

# **POLICY REFORM AND NATURAL RESOURCE MANAGEMENT**

## **WEEK 4: DAY 4b**

### **IMPACT OF ENVIRONMENTAL REGULATIONS ON TRADE RELATIONS FOR DEVELOPING COUNTRIES. A CASE STUDY OF INDIAN-GERMAN TEXTILE TRADE**

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#### **CONTENTS**

1. INTRODUCTION
  2. THE EFFECTS OF ENVIRONMENTAL POLICIES ON TRADE RELATIONS
    - 2.1. Instruments of trade policies to protect the environment
      - 2.1.1. Product and production standards
      - 2.1.2. Restrictions
      - 2.1.3. Voluntary Industrial Agreements
      - 2.1.4. Eco-labeling
      - 2.1.5. "Take Back Policy"
    - 2.2. Competitiveness
    - 2.3. The special problems of developing countries
    - 2.4. Harmonization of environmental standards
    - 2.5. International trade and environmental law
    - 2.6. Critical comments on the subject of trade and the environment
  3. A CASE STUDY ON THE TRADE OF TEXTILES BETWEEN INDIA AND GERMANY
    - 3.1. Structure of the Indian economy
    - 3.2. The Indian trade structure
    - 3.3. The Indian textile industry
    - 3.4. The azo-dye ban in Germany
    - 3.5. Consequences for the Indian textile industry
    - 3.6. Measures of the Indian Government
  4. CONCLUSIONS
- REFERENCES

#### **LIST OF TABLES**

- |          |  |
|----------|--|
| Table 1. | Pollution abatement operating costs by U.S. industry, 1988   |
| Table 2. | Exports to OECD countries of products which are potentially vulnerable to environmental policies, 1993 |
| Table 3. | Indian exports   |
| Table 4. | Indian exports by major commodities in million US\$ (relative share of total exports in brackets %)    |

## **1. INTRODUCTION**

Most experts feel that trade liberalization has a positive effect on economic growth. Thus, it is desirable to remove trade barriers. However, opinions are split whether a liberalization in trade contributes to the environment or not. Many experts argue that if domestic policies force manufacturers to internalize negative environmental effects of production, trade will have a positive effect on the environment. More controversial is the question of whether trade restrictions based on environmental grounds are justified when countries do not have the means to internalize environmental costs. Here, the opinion between developing and industrial countries part. Countries with different income levels tend to have different preferences on environmental issues. Environmental damage and regional pollution is, to a large degree, the result of poverty. Therefore, developing countries give priority to economic growth and are more skeptical about environmentally based trade barriers. There is concern that environmental standards will not only protect the environment but also the markets of wealthier nations, making it is more difficult for developing countries to enter these market. Environmental sensitivity in general is more pronounced in industrial countries and the negative effects of economic growth on the environment are articulated more openly. Thus, the demands for stricter environmental standards on an international level are likely to increase. However, these demands do not take into consideration that the effects of environmental standards are more severe for developing countries than for industrial countries.

There are two main reasons why developing countries face particularly difficult problems. First, environmental standards effect consumer products manufactured in developing countries to a higher degree than investment products manufactured in industrial countries. Second, infrastructure is less developed, particularly in rural areas, and technical know how is also more limited. Thus, the implementation of environmental standards causes high costs of adaptation, often exceeding the financial means of poor countries.

The case study has demonstrated the difficult problems environmental standards cause for developing countries. Due to the fact that the textile industry is a main source of foreign currency in India, it is imperative to maintain export markets. It is particularly difficult for India to adapt to the standards because of the small scale enterprise structure of their textile industry. Loosing their export market because of the azo-dye ban, the financial existence of many small enterprises, particularly in rural areas would be at stake. The consequences would be severe for the economy but most notably for the poor in rural areas, with few alternative employment opportunities, as well as for the environment, because an increasing poverty may force people to over use and destroy local natural resources.

## **2. THE EFFECTS OF ENVIRONMENTAL POLICIES ON TRADE RELATIONS**

The effects of trade liberalization on the environment are extremely complex. Environmental damage, especially regional pollution, is to a large degree the result of poverty (Reiterer, 1993). Thus, economic growth may be beneficial for a sustainable development. However, to insure positive effects on the environment by economic growth and to avoid additional environmental damages, political measures are imperative. Therefore, environmental legislation must address these problems.

Generally speaking, free trade can have a positive impact on natural resources when the environmental costs caused by the economic activities are included in the market prices

(Young, 1994). The main difficulty is to develop a framework that internalizes environmental costs and thus promotes sustainable methods of production. At the same time it is important not to hinder an efficient resource allocation and a beneficial impact on economic growth. It must be remembered that it is not trade *per se* but the method of production and consumers attitudes that endanger the environment (World Trade Organization, 1996). Therefore, the question arises whether it is not more sensible to tackle the problems of the individual countries by influencing production and consumption patterns directly rather than restricting international commodity trade. The different possibilities to internalize negative environmental effects are discussed in various chapters prior to this one. In general, the internalization of external effects puts the financial burden on the party responsible for the costs and possibly also on those demanding the goods. Even though this procedure is economically efficient and desirable, it can cause distortions in the competition between countries with different environmental standards. This paper will analyze the specific issues resulting from high environmental standards and strict environmental legislation compared to other less strict cases. Furthermore, it will discuss the desirability of an adjustment of environmental standards between countries and effects trade restrictions for environmental protection can have.

## **2.1. Instruments of Trade Policies to Protect the Environment**

The reason to enact trade restrictions to protect the environment can be different in nature (Low and Safadi, 1992):

- (a) to adjust unfair competition between countries with different environmental standards,
- (b) to influence the policy of countries with less strict environmental regulations,
- (c) to impose one country's regulations on other countries, and
- (d) to enforce an international environmental agreement.

