

RIS DISCUSSION PAPERS

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Measures in the European Union Implications
for South Asian Exports**

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Analysis of Environment related Non-Tariff Measures in the European Union

Implications for South Asian Exports⁺

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I. Introduction

A major issue relating to trade and environment is the manner in which developed countries use “environment” as a protectionist measure in international trade. Such protectionist measures usually called “Green Protectionism” has many dimensions in trade (Esty, 1994). It is argued that while tariffs have declined as a result of liberalisation process, the environmentally related non-tariff measures (NTMs) and other technical standards have emerged as significant factors in determining world trade.

There are three important consequences of “green protectionism” on trade prospects of developing countries. First, many of their export commodities will face entry barriers to important markets in the form of higher environmental regulations, process and production methods (PPMs) or certification schemes. Second, adjusting to higher environmental standards will make their economies less competitive in overseas markets since the ability of developing countries to implement environmental standards set by foreign markets are limited either by financial and technical constraints or by the size of the domestic demand for environmentally friendly products. Third, differences in environmental standards will cause relocation of “dirty industries’ from developed (with higher environmental standards) to developing (with lower environmental standards) countries.

The United Nations Conference on Environment and Development (UNCED) – Rio Earth Summit- held in 1992 fully recognised the role of trade in economic

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development but cautioned about the damaging effect of trade due to the unsustainable utilisation of natural resources and environment (UNCED,1992). The Earth Summit influenced the process of trade liberalisation during the Post-Rio Period. The establishment of Committee on Trade and Environment (CTE) is an important decision taken in the Ministerial Meeting of UR held at Marrakesh in 1994. When WTO was established in 1995, both environment and trade communities were very much keen to know the work programme and activities of CTE. The committee held discussions on it's identified 10 items on trade and environment but could not come up with any amicable solution so far. The CTE noticed that the issues on trade and environment are complex. Subsequently, the discussions at CTE were based on "cluster approach" under the two themes of (i) Market Access and (ii) the linkages between the multilateral environment and trade agendas (WTO,1999). India and many other developing countries opposed any attempt to include non-trade issues such as environment and labour in the negotiating framework. However they had to compromise this with EU and other developed countries in the fourth Ministerial Meeting of WTO held at Doha in 2001 when the decision was taken to begin negotiation on selected issues on trade and environment.

Market access is an important issue of the developing countries. The environmental standards in developed countries are very high. Further, many of them have increased their environmental standards and other measures in the recent past. The higher environmental standards in developed countries are not found to be adversely affected their trade. But it is a matter of concern for the developing countries especially for Small and Medium scale Enterprises (SMEs) in those countries. The problems include additional costs and lack of environmentally friendly technology in complying such standards.

Of various studies available on trade and environment, a few of them have addressed the issue of environmentally related non-tariff barriers in developing countries trade (Dean et.al. 1992, Jaffee et.al. 1995, Manoharan et.al 2000). Sorsa (1994) while analysing environmentally sensitive products found that between 1970 and 1990, the developing countries' share in the imports of environmentally sensitive commodities (ESCs) has declined in the selected European countries. UNCTAD initiated a number of case studies in the developing countries to understand the linkages between trade and environment. Such studies pointed out that environmental standards affected adversely to many export oriented sectors such as textiles, chemicals, leather, marine products. The small and medium scale enterprises (SMEs) face more difficulties when compared to big companies and multinational corporations (MNCs) (Jha, 1997).

1.1. NTMs in the European Union and South Asia's trade: some key questions

The formation of the European Union (EU) in the early Nineties created high hopes among developing countries including South Asian countries that the new regional trading arrangement (RTA) would improve market access of extra-regional countries in view of the expanding market of the Union. Against such expectations, the net increase in the levels of trade of the South Asian countries with the EU has been dismal. It is the feeling of the regional countries of the South Asian that the persistence of peak tariff, specific tariff, tariff escalation and non-tariff measures (NTMs) have significantly eroded the prospects of the South Asian exports to the EU. Besides these measures the environmentally sensitive NTMs have to a large extent constrained the market access of South Asian countries in the EU. The complexities involved in both trade and non-trade barriers raise number of issues for discussion in the context of trade prospects of South Asian countries in the EU. The possible concerns in this regard are:

- Is the tariff structure of the EU invariably low across the product groups or the average level of tariff in different product groups varies significantly from one sector to another, thus, allowing for discrimination in the level of protection between sectors ?
- To what extent imports of the Union are protected by NTMs and the role played by environment-related NTMs in affecting export prospects of South Asian exports in the Union.
- What is the coverage of specific tariff in the customs tariff of the EU?
- Is it the case that the specific tariffs combined with NTMs have downsized the level of market access of extra-regional trading partners including South Asian countries in the EU?
- What are the prospects of improving South Asian exports to the EU by giving priority to regional countries over its competitors in the trade of those commodities, which are subject to environment-related NTMs?

