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**FOOD TRADE, TRADE FLOWS
AND TRADE POLICIES**
**A COMPARATIVE ANALYSIS OF
WORLD AND INDIA**

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and
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FOREWORD

Rapid changes are taking place in global food trade. The processed food products are emerging as the fastest growing category, accounting for over 50 per cent of the food trade. This provides a threat to and also an opportunity for developing countries like India. The increasing levels of imports of processed products to developing countries pose a threat, while the fast growing demand for such products provides an opportunity to such countries for diversifying their export basket.

The current paper brings out in a cogent fashion the facts and implications of this phenomenon of changing pattern of food trade. With a view to identifying the food products for which the world demand is expanding, the paper carries out a comparative analysis of the structure of global food trade with that of India. The analysis provides two interesting insights. *First*, India's export basket continues to be dominated by primary food products even when the world trade in these products is shrinking. *Secondly*, consumption shifts in domestic food demand are taking place which are reflected in the structure of food imports into India.

The paper also highlights the market and product concentration in food trade flows. The domination of developed countries especially in trade in processed food products is clearly evident from the analysis. Further, a detailed analysis of market access issues (arising out of large agriculture subsidies in developed countries, the non-tariff measures and the skewed tariff schedules) confronting India has also been carried out.

An important trend highlighted in the paper is that of expanding intra developing country trade in food products.

Indian exports face extensive NTMs and high tariffs in developing countries as well. An immediate fallout of the rising intra developing country trade is that more and more developing countries are competing with one another. Therefore, countries like Vietnam, Brazil, and China who have successfully reformed their domestic agricultural sector have gained significantly from this emerging trend.

Finally, the paper brings out the tasks before India if we are to adapt to, and take advantage of, the changing pattern of world trade. We hope the paper will generate debate and discussions among all interested circles.

PRABIR SENGUPTA
DIRECTOR

New Delhi
March 2004

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Food Trade, Trade Flows and Trade Policies

A Comparative Analysis of World and India

Sunitha Raju and Tamanna Chaturvedi

I. CURRENT ISSUES IN WORLD AGRICULTURAL TRADE

1.1 Distortions in Commodity Markets

THE structure of agricultural trade has changed markedly since the early 1980s. The developing countries, who were net exporters of agricultural commodities, emerged as net importers especially for food products. The import dependence of these countries increased significantly. Their share in world imports which stood at 17.2 per cent in 1971 increased to 24.9 per cent by 1995. Against this, their share in world exports declined marginally from 31.3 per cent in 1971 to 28.8 per cent in 1995 (Table 1.1).

TABLE 1.1
TRENDS IN AGRICULTURAL TRADE

	1967	1971	1980	1985	1990	1995
I. Agricultural Exports						
1. World (US\$ mn)	50333.7 (100.0)	66615.6 (100.0)	280078.4 (100.0)	249048.8 (100.0)	421305.8 (100.0)	626076.3 (100.0)
2. Share of developed countries (%)	55.3	58.9	63.9	61.9	67.8	61.7
3. Share of developing countries (%)	33.4	31.3	29.7	30.9	22.1	28.8
4. Share of socialist countries	11.3	9.7	3.1	7.1	9.8	9.4
II. Agricultural Imports						
1. World (US\$ mn)	55988.3 (100.0)	74693.3 (100.0)	313128.9 (100.0)	284511.7 (100.0)	467044.2 (100.0)	650027 (100.0)
2. Share of developed countries (%)	71.9	72.6	64.5	64.7	63.9	60.4
3. Share of developing countries (%)	17.5	17.2	23.0	23.9	21.9	24.9
4. Share of socialist countries (%)	10.6	10.2	12.5	11.4	14.2	14.6

Source: UNCTAD, *Commodity Year Book*, various issues.

2. The resultant deterioration in the traditional agricultural terms of trade of the developing countries needs to be viewed in the context of two interrelated sets of factors. While the rapid technological advances helped most countries, especially developing countries, to increase their production potentials of food crops, resulting in the decline of import demand for basic agricultural commodities, this advantage was more than neutralised due to the significant increase in the demand for value added food products caused by spurts in the per capita income. For instance, as shown in Annexure I, the net imports of temperate zone products (cereals, meat, milk) by developing countries which stood at US\$ (-) 1.72 billion in 1961-63 increased to US\$ (-) 24.23 billion by 1997-99. This is particularly true for wheat and milk. In the case of meat, developing countries which had a trade surplus of US\$ 0.22 billion in 1961-63 turned into net importers by 1997-99, with net trade deficit of US\$ (-) 1.18 billion. Similar was the case with vegetable oils.

3. The second factor that influenced the net trade balances of developing countries was the national agricultural policies of developed and developing countries. In the early 1980s, most countries emphasised raising their degrees of self-sufficiency in food products. Consequently, national policies were designed to stimulate production and reduce imports. The ensuing surpluses that emerged not only slowed down the growth in world agricultural trade but also affected the trade flows between developed and developing countries.

4. With demand for traditional agricultural export commodities approaching saturation levels in developed countries and technological advances that led to significant increases in potential yields of both crops and livestock in these countries, price policies were initiated that insulated domestic producers from competitive price signals, thereby stimulating further expansion of output. This is evident in the net trade balance of major commodities of developed and developing countries, given in Annexure II. The net trade balance of cereals in developed countries increased from 55 to 110.7 million tonnes between 1974-76 and 1997-99. Accordingly, the Self Sufficiency Ratios (SSR) increased from 119 to 124 in these countries. In contrast to this, the developing countries had a net trade deficit of (-) 38.8 million tonnes in

1974-76 which increased to (-) 102.5 million tonnes by 1997-99. Interestingly, the SSR for cereals in developing countries decreased from 96 to 91 during this period.¹ Even in the case of milk and dairy products, the net trade deficit in developing countries increased by over 100 per cent [i.e from (-) 8.73 million tonnes to (-) 19.84 million tonnes] while there has been an increase of trade surplus by over 100 per cent (i.e from 8.97 million tonnes to 19.66 million tonnes) for developed countries between 1974-76 and 1997-99.

The above trends call into question the agricultural price and other support policies of particularly the developed countries. Most support measures in these countries were aimed at maintaining high prices or producer incomes which lead to high production response that otherwise would not have occurred. In order to dispose these production surpluses, export subsidies and other aids were provided to the exporters. In the early 1980s, domestic prices in OECD countries exceeded world prices by 40 per cent. Budgetary expenditures on prices supports, storage subsidies, export aids increased massively. According to some estimates, these transfers in 1979-81 averaged 32 per cent of the gross domestic value of production of all major commodities in OECD member countries. With respect to individual countries, producer subsidies were estimated to account for 16 per cent of the value of production in USA, 24 per cent in Canada, 42.8 per cent in EEC and Austria and 59.4 in Japan. (FAO, 1988)

Thus, these support policies resulted in a disarray of world agricultural markets that affected the competitive agricultural industries, mostly in developing countries. The distortionary effects of these price policies are exemplified in the case of sugar especially for EU. In 1964-66, EU had a net trade deficit of (-) 2.6 million tonnes and by 1997-99, there was a trade surplus of 4.1 million tonnes. Similar trends are also evident in cereals & meats because of which, the developed countries accumulated large stocks which would not find markets on commercial terms and hence needed to be subsidised. Thus, it is not surprising to find a secular decline in the prices of most agricultural products over the last 25 years. In 1973, the world price of wheat was about 150 US\$/tonne and by 2000 this declined to about 115 US\$/tonne. Similarly, the world prices of rice which were

prevailing at 290 US\$/tonne declined to about 190 US\$/tonne by 2000. Similar decline in world prices can be observed in sugar & rapeseed/mustard oil.

Declining international prices restricted the export opportunities to developing countries that were traditionally competitive in agricultural commodities. Further, in most developing countries, protection to agriculture was very low or even negative particularly on export commodities. Thus in sharp contrast to the subsidising policies of developed countries, the developing countries taxed their agriculture both in absolute and relative terms (relative with respect to domestic manufacturing sector).

The broad result of these contrasting policy interventions between developed and developing countries was that - too much was produced in developed countries and too little in developing countries. Further, because of high degree of insulation of domestic markets from world market conditions, market equilibrium remained at low level and market access was restricted. These together resulted in virtual trade war. Trade tensions were reflected in a large number of agricultural disputes brought before GATT such as threats of new market access restrictions, bilateral agreements, increase in export assistance for capturing, defending or regaining export shares in competitive markets. Under these conditions, the need for a framework of international rules and disciplines for agricultural trade was underlined.

1.2 Trade Policy Reform

The first step towards fundamental reform of the agricultural trading system was initiated through the Agreement on Agriculture (AOA) under the WTO framework. The basic framework of AOA aimed at (i) a fair and a market oriented trading system; (ii) greater opportunities and terms of access to developing countries; and (iii) concern for non-trade issues such as food security, environment, health, etc. Following these objectives, the rules for multilateral trading defined specific reduction commitments by member countries in three interrelated areas, namely Market Access, Domestic Support and Export Subsidies (Annexure III). These commitments which began on

1 January, 1995 are being implemented over a six-year period for developed countries and ten-year period for developing countries.

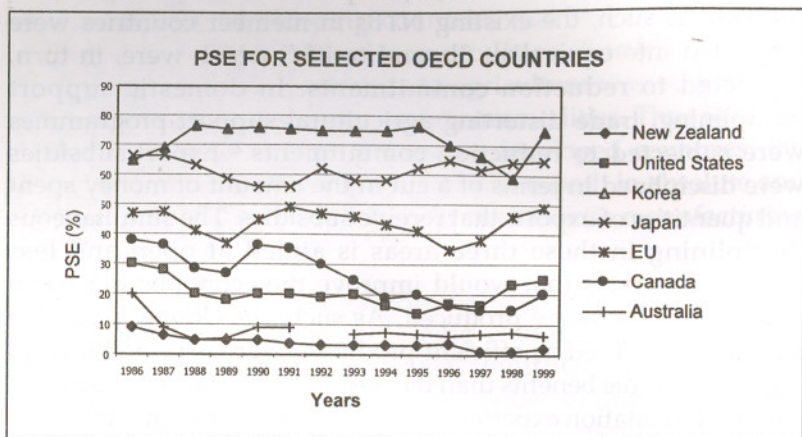
In market access reforms, AoA prohibits non-tariff barriers (NTBs). As such, the existing NTBs in member countries were converted into equivalent "bound tariffs" which were, in turn, subjected to reduction commitments. In domestic support disciplining, trade distorting agricultural support programmes were subjected to reduction commitments.² Export subsidies were disciplined in terms of a cut in the amount of money spent and quantities of exports that receive subsidies. The simultaneous disciplining in these three areas is aimed at open and less distorted markets that would improve the economic efficiency with which goods are produced. As such, developing countries that are considered as efficient producers were expected to reap higher economic benefits than the developed countries. However, the implementation experience of the AoA indicates that the trade benefits to the developing countries have been limited primarily due to the continuation of trade barriers and distortionary agricultural support programmes in member countries, especially in developed countries. The distortions in agricultural trade continued in spite of AoA as is highlighted below.

Market access: Considering that the tariff reduction commitments were based on average cuts, countries have had the flexibility to reduce more on some products and maintain high tariffs on others. As such bound tariffs have remained high especially for sensitive food products. There has also been proliferation of complex duties that have combined elements of specific and *ad valorem* duties (UNCTAD, 1999). TRQs, which were aimed to create new market access opportunities, have restricted the producers from capturing the benefits due to the administrative mechanism adopted and prevalence of high in-quota and out-of-quota tariffs (ABARE, 1999; OECD, 2001).

Domestic support: The data indicate that there is no noticeable reduction in the levels of support after 1995. Although several OECD countries have reformulated their agricultural policies towards less trade distorting instruments, agricultural support as a percentage of Producer Support Estimate (PSE) has increased since 1997. In EU, this ratio increased from 52 per cent in 1997 to

64 per cent in 1999. Such increases (though to a lesser extent) can be observed in Japan, Korea, New Zealand, and Canada (Figure 1.1 below).

FIGURE 1.1



Source: Tangermann (2001).

The distortionary effects of the support programme are also evident in the high producer nominal protection coefficients (PNPC) of agricultural commodities in OECD countries given in Annexure IV. During the implementation period, 1995-2000, the PNPC is high for a number of agricultural products, particularly for rice, sugar and milk. Domestic prices have, on an average, been 40 per cent higher than the world prices during 1995-2000 (World Bank, 2003). The continuance of such high levels of support has insulated the farmers in OECD countries from world markets.

Export subsidies: Although the total amount of subsidised exports was curtailed, export subsidies continue to be highly concentrated. About 90 per cent of the direct export subsidies are accounted by EU and about 46 per cent of the export credit guarantees are accounted by USA. The effectiveness of export subsidy disciplining is largely dependent on the movement of world prices. When world prices reign low, export subsidies rise and *vice-versa*. This is highlighted in a comparison of cost of production and export price in USA of major commodities. For example, the export price of wheat was 82 per cent of the cost of production in 1996 and by 2001, the export price declined to 56

per cent of the domestic cost. In the case of cotton, export price was 83 per cent of the full cost in 1996 which declined to 46 per cent by 2001. Similarly, in the case of soybean, the export price was 110 per cent of the full cost in 1996 but this declined to 74 per cent by 2001. (Table 1.2). The significant fall in export prices relative to domestic cost for major export products reflects the implicit rise in export subsidies for these products.

