

## Environmental Standards in Food Processing Industry: *Impact on South Asian Exports*

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### Introduction

The Food Processing Industry (FPI) is one of the prime industries in India in terms of production, consumption, export and growth prospects. The sector is critical to India's development, for it establishes a vital linkage and synergy between the two pillars of the economy - Industry and Agriculture. The sector accounts for a gross output of more than US\$69.4bn, out of which value-added food products comprise US\$22.2bn. The industry ranks fifth in size in the country and employs nearly 19 percent of the industrial labour force. Above all, as stated in the Union Budget 2005-2006, this Industry would create 2.5 lakh jobs every year.

When it comes to export of agricultural and processed foods, it grew by 15.6 percent in the year ended March 2005 to Rs 16,559 crore (US\$3.5bn) over the previous year's Rs 14,324 crore (US\$3.09bn), exceeding the target of Rs 16,213 crore (US\$3.4bn) set by the Agricultural and Processed Food Export Development Authority.<sup>1</sup>

**Table 1: Status of Food Processing Industry in India**

Rank of Industry	5 <sup>th</sup>
Employment in million	1.6
% of Total Industrial Labour Force	19
Total Industry Output in Percentage	14
Output as % of GDP	5.5
Estimated Turnover (US\$ <sup>†</sup> )	32.2bn
Unorganised Sector (US\$ <sup>†</sup> )	24.9bn

<sup>†</sup> (US\$ 1 = Rs 44.6 as on December 07, 2006)

This current rate of growth of the industry can be attributed to a number of policy initiatives taken with regard to regulation and control, fiscal policy, export and import, taxation, exchange and interest rate control, export promotion and incentives since economic liberalisation in 1991. Besides, the Government is giving high priority to this sector, with a number of fiscal reliefs and incentives, to encourage commercialisation, generate employment and promote export.

As per the Union Budget 2006-2007 report, the food-processing sector would be treated as a priority sector for bank credit: National Bank for Agriculture & Rural Development (NABARD) has been asked to create a refinancing window with a corpus of Rs 1,000 crore

(US\$223mn), especially for agro-processing infrastructure and market development. Also, provisions have been made in this budget for setting up of a National Institute of Food Technology Entrepreneurship and Management and developing the Paddy Processing Research Centre at Thanjavur into a national-level institute. FPI is thus certainly emerging to be the next sunrise sector in the country.

### Impact of Environment & Health Standards

In spite of this significant share in India's trade, as stated above, the country has only one percent share in the world trade of processed food items though the country has a huge export potential. The main reason for this small share is the rejection of the food and manufactured products exports by the developed countries on the ground of environmental and safety standards. There is a wide disparity between the food quality standards that Indian firms need to meet in domestic markets and those it needs to access foreign markets.

While most developed countries have adopted a high level of food safety standards taking into consideration the health and hygiene factors, developing and least developing countries (LDCs), including India are yet to adopt such stringent safety standards. This is either due to the lack of financial resource or technical expertise with the government. Even if such standards are adopted, most of the producers and exporters being the small and medium enterprises (SMEs) in nature fails to incorporate such standards in their production process due to their limited financial capacity and expertise thus ending up losing export order.

Timely dissemination of requisite information relating to the newly adopted standards by the developed countries to their trading partners is also severely lacking. Most of the time the information's received is either too late or not at all. In addition, while preparing and applying for the safety standards, the rich countries hardly consider the economic situations in developing countries.

In addition, at times the rich countries use high standards as a trade barrier, i.e. restricting import in their countries to promote the domestic industry, defeating the very objective of free trade. Hence, though trade liberalisation has reduced tariff barriers, it has exposed another layer of trade measures, in the form of standards,

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which can prove just as difficult to surmount for developing country exporters.

For example, the rejections of Indian shipments by US has increased from 860 during May 1999-April 2000 to 997 during December 2001-November 2002.<sup>2</sup> As a consequence of these harsh realities of the global trading system the exporters are now forced to accept the fact that quality production of the processed food items at par with the international standards is the watchword for survival of an industry in the global market.

Besides, the industry is increasingly taking care to upgrade the hygienic and sanitary conditions of the workers, plant and machinery to ensure quality of the finished product. Emphasis is now more been given to invest in research and development (R&D), including product innovation. The two nodal agencies for the processed food exports identified in India at the national level are the Agricultural and Processed Food Export Development Authority (APEDA) and the Marine Products Exports Development Authority (MPEDA). While MPEDA is responsible for overseeing all fish and fishery products exports, surveillance of other processed food product exports are the responsibility of APEDA.