The important issues faced by the exporters of developing countries on market access, as reported by UNCTAD are: lack of timely and accurate information, lack of scientific data for specific thresholds or limit values, inconsistent application of procedures, uncertainty due to rapidly changing environmental and sanitary requirements in overseas markets, varying standards and regulations in different markets and the costs and difficulties of testing and verification procedures.

The main objectives of the present study are the following:

- (i) To examine the coverage of the environment-related NTMs in different product groups of the EU's imports, and the role of other NTMs in limiting the market access of developing countries.
- (ii) To analyse the structure of ad valorem tariff and specific tariff in different product categories of the EU.
- (iii) To examine the linkages between TBs and NTMs in protecting the EU market and its implication on the export prospects of South Asian countries.

II. Environment related NTMs

Developed countries have imposed a number of environment related NTMs to regulate trade. The analysis of such NTMs is difficult because the available sources such as TRAINS data base of UNCTAD, do not provide information on environment related NTMs as a distinct category. The list of NTMs provided by TRAINS is too aggregate in many countries especially USA where only four NTMs are provided in the list. This makes difficulty in identifying and analyzing environment related NTMs. Therefore, we have restricted our study only to European Union and carried out the analysis on the basis of available information from TRAINS data base.

In this study we have selected EU because of two reasons. First, EU market is a major and important market for the South Asia. Second, the availability of data base on some of the environment related NTMs, is better in the case of EU.

Of the available information on 16 NTMS in EU, three are seen to be imposed exclusively for environment purposes . They are: (i) Prior authorisation as per CITES (code:110), (ii) Quota in relation to Montreal Protocol (code:113) and (iii) Prohibition for environmental protection (code: 114). Therefore, these three are taken as environment NTMs in the present study. NTM for product characteristic requirements for health (116) is also taken into consideration because health and environment are closely interrelated. A description on these NTMs is given in the Table1.

The first two ENTMs are based on Multilateral Environmental Agreements (MEA) viz., Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and Montreal Protocol.

II.1 CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was concluded in 1973 and entered into force in 1 July 1975. Having

the current membership of 132 countries, it established the legal framework for regulating trade in endangered and other species globally.

The four Appendices to the convention form the basis for implementation of the treaty. The first three Appendices list species for different levels of trade restriction on each category. Appendix IV makes provision for the issue of permits for international trade in the species listed on the three Appendices. The Appendices are amended at least in every two years, in accordance with procedures and criteria set forth in the treaty and through resolutions adopted by the Conference of the Parties at their biennial meetings.

Appendix I shall include all species threatened with extraction that are or may be affected by trade. Trade in specimens of these species must be subject to particularly strict regulation in order to endanger further their survival and must only be authorised in exceptional circumstances. Appendix I contained about 450 species in the majority being well known endangered animals such as Elephant, Lion, Tiger, Cheetah, Leopard and Sloth bear.

Commercial trade in Appendix I species is prohibited and non- commercial trade is allowed only in exceptional circumstances provided it will not damage their chances for survival. For all transactions in the Appendix I species an export permit from the country where the wildlife originates or re-export certificate from the re-exporting country, and an import permit from the recipient country is required. The import permit must be issued before any transaction involving the Appendix I species can occur.

The import permit can be granted only if. (a) the importation will not be for purposes detrimental to the specie's survival, (b) the importation will not be primarily commercial and (c) if live wildlife is involved, the specimen be assured of a suitable home.

The export permit can be issued only if (a) the wildlife was obtained legally, (b) the wildlife will not be harmed during shipping and (c) an import permit has already been granted.

Appendix II shall include: all species that although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilisation incompatible with their survival; and other species that must be subject to regulation in order that trade in specimens of certain species referred to in the above sub- paragraph may be brought under effective control.