TABLE 1.2

COMPARISON BETWEEN EXPORT PRICE AND COST OF PRODUCTION

Commodities/ Year	Export price		Full cost		Export price as % of full cost	
	1996	2001	1996	2001	1996	2001
1. Maize (US\$/bushel)	4.17	2.28	4.34	3.05	96	75
2. Cotton (US\$/pound)	0.78	0.40	0.94	0.92	83	43
3. Rice (US\$/CWT)	19.64	14.55	20.70	19.41	95	75
4. Wheat (US\$/bushel)	5.63	3.5	6.88	6.24	82	56
5. Soyabeans (US\$/bushel)	7.88	4.93	7.21	6.98	110	71

Source: IATP (2003), *US Dumping on World Agriculture Markets*, Cancun Series No. 1.

Clearly, from the above, it is evident that despite the avowed trade policy reforms, distortions in global agricultural trade have continued. Partly, this is because almost all WTO members also participate in regional and preferential trade agreements. The terms under which trade takes place within these agreements are important determinants of the trends in agricultural trade flows. It is therefore, necessary to analyse how the developments in this area have influenced the global agricultural trade.

1.3 Regional and Preferential Agreements

There has been a proliferation of Regional Trade Agreements (RTAs) since the initiation of the WTO in 1995. There are both economic benefits and costs for trade under RTAs. When lower-cost imports from partner countries displace high cost domestic goods then there is trade creation effect. However, if lower cost

imports from non-members are displaced by higher-cost products of member countries, then there is trade diversion effect which raises consumer costs and encourages inefficient production patterns. Since RTAs are also associated with indirect trade effects (like technology transfer, foreign investment) and other non-economic considerations (like regional security, immigration flows, etc.), identification of clear net trade benefits and costs under RTAs are difficult. However, the experience of some important RTAs like NAFTA, Mercosur has indicated that agricultural trade liberalisation has been at a faster pace between these countries than under AOA (FAO, 2003). More significant is that bilateral/regional institutions have played an important role in global food regulation. In most cases, bilateral regional food standards have emerged which makes new technical requirements binding for non-members to gain entry into unified market. The trade effects of such regional initiatives are yet to be discerned.

Preferential Trade Agreements (PTAs): Most developing countries (especially least developed countries) depend on PTAs for access to the protected developed country markets in Europe, North America and Japan. Under WTO, four PTAs that are of particular relevance are: the *Generalised System of Preferences (GSP)*, *ACP-EU Cotonou Agreement*, *US Trade and Development Act of 2000* and *Everything But Arms Initiative* by EU. These PTAs provide the recipient countries access at lower import duties than other competing countries. In general, these provisions of PTAs have been considered as a form of aid for economic development.

The operational issues of PTAs have indicated that some developing countries have gained at the expense of other developing countries (ABARE, 2001). Further, it has been argued that the overall net trade benefit to the recipient countries is modest as only a few individual producers and industries gain from the access into the highly protected markets (FAO 2003).

II. FOOD SECTOR: ISSUES FOR DEVELOPING COUNTRIES

2.1 Introduction

The distortions in the world agricultural markets, highlighted in the earlier section, have continued in spite of trade policy

reforms initiated at the global level. While the developed countries had food surpluses, food insecurity in developing countries has always been a major global economic issue. FAO estimates indicate that the incidence of undernourishment, in developing countries was at 777 million in 1997-99 (i.e. 17 per cent of population). Although the per capita food consumption (kcal/day) for developing countries has increased from 2,054 to 2,681 between 1964-66 and 1997-99, there are wide variations in the consumption levels among developing countries. Sub-Saharan African Countries have per capita food consumption below 2200 (kcal/day) while India and Pakistan are at middle levels, i.e. 2400 (kcal/day). As against this, per capita food consumption in industrial countries was at 3380 (kcal/day) in 1997-99 (FAO 2002). These wide variations in food consumption are related to food availability in these countries. The question, therefore, is why didn't globalisation which promoted trade between countries reduce the unequal access to food between countries?

2.2 Analytical Framework

Most nations of the world consider food security as the prime responsibility of the state towards its citizens. In doing so, the policy of food self-sufficiency encouraged countries to adopt productivity enhancing technologies for increasing the availability of food to the growing masses. Trade was not considered as a viable option for meeting domestic food requirements by many countries. International empirical evidence did not confirm the causality between openness and poverty reduction. The channel of influence between trade and poverty was primarily through two relationships, namely trade openness and income growth; and income growth and poverty reduction. While empirical evidence has highlighted the positive correlation between trade and income growth (Dollar & Kray 2002; Edwards 1998), poverty reduction under rising incomes was largely determined by the income distribution and there lie, the importance of appropriate rural institutions and productivity enhancing rural infrastructure (Dorosh 2001; Rodrik, 2000). With most countries enhancing their domestic food production capabilities, global trade flows were determined by the ensuing food surpluses which were in turn a result of

domestic support/price policies.³ The classical trade model of production cost differentials determining trade flows was hardly relevant in the case of food. The trade competitiveness arising out of efficiency differences in the use of production factors (Ricardian Comparative Advantage) or differentials in factor endowments (Heckscher Ohlin) did not determine food trade flows. This, to a certain extent, is reflected in the production and trade indicators highlighted in Annexure V. While there have been significant gains in the production and productivity levels of major food crops, trade has been low. For example, 3.7 per cent of production was traded for rice, 19.3 per cent for wheat, and 17.6 per cent for pulses. As against this, for commercial crops, 73 per cent of production was traded for coffee, 49.5 for tea and 32.3 for soybeans.

Even when competitiveness issues did not seem to influence food trade flows, there have been simultaneous developments that have influenced world food trade. Most developing countries that have specialised in producing and exporting primary agricultural products were facing constraints for growth because the export products/markets faced low and declining demand elasticities. Two-way trade (TWT) or intra-industry trade in differentiated products was shown to overcome this elasticity constraint (Krugman, 1986). If consumers have a certain taste for variety, each new differentiated product creates a niche and the corresponding demand. Thus, the country with higher growth produces more product variety which in turn generates export markets. Indicators of trade diversification and specialisation (Annexure VI) show that the developed countries recorded a rapid growth in TWT during 1980s and 1990s while TWT remained at low levels in developing countries. The lack of development of TWT in developing countries is because of the absence of an internationally competitive food processing industry in these countries.⁴

While the production of the processed food products was constrained by the absence of a competitive domestic food processing sector, structural shifts in the food demand in developing countries took place. Processed food products gained importance in the food demand structure of developing countries. As Annexure VII highlights, per capita consumption of milk in

developing countries increased from 37 kg (fresh milk equivalent) in 1984-86 to 45 kg in 1997-99. During the same period, per capita consumption of meat (carcass weight) increased from 16 kg to 26 kg while cereals remained stagnant at 172-173 kg. Further, from the Annexure VII, it is also evident that the food consumption levels in the developing countries are relatively lower compared to that of developed countries. From this, it would follow that future food trade flows will be driven by the demand for processed food products in developing countries.

The demand for processed food products in developing countries also accelerated because of the dominance of TNCs in the global food industry. Most of the food chains/clusters operate from US or Western European⁵ having a majority of TNC subsidiaries in developing countries mainly in Asia and Latin America. The dominance of TNCs and their expansion into developing countries has influenced the consumption pattern in these countries. The Consumption Similarity Index (CSI) indicates that there is a strong convergence of food consumption pattern in OECD countries as 80 per cent of the calories consumed stem from the same food products. Similar convergence is also evident in Asian and African countries as well. There is also similarity in consumption pattern between the regions as 60 per cent of the calories consumed between regions stem from the same food products. (FAO 2003)

Strengthening food processing sectors in developing countries requires an establishment of effective agriculture-industry linkages. As food production in most developing countries is characterised by a large number of small farmers, mainly unorganised, instituting efficient production systems and establishing effective backward and forward linkages necessitates a revamping of the existing institutional structure. Besides the efforts to initiate agriculture development programmes at national level, TNC investment in agriculture has also provided the necessary impetus by promoting technology transfer and initiating better farming practices. However, international evidence of the benefits of TNC investment in agriculture varied between countries. While there have been instances of positive effects - productivity gains, income increases, improved farming practices - through new

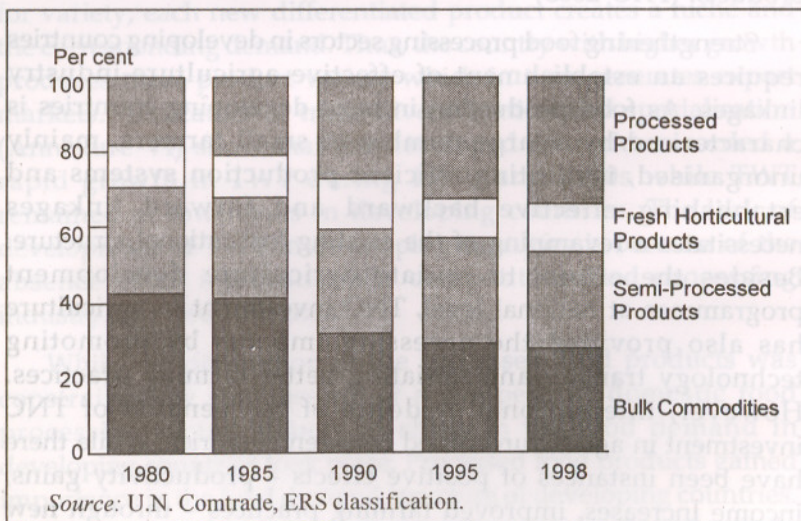
institutional arrangements like contract farming,⁶ there have also been instances (as in some African countries) where profit margins of banana farmers were squeezed due to the lack of negotiating power of unorganised small farmers. Therefore, the challenge of policy is to develop appropriate domestic incentive systems, institutional support infrastructure that can provide effective operating conditions for farmers to integrate into the global economy.

III. STRUCTURE OF FOOD TRADE: WORLD AND INDIA

3.1 Trends in Food Trade: World and India

Figure 3.1 highlights the changing structure of food trade⁷ during 1980 and 1998. The processed consumer goods emerged on the fastest growing category with the percentage share in world food trade increasing from 18 per cent in 1980 to almost 33 per cent by 1998. At the same time, the share of bulk commodities dropped from 50 per cent to 31 per cent during this period. The share of intermediate processed products increased from 18 per cent in 1980s to 23 per cent during late 1990s.

FIGURE 3.1
WORLD GRAIN TRADE DECREASED AS
PROCESSED FOOD TRADE INCREASED



The behaviour of the world exports and imports of food products during 1997 and 2001 is highlighted in Annexure VIII. All categories of food products (except fisheries) declined between 1997 and 2000, after which they registered an increase in 2001. In relative terms, the decline in exports of primary products was more than that of processed products – the CGR for primary was (-) 2 per cent as against (-) 1.2 per cent for processed products. The same is true for food imports. As such, the percentage share of processed products in both world food exports and imports has been rising as compared to semi-processed and primary products.

This change in the structure of food trade is closely related to the changing food consumption pattern across countries/regions. During 1970s, consumption shifts towards processed products (especially meat, milk and vegetable products) took place in affluent markets like EU, North America and Japan. But in the case of developing countries, these consumption shifts were witnessed place during 1990s. While the cereal consumption (kg/person/day) plateaued at 173, meat consumption increased from 16 to 26 and milk from 37 to 45 (Annexure VII).

The structure of India's food trade between 1996-97 and 2002-03 is given in Annexure IX. Fisheries and primary food products emerged as major food exports registering a growth rate of 18 per cent and 12 per cent respectively. Against this, the exports of semi-processed products declined during this period. The above trends imply that for India, primary food products continue to be major exports as is reflected in their rising relative shares. Between 1996-97 and 2002-03, the share of primary food products in total food exports increased from 45 per cent to 50 per cent. Against this, the share of semi-processed products declined from 25 per cent to 20 per cent.

Compared to food exports, the structure of food imports was dominated by semi-processed and processed food products. During 1996-97 and 2002-03, the semi-processed products registered a growth of 29 per cent and that of processed products the growth was at 14 per cent. Together they account for about 80 per cent of India's food imports in 2002-03.

A comparison of the trends in India's food trade with that of the world highlights the following. *First*, India's share in world

food exports registered a marginal increase from 1.4 to 1.6 per cent between 1997 and 2001. However, with respect to the broad food categories, significant increase in India's share in world food exports took place in primary food products followed by semi-processed food products. Between 1997 and 2001, the share of primary food exports increased from 2.4 per cent to 2.7 per cent and that of semi-processed food products, the share increased from 1.6 per cent to 1.9 per cent. In relation to the decline in the world food exports, discussed earlier, these trends imply that while world trade in primary and semi processed food products is shrinking these products still constitute major export items for India (Table 3.1).

TABLE 3.1
PERCENTAGE SHARE OF INDIA'S TRADE IN THE WORLD

	1997	1998	1999	2000
Exports				
Primary	2.41	2.99	2.59	2.68
Semi-processed	1.60	1.59	1.62	1.85
Processed	0.29	0.23	0.26	0.30
Fisheries	3.82	3.38	3.68	4.33
Total food	1.36	1.42	1.39	1.57
Imports				
Primary	0.90	1.20	1.16	0.60
Semi-processed	1.32	1.24	2.48	1.85
Fisheries	0.03	0.04	0.02	0.02
Processed	0.07	0.06	0.05	0.07
Total food	0.54	0.71	0.85	0.60

Source: UNCTAD, PCTAS (2001).

