

## Chapter 12

# Environment and Trade

## Introduction

This chapter is not about trade or about the environment; it is about the increasing overlap between trade and environment where there are trade-related environmental issues and environment-related trade issues. Trade-related environment problems can be seen in the exports of natural resources such as forest products and the resulting deforestation that could impact a watershed and lead to serious environmental consequences for an area's people and biodiversity. Export industries may be using so much of scarce water resources that the increasing competition actually keeps people and ecosystems from accessing this resource. In addition there may be significant water and air pollution, as there is rarely only one environmental problem associated with any type of manufacturing industry.

Environment-related trade issues deal with environmental measures taken to control or regulate environmentally undesirable trade because of threats to human and plant life or to the overall environment. The World Trade Organization's (WTO) sanitary and phyto-sanitary measures are good examples of environment-related trade measures. There is a wide ranging discussion about many of these environment-related trade measures because developing countries are arguing that this is another form of protectionism being introduced by developed countries.

On the one hand we see a strong move towards liberalization, with countries like the People's Republic of China and India coming up as new economic powerhouses following their gradual liberalization, but there is also a strong push from developed countries to impose new restrictions and sanctions on trade related with environmental, social, labor, and even human rights issues. Some of the environmental standards have adversely affected exports from developing countries. Many issues remain unresolved. Over the next few years significant changes will occur in the areas of trade and environment relationships. To the extent that developing countries can benefit from environ-

mentally friendly exports, trade will have a positive impact on the environment. However, experience shows that this need not always happen. Exports are being lost on environmental grounds, given the high costs of changing industry practices, which may not be possible in the short run. In such cases both the environment and the economy may suffer.

Nepal is a relatively small and new player in the field of environment and trade. This may be both good and bad for the country. It may be good because its small trade means current investments in dirty equipment, management practices, and labor skills may be altered relatively easily. It may be bad because as a poor country it has few options and limited resources to exercise any option fully. Nepal is already a member of the WTO, having agreed to play by its rules. Exports to the European Union (EU) and United States of America (US) are limited but extremely significant in terms of overall exports. These are also the main destinations with tough environmental standards that are getting more stringent every year and are also being rigorously enforced by these countries. In addition there are multilateral environmental agreements, many of which Nepal has ratified or signed. How successful Nepal will be in promoting its trade in the context of these developments only time can tell.

The challenges for this poor nation are formidable not only on account of the increasingly stringent standards abroad but more significantly on account of the terribly disorganized state of the domestic institutions responsible for promoting trade and improving the environment.

This chapter reviews Nepal's current situation regarding trade and environment. The next section outlines the ongoing discussion in the areas of trade, environment, and sustainable development. This is followed by a review of the different trade-related environmental obligations under multilateral environmental agreements, and then a review of the trade environmental agreements that Nepal has with the WTO and India, and the restrictions imposed by Nepal. The next part reviews Nepal's exports, imports, and trade with different regions of the world. As Nepal's trade is relatively small, any serious effort to increase it will mean understanding better

how other countries with substantially larger trade have been faring so far. This is briefly discussed in the following section. The chapter closes with some observations on the future implications for Nepal's trade and environment.

## Trade, Environment, and Sustainable Development

### Liberalization of Trade

The rationale for free trade is based on the principles of comparative advantage. Interregional trade benefits both partners, as each can gain from the other's comparative advantages and have access to cheaper goods, raw materials, and new ideas; market discipline can also be enhanced. Trade also brings in critical foreign exchange. Although the direct relationship of trade to economic growth is complex, throughout history countries open to trading have always enjoyed greater prosperity than those that have remained relatively isolated. In today's world, with increasing global interdependence, few countries can pursue completely isolationist policies.

Bhagwati (2001) points out that India has experienced healthy growth since 1991 after reversing past protectionist policies and excessive reliance on the public sector. With the opening of its economy, India benefited from a growing world economy and direct foreign investment, which was made possible by changing past policies regarding taxes, licensing, foreign exchange, and others. He further points out that it is easy to fall prey to notions that markets, globalization, and privatization reforms are not for the poor. Without denying the need for supplemental policies, growth-oriented policies such as free trade are seen as necessary for reducing poverty.

Commenting on the performance of the Bangladesh economy, Ahmed and Sattar (2004) point out that trade liberalization and economic deregulation have contributed to output growth and helped to reduce poverty, although this might not have been to the extent desired. Other findings are that greater reduction in poverty will require more focused and targeted programs in agriculture and rural non-farm sectors (Ahmed and Sattar 2004). The direct effects of liberalization have been positive, with overall manufacturing growing more rapidly than before the new policies. The textile sector, which is fairly labor intensive and employs many women, has been a major beneficiary. The fears of de-industrialization and import rush have proven to be unfounded.

Going back a little further, we find that even in developed countries, trade was liberated in stages. Tariffs on manufactured products were gradually lowered over a fairly long period through successive rounds of international trade negotiations (South Center 1996). Although current account convertibility was introduced in the 1950s, capital account convertibility has been relaxed very slowly and in some cases only recently. This has varied significantly from country to country. Liberalization in labor flows has been even slower.

Insofar as developing countries are concerned, the creation of the United Nations Conference on Trade and Development (UNCTAD) was significant because for the first time the General Agreement on Tariffs and Trade (GATT) accepted that industrialized countries would provide preferential access in their markets to goods from developing countries, while permitting developing countries to impose tariffs on products from the developed countries. However, with the establishment of the WTO, some of this has changed. Whenever liberalizing reforms have been sudden and imposed by multilateral lending agencies, countries have faced a crippling debt crisis. When reforms have been voluntary, gradual, and guided as in some Asian countries, the results have been encouraging (South Center 1996).

### Environment and Trade Discussions

Trade and environment relationships have been discussed since the 1970s, but without concrete results. With the mounting evidence of environmental effects on all aspects of daily life, stronger voices were raised in various international forums. In 1982 the developed countries raised issues of health hazards from products already prohibited in their countries (WTO 2005). From 1982–1993 a series of health-related trade measures were introduced by the developed countries. These have been integrated into WTO rules and regulations. Trade discussions have proceeded almost parallel to discussions on sustainable development and multilateral environmental agreements where trade plays an important role. While there are many overlaps, WTO reiterates that it is not an environmental agency.

United Nations Environment Programme (UNEP) reviewed the experience of a number of developing countries on trade liberalization and environment and concluded that trade liberalization is good for trade but not for the environment, and that specific attention must be paid to the environment (UNEP 1999). If environmental factors are not recognized at the outset and included in the policy design, irreparable damage may occur. Full valuation of resources and full cost pricing of resources are essential. A judicious mix of market instruments and

standard setting is the most appropriate approach. Access to information, methods of gathering data, and techniques of integrated analysis need to be improved.

### **WTO and Environment**

The issue of environment has been highly controversial in the past few years and is likely to remain so in the future. WTO's position on the environment is reflected by the principles guiding its Committee on Trade and Environment. These are: (i) WTO is not an environmental protection agency and its competence is limited to trade and to those aspects of environmental policies that are trade related and may have significant effects on WTO members' trade; (ii) The WTO agreements (including earlier agreement under GATT) already provide significant scope for countries to pursue non-discriminatory national environmental policies; (iii) Increased coordination and internal cooperation are necessary to address environmental concerns; and (iv) Secure market access opportunities are essential to help developing countries work towards sustainable development (Boyer 2001; WTO 2005).

WTO's overall position is that trade can be both good and bad for the environment, and experience shows cases of both. "Win-win" outcomes can be assured through well-designed policies in both the trade and environment fields.

Some argue that trade and environmental issues need to be reviewed in the context of sustainable development. Sustainable development emphasizes, among other things, environmentally sound and sustainable production practices and the capacity to fulfill the basic human needs of present and future generations. Trade plays a key role in promoting particular types of technology.