The instruments being used to achieve these are described below.

### *2.1.1. Product and Production Standards*

In general, one can distinguish between product standards and production standards. Product standards describe the characteristics of a product, e.g. quality or safety. They help control the environmental and health effects a product may have in the country in which it is consumed. Production standards, on the other hand, serve to prevent environmental damage caused by production methods. Therefore, environmental damage is not caused by the product itself but is the result of the process of production (OECD, 1994a).

Product standards do not only effect the domestic but also foreign manufacturing, where as production standards usually only effect domestic production. Generally, countries can impose product standards by regulations on imported commodities, but cannot determine production standards in other countries. Therefore, industries consider different production standards as distorting competitiveness. To compensate for such distortions, producers in countries with higher production standards often call for trade restrictions for countries with less strict production standards. The legal problems of trade restrictions based on different production standards will be discussed in the chapter "International Trade and Environmental Law."

### *2.1.2. Restrictions*

As the public's concern about health and environmental effects of toxic substances increases, legal restrictions up to outright bans are increasingly used on the grounds of environmental protection. The implementation of legal restrictions is often easier than the use of technical standards whose definition often requires complex estimations of risk. The restriction of a specific substance can influence the trade of products which contain the banned substance. Restrictions and standards can be applied to products, product groups, or to the production process.

### *2.1.3. Voluntary Industrial Agreements*

Apart from governmental regulations, voluntary agreements can be agreed upon between government and industry. However, there is risk that such agreements are misused as a form of protectionism. As domestic industries are informed in advance and participate in working out these agreements, these industries will have more time to adapt to the requirements. Furthermore, special needs of the domestic industry can be taken into consideration (Verbruggen and Jongma, 1995). Voluntary agreements can be the basis for laws, which when implemented can cause immense problems for foreign competitors because they have less time to adapt their production process to these regulations (UNCTAD, 1995a).

### *2.1.4. Eco-labeling*

In recent years, consumers have become more and more interested in the composition, origin, and the production process of the goods that they buy. Due to the rise of environmental consciousness, there is a higher demand for information, particularly on the environmental impact of products. Eco-labeling is a way of trying to meet this new demand. It is a voluntary introduction of labeling by state or private organization to inform consumers which products are less harmful to the environment than others (Sanchez, 1995). Governments, and environmentalists in particular, promote the development of eco-labeling because it is a simple way to inform consumers about environmental friendly products and to induce companies to keep the environment in mind during the production process. The main advantages of eco-labeling is summarized in Vossenaar and Jha (1995) as follows:

- eco-labeling is a market instrument which promotes technical innovations;
- developing countries can increase their profits because of the higher prices consumers in industrialized countries are willing to pay for "eco-products".

Eco-labeling is also defined as a "soft" economic instrument because the label is voluntary and emphasizes positive characteristics. Nevertheless, some countries, in particular the developing world, fear that eco-labeling will discriminate against imported products (UNCTAD, 1995b). Even though developing countries can achieve higher prices for their products, the criteria, and the required tests set by the industrial countries can indeed have a negative effect on developing countries which face additional problems due to the fact that the standards vary among the industrial countries.

Despite the fact that environmental standards are voluntary, the adherence to them is essential for certain products (e.g. children clothes and baby food) to be competitive in OECD markets (ITC, 1994). This makes it even more imperative to formulate clear criteria and insure transparency to assure equal access to these markets for all. There should be

closer cooperation between importers from industrialized countries and manufacturers in developing countries to develop eco-labeling standards.

#### 2.1.5. “Take Back Policy”

A "take back policy" implies the obligation of the producer to take back the by-products after their use by consumers. It should promote recycling and at the same time cause manufacturers to use environmental friendly products in order to reduce costs of recycling. It is often not possible for exporters to take back their waste because of the transport costs involved, so that this burden falls on the importer. Nevertheless, it is important for exporters to inform themselves about the laws and regulations of the country they are exporting to. Importing countries may have additional costs for the recycling and waste disposal related to imported goods to (e.g. packaging). This means, if regulations are ignored by exporters, foreign commodities may become less competitive due to higher disposal/recycling costs (UNCTAD, 1993).

## 2.2. Competitiveness

One of the most often discussed aspects of trade and environment is the question of whether different environmental standards and laws distort the competitiveness between countries and companies. The answer to this question has to be very comprehensive because numerous factors influence competitiveness. Therefore, one must distinguish between regulations with short-term and long-term effects, and between laws applying to domestic markets and those that have an international effect. Laws on environmental standards also affect industrial and developing countries differently. In addition, the size of a company has an effect on the influence of environmental laws on competitiveness, a point, that is discussed in more detail below.

National environmental laws can increase production costs, giving firms a competitive disadvantage compared to firms in countries with less strict environmental laws. This issue is very controversial. Several studies have analyzed whether strict environmental regulations reduce the level of investments. Most of these studies confirm that even in countries with strict environmental standards, the additional investment costs for companies are only a marginal part of total cost, and do not represent a decisive competitive disadvantage. These studies carried out in industrial nations determined that as little as 1 to 3 percent of the total costs are spent on environmental protection (Low, 1992; OECD, 1994b). See Table 1 for estimates of the share of pollution abatement costs of total pollution by industry. Critics of these studies argue that not all of the environmental costs were taken into consideration and, therefore, underestimate the actual costs (Low and Yeats, 1992).

