade in wood, *export restrictions* can also exert an enormous influence on international trade in some types of wood products, especially logs and plywood; such a practice is widespread in the developing countries as

³⁸ Communication from the Commission to the Council and the European Parliament Proposal for a European Union action plan. — FLEGT & Commission of the European Communities, Brussels, 21.05.2003. —32 p.

well as in some developed countries. Exports can also be controlled by the following measures: complete bans, quotas, selective bans depending on the type of exports, indirect quantitative restrictions via control over logging, direct bans (customs duty and taxes), indirect charges as royalty and taxes on forest renewal and reforestation, administrative control (permits and licenses). Restrictions on the export of logs are traditionally associated with the protection of national wood processing industries in countries that have forest resources. Among the other goals of export restrictions are the following: greater financial returns to a country, proper supply of resources to national enterprises of the wood processing sector, prevention of exhaustion of one's own wood resources. During the past few years restrictions on exported logs have increased markedly³⁹.

Table 2. Some examples of the application of export restrictions and their consequences

Country	Substance of introduced export restrictions	Consequences	Further development
1	2	3	4
Romania	Liberalization of trade in 1997 caused a sharp increase in the export of unsawn timber in 1998-2000. Following the pressure of Romanian woodworking enterprises bans on the export of unsawn wood products were introduced in 2001.	The bans immediately impacted on prices, especially for hard wood (specifically for oak). Prices dropped by 60-70% (from US 4200 to US \$80-100).	The restrictions were lifted in April 2002. However, the export of unsawn wood products is under strict control.

³⁹ Bourke I., Leitch J. Trade restrictions and their impact on international trade in forest products. — Rome: FAO, 2000.

Country	Substance of introduced export restrictions	Consequences	Further development
1	2	3	4
Indonesia	In the early 1990s the government of Indonesia banned the export of un-sawn wood products as a measure to stimulate national woodworking enterprises and conserve forests. In 1994 high export duty (35-45%) was introduced for sawn timber to encourage national woodworking enterprises (specifically for the output of plywood)	The country quickly turned from an exporter of raw wood products to an exporter of plywood; the bans increased illegal logging (about 73% of all volumes, as evaluated by FERN) and caused substantial financial losses to the country	In 2001 bans on the export of un-sawn wood products were lifted, export duty on un-sawn timber (20-30%) and sawn timber (10-15%) was introduced.
Ghana	In the late 1980s bans on the export of wood were introduced to encourage national producers.	The bans caused a 45-55% increase in illegal trade, according to FERN data.	Since 1996 the export duty on unsawn timber is up to 25% and on air seasoned sawn timber up to 15% to stimulate technological seasoning.
Cambodia	In 1992 a system of forest management based on concessions was introduced and caused serious problems in the sector. The Ministry of Agriculture, Fishing and Forestry set quotas on the export of un-sawn wood products and banned the export of unfinished wood products to stimulate the national industry.	As a result, in 1994 forest management in the country ceased. The introduction of export restrictions caused a growing illegal trade (about 55-60% of total volumes as evaluated by FERN), a slump in prices, and inefficient forestry.	The government introduced export duty credited to the state budget, also 1% of the value of exports on terms of FOB is transferred to a special fund to finance reforestation. A system of coding and independent monitoring was introduced to prevent illegal trade.

Country	Substance of introduced export restrictions	Consequences	Further development
1	2	3	4
Nicaragua	In 1998 the country banned the export of unsawn timber.	Illegal trade went up 70% according to FERN evaluations ⁴³ .	In June 2003 a new law was introduced under which fiscal instruments were applied to exports. For example, reduction of export duty by 100% on condition of the further use of relieved funds for regeneration of forests.
Brazil	High taxes on the use of forest resources introduced since 1984	The economy was reoriented toward agriculture and forests were felled to gain agricultural land. Illegal trade went up by 50% according to FERN evaluations	Since 1992 a new program of the development of forestry is in effect based in the principles of sustainable forest management, technical assistance, and innovation approaches. A system of independent control over logging was introduced

⁴³ FERN Report. Illegal logging and the global trade in illegally sourced timber: a crime against forests and peoples. — FERN. — 2002, April. — 26 p.