Trade has been strongly linked to inequalities, environmental degradation, and poverty (Khor 1996). A major task before sustainable development is to reform trade. Arguing that free trade is always good for the environment ignores the large number of environmental problems in the world today. Although the toxic intensity of emissions and pollution as a proportion of gross national product has declined in the developed countries, the absolute levels are still going up (Boyer 2001). Other concerns raised in the context of world trade include the following:

- (i) Many non-trade issues such as environment, labor, social standards, and human rights, especially those within the areas of domestic policy and national decision making, have been included.
- (ii) It is maintained that environmental measures have been imposed on developing

countries through the threat of trade sanctions.

- (iii) There is a need to recognize the wide differences in endowments; levels of pollution, waste, and absorptive capacity; production systems; and levels of development, when determining environmental standards.

UNEP (2003) under its Global Environment Outlook scenario analysis undertook an exercise to look into the future, using four scenarios to explore what the future could be depending on different policy approaches. These scenarios are "Market First", "Policy First", "Security First", and "Sustainability First". Market First is basically following the practices of the present industrialized world. Policy First makes a deliberate effort to give priority to environmental and social concerns. Security First gives priority to overcoming striking disparities where inequality and conflict prevail. Sustainability First introduces a new environment and development paradigm. Some of the results were as follows:

- (i) Carbon dioxide and other greenhouse gases increase significantly in the next 30 years under Market First and Security First scenarios. Global emissions start reducing around 2030 under the Policy First scenario because of carbon tax and investments in non-fossil-fuel energy sources.
- (ii) Biodiversity, however, continues to be under threat unless urban and infrastructure expansion and climate change can be effectively controlled.
- (iii) The Market First scenario sees some decline in percentage of basic human needs met, but the absolute numbers increase. Under Policy First and Sustainability First scenarios, a targeting of hunger helps to reduce significantly the percentages and total numbers of people affected. The Security First scenario leads to a sharp increase.
- (iv) The report points out that "the overriding need in policy development is for a balanced approach towards sustainable development. From the environment perspective this means bringing the environment from the margins to the heart of development."

### **Nepal—Trade, Environment, and Sustainable Development**

Nepal's present development strategy is outlined in the Tenth Five-Year Plan (2002–2007) which is also the Poverty Reduction Strategy Programme. The program has four major thrusts:

- (i) Broad-based and sustainable economic growth,
- (ii) Improving the quality and availability of social and economic services,
- (iii) Ensuring social and economic inclusion of poor and marginalized groups, and
- (iv) Vigorously pursuing good governance.

Nepal has been moving strongly towards a liberalized economy. It has drastically reduced tariffs and removed licensing requirements for many imports. It has divested many public enterprises, relinquished its public-sector monopoly on imports of fertilizer, and removed the subsidy on some agricultural inputs. The economy was showing many healthy signs regarding growth, trade, and even government revenue until very recently. However, the country's widening conflict has slowed the economy and many critical indicators have shown discouraging signs during fiscal year (FY) 2004 (MOF 2004).

Although the environment has not figured among the high-priority overall policies, it gets mentioned in sectoral policies such as forestry, infrastructure, urban development, and a few others. However, even under the Poverty Reduction Strategy Programme, it is inconceivable that rural poverty can be addressed without considering the available local natural resources and their sustainable management. Improved management of land, water, and forest resources and their better distribution are fundamental for reducing poverty in rural areas, in addition to developing rural non-farm sectors. Important issues regarding governance of natural resources need to be urgently addressed in the context of poverty reduction.

In addition to these measures, different action plans like the National Biodiversity Strategy 2004, the Clean Production Measures Programme, and the Environment Sector Support Programme are trying to address the country's environmental issues.

## Nepal and Multilateral Environmental Agreements

Nepal has ratified the following conventions relevant to trade:

- (i) Plant Protection Agreement for the South-East Asia and Pacific Region 1956.
- (ii) Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1973.
- (iii) Montreal Protocol on Substances that Deplete the Ozone Layer 1987 and its amendments.

- (iv) Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Disposal.
- (v) Convention on Biological Diversity (CBD) 1992, and the Cartagena Protocol on Biosafety 2000.
- (vi) United Nations Framework Convention on Climate Change 1992, and the Kyoto Protocol 1997 (accession).
- (vii) International Tropical Timber Agreement 1994.

There are a few other agreements that Nepal has not signed at present, but may eventually because of the issues they address.

Each of the agreements is reviewed briefly below regarding trade implications.

**The Plant Protection Agreement for the South East Asia and Pacific Region, 1956 or Asia Pacific Plant Protection Convention.** The main objective of this agreement is to prevent the introduction into and spread of destructive plant diseases and pests within the South East Asia and Pacific Region. In Nepal various measures have been implemented such as the Plant Protection Act 1972 (2029 BS), Plant Protection Regulations 1975 (2031 BS), Forest Act Amendment 1993, and National Parks and Wildlife Conservation Act 1973. However, implementation has been very weak due to an open border, insufficient checkpoints, and inadequate laboratories and quarantine stations (Sapkota undated).

**Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) 1973.** CITES has a number of articles relevant to trade. Article II deals with trade in endangered species and defines conditions under which trade may take place. Protected species are classified and listed in three appendices. Article III refers to species threatened with extinction. Trade in these species is subject to strict regulation and permitted only under exceptional circumstances. The general thrust is that trade should not be for commercial purposes and should not be harmful to the species. The Convention of Parties under CITES regularly reviews illicit trade problems and recommends suspension of trade with countries that fail to comply with CITES provisions. Trade suspension is recommended when there is (i) significant trade, and (ii) absence of domestic measures to enforce the provisions of conventions. More recently in the Convention of Parties 11 it was agreed that trade suspension recommendations would apply to countries that did not submit annual national reports as required by Article VIII (7) (a) for three consecutive years.

Nepal has implemented various acts, rules, and regulations including a ban on collection, use, sale, distribution, transportation, and export of two plants—*Cordyceps misirensis* (yarcha gumba) and *Orchis latefolia* (paunch ounle). Similarly, the Government has banned transportation, exports, and sale of khayar (*Acacia catechu*), chanp (*Michelia ehampaca*), and sal (*Shorea robusta*). However, experts consider the existing provisions and measures taken insufficient to fulfill the obligations under CITES (Sapkota undated).

**Montreal Protocol on Substances that Deplete the Ozone Layer 1987 and its amendments.** The main focus is on controlling the production and use of ozone-depleting substances (ODS). Articles focus on controlling imports and exports of all types of ODS and changing chlorofluorocarbon technologies to more ozone-friendly options. Support has been received for institutional strengthening and technical advice for reducing the use of ODS. Parties having difficulties meeting their obligations under the protocol have to notify the Member of Parties. Nearly 2,500 projects are being implemented in developing countries to shift to non-ODS substances. Nepal has agreed to reduce chlorofluorocarbon use at the rate of 3 tons per annum, phasing it out entirely by 2010. For halons being used by agriculture, hospitals, and fire brigades, it was agreed to reduce the amount annually and phase it out by 2040 (Mainali undated).

**Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Disposal.** This convention is directed towards environmentally sound management of hazardous waste as it is moved from one country to another. Countries can ban the imports of such hazardous waste. Exports must have written consent of the importers. If an importing country lacks the capacity to manage hazardous substances, parties can stop their exports. No hazardous waste can be exported to Antarctica, and there are packaging, labeling, and transport requirements for hazardous waste. Limited support is provided for capacity building.