CITES permits commercial trade in Appendix II species only if the country of origin has issued an export permit or a re-export permit unless the proper government agency has certified that the export will not be detrimental to the species survival.

Import permits are not required. Appendix II is much larger than Appendix I and contains more than 2300 animal's species and over 24,000 plant species. The larger size of Appendix II is because whole families of species are listed in the Appendix where as in Appendix I individual species are listed.

Appendix III shall include all species that any Party identified as being subject regulation within its jurisdiction for the purpose of preventing or restricting exploitation, and as needing the co-operation of other parties in the control of trade.

Thus CITES gives parties the option of listing under this Appendix native species that are already protected within their own borders. Operation in enforcing their own wildlife trade regulations. So if a country lists species under Appendix III and which is not listed under any other Appendices it then implies that trade in that particular species is regulated in that country and import of that species or its parts from that country is illegal without a CITES export permit issued by the Management Authority of that Country. Trade in Appendix III species thus requires an export permit from the listing country or a certificate of origin when the specimen is exported from other countries. The parties shall not allow trade of specimens included in the three Appendices except in accordance with the provisions of the Convention.

II.2 MONTREAL PROTOCOL

The Montreal Protocol on Substances that deplete the ozone layer was finally agreed upon on 16th September 1987 at the Head Quarters of the International Civil Aviation Organisation in Montreal, and came into force on January 1st, 1989. Currently , 172 countries have signed the Protocol.

The basic objective of the Protocol to protect ozone layer through control of substances that deplete ozone layer in a manner that is likely to result in adverse effects on human health and the environment. The measures taken for this purpose should be based on relevant scientific knowledge, taking into account technical and economic considerations.

In this regard, the developmental needs of the developing countries is also taken care of. Article 2 of the Protocol describes about control measures to be taken against global emissions of selected chlorofluorocarbons (CFCs) and other substances such as halons, carbontetrachloride, trichloroethane, hydrochlorofluorocarbons and methyl bromide listed in Annexes A,B, C and E. Annexure A provides eight substances of which 5 in Group I and the remaining in Group II. The ozone depleting potential is also given in the annexures. The ozone depleting potentials are estimates based on existing knowledge and will be reviewed and revised periodically. Annexure B contains a total of

12 substances in three groups of which twelve are in Group I and the remaining two are distributed one each in the other two groups. Annexure C contains 74 Substances of which 40 are listed in Group I and the remaining in group. Annexure E has one substance which is methyl bromide having ozone depleting potential of 0.6.

Annexure D provides list of products containing controlled substances specified in Annexure A. About six product categories are given in this Annexure. They are:

1. Automobile and truck air conditioning units (whether incorporated in vehicles or not)
2. Domestic and commercial refrigeration and air-conditioning / heat pump equipments. (Examples Refrigerators, Freezers, Dehumidifiers, Water coolers, Ice machines, Air conditioning and heat pump units, etc.)
3. Aerosol products except medical aerosols
4. Portable fire extinguisher
5. Insulation boards, panels and pipe covers
6. Pre-polymers

In the case of CFCs, Article 2A1 says: " Each part shall ensure that for the twelve month period commencing on the first day of the seventh month following the date of entry into force of this Protocol and in each twelve month period thereafter, its calculated level of consumption of the controlled substances in Group I of Annexure A does not exceed its calculated level of consumption in 1986. By the end of the same period each party producing one or more of these Substances shall ensure that its calculated level of production of the substances does not exceed its calculated level of production in 1986, except that such level may have increased by no more than ten per cent based on the 1986 level". For developing countries " such level may have increased by no more than ten per cent based on the 1986 level".

The second, fourth , seventh and ninth meetings of the Parties of Montreal Protocol took more stringent measures on emission levels. Para 4 of Article 2A says" Each party shall ensure that for the twelve month period commencing on 1st January 1996, and in each twelve month period level of consumption thereafter, its calculated level of consumption of the controlled substances in Group I of Annex A does not exceed zero. Each party producing one or more substances shall, for the same periods, ensure that its calculated level of production of the substances does not exceed zero". For developing countries, considering their domestic needs, the calculated level of production may exceed that limit by up to fifteen per cent of its calculated level of production in 1986.