### **Ban on South Asian Exports**

South Asian countries, including India have faced many problems, with respect to environmental and health safety standards while exporting processed food products to developed nations. A few product specific instances are cited below to substantiate this stand.

#### **I. Marine Products**

Developed countries' stringent environment and safety requirements, in particular the provisions concerning the use of Hazard Analysis and Critical Control Point (HACCP), have affected marine exports from several South Asian countries. Failure to comply with such requirements has resulted in import bans in EU and US. For example, EU imposed a ban on the import of marine products from Bangladesh and India in 1997 and from Pakistan in 1998 and 2005.

**India:** On August 1, 1997 the European Commission (EC) imposed a temporary ban on the fishery products from India stating the serious deficiencies in the structure of establishments, the hygiene quality of raw material, and in the processing operations. The EU after its inspection on these fishery products stated that the level of control by the national authorities was insufficient and microorganisms, which may have constituted a hazard to human health, may have contaminated the products.

**Bangladesh:** On July 30, 1997 the EC imposed a ban on the import of shrimp products from Bangladesh on the grounds that the exported commodity did not meet the stringent provisions of the HACCP regulations. The ban originated from concerns as regards in areas related to health safeguards, quality control, infrastructure and hygiene in the processing units, and also due to lack of trust in the efficiency of the controlling measures carried out by the designated authorities in Bangladesh.

**Pakistan:** The seafood export from Pakistan to EU countries was banned in March 2005 after a three-member EU team visited Karachi and Korangi fish harbours. The EU countries, which shared 54 percent of Pakistan's seafood export during 2003-04, have already imposed 100 percent checks on import of frozen fish products from Pakistan following detection of a contaminated consignment of shrimps at Rotterdam in March 2002. This was the second time that Pakistan lost the European market in the last seven years.

**Response:** The adoption of stringent EU standards by India, Pakistan and Bangladesh was not only difficult, but also indefensible. For instance, the EU standards require that even floors and ceilings be washed with potable water. Such standards are especially difficult to defend in places where potable water is in short supply, such as in the Cochin (India) where shrimps are farmed. Another example of over-strict regulations quoted by the producers is the requirement to undertake 62 tests to check water standards. The equipment required for some of these tests is not even available in India.

As a result of the EU ban on marine products, the trade displacements in these countries caused by the EU standards have been significant. Moreover, little technical assistance has been made available by EU to the firms in these countries to upgrade their standards.

#### **II. Peanut Products**

Some of the EU countries imposed *aflatoxin* standards that are more stringent than the international standards of the Codex Alimentarius Commission i.e. specific standards set for *aflatoxin B I* and the sampling procedures.

**India:** The EC, which is vested with regulatory powers under the Food and Hygiene Directive to ensure consumer safety, proposed the ban on the import of peanut from India for a period of four months following the detection of a large amount of *aflatoxins* in the products.

**Response:** The Indian Government subsequently took steps to monitor its exports. The peanut exports to EU are now permitted subject to compulsory registration of contracts with the APEDA along with pre-shipment quality certificates. An extensive procedure for monitoring the exports have also been introduced and several agencies/laboratories have been nominated for testing and certifying the aflatoxin content in the consignments intended for export to EU. Some of the problems identified by the UNDP *aflatoxin* management programme for India include: lack of financial and technical resources to implement stringent requirements; trade displacements; permissible limits different in different countries; lack of scientific evidence; lack of mutual recognition of inspections; standards and non-involvement of developing countries in the standard-setting process; and above all no rationality of the sampling size and testing procedures/methods adopted.

#### **III. Mango Pulp**

Mango weevil in Indian mango pulp affected its export to US, Japan and EU markets. The major handicap is Sanitary &

Phyto sanitary (SPS) measures relating to the presence of pesticides, which are used to rid the fruit of mango weevils.

**India:** Japan had banned Indian mangoes in 1986 on suspected pest infestation by fruit flies, followed by EU and US. The Indian Agricultural Research Institute (IARI) and other research bodies worked on eliminating the risk of fruit flies and came up with vapour heat treatment, which was found to be effective in 1998 and the Japanese authorities too approved of it. But subsequently, Japan raised the issue of a new fruit fly.