**Convention on Biological Diversity 1992.** The purpose of this convention is the conservation of biological diversity, promotion of sustainable use, and fair and equitable sharing of benefits arising from the use of genetic resources. Although it does not directly refer to trade measures, there are activities with trade implications. Those relate to preserving and maintaining knowledge, innovation, and practices of indigenous and local communities, use of biological diversity, and fair and equitable distribution of the use of genetic resources.

Translating these into actual legislation and other procedures will need to clarify conditions of access, sustainable use, and benefit sharing of a country's biological resources.

Nepal has instituted various policies, legislation, and institutional measures to implement the provisions of the convention, and completed a National Biodiversity Strategy in 2002. However, there is an urgent need for updating the biodiversity database so that the changes can be better understood over time and endangered flora and fauna better monitored and protected. At present, little is known of the extent of trade in endangered flora.

**Cartagena Protocol on Biosafety, 2000.** This protocol seeks to ensure safe transfer, handling, and use of living modified organisms that may have adverse impacts on biological diversity and human health. It maintains that trade and environment should be mutually supportive, without compromising biosafety for humans and environment. This protocol does not seek to change the rights and obligations of a party under existing international agreements like the WTO. However, parties can take more protective actions than called for in the protocol. It specifies an Advanced Informed Agreement procedure that will hold in the international transboundary movement of living modified organisms. There are provisions for a biosafety clearinghouse that will focus on risk assessment in accordance with specified procedures and time periods. There are specific handling and transport requirements for living modified organisms.

**United Nations Framework Convention on Climate Change 1992.** The objective here is the stabilization of greenhouse gas concentrations in the atmosphere. It does not directly restrict trade, but actions related to reducing greenhouse gases could impact trade. It points out that actions taken to combat climate change should not be discriminatory to international trade. A Global Environment Facility (GEF) provides financial resources to help countries reduce greenhouse gases by adopting appropriate technologies.

**Kyoto Protocol, 1997.** This protocol to the United Nations Framework Convention on Climate Change seeks to reduce emission of carbon dioxide through enhancement of energy efficiency in all greenhouse-emitting sectors. It supports the use of economic and financial incentives for adopting energy efficient technologies. It introduces the concepts of clean development mechanisms and emissions trading.

Although progress is encouraging, much remains to be done. EU countries have ratified the Kyoto Protocol but the US has not. In the absence of Parliament, Nepal became a Party to the Protocol through a Royal ordinance in September 2005.

**International Tropical Timber Agreement (ITTA), 1994.** This Agreement seeks to promote international trade in tropical timber, the sustainable management of tropical forests, and development of tropical forest industries. Trade-related aspects deal with providing a forum for consultation on promoting non-discriminatory timber trade practices, helping countries to develop strategies for sustainable management of timber products (including exports), diversification of international trade in tropical timber on a sustainable and equitable basis, bringing greater transparency in the international timber market, and promoting information sharing on the international timber market. Nepal is a member of the Agreement and has been participating in its meetings.

**Agreement for the implementation of the Provisions of the UN Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks (UN Fish Stocks Agreement 1995).** This agreement seeks to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks by requiring coastal states and states fishing on the high seas to cooperate in implementing agreed measures. There are provisions to deter activities of fishing vessels that undermine the effectiveness of internationally agreed conservation measures. There are also provisions to help build the capacity of least developed countries and small island nations to work towards meeting the agreement's goals.

**Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade 1998.** The objective is to promote shared responsibility and cooperation in the international trade of certain hazardous chemicals to protect human health and the environment. It focuses on promoting environmentally sound use through information sharing in all aspects of such hazardous chemicals. Trade in certain listed chemicals should be on the basis of prior informed consent. Obligations of a party under any other existing international agreements are not changed by this agreement. There are also provisions for providing technical assistance to countries if requested.

**Stockholm Convention on Persistent Organic Pollutants 2001.** This convention aims to reduce or eliminate releases of persistent organic pollutants into the environment to protect human health and the environment from such harmful substances. The convention makes provisions to prohibit or eliminate the production, use, import, and export of the pollutants listed in Annex A (Elimination) and restricts the production and use of those listed in Annex B (Restriction). It calls for development of national plans to implement the agreement and also provides technical assistance.

## WTO and Nepal

The WTO was established to promote the free flow of trade and to ensure that trading rules are clear-cut and observed by all members; there is an accepted mechanism within the WTO for settling all trade disputes. It follows from the negotiations undertaken over many years in the GATT. WTO is not an environmental agency. However, a few environmental issues are trade related in the sense that environmental barriers could be erected by countries to restrict trade and that trade could be damaging to the environment. Such issues are within the domain of the WTO if members decide to seek its assistance. Further details about WTO are available on the WTO web site ([www.wto.org](http://www.wto.org)).

Nepal was not a member of GATT, which was started in 1947 following the Bretton Woods Conference of 1944, which established the International Monetary Fund and The World Bank, and discussed the need for an international trade organization. GATT's focus was on reducing tariffs and trade barriers for promoting multilateral trade. Between 1986 and 1994 global trade talks were pursued under the Uruguay Rounds, which resulted in establishment of the WTO on January 1, 1995. In May 1989 Nepal applied for membership in GATT, and on September 11, 2003 Nepal was invited to become a WTO member. The period in between involved submitting its Memorandum on Foreign Trade to be circulated within GATT, followed by various rounds of extensive questions from GATT and answers by Nepal before WTO granted membership.

By joining the WTO, Nepal cannot be discriminated against by another WTO member and it has the option to use the WTO's dispute settlement procedure, but there are also many obligations. In the area of services, Nepal has made broad commitments in 11 service sectors. Regarding tariffs, Nepal has accepted average tariffs of 42% on agricultural products and around 24% on industrial

goods. Most imports will be within the duty range of 10–20%. Nepal agreed to progressively implement the Agreement on Customs Valuation in accordance with the action plan, and full implementation will start from January 1, 2007. Nepal will implement fully the provisions of the Agreement on Sanitary and Phyto-sanitary Measures by January 1, 2007. Nepal will prepare an action plan, to be implemented in stages after it adopts the Food Act and implementation of the Codex Alimentarium. It will establish and operationalize a single enquiry point. Nepal will progressively implement the agreement on Technical Barriers to Trade in accordance with an action plan and implement those provisions fully by January 1, 2007. Nepal has agreed to incorporate all the substantive provisions of the Trade-Related Intellectual Property Rights Agreement in its new Industrial Property (Protection) Act to be promulgated no later than January 1, 2006.

Nepal has not become a member of the International Union for the Protection of New Plant Varieties. Nepal seeks to adopt an effective sui generis system for the protection of plant varieties as provided under Article 27.3 (b). In answering questions about the benefits to Nepal from WTO membership, Shrestha (2004) points out that this will avoid the risks of non-membership, as well as prevent any unilateral decision by a trading partner against Nepal. He further points out that Nepal will need to amend or enact 40 laws, although WTO required compatibility only in customs valuation, technical barriers to trade, sanitary and phyto-sanitary measures, and intellectual property rights. This was to be achieved over a period of four years. Regarding questions of import surges affecting domestic products, he did not believe that this would occur. Regarding subsidy for some of the primary producing sectors, some level of subsidy was still possible and there were provisions to address the problems of the primary sector through investments in infrastructure, research, and human resources development. At present Nepal's protection levels are nowhere near the levels permitted by the WTO, so there is no question about WTO membership reducing subsidies to farmers.

### **Nepal-India Trade Treaty of 2002**

India has been and will continue to be Nepal's most significant trading partner because of Nepal's landlocked position with India enclosing it on three sides. The new trade treaty is far more restrictive than the earlier one and is likely to create many uncertainties for Nepal. The most significant

development has been that India has imposed quantitative restrictions on four items—vegetable ghee, acrylic yarn, copper oxide, and zinc oxide—based on rules of origin, quota allocation, and non-tariff barriers (NTCS 2003).

