

**GREENING INDIAN BUSINESSES FOR THE  
WORLD MARKET**

By

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**February 2002**

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# Greening Indian Businesses for the World Market

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## **Abstract:**

*There has been a steady increase in environmental notifications under the provisions in the WTO Agreements as indicated by the recent WTO environmental database. This trend threatens to reduce market access and competitiveness of traditional exports from developing countries like India. The Indian businesses need to aggressively address the green challenge in the world market, and credibly signal the eco-sensitivity of their products in the market by increasing environmental certification. Other developing countries like China have been quick with proactive strategies on environmental certification to tap global opportunities in the sectors like organic food/beverage and eco-textiles. The rates of growth in ISO 14001 and IFOAM certified firms/farms in China have been phenomenal, and the total number of such eco-certified Chinese firms/farms outstripped those in India in the last six years. Drawing from the literature on competitiveness and environmental regulations, and anecdotal evidence of actual firm experience, this paper puts forward the case that it is both essential and profitable for Indian businesses to increase environmental certifications to take advantage of the full potential of the opportunities in the world market.*

## **1.1 Introduction**

Environmental measures today have emerged as a major market force encompassing changes in regulation, consumer tastes, and firm strategies. Governments around the world have been active with new environmental legislation, consumers have become more environmentally conscious, and firms have been aggressively differentiating their products via environmental characteristics to create market niches (riding on consumer environmental consciousness as well as keeping competition at bay) Majority of Asia's commodity exports are in sectors (like food/allied products, textiles/garments, leather, engineering goods) where new environmental requirement have emerged, and developing country exporters find that new investments are required in production process, materials, testing and certification to retain/expand market shares.

Market access as well as competitiveness in the global market is determined by the intrinsic environmental characteristics of products. In the multilateral trade regime, while there are no explicit environmental agreements, a number of WTO agreements that came into effect in 1995 have environmental provisions. These include the Agreements on the Application of Sanitary and Phytosanitary measures (SPS), Technical Barriers to Trade (TBT), Agriculture (AoA), Subsidies and Countervailing Measures (SCM), Import Licensing Procedures (ILP), Trade in Services (GATS), Safeguards etc. Of these, the environmental provisions under the two agreements SPS and TBT have been most extensively used.

In case importable goods are deemed to be using environmentally damaging (to plant, animal or human health) inputs or, are not adequately certified as ecologically safe, countries are well within their rights to invoke unilateral trade restrictions. For example, under the TBT, a country can restrict/ reject imports, which do not carry appropriate environmental certification or labels, and under the SPS, if the level of pesticide residue or genetically modified organism is higher than stipulated tolerance level, imports can be banned. Of course, it is sometimes hard to distinguish whether a trade barrier has been invoked to protect the environment or economic interests in the importing country.<sup>1</sup>

**Protectionism in the guise of environmental /health concerns in the developed countries against developing country exports is important for negotiating policies and safeguarding both the multilateral trade regime (to promote freer trade) and interests of developing countries. There is however, a distinct market trend driven by green consumerism with business strategies riding on this change. This paper concentrates on this market driven change: its implications for a developing country like India and the coping strategies for businesses.**

**The rest of the paper is organised as follows: Section 1.2 briefly discusses the rise in environmental notification under the WTO and their implications, section 1.3 elicits the challenges and scope of the two major Indian export sectors (agriculture/allied products and textile/garments). Section 2 highlights the literature on environment and competitiveness for businesses, section 3 gives the certification status of Indian farms and firms with a few success stories in India; and section 4 concludes with the strategies for Indian businesses.**

## 1.2 Environmental Notifications and Implications of WTO Agreements

There has been a steady growth in environmental trade notifications under the WTO since 1995 (see Table 1). For instance, the number of SPS notifications increased by 59% during 1997-2000 from 300 to 468. While all measures under the SPS deal with the protection of human, animal and plant health, the WTO database reported a subset of those notifications (by search word criterion), and the number of such environment-related SPS notifications increased from 9 to 27 during 1997-2000, i.e. three-fold increase in four years!