The non-tariff measures applied by EU on the basis of Montreal Protocol will be covered for more products in the coming years. Though developing countries have

given special provision in the Protocol, the effect of the Protocol on trade prospects of developing countries needs to be fully addressed.

While the NTMs on the basis of Montreal Protocol and CITES are imposed as a result of Multilateral Environmental Agreements, a number of restrictions and prohibitions are made on several important product categories on the basis of environmental grounds. This includes restrictions on the use of certain chemicals, packaging requirements, etc.

II.3 PROHIBITION FOR ENVIRONMENTAL PROTECTION

EU imposed import prohibition for a variety of products for environment protection. Imports of ozone depleting substances such as CFCs and Halons from countries which are not parties to Montreal Protocol are prohibited. A number of chemicals and other substances which affect public health and environment are prohibited. This includes PCBs and PCTs (concentration exceeding 0.005% of weight), Benzidine, 4-nitrobiphenyl, 4-aminobiphenyl, paints which contain neutral anhydrous carbonate, lead hydrocarbonate and lead sulphates, certain antifouling paints containing mercury compounds, arsenic compounds, and organostannic compounds and wood preservatives.

EU prohibited the use of cadmium and its compounds as pigment or stabilizer in the products such as packaging material, fittings for furniture, clothing and accessories, etc. Similarly, the marketing and use of all plant protection products is prohibited. Imports of skins of certain animals such as beaver, otter, wolf etc and the products derived from those skins are also prohibited.

II.4 PRODUCT CHARACTERISTIC REQUIREMENT FOR HEALTH

EU has taken various measures for health and sanitary conditions for the products imported. For instance, imports of fresh, chilled, frozen meat/fishery products to the EU should meet certain health and hygiene standards. These imports should come from EU-approved establishments (premises where products are prepared, processed, chilled, frozen, packaged or stored). The imports should bear an animal health certificate and public health certificate drawn by an EU-approved official veterinary authority of the exporting country. Meat products should bear a "Health Mark". Imports of these products as well as of fresh fruits and vegetables are subject to inspection upon arrival in to EU. A number of health and quality conditions are made for food products and non-food products having direct influence on human health. A good number of products such

as soap, cosmetics, toilet preparations, fertilizers, pesticides, detergents, medicines, plastic packaging for food etc. are subject to these requirements.

III. Methodology

In view of the broad objectives of the study we have used TRAINS database for the empirical analysis. The study requires data pertaining to different types of NTMs (separate for environment-related, trade related and health-related), MFN *ad valorem* tariffs and specific tariffs in the EU.

For the present study, we are using trade, ad valorem tariff, specific tariff and NTMs of the EU for examining the relationship between these variables in providing effective protection to the domestic sector of the Union. While NTMs, ad valorem tariff and specific tariffs are presented at the national lines, bilateral trade data are given at the HS sub-heading level. The level of desegregation associated with national lines varies from one country to another. The EU defines its national lines at 8-and 10-digit level. Combining both 8-to 10-digit HS level products, the EU has as many as 14251 national lines. While most of the products are defined at 8-digit HS level, some of them are defined at more desegregated level of 10-digit level. However, bilateral exports of the EU are given at 6-digit level. In 1997, the EU imported as many as 5106 products at 6-digit level from the global economy.

It is evident from the literature that the level of NTMs increased by many-folds, particularly in the post-Uruguay Round period in comparison with the pre-negotiation period. We are unable to examine the position of pre-and post-Uruguay situations due to lack of information regarding NTMs during the pre-URTN period. Therefore, our analysis is mostly restricted to cross-section analysis, based on most recent year data. We have used TRAINS, winter 1998, UNCTAD, CD for the present study. While the latest trade data is available for 1997, NTMs, ad valorem tariff and specific tariffs are given for the year July 1998. Despite of data constraints, we have taken the latest data available for this study. The individual member countries in the EU use several NTMs and many of them are neither consistent regionally nor compatible to the WTO framework¹.