### **Nepal's Own Trade Restrictions**

As a WTO member Nepal must inform WTO about any ban notifications coming into effect.

- (i) Nepal has banned the following products from being exported (FNCCI 2004):
  - (a) Articles of archaeological and religious importance;
  - (b) Conserved wildlife and related articles: wild animals, musk, bile, and any part of wild animals, snake skin, lizard skin;
  - (c) Drugs, marijuana, opium, hashish;
  - (d) Metals and jewellery: valuable metals and jewelry (exceptions permitted);
  - (e) Articles of industrial importance, explosive materials, and related materials used in the production of arms and ammunition;
  - (f) Industrial raw materials: raw hides and skins (including dry salted), raw wool, all imported raw materials, parts and capital goods;
  - (g) Other products: turmeric has been banned; and
  - (h) Export to India: all goods imported from countries other than India.
- (ii) Nepal has banned the following products from being imported (FNCCI 2004):
  - (a) Products injurious to health: narcotic drugs; liquor containing more than 60% alcohol;
  - (b) Arms and ammunition and explosives (except under license): materials used in production of arms and ammunition, guns and cartridges, caper without paper, arms, and other explosives;
  - (c) Communications equipment (except under license);
  - (d) Valuable metals (except under license);
  - (e) Beef and beef products;
  - (f) Plastic rags and recycled plastic goods;
  - (g) 118 azo dyes harmful to the environment; and
  - (h) Any other product designated by the Government.

# Nepal's Changing Pattern of Trade and its Environmental Aspects

## Current trade with India

In FY1966 Nepal's total trade was only NRs 1157.1 million, of which 98% was with India (Table 12.1). Exports amounted to only NRs 375.1 million or 33% of total trade. Ten years later in FY1976 exports to India dropped to 75% and imports from India declined to 62% while overall trade more than doubled to NRs 3,167.5 million. In FY1986 exports to India further dropped to 40% while imports from India decreased to 43% and overall trade increased almost four-fold to NRs 12,419.2 million. This pattern of change continued during the next decade, and in FY1996 exports to India were only 19%, and imports from India 33% of total trade, which had increased by almost seven times to NRs 94,335.6 million. However, on account of a highly favorable Nepal-India Trade Treaty in FY1997, exports to India continued to improve, increasing from 24% in FY1997 to 59% in FY2004. A similar pattern was seen in imports, which increased from 2% of total trade in FY1997 to about 41% in FY2004 (Table 12.1).

The structure of exports has undergone major changes in recent years, shifting to manufactured goods, although trade with India still consists mainly of primary products and some processed materials. The trade balance has persistently remained against Nepal's favor; trade deficit/gross domestic product (GDP) ratio was 14% in FY2002 (Table 12.2). The total trade/GDP ratio increased from 22% during the 1980s to 41% in the latter 1990s. The rapid increase in trade has been attributed largely to the trade liberalization policies pursued by the Government since the early 1990s. The International Monetary Fund Trade Restrictiveness Index for Nepal was 2, with scores of 1-4 indicating an open regime and scores of 7-10 indicating a restrictive regime (NDF 2003). Different trade-related ratios are shown in Table 12.2.

Table 12.3 shows the major types of exports to India in FY2003 and FY 2004. Vegetable ghee topped the list, followed by jute goods and jute-related items, textiles, forest products including herbs, agricultural products, and miscellaneous manufactured items. Toothpaste and soap accounted for over 80% of the latter. There has been a great deal of fluctuation in the items from year to year. For example, some items exported in one year (like Chyawanprash) do not show up in next year's trade. Decreases in export value have been seen in many items, including vegetable ghee and 26 other important exports, although the total value of export trade has registered an 18% increase. The increase

has been due to items such as wheat flour, hessian sacking, cattle feed, hides and skin, polyester yarn, readymade garments, and a few other items. The largest increases were in toothpaste and readymade garments.

Table 12.4 shows the major imports from India for two fiscal years. There was an overall increase in import value of about 18%. Petroleum products were the single largest imported item followed by textiles, cement, medicines, vehicles and spare parts, and machinery and parts. There was a decrease in some 25 imports between FY2003 and FY2004. The major decreases were in textiles and cement. About 16 imports registered increases, the major ones being chemicals, vehicles and spare parts, machinery and parts, and petroleum products.

## Current Trade with Overseas Countries

Nepal's overseas trade was only NRs 23 million in FY1966 but increased to NRs 66,254 million three decades later. Thereafter it registered an annual growth rate of 10% until FY2001, when it reached NRs 100,100 million. After this it declined significantly to almost the level of the 1980s. It increased slightly during FY2004 to NRs 78,969 million. In FY2004 the major overseas exports were readymade garments, followed by woolen carpets, woolen and pashmina shawls, and handicrafts. Other exports included hides and goat skins, tea, pulses, cardamom (large), sugar, silverware and jewelry, towels, Nepali paper and paper products, and wooden goods (Table 12.5). The top ten countries for Nepal's exports are shown in Table 12.6. India, the United States (US), and Germany are the major importers of Nepali exports with shares of 57%, 18%, and 6.6%, respectively, in FY2004. Table 12.7 shows the top ten countries that are sources of imports to Nepal. India, Singapore, and the People's Republic of China were the major suppliers of Nepal's imports with shares of 59%, 6.3%, and 3.9%, respectively, in FY2004.

## Environmental Dimensions of Trade

### Internal Trade

Although there has not been any reference to internal trade in this chapter so far, clearly in the context of environmental impacts, this cannot be neglected. The problem is that domestic trade, its growth and impact, and so on have not been studied to date. There are no records of any type regarding internal trade.

If we look at the national accounts, trade has been lumped together with restaurants and hotels, although the latter two will be fairly small compared with the value of domestic trade. This sector contributed 11.6% of GDP and was second only to

**Table 12.1: Direction of Foreign Trade (NRs million)**

Item	FY1966	FY1976	FY1986	FY1996	FY1997	FY1998
Export (FoB)	375.1	1,185.8	3,078.0	19,881.1	22,636.5	27,513.5
India	370.5 (98.8)	893.7 (75.4)	1,241.1 (40.3)	3,682.6 (18.5)	5,226.2 (23.5)	8,794.4 (32.0)
Other countries	4.6 (1.2)	292.1 (24.6)	1,836.9 (59.7)	16,198.5 (81.5)	17,410 (76.9)	18,719.1 (68.0)
Imports (CIF)	782	1,981.7	9,341.2	74,454.5	93,553.4	89,002.0
India	763.5 (97.6)	1,227.1 (61.9)	3,970.9 (42.5)	24,398.6 (32.8)	24,853.3 (26.6)	27,331.0 (30.7)
Other countries	18.5 (2.4)	75.6 (38.1)	537.03 (57.5)	50,055.9 (67.2)	68,700.1 (69.3)	61,670 (69.3)
Trade balance	-4,0619	-795.9	-6,263.2	-54,573.4	-7,016.9	-61,488.5
India	-393 (96.6)	-333.4 (41.9)	-2,729.8 (43.6)	-20,716.0 (38.0)	-19,627.1 (27.7)	-18,536.6 (30.1)
Other countries	-13.9 (3.4)	-462.5 (58.1)	-3,533.4 (56.4)	-33,857.4 (62.0)	-51,289.8 (72.3)	-42,951.9 (69.9)
Total volume of trade	1,157.1	3,167.5	12,419.2	94,335.6	116,189.9	116,515.5
India	1,134.0 (98.0)	2,120.8 (67.0)	5,212.0 (42.0)	28,081.2 (29.8)	30,079.5 (25.90)	36,125.4 (31.0)
Other countries	23.1 (2.0)	1,046.7 (33.0)	7,207.2 (58.0)	6,625.4 (70.2)	86,110.4 (74.1)	80,390.1 (69.0)
Share exports/in total <sup>a</sup>	32.7	37.4	24.8	21.1	19.5	23.6
Share imports/in total <sup>a</sup>	67.3	62.6	75.2	78.9	80.5	76.4
GDP (at factor cost / current price)				248,913	280,513	300,845