**Table 1.**

### **Incidence of environment-related notifications under WTO agreements 1995-2000**

<b>Year</b>	<b>Total SPS notifications</b>	<b>Environment-related TBT notifications*</b>	<b>Environment-related SCM notifications*</b>	<b>Environment-related ILP notifications*</b>	<b>Environment-related AoA notifications*</b>
1995	-	41 (10.6%)	-	-	-
1996	-	53 (11.5%)	-	-	-
1997	300	89 (11.2%)	22 (22%)	15 (30%)	20 (8.7%)
1998	300	98 (15.1%)	36 (40%)	20 (33.3%)	22 (11.6%)
1999	450	84 (12.5%)	27 -	10 (15.1%)	28 (12.7%)
2000	468	97 (15.6%)	32 (24.1%)	17 (24.3%)	40 (40%)

\*The figures in parentheses give the percentage of environment-related notifications in total notifications under the specified agreement.

SPS= Sanitary and Phytosanitary measures, TBT = Technical Barriers to Trade, ILP = Import Licensing Procedures, AoA= Agreement on Agriculture.

Source: Adapted and calculated from data in *WTO Environmental Database 1997-2000*.

Similarly, the number of environment-related notifications under TBT more than doubled from 41 to 97 during 1995-2000, and the proportion of such notification to total

TBT notifications also increased (from 10.6% to 15.6%). These TBT notifications covered a range of product groups in vehicles, fuels, genetically modified organisms, organic agriculture, pesticides, fertilizers etc.

Besides, reduced market access (entry barrier to markets with higher standards), SPS and TBT measures also have competitiveness implications. Market competitiveness effect of SPS and TBT measures can be two fold: First, products differentiated by environmental characteristics (e.g. through a credible eco-label, or eco-packaging or take-back commitments of the used product) enjoy an advantage over generic products.

**Market competition itself has been redefined (oligopoly or even monopoly) via greening of product life cycles, in markets which earlier could have been defined as simply competitive (say in food, beverages, clothing etc).<sup>2</sup> Second, the process of certification of production processes and labelling of final products is expensive for developing country producers, especially the small and medium enterprises (certification cost as percentage of total production cost or product price). The latter can erode the competitive advantage of exports due to traditional low costs of labour and inputs.**

The environmental related AoA notifications have also consistently grown, and registered a 100% increase between 1997-2000 (from 20 to 40). In the year 2000, almost half of these notifications (18 out of 40) were under the “Green box” measures. It is interesting to note that, while the AoA requires member countries to reduce government subsidies, such a trend is being accompanied by increasing government support under the environmental banner (especially in the industrialised countries). This in turn has impact

on the competitiveness of agricultural exports from developing countries, which are also required to reduce farm subsidies under the AoA (but may not have such green support).

To sum up, the objective of opening up markets sought through the Uruguay Round (UR) may be partially defeated through the channel of environmental clauses. For instance, the new Agreement on Textiles and Clothing (1995-2004) under the WTO, set to liberalize trade in this sector by 2005 (phase out the Multifibre Agreement), may not achieve much if accompanied by a surge of environment/health trade barriers.

Even though some green measures may be based on economic protectionism in industrialized countries, others are genuine (e.g. toxic residue in tea/coffee; pollution from hazardous chemical-intensive textile processing stages) and consumer sovereignty on risk-perception have to be respected. Thus it is imperative for the Indian industry as a whole to respond positively to the environmental challenge in the market, both to retain/increase market shares and reduce the environmental stress in the country.

### **1.3 Two Indian Export Sectors: Challenges and Scope**

The two sectors of agriculture/allied products, and textiles/ready-made garments constitute the two major commodity export sectors of India. Agriculture and allied products constituted over 13% of total Indian commodity exports in 2000-2001 (*CMIE 2001*). This sector is particularly important since it is the largest provider of employment to the phenomenal Indian population. While the agri-sector holds export growth potential for developing countries like India, it is heavily protected by environmental and safety measures in developed countries. The textile/garment sector is another important export-

revenue earning sector for India (25-28% of total commodity exports in 2000-2001, *CMIE 2001*). Textile and clothing industry accounts for about 20% of India's industrial output, and is the second largest employment provider.