Country	Substance of introduced export restrictions	Consequences	Further development
1	2	3	4
Malaysia	Since 1985 a complete ban on the export of unsawn timber was introduced, especially in the states of Sabah and Sarawak to stimulate national production of plywood and conserve forests.	Growth of illegal trade by 70% of total volumes (according to FERN data). Substantial financial losses to the state.	A system of trade restrictions, depending on states, was introduced in the early 1990s. In Sabah, for instance, a 10-20% export duty is applied along with export quotas. In Sarawak, along with quotas, a system of reduction of royalty for the woodworking industry is applied.
Costa Rica	Bans on export of unfinished timber introduced since 1986, bans on export of worked timber introduced since 1987.	Domestic prices in 1989-1992 dropped by 18-52% (depending on species and degree of working). In the short-term outlook, the woodworking industry will stand to gain, but the forest industry, forest owners and the state will be the losers. In the long-term outlook, the woodworking industry will be a loser as well, since investment in the forest sector will decline.	
Ecuador	Bans on export of timber	Domestic prices dropped by 15-45%. The competitiveness of the forest sector declined as did the efficiency of land utilization. The state lost the woodworking industry. Unsaun timber is exported at a price of about US \$500; instead, plywood and saun timber sell now at US 4320-380.	

From these examples of export restrictions and their consequences it follows that:

- complete bans on exports do benefit neither national woodworking enterprises, nor a country's forests nor the country as a whole;
- complete export bans increase the illegal trade in timber;
- countries reorient toward other export restrictions - such as export quotas and export duty - to encourage national producers;

- excessive taxes and charges may also have an indirect negative effect on the development of the world economy - impair the development of a competitive processing sector on an international scale by protecting inefficient local producers;
- introduction of moderate trade restrictions while practicing sustainable forest management produce much more positive results for a country's forests and the economy as a whole;
- complete or partial use of funds (such as duty) credited to a country's budget from the export of timber produce positive results for forestry.

But the overview of export restrictions as practiced worldwide would be incomplete without the examination of other examples of the impact of liberalized trade on national producers and the condition of forests. There are two examples worth citing - liberalization of trade in wood in Mexico⁴⁴ and Chile⁴⁵ (see Table 3).

Table 3. Some examples of the liberalization of trade in wood products in world practice and their consequences

Country	Substance of restrictions	Consequences
Mexico	In July 1985 the government of Mexico introduced a program of liberalization of trade; in 1986 Mexico acceded to GATT, and in 1994 it became a member of NAFTA	The value of exported wood products dropped by 84% in the period from 1985 to 1990. But the pace of the sector's growth within this period went down by 0.7%. All this impacted on environmental protection and sustainable forestry
Chile	A program of liberalization of trade was introduced within five years from 1970 on, along with structural reform in privatization, liberalization of prices and the financial market, as well as fiscal policy. Also, a program was launched to plant artificial forests and use their wood	The share of export of wood in the total exports increased from 0.9% in 1970 to 10.1% in 1990. Eventually, commercial production and export of timber doubled. Chile became one of the largest producers of wood, paper, cardboard and products thereof. The overwhelming majority of the products originate from artificial forests

⁴⁴ International Workshop of Forest Fiscal System. World Bank, Washington DC. — 2003. 19-21 October. — 9 p.

⁴⁵ Latenas S. Globalisation and changes in the patterns of consumption in Chile. — Santiago: Consumers International Regional Office for Latin America, 1997 — 23 p.

As the data in the table show, liberalization of trade exceeds by far the development of exports, but does not impact on the development and improvement of the forestry industry. On the contrary, without proper reform, including in environmental policy, the consequences of liberalization are catastrophic.

Phytosanitary and technical provisions and standards also create problems in some cases and become non-tariff restrictions in trade. This refers, in particular, to the provisions and standards of environmental protection and forests - only a negligible number of standards and codes are against exports from certain countries, while the majority set up serious obstacles for foreign producers. Lately, such barriers have been applied ever more frequently in European countries. It is difficult to determine whether these provisions, norms and standards are really obstacles in the way of international trade. Most of them are common obstacles that can be overcome, but some of them result in controversies between countries [139].

In addition to the above-mentioned measures, there exist also others that cannot be included in the category of formal trade restrictions. As a rule, they do not refer to official government norms, although the government can unofficially encourage them. The result of the effect of *informal restrictions* is frequently similar to the effect of formal restrictions, while their purpose is to restrict trade. Lately, non-tariff measures are used in the market to restrict trade in wood products of those types that do not originate from forests of sustainable economic management. Examples include such restrictions as certification and environmental marking, as well as restrictions, bans or boycotts of local authorities and wholesale and retail traders⁴⁶.

In many countries of western Europe (specifically Germany⁴⁷, The Netherlands, the UK, and Scandinavian

⁴⁶ Study of non tariff measures in the forest products sector // Forest research institute study, 1999 — 46 p.
⁴⁷ Brack D., Marijnissen Ch., Ozinga S. Controlling imports of illegal timber: options for Europe. — Netherlands: FERN, 2002.

countries⁴⁸) *bans and restrictions* are established by local and regional bodies of authority. Such measures are justified when they are concerned with environmental protection and human health. Some wholesalers and retailers can also make decisions on suspending trade in certain types of products or «voluntarily» deal only in products that originate from forests pursuing sustainable economic management (some of these groups are supported by the World Wildlife Fund⁴⁹).