Table 1: Pollution abatement operating costs by U.S. industry, 1988

Industry	Share of pollution abatement costs of total production costs (percentage)
Cement	3.17
Industrial chemicals	2.20
Paper mills	1.97
Agricultural chemicals	1.94
Iron and steel industry	1.83
Petroleum refining	1.62
Plastics and synthetics	0.94
Leather tanning/finishing	0.62
Textiles	0.40

Source: U.S. Department of Commerce in Low (1992)

The statistics presented above do not consider dynamic effects that can occur when environmental laws are introduced. Only short-term costs are taken into consideration. In a long-term, dynamic perspective strict environmental laws can lead to innovations, cost savings, and competitive advantages, both in the industries regulated as well as in industries producing the technologies required to fulfill the higher standards (Cairncross, 1993).

Apart from national environmental laws that mainly affect producers in domestic markets, there are also environmental standards foreign producers must meet if they want to export their goods to these countries. This is called an external environmental legislation. The effect on the competitiveness of individual countries depends on the following factors (UNCTAD, 1995b):

- *Composition and destination of exports.* The larger the proportion of exports that are affected by the external environmental laws of the importing country, the greater the impact on the competitiveness of the exporting country.
- *Cost structure.* If low production costs are the reason for competitiveness then environmental standards causing higher costs can have a negative effect on the competitiveness of an exporting country. For example, shoe and textile industries in developing countries with a competitive advantage may suffer competitive disadvantages if the prices for raw materials and by products like dyes and tanning chemicals increase due to external environmental standards. Furthermore, as a result of environmental standards, the availability of raw materials and the costs of developing new technologies may be affected. Countries lacking certain raw materials or technologies to meet environmental standards may have considerable competitive disadvantages.

- *Structural factors.* A lack in infrastructure can make it more difficult to meet external environmental standards. The flow of information regarding the environmental laws of the importing countries can be crucial for the competitive position of a country. Suitable laboratories to test products whether they meet external environmental standards have to be available.
- *Company size.* The size of a business may have a decisive influence on the capability of a company to comply with environmental laws and standards. In general, it is easier for large companies to investment in environment-friendly technologies than small ones. The cost of such investments often exceeds the financial possibilities of small companies. Furthermore, large companies often have easier access to financing, information, and raw materials. For small firms, it may be impossible to buy environment-friendly inputs on time if they are not available on local markets and, particularly, if they have to be imported. The costs for testing and certifying products are also relatively high for small companies than for large ones (Jha, 1996). In many cases small companies do not have the know-how to implement environmental laws. In small companies the department for environmental management is often not under staffed to meet the standards of importing markets. A lack of awareness of the impact of external environmental standards can cause additional disadvantages for small companies, particularly when environmental standards are newly introduced. This can result in the loss of export markets for small companies if they cannot adapt to new standards.

External environmental legislation is not only disadvantageous for the competitiveness of exporting countries, it can lead also to restrictions of access to their foreign markets. Environmental laws can lead to market access barriers, if for example, products contain forbidden substances that are not allowed to be imported or sold on foreign markets. Thus, to obtain access to a market exporters must adjust their production according to prevailing laws, which again can affect the competitiveness of their product. Many developing countries are concerned that industrial countries will establish new protectionist trade restrictions in the form of environmental standards (Langhammer, 1997).

### **2.3. The Special Problems of Developing Countries**

Many of the problems discussed above that occur when environmental standards are introduced, affect developing countries more severely due to:

- a) the lack of infrastructure to make an efficient environmental management possible, and the inability to carry out laboratory tests to meet the standards,
- b) the more restricted access to environmental technology necessary to fulfill certain standards, and
- c) the lack of information of many businesses which makes it impossible to meet environmental standards (Jha, 1996).

Often, the necessary steps to meet external environmental standards exceed the financial possibilities of companies and administration of developing countries. The situation is aggravated by the fact that environmental standards are introduced in production lines which are of great importance to developing countries. Examples of this are fish products, timber, leather products and shoes, and textiles and clothes (UNCTAD, 1995c). Table 2 shows the share of exports to OECD countries originating from developing countries that is restricted by environmental laws.

Table 2: Exports to OECD-countries of products which are potentially vulnerable to environmental policies, 1993

Region or country	All vulnerable products	wood products	leather products	cotton and textile
OECD-countries	17.0	1.9	0.8	2.6
Developing countries	31.5	2.4	3.1	12.1
<i>Africa</i>	14.7	2.3	0.7	8.7
Cameroon	23.4	22.7	0.1	0.5
Egypt	15.9	0.3	0.2	15.1
<i>America</i>	19.2	1.7	2.7	5.6
Argentina	16.2	0.5	5.2	0.5
Brazil	21.3	3.8	9.6	2.1
<i>Asia</i>	36.2	2.8	2.3	12.5
China	42.7	1.2	8.7	22.4
India	33.8	0.3	4.7	23.9
Indonesia	41.0	14.2	6.5	12.0
Malaysia	47.1	13.0	0.2	5.0
Philippines	38.5	2.0	1.8	18.5
Thailand	44.8	2.0	4.3	10.3
Viet Nam	47.3	1.2	7.9	23.5

Source: UNCTAD (1995d).

Table 2 also indicates that the proportion of potentially restricted exports due to environmental laws is twice as high for developing countries as compared to OECD countries. The disparity is even higher for Asian countries. Often, consumers in industrial countries pay particular attention to environmental criteria when buying products that are produced in developing countries (UNCTAD, 1995c). It is not only the make up of exports of developing countries that makes it difficult to introduce environmental standards, however, the structure of many exporting companies is not equipped to meet environmental standards. That is, in developing countries, the proportion of small- and middle-sized exporting companies with the already mentioned problems is relatively large, especially in Asia.