### **Environmental Challenges**

A recent study illustrated that approximately 13% of total world trade by value (appr. 88% of world product imports) is directly affected by environmental trade barriers (Fontagne et al, 2001). For India, in particular, it was estimated that roughly 6% of total Indian exports were threatened by environmental measures in the EU, Japan and US (Sawhney 2000). Indian agricultural exports undergo elaborate testing and certification before entry in industrialized countries (like the US); beverages have been rejected due to high pesticide residue/ ochrotoxin in Europe/Japan; textile products have been restricted due to presence of hazardous chemicals (e.g. certification of azo-dyes free for processed fibre import required in Germany), inflammability standards, etc.

The EU, Japan and the US absorb more than half the commodity exports of India, and these countries maintain strict environmental standards (some stricter than international norms under the "precautionary principle" of the SPS) for consumer goods in particular. Thus keeping up with environmental market challenges in these countries is important for Indian exporters.

### **Green Market Prospects**

Within green agricultural products, the market for organic food and beverages has been growing rapidly, and offers great export opportunity to a country like India (with indigenous knowledge of organic manure, pesticide, inter-cropping etc). Though still



small at present, world-wide market for organic food are projected to increase to \$102 million by 2010 (\$46 million in the EU, \$45million in the US and \$11million in Japan) from \$13 billion in 1997 (International Trade Centre). India could experience a boom in this sector if adequately developed.<sup>4</sup>

Organic tea, spices and grains are currently among India's exports, and businesses have targeted to increase organic market in fruits and grains. With a business potential of about Rs 50,000 crore, corporate India plans to get 10,000 farmers across 2000 villages in North India by year 2004 under the organic project (*PTI news, 7 12 2001*) In 2001 the **Indian Government mandated that organic products can be exported (effective 2001) only if they have been produced, processed/ packed under a valid organic certificate (from government accredited agencies, including ENCON, IMO offices in India).**<sup>5</sup>

Organic cultivation being labour-intensive, it is especially promising for a populous country like India. Small and scattered farming communities across India can find economic gains, e.g. Peermade Development Society, an NGO in Kerala, the largest Indian exporter of spices, encourages production/export of organic spices from rural areas including tribal community. Also, the wealth of traditional knowledge in the field of natural pesticides, herbicide, manure, can be tapped and further developed in India.

Similarly, there is market potential for eco-textiles, especially in Europe (e.g. Germany) and the US. The US happens to be the largest importer of Indian textiles, yet India's share in US imports is negligible (compared to China, Hong Kong, Taiwan, S Korea). Market access in the US has been hindered in the past due to inflammability standards, presence of azo-dyes, etc. Environmentally upgrading textile units by ISO

14000 standards and/or Oko-Tex Standard 1000, would signal quality assurance and increase market access.

Importers in developed countries are often willing to help in the greening of the supply chain. For example, during 1989-91, a Dutch importer assisted in the conversion and certification of tea gardens (of Bombay Burma Trading Co.) to organic cultivation in South India. German importers have been known to help small-scale Indian leather units to upgrade technology when PCP was banned. Thus maintaining good exporter-importer relationships is a good business strategy that helps in internalization of environmental costs of production and certification, besides ensuring market abroad.

## **2. Business Competitiveness and the Environment**

The writing on the wall clearly indicates that firms today need to look at environmental problems as business issues, i.e. it is important to bring environment into the fold of business problems and determine when it pays to be green. Besides, industrial ecology has potential for shaping firm strategy and competitiveness (Esty and Porter 1998). Environmental management and product innovation help firms to keep ahead of the game by creating market niches and/or new market demand for differentiated products in markets which would otherwise have been purely competitive.