Although these instruments concern only the members of such groups and are applied within the limits of these groups, their purpose is to intentionally restrict trade. Today groups of buyers cannot exert any marked influence on trade restrictions on wood that does not originate from forests following sustainable economic management, because the quantity of such products is limited on the market. In this sense the most active consumers are in the UK where the 95 Plus Group was organized with the support of the World Wildlife Fund to pursue the above-mentioned goals⁵⁰.

It goes without saying that not all world trade transactions follow reconciled multilateral rules. In particular, the formal system of trade almost does not focus attention on illegal trade and legal trade of illegal origin⁵¹. According to evaluations of independent experts, the volume of illegal international trade in wood in principal countries can exceed legal volumes. A group of NGOs (ARA, Down to Earth, EIA, Fern, FOE, Global Witness, Green Movement Estonia, IFAW, Rainforest Foundation, WWF) established that almost 50% of imported wood from tropical forests and about 20% of wood from the continental forests of the EU are illegal⁵². Also, from 30% to 50% of Russian exports and about a half of

⁴⁸ Brack D., Gray K., Hayman G. Controlling the international trade in illegally logged timber and wood products. — Royal Institute of International Affairs, 2002. — 75 p.

⁴⁹ Regulatory barriers to the enhanced use of wood in Europe. Building Research Establishment. — Brussels: CEI-Bois, 2003. — 149 p.

⁵⁰ Bourke I.J. International trade in forest products and the environment // International Journal of Forestry and Forests. — Unasylva, 1996. — P. 12—17.

⁵¹ Geneva timber and forest discussion papers. Trade and environment issues in the forest and forest products sector. — United nations New York and Geneva, 2000 — 68 p.

⁵² Blaser J. Illegal activity in the forest sector: an overview // Materials of FLEGT Conference in Brazzaville, 18 June 2002.

the exports from the Baltic countries are illegal. Ukraine's situation in this respect has not been studied, but experts believe that the share of illegal logging and exports from Ukraine are substantial and in some oblasts, specifically Rivne, Volyn, Lviv and Ivano-Frankiysk oblasts, are in the 50-60% range of total volumes⁵³.

According to the 2001 estimates of the World Bank governments lose US \$5 billion annually from illegal logging, but the economic losses for producing countries is an additional US \$10 billion⁵⁴. The Friends of the Earth Association revealed that the largest importers of illegal wood are the UK, Belgium (the share of illegal imports of wood in the overall imports is about 60%), France, Germany, The Netherlands (about half of imported wood is of illegal origin), Italy (about 40%) and Spain (about one-third)⁵⁵.

The pressure the international public brings to bear to reduce the scope of illegal logging is growing. That is why the EU is now designing a regulation to ban the import of illegally produced wood. The regulation stipulates the exercise of border control and laying down of a legal foundation for setting up a system of licensing and concluding partnership agreements under the EU Action Plan on Forestry Law Enhancement and Governance and Trade. But some observers point out that bans on the import of illegally produced timber will hardly yield appreciable results if they are applied only to round wood and sawn timber⁵⁶. In the opinion of World Bank experts the system of licensing has to be extended

⁵³ K.Losyk. Floods, Forests and Two Transcarpathian Governors. *Mirror of the Week*. 2001, No.11, March 17-23; H.Storozhuk. Wood Goes Abroad. For us are Left but Chips? *Government Courier*. 2003, September 8; I. Franchyk. Polissia is Turning into a Desert. *Rivne Gazette*. 2004, March 11 [No.899]; P.Checheliuk. The Future of Ukrainian Forests: is there a Reason for Optimism? *Mirror of the Week*. 2002, December 28[No.50].

⁵⁴ World Bank. Controlling the international trade in illegally logged timber and wood products — a revised strategy. — RIIA, 2004. — 65 p.

⁵⁵ FERN Report. Illegal logging and the global trade in illegally sourced timber: a crime against forests and peoples. — FERN. — 2002, April. — 26 p.

⁵⁶ Timber Bulletin. Annual forest products' market review 2003-2004. — Vol. LVI. — 2005. — 152 p.

to all commodity groups, including furniture, pulp and paper, but this would mean additional administrative costs that are comparable with the expenses for the system of tracing products along the production and distribution chain set up within the framework of certification of forests⁵⁷.