It is an intricate task to combine trade, NTMs and customs tariff in one place because the reported data are not provided by the UNCTAD or any other Multilateral Agencies at a given level of aggregation. While data on TBs and NTMs are available at national lines, trade data are in HS 'sub-heading level. Moreover aggregation of custom

¹ Such measures have adversely affected trade prospects of South Asian countries. For example Germany required for the use of a specific type of dye in carpet for import, and this unilateral policy had adversely affected export prospects of some of the South Asian countries. We are, in fact, looking for such type of NTMs for the study. Due to lack of information on specific NTMs, we are restricting our analysis only to the available information.

tariff rates may be unrealistic for negotiation purpose and the underlined danger of lose of information. However we have tries to combine trade, tariff (both ad valorem and specific) and NTMs in a single spread sheet. However, attention has been made to minimise loss of information. The purpose of this exercise is to analyse the extent to which environment-related NTMs affecting export prospects of South Asia in the markets of the EU.

In the first place we have attempted to map EU's tariff, specific tariff and NTMs at the most desegregated product level (both at 8-and 10-digit level), since these variables are defined at the national lines. It is found that many products at the national lines are subject to either single or multiple NTMs.

The TRAINS² database provides information for sixteen types of NTMs, for the EU. From the total of sixteen³, three of them are environment-related, one is health-related and remaining eleven are trade related NTMs. All the three environment-related NTMs are WTO compatible. They are: a) Prohibited under CITES (code 110); b) Prior authorisation required under Montreal Protocol (code 113) and; c) prohibited due to environmental reasons (code 114). The number of products falling under CITES is relatively much larger than those of other two types of environment-related NTMs.

We have analysed information provided in the TRAINS database in two phases. In the first phase, we have mapped ad valorem tariff, specific tariff and NTMs for each national line separately. Occurrences of both environment-related, health-related and trade-related NTMs across the product lines are mapped separately. For these groups of NTMs, frequency⁴ ratios are estimated separately.

In order to converge TBs and NTMs data with the trade data, we have taken aggregated figures of the NTMs and tariff data at the 6-digit level. We have estimated frequency ratios⁵ and average tariff for each product line at 6-digit HS level. Very often, we find difficulty in computing average tariff for each product at 'sub-heading' level because of 'specific tariffs'. We have also estimated frequency ratios separately for environment-related NTMs, health-related and Trade-related NTMs.

² We refer to Winter 1998 version of TRAINS, UNCTAD.

³ A detailed discussion on the nature of NTMs in the EU is given in Section 2.1.

⁴ The frequency of NTMs of a HS product line indicates number of times different NTMs are against a product invoked by the importing country. For example, against the national line 'bromochloromethane" (HS 2903498010), the EU imposes two environment related NTMs namely, Montreal protocol and prohibition in 1996. Therefore the frequency of the product line is equal to two. For other product lines, Frequency lines are estimated in a similar manner.

⁵ Frequency ratio of a broad product (at 6-digit level) is the ratio of number of micro-products (at national level) subject to one or more NTMs to total number of micro-product lines (at national level) falling under the same broad product (at 6-digit level).

IV. Results

In the post-Uruguay Round of Trade Negotiations, the agricultural sector continued to be one of the most protected areas of trade⁶ in developed countries, and this has been more so in the European Union. The protection of the agricultural sector is not only significant in terms of coverage of products but also in terms of intensity⁷ of protection. The incident of NTMs is relatively much higher in the agricultural sector than that of the industrial sector. It is observed that both environment-related and health-related NTMs are more predominantly present in the primary sector as compared to the manufacturing sector. About half of total number of agricultural products and one tenth of total manufacturing products are subject to one or other forms of NTMs as shown in Figure 1. While 1910 product lines are subject to single or multiple NTMs out of 4043 agricultural products, only 1016 product lines are subject to NTMs out of 10208 manufacturing products.

The extent to which different product groups are affected by the NTMs is examined by the frequency ratio. Table 2 presents number of national lines subject to environmental, trade and health related NTMs and the frequently ratios in the EU. It is interesting to note that both environmental and trade related NTMs are simultaneously invoked in both agricultural and industrial sectors, but the health related NTMs are imposed in the agricultural sector. In terms of coverage of products, both environment-related NTMs and health related NTMs are mostly concentrated in the agricultural sector. The number of products under each of these broad group of NTM is quite substantial in comparison with total number of products imported in the agricultural sector. Total number of products covered by environment related and health related NTMs constitutes almost two third of total number of products subject to trade related NTMs in the agricultural sector. The situation in the manufacturing sector is different from that of agricultural sector. The number of lines subject to the environmental related NTMs constitutes almost one third of that of trade related NTMs in the manufacturing sector.