Indeed businesses should make environmental investments for the same reasons they make other investments “because they expect them to deliver positive returns or to reduce risks” (Reinhardt, 1999). While not all firms will be able to profit from

environmental challenges, some will be able to profit through various strategies. A few of the examples from Reinhardt (for details see Reinhardt 1999) include:

- Differentiating products and commanding higher prices for them<sup>6</sup> (e.g. Swiss company Ciba Speciality Chemicals manufactured a textile dye that required less salt, which reduced costs of salt and water treatment costs for users);
- Imposing a set of private regulations or help shape rules written by government officials to manage competition (e.g. following the Union Carbide plant accident in India, the Chemical Manufacturers Association developed a set of private safety codes to save the tarnished image of the chemical industry and forestall government regulations); and
- Redefining competition in the market (e.g. Xerox redefined its business model to include cradle to grave responsibility of its products, and succeeded in cutting costs by recycling and manufacturing newer products from take-backs).

In new market parlance, “dynamic competition” (result of pressure from firm competition, customers and regulators) in the real world requires constant innovative solutions from firms, which limit pollution before it occurs or maintaining closed-loop systems. For example, Dutch flower producers in order to reduce use of fertilizer and pesticides developed a closed-loop system for growing flowers in water and rock wool, and consequently reduced costs of inputs and indirect costs of waste/disposal expenses while increasing the value of their product (Porter-Linde, 1995a). Thus at the level of resource utilization and productivity, environmental improvement and competitiveness come together rather than pose a trade-off. Today the “*internationally competitive firms*

*are not those with the cheapest inputs or largest scale, but those that have the capacity to improve continuously” (Porter-Linde 1995b: 98).*

In case of India, the concept of “dynamic competition” with liberalization holds more punch than for industries in developed countries, since our domestic pollution control regime of end-of-pipe measures (rather than innovation-spurring measures, coupled with lax monitoring due to paucity of funds) have failed to push the industry in general towards a greener path. Thus, one clear advantage of the new market forces is that they can move the Indian industry onto a green path through efficient utilization of resources and lower pollution!

### **3. 1 Environmental Certification Status of Farms and Firms in India**

The environmental challenges in the world market today threaten to erode the traditional comparative advantage of developing countries in the sectors of agriculture and textiles. In developing countries like India, the internalization of environmental costs to production costs become especially difficult since production structure is dispersed among small and medium enterprises (SMEs), whether farms or firms. For instance the share of SMEs in Indian exports of textiles is about 80% (WTO 1996). The up-gradation with eco-friendly technology, obtaining certification/ eco-label becomes significant expenses relative to total cost for the small units. Yet, the promise of expansion of markets in green products, and reduction in tariff/quota barriers in developed countries (e.g. in textiles - MFA phase-out, and organic food), makes it imperative for Indian firms to take the environmental challenge by the horns.

Since certification and labelling are essential to endorse the eco-sensitivity of commodities and compete in the global market<sup>7</sup>, firms in developing countries are increasingly moving towards environmental management systems in production. To credibly signal the eco-sensitivity of production processes and products in the world market, exporters in developing countries need to obtain certification based on international standards (e.g International Federation of Agriculture Movements- IFOAM, International Standards Organization- ISO).

This translates into two action plans first, implementing and certifying the environmental (management system in) production, or farming; second obtaining the popular product specific eco-label in the target exports market (given the wide range of such labels across countries and even within countries). Though the latter certainly goes against the standard economic efficiency arguments, it is an inevitable outcome of rising consumer choice sovereignty and reputation of certain established eco-labels across countries.

### **Organic Farm Certification**

Although India has been exporting organic tea, spices, rice, grains, dry fruits, we have a long way to go. As of 1999, only 304 farms were certified to be organic by IFOAM standards, constituting only about 0.001% (1, 1711 hectares) of total agricultural area in India. In comparison Argentina, Brazil, and China have larger certified tracts under organic cultivation (see Table 2):

At present, developed countries dominate the global market supply and demand (e.g. the US is the largest exporting as well as importing country of organic products).

Slowly but surely the domestic market demand for organic foods will also grow in developing countries like India (domestic organic market though small is reported to have 100% premium), but for now the growing demand in the US, Germany, Japan etc. is strong enough to encourage the Indian organic industry.