Proceeding from the above evaluation of restrictions on access of wood products to foreign markets, we can conclude that any trade measures to encourage sustainable forest management should be based on a thorough analysis of international trade principles, specifically those established by GATT. When applying one or another barrier, countries should concentrate on the following:

- direct trade measures, such as tariffs, quotas or import bans, which are discriminatory in relation to commodities with a difference that is impossible to establish physically, are inconsistent with the GATT rules;
- instead, non-discriminatory tariffs, customs duty or other charges for all types of wood products to increase a country's earnings does not contradict the GATT rules;
- subsidies that compensate for the expenses of introducing sustainable forest management practices will not be appealed, provided they do not cause any harm to trade;
- measures on exports, such as bans on the export of logs, may be inconsistent with the GATT rules when taxes, customs duty and tariffs introduced to restrict exports will not be appealed;
- the schemes of environmental marking do not contradict the GATT rules, if they are voluntary and are not in conflict with other spheres of state policy.

Thus, the general principle to be adhered to when identifying instruments of trade policy for their further introduction should be the search for direct and most effective methods with the least side effects for a country's economy in general and an individual sector in particular.

⁵⁷ Blaser J. Illegal activity in the forest sector: an overview // Materials of FLEGT Conference in Brazzaville, 18 June 2002.

Given the above-mentioned conditions, it can be concluded that trade restrictions in the forest sector are necessary as an effective leverage to promote environmental protection on the international scale, especially for dealing with environmental problems.

Current Trends in the Development of Ukraine's Forest Sector

Analyzed below is the activity of enterprises in 16 state forestries (in Vinnytsia, Volyn, Zhytomyr, Kyiv, Kirovograd, Lviv, Luhansk, Odessa, Poltava, Rivne, Sumy, Ternopil, Kharkiv, Khmelnytsky, Cherkassy, Chernihiv oblasts), three oblast forestry directorates (in Ivano-Frankivsk, Chernivtsi and Transcarpathian oblasts), and one state forestry in Teterivska, Kyiv oblast. They are all accountable to the State Committee for Forestry of Ukraine (SCFU) and produce about 90% of Ukraine's timber.

Within the period under review (1995-2004) the exports of forest enterprises in natural terms were increasing 32% and in terms of value almost 52.5% annually. The average increase of imports was only 2.3%, which reflects the general trends in the development of the world and European markets of forest products.

What distinguishes the foreign trade of Ukraine's forest industry is the absolute difference in the commodity structures of exports and imports - exported are logs, worked wood and some types of non-wood products, but imported are frame saws, drying kilns, woodworking benches and production lines, cutting tools, auxiliary equipment, as well as machines and mechanisms.

In terms of value, exports exceeded imports by an average of more than 12 times⁵⁸ (see Table 4), as reflected in the index of the balance status estimated for average exports and imports for the period under review. The highest value of the bal-

⁵⁸ The data for computing the main estimated figures of the forest enterprises' foreign trade activity were provided by the State Committee for Forestry of Ukraine.

ance status index was registered in 2004 when it exceeded 24.

**Table 4. Computation results
of the main indicators of the analysis
of Ukraine's forest enterprises' export activity**

Indicator	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Exports of Ukraine's forest enterprises, US \$ million	9.30	15.00	24.45	28.12	38.52	45.31	52.98	66.25	67.9	90.1
Imports of Ukraine's forest enterprises, US \$ million	2.96	3.34	3.61	3.83	3.64	3.60	3.52	3.47	3.59	3.67
Balance of foreign trade, US \$ million	6.34	11.66	20.84	24.29	34.88	41.71	49.46	62.77	64.28	86.41
Balance status index, %	3.1	4.5	6.8	7.3	10.6	12.6	15.1	19.1	18.8	24.5
Export concentration index, %	9.0	14.4	19.9	22.8	30.5	36.2	37.4	39.3	39.5	51.2

The export concentration index determines what part of an enterprise's finished product is exported. As we see from Table 4, the share of exported forest products increased and exceeded 51% in 2004.

But judging from the data of the Customs Services of Ukraine, the exports of wood were much higher. In 2004, for instance, over US \$305 million⁵⁹ worth of timber was declared, while the enterprises accountable to the SCFU exported about US \$90.1 million worth of timber. The data on the declared exports and imports of forest wood products in 2002-2004 (see Table 5) show that they exceeded by far the volumes of the forest enterprises accountable to the SCFU.

⁵⁹ The statistical information of the Customs Service of Ukraine serves as the source data for the analysis.

Table 5. Volumes of foreign trade in wood for 2002–2004, US \$million

Indicator	2002	2003	2004
Export	186,21	262,41	328,82
Import	14,47	23,76	23,23
Balance	171,73	238,65	305,59

The most typical trends in the export activity of Ukrainian forest enterprises as well as the link of their activity with Ukraine's overall economic development and structural changes were observed from 2000 to 2004.

To understand changes in the dynamics of exports of Ukraine's forest enterprises, it is important to compute the dynamics indexes: value, physical volume, prices, structure and quantity, which not only reflect the process of increase or reduction of volumes, but also why the growth and reduction occur (see Table 6).