**Response:** Japan formally lifted the ban on import of Indian mangoes on June 23, 2006 after a long gap of 20 years on the basis of confirmation that there is no risk of infiltration of diseases and pests through previous scientific and technical examinations. The lack of vapour heat treatment plants was a major constraint in exporting fresh mangoes to EU, Japan and US. However, installations of vapour heat treatment by the Indian exporters were very expensive.

Some exporters even claimed that there is a lack of clarity in the specification of SPS measures for mangoes. For example, exports to Jordan require a certificate stating that the product: (a) is not radioactive; (b) does not contain dioxins; and (c) does not contain certain pesticide residues.<sup>3</sup> However, buyers often do not provide detailed specifications of the pesticide residues for which the fruit must be tested.

#### IV. Spices

The different levels of permitted *aflatoxin* are a major problem faced by the chilli export to Europe. For example, aflatoxin contamination should be less than four parts per billion (ppb) in Germany whereas Sweden and Finland allow five ppb and Spain allows 10 ppb.<sup>4</sup> These measures entail higher costs of analysis, investment in processing units and upgrading of the competence of technicians. The cost of compliance with standards for aflatoxin and pesticide contamination i.e. chemicals, procedures for compliance with standards and skilled technicians is very high valuing up to Rs 20 lakhs (US\$43,148) plus additional operational costs.

**Sri Lanka:** There are no reported cases in Sri Lanka of a complete ban of processed foods still, the estimated rate of rejection due to substandard quality and non-compliance with SPS requirements is about 30 percent of the total exportable volume (Sri Lanka Standards Institution). According to the exporters, the spices undergo heavy re-processing to improve its quality before export, particularly to the EU and US market since the Sri Lankan spices are faced with SPS problems such as the presence of mould, high moisture content, aflatoxin and rodent droppings. These problems were primarily due to poor weather conditions added with low-cost processing technology, poor storage facilities, the small-scale nature of production units and early harvesting habits to meet family cash needs of resource-poor farmers.

**India:** Italy and Germany have detained Indian spice consignments on the grounds of pesticide residue. But, both countries failed to justify the changes they made to

their existing regulations on microbial contamination as well as that due to pesticide residue. Similarly, inconsistency in standards, as in the case of acceptable levels of *aflatoxin* and pesticide residues among countries within Europe, has been a cause of great difficulty for exports from India.

**Response:** The Spices Board of India has already implemented a number of schemes aimed at export development of spices with a view to meet international standards and promotion of export of value added spices. The Board has well-established quality evaluation and upgradation laboratory at Cochin that is engaged in surveying the quality of spices procured from different producing and marketing centres. It offers training of quality upgradation to growers and exporters and undertakes physical, chemical and biological analysis of the samples brought by the exporters.

#### V. Tea

In recent years, there have been growing reports of pesticide residues in Indian and Sri Lankan tea, affecting its market access. Doubts have been raised over the justification of some of the objections about pesticide residue in the European market. In 1995, the German limit of 0.01 mg of *tetradifon* and 2 mg of *ethion* per kg of tea were somewhat arbitrarily imposed because of lack of data from India on its pesticide safety limits for tea.

**India:** In 1995, the Teekanne Darjeeling Gold brand of tea was rejected because it contained 0.24 mg of *tetrafidon* per kg, 24 times the limit set by Germany. The rejection was soon followed by a report by the German Institute of Environment Analytics, Messzelle, branding it as unsafe. On the other hand, there were no rejections from the UK, another European market, which continued to import it. Although Indian exporters adhered to the maximum pesticide residue levels recommended by US Environmental Protection Agency (EPA), stricter limits (e.g. 0.01 mg of *tetrafidon* and 2 mg of *ethion* per kg of tea) imposed in some European countries are insurmountable, apart from other problems including a cost of US\$234 per analysis.

**Sri Lanka:** The main markets for Sri Lankan tea are Russia and Middle East. The SMEs and processors are facing several problems in implementing HACCP procedures due to lack of up-to-date information, high investment costs to secure certification and lack of technical capacity. The government operated Tea Board is also experiencing difficulties in providing incentives to SME tea factories and warehouses due to the lack of financing to meet the high costs of certification.