Second, the structural shifts that have taken place in the world food trade (evident in the relatively higher shares of processed food products) appear to have influenced only India's food imports and not exports. The relative importance of semi-processed and processed products in food imports increased from 69 per cent to 80 per cent between 1996-97 and 2002-03 while the exports of the same decreased from 34 per cent to 28 per cent. This implies that consumption shifts in the domestic market are taking place towards processed and semi-processed products without an accompanying expansion in the domestic production base.

3.2 Trade in Major Food Products: World and India

(i) World

Annexures X(a) and X(b) give product-wise details of major world exports and imports of food products⁸. The exports of primary food products have declined (both in absolute values and relative shares). This is particularly significant for cereals, mainly Wheat and Maize. The share of wheat exports in total food exports declined from 4.5 per cent to 3.8 per cent and for maize from 2.5 per cent to 2.4 per cent during 1997 and 2001. Horticulture based food exports account for over 20 per cent of total primary food exports.

About 75 per cent of the semi-processed food exports are accounted by fisheries, dairy and meat products. Among the dairy products, cheese and curd are important trade products followed by milk and cream, butter and fat. Among the meat products, poultry meat followed by swine meat and bovine meat have emerged as major trade products. The relative importance of these products in world food trade is on the rise. As a per cent of total food exports, fisheries product exports increased from 8.1 to 9.1 per cent, dairy products (especially cheese and milk 0402) increased from 5.9 per cent to 6.3 per cent, and meat products (0203, 0207) increased from 10.1 per cent to 10.9 per cent between 1997 and 2001.

Though the export and import of processed food products is more diverse, the relative importance of cereal preparations and processed fruits and vegetables is rising. The share of cereal preparations in total food exports increased from 6.5 per cent to 7.2 per cent and that of processed fruits and vegetables increased from 2.9 per cent to 3.2 per cent during 1997 and 2001. Together, their share in exports of processed products increased from 20.7 per cent to 22.6 per cent during the same period.

(ii) India

The product structure of major Indian food exports and imports are given in Annexures XI (a) & XI (b). Amongst the major primary food exports, rice and wheat have registered significant increase (both in absolute and relative terms) between

1996-97 and 2002-03. Together, their share in food exports increased from 20 per cent to 25 per cent during the same period. Against this, pepper which has been a traditional export-item for India decreased significantly both in absolute and relative term. The share of pepper in total food exports decreased from 3.2 per cent to 1.5 per cent during the reference period.

Amongst the semi-processed food exports (excluding fisheries), the relative importance of tea and frozen meat has increased while for coffee (another traditional export-item) it has significantly declined. The share of coffee in total food exports decreased from 6.1 per cent to 2.3 per cent and for frozen meat it has increased from 2.9 per cent to 4.0 per cent during the same period.

In the case of processed food exports, cereal preparations, and fruits & vegetable products have increased by about 100 per cent during 1996-97 and 2002-03. It may be noted that world food trade in these products is expanding, as discussed earlier in this section. As such, expansion of trade in these products enhances the export opportunities for India.

Shifts in the structure of food imports reflect the changes in the consumption pattern of a country. In the case of India, the food imports of semi-processed and processed products have significantly increased during 1996-97 and 2002-03. In semi-processed food imports, edible oil and dried vegetables increased both in absolute and relative terms. The share of edible oils in total food imports increased from 37 per cent to 53 per cent during 1996-97 and 2002-03. During the same period, the share of dried vegetables increased from 14.7 per cent to 18.5 per cent. Amongst the processed food imports, food preparations (like chocolate, pasta), fruit juices, and alcohol & spirits have increased considerably.

3.3 Summary

The structure of world food trade changed significantly over the last two decades. The processed consumer goods emerged as the fastest growing category compared to primary and semi-processed products. Considering the shifts in food consumption pattern and plateauing of food demand in developed countries,

trade in processed food products will be dominated by the demand in developing countries.

An analysis of the structure of Indian food exports has highlighted that besides fisheries, primary food products have emerged as major export items. Seen against the trend of shrinking world trade in the primary products, sustaining India's primary food exports would be difficult.

The analysis of India's food imports highlights the growth in the imports of semi-processed and the processed food products. This would mean that while consumption shifts towards these products are taking place, domestic production capabilities are inadequate.

A disaggregated analysis of food exports and imports for World and India have highlighted the following. *First*, Horticulture food products, dairy and meat products, cereal preparations and processed fruits and vegetables are emerging as major items in the world food trade. *Second*, there have been structural shifts in the food export basket of India. New export items like rice, frozen meat, cereal preparations and fruit & vegetable products are expanding. As against this, the traditional export items of pepper, coffee and tea have declined considerably (both in absolute and relative terms). In fact, imports of pepper and tea have been on the rise. This would reflect, to a certain extent, India's declining competitiveness in these products. And *lastly*, the structure of food imports, especially the processed food imports, reflects the changing consumption pattern in the country. This is evident in the considerable increase in the import of food products like chocolate, pasta, fruit juices and alcohol & spirits.

IV. DIMENSIONS OF FOOD TRADE FLOWS

4.1 Introduction

Trade patterns are largely determined by changes in consumption, production and commercial/trade policies. Changes in consumption/production in one region have implication for production/consumption in other regions. Even while trade links countries/regions by balancing out the differences in consumption and production, the actual trade is an outcome of the border policies of the trading partners. For

example, the imposition of tariffs and/or non-tariff measures (NTMs) by importing countries on certain products originating from some countries would influence the pattern of trade flows between countries.

Taking this observation into account, the analysis in this section aims at the following: (i) identify the major players/countries in world food trade; (ii) analyse the structure of trade flows between India and major trading partners; and (iii) trade implication of border measures (tariffs and NTMs) for India.

4.2 Major Exporters and Importers of Food Products : World

Annexures XII & XIII detail the main exporting and importing countries for the major food products traded globally. In the primary food products, export and import markets are highly concentrated. This is particularly true for most horticultural crops (tomato, pepper, almonds, and banana) and wheat among cereals where two or three countries account for over 50 per cent of world trade. For example, Netherlands and Spain account for 48 per cent of tomato exports, 60 per cent of pepper, USA accounts for 70 per cent of almond exports; Canada and USA account for 65 per cent of wheat exports; Thailand and India account for 40 per cent of rice exports. A product-wise comparison of major exports and imports highlight that USA is a major importer of horticultural crops and major exporter of cereals. Interestingly, for most horticultural crops, trade flows are concentrated among developed countries, mainly USA and EU.

World trade in semi-processed products is largely concentrated in meat and dairy products. As in the case of primary products, export and import markets are highly concentrated. USA is a major exporter and an importer of meat products.⁹ EU countries are major exporters and importers of milk products. Global trade in these food products is concentrated among developed countries, mainly USA, EU, Australia, New Zealand and Japan.

World exports and imports of processed food products are more diversified. Concentration of market is only evident for grapes wine, whisky and beer. To a large extent, trade in these products is concentrated among developed countries, mainly EU, USA and Japan.

4.3 Major Export Destination for Indian Food Exports

A closer look at the structure of export destinations highlights the following:

- (i) In the case of cashew kernels, USA is an expanding market (its share in world imports increased from 38 per cent to 47 per cent) and India's export into this market has also increased (the share of USA in India's export increased from 36 per cent to 45 per cent).
- (ii) In the case of pepper, the share of USA in world imports increased from 23 to 27 per cent but India's exports into this market have decreased. The share of USA in India's exports decreased from 43 per cent to 38 per cent. Against this, the shares of Sri Lanka, UK and Canada have increased.
- (iii) Wheat and rice being food crops, India's export destinations are mainly to developing countries in Asian and Middle East regions.

The exports of semi-processed food products are largely fisheries and meat products. India's exports of bovine meat to Malaysia, Philippines and Jordan have increased during 1997 and 2001. However, important world markets for bovine meat are USA, Japan and Russian Federation into which India has no access. For fisheries, China is emerging as major export destinations along with USA, Japan and EU.

Among the processed food products, the exports of food preparations, vegetable and fruit product and tobacco products have increased primarily on account of rising import demand for these products. In the case of food preparations, USA is an expanding market but India's exports to USA have declined during 1997-2001. For tobacco products, Japan and EU are expanding markets, but India has no presence in these markets. USA is emerging as an important export destination.

4.4 Major Sources for Indian Food Imports

Annexure XV details the major sources for food imports. Among the primary food imports, spices are emerging as important products. In the case of pepper,¹⁰ Vietnam and

Indonesia have emerged as major import sources, together accounting for about 56 per cent of India's imports in 2002. Sri Lanka, Indonesia are emerging as major import sources for cloves and nutmeg, while Nepal is emerging as an important import source for nutmeg and ginger.

Among the semi-processed food imports, dried leguminous and tea have emerged as major import items. In the case of the former, Australia, Canada and Myanmar are major sources of import while for tea the major importing countries for India are Indonesia, Kenya and Sri Lanka.

The imports of processed food products are largely accounted by fats & oils. Indonesia and Malaysia are major import sources for coconut and palm oils. Nepal has emerged as an important import source for animal/vegetable fats and fruit juices. For cereal products and soups & broths, USA is the major import source.

4.5 Trade Implications of Border Measures (Tariffs and NTMs)

Market access of Indian exports is affected by nominal tariff rates and/or non-tariff measures (NTMs) prevalent in the importing countries. In the earlier section, it was highlighted that there have been considerable shifts in export destinations during 1997-2001. It was also argued that in some expanding markets India had no presence. Following this, it needs to be seen whether these shifts in markets are on account of the border measures.

Annexure XVI highlights the tariffs and NTMs faced by Indian exports in important importing country markets. It is interesting to note that there are wide differences in the border measures faced by a single product in different export destinations. While USA imposes a zero tariff rate on pepper, Sri Lanka imposes a tariff rate of 25 per cent and Canada has 100 per cent NTM on this product.

Secondly, tariff rates are high mainly in developing countries while NTMs are widespread in both developed and developing countries. For example, in semi-processed products, bovine meat and fish products face extensive NTMs. In some of the competing countries, like Thailand for fish products, the tariffs are also high. Similar is the case for processed products.

Thirdly, a single product faces a number of NTMs in the same market. For example, malt extract in USA faces TRQs, SPS and TBT measures. Similarly, food preparations in Malaysia face besides a number of SPS and TBT including packing and labelling requirements. This is particularly true for most semi-processed and processed products.

Another dimension of the market access issue is the special preferential treatment accorded to some of the competing countries that may have affected India's export opportunities. Annexure XVII highlights the inter-country differences, with respect to tariffs and NTMs. Among primary products, India's competitors in the importing country had no preferential tariff rates. In the semi-processed products, for two fishery products (sol & crabs frozen) Mexico and Canada got preferential tariff rates for exports into USA, under US-Canada and US-Mexico FTAs. In the processed products, for food preparations, malt extract and vegetable preparation, Canada received preferential tariff rate in USA and Australian markets. For cigarettes in Malaysian market, China received preferential tariff rate under ANDEAN free trade area.

4.6 Summary

World food trade in primary and semi-processed products is highly concentrated in the few markets. For example, USA accounts for over 50 per cent of world's export of soybean, maize, almonds and over 15 per cent for oranges, apples and wheat. Canada accounts for about 50 per cent of the world exports of wheat and Thailand accounts for about 35 per cent of the world exports of rice. For most meat products, USA and Australia account for about 50 per cent of the world exports. EU countries account for all world exports of milk and cream and cheese. Similar concentration is also evident for the import of primary and semi-processed products. USA accounts for over 25 per cent of the world imports of tomatoes, pepper, banana, pineapple, grapes, coffee, bovine cuts, sheep cuts and swine meat. EU countries account for over 30 per cent of the world imports of apples and peaches. Japan accounts for over 25 per cent of the world imports of bovine cuts, swine cuts, fowl cuts and maize.

In the case of processed food products, world exports and imports are more diversified. Concentration is only evident in wine, palm oil, whisky and beer. Important exporting countries are EU (sugar refined, chocolate, malt extract, and orange juice, whisky, wine and beer), Malaysia (palm oil), USA (malt extract, nuts and seeds, soyabean oil, food preparation, tobacco and cigarettes) and Brazil (tobacco and soyabean). Important importing countries are Japan (shrimps, malt extract, cigarettes, fruit products) USA (tunas, shrimps, sugar, whiskies, wine, fruit product, beer), EU (food preparation, chocolate wafer).

Thus, world food trade is dominated by developed countries. Except for a few developing countries like Mexico, Ecuador, Brazil and Columbia, other developing countries are not major players in the world food market. A closer look at the structure of India's major export destinations highlight the following: *First*, among developed countries, USA is a major export market for cashew kernels, pepper, marine products, prepared fruits and vegetables products, food preparations and cigars followed by Japan and EU countries. In these markets, the share of Indian exports increased for the following products: cashew kernels (USA), oilseeds (USA), frozen fish (Japan), crustaceans (USA), molluscs (Spain, USA), prepared fruits and vegetables (USA), extracts (USA), food preparations (USA), cigars (USA). *Secondly*, developing country markets are emerging as major export destinations for India. For example, Indonesia and Pakistan for cane sugar, Saudi Arabia for rice, Bangladesh and UAE for wheat, Srilanka for pepper, Malaysia, Philippines and UAE for frozen meat, China for frozen fish, UAE for tea and food preparations. *Thirdly*, India's major export destinations are not major import markets. For example, for cane sugar, USA and Russian Federation are the world's major importers. However, India's major export destination is Pakistan. For Frozen meat, Russia, Japan and USA are world's major importers; but India's export destinations are Malaysia and Philippines. Similar is the case with coffee, food preparations, unmanufactured tobacco and cigars. This may indicate market access problems of India's exports into these major markets.