The computed results of the dynamics indexes show that the increase in the value of exports in 2001 compared with 2000 occurred due to the increase in physical volumes (the physical volume index is more than one), but the drop in prices of products (the price index is less than one) by 2% occurred because of the rise in value only by 16.9%. The increase in the physical volume occurred due to the increase in the quantity of commodities almost by 19% and only because of the change in the structure of exports toward somewhat more expensive commodities (the index structure equals 1.003).

Table 6. Index of export dynamics of Ukraine's forest enterprises

Indicator	2001 compared with 2000	2002 compared with 2001	2003 compared with 2002	2004 compared with 2003
Value index	1,1692	1,2504	1,0246	1,3272
Price index	0,9799	1,0820	0,9679	1,0438
Physical volume index	1,1932	1,1557	1,0585	1,2715
Structure index	1,0029	1,0765	0,9906	1,0409
Quantity index	1,1898	1,0735	1,0685	1,2215

In 2002 the increase in the value of exports is due to physical volumes (by 15.6%) as well as prices (by 8.2%). The structure of exports changed much more than was the case the year before. The physical volumes of exports increased due to changes in quantities by 7.35%, and increased by 7.65% because of changes in the structure toward more expensive commodities. This means that in 2002 certain changes occurred in export policy - enterprises tried to reorient exports toward more expensive, finished forest products instead of gaining profit by exporting inexpensive logs. As for the 2003 results, the increase in the value of exports by almost 2.5% occurred exclusively due to growing physical volumes (more than by 5.8%), while prices accounted for a reduction by 3.2%. The structure of exports changed in favor of more inexpensive commodities. But in 2004 the export indicators improved somewhat. Prices for exported products were growing (almost by 4.4%), while the physical volumes of exports increased at a much more rapid pace (by more than 27%).

In the period under review the largest importers of Ukraine's wood were Slovakia, Germany, Poland, Austria and Russia. Among the five largest importers (in natural terms) in 2000 was the US with a share of 16.6%, but in 2004 this share declined almost four times to 4.2%. In 2000 the leader of imported Ukrainian wood was Germany with a share of 23.1%, but in 2004 it surrendered its position to Slovakia whose share increased from 17.5% to 26.5%⁶⁰.

What has also been observed is the delimitation in the structure of export flows of lumber and logs. For instance, logs for sawn timber, pulpwood, and building timber are exported predominantly to Slovakia, Poland, Hungary, the Czech Republic, and Russia. But lumber is mostly exported to Germany, Austria, and Italy. It is not advisable to regard such changes as positive, because we cannot but take into account the trade flows of the countries of Central and Eastern Europe with the countries of Western Europe. Interestingly, these countries buy logs from

⁶⁰ State Committee for Forestry of Ukraine data.

the CIS countries, in particular in Russia and Ukraine, and then resell them in a more finished state to Western Europe. Ukraine incurs losses from such trade, since it could sell more finished forest products to Western Europe.

Thus, the commodity structure of exports in general is not efficient, since it is dominated by unsawn timber. Although the ratio between unsawn timber and sawn timber in the exports is changing a little in favor of the latter, more than 80% of timber exported from Ukraine is unsawn.

Indicators Measuring Environmentally Responsible Trade

The analysis of foreign trade of Ukrainian enterprises and the rapidly growing volumes of trade worldwide require consideration of the environmental component. In particular, this is supported by the following data:

- in 2004 the average export concentration index for Ukrainian forest enterprises was 51.2%, and for some state forestries in the western regions it exceeded 70%;
- exports grow mostly because of physical volumes;
- in the commercial commodity structure unsawn timber predominates, its share exceeding 80%;
- in exports the share of high quality forest products of valuable species (oak, larch, maple, hornbeam, ash) is growing.

As mentioned earlier, environmentally responsible trade should yield environmental and economic benefits. Quantitatively, this is reflected by the indicators of environmental-economic efficiency of exports, environmental-intensive export products, environmental-economic efficiency of products sales on the domestic market, as well as environmental-economic efficiency of purchase and use of imported equipment.

The *environmental-economic efficiency of exports* of forest products is determined as a ratio of proceeds from the sale of exports to the sum of economic (E_{econ}) and environmental ($E_{environ}$) components of export expenses:

$$EEE_{\text{exp}} = \frac{\sum_{i=1}^n P_{\text{exp},i} \cdot Q_{\text{exp},i}}{E_{\text{econ}} + E_{\text{environ}}}, \quad (1)$$

where $Q_{\text{exp},i}$ – quantity of i -type exported products, thousand m^3 ;

$P_{\text{exp},i}$ – price of i -type exported products;

n – number of types of exported products.