**Table 2. Certified Organic Farming in Selected Developing Countries**

Country	Year	Organic Farms	Organic Acreage	% of total acreage
Argentina	2000	1,000	3,000,000	1.770
Brazil	1999	1,200	100,000	0.040
China	2000	-	8,517	0.002
India	1999	304	1,711	0.001

**Source: Adapted from Tables 7, 13, and 14 in SOL-Survey (2001)**

### **Environmental Management Certification**

In the industrial front, the ISO 14001 certification is the most popular tool to indicate environmental friendly management systems worldwide. While Indian industry also has responded positively to this challenge, progress has been slow compared to other developing countries like Brazil, China, and Thailand (see Table 3). By year 2000, only 257 firms had ISO 14001 certificates, compared to 510 in China, even though beginning in 1995, India seemed ahead. In fact, China registered one of the highest growth rates in environmental certification (of ISO) in the world.

Typically firms with ISO 14001 certifications also have ISO 9000 certificates. Thus, if the number of ISO 9000 certified businesses is an indicator of the potential for future environmental certification, even then India has been outstripped by China (and Brazil) although in 1995, India was better placed in number compared to the two

countries (see Table 3). It is important for businesses in India to upgrade management systems, in order to better compete in the international market.

**Table 3**

**Total ISO 14000 & 9000 certifications in selected countries between 1995-2000**

Country	ISO	Dec-1995	Dec-1996	Dec-1997	Dec-1998	Dec-1999	Dec-2000
Brazil	<b>14000</b>	2	6	63	88	165	330
	9000	923	1198	2068	3712	6257	6719
China	<b>14000</b>		9	22	94	222	510
	9000	507	3406	5698	8245	15109	25657
India	<b>14000</b>	1	2	28	40	111	257
	9000	1023	1665	2865	3344	5200	5682
Thailand	<b>14000</b>		58	61	126	229	310
	9000	143	182	1104	1236	1527	2553

Source: Selected data from Annex A and B, *The ISO Survey- Tenth Cycle*, 2001.

A cross-country survey of ISO 14001 certified Indian firms (Nyati 2000), suggested that the predominant reason for certification seemed to be corporate image. This is certainly in tune with the fact that businesses need to credibly signal their product quality (environmental) in the market. The decision to implement the environmental management system and certify seemed related to the size of the domestic market and exports for the surveyed firms.<sup>8</sup> Of the seventy-one firms covered, twenty-five were SMEs (almost all been medium sized), and firms reported reduced costs, increased competitiveness and international market opportunities among the benefits of ISO-14001 certification.

### 3.2 Indian Success Stories

Success stories in greening businesses in India can be found among large, medium and small enterprises. As mentioned earlier, there is a plethora of environmental

production standards world-wide. Thus, besides, ISO 14001, other industry specific standards e.g. Oko-Tex Standard 100 (German) is popular among textile units. Since, finally the reputation and prevalence of a particular eco-label in the target export market matters the most, Indian firms are seen to go for specific eco-labels Eco-tex (German but acceptable in the UK and US). In certification of organic produce, SKAL (Netherlands) and Demeter (Germany) are quite popular in India.

The first Indian firm to obtain the German *Oko-tex* certification was Century Textiles (with the largest textile mill in Asia) in 1995. The company's marketing department felt that it could get a 10-15% premium rate than before due to the Eco-tex label. The company reported that the market widened by at least 15% in the first year, and new buyers from the US and UK had come in.

Smaller textile enterprises have also opted for ISO 14001 certification and Eco-tex label. A garment exporting firm, Prem Group, reported cost savings of over Rs 45 lakhs per annum (approx. \$100,000) from ISO 14001 programmes which reduced consumption of water, energy as well as raw materials like cotton fibre, yarn, dyes etc (Prakash 2001). Both productivity and quality of manufacturing increased over the three years 1998-99 to 2000-2001 (as a combined effect of ISO 14000 and SA 8000 programme implementation).