Between 1996-97 and 2002-03, there has been a significant increase in the imports of pepper, cloves, cardamom, seeds, dried

vegetables, soybean oil, chocolate, pasta, fruit juices and alcohol. A closer look at the import sources indicates the following: *First*, developing countries are emerging as major import sources; For pepper, Vietnam and Sri Lanka are major import sources; for cloves, it is Sri Lanka and Indonesia; for nutmeg and cardamom it is Nepal and Sri Lanka; for soybean oil it is Argentina and Brazil and for fruit juices and pasta it is Nepal. *Secondly*, these imports are taking place despite a relatively high applied tariff rate. *Thirdly*, for some traditional exports like pepper and spices, India is emerging as a major importer. And *lastly*, over 90 per cent of India's imports of prepared food products, soups, broths are from USA.

The analysis of tariffs and NTMs has given interesting insights. *First*, besides wide differences in the border measures faced by the Indian exports in different export markets, tariffs and NTMs are applied together in some markets. For example, Taiwan imposes both tariffs and NTMs on oilseeds, Bangladesh for cane or beet sugar; Egypt for Bovine meat; Thailand for crustaceans; Bangladesh and USA for malt extract. *Second*, Indian exports face extensive NTMs and high tariffs mainly in the developing countries. *Third*, a single product faces a number of NTMs in the same market. And *fourth*, India's export opportunities for some items seem to have been affected by the preferential trade agreements between USA and Mexico, USA and Canada and ASEAN.

V. IMPLICATIONS FOR INDIAN FOOD SECTOR

5.1 Summarising Food Trade Issues for India

In the earlier sections, the structure and composition of food trade and also the dimensions of food trade flows between countries have been analysed. It was pointed out that the world food trade has changed structurally over the last two decades. Globally, trade in bulk commodities declined whereas trade in intermediate and processed consumer products increased significantly. Against this, India's food exports were dominated by primary food products. Thus while world trade is shrinking for primary products, these products still constitute a significant share of exports for India. And, with respect to food imports

into India, the relative importance of semi-processed and processed products has risen. Between 1996-97 and 2002-03, their share in total agricultural imports increased from 69 per cent to 80 per cent implying shifts in consumption in the domestic market.¹¹

Together, the food exports and imports trends highlight two important challenges for the domestic food industry. *First*, to sustain the growth in agricultural exports, there is a need to shift the emphasis from primary to the processed food exports. This would require reformulating export strategies with respect to developing production capabilities for the processed food products and developing markets for the same. *Secondly*, consumption of processed food products is expanding in the domestic market. Capitalising these emerging market opportunities would enable the domestic food industry to reap scale economies that in turn would facilitate the domestic food industry to compete effectively in the world markets.

The analysis of the product structure of world food trade has highlighted the growing importance of horticultural products, meat & dairy products, cereal preparations and processed fruits and vegetable products. In contrast, India's export basket was dominated by traditional items like rice, wheat, pepper, coffee, tea and to a small extent cereal preparations and processed fruits and vegetables. Thus, it was evident that India was not able to successfully tap the emerging export opportunities in the world food market.

For exploiting the market opportunities for processed food products, development of competitive food processing sector is required. This is not only dependent on efficient production systems but also requires efficient upstream access to raw materials and downstream access to markets. Establishing these efficient backward and forward linkages requires large-scale operations that would necessitate structural changes in the existing agricultural production, distribution and marketing systems. Some developing countries have made significant inroads into food processing by establishing efficient forward and backward linkages. These countries are Brazil (orange juice), Thailand (canned pineapple), Columbia and Brazil (soluble coffee). In this context, it may be noted that experiments with

new institutional arrangements like contract farming have yielded good results in India. Tomato yields in Punjab have increased from 16 tonnes/ha in 1989 to 52 tonnes/ha in 1999 (Pepsi Foods, 2000). Studies by Punjab Agricultural University reveal a very substantial increase in farmers' income who have entered contract farming with Pepsi Food for tomato, potato, chilli and basmati rice. In this case, Pepsi Foods has procured these commodities for further processing into tomato and chilli paste which was exported using the company's global marketing networks. Thus, investment flows into agriculture (in the form of FDI) had helped to create export capability. Further, by eliminating the middlemen in the product distribution and marketing, farmers also have benefited.

Initiating technological interventions and institutional reforms in agricultural sector requires high investment flows. Estimates indicate that for reforming Indian food chain systems, investment to the order of Rs 140,000 crore is required for revamping processing, procurement, distribution and agriculture sectors. However, it is disconcerting to observe that public investment in agriculture has been on the decline. The capital formation in agriculture at 1993-94 prices indicates that the share of public investment has declined from 33 per cent in 1993-94 to 24.8 per cent in 1999-2000. Thus corporate-agriculture nexus needs to be strengthened for increasing investment flows into this sector. This in turn would not only result in successfully tapping the export opportunities for the processed food products but also can meet the expanding domestic demand for the same.

While export opportunities exist, gaining access into the markets has been a major issue to reckon with. For the major food items traded globally, the export and import markets are highly concentrated for horticultural crops, cereals, meat and milk products. Interestingly, for these products, trade flows are concentrated among developed countries, mainly USA, EU, Australia, New Zealand and Japan.

For the products of trade interest to India, our analysis has shown that the trade flows are concentrated among developing countries. It would, therefore, seem that intra-developing country trade has been on the rise. A recent WTO Secretariat paper¹² has

also highlighted this trend. The paper has pointed out that in the second-half of 1990s, the developing countries are becoming important export markets for agricultural exports from other developing countries. This is particularly true for primary and some semi-processed products whereas trade in processed consumer products is still dominated by developed countries, particularly the USA.

An immediate fallout of the rising intra-developing countries' trade is that more and more developing countries are competing with one another. Therefore, countries like Vietnam, Brazil, China, who have successfully reformed their domestic agricultural sector have gained significantly from this emerging trend. For example, pepper exports – a traditional export item and a major contributor to India's foreign exchange earnings – have declined for India even when the global demand was expanding. This was primarily due to the emergence of major competitors like Indonesia, Vietnam and Brazil. As a result, the relative share of India in important markets like USA has also declined. More alarming is the reverse trend. India's imports of pepper have risen considerably especially from these countries. (Annexure XV). Similar was the case with other traditional exports like Tea.

Consequent to these shifts in trade flows among developing countries, border measures are becoming increasingly important. As was highlighted earlier, tariffs and NTMs were widespread for these products among developing countries and relatively higher than those prevalent in developed countries. In the case of processed consumer products which India exports primarily to developed countries, *market access* has emerged as a major issue. Particularly for Indian exports of processed fruits and vegetables, the preferential arrangements between developed countries is emerging as a major deterrent for food trade flows.

5.2 Food Trade Issues & AoA

Following the Article 20 of the AoA, mandated negotiations were initiated in April 2000 with the objective of further increasing market access and reduction/elimination of domestic support and export subsidies.

One important area of negotiations in agriculture relates to market access. Under AoA, non-tariff measures were prohibited. As such, the tariffication process has aimed at converting NTMs into equivalent tariffs and, through the reduction commitments has aimed to address both tariffs and NTMs that have affected agricultural imports in the past. But, our analysis in the previous section has highlighted the widespread prevalence of NTMs primarily for semi-processed and processed products. The NTMs are primarily import restricting measures falling in the domain of SPS and TBT. Data on food import rejections by USA during 1996-97 have indicated that about 53 per cent of food import rejections were on account of filth, decomposition and microbiological contamination.¹³ These rejections were primarily from African, Asian, Latin American and Caribbean countries (OECD, 2001). These data highlight the problems in these countries in meeting food hygiene standards and complying with technical measures in high income countries.

While the above arguments emphasise the need for upgrading technical and institutional competence in developing countries, there is also evidence to show selective application of SPS measures primarily with the objective of restricting imports. For example, Australia, China and Japan have imposed import restrictions on grapes from India on the ground of the presence of fruit flies. Ironically, China imposed the ban on grapes *for a species of fruit fly that does not exist in India*. Further, the Japanese stipulation of Vapor Heat Treatment (VHT) for fruit imports is yet another instance of SPS being a key instrument for restricting trade (Mehta, 2002). SPS measures were also considered to be most significant impediment for exports into EU. During 1997 and 1999, SPS measures were particularly restrictive for fish and products, meat and meat products, fruits and vegetables products, spices and processed forms of these products. In conjunction with other technical requirements, like labelling and/or compositional standards, SPS measures impede trade significantly. (OECD, 2001)

From the perspective of developing countries, market access issues would involve balancing the conflicting interests of export promotion and import protection. Especially with intra-developing country trade increasing and most developing countries seeking tariff reduction concessions under S&D, the

market access gains for *individual* countries through tariff reduction will be limited. For India, what would be more important for export promotion would be to structurally shift the composition of export basket. With the demand for processed food products increasing in both developed and developing countries, the long-term objective should be to develop these products for exports. Accordingly, the requisite institutional and infrastructural support for developing forward and backward linkages needs to be strengthened. Such initiatives for reforming the agricultural sector take time. Therefore, India should negotiate for a longer implementation period for tariff reduction.

Another area of concern associated with the opening of Indian agriculture is the possible exposure to price volatility that characterise world food market. Though AoA has aimed to reduce price volatility by increasing the depth of the agricultural markets, data reveal that price volatility continued even in post-AoA period. The concerns for India if price volatility is transmitted through cross-border trade would be two-fold. *First*, in line with international price volatility if domestic price instability increases, this would alter the risk perception of farmers and thereby have serious implications for production increases. And *second*, recent estimates suggest that the poor spend about 40 per cent of their budget on cereals and therefore foodgrain prices are important. It was also found that the poverty ratios are positively correlated with foodgrain prices. The elasticity of poverty ratio to CPIAL (Consumer Price Index for Agricultural Labourers) is 0.23. This implies that a 20 per cent increase in price level will increase the poverty ratio by 4.6 per cent if the initial poverty ratio is 40 per cent (Kotwal and Ramaswami, 1999). Thus, food security concerns would be a major issue for negotiations.

Low and/or unstable international prices are an obvious outcome of the extensive domestic support programmes and export subsidies given by most developed countries. Although no causal relationship between support programmes and international price volatility has been established, the adverse implication of high agricultural support on international prices has been widely recognised. Thus, while negotiating for a reduction in domestic support and export subsidies, there is also

a need to *negotiate for safeguard measures*. In the case of India where yields are low and agriculture is susceptible to variations in climatic conditions, safeguards would be necessary in the event of further reduction in tariffs.

5.3 Challenges for Indian Food Sector

From the detailed analysis of the food trade and trade flows, carried out in the earlier sections, it is clear that the challenges facing the Indian food industry need to be addressed both internationally and domestically. While the challenge for international negotiations under AoA is to effectively address the *market access* issues for Indian exports, the challenge on the domestic front is to initiate agricultural development programme that would revolutionise agricultural production, marketing and distribution systems.

Internationally, the high product and market concentration characterising the agricultural trade flows are a reflection of the continuation of the distortionary support policies in the developed countries. By taking advantage of the flexibilities that are available under AoA, the USA and EU have restructured their support programmes wherein price support and input subsidies were replaced by direct compensation to the farmers. In both these countries, product subsidies are concentrated on a few commodities that are of export interest to them. Such concentration of support measures can effectively foreclose potential export opportunities for the developing countries either in these markets and/or in third country markets. This problem is further compounded by the prevalence of widespread NTMs.

The above developments are taking place especially at a time when most developing countries are opening up their markets. The analysis of the structure of food exports and imports of India has highlighted the potential threats to the domestic agricultural sectors in these countries - while export markets are shrinking, processed food imports are on the rise. Some developing countries (like Brazil, Vietnam and China), however, have been able to counter this emerging international milieu and capitalise on the export opportunities by successfully restructuring their agricultural sectors.

The Indian food sector, on the contrary, has been plagued by inefficiencies in production, distribution and marketing systems. Low yields, high levels of wastage and value loss and too many intermediaries in the procurement chain have perpetuated traditional cropping pattern and crop husbandry practices. A significant part of the total agricultural output does not even enter the marketing channel. It is estimated that only 61.7 per cent of the agricultural production enters the marketing channels (Acharya, 1994) of which, a small portion still goes for external trade.

An important fallout of the continuation of the traditional agricultural system is low capital formation and the absence of efficient backward and forward linkages which has constrained the development of a competitive food processing sector in India. Exploiting the vast potential for increasing yields requires investment, especially public investment, in soil and moisture conservation, land development, improvement in irrigation, extension services and infrastructure for marketing and processing. This is particularly true for dryland areas which have a comparative advantage in horticulture and livestock products, but have been unable to capitalise on the external trade opportunities for want of large investments in agro-processing and other support infrastructure (Vaidyanathan, 2000). Technology can play an important role, especially in the development of new crop varieties through selective adoption of bio-technology and strengthening of bio-safety regulations.