  

Item	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004
Export (FoB)	35,676.3	49,822.7	55,654.1	46,944.8	49,930.6	52,723.7
India	12,530.7 (35.1)	21,220.7 (42.6)	26,030.2 (46.8)	27,956.2 (59.6)	26,430.0 (52.9)	31,244.3 (59.3)
Other countries	23,145.6 (64.9)	28,602.0 (57.4)	29,623.9 (53.2)	18,988.6 (40.4)	23,500.6 (47.1)	21,479.4 (40.7)
Imports (CIF)	87,523.3	108,504.9	115,687.2	107,389.0	124,352.1	139,142.3
India	32,119.7 (36.7)	39,660.1 (36.6)	45,211.0 (39.1)	56,622.1 (52.7)	70,924.2 (57.0)	81,651.9 (58.7)
Other countries	55,405.6 (63.3)	68,844.8 (63.4)	70,476.2 (60.9)	50,766.9 (47.3)	53,427.9 (43.0)	57,490.4 (41.3)
Trade balance	-51,849.0	-58,682.2	-60,033.1	-60,444.2	-74,421.5	-86,418.6
India	-19,589.4 (37.8)	-18,439.4 (31.4)	-19,180 (32)	-28,665.9 (47.4)	-44,494.2 (59.8)	-50,407.6 (58.3)
Other countries	32,260 (62.2)	-40,242.8 (68.6)	-40,852.3 (68)	-31,778.3 (52.6)	-29,927.3 (40.2)	36,011.0 (41.7)
Total volume of trade	123,201.6	158,327.6	171,341.3	154,333.8	174,282.7	191,866
India	44,650.4 (36.2)	60,880.8 (38.5)	71,241.2 (41.6)	84,578.3 (54.8)	97,354.2 (55.9)	112,896.2 (58.8)
Other countries	78,551.2 (63.8)	97,446.8 (61.5)	100,100.1 (58.4)	69,755.5 (45.2)	76,928.5 (44.1)	78,969.8 (41.2)
Share exports/in total <sup>a</sup>	29.0	31.5	32.5	30.4	28.6	27.5
Share imports/in total <sup>a</sup>	71.0	68.5	67.5	69.6	71.4	72.5
GDP (at factor cost / current price)	342,036	379,488	410,789	422,301	454,935	494,882

CIF = cost insurance freight, FOB = freight on board, GDP = gross domestic product

Note: values in brackets indicate percentages; the fiscal year (FY) of the Government of Nepal ends on 15 July. Fiscal Year before a calendar year denotes the year in which the fiscal year ends, e.g. FY2002 ends on 15 July 2002.

Source: FNCCI (2004)

**Table 12.2: Trade/ GDP Ratios**

Indicator	FY1981– FY1985	FY1986– FY1990	FY1991– FY1995	FY1996– FY2000	FY2001– FY2002
Total trade/GDP ratio	21.9	23.7	33.6	40.7	38.9
Export/GDP ratio	4.9	5.3	9.0	10.1	12.3
Export growth rate (%)	23.6	14.4	31.6	24.5	17.1
Import/GDP ratio	17.0	18.4	24.6	30.6	26.6
Import growth rate (%)	17.2	18.9	28.4	11.7	16.4
Trade deficit/GDP ratio	12.1	13.1	15.7	20.5	14.3
Current account deficit/GDP ratio	3.0	6.2	6.2	4.5	2.7
Export/import ratio	29.2	28.8	36.8	33.7	46.3

GDP = gross domestic product  
Source: NDF (2004)

**Table 12.3: Selected Exports to India (value in NRs '000)**

Commodity	FY2003 (2059/60)	FY2004 (2060/61)	% Change	Commodity	FY2003 (2059/60)	FY2004 (2060/61)	% Change
Pulses	880,400	575,000	(34.7)	Rosin	221,600	138,200	(37.6)
Ghee	54,600	36,600	(33.0)	Brooms	102,700	65,300	(36.4)
Herbs	111,900	79,100	(29.3)	Noodles	309,700	259,700	(16.1)
Ginger	315,400	263,500	(16.5)	Biscuits	25,100	15,500	(38.2)
Dried ginger	108,400	73,000	(32.7)	Marble slabs	28,600	36,900	29.0
Linseed	45,800	33,400	(27.1)	Cattle feed	405,900	544,100	34.0
Cotton seed	300	200	(33.3)	Barns	62,800	37,500	(40.3)
Fruits	2,400	700	(70.8)	Oil cakes	311,100	303,700	(2.4)
Vegetables	43,000	17,000	(60.5)	Hides and skin	248,500	332,300	33.7
Wheat flour	7,100	32,200	353.5	Toothpaste	1,002,800	1,478,800	47.5
Vegetable ghee	3,812,300	2,959,000	(22.4)	Polyester yarn	656,900	1,114,500	69.7
Jute goods	1,899,000	1,882,600	(0.9)	Readymade	399,200	626,200	56.9
Hessian	44,200	143,500	224.7	Handicraft goods	44,800	25,600	(42.9)
Sacking	855,900	1,056,500	23.4	Veneer sheets	3,800	5,100	34.2
Twine	998,900	682,600	(31.7)	Toilet soap	469,200	539,100	14.9
Live animals	62,500	40,400	(35.4)	Chyawanprash	525,900	0	0
Rice barn oil	210,000	194,700	(7.3)	Hajimola	217,200	289,900	33.5
Turpentine	24,700	15,700	(36.4)	Kachha	11,200	8,200	(26.8)
Cinnamon	4,700	6,300	34.0	Iron scrap	7,000	3,700	(47.1)
Cardamom	469,600	449,500	(4.3)	Bristle	2,100	500	(76.2)
Catechu	145,400	159,500	9.7	Others	12,986,900	18,460,700	42.1
Stone and sand	189,500	140,400	(25.9)	<b>Total</b>	<b>28,329,000</b>	<b>33,126,900</b>	

Note: Trade with India for FY2003 is revised, and is provisional for FY 2004.  
Source: Trade Promotion Centre (2004)

agriculture in FY1995. In FY2004 its share was 10.4%; it declined to third position after agriculture and financial and real estate. There can be little doubt about its significant role in the economy, and something this big will undoubtedly have direct and indirect environmental effects (FNCCI 2004).