Magosan Exports (SKAL certified) has been able to pursue organic farming profitably, and exports spices, honey, coffee, ginger and rice (*Down to Earth: 41*). Similarly, Indian Organic Food (IFOAM member) profitable trades in organic commodities including rice, tea, grains and sugarcane. In view of long-term gains, the



strategy was to first create the demand for its organic food in the market. As the company director put it: “enter the market with a professional mindset” since the initial period of creating awareness about the need to consume organic foods is “a period of loss” and sustainability comes when the food becomes a fashion. However, “quality is the key” for sustainability (*ibid*: 40). And indeed, the issue of certification is all about signaling the quality of the consumer good!

Non-governmental/ private organizations have been active in reaching out to small farming units in India, e.g. Peermade Development Society (IFOAM member) is the largest Indian exporter of spices (to Germany, Netherlands, US), encouraging production/export of organic spices from rural areas including tribal community. This provides a perfect channel to tap the huge potential organic farming communities, which are small (and therefore financially handicapped to undergo the expenses of certification individually) and scattered all over India.

#### **4. Concluding Comments: Strategies for Indian Businesses**

The greening of markets world-wide requires businesses to ecologically upgrade production/ farming processes and more importantly to signal the environmental quality of their products credibly. Thus there is an urgent need to increase international environmental certification and labeling (since our national eco-mark is yet to develop a reputation domestically, not to speak of the world market) of businesses in India.

Second, as theory and anecdotal evidence shows, there is scope for enhancing resource productivity and profitability for firms implementing environmental management. Certified firms have reported costs savings and market enhancement.

Third, product diversification, and environmental value-addition in products are imperative for the Indian businesses to thrive in the long-term, especially for traditional products in textiles/garments and food.

Fourth, given the proliferation and popularity of different eco-labels across countries, it is important to green the supply along the importer-exporter chain to ensure target market popularity, and it has the added advantage of importer-assistance certification expenses (as experienced by some Indian businesses).

There are a large number of farms in India which are quasi-organic (using little chemical pesticide and fertilizer) and can be easily converted into certified organic cultivation. Indeed, the China Green Food Development Center (under the Ministry of Agriculture) originally emphasized reduction rather than elimination of chemical use in 1992. In 1995, a special “AA Grade” Green Food certification was developed for chemical-free organic food (compared to “A Grade” which is quasi-organic). Such a phasing out strategy may also work well in India, and help in re-discovering our indigenous knowledge of organic farming. With support of government initiative, Indian businesses can exploit the potential of quasi-organic farms across India.

In marketing green products; businesses need to be aggressive in creating a demand for the product (and ensuring quality), especially if the product is new and perceived exotic. Organic food market in the world is developing, and just budding in

**India, thus creating demand for the eco-product within India is important so that domestic market can buffer fluctuations in the international market.**

All in all, Indian exporters have been slow to adjust to environmental challenges in the international market, and this leads to losses (of course, this has been caused by both informational and financial deficiencies of especially the SMEs). The best business strategy is to keep ahead of the market rather than to keep up with the market. While this paper was a preliminary exploration of the scope of environmental certification for a developing country like India, more in-depth studies on industry level cost-benefit **analyses of environmental certification would be useful in developing detailed strategies for businesses.**

## **References:**

- Century Textiles (2000) *Ecolabel Case Study: Case of Century Textiles and Industries Ltd, India.* ([www.emcentre.com/textile/ecolabels/ecolabel.htm](http://www.emcentre.com/textile/ecolabels/ecolabel.htm))
- Down to Earth* (2001) “India Organics Inc.”, *Down to Earth*, September 15: 39-41.
- EC (2000) “Organic Farming: Guide to Community Rules”, European Community.
- Esty, Daniel C. and Michael E. Porter (1998) “Industrial Ecology and Competitiveness”, *Journal of Industrial Ecology*, Volume 2 (1): 35-43.
- EXIMIUS (2001) “India’s Organic Food Exports: Problems and Prospects”, Vol XV, Issue III, September ([www.eximbankindia.com/september-2001.pdf](http://www.eximbankindia.com/september-2001.pdf)): 9-12.
- Fontagne, Lionel, Friedrich von Kirchbach and Mondher Mimouni (2001) “A First Assessment of Environmental Related Trade Barriers”, CEPII, Document no. 01-10, October.
- ISO (2001) “The ISO Survey of ISO 9000 and ISO 14000 Certificates: Tenth cycle up to and including 31 December 2000”, ISO.
- Nyati, K. P. (2000) “*ISO 14001 in India – Boon or Blackmail*”, paper presented at the 2<sup>nd</sup> *Environment Summit*. New Delhi, CII, October.
- Porter, Michael E. and Claas van der Linde (1995a) “Green and Competitive: Ending the Stalemate”, *Harvard Business Review* 73(4): 120-34.
- Porter, Michael E. and Claas van der Linde (1995b) “Toward a New Conception of the Environment-Competitiveness Relationship”, *Journal of Economic Perspectives*, Vol. 9 (4): 97-118.