The urgency of technological upgradation is necessary if farmers have to gain from global agricultural trade opportunities to be taken up. However, the opening up of agriculture will invite competition under the WTO regime which obviously necessitates new policy initiatives.

The current agricultural price regime continues to be guided by two contradictory objectives of increasing domestic food production and of maintaining low and stable food prices. The resultant distortions in relative prices have affected the cropping pattern that favoured crops which were less trade important. Further, the unfavourable cost benefit ratio (arising out of low output prices) has constrained exports by not generating "genuine surpluses" which are necessary for sustaining export markets

ANNEXURE I

NET TRADE OF DEVELOPING COUNTRIES

US\$ billion (current)

Commodity category	1961-63	1979-81	1997-99
Total agriculture	6.68	3.87	-0.23
Total food	1.14	-11.52	-11.25
<i>1. Temperate-zone</i>	-1.72	-18.17	-24.23
Cereals (excluding rice)	-1.57	-14.25	-17.40
Wheat	-1.53	-10.45	-10.30
Coarse grains	-0.04	-3.80	-7.10
Meat	0.22	-0.56	-1.18
Ruminant	0.27	0.14	-0.93
Non-ruminant	-0.06	-0.71	-0.25
Milk	-0.37	-3.36	-5.65
<i>2. Competing*</i>	3.13	4.29	6.20
Rice	-0.07	-1.44	-0.39
Vegetable oils and oilseeds	0.81	0.52	-0.57
Fruit, vegetables and citrus	0.24	1.67	8.40
Sugar	1.02	3.83	1.30
Tobacco	0.20	0.07	1.26
Cotton lint	0.91	-0.13	-3.46
Pulses	0.02	-0.23	-0.34
<i>3. Tropical</i>	3.83	17.55	19.16
Bananas	0.28	1.00	2.64
Coffee	1.78	9.49	9.77
Cocoa	0.48	3.30	2.82
Tea	0.48	0.85	1.39
Rubber	0.89	2.91	2.54

*Competing crops are produced in both developed and developing countries and hence compete for markets.

Source: FAO (2003), *World Agriculture: Towards 2015-30*, p. 238.

ANNEXURE II
NET TRADE BALANCE OF MAJOR COMMODITIES

Commodity/Country Groups	1974-76	1984-86	1997-99
I. Cereals (million tonnes)			
1. Developing countries	-38.8 (96)	-66.4 (93)	-102.5 (91)
2. Developed countries	55.1 (119)	105.9 (132)	110.7 (124)
3. Transitional countries	-15.7 (94)	-37.3 (87)	0.9 (100)
(a) Wheat (million tonnes)			
1. Developing countries	-37.9	-48.8	-61.8
2. Developed countries	41.4	70.8	66.0
3. Transitional countries	-4.8	-20.2	-0.3
(b) Coarse Grain (million tonnes)			
1. Developing countries	-0.2	-17.6	-43.2
2. Developed countries	12.1	33.7	43.4
3. Transitional countries	-10.4	-16.5	2.1
(c) Rice (milled) (million tonnes)			
1. Developing countries	-0.7	0.0	2.5
2. Developed countries	1.6	-1.4	1.4
3. Transitional countries	-0.5	-0.6	-0.9
II. Milk & Dairy Products (whole milk equivalent in 1000 tonnes)			
1. Developing countries	-8,735	-20,040	-19,848
2. Developed countries	8,973	18,420	19,665
3. Transitional countries	898	1,886	2,212
III. Sugar (1000 tonnes)			
1. Developing countries	11,107	6,993	5,833
2. Developed countries	-7,519	12	3,755
• EU 15	-1,857	2,595	4,125
• USA	-4,196	-2,246	-2,309
3. Transitional countries	-3,281	-5,281	-5,863
IV. Oilseeds, Oil & Products (million tonnes : oil equivalent)			
1. Developing countries	3.0	N.A	4.0
2. Developed countries	-2.9		-0.9
3. Transitional countries	0.0		-0.2

Note: Figures in brackets are Self Sufficiency Ratios (SSR) where $SSR = \text{Production/Demand}$.

Source: FAO (2003).

ANNEXURE III
REDUCTION COMMITMENTS UNDER AOA

Negotiated reduction	Developed countries (1995-2000)	Developing countries (1995-2004)
<i>(i) Market Access</i>		
(a) Average tariff cuts for all products (%)	-36	-24
(b) Minimum tariff cuts per product	-15	-10
<i>(ii) Domestic Support</i>		
(a) Total cuts in aggregate measure of support	-20	-13
(b) de-minimis level	10	5
<i>(iii) Export Subsidies</i>		
(a) Value cut	-36	-24
(b) Volume cut	-21	-14
<i>(iv) Implementation Period</i>	6 years	10 years

ANNEXURE IV
RELATIVE COMPARISONS OF SUPPORT INDICATORS
IN OECD COUNTRIES

Commodity	PNPC			
	1986-88 (1)	1990-94 (2)	1995-2000 (3)	Difference (3 - 2)
Wheat	1.7	1.4	1.1	-0.3*
Maize	1.3	1.2	1.1	-0.1**
Other grains	2.0	1.7	1.2	-0.4*
Oilseeds	1.3	1.2	1.1	-0.1
Rice	4.9	4.6	4.4	-0.2
Refined sugar	2.4	1.9	2.0	0.1
Milk	2.7	2.3	1.9	-0.4**
Beef	1.4	1.4	1.3	-0.1
Sheep	1.9	1.6	1.2	-0.4**
Pork	1.2	1.2	1.2	0.0
Poultry	1.3	1.2	1.1	-0.1**
Eggs	1.2	1.2	1.1	-0.1**
All PSE commodities	1.6	1.5	1.4	-0.1**

* Indicate that difference between medians is significant at a 1 per cent two-tail level.

** Indicate that difference between medians is significant at a 5 per cent two-tail level.

Source: M.D. Ingco (2003), *Agriculture, Trade, and the WTO*, World Bank, p. 30.

ANNEXURE V

PRODUCTION AND TRADE INDICATORS FOR SELECT FOOD ITEMS

Country	Production (million tonne)			Productivity (kg/hectare)			Exports as % of production		
	1980	1990	2001	1980	1990	2002	1980	1990	2001
I. World									
(i) Pulses	466	543	589	134	139	140	10.40	9.97	14.04
(ii) Rice paddy	41	58	53	2,743	3,526	3,916	6.93	11.36	17.59
(iii) Wheat	397	518	598	1,855	2,562	2,720	0.05	0.05	3.70*
(iv) Poultry meat	440	592	590	668	862	791	20.48	16.65	19.26
(v) Milk total	26	41	71	1,343	1,434	1,508	5.93	6.52	13.47
II. Developed Countries									
(i) Pulses	11	21	15	4,903	5,860	6,554	14.75	20.21	38.89
(ii) Rice paddy	24	26	26	2,054	2,778	2,723	0.43	1.01	10.06*
(iii) Wheat	289	358	327	1,218	1,853	1,656	29.41	25.41	29.81
(iv) Poultry meat	18	26	34	1,434	1,575	1,766	7.15	7.84	18.71
(v) Milk total	353	383	348	180	208	361	13.50	13.68	22.23

Country	Production (million tonne)			Productivity (kg/hectare)			Exports as % of production		
	1980	1990	2001	1980	1990	2002	1980	1990	2001
III. Developing Countries									
(i) Pulses	30	38	38	2,668	3,454	3,845	4.14	6.46	8.87
(ii) Rice paddy	373	493	572	1,565	2,290	2,717	0.03	0.00	3.41*
(iii) Wheat	151	235	264	575	665	671	3.36	3.29	6.19
(iv) Poultry meat	8	15	37	1,175	1,246	1,337	3.17	4.28	8.77
(v) Milk total	112	160	241	134	139	140	0.68	1.08	2.22
IV. India									
(i) Pulses	9	13	11	2,000	2,613	2,915	0.01	0.12	1.52
(ii) Rice paddy	80	112	140	1,436	2,121	2,770	0.00	0.00	1.53*
(iii) Wheat	32	50	7	400	549	600	0.57	0.28	38.02
(iv) Poultry meat	0	0	1	942	923	929	0.01	0.06	0.00
(v) Milk total	32	54	83	138	138	138	0.01	0.01	0.28

*Figures depict export of milled paddy rice as a percentage of paddy rice production.

Source: FAO (2003).

ANNEXURE VI

TWO-WAY TRADE IN FOOD AND AGRICULTURE, BY REGION

Region	TWT (percentage)			No. of products traded		
	1969-71	1984-86	1997-99	1969-71	1984-86	1997-99
Developed countries	25.2	30.2	34.6	252	297	279
EU	28.4	33.4	45.3	278	329	395
North America	31.0	33.8	44.8	280	315	390
Other countries	18.5	21.3	26.8	199	236	332
Developing countries	17.4	17.6	20.4	98	119	194
East Asia	13.9	17.5	16.0	101	136	186
Latin America and the Caribbean	14.0	15.3	18.1	122	139	234
Near East/ North Africa	29.2	28.2	29.5	120	146	200
South Asia	17.7	17.6	13.5	96	167	227
Sub-Saharan Africa	16.4	15.7	16.8	77	79	142
Transition economies	26.3	19.0	28.9	118	121	269
Eastern Europe	25.2	19.3	28.0	117	119	278

Source: FAO (2003), p. 293.

ANNEXURE VII

CHANGES IN THE COMMODITY COMPOSITION OF FOOD
CONSUMPTION, MAJOR COUNTRY GROUPS

Kg/person/year	1964-66	1974-76	1984-86	1997-99
<i>World</i>				
Cereals, food	147	151	168	171
Cereals, all uses	283	304	335	317
Sugar (raw sugar equivalent)	21	23	24	24
Pulses, dry	9	7	6	6
Vegetable oils, oilseeds and products (oil eq.)	6	7	9	11
Meat (carcass weight)	24	27	31	36
Milk and dairy, excl. butter (fresh milk eq.)	74	75	79	78
Other food (kcal/person/day)	208	217	237	274
Total food (kcal/person/day)	2358	2435	2655	2803
<i>Developing countries</i>				
Cereals, food	141	150	172	173
Cereals, all uses	183	201	234	247
(Developing <i>minus</i> China)	62	61	57	63
Sugar (raw sugar equivalent)	14	16	19	21
Pulses, dry	11	8	8	7
Vegetable oils, oilseeds and products (oil eq.)	5	5	8	10
Meat (carcass weight)	10	11	16	26
Milk and dairy, excl. butter (fresh milk eq.)	28	30	37	45
Other food (kcal/person/day)	122	129	155	224
Total food (kcal/person/day)	2054	2152	2450	2681
<i>Industrial countries</i>				
Cereals, food	136	136	147	159
Cereals, all uses	483	504	569	588
Sugar (raw sugar equivalent)	37	39	33	33

Kg/person/year	1964-66	1974-76	1984-86	1997-99
Pulses, dry	3	3	3	4
Vegetable oils, oilseeds and products (oil eq.)	11	15	17	20
Meat (carcass weight)	62	74	81	88
Milk and dairy, excl. butter (fresh milk eq.)	186	192	212	212
Other food (kcal/person/day)	461	485	510	516
Total food (kcal/person/day)	2947	3065	3206	3380

Note: Cereal food consumption includes the grain equivalent of beer consumption and of corn sweeteners.

Source: FAO (2003), p. 53.

ANNEXURE VIII

TREND IN WORLD FOOD TRADE

(US\$ million)						
	1997	1998	1999	2000	2001	Growth
Exports						
Primary	88,089 (22.74)	83,190 (22.44)	78,110 (21.89)	77,490 (22.30)	81,246 (22.30)	-2.00
Semi Processed	90,037 (23.24)	85,005 (22.93)	82,195 (23.03)	80,661 (23.21)	83,550 (22.93)	-1.85
Processed	177,867 (45.91)	172,137 (46.42)	164,995 (46.23)	157,020 (45.19)	166,498 (45.70)	-1.64
Fisheries	31,355 (54.01)	30,426 (54.62)	31,565 (55.07)	32,267 (54.47)	33,007 (54.75)	1.29
Total Food	387,348 (100)	370,758 (100)	356,865 (100)	347,438 (100)	364,301 (100)	-1.52
Imports						
Primary	88,432 (23.13)	84,966 (18.60)	82,934 (22.35)	80,480 (22.71)	82,546 (21.99)	-1.71
Semi Processed	85,256 (22.30)	169,782 (37.17)	84,208 (22.69)	83,295 (23.50)	82,701 (22.03)	-0.76
Processed	168,037 (43.95)	162,455 (35.57)	161,983 (43.65)	146,843 (41.43)	166,273 (44.28)	-0.26
Fisheries	40,603 (54.57)	39,525 (44.22)	41,968 (54.96)	43,811 (53.79)	43,942 (55.99)	2.00
Total Food	382,328 (100)	456,728 (100)	371,093 (100)	354,429 (100)	375,462 (100)	-0.45

- Notes: 1. Figures in parenthesis depicts percentage share of the subcategory in total food trade.
2. Total food items include all edible food items at two-digit code from 01 to 24.
3. Primary food items include the food items with minimum level of processing, i.e. sorting, grading and packaging.
4. Semi Processed includes the food items with certain level of processing.
5. Processed include the food items with high level of processing so as to change the form (value added).

Source: UNCTAD, PCTAS Trade data base (2001).