In the literature, frequency ratio is very often used as an index for measuring the extent of protection conferred to import through NTMs. The effectiveness of a specific

⁶ Protection is referred here to denial of market access through different forms of NTMs, but not to customs tariff.

⁷ When a specific product is covered by one type of NTMs, the import of the product is restricted to some extent by the importing country. But when the same product is subject to several types of NTMs, the possibility of import of the same product is severely affected. In other words, market access of the specific product is denied by multiple conditions attached in the form of one or another NTM. Therefore intensity of NTMs increases when more number of NTMs are invoked for one line of product. The possibility of having market access declines when intensity of NTMs increases.

NTM, particularly in terms of import restraining capacity, may be difficult to ascertain. It may vary from one type of NTM to another in an importing country.

Therefore, ordering of NTMs on the basis of their effectiveness in a country is generally not seen in the literature. In the absence of quality-related NTMs analysis, frequency ratio is very often used to examine the coverage of the products in different sectors.

It is estimated that the overall frequency ratio of the EU is 20.5 per cent in 1998, thereby indicating that one fifth of the EU's National lines (for imports) is subject one or multiple NTMs. The results show that the level of frequency ratio varies (overall frequency ratio and environment related frequency ratio) significantly from one sector to another (for details see Figure 2.)

In agriculture, all the broad categories except animal and vegetable fats and oils (HS Section III) are extensively protected by NTBs. In the industrial sector only three broad product categories are strongly protected, and those broad groups are: raw hides and skins, leather, etc. (HS Section VIII), footwear, headgear and umbrella (HS Section XII), and base metals & its associated products (HS Section XV). The recent study of Mohanty (2001a, 2001b), Mehta and Mohanty (1999) shows that most of these products are of interest to India's export to the EU.

Decomposition of overall frequency ratio into environment-related, trade-related and both environmental & trade-related indices shows interesting results. It is observed that against large number of products, both environmental and trade related NTMs are invoked simultaneously in the agricultural sector. There are about 275 such products which are identified in the agricultural sector. On the contrary, only 197 items in the same sector are subject to only environmental NTMs.

Though environment-related NTMs are WTO-compatible, but they are very often being used as an effective instrument to restrict market access other countries in the EU. Detailed results by HS chapters are presented in Table 3.

As mentioned earlier, out of the three types of NTMs concerning environment-related issues, CITES covers more than 97 per cent of total number of ES-NTM products as shown in Table 4. It is interesting to note that simultaneous application of various ES-NTMs on individual commodities has been very few in number. The results indicate that the quota under Montreal protocol and other environment-related prohibition are jointly triggered against twenty chemical products. The trade control under CITES are invoked against other group of products which are both in the agricultural and manufacturing sectors. Out of 739 products subject to CITES, about 85 per cent of them are concentrated in only four major product groups (HS sections). The CITES are very

frequently used in product groups like live animal & animal products (section I), vegetable products (section II), raw hides and skins (section VIII), and footwear, headgear, umbrellas, etc. (section XII).

The disaggregated analysis shows that environment-related NTMs is mostly concentrated in few broad product groups as identified in Table 4. The detailed analysis on the concentration of environment-related NTMs is presented in Table 5. As mentioned earlier, agricultural sector is more protected than manufacturing sector, and within the agricultural sector, some broad product segments are more heavily protected than others. Some of the heavily protected areas in the agricultural sector are: live animal (Chapter 1), meat and edible meat offal (Chapter 2), fish and crustaceans (Chapter 3), live trees and other plant bulb (Chapter 6) and preparation of meat and fish (Chapter 16). Among the non-primary product categories, some of the highly protected product segments by the environmentally related NTMs are raw hides and skins (other than furskins) (Chapter 41), articles of leather (Chapter 42), furskins and artificial fur (Chapter 43), wood and articles of wood (Chapter 44) and footwear, gaiters etc. (Chapter 64). These products constitute more than 88 per cent of total number of products subject to CITES related NTMs. In total, 11 chapters are affected by environmental NTMs in the agricultural sector and, 18 chapters are affected in the manufacturing sector.