The economic component of export expenses (C_{econ}) should consider the following: expenses for disbursement of wages and social insurance; depreciation deductions; other expenses related to the output and sale of exported products (transportation expenses included). The environmental component of export expenses (E_{environ}) should consider the following: cost of consumed energy resources during the production and sale of exported products; cost of consumed material and primary resources during the production and sale of exported products; cost of consumed water resources during the production of exported products; cost of compensations for emissions of hazardous substances in the process of manufacture, transportation and consumption of exported products; environmental charges. Such a distribution of expenses during factor analysis makes it possible to explain what costs impact the most on the efficiency of foreign trade.

Exports will be efficient from the environmental-economic point of view, if the value of this indicator will be higher than one. Besides, the indicator of environmental-economic efficiency of exports should be compared in dynamics as well as with the indicator of environmental-economic efficiency of products sales on the domestic market.

In order to evaluate the degree of environment intensity of the exported products, we believe that it is advisable to compute this indicator according to the following formula:

$$EI_{\text{exp}} = \frac{E_{\text{environ}}}{Q_{\text{exp}}}, \quad (2)$$

where Q_{exp} – total volume of exports, m^3 .

As mentioned earlier, the indicator of environmental-economic efficiency of exports should be compared with the environmental-economic efficiency of

products sales on the domestic market, which should be determined according to the following formula:

$$EEE_{dom.m.} = \frac{\sum_{i=1}^n P_{dom.i} \cdot Q_{exp.i}}{C_{econ.dom} + B_{environ.dom}}, \quad (3)$$

where $C_{econ.dom}$ – cost of the economic component during the sale of products on the domestic market;

$B_{environ.dom}$ – cost of environmental component during the sale of products on the domestic market;

$P_{dom.i}$ – price of i -type products on the domestic market;

n – quantity of types of products.

From the environmental and economic perspectives, it would be beneficial to the enterprise to export under the following condition:

$$EEE_{exp.} > 1 \text{ and } EEE_{exp.} > EEE_{dom.m.} \quad (4)$$

As mentioned earlier, the *import of machines and equipment* is extremely important for Ukraine's forest enterprises to modernize their technical base, balance the production and consumption of commodities, and conserve and rationally use natural resources.

The construction of the indicators of environmental-economic efficiency of imports is to a certain extent «symmetrical» to the construction of indicators describing exports. The main distinction is the interpretation of the indicators of cost estimation of imports. This indicator is very important in computing the indicators of the environmental-economic efficiency of import of a given type of product. The methods of computing the indicator of environmental-economic efficiency of imports should be differentiated depending on the specifics of import agreements. Concerning the import of equipment, two main events are possible: either the equipment can be acquired on the domestic market or such equipment is not imported into the domestic market.

The formula for assessing imported equipment can be improved if, to perform the required functions such

equipment can be acquired on the domestic market, albeit with worse consumption properties and less economy. It is proposed to compute the environmental-economic cost of imported equipment according to the following formula:

$$V_{imp.equip.}^{environ-econ} = P_{dom} \frac{R_{dom} + O_r}{R_{imp} + O_r} + \frac{\Delta Q_s \pm \Delta E_{econ} \pm \Delta E_{environ} - O_r \cdot \Delta OA_{imp}}{R_{imp} + O_r}, \quad (5)$$

where P_{dom} – purchase price of domestic equipment similar to imported equipment;

R_{dom} , R_{imp} – share of deductions for renovation of domestic and imported equipment;

O_r – rated profitability of operation;

ΔQ_s – increase in the annual volume of products sales during the use of imported equipment compared with domestic equipment;

ΔE_{econ} – changes in the economic expenses of production owing to the use of imported equipment;

$\Delta E_{environ}$ – changes in the environmental expenses of production owing to the use of imported equipment;

ΔOA_{imp} – changes in the average annual cost of the importer's production assets.

If there is no equipment similar to imported equipment, the formula for determining its assessment and allowing for environmental aspects may be improved in the following way:

$$V_{imp.equip.}^{environ-econ} = \frac{Q_s - E_{econ} - E_{environ}}{R_{imp} + O_r} \cdot d_{imp}, \quad (6)$$

where Q_s – annual volume of sale of products with the use of imported equipment;

E_{econ} – economic expenses of production with the use of imported equipment;

$E_{environ}$ – environmental expenses of production with the use of imported equipment;

d_{imp} – share of proceeds from the sale of products owing the use of imported equipment;

To the economy of environmental-economic expenses of production owing to the use of imported equipment should be added a reduction in the cost of consumed fuel and energy, primary resources and other mate-

rial values, as well as a reduction in the emission of hazardous substances and waste.

Allowing for improvements in the formulas of assessing imported equipment, it is proposed to determine the environmental-economic efficiency in the following way:

$$E_{imp.equip.}^{enviuron-econ} = \frac{V_{imp.equip.}^{enviuron-econ}}{R_{dom.}} \quad (7)$$

The value of the indicator of less than one will prove that from the environmental-economic point of view an import transaction will be considered of advantage.