Besides the lack of infrastructure, suitable certifying institutions to test if products meet environmental standards are lacking. The test results of these institutions are often not accepted in OECD countries. Therefore, many exporters from developing countries have to



rely on international institutions for certification, which increases the cost of production. As a consequence, negative effects of environmental standards are much more pronounced for developing countries. Studies have shown that in developing countries, costs of meeting environmental standards account for much more than the 1 to 3 percent of the total production costs estimated for industrial countries (OECD, 1994b).

In order to apply industrial countries' environmental standards to developing countries, some authors have suggested that industrial countries should support developing countries. Apart from financial and technical support, training courses must be carried out and producers must be informed in time about the introduction of environmental standards. Several international institutions, such as UNCTAD and the International Trade Center, are already offering training courses and information workshops for developing countries on how to adjust production to meet external environmental standards (ITC, 1995).

#### **2.4. Harmonization of Environmental Standards**

The international harmonization of environmental standards is discussed controversially. Arguments for a harmonization are often brought forward by environmentalist and representatives from industrial countries. The reasons for harmonization of environmental standards are based on the world wide validity of environmental objectives. Furthermore, harmonization of standards ensures that liberalization of markets and increasing competition does not soften environmental laws and standards. Environmental problems often transgress national borders, thus harmonization of standards are necessary. Otherwise, efforts of one country to protect the environment could be ruined by the pollution and carelessness of a neighboring country. Another reason to harmonize environmental standards is that different national standards can cause an increase in costs because different production methods have to be used for different standards (Stevens, 1993). Harmonization also prevents the use of environmental standards as a form of protectionism. Thus, harmonization of standards is seen to increase efficiency of production and to promote international trade.

From an economic point of view, there are some arguments against harmonization of environmental standards. Production standards are efficient when the marginal cost of reducing pollution is equivalent to the marginal benefit of gaining environmental improvements. Since the marginal costs as well as the marginal benefits are different in each country, uniform standards would lead to inefficiencies. The differences are caused by the following (Andersson, Folke, and Nyström, 1995):

- a) The environmental conditions differ from country to country. Every ecological system has a specific absorptive capacity of harmful chemicals. This depends on the soil composition, the climatic conditions, and the preexisting pollution.
- b) The costs needed to eliminate pollution differ between countries.
- c) The income and willingness to pay for a clean environment is different from country to country. In developing countries, for example, poverty can make people more willing to accept a higher amount of harmful chemical emission and a higher risk of pollution if this results in a higher income.

If environment is considered an input like labor and capital, then different social preferences for the environment and different amounts of natural resources result in comparative advantage or disadvantage. The harmonization of environmental standards would thus negate these differences and cause distorted comparative advantages. In this

context, the question arises whether individual countries are responsible for world wide environmental problems. A large portion of environmental damage can be traced back to the activities of industrial countries. Therefore, many experts argue that developing countries should receive financial and technical compensation to enable them to meet external environmental standards (OECD, 1994a).

Also, the question of sovereignty of countries within the context of environmental standards is often discussed. Many countries emphasize that every country must have the right within its own borders to determine its own environmental standards according to its preferences and needs, especially for those environmental effects that do not transcend national borders (WTO, 1996).

Apart from harmonizing environmental standards there are also efforts to unify testing methods for the acceptance of products. Unified testing procedures should help avoid market access barriers.

The above arguments indicate the need to find a compromise between the advantages and disadvantages of harmonizing environmental standards. The problems of harmonizing environmental standards and avoiding new trade barriers could be minimized if testing standards were mutually recognized in all countries. This would enable a country to keep its own standards adapted to its needs, but on the other hand prevent it from discriminating against products from countries complying with the accepted standards (UNCTAD, 1993). Completely identical standards would not be necessary, but different needs could be addressed with equivalent standards.

## **2.5. International Trade and Environmental Law**

The increase of international trade and, consequently, the increased incidence of trade conflicts, resulting from environmental standards and laws makes it even more urgent to develop international regulations to resolve such disputes. The World Trade Organization (WTO), the successor of the General Agreements on Tariffs and Trade (GATT), is the world's legal and institutional framework for global trade. Its main task is to liberalize the flow of commodities on an international level. Its functions are (GATT, 1995):

- to administrate and implement agreements of multilateral trade;
- to serve as a forum for multilateral trade negotiations;
- to supervise national and international trade policies; and
- to cooperate with other international institutions engaged in international economic policies.

Articles 1 and 3 are the core of GATT's statutes in promoting the liberalization of trade which in turn is expected to increase the standard of living and insure full employment worldwide (WTO, 1995). The first article which contains the "most favorite nation clause" states that equal products have to be treated equally by all countries of the GATT and that no country will be entitled to special treatment. Article 3 promulgates that foreign products have to be treated the same way as domestic products. Thus, trade policies have to apply to foreign and domestic products alike. Article 3 paragraph 4 explicitly states that the principle of equality must apply to all the regulations and laws of an entire country. Because of the potential conflicts between environmental standards and free trade, certain regulations within the GATT statutes address these problems. The exception stated in article XX, is of special importance. This article allows the introduction of trade