ANNEXURE IX
TREND IN INDIA'S FOOD TRADE

(US\$ million)

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	Growth
Exports								
Primary	2366.54 (44.99)	2082.89 (39.79)	2467.74 (47.09)	2041.55 (41.02)	2060.39 (38.33)	2408.02 (45.55)	3068.56 (49.46)	12.17
Semi Processed	1328.34 (25.25)	1438.91 (27.49)	1350.61 (25.77)	1333.7 (26.80)	1469.22 (27.33)	1203.33 (22.76)	1224.93 (19.74)	-4.68
Processed	448.17 (8.52)	513.25 (9.80)	392.74 (7.50)	435.79 (8.76)	466.91 (8.69)	453.84 (8.58)	509.31 (8.21)	6.53
Fisheries	1116.8 (21.23)	1199.61 (22.92)	1028.93 (19.64)	1165.32 (23.42)	1378.6 (25.65)	1221.79 (23.11)	1401.13 (22.58)	18.28
Total food	5338.62	5311.74	5320.38	5052.94	5449.47	5363.87	6281.35	8.42
Imports								
Primary	459.51 (27.00)	976.34 (43.58)	982.11 (30.70)	960.81 (30.52)	474.18 (22.51)	386.50 (14.38)	548.92 (17.12)	-44.37
Semi Processed	1135.93 (63.06)	1129.90 (48.29)	2095.77 (63.53)	2090.55 (64.36)	1520.47 (68.93)	2171.94 (77.90)	2528.16 (76.47)	28.55
Processed	96.76 (5.69)	111.04 (4.96)	91.72 (2.87)	81.21 (2.58)	98.16 (4.66)	113.86 (4.24)	113.13 (3.53)	13.87

	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	Growth
Fisheries	4.76 (0.28)	11.49 (0.51)	14.78 (0.46)	7.85 (0.25)	6.74 (0.32)	8.1 (0.30)	8.17 (0.25)	-21.09
Total food	1801.44	2339.75	3298.70	3248.02	2205.97	2788.20	3306.30	3.55

Notes: 1. Figures in parenthesis depicts percentage share of the subcategory in total food trade.

2. Total food items include all edible food items at two-digit code from 01 to 24.

3. Primary food items include the food items with minimum level of processing, i.e. sorting, grading and packaging.

4. Semi Processed includes the food items with certain level of processing and are mainly intermediate consumption goods.

5. Processed include the food items with high level of processing so as to change the form (value added).

6. The entire period is divided into two 1996-97 to 1999-2000 and 2000-01 to 2002-03. The growth is calculated between the average values for these periods.

Source: CMIE, India Trades (2003).

ANNEXURE X (A)
PRODUCT STRUCTURE OF MAJOR WORLD EXPORTS

(US\$ million)

Commodity	1997	2001	% Share in total	sub sector	% Share in total food exports	
Total Primary	88089	81246	100.00	100.00	22.74	22.30
(i) Horticulture products	20241	19409	22.98	23.89	5.23	5.33
Citrus fruit fresh or dried	4130	3809	4.69	4.69	1.07	1.05
Bananas including plantains fresh or dried	3788	3021	4.30	3.72	0.98	0.83
Apples, pears & quinces, fresh	3214	2836	3.65	3.49	0.83	0.78
Tomatoes fresh or chilled	2419	2614	2.75	3.22	0.62	0.72
(ii) Cereals	32223	27272	36.58	33.57	8.32	7.49
Wheat & meslin	17511	13819	19.88	17.01	4.52	3.79
Maize (corn)	9747	8824	11.06	10.86	2.52	2.42
Rice	4965	4629	5.64	5.70	1.28	1.27
(iii) Others						
Soyabeans w/n broken	11174	10295	12.68	12.67	2.88	2.83
Total Semi Processed	90037	83550	100.00	100.00	23.24	22.93
(i) Dairy Products	22880	22933	25.41	27.45	5.91	6.30
Cheese and curd	10156	10695	11.28	12.80	2.62	2.94
Milk & cream cncntd/contng sugr/ swetng matr	7146	7563	7.94	9.05	1.84	2.08

Commodity	1997	2001	% Share in total	sub sector	% Share in total food exports	
Milk & cream not concentrated nor contng added sugar or other sweetening matter	2493	2295	2.77	2.75	0.64	0.63
Butter and other fats & oils drvd from milk; dairy spreads	3085	2380	3.43	2.85	0.80	0.65
(ii) Meat Products	38996	39626	43.31	47.43	10.07	10.88
Meat of swine, fresh, chilled or frozen	9082	9832	10.09	11.77	2.34	2.70
Meat and edible offal of the poultry of heading no. 01.05, fresh chilled or frozen	8237	8753	9.15	10.48	2.13	2.40
Meat of bovine animals, frozen	5036	4700	5.59	5.63	1.30	1.29
Preparations of a kind used in animal feeding	6807	7227	7.56	8.65	1.76	1.98
Meat of bovine animals, fresh or chilled	7540	7004	8.37	8.38	1.95	1.92
Meat of sheep or goats, fresh, chilled or frozen	2294	2110	2.55	2.53	0.59	0.58
(iii) Coffee						
Coffee, whether roasted or decaffeinated; coffee husks & skins; coffee substitutes containing coffee in any proportion	11022	5093	12.24	6.10	2.85	1.40
(iv) Fisheries	31355	33007	34.82	39.51	8.09	9.06
Total Processed*	177867	166498	100.00	100.00	45.92	45.70
(i) Meat preparation	12017	12735	6.76	7.65	3.10	3.50
(ii) Sugar	12984	10861	7.30	6.52	3.35	2.98
(iii) Cereal preparation	25258	25998	14.20	15.61	6.52	7.14

Commodity	1997	2001	% Share in total	sub sector	% Share in total food exports	
(iv) Processed fruits and veg.	11556	11720	6.50	7.04	2.98	3.22
(v) Others	57293	53845	32.2111532	33.97278	14.79	14.78
Total Food Exports	387348	364301				

Selection of major products is as identified in Footnote 9.

*Subcategories under the processed products are as follows:

1. Meat Preparation: othr prpd/prsvd meat meat offal/blood, prepared/preserved fish caviar & caviar substitutes prpd from fish eggs and crustaceans molluscs & other aquatic invertibrates prepared or preserved.
2. Sugar: cane/beet sugar chemically pure sucrose in solid and sugar confectionery including hot chocolate.
3. Cereal Preparations: Chocolate & other food preparations containing cocoa malt extract; food preparations of flour, starch, etc. without cocoa powder or containing cocoa pwdr in <50% by wt n.e.s, bread, pastry & other bakers wares, w/ n with cocoa; communion wafers, empty cachets for rice preparations other food preparations n.e.s.
4. Processed Fruits and Vegetables: other vegetables prep/prsvd otherwise then by vinegar/acetic acid not frozen, fruits nuts & other edible parts of plants otherwise prepared/prsvd, w/n sweetened n.e.s. and fruit juices (including grape must)/vegetable juice unfermented.
5. Others: waters including mineral waters & aerated water containing added sugar/other sweetening matter & other nonalcoholic beverage, wine of fresh grapes including fortified wines grape, oil-cake & other solid residue w/n grind/ in pelts form obtained from Soya-bean oil extract, un-manufactured tobacco, tobacco refuse, cigars cheroots cigarillos & cigarettes of tobacco or of tobacco substitutes.

Source: UNCTAD, PCTAS (2001).

ANNEXURE X (B)

PRODUCT STRUCTURE OF MAJOR WORLD IMPORTS

(US\$ million)

Commodity	World imports		% Share in total sub sector		% Share in total food imports	
	1997	2001	1997	2001	1997	2001
Primary	88432	82546	100.00	100.00	23.13	21.99
<i>Horticulture</i>	32979	32620	37.29	39.52	8.63	8.69
Tomatoes fresh or chilled	2940	2899	3.32	3.51	0.77	0.77
Bananas incl. plantains frsh or dried	5738	5234	6.49	6.34	1.50	1.39
47 Dates, figs, pineapples, avocados, guavas, mangoes & mangosteens fresh or dried	1458	1898	1.65	2.30	0.38	0.51
Citrus fruit fresh or dried	5037	4743	5.70	5.75	1.32	1.26
Grapes fresh or dried	3139	3174	3.55	3.85	0.82	0.85
Apples, pears & quinces, frsh	3511	3272	3.97	3.96	0.92	0.87
Apricots cherries peaches (incl nectarins) plums & sloes, frsh	1777	1794	2.01	2.17	0.46	0.48
<i>Cereal</i>	28595	23017	32.34	27.88	7.48	6.13
Wheat & meslin	12401	10006	14.02	12.12	3.24	2.66
Barley	2962	2149	3.35	2.60	0.77	0.57

Commodity	World imports		% Share in total sub sector		% Share in total food exports	
	1997	2001	1997	2001	1997	2001
Maize (corn)	8565	7408	9.69	8.97	2.24	1.97
Rice	4667	3454	5.28	4.18	1.22	0.92
Other						
Soyabeans w/n broken	10016	10315	11.33	12.50	2.62	2.75
Semi Processed	85256	82701	100.00	100.00	22.30	22.03
Meat	35311	35607	41.42	43.06	9.24	9.48
Meat of bovine animals, fresh or chilled	7870	7197	9.23	8.70	2.06	1.92
Meat of bovine animals, frozen	5402	4921	6.34	5.95	1.41	1.31
Meat of swine, fresh, chilled or frozen	10594	11151	12.43	13.48	2.77	2.97
Meat of sheep or goats, frsh, chld or frzn	2259	2222	2.65	2.69	0.59	0.59
Meat and edible offal of the poultry of heading no.01.05, fresh chilled or frozen	7440	7887	8.73	9.54	1.95	2.10
Meat/edbl meat ofl, sltd, in brine, dried/ smokd; edbl flours & meals of meat/meat offal	1746	2229	2.05	2.70	0.46	0.59
Dairy	16802	16283	19.71	19.69	4.39	4.34
Milk & cream not concentrated nor contng added sugar or other sweetening matter	2517	2285	2.95	2.76	0.66	0.61

Commodity	World imports		% Share in total sub sector		% Share in total food exports	
	1997	2001	1997	2001	1997	2001
Milk & crm cnctd/contng sugr/swetng matr	5376	5143	6.31	6.22	1.41	1.37
Cheese and curd	8909	8855	10.45	10.71	2.33	2.36
Others						
Coffee, whtr/nt roasted or decaffienated; coffee husks & skins; coffee substitutes containing coffee in any proportion	14568	6851	17.09	8.28	3.81	1.82
Preparations of a kind used in anml feding	873	6857	1.02	8.29	0.23	1.83
<i>Fisheries</i>	40603	43942	47.62	53.13	54.57	55.99
Processed*	168037	166273	100.00	100.00	43.95	44.28
Meat preparations	11933	13262	7.10	7.98	3.12	3.53
Sugar	11360	10161	6.76	6.11	2.97	2.71
Cereal preparations	15203	17116	9.05	10.29	3.98	4.56
Processed fruits and vegetables	15272	15582	9.09	9.37	3.99	4.15
Others	50264	50948	29.91	30.64	13.15	
Total Food Import	382328	375462			100	100

Selection of major products is as identified in Footnote 9.

*Subcategories under the processed products are as follows:

1. Meat: prepared/preserved fish caviar & caviar substitutes prpd from fish eggs crustaceans molluscs & other aquatic invertebrates prepared or preserved.
2. Sugar: cane/beet sugar chemically pure sucrose in solid sugar cnfctnry (incl white chclt) wthot cocoa
3. Cereal Preparations: chocolate & other food preps contng cocoa malt extrct; food preps of flour, starch etc without coca pwdr or contng coca pwdr in <50 percent by wt n.e.s. bread, psty & othr bkrs wares, w/n wth cocoa; communion wafers, empty cachets for phrmctuse, slng wfrs, rice papr & smlr products.
4. Processed Fruits and Vegetables: othr vgtbls prpd/prsvd othrwse thn by venegar/acetic acid nt frzn othr thn prdtcs of hdng no. 2006 fruits nuts & other edible parts of plants othrwse prepd/prsvd, w/n sweetnd n.e.s. ,fruit juices (incl grape must)/vgtbl juice unfmrntd & not wth added sprt, w/n sweetnd, sauces & prpns threfor mxd condimnts & mxdseasonngs, mustrd flour & meal, prpd mustrd, wine of frsh grapes incldg fortified inesgrape must othr thn that of hdng no 2009.
5. Other: other food preprns n.e.s. waters incl mnrl waters & aertd water contng adgd sugr/othr swtng mattr/flvrd & othr nonalcoholc bevrge excl juics of hd no 2009, beer made from malt undnatrd ethyl alchl wth <80% alchl strngth; sprts ,liqrs & othr sprtous bvrge; compnd alchl prpn for manufacture of bvrge ,oil-cake & othr solid residue w/n grnd/in pllts form obtnd frm Soya-bean oil extract unmanufactured tobacco, tobacco refuse, cigars , cheroots cigarillos & cigarettes of tobacco or of tobacco substitutes.

Source: UNCTAD, PCTAS (2001).