Conclusions and Proposals

The results of the study show that among the world's most influential organizations involved in the regulation of foreign trade and environmental protection there is an ongoing controversy whether the growing volumes and liberalization of world trade cause damage to the environment. During the past few years there has been an upward trend in giving preferences to the environmental component over the advantages of international trade.

To deal with this controversy and use the potential of foreign trade as much as possible, especially in the forest sector (a combination of extraction and processing sectors), allowance should be made for the environmental and social factors when laying down the principles and rules of foreign trade. This will make possible the development of environmentally responsible trade in forest products.

Environmentally responsible trade has to yield economic and environmental advantages without negative environmental consequences for countries, business entities and associations engaged in trade. The main principles of environmentally responsible trade should be: economic advantage; eco-mindedness; education (information) of consumers; and creation of demand.

Environmental standards in the forest economy are not referred to the standards of production. In the long-term the need will arise to shift attention

from the process of production to balanced consumption. This will increase the role of trade as a corresponding channel for the required changes in policy.

When evaluating the instruments related to trade, we believe that it is important to take into account three general aspects: effectiveness of achievement of specific goals and sufficiency of proposed measures; compromise between environmental effects and economic growth; and general effect.

Judging from the evaluated trade restrictions, we can arrive at the conclusion that they are necessary as effective levers for promoting environmental protection worldwide, especially for dealing with environmental issues.

The experience of other countries shows that the introduction of certain restrictions on foreign trade in forest products (especially logs) produces a different effect. The introduction of complete bans on export of logs causes growth in illegal trade instead of developing the national woodworking industry.

Proceeding from this study, the best measure should be the introduction of an export duty of up to 10% and environmental marking along with the certification of forests, which is consistent with the WTO norms and, as the experience of some countries shows, yields positive results. The proceeds from the duty can be committed to finance the certification of forests and sustainable forest management.

References

1. ARA, Down to Earth, Fern, FOE, Global winners, Green Movement Estonia, IFAW, Rainforest Foundation, WWF. Illegal logging and the global trade in illegally sourced timber – a crime against forests and peoples. – April 2002.
2. Bach C. International trade principles and incentives for sustainable forest management. – Brussels: UNECE, 2002.
3. Barbier E. Impact of the Uruguay Round on international trade in forest products. – Rome: FAO. 1996. – P. 4-6.

4. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
5. Blaser J. Illegal activity in the forest sector: an overview // Materials of FLEGT Conference in Brazzaville, 18 June 2002.
6. Bourke I., Leitch J. Trade restrictions and their impact on international trade in forest products. – Rome: FAO, 2000.
7. Bourke I.J. International trade in forest products and the environment // International Journal of Forestry and Forests. – Unasylva, 1996. – P. 12–17.
8. Bourke I.J. The Uruguay Round results – an overview // Tropical Forest Update – 1996. – No. 6(2). – P. 12–15.
9. Brack D., Gray K., Hayman G. Controlling the international trade in illegally logged timber and wood products. – Royal Institute of International Affairs, 2002. – 75 p.
10. Brack D., Marijnissen Ch., Ozinga S. Controlling imports of illegal timber: options for Europe. – Netherlands: FERN, 2002.
11. CINTRAFOR. Forest Products Export: Policy Impacts. Fact Sheet # 10. – 2 p.
12. Communication from the Commission to the Council and the European Parliament Proposal for a European Union action plan. – FLEGT & Commission of the European Communities, Brussels, 21.05.2003.– 32 p.
13. Environment and trade. A Handbook. – The United Nations Environment Programme, Division of Technology, Industry, Economics and Trade Unit and the International Institute for Sustainable Development, 2000. – p. 12. – p. 96
14. FERN Report. Illegal logging and the global trade in illegally sourced timber: a crime against forests and peoples. – FERN. – 2002, April. – 26 p.
15. Findlay D. Comparative advantage. – The World of Economics, New York: WW, Norton, 1991. – P. 99
16. French H. Costly tradeoffs: reconciling trade and the environment. Worldwatch paper 113. – March 1993.
17. Geneva timber and forest discussion papers. Trade and environment issues in the forest and forest products sector. – United nations New York and Geneva, 2000 – 68 p.
18. <http://europa.eu.int> – official website of the EU Trade Commission
19. <http://www.epe.be> – official website of the Sustainable Trade and Innovation Center [STIC]
20. http://www.iisd.org/standards/trade_standards.asp – International Institute of Sustainable Development
21. International Workshop of Forest Fiscal System. World Bank, Washington DC. – 2003. 19–21 October. – 9 p.