Nepal's main environmental problems are deforestation, loss of biodiversity, soil erosion, air and water pollution, and in some areas solid waste disposal. In selected areas one also encounters pesticide problems (Banskota 2005). In the history of Nepal, economic integration has moved at a slower

pace than political integration primarily because transport and communications, so vital for the development of trade, have expanded relatively slowly. Even now there are parts of Nepal accessible only by air or on foot. However with increasing economic integration, interregional trade follows for the same reasons as international trade—relative comparative advantages. In Nepal the trade links between the Hills and the Terai have been very significant with the Terai providing firewood, timber, and many agricultural products to the Hills—especially to the ever-growing market of Kathmandu

**Table 12.4: Selected Imports from India (Value in NRs ' 000)**

Commodity	FY2003 (2059/60)	FY 2004 (2060/61)	% Change
Live animals	404,000	204,800	(49.3)
Textiles	4,186,100	3,176,900	(24.1)
Ready-made garments	444,700	410,900	(7.6)
Raw cotton	91,400	89,300	(2.3)
Thread	1,105,800	985,500	(10.9)
Fruits	284,500	241,500	(15.1)
Vegetables	772,800	638,700	(17.4)
Milk products	508,800	427,100	(16.1)
Tea	39,500	36,000	(8.9)
Coffee	37,000	40,500	9.5
Cumin seed and pepper	199,300	197,800	(0.8)
Salt	713,300	607,300	(14.9)
Sugar	119,500	12,600	(89.5)
Rice	744,900	515,900	(30.7)
Pulses	539,300	598,500	11.0
Wheat	216,500	269,700	24.6
Tobacco	534,300	563,200	5.4
Chemicals	1,906,600	2,526,200	32.5
Enamel and other paints	111,200	121,500	9.3
Cement	2,934,700	2,118,700	(27.8)
Pipe and pipe fittings	128,400	123,100	(4.1)
Sanitary wares	126,700	121,700	(3.9)
Bitumen	54,300	168,900	211.0
Electrical equipment	997,500	1,065,500	6.8
Medicines	3,225,700	3,329,600	0.2
Writing and printing paper	431,200	404,400	(6.2)
Books and magazines	304,500	327,200	7.5
Cosmetic goods	409,700	406,000	(0.9)
Chemical fertilizers	183,500	562,700	206.6
Insecticides	145,800	136,100	(6.7)
Hand tools	67,900	57,900	(14.7)
Agri-equipment and parts	689,900	477,400	(30.8)
Vehicles and spare parts	3,857,800	4,923,900	27.6
Tires, tubes and flaps	252,200	242,800	(3.7)
Coal	695,400	775,300	11.5
Machinery and parts	2,571,800	3,262,600	26.9
Glass sheets and glassware	439,800	444,900	1.2
Radios, televisions, decks & parts	128,600	87,900	(31.6)
Shoes and sandals	87,700	67,600	(22.9)
Wire products	162,700	99,200	(39.0)
Others	21,257,300	30,617,300	44.0
<b>Total without petroleum products</b>	<b>52,112,600</b>	<b>61,484,600</b>	<b>18.0</b>
Petroleum products	18,811,600	20,167,300	7.2
<b>Total</b>	<b>70,924,200</b>	<b>81,651,900</b>	<b>15.1</b>

Note: Trade with India for FY 2003 is revised, and is provisional for FY2004.  
Source: Trade Promotion Centre (2004)

**Table 12.5: Percentage Share of Major Commodities in Nepal's Overseas Exports in FY2004 (2060/61) (NRs '000)**

Commodity	Unit	Quantity	Value	Share in %
Readymade garments	pcs.	38,994,326	9,552,544	45.6
Woolen carpets	sq.m	1,648,918	5,461,301	26.1
Woolen and pashmina goods			1,473,675	7.0
Handicrafts			427,189	2.1
Sugar	t	9,250	404,165	1.9
Nepali paper & products			348,482	1.7
Silverware and jewelry			321,569	1.5
Pulses (lentils)	t	7,590	294,554	1.4
Hides and goatskin	sq.ft.	6,627,864	286,117	1.4
Towels			249,393	1.2
Cardamom (large)	t	1,111	228,963	1.1
Tea	t	1,002.2	106,897	0.5
Wooden goods			46,810	0.2
Other			1,740,002	8.3
<b>Total</b>			<b>20,941,661</b>	<b>100.0</b>

pcs = pieces, sq.ft. = square foot, sq.m = square meter, t = metric ton  
Source: Trade Promotion Centre (2004)

**Table 12.6: Major Trading Partners of Nepal : Exports (NRs '000)**

Country	FY2002	FY2003	FY2004
India	27,956,200	26,430,000	31,244,300
United States	9,377,832	12,686,537	9,695,977
Germany	4,043,218	3,555,327	3,567,036
United Kingdom	808,751	1,070,737	1,677,085
Italy	566,557	530,869	589,370
France	473,472	453,961	581,762
Canada	305,978	383,651	546,403
Japan	492,833	474,247	525,601
Bangladesh	NR	411,335	421,308
Switzerland	382,823	NR	306,255
Portugal	NR	414,680	NR
Belgium	295,140	NR	NR
<b>Subtotal</b>	<b>44,702,804</b>	<b>46,411,344</b>	<b>49,155,097</b>
Other countries	2,683,984	3,599,778	5,261,517
<b>Grand total</b>	<b>47,386,788</b>	<b>50,011,122</b>	<b>54,416,614</b>

NR = not ranked in that year, only top ten countries are listed.  
Source: Trade Promotion Centre (2004)

**Table 12.7: Major Trading Partners of Nepal: Imports (NRs '000)**

Country	FY2002	FY2003	FY2004
India	56,622,100	70,924,200	81,651,900
Singapore	7,346,919	9,039,197	8,698,647
China, People's Rep. of	4,315,803	4,760,342	5,433,815
Thailand	3,278,165	2,988,929	4,320,169
Malaysia	4,818,356	4,009,640	3,676,428
Indonesia	2,877,654	3,976,734	3,253,785
Korea, Republic of	2,500,974	3,380,348	3,080,644
Saudi Arabia	3,654,905	2,363,956	2,547,901
Germany	NR	2,278,356	1,977,896
Japan	NR	NR	1,690,396
Hong Kong	2,461,194	2,276,995	NR
United States	2,525,603	NR	NR
<b>Sub total</b>	<b>90,401,673</b>	<b>105,998,697</b>	<b>116,331,581</b>
Other countries	18,233,128	22,229,437	22,421,154
<b>Grand Total</b>	<b>108,634,801</b>	<b>128,228,134</b>	<b>138,752,735</b>

NR = not ranked in that year, only top ten countries are listed.  
Note: Trade with India for FY2002 and 2003 are revised, and is provisional for FY2004.  
Source: Trade Promotion Centre (2004)

Valley and its satellite towns. This large demand and the consequent trade have resulted in extensive deforestation of Terai forests, some in very critical ecosystems such as the Churia and the wetlands. Along with deforestation, the rich biodiversity of the Terai's subtropical forests has also diminished significantly. Roughly 4–5% of Nepal's exports to India consist of non-timber forest products and herbs, and there is concern about unsustainable harvesting of these products (Dhakal 2004, Tiwari et al. 2004). Another major impact of this deforestation has been the widespread flooding of the Terai plains causing extensive damage to crops and agricultural land, frequent changes in river courses, bank erosion, and debris deposits. Some of this occurs naturally, but the impact of anthropogenic factors has increased considerably (Banskota 2005) as a result of the rapid increases in population, deforestation, and expansion in agricultural land. The argument here is not to suggest that trade is bad. However, it does have environmental effects that should be carefully studied.

Trade involves transport, and in today's world motorized transport is using fossil fuel that adds to the carbon dioxide in the atmosphere and releases harmful gases. A recent study has highlighted some of the health effects in Kathmandu (CEN and ENPHO 2003). The time has come to better understand the environmental effects of increasing domestic trade and identify possible corrective measures.

### International Trade

International trade has grown rapidly over the years with the trade/GDP ratio almost doubling in two decades. Today it stands at 40%. However, other smaller nations that depend on trade have ratios as high as 80% (NTCS 2003), suggesting that there are further potentials for expanding trade.

Nepal imports many environmentally sensitive products such as petroleum products, insecticides, and chemicals which are critical inputs into various production processes. These need to be carefully handled. Increasing use of fossil fuel is now seen as the main factor behind the deterioration of air quality in Kathmandu Valley (CEN 2003); this is already beginning to have many health

effects. Kathmandu Valley has a special environmental problem of temperature inversion, due to which air pollutants do not disperse very easily (Tuladhar 2003). Unleaded petrol was introduced in the country only recently, and there is concern about adulteration in the fuels available. If improving the quality of fossil fuel to minimize the presence of harmful substances is one aspect, there is also a need for the carriers to be environmentally friendly. Many of the vehicles are in a very poor state, and these are responsible for a lot of the pollution.