ANNEXURE XI (A)

PRODUCT STRUCTURE OF INDIAN EXPORTS

(US\$ million)

	Exports from India		% share in total sub sector		% share in total food exports	
	1996-97	2002-03	1996-97	2002-03	1996-97	2002-03
Primary	2366.35	3067.95	100	100	44.33	48.84
Rice	894.38	1221.43	37.80	39.81	16.75	19.45
Wheat and meslin	196.91	364.59	8.32	11.88	3.69	5.80
Coconuts, Brazil nuts and cashew nuts	341.06	426.28	14.41	13.89	6.39	6.79
Cane or beet sugar	237.9	366.22	10.05	11.94	4.46	5.83
Other oil seeds whether or not broken	93.14	103.5	3.94	3.37	1.74	1.65
Pepper dried or crushed	171.7	96.59	7.26	3.15	3.22	1.54
Semi Processed	2445.14	2626.06	100.00	100.00	45.80	41.81
Fisheries	1080.32	1368.11	44.18	52.10	20.24	21.78
Fish frozen excl. fish fillets	212.47	271.61	8.69	10.34	3.98	4.32
Crustaceans live, fresh, chilled, frozen, dried, salted or in brine; crustaceans	757.66	964.28	30.99	36.72	14.19	15.35
Molluscs live, fresh, chilled, frozen, dried, salted	110.19	132.22	4.51	5.03	2.06	2.10
Other						
Tea	284.52	329.04	11.64	12.53	5.33	5.24

	Exports from India		% share in total sub sector		% share in total food exports	
	1996-97	2002-03	1996-97	2002-03	1996-97	2002-03
Meat of bovine animals, frozen	155.79	247.74	6.37	9.43	2.92	3.94
Coffee, whether or not roasted or decaffeinated	323.58	146.7	13.23	5.59	6.06	2.34
Processed	448.17	509.31	100.00	100.00	8.39	8.11
<i>Tobacco products</i>	<i>213.36</i>	<i>213.02</i>	<i>47.61</i>	<i>41.83</i>	<i>4.00</i>	<i>3.39</i>
Unmanufactured tobacco; tobacco refuse	186.21	152.97	41.55	30.03	3.49	2.44
Cigars and cigarettes, of tobacco	15.25	39.02	3.40	7.66	0.29	0.62
Other manufactured tobacco	11.9	21.03	2.66	4.13	0.22	0.33
Cereal preparations	38.85	72.3	8.67	14.20	0.73	1.15
Food preparations not elsewhere specified	16.81	44.1	3.75	8.66	0.31	0.70
Malt extract; food preparations of flour, meal, starch or malt extract	22.04	28.2	4.92	5.54	0.41	0.45
Others						
Vegetables, fruits and nuts preserved by vinegar	15.91	31.94	3.55	6.27	0.30	0.51
Extracts and concentrates, of coffee, tea	86.51	74.97	19.30	14.72	1.62	1.19
Total food Exports	5338.62	6281.35			100	100
Selection of major products is as identified in Footnote 9.						

Source: CMIE, India Trades (2003).

ANNEXURE XI (B)

PRODUCT STRUCTURE OF INDIAN IMPORTS

(US\$ million)

	Imports to India		% share in total sub sector		% share in total food imports	
	1996-97	2002-03	1996-97	2002-03	1996-97	2002-03
Primary	459.51	548.92	100.00	100	25.51	16.60
<i>Nuts</i>	251.89	338.04	54.82	61.58	13.98	10.22
Coconuts, Brazil nuts and cashew nuts, fresh or dried	176.7	256.81	38.45	46.78	9.81	7.77
Other nuts, fresh or dried, whether or not shelled or peeled	75.19	81.23	16.36	14.80	4.17	2.46
<i>Fruits</i>						
Dates, figs, pineapples, avocados	50.41	30.31	10.97	5.52	2.80	0.92
Guavas, mangoes, and mango teens, fresh or dried.						
<i>Spices</i>	13.88	68.21	3.02	12.43	0.77	2.06
Pepper of the genus piper	5.2	27.72	1.13	5.05	0.29	0.84
Cloves (whole fruit, cloves and stems)	4.78	25.03	1.04	4.56	0.27	0.76
Nutmeg, mace and cardamoms	3.9	15.46	0.85	2.82	0.22	0.47
<i>Others</i>						
Seeds, fruit and spores, of a kind used for sowing	5.14	18.06	1.12	3.29	0.29	0.55

	Imports to India		% share in total sub sector		% share in total food imports	
	1996-97	2002-03	1996-97	2002-03	1996-97	2002-03
Semi Processed	1140.69	2536.33	100.00	100.00	63.32	76.71
<i>Edible Oil</i>	667.55	1764.88	58.52	69.58	37.06	53.38
Soya-bean oil and its fractions, whether or not refined	14.35	544.13	1.26	21.45	0.80	16.46
Palm oil and its fractions, whether or not refined	653.2	1220.75	57.26	48.13	36.26	36.92
<i>Others</i>						
Dried leguminous vegetables, shelled	265.12	612.88	23.24	24.16	14.72	18.54
Processed	96.76	113.13	100.00	100.00	5.37	3.42
<i>Food preparations</i>	66.71	55.15	68.94	48.75	3.70	1.67
Chocolate and other food preparations containing cocoa	0.19	5.26	0.20	4.65	0.01	0.16
Pasta, whether or not cooked	0.84	5.16	0.87	4.56	0.05	0.16
Prepared foods (for example, corn flakes); cereals, other than maize (corn), in grain	13.74	14.02	14.20	12.39	0.76	0.42
Soups and broths	43.57	22.73	45.03	20.09	2.42	0.69
Food preparations not elsewhere specified	8.37	7.98	8.65	7.05	0.46	0.24

	Imports to India		% share in total sub sector		% share in total food imports	
	1996-97	2002-03	1996-97	2002-03	1996-97	2002-03
<i>Juices</i>						
Fruit juices (incl. grape must and vegetable juices)	0.43	9.41	0.44	8.32	0.02	0.28
<i>Spirits</i>	4.81	11.66	4.97	10.31	0.27	0.35
Undenatured ethyl alcohol of an alcoholic strength by volume of 80% volume	0.62	5.89	0.64	5.21	0.03	0.18
Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80% volume						0.17
<i>Tobacco Products</i>	6.07	8.63	6.27	7.63	0.34	0.26
Unmanufactured tobacco; tobacco refuse	2.22	4.92	2.29	4.35	0.12	0.15
Cigars, cheroots, cigarillos and cigarettes, of tobacco	3.85	3.71	3.98	3.28	0.21	0.11
Total Food Imports	1801.44	3306.3			100.00	100.00

Selection of major products is as identified in Footnote 9.

Source: CMIE, India Trades (2003).

ANNEXURE XII

WORLD MAJOR EXPORTERS FOR IDENTIFIED PRODUCTS (2001)

Commodity	Major exporting country
I. Primary	
Tomatoes, fresh or dulled (070200)	Netherlands (24.45), Spain (23.51), Mexico (19.65), USA (4.79)
Pepper (070960)	Netherlands (32.05), Spain (28.04), Mexico (21.02), USA (4.02)
Almonds Fresh ('080212)	USA (70.05), Spain (20.33), Germany (1.77), Italy (1.05)
Banana ('080300)	Ecuador (22.85), Costa Rica (13.65), Colombia (11.05), Belgium (10.09)
Oranges fresh or dried ('080510)	Spain (35.89), USA (15.68), Mexico (5.39), Greece (5.14)
Apples Fresh ('080810)	France (19.55), USA (14.83), Italy (10.56), Chile (8.66)
Durum Wheat (100110)	Canada (48.25), USA (15.67), France (10.11), Spain (4.6)
Maize (100590)	USA (56.81), France (13.42), Argentina (12.78), China (8.41)
Rice Semi (100630)	Thailand (35.39), India (15.68), USA (5.39), China (5.14)
Soybean (120100)	USA (58.67), Brazil (23.64), Argentina (7.06), Paraguay (4)
II. Semi Processed	
Bovine Cuts ('020130)	USA (26.68), Australia (16.22), Canada (13.3), Netherlands (9.19)
Bovine Cuts boneless frozen ('020230)	Australia (24.58), USA (20.99), New Zealand (12.65), Brazil (6.71)

Commodity	Major exporting country
Swine Cut (020329)	Denmark (33.21), USA (8.65), Canada (8.54), France (7.44)
Lamb Carcasses (020410)	UK (48.76), Ireland (31.29), Spain (5.48), Bulgaria (2.61)
Fowl Cuts (020741)	USA (35.89), China (12.6), Brazil (12.59)
Milk & Cream (040130)	Germany (18.71), France (17.24), UK (16.4), Netherlands (13.24)
Milk & Cream (040221)	New Zealand (22.04), France (15.19), Netherlands (12.73), Australia (8.51)
Butter & other fats & oils (040500)	New Zealand (12.16), Netherlands (14.68), Ireland (12.81), France (6.65)
Cheese n.e.s. (040690)	Netherlands (21.17), France (16.92), Germany (14.81), Italy (7.42)
Coffee, not roasted (090111)	Brazil (24.85), Colombia (18.09), Mexico (7.24), Guatemala (6.46)
III. Processed	
Palm Oil (151190)	Malaysia (70.78), Indonesia (15.85), Netherlands (4.81)
Tunas (160414)	Thailand (40.31), Spain (11.51), Ecuador (6.82)
Refined Sugar (170199)	France (25.66), Brazil (14.35), Germany (10.38), Thailand (6.09)
Sugar Confectionary (170490)	Germany (10.49), UK (10.1), Spain (9.25)
Chocolate (180690)	Germany (14.12), UK (10.42), Belgium (9.71), France (9.16)
Malt extract (190190)	Germany (20.39), USA (11.84), France (9.87), Netherlands (9.51)
Communion (190590)	Germany (13.8), France (11.05), USA (9.31)

Commodity	Major exporting country
Nuts & Seed (200819)	Turkey (29.93), USA (20.2), Germany (12.1), China (8.12)
Orange Juice (200911)	Netherlands (12.67), Belgium (10.02), USA (6.99)
Food Prep (210690)	USA (18.62), France (12.01), Germany (8.24)
Beer made from malt (220300)	Netherlands (20.23), Mexico (15.53), Germany (12.7), UK (7.79)
Grapes wine (220421)	France (37.46), Italy (18.31), Spain (8.29), Australia (7.32)
Whiskies (220830)	UK (74.44), Canada (8.32), USA (6.81)
Soybean (230400)	Argentina (28.15), Brazil (26.76), USA (19.63), Netherlands (6.88)
Tobacco (240120)	USA (34.58), Brazil (24.51), China (4.47), Argentina (4.09)
Cigarettes (240220)	USA (26.89), Netherlands (17.47), Germany (11.18), UK (11.13)

Figures in brackets are percentage share to the total world exports.

Source: UNCTAD, PCTAS (2001).

ANNEXURE XIII

WORLD MAJOR IMPORTERS FOR IDENTIFIED PRODUCTS (2001)

Commodity	Major importing country
I. Primary	
Tomatoes, fresh or dulled (070200)	World (2899), USA (25.55), Germany (21.01), UK (11.09), France (9.38)
Pepper (070960)	World (1790), USA (26.8), Germany (23.25), UK (9.7), France (6.78)
Almonds Fresh (080212)	World (726), Germany (24.03), Spain (9.91), France (9.82), Japan (8.9)
Banana (080300)	World (5234), USA (23.17), Germany (10.93), UK (8.46), Japan (7.79)
Oranges fresh or dried (080510)	World (1992), Germany (12.09), France (11.59), UK (7.58), Netherlands (7.39)
Pineapple (080430)	World (656), USA (23.04), France (16.24), Japan (7.86), Italy (7.7)
Grapes, fresh (080610)	World (2655), USA (22.61), Germany (13.86), UK (9.78), Canada (6.99)
Apples Fresh (080810)	World (2296), Germany (15.73), UK (14.89), Netherlands (5.99), Mexico (4.75)
Peaches (080930)	World (901), Germany (27.55), UK (12.15), France (9.18), USA (6.24)
Fruits n.e.s. (081090)	World (1202), Germany (11.98), Hong Kong (10.64), France (8.12), Japan (7.47)
Wheat n.e.s. (100190)	World (7639), Japan (10.61), Brazil (9.4), Italy (8.01), Korea Rep. (5.5)
Barley (100300)	World (1705), Saudi Arabia (15.97), China (13.31), Japan (9.6), Netherlands (4.56)
Maize (100590)	World (6394), Japan (25.81), Korea Rep. (12.32), Mexico (7.27), Egypt (4.97)
Rice Semi (100630)	World (2367), Indonesia (8.87), Saudi Arabia (8.52), Philippines (6.51), Iran (6.13)

Commodity	Major importing country
Soybean (120100)	World (10315), China (15.61), Japan (13.9), Netherlands (10.41), Germany (9.28)
II. Semi Processed	
Bovine Cuts('020130)	World (5095), Japan (31.7), USA (13.54), Mexico (10.33), Germany (7.27)
Bovine Cuts boneless frozen ('020230)	World (4104), USA (25.65), Japan (19.08), Russian Fed (5.94), Korea Rep. (5.04)
Swine Cut ('020329)	World (4472), Japan (50.2), Germany (6.3), USA (5.02), Korea (4.72)
Sheep Cuts ('020442)	World (587), UK (24.89), USA (13.01), Germany (10.34), France (8.77)
Fowl Cuts ('020741)	World (3885), Japan (22.92), Hong Kong (19.12), Russian Fed (10.24)
Swine Meat ('021019)	World (1216), UK (59.8), USA (10.57), Germany (7.47), France (2.74)
Milk not concentrated ('040120)	World (1443), Italy (35.26), France (11.56), Germany (8.04), Belgium (7.14)
Milk & Cream ('040221)	World (2378), Netherlands (15.29), Italy (2.73), Mexico(2.71), Philippines (6.04)
Cheese n.e.s. ('040690)	World (6306), Germany (21.77), Italy (11.78), USA (9.03), UK (8.57)
Coffee, not roasted ('090111)	World (5480), USA (23.79), Germany (17.52), Japan (8.46), Italy (6.76)
III. Processed	
Other Preserved Poultry (160239)	World (1654), Japan (31.68), UK (15.45), Germany (12.75)
Tunas (160414)	World (1955), USA (20.01), France (14.01), UK (12.93)
Shrimps (160520)	World (1958), USA (28.92), Japan (17.23), UK (13.16), Denmark (8.05)
Raw Sugar (170111)	World (4733), Russian Fed (17.76), UK (12.37), USA (12.37), Japan (6.72)