restrictions, even if they infringe upon other GATT articles, and if they protect political objectives considered more important than liberalized trade. Article XX implies that an individual country is allowed to protect its environmental, health, and security interests. Thus, trade policy measures can prohibit imports to protect the life and health of humans, animals, and plants or to protect non-renewable resources (GATT, 1995). An action must be considered as essential before article XX can be enacted. The justification of such an action is determined by GATT and depends on availability of alternative actions. A trade restriction is regarded as unnecessary if there are alternatives that do not violate the GATT statutes. According to GATT statutes, trade barriers introduced on the grounds of environmental protection have to be based on scientific merit. The GATT does allow standards to be set as long as they are valid for domestic products as well as imports. But it is much more problematic to set standards for production methods. According to the present GATT regulations, trade barriers can be based on environmental standards for products but not production processes (Vossenaar and Jha, 1995). Politicians are hesitant to allow trade barriers based on production processes because they fear this may be misused as protectionism (OECD, 1994a). The fundamental question is whether the items to be protected according to article XX have to be within the borders of the importing countries or not. This question is of particular relevance because the environmental effects of a production process usually affect the exporting but not the importing countries. This controversial question is clarified in the tuna-dolphin conflict between USA and Mexico. In this case, USA wanted to ban tuna imports from Mexico because the fishing methods used was held responsible for the deaths of dolphins. USA appealed to article XX(b) of the GATT statute, which allows trade barriers in order to protect the lives of humans, animals, and plants within the area of responsibility of the importing country. However the area in which the dolphins were killed were not in the area of responsibility of USA and therefore the case was lost (GATT, 1990).

There is no agreement between member countries of GATT on whether article XX only applies to items within the country enacting the trade barriers or beyond (WTO, 1996). It is imperative that GATT clarifies this matter.

## **2.6. Critical comments on the Subject of Trade and the Environment**

The topic of trade and the environment is hotly debated. Some regard the liberalization of trade as the most important measure to solve environmental problems in developing countries, since they regard poverty as the main source of environmental destruction (Eglin, 1993). Economic growth and technical development are, however, not the solution for environmental problems. The type of economic growth and technical development that takes place is extremely important. Whether or not liberalization of trade has a positive or negative effect on the environment depends on the institutional framework in which trade agreements are enacted. It is also advantageous for developing countries to internalize the environmental costs to have them reflected in the price of export commodities. Otherwise, they would have to shoulder the costs of health damages and the damage of the ecosystem that occur during the production process.

It is inevitable that in comparison to industrialized countries, developing countries face greater problems and that the negative effect on their competitiveness is more severe when environmental laws and standards are introduced. Because trade is often not the cause of environmental problems it is most important to internalize external effects at the source, i.e. in the production cost in the respective country. The question remains if it is not justifiable to introduce trade barriers for countries that do not internalize their

environmental costs. If trade barriers are the only practical solution to avoid environmental damage, then a second best solution may be better than a totally free trade (Lopez, 1992; OECD, 1994b). GATT even allows trade barriers under certain conditions to protect the environment. Nevertheless, there are still uncertainties on how to treat trade barriers based on production standards. These uncertainties need to be clarified to avoid more conflicts of trade.

### **3. A CASE STUDY ON THE TRADE OF TEXTILES BETWEEN INDIA AND GERMANY**

India has a population of 915 million, making it one of the most populated countries in the world. It also is one of the poorest countries in the world with an average per capita income of US\$320 in 1994 (World Bank, 1996). In what follows, the structure of the Indian economy with special emphasis on the textile sector will be presented. The effect environmental standards can have on developing countries' trade and economy and the problems environmental standards can cause will be illustrated by the textile industry in India and the textile importers in Germany. The different perspective of both countries regarding environmental standards will also be analyzed.

#### **3.1. Structure of the Indian Economy**

Until the end of the 80s and the beginning of the 90s, India's economic policy isolated the country from global trade and promoted import substitution. The economy was strictly regulated and trade with other countries was restricted by high import tariffs. As a result of an economic crisis in 1991, India began liberalizing its economy and lifted many trade barriers (Banerji, 1996). In the context of these reforms, India not only promoted production for the domestic market but also for exports to obtain the necessary foreign currency for development and investments. The textile market played an important role in this pursuit because it is a main source of foreign currency.

India's gross domestic product (GDP) has risen continuously during the past three decades. Between 1970 and 1975, the average per capita income was at US\$180, it rose to US\$280 between 1980 and 1985, and it reached US\$310 between 1988 and 1993. The average annual growth of the GDP was 2.9% between 1984 and 1994 and as high as 4% to 6% between 1992 and 1996.

During the last decades, the importance of the agricultural sector decreased while the importance of industry and service sectors increased. The proportion of the agricultural sector in GDP had decreased to 38% by 1980 and to 30% by 1994. On the other hand, the service sector increased from 36% to 42% and the industry sector from 26% to 28% in the same period (World Bank, 1996).

#### **3.2. The Indian Trade Structure**

Indian commodity exports grew from US\$8.6 million in 1980 to US\$25 million in 1994, which corresponds to an average annual growth rate of 6.3% between 1980 and 1990 and 7% between 1990 and 1994. Despite the fact that imports also increased over this period, it was still possible to reduce the trade deficit as the annual rise in imports was lower than that of exports (World Bank, 1996).

However, in the last decade, India's share in global trade has decreased. The share of the value of Indian exports in total world exports sank from 2.1% in the 50s, to 1.2% in 1960, and to 0.5% in 1990. Nevertheless, the total value of India's exports in absolute terms increased, but the growth was less than that of the growth in world exports. This explains the decreasing proportion in the world market as shown in Table 3.

Table 3: Indian exports

	1950	1960	1970	1980	1990
Indian export in % of world exports	2.1	1.2	0.6	0.4	0.5
Indian exports in million US\$	1146	1331	2026	8378	17814

Source: Parikh, Sharma, and Ghosh, Panda (1994).

The share of agricultural products in total exports has declined between 1950 and 1990 while the share of industrial products has increased as shown in Table 4. In the last decade, textiles have been among the three most important export commodities and, currently, it is the most important one. Textiles have a higher share of the world market than any other commodity India produces. However, India's share of the world market for textiles decreased from 4.1% in 1970 to 2.3% in 1980 and finally to 1.6% in 1990.