- Prakash, B.K. (2001) “Benefits Accrued on Effective Implementation and Certified Performance management Systems in Quality, Environment and Social Accountability”, Exports & Corporate Management Division, *Prem Group of Companies*, Tirupur, India.
- Reinhardt, Forest L. (1999) “Bringing the Environment Down to Earth”, *Harvard Business Review*, July-August: 149-57.
- Sawhney, Aparna (2000) “GATT/WTO and Environmental Provisions” in B. Bhattacharyya ed. *Seattle and Beyond: The Unfinished Agenda*, IIFT: 191-207.
- SOL-Survey (2001) *Organic Agriculture WorldWide: Statistics and Future Prospects*, SOL, IFOAM, February.
- WTO (2001-1997) “Environmental Database”, WT/CTE/W46, WT/CTE/W77, WT/CTE/W118, WT/CTE/W143, and WT/CTE/W195.
- WTO (2000) “The study of the effects of environmental measures on market access”, WT/CTE/W/177, communication from India, October 27.
- WTO (1996) “The effect of environmental measures on market access” *Non-paper by India*, CTE, June 20.

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## Endnotes

<sup>1</sup> For example, under the *precautionary principle* of the SPS agreement, a country can impose health standards more stringent than international norms even if scientific evidence is opaque. Similarly, under the TBT, process and production method related measures have been legitimized that may have no impact environmental characteristic of the final traded good. There is now a substantial body of literature on green protectionism (UNCTAD studies and country studies) and is beyond the scope of this paper.

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<sup>2</sup> The oligopolistic/monopolistic competitive nature of the market ensures that firms can earn economic profits. Indeed redefining competition is a firm strategy to keep competition from other firms at bay.

<sup>3</sup> Environmental trade barriers in the study covered an entire range of tools from import bans to custom surcharges, finance measures, technical measures (preshipment inspection, obligation on recycling) etc.

<sup>4</sup> Besides, enhanced export earnings, organic farming can help small farmers by reducing financial drain, improve soil fertility, and trim the government subsidy bill. In year 2000, the Government of India launched the National Programme for Organic Production in view of the optimistic global market expansion (rather belated, considering the China Green Food Development Center, under the Ministry of Agriculture was set up in 1992 to certify agricultural produce). The programme targets export expansion in the US and Germany (largest country markets) among others. (EXIMIUS, 2001)

<sup>5</sup> This is a step towards making Indian organic exports credible abroad. In particular, EC's mandatory regulation No. 2092/91 on organic products, requires exporting countries to EU to have standards equivalent to those outlined in the EC regulation. While only six countries were included in the EC list (Article 11-1), other exporters including India are allowed via an exception rule (Article 11.6) where the onus of proving equivalence falls on the importer in EU. This exception rule is valid until 2005.

*EC(2000):21.*

<sup>6</sup> Reinhardt adds that such environmental product differentiation is profitable only when consumers are willing to pay more for the product, the company can credibly communicate the environmental benefits, and the company is able to earn profit on its investment before imitation emerges.

<sup>7</sup> Eco-labels have adverse effects as market entry barriers, freezing technology choice, etc. Though important, those issues will not be covered in this paper. The general issue of green protectionism will also not be discussed here.

<sup>8</sup> However, other factors such as type of ownership, parentage, number of locations, nature of product did not appear to be related to the decision to implement the environmental management system.