Another major problem is related to imports of pesticides and toxic and harmful substances. Their proper handling, use, storage, and transport are relatively unknown at present. Some studies on the use of pesticides have shown that few precautions have been taken, and that pesticides could become a public health hazard at any time (Pokharel 2003). While developed countries are introducing stringent regulations on many harmful and toxic chemicals, there is little monitoring of what is happening in Nepal. Nepal's weak monitoring and policing capacity could make it an attractive candidate for dumping harmful and chemical substances, whose toxicity may only become known after they are in the country. This is an important area and needs to be given serious attention in light of the long and highly porous open border with India.

What about environmentally sensitive exports? So far Nepal has been fortunate because no major export consignment has been rejected on environmental grounds. Environmental standards in the European Union (EU) and the US have become highly stringent and some aspects of this are discussed in the next section. Discussions with different experts<sup>1</sup>, have identified several current and likely problems regarding exports to the EU:

- (i) Exports of woolen carpets to Germany were required (voluntarily) to have ecolabels.
- (ii) India imposed quarantine restrictions on ginger exports from Nepal, and exports were frequently stranded at the border because of the delay by India on pest risk analysis. Nepal could not provide the necessary data to India in time for the analysis. Now the quarantine problem on ginger has been solved.
- (iii) Italy recently returned a shipment of Chywanprash because of the presence of toxic substances.
- (iv) Some concerns have been expressed about pesticides and other prohibited residues in tea samples from Nepal.
- (v) Nepal honey is not in the open list of the EU because of an insufficient residue

monitoring plan and lack of legislation in Nepal to control the quality of honey. Further, the considerable production by indigenous honeybees is not recognized as "honey" under EU directives.

There may be other cases, but very little of this knowledge is in the public domain. Although the list is small so far, the lists of prohibited items in the US and the EU are very large, and care must be taken to ensure that farmers and producers from Nepal are well aware of these requirements. So far Nepal's exports have been limited and therefore the problems are also small. Some positive developments in this respect have been the award of Oeko-Tex 100 ecolabel certificates to five Nepali exporters to EU countries. There have also been efforts to promote cleaner production measures in industrial units, some of which are exporters (Adhikari 2004). Similarly the practice of organic farming and integrated pest management is also being encouraged. While these are positive signs, boosting Nepal's future exports will require major efforts to ensure that these are safe for the environment and humans, and meet the emerging standards in different parts of the world.

### **Trade and Environment-related Experience of Other Countries**

Kirchbach (ITN 2001) highlights a number of interesting points regarding trade-related environmental barriers. He points out that of 4,917 products examined in world trade, only 24% did not face some kind of environment-related trade barrier in 2001. While the number of products is large, their value as a percentage of total trade is only 13%. Either exporters are focusing their attention on restriction of free markets or these are mostly low-value products of agricultural, forest, or mineral origin. About 90% of the barriers are concentrated in 44 products. The most common ones are food items, plants, bulbs and cut flowers, boneless bovine cuts, large automobiles, trucks, smaller automobiles, motor vehicle parts, coniferous timber, natural gas, footwear, medicine, telephones, and wildlife products. Apart from straight bans on imports, these barriers can take many forms—surcharges, internal taxes, advance payment requirements, transfer delays, quality control, prior authorization, quotas, obligations to return used products, and so on. Exports from less developed countries have been subjected most frequently to environment-related trade barriers.

What are the reasons for these barriers? Based on a review of the provisions in the WTO rules, as

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well as other provisions in specific countries or regions, a number of reasons have been identified.

### *Precautionary Principle*

Rio Principle 15 points out that where there are threats of serious or irreversible damage, lack of scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation (UN 1992). The principle was to protect the environment and public health even when scientific information was considered insufficient regarding the potential impact of a product or technology. It is clear that even the slightest suspicion can result in the use of this principle. Opponents of this argue that it can be easily used as a trade barrier. Many countries have already used this principle in the regulation of biotechnology and genetically modified foods, hazardous chemicals, and invasive and alien species.

### *Sanitary and Phyto-sanitary Measures*

Sanitary and Phytosanitary Measures set out the basic rules for food safety and animal and plant health standards in international trade (WTO 1998). Countries can also set their own standards, which must be scientifically based and should not be arbitrary or discriminatory between countries where similar conditions prevail. Critics argue that because of its technical complexity, this has been very difficult to challenge and could be a very effective trade barrier in the future. Another point is that standards cannot be the same everywhere because of wide differences in living environments, and adjustments need to be made for this.

### *Technical Barriers to Trade*

Technical barriers to trade deal with GATT rules governing the use of product standards. The Agreement gives countries the flexibility to take necessary measures to protect the environment, provided these are not discriminatory or trade restrictive (Jha 1999). The Agreement covers all technical regulations, voluntary standards, and procedures to ensure that these are met, except when these are sanitary and phyto-sanitary-related as defined by the Agreement. The two Agreements have many common elements.

### *Production and Process Methods*

Products cannot be discriminated against based on the manner in which they were produced. For instance, timber produced by clear felling should not be discriminated from timber produced by sustainable forest management. However, some

exceptions are permitted. One very prominent case regarded the dolphin-shrimp-turtle case brought to the WTO Panel by some member countries against the restrictions imposed by the US (Jha 1999).

### *Ecolabels*

Ecolabels are a method of providing information to the consumer that the product is environmentally safe in its production and contents. This is now being increasingly used as a requirement for entering markets in the US, EU countries, and Japan. Mandatory labeling of genetically modified foods is required by EU, Japan, and Australia, while the US and Canada have complained that such labeling violates WTO rules (Chaturvedi and Nagpal 2003).

All the developed countries have developed their own ecolabels for textiles, and developing countries are encouraged to use these ecolabels if their products are to be competitive in these markets. The use of ecolabels is voluntary but becomes unavoidable if others are using it in their products. Ecolabels have raised many other issues regarding establishment of standards, certification, credibility of certifying authority, competent laboratories and their staff, and harmonization of standards among countries that have also been raised under sanitary and phyto-sanitary measures as well as technical barriers to trade (UNDP undated).

### *Subsidies*

WTO agreements have attempted to lower subsidies across the board. While reducing subsidies on manufactured products has been accepted, subsidies in agriculture and fisheries have become a highly contentious issue in the WTO. Developing countries have been particularly concerned about the high level of subsidies provided to agriculture in the EU and the US (Bardhan 2001).

### *Investments*

One objective of liberalization is to attract foreign capital. However if this is done without any environmental safeguards, it could be very damaging to the local environment as well as unfair to others who have instituted industrial environmental standards. One recent study (Busse 2004) indicated that there is no rush of industries to pollution havens. The only exception may be the iron and steel industry.

### *Services*

There has been a move within WTO to pressure countries to liberalize service sectors such as

finance, insurance, education, media, transport, energy, health, water and sanitation, waste disposal, and others. The developed countries have many pollution abatement services and technologies to sell, and this move is seen by some people in developing countries as a way of promoting exports from the developed countries. While this may be true for some of the services, it may not be applicable to others and a case by case evaluation is necessary.

### *Intellectual Property*

This has been one of the most controversial and difficult provisions under the present WTO agreement. Developments in biotechnology have pushed the developed countries to press for stronger protection of intellectual property rights. Developing countries have lacked appropriate laws and the pressure is on to prepare needed rules and regulations. However, there are a number of serious concerns here such as (i) overlooking the collective nature of ownership of traditional knowledge developed over many generations and the possibility of foreclosing the entry of the public sector in the future, (ii) loss of biodiversity and adapted local varieties impoverishing the genetic pool, and (iii) promoting a very western, developed country friendly legal regime with respect to intellectual property rights. The developed countries have been somewhat unprepared for this reaction, as their agenda requires not only the development of related laws but also the capacity to enforce such policies (Boyer 2001, Chaturvedi 2003, Adhikari 2004).