Table 4: Indian exports by major commodities in million US\$ (relative share (%) of total exports are in brackets)

	1960	1970	1980	1990
Agricultural products	596 (44.3)	644 (31.7)	2601 (30.7)	3521 (19.4)
Manufacturing products	610 (45.3)	1021 (50.3)	4738 (55.8)	13229 (72.9)
Textile (share of manufacturing products)	153 (11.4)	192 (9.5)	1179 (13.9)	3860 (21.3)

Source: Parikh, Sharma, Ghosh, and Panda (1994).

The OECD nations are the main importers of Indian textiles. With the USA, Japan and the United Kingdom at the top. Traditionally, Germany has been one of India's most important trading partners. The structure of the bilateral trade has the classical form of a trading relationship between industrial and developing countries. German exports to India are highly concentrated in capital intensive investment products of which 68% is machinery. India's main export products are labor intensive consumer goods, which make up 74% of the total exports. In 1994, textiles alone made up 76% of all consumer good exports (IKB Deutsche Industriebank, 1994). This shows how important textile export to Germany is for the textile industry and entire economy of India.

### 3.3. The Indian Textile Industry

The textile industry is the oldest and most important in India. The importance of the textile industry for the Indian economy can easily be shown by the following. Textiles make up

20% of all industrial production and 32% of the exported goods and the sector employs 26 million people (Verma, 1995). The biggest buyers of Indian-made textiles are the European Union, with Germany being the largest consumer within the EU, and USA. Together, these two nations import 70% of all Indian textiles (Iyer, 1992). The structure of the Indian textile industry is very heterogeneous. A number of small- and medium-sized, unorganized businesses exist parallel to a few well organized large businesses (Gangopadhyay, 1996). The small- and medium-sized enterprises play a significant role in India's economy. For decades, these enterprises have been promoted by the government to secure and establish jobs (Jaitle, 1996). Furthermore, small- and middle-sized businesses produced 32% of the total exports of the country between 1994 and 1995 (Das, 1996). To look at it another way, 90% of all textile exports are produced by the unorganized sector of small- and medium-sized enterprises (Vossenaar and Jha, 1996). This structure caused problems when environmental standards were introduced.

The textile industry is still one of the growing industries of the country (UNIDO, 1993). But until now, the exports of Indian textiles were limited by the so-called multi-fibre agreement that protects industrialized countries from cheaper textile imports. This agreement contains a quota regulation on textile exports for developing countries. In GATT negotiations, industrialized and developing countries have agreed on phasing out this quota regulation. Thus, India hopes that the exports of textiles will increase after the multi-fibre-agreement expires in 2005. When the multi-fibre agreement runs out, some people in India's textile industry fear that protectionist measures introduced by industrialized countries will shift from export quotas to non-tariff trade barriers such as environmental standards. In this respect, many manufacturers believe that the ban on "azo-dye" in Germany could become a major problem for India's textile industry (Jhaveri, 1995). Azo dye is a coloring substance used in the dyeing process that is held to be a cancer-causing agent.

### **3.4. The Azo-dye ban in Germany**

The amendment of §16 of the "German Consumer Goods Regulation" states that food and consumer goods as defined in §5 article 1 number 6 of the law may not be produced, imported, or sold after a certain period of time if they contain azo dye, because they can generate one of the forbidden azo-radicals listed in amendment 1 number 7 of this regulation. This amendment is called the azo-dye ban. According to this regulation, no clothes or bed-linen that is dyed with azo-coloring is allowed to reach the market in Germany. This law applies to domestic products as well as to foreign ones (TÜV Rheinland, 1995).

This ban was decided upon after lengthy debates. The increased awareness of the public on topics such as environment- and health-endangering textiles or rather the additives used for their production is because they are discussed in the media and in public. In 1992, an enquête-committee, "Protection of Humans and the Environment", from the lower house of the German parliament met to define the criteria by which substances were to be tested and to determine the possibility of developing an environmentally tolerant production cycle in the industrial society. The flow of certain products was studied to determine their ecological, economical and social impact. One of the three studies focused on textiles and clothes. After two and one-half years of research, many recommendations were given, and further measures and initiatives followed, all designed to protect the environment and health. Following are some of the recommendations of the committee (Deutscher Bundestag, 1994):

- to work out minimal international standards,
- to plant natural fiber with more respect to ecology,
- to introduce papers on ecological criteria accompanying textile products,
- to introduce an ecologically conscious customer-friendly labeling for textiles in the European Union (EU), and
- to develop a uniform EU-environmental symbol for textiles.

These recommendations indicate that German policies will promote the protection of the environment and health, which applies to the sector of textiles. It also can be expected that more laws will be introduced to regulate the textile industry in the future, mainly due to increasing public pressure. Furthermore, the textile industry is pressuring politicians to develop uniform international environmental standards. The German textile industry believes to be disadvantaged compared to foreign industries, because of the higher cost of adhering to strict local environmental standards. The environmental costs are estimated to equal 4.2% of the total investments in the German textile industry (Hartmann, 1993).

In addition, the consumers increasingly demand textiles that do not contain substances that are dangerous to the environment or health. Many publications have helped sensitize the public in this matter. For example, in the *Frankfurter Allgemeine Zeitung*, the Federal Institution of Health promulgated that criteria for the use of chemical substances, such as dyes and additives in clothes, should be enforced and uniform for all of Europe. The article also warns consumers that imported textiles may not meet strict German standards. A French article titled “The Hidden Dangers of Textiles from the Third World” in *Midi Libre* (February, 1996), warns that many textiles imported from developing countries contain dyes which are dangerous to health. The list of publications in the German and European press on the subject is endless. The two citations are just examples of how the press relates textiles to health and environmental risks, and the way in which this matter is being discussed. Textiles imported from developing countries are especially criticized for being a health risk.