**Response:** Tea Research Association in India now monitors pesticide residues. The Indian standards are made even more stringent than ISO and all other countries domestic standards, with the exception of Japan. The Indian and Sri Lanka Tea Boards are discussing the harmonisation of maximum residue limits (MRLs) for pesticides in black tea, which will be applicable internationally and replace the myriad MRL standards imposed by different countries.

### Box 1: The Standards and Trade Development Facility (STDF)

The STDF is a global programme in capacity building and technical assistance to assist developing countries in trade and SPS measures established by the Food and Agriculture Organisation (FAO), the World Organisation for Animal Health (OIE), the World Bank, the World Health Organisation (WHO) and the WTO. The strategic aim of the STDF is to assist developing countries enhance their expertise and capacity to analyse and to implement international SPS standards, improving their human, animal and plant health situation, and thus ability to gain and maintain market access. In addition to facilitating international trade, SPS capacity building, notably in the area of food safety, result in improved health conditions for local markets and favours economic and social development.

The STDF aims to

- act as a reference point for good practice by implementing demonstration projects with innovative approaches;
- address longer term issues of capacity and compliance, rather than involve itself in short term policy-driven “fire-fighting” projects; and
- offer technical expertise and experience to developing countries in this highly technical area.

## Conclusions

Meeting environmental and health safety standards demands acquisition of technology, heavy investment, training of personnel, and better management from the level of procurement of raw materials to packaging and selling. Thus when compared to the developed countries, the overall preparedness of developing countries, particularly South Asian countries is low and inadequate.

The infrastructure available in South Asia is insufficient to meet the standard needs of the region. Certification cost, particularly for inspection and testing, is beyond the reach of SMEs. Capacity problems, especially the lack of technology and finance, have been found to be decisive bottlenecks other than the lack of clarity and transparency in the implementation of standards. As once pointed out by Jagdish Bhagwati, in many cases, small financial and technical assistance programmes could have achieved the environmental objective without committing much resource.

While financial assistance are provided by World Bank and World Trade Organisation (WTO) by establishing a fund, called the Standards and Trade Development Facility (STDF), it needs to be ensured that through such financial assistance the developing country governments are well informed of new developments in SPS standards and at the same time are able to effectively implement such required standards.

Likewise, Article 9 of the SPS Agreement certainly encourages but does not compel developed country

members to provide technical assistance that will enable a developing country to maintain and expand its market access. India has called for such assistance to be bound to specific commitments by industrialised countries.<sup>5</sup> All the more in most South Asian countries though various policies for developing and monitoring health safety and environmental standards have already been formulated, their implementation and monitoring remains a challenge.

But the growing desire of developed countries to have high food safety standards does not imply that such standards are anti-trade or are against the principles of the WTO. The developed countries only need to make certain that such regulatory barriers are not misused to achieve protectionist objectives. In fact one of the main arguments in favour of linking trade to environmental and health safety standards is that the adoption of lower standards, such as harvesting shrimp in methods that endanger turtles, is morally reprehensible and trade measures should therefore be used to force countries to raise their standards.

However, while formulating such standards care should be taken to ensure that the conditions prevalent in both developed as well the developing countries are given their due importance. Plus, most importantly the developed countries need to ensure that exporting countries have timely and complete information regarding the standards adopted. In the long run the trend towards higher food safety standards will be beneficial to both developing and developed countries.

## Endnotes

- 1 Vishwanath Kulkarni, Processed foods exports grew 15.6%, *The Hindu*, 01 July 2005.
- 2 Deepak K Srivastava, Indian Agricultural Exports and the Compliance Standards of Developed Countries, *Asian Analysis*, Asean Focus Group & The Australian National University, March 2006.
- 3 Veena Jha, Environmental Regulation and Food Safety: Studies of Protection and Protectionism, 2006. [http://www.idrc.ca/fr/ev-92132-201-1-DO\\_TOPIC.html](http://www.idrc.ca/fr/ev-92132-201-1-DO_TOPIC.html)
- 4 Supra
- 5 WTO Trade Policy Review, India, 1998

This Briefing paper is researched and written by Simi T B based on her presentation made at the workshop titled “Trade and Environment Dimensions in the Food and Food Processing Industries in South Asia” organised by UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific) in Colombo, Sri Lanka, on 6-7 September 2006. The views are personal.

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