The customs tariff of the EU indicates that 87.5 per cent of the total product (national) lines is subject to ad valorem tariff. The simple average MFN tariff of the Union is about 5.9 per cent in 1998. The results indicate that specific tariffs are very often triggered for imports in the EU. In every eight-product (at national line), one line is subject to specific tariff. Both in terms of ad valorem tariff and specific tariff, agricultural sector is overwhelmingly protected than that of the industrial sector as shown in Table 6. The average tariff rate of the agricultural sector was 12 per cent as against 6 per cent for the industrial sector in 1998⁸. It may be noted that all the broad agricultural product groups are strongly protected by unprecedentedly high tariffs and specific tariffs⁹. Another important observation emerges from the results that average tariffs of selected product groups have been very high and several product groups have witnessed high incidence of specific tariffs within these product ranges. However, product groups having high average tariff rate coupled with specific tariffs, are mostly seen in the agricultural sector.

⁸ For details about India, see Mohanty (2002).

The results show that average tariff of broad product groups are not only alarmingly large in agricultural sector but also in the manufacturing sector. Such broad product groups having significant average tariff are: live animals and animal products (section I) vegetable products (section II), animal and vegetable fats and oils (section III), prepared food-stuffs and beverages (section IV), plastics and articles thereof (section VII), textiles (section XI) and footgear, headgear and umbrella (section XII). Similarly, specific tariffs are mostly concentrated in primary products and select manufacturing products, such as chemicals (section VI), articles of stone, plaster and cement (section XIII) and optical, photography and cinematography (section XVIII). A detailed results concerning *ad valorem* tariffs and specific tariffs are presented in Table 7. The import of primary sector products is not only protected by tariffs but also by the specific tariffs. Out of 25 chapters in the primary sector, the average *ad valorem* rate of products is more than 10 per cent in case of 12 HS chapters. The products in these chapters constitute about 64 per cent of total number of lines in the primary sector. The manufactured tobacco (Chapter 24) is the product group, which is subject to maximum average tariff of 48.2 per cent in 1998. In the manufacturing sector, average MFN tariffs is very close to 10 per cent in some product groups.

The chapters, where average MFN tariffs of chapters are exceeding 10 per cent, are made up fabrics and apparel (chapter 60-63). Average tariff of these group of products is 11.8 per cent. The product lines in these chapters constitute about 37.3 per cent of the total number of products in textiles and textile articles (section XI). Some of the non-textile product groups witnessing high tariff (more than 6 per cent) are footwear (chapter 64), aluminum articles (chapter 76) and vehicles other than railway or train (Chapter 87). However, some of the chapters have witnessed 'nil' duty for imported products such as ores, slag and ash (chapter 26), pharmaceutical products (chapter 30), pulp of wood or of other fibrous material (chapter 47), vegetable plaiting materials and works of art and collector's pieces (chapter 97).

In the EU, specific tariffs are combined with environment related NTMs and other NTMs in the agricultural sector as shown in Table 8. Except for animal and vegetable fats and oils (Section 3), other broad product groups are subject to both specific tariff and NTMs in the agricultural sector. The environment sensitive NTMs combined with specific tariffs has affected only one sector, i.e. live animals products (Section 1). To be more specific, environmental protection is mostly affecting products like live animal

⁹ UNCTAD has made an attempt to estimate ad valorem tariff equivalence of specific tariffs for the year 1996. The results show that average ad valorem tariff equivalence of specific tariff is much higher than average ad valorem tariff of similar product groups in the EU. For details see Mehta and Mohanty (1999).

(Chapter 1), meat (Chapter 2) and fish preparation (Chapter 16). For details see Table 9.

V. Conclusions

The EU market is largely protected by the TBs and NTMs. The agricultural sector is more protected than the manufacturing sector. So far as NTMs are concerned, primary sector is five firms more protected than the manufacturing sector. The environment sensitive NTMs have further intensified the level of protection in the Union. In every four products subject to any type of NTM, one product is subject to environmentally sensitive NTM.

We have used frequency ratio to examine the level of protection. It is found that all broad agricultural products are having high frequency ratio except for products like fats and oils.

In the manufacturing sector, some of the important product groups are subject to large number of environment sensitive NTMs and South Asian countries have export interest in those products. Some of these broad product segments are hide & skin, leather, other manufactures, etc. Even the average tariffs for these product segments have been very large as compared to overall average tariff of the Union. The export prospects of South Asian is largely affected by the use of multiple NTMs, peak tariff and specific tariff on specific products where the region has its current and future export interest.

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