Textile firms and trading houses in Germany demand a minimum of ecological standards, which foreign producers must fulfill. These demands even exceed the national environmental laws on textiles. The biggest clothing firm, The Steilmann Group, in Europe wants to inaugurate strict environmental standards for their entire collection. These standards are also to apply for all imported textiles (*Frankfurter Allgemeine Zeitung*, 1996). Germany’s biggest ecological mail-ordering house, Panda mail order, a subsidiary of the World wide Fund for Nature (WWF), advertises along with other environmental criteria that all of their offered textiles are free of azo-dyes (WWF, 1996).

Even in catalogues of conventional mail ordering houses such as Otto and Quelle, ecological criteria are becoming more and more important. These mail ordering houses have set up a department for environmental regulation. The ecological standards do not only apply internally but also to imported textiles. These companies have developed ecological standards such as the “eco-tex standard 100” and other standards, containing upper limits of dangerous chemical substances that have to be met for textiles to obtain an environment-friendly stamp or to be taken into the collection. German textile traders insist that environmental standards which exceed the legal norms are necessary to meet the demands of environmental-conscious consumers. Furthermore, the German textile industry will put more pressure on politicians to pass stricter environmental regulations for textiles at the international level.

The ban of azo dyes is a legal regulation that was introduced because azo-dyes can potentially split into carcinogenic amides, when tested in animals (Rosenkranz, 1993). The results of these tests show that azo-dyes are most dangerous to people working with azo-dyes. Therefore, German dye factories voluntarily refrained from using azo-dyes in the last years (Moll, 1993). Thus, German factories had timely adjusted to the new binding regulation, and so it did not affect their production costs drastically. A time advantage producers in other countries did not have.

Whether wearing clothes dyed with azo-dyes is dangerous to human health has not been proven with certainty. However, this risk has not been excluded. The ban on azo-dye in Germany also affects many other countries because Germany imports 85% of its textiles.

The second regulation, that is, the Consumer Goods Regulation (azo-dye ban), became effective 16<sup>th</sup> July, 1994. The law states that consumer goods (e.g. clothes) containing azo-dye were not allowed to be produced after 31<sup>st</sup> December, 1994 and were not allowed to be imported or sold after 1<sup>st</sup> July, 1995. If producers failed to meet these requirements, they were to be fined. This procedure puts the responsibility on the domestic industry to ensure that imported products do not contain azo-dyes (Ohles, 1995). The Technical Control Board Rheinland advises the industry to adhere to the following steps to prevent damage claims (TÜV Rheinland, 1995):

- a) to analyze one specimen of textiles for azo dye,
- b) to keep records on purchasing and delivery contracts,
- c) to list the suppliers according to qualification and reliability, and
- d) to demand certification from recognized testing institutes.

The above mentioned deadlines were extended as the development of certified testing procedures proved to require more time. The deadline for the ban against imported textiles containing azo-dyes was postponed by six months and then again for nine months. It was not until after the fifth change, allowing for exceptions under certain conditions, did the ban become law on 17<sup>th</sup> April, 1997. The repeated postponements of the ban shows the difficulties of domestic and foreign producers to meet these regulations.

According to the International Trade Agreement, the ban on azo-dye is an acceptable measure within the GATT. Article XX in the GATT can be applied because the ban was implemented to protect human health. Furthermore, the ban does not discriminate against the origin of products because it applies equally to domestic and foreign products (see chapter 2.5. of International Trade and Environmental Law). The ban is not only justifiable within the framework of international trading laws but conforms to the opinion of the German public and government to protect the environment and their health (Handelsblatt, 1996).

The next section will discuss India's reaction to the regulations mentioned above, and then suggest measures for a solution.

### **3.5. Consequences for the Indian Textile Industry**

For quite a while now, the Indian press have been discussing the effects environmental standards designed by industrial countries will have on the domestic economy. The environmental and health effects, however, have not been discussed as extensively as the economic effects. Thus, the information on health and environmental risks is not as



widespread as in Germany, for example. The health risks of workers handling azo dyes are therefore not discussed here. Nevertheless, health problems occur but they are often not taken seriously, mostly because of the lack of information. Therefore, when discussing the negative economic effects in India, one should also bare in mind that the environmental standards can have positive health effects.

The economic impact of the ban of azo-dye on India's textile industry will be significant, since about 20% of all dyes used in the Indian textile industry are azo-dyes (Vossenaar and Jha, 1996). These types of bans are often regarded as hidden protectionism and heavily criticized in the Indian press. In the Economic Times, an article entitled "German Bans Hinder the Exports of Indian Textiles" was published on 18<sup>th</sup> August, 1995. The article points out that German textile purchasers do not order textiles produced in India anymore because Indian manufacturers cannot guarantee fabrics that are free of azo dyes. In another article of the same paper published on 6<sup>th</sup> June, 1995, a representative of the Indian textile industry accuses European countries of trying to achieve an advantage over less expensive Asian competitors through the ban on azo dyes. In another article published on 28<sup>th</sup> August, 1995, industrial countries were accused of pressuring India to liberalize their economy while they introduce non-tariff trade barriers in the form of environmental standards.

The ban on azo dyes has affected the Indian textile industry to various degrees. The effect depends on the financial strength of the business, access to information on these standards, technical knowledge, cooperation with importers, availability of alternatives, and access to fabric analyzing institutions.