22. Johnson S. Environment and free trade // Ecological Economy. - 1992. - No. 7. - P. 7-15.
23. Latenas S. Globalisation and changes in the patterns of consumption in Chile. - Santiago: Consumers International Regional Office for Latin America, 1997 - 23 p.
24. Lee R. Process and product: making the link between trade and the environment // Environmental Affairs. - 1994. - No. 6. - P. 320-347.
25. Moltke K. International environmental management, trade regimes and sustainability. - Winnipeg: IISD, 1996. - P.
26. Moltke K. Trade and Environment. The linkages and the politics. - Canberra, 1999 - P.3. - 85 p.
27. Nordstrom H., Vaughan S. Trade and Environment. Report of World Trade Organization. - WTO, 2000 - P. 127
28. Nordstrom H., Vaughan S., Abhyankar S., Sørensen J. Trade and Environment. Special Studies 4. - WTO, 1999. - P. 16.
29. Regulatory barriers to the enhanced use of wood in Europe. Building Research Establishment. - Brussels: CEI-Bois, 2003. - 149 p.
30. Robins N., Roberts S. Environmental responsibility in world trade // Materials of the British Council International Conference. - London, 1998 - P. 34-39.
31. Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals And Pesticides in International Trade
32. Simula M. Trade and Environmental Issues in Forest Production // Environmental Division Working Paper. - 1999. - April . - 38 p.
33. Steininger K. Reconciling trade and the environment: towards a comparative advantage for long-term policy goals // Ecological Economy. - 1994. - No. 9. - P. 23-42.
34. Study of non tariff measures in the forest products sector // Forest research institute study, 1999 - 46 p.
35. Timber Bulletin. Annual forest products' market review 2003-2004. - Vol. LVI. - 2005. - 152 p.
36. Vaughan S., Ali D. Policy effectiveness and MEAs. Environment and Trade Series #17. Geneva: UNEP, 1998. p. 43.
37. Wolfe M. Trade expansion remains the engine of growth // Financial Times, 1999 - 29 October - P. 5
38. World Bank. Controlling the international trade in illegally logged timber and wood products - a revised strategy. - RIIA, 2004. - 65 p.
39. Young M. Ecologically accelerated trade liberalisation: a set of disciplines for environment and trade agreements // Ecological Economy. - 1994. - No.9. - P. 43-51.

40. *Eksportna orientatsia ta ii vplyv na restrukturyzatsiu pidpnyemstva krainy. Ukraina na shliakhu do Yevropy.* [I.Akimova. Export Orientation and its Impact on the Restructuring of a Country's Enterprises. Ukraine on the Way to Europe. Edited by L.Hoffman and F.Miollers. Kyiv, Fenix Publishers, 2001, pp.205-215].

41. *Vliyaniye ekologicheskogo faktora na formirovaniye sovremennoy sistemy mezhdunarodnykh otnosh-eniy.* [N.Andreyeva., S.Kharichkov. The Impact of the Eco-logical Factor on the Formation of the Current System of International Economic Relations. *Regional Economics*. 2004, No.2, pp.142-153].

42. G.Daily. *Above Growth. Economic Theory of Sustainable Development.* Translated from English. Kyiv, Intelsfera Publishers, 2002, p. 312.

43. W.Kweizer, F.Vinunz. *Ukraine's Integration into the World Economy. In What Way, How Fast, and What For?. Ukraine on the Way to Europe.* Edited by L.Hoffman and F.Miollers. Kyiv. Fenix Publishers, 2001, p.91.

44. K.Losyk. *Floods, Forests and Two Transcar-pathian Governors. Mirror of the Week.* 2001, No.11, March 17-23; H.Storozhuk. *Wood Goes Abroad. For us are Left but Chips? Government Courier.* 2003, September 8; I. Franchyk. *Polissia is Turning into a Desert. Rivne Gazette.* 2004, March 11 [No.899]; P.Checheliuk. *The Future of Ukrainian Forests: is there a Reason for Optimism? Mirror of the Week.* 2002, December 28 [No.50].

45. *Okhrana okruzhayushchei sredy i togovye prot-sesy. Ekonomicheskiye instrumenty resheniya ekologicheskikh problem na regionalnom i mezregionalnom urovne. Ekologicheskaya ekonomika i upravleniye: Trudy uchastnikov obrazovatelnoi programmy ekologicheskogo menedzhmenta dlya rabotnikov mestnykh administratsiy Ukrainy.* [V.Sabadash. Environmental Protection and Trade Processes. Economic Instruments for Dealing with Ecological Problems at the Regional and Interregional Level. Ecological Economics and Management: Papers of the Participants in the Educational Programs of Ecological Management for Workers of Local Administrations of Ukraine. Sumy, Mriya-1 Ltd., 1997, pp.60-64)].

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