### *Problems of Access to Information*

Information regarding new environmental standards by the importing countries is often delayed, inadequate, distorted, and even non-existent at the time of the export. Exporters have been caught by surprise without sufficient time to prepare and respond appropriately. The technical standards are very complex in some cases, and these may not be understood. Even when understood the exporting firm may lack the capacity to do anything about it. This lack of knowledge and capacity to respond is a real problem for many of the small- and medium-sized exporters in many developing countries.

### *Heterogeneous Standards and Regulations*

There appears to be a lack of uniformity of standards between countries for the same export. The cost of keeping up with the changes has been escalating. There is competition between organizations for certification and labeling for the same environmental standard. This may be helpful in reducing costs to

some extent, but developing countries may face problems in choosing the acceptable ones. Some of the standards have been designed with the objective of creating new markets for cleaner production technologies or methods (Andrew et al. 2004). There are discussions about harmonization of standards, procedures for conformity assessments, and the possibility of establishing equivalence agreements. However this is a relatively new area and many aspects are still in their early stages of development.

Boyer (2001) points out that EU packaging and labeling standards including regulation on recycled content of paper are so high that most developing countries' exports will not be able to satisfy them. He maintains that although ecolabeling is voluntary it results in market segmentation; use of International Standards Organization (ISO) certification and expertise is very costly for most small exporters from developing countries.

Chaturvedi and Nagpal (2003), referring to India's experience with the EU, point out that permitted levels of additives and pesticides are very high, including emission standards for machines. He points that some EU importers have introduced "socially responsible trading" to reflect status of employees, working environment, facilities and the need to fulfill a new "code" for exporters. Similarly, the quarantine restrictions for fresh fruits and vegetables have become highly stringent. There is a ban on some types of antibiotics and chemicals. Any trace of DDT, aldrin, or heptachlor results in rejection of the export. Some dyes are banned in textiles and leather. There are restrictions on the levels of formaldehyde although there is controversy within the EU in this regard. Referring to Japan, Chaturvedi further points out that Japanese food sanitation laws prohibit imports of many citrus fruits. There is a zero tolerance law on insects, plant quarantine procedures are very lengthy, and preshipment inspection is possible but the cost is very high. Moving to the US, Chaturvedi (2003) provides some information on the interventions made by the United States Food and Drug Administration for detention of imports from South Asian countries. The major reasons for preventing entry of some exports were related to food additives, pesticide residues, and presence of heavy metals, moulds, microbiological contamination, decomposition, filth, low acid canned food, labeling, and a few others. The most important categories were filth (article appears to consist in whole or in part of filthy, putrid, or decomposed substances), violation of labeling requirements, and microbiological contamination (presence of bacteria such as salmonella and shigella).

# Future Implications for Nepal

## **Increasing trade under stringent environmental conditions**

There is little doubt about the increasing value of trade, both internally and externally, but trade cannot be a panacea for all problems of underdevelopment and how trade impacts different development goals needs to be studied continuously over time. Only then can appropriate policies be targeted to deal with specific problems. The Nepalese economy has benefited immensely from growing internal economic integration permitting specialization and trade between regions. It has also benefited from increasing external trade, which has made rapid strides in recent times. However, Nepal's trade is lopsided from the point of view of limited exports, few markets, and a rapidly widening trade gap. In addition, due to increasingly stringent environmental standards by developed countries, Nepal's exports face serious market access problems. There is also tough competition in some of the exports from other South Asian countries that have many advantages over Nepal.

## **Improving quality of trade**

While international trade is important and for many commodities domestic markets may not provide comparable scales of demand, the poor quality of domestic trade is often reflected in international trade as well. Not much importance has been given to the quality of domestic trade. In fact many of the sanitary and phyto-sanitary conditions can be even more appalling in domestic markets. Increasing internal and international trade means greater quality control at home also.

## **Better understanding and awareness of WTO requirements**

Nepal is a member of WTO and there is little point in debating this issue; now better understanding about what is expected from the traders in Nepal is needed. There are many ongoing discussion areas about this, some of them contentious. Nepal must do its homework and prepare for each discussion well in advance to negotiate in the country's best interests.

## **Improving technical standards and quality assurances**

Shrestha and Shakya (2002) and Sharma and Karkee (2004) both emphasize this point. The technical requirements for quality assurance have now reached a level where many exporters not only lack

the skills, expertise, and the infrastructure to meet them but do not really know what is required and who to turn to for help. Cost considerations are another set of critical issues. Experience in Bangladesh and India, particularly in the fishing industry, has revealed that compliance with quality standards not only requires substantial capital investment but can also entail very high annual operating expenses (Chaturvedi and Nagpal 2003).

The Nepal Bureau of Standards and Metrology is the national body for the development of Nepalese standards, adoption of international standards, providing quality assurance, certification, inspection, testing, accreditation, and harmonization procedures with the standards in Nepal's exporting regions. Nepal has some 600 standards, but only five related to safety and public health in export trade are mandatory—the remainder are voluntary (Shrestha and Shakya 2002). Standards acceptability abroad and their enforcement domestically will be a major challenge for export efforts in Nepal as all the major exporting countries are imposing increasingly stringent standards. The establishment of a South Asian Regional Standards Organization is a very positive step, and Nepal should work with others to make this organization well recognized and accepted internationally.

## **Compliance with Multilateral Environmental Agreements**

Nepal has signed and ratified many different Multilateral Environmental Agreements. Some like CITES and the Convention on Biodiversity have well-defined focal points, but others need stronger action and monitoring. While multilateral environmental agreements related international organizations will not have the same effect as the WTO, environmental standards are expected to get much stiffer in the developed countries (Chaturvedi 2003), forcing countries like Nepal to take stronger action on the domestic front as well. Developing the institutional capacity and resources to move ahead on the different multilateral environmental agreements needs stronger attention.

## **Trade-related Intellectual Property Rights**

The five-year period allowed for countries like Nepal to introduce legislation and other measures to meet the provisions of Trade-related Intellectual Property Rights (TRIPS) is already at hand. Nepal has only recently announced new laws regarding patents, copyrights, and similar. However, the broader implications of this agreement are still hotly debated both nationally and internationally (Boyer 2001,

Chaturvedi 2003, Adhikari 2004). The long-term impacts on national biodiversity, genetic pool, local food security, and protection of local innovation and traditional knowledge are still being discussed. With the collapse of American leadership on international environmental issues, Europe now leads in promoting new environmental standards (Boyer 2001) and it is not clear how this will proceed. Adequate capacity and resources for research, analysis, information, local registration, and maintaining a local registry are important practical aspects for the future. This subject is still developing, and Nepal must do a significant amount of homework as it shares a common endowment and heritage in genetic resources, medical tradition, and agricultural practices with many South Asian countries.

### Trade Environment Surveillance

We know very little about the complex relationship between trade and environment. Interest in this subject grew only after the WTO agreement, which made it necessary to improve understanding of the technical aspects of trade and environment. Ignorance in this respect can be very costly in terms of the loss of export markets. Understanding domestic trade and its environmental aspects also needs to be significantly improved. In the long run the need to improve domestic standards is very apparent, especially regarding agricultural products. Nepal is a signatory to many different types of trading regimes—bilateral, regional, and international. It is not yet clear how each of these arrangements is serving the interests of the nation and what impact each has on the environment. Unless trade and environment are closely monitored in their different settings, our capacity to negotiate better economic and environmental deals may be severely compromised in the future.

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