Large textile companies in India usually work closely together with German companies and have been informed about the ban well ahead of the deadlines. These companies had few problems to adapt their production to the environmental standards. They have the financial means and technical know-how to adapt their production and the ability to import alternative resources. Large enterprises also have few problems to get their products certified as they have access to analyzing institutes.

On the other hand, the impact on small enterprises is much more severe. The numerous regulations can be an insurmountable trade barrier, which can result in a great loss of export markets. The main problem small- and medium-sized enterprises face is poor understanding of environmental issues, lack of information on international environmental regulations and limited technical know-how. Furthermore, these enterprises usually do not have access to textile analyzing laboratories. However, because the small enterprises make up a large part of the textile sector, experts estimate that the ban on azo-dyes affects 50% of all textiles exported from India (Jhaveri, 1995).

Many German importers of textiles demand that the suppliers certify that their textiles are not dyed with azo-coloring. However, in India many small enterprises are in rural areas and have no access to textile analyzing laboratories. As a result, German importers do not purchase textiles from these companies but will opt to buy from large businesses (Jhaveri, 1995).

Small enterprises often have problems in trying to purchase environment-friendly inputs. It will take some time until the domestic market in India will be able to supply substitutes for azo-dyes. In most cases, small businesses are unable to import substitutes and therefore can not meet the standards. Dyes that can substitute azo-dyes are much more expensive than azo-dyes. This, of course, gives companies little incentive to use substitutes. Only if

businesses are informed in due time that textiles dyed with azo-dyes are banned from the export markets will producers be willing to use substitutes.

In India, most small textile companies do not even know that azo-dyes are banned in Germany. Because these companies do not have direct contact to importers, the Indian Government is responsible for informing them about European environmental standards. Often, there is considerable time lag for information to reach small enterprises in rural areas. As small businesses in India are usually not organized in associations, it is difficult for the Government to reach them individually (Das, 1996).

Even if the information transfer issues are solved, there is still the problem of lack of technical knowledge and financial means. Most people working in small textile businesses do not comprehend the actual problem, because they only have very limited technical knowledge. This largely explains why small enterprises may not be willing to change their ways of production even if they know about the ban on azo-dye. Therefore, it is necessary to help small entrepreneurs through information and training campaigns to fully understand the impact of the azo-dye ban, otherwise they would be excluded from export markets in industrialized countries.

### **3.6. Measures of the Indian Government**

As the ban on azo-dyes affects primarily small businesses, it causes a social dilemma. If workers of small textile companies lose their jobs, they often also lose their only source of income. To tackle this challenge, the textile industry and the Government are working on measures to eliminate or at least alleviate the problems of the ban on the small-scale textile sector. The Ministry for Textiles has developed an information program targeted at small businesses about environmental problems and laws. The Small Industries and Development Bank has also organized programs to improve the environmental awareness of small businesses (Jaitle, 1996). It is also of great importance that the Government provides laboratories with certification capacities. Additionally, India must guarantee foreign purchasers that the certification of environmental quality meets internationally accepted standards and is reliable. The Government has already suggested to build 26 new laboratories in addition to the 36, which already exist and benefit, primarily, small businesses (Jaitle, 1996).

Internationally, Governments and industry associations should aim to improve the cooperation between trading partners in order to inform all parties in due time about legal regulations. The cooperation between the Indian government and the industry could ameliorate the consequences for manufacturers. In a meeting held in February, 1995, representatives of the Indian Embassy and German textile importers discussed how Indian textile manufacturers could be educated not to use azo-dye (Economic Times, 1995). Furthermore, India has organized an environment information system that collects information on foreign environmental laws and regulations to be made available to the respective companies.

To inform businesses about environmental laws and standards as early as possible is imperative to enable them to adapt their production and to prevent unforeseen trade barriers. In addition, small enterprises must receive financial and technical support to help them understand and comply with environmental regulations. Thus, to a large extent, technical and financial cooperation between India and Germany can be instrumental in resolving transition and adaptation problems.

#### 4. CONCLUSION

In industrial countries, environmental standards are going to become increasingly important in the future. The pressure on manufacturers to comply with higher environmental standards as the public's sensitivity towards pollution and health issues is on the rise.

The case study on India demonstrates how far-reaching the consequences of environmental standards, such as the ban on azo-dye, can be. Because of the special structure of the Indian economy and the great importance of the textile industry, the ban on azo-dyes caused significant problems, particularly for small- and medium-sized producers in rural areas.

For developing countries like India, there are two possible ways to cope. They can react defensively and try to hinder and delay the introduction of such standards or they can cooperate with representatives from the import markets. In cooperating, they have a better chance to influence and help in the design of standards and inform domestic manufacturers early so that they can adapt to the regulations. Developing countries that opt for the cooperation strategy are likely to be much more successful in export markets, compared to those with a defensive strategy. It is also advisable for developing countries to develop markets for eco-products as an opportunity rather than a threat. Countries that lead in meeting the demands of "eco-consumers" will have a competitive edge over their competitors. As an example, India could change from a low-priced textile exporter to a high quality supplier. This export strategy is supported by a study on the possibilities of development for the Indian economy which states: "... the Indian textile industry should improve the quality of their products and find itself a niche in the world market of textiles. The crucial factors to achieve this is a large amount of flexibility and a better reputation" (Gangopasdhay, 1996).

On the other hand, industrial countries need to recognize the fact that adaptation to new standards is more difficult for developing countries. As this paper has pointed out, environmental standards can cause severe problems in less developed countries compared with developed countries. In order to enable developing countries to maintain their competitiveness in the export markets of wealthier nations, it is necessary to inform them early enough about environmental standards. Industrial countries should support developing countries financially and technologically to enable them to adapt to the environmental standards.

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