Commodity	Major importing country
Sugar Confectionary (170490)	World (2999), USA (19.45), Germany (8.19), UK (6.1)
Chocolate (180690)	World (2910), France (10.41), Germany (10.38), USA (9.25), UK (9.08)
Malt extract (190190)	World (1690), Japan (19.35), France (8.72), USA (6.06), Mexico (5.91)
Communion (190590)	World (4264), USA (14.08), UK (10.46), Germany (10.17)
Fruits & other edible parts (200899)	World (801), USA (25.92), Japan (13.36), Germany (9.25)
Orange Juice (200911)	World (1274), Netherlands (16.40), USA (13.77), Germany (13.33), Belgium (8.74)
Food Prep (210690)	World (7637), Germany (11.06), UK (7.6), Japan (6.18)
Beer made from malt (220300)	World (4899), USA (44.17), UK (9.37), Italy (6.71), France (6.21)
Grapes wine (220421)	World (9352), UK (22.78), USA (17.14), Germany (12.89), Japan (7.29)
Whiskies (220830)	World (4099), USA (23.34), Spain (11.92), France (9.76), Japan (8.67)
Tobacco (240120)	World (4536), Germany (12.21), Japan (9.82), USA (8.52), UK (8.08)
Cigarettes (240220)	World (9896), Japan (19.48), France (13.09), Italy (10.76), Singapore (7.19)

Figures in bracket are percentage share to the total world imports. World imports are in US\$ million.

Source: UNCTAD, PCTAS (2001).

ANNEXURE XIV

COMPARISON OF INDIA'S EXPORT MARKETS AND WORLD IMPORT MARKETS

	Major export destinations (% share in total exports)			Major world importers (% share in total imports)	
	1997	2001		1997	2001
I. Primary					
Coconuts, Brazil nuts and cashew nuts, fresh or dried (0801)					
USA	35.73	45.04	USA	37.95	46.70
Netherlands	24.81	18.54	UK	4.11	2.92
Pepper of the genus piper; dried or crushed (0904)					
USA	42.80	38.15	USA	23.14	26.97
Sri Lanka	3.01	9.58	Germany	10.34	9.33
Wheat and meslin (1001)					
Bangladesh	4.91	27.76	Japan	10.62	9.92
Yemen	21.72	9.09	Iran	8.93	8.76
UAE	7.27	12.21	Italy	7.83	6.98
Rice (1006)					
Saudi Arabia	28.24	44.48	Brazil	5.81	2.55
Nigeria	0.32	0.00	France	2.29	2.72
South Africa	6.21	2.29	Mexico	2.34	2.43

	Major export destinations (% share in total exports)			Major world importers (% share in total imports)	
	1997	2001		1997	2001
Other oil seeds and oleaginous fruits, whether or not broken (1207)					
USA	12.77	19.20	Japan	21.22	16.21
Egypt	11.36	10.61	USA	10.21	9.64
Netherlands	19.00	11.33	Korea rep.	5.96	5.56
Cane or beet sugar and chemically pure sucrose, in solid form (1701)					
Indonesia	22.21	2.96	USA	13.03	8.12
Sri Lanka	10.61	7.73	Russian Fed	14.20	18.67
Pakistan	36.52	59.16	UK	9.79	8.76
II. Semi Processed					
Meat of bovine animals, frozen (0202)					
Malaysia	27.05	30.68	Russian Fed.	16.85	10.04
Philippines	12.38	19.41	Japan	17.55	16.85
UAE	27.78	8.44	USA	18.29	29.80
Fish frozen excluding fish fillets and other fish meat of heading No.0304 (0303)					
China	28.56	22.78	Japan	56.23	39.84
Taiwan (Taipei)	1.91	10.62	Spain	4.06	4.38
Japan	8.35	9.36	USA	4.12	3.94

	Major export destinations (% share in total exports)			Major world importers (% share in total imports)	
	1997	2001		1997	2001
<i>Crustaceans, live, fresh, chilled, frozen, dried, salted or in brine (0306)</i>					
USA	14.21	28.32	USA	28.93	34.43
Japan	64.90	36.97	Japan	35.17	24.65
UK	2.29	5.65	France	1.11	1.24
<i>Molluscs live, fresh, chilled, frozen, dried, salted or in brine (0307)</i>					
Spain	14.33	34.56	Japan	34.67	30.37
USA	8.84	12.06	Spain	11.71	13.34
Italy	6.64	10.41	Hong kong	7.15	7.33
<i>Coffee, whether or not roasted or decaffeinated (0901)</i>					
Italy	17.18	20.92	USA	26.21	23.62
Germany	20.68	17.65	Germany	17.15	14.90
Belgium	4.53	7.84	Japan	7.34	7.93
<i>Tea (0902)</i>					
Russia	39.39	24.36	Russian Fed.	11.94	5.76
UAE	10.82	14.40	USA	6.58	7.61
Iraq	0.95	6.81	Japan	8.37	9.74

	Major export destinations (% share in total exports)			Major world importers (% share in total imports)	
	1997	2001		1997	2001
III. Processed					
Malt extract; food preparations of flour, meal, starch or malt extract (1901)					
UK	31.44	30.17	UK	4.70	5.20
USA	12.32	11.43	Germany	4.29	3.10
Nepal	13.60	11.43	USA	5.89	7.00
Vegetables, fruits prepared or preserved by vinegar or acetic acid (2001)					
USA	10.50	15.21	USA	13.88	13.62
UK	17.86	17.38	Germany	7.11	6.30
Russia	2.08	2.88	France	5.45	4.39
Extracts, essences and concentrates, of coffee, tea or mate (2101)					
Russia	68.11	60.71	USA	10.54	12.79
USA	5.84	10.20	Russian Fed.	11.87	11.07
Ukraine	0.06	0.74	Germany	6.65	7.42
Food preparations not elsewhere specified or included (2106)					
UAE	41.25	22.06	UK	9.98	5.97
USA	10.39	13.40	Germany	12.44	9.52
UK	7.00	4.43	Japan	6.45	6.85

	Major export destinations (% share in total exports)			Major world importers (% share in total imports)	
	1997	2001		1997	2001
<i>Unmanufactured tobacco; tobacco refuse (2401)</i>					
Russia	23.98	17.65	USA	16.56	12.56
Belgium	10.85	18.28	Germany	8.68	11.19
Germany	8.06	10.84	Japan	7.02	8.23
<i>Cigars, cheroots, cigarillos and cigarettes, of tobacco (2402)</i>					
USA	8.00	45.38	Japan	16.74	18.45
UAE	21.50	29.27	France	11.59	15.41
Yemen	0.20	3.66	Italy	9.10	11.29
<i>Other manufactured tobacco and manufactured tobacco substitutes (2403)</i>					
Saudi Arabia	26.79	25.07	Germany	18.20	18.04
UAE	25.03	19.97	France	9.66	9.88
Afghanistan	2.83	7.14	Netherlands	4.11	3.51

Source: CMIE, India Trades (2003); and UNCTAD, PCTAS (2001).

ANNEXURE XV

SOURCES OF IMPORTS OF IDENTIFIED COMMODITIES TO INDIA

	1996-97	2002-03	Applied Rate (%)
I. Primary			
<i>Coconuts, Brazil nuts and cashew nuts, fresh or dried (0801)</i>			70
Total Imports (US\$ million)	176.70	256.81	
Tanzania (% share)	28.98	20.05	
Cote d'Ivoire (% share)	7.86	19.57	
Guinea-Bissau (% share)	8.49	18.42	
Indonesia (% share)	3.60	13.69	
<i>Other nuts, fresh or dried, whether or not shelled (0802)</i>			30
Total Imports (US\$ million)	75.19	81.23	
USA (% share)	61.13	47.70	
Iran (% share)	26.93	27.65	
Afghanistan (% share)	0.53	9.76	
Australia (% share)	0.13	3.40	
Bangladesh (% share)	0.00	2.99	
<i>Dates, figs, pineapples, avocados, guavas, mangoes, and mangosteens, fresh or dried (0804)</i>			30
Total Imports (US\$ million)	50.41	30.31	
Iran (% share)	50.09	59.06	
Pakistan (% share)	45.67	23.62	

	1996-97	2002-03	Applied Rate (%)
Afghanistan (% share)	0.06	7.19	
Oman (% share)	2.06	4.92	
UAE (% share)	1.75	4.42	
<i>Pepper of the genus piper; dried or crushed (0904)</i>			70
Total Imports (US\$ million)	5.20	27.72	
Sri Lanka (% share)	60.96	42.64	
US Virgin Islands(% share)	0.00	23.52	
Viet Nam (% share)	0.00	13.02	
Indonesia (% share)	30.38	9.56	
South Africa (% share)	0.00	4.37	
<i>Cloves (whole fruit, cloves and steams) (0907)</i>			70
Total Imports (US\$ million)	4.78	25.03	
Sri Lanka (% share)	7.11	55.33	
Indonesia (% share)	0.00	18.38	
Tanzania	38.70	9.47	
Malagasy (Madagascar) (% share)	12.55	9.39	
Singapore (% share)	23.43	1.64	
<i>Nutmeg, mace and cardamoms (0908)</i>			30 (70 for cardamoms)
Total Imports (US\$ million)	3.90	15.46	
Nepal (% share)	57.18	56.66	

	1996-97	2002-03	Applied Rate (%)
Sri Lanka (% share)	8.46	18.31	
Indonesia (% share)	17.44	8.73	
Guatemala (% share)	3.85	6.02	
Slovenia (% share)	0.00	4.01	
Singapore (% share)	11.28	3.62	
<i>Seeds, fruit and soppes, of a kind used for sowing (1209)</i>			30
Total Imports (US\$ million)	5.14	18.06	
Korea Republic (South) (% share)	12.65	22.43	
USA (% share)	28.99	18.77	
Japan (% share)	15.18	14.01	
Netherlands (% share)	22.37	12.35	
Thailand (% share)	0.39	6.31	
Egypt (% share)	11.09	4.98	
II. Semi Processed			
<i>Dried leguminous vegetables, shelled (0713)</i>			50 (45 for dried peas)
Total Imports (US\$ million)	265.12	612.88	
Myanmar (Burma) (% share)	48.48	38.44	
Canada(% share)	5.94	17.51	
France(% share)	0.00	11.10	

	1996-97	2002-03	Applied Rate (%)
Australia(% share)	17.49	5.64	
China(% share)	0.78	5.26	
<i>Soyabean oil and its fractions, whether or not refined (1507)</i>		45	
Total Imports (US\$ million)	14.35	544.13	
Argentina (% share)	30.10	64.06	
Brazil (% share)	17.98	24.88	
USA (% share)	34.43	9.65	
South Africa (% share)	0.00	0.76	
Indonesia (% share)	0.07	0.24	
III. Processed			
<i>Chocolate and other food preparations containing cocoa (1806)</i>			30
Total Imports (US\$ million)	0.19	5.26	
Singapore(% share)	0.00	19.39	
Netherlands(% share)	0.00	15.21	
Malaysia(% share)	0.00	13.12	
UAE(% share)	21.05	7.79	
<i>Pasta, whether or not cooked or stuffed (with meat or other substances) (1902)</i>			30
Total Imports (US\$ million)	0.84	5.16	
Nepal(% share)	97.62	90.31	
Italy (% share)	0.00	7.75	

	1996-97	2002-03	Applied Rate (%)
Philippines(% share)	0.00	0.58	
Japan(% share)	0.00	0.19	
Korea Republic (South) (% share)	0.00	0.19	
<i>Prepared foods obtained by the swelling or roasting of cereals (1904)</i>			30
Total Imports (US\$ million)	13.74	14.02	
USA (% share)	98.25	98.93	
UAE (% share)	0.29	0.29	
China (% share)	0.00	0.21	
UK(% share)	0.00	0.14	
Indonesia (% share)	0.29	0.07	
<i>Fruit juices (including grape must and vegetable juices) (2009)</i>			35
Total Imports (US\$ million)	0.43	9.41	
Nepal (% share)	95.35	56.00	
Brazil(% share)	0.00	10.10	
Netherlands (% share)	0.00	3.93	
Bhutan (% share)	0.00	3.40	
Australia (% share)	0.00	3.19	
<i>Soups and broths (2104)</i>			30
Total Imports (US\$ million)	43.57	22.73	
USA(% share)	99.98	97.89	

	1996-97	2002-03	Applied Rate (%)
Australia(% share)	0.00	1.58	
UK (% share)	0.00	0.22	
Malaysia (% share)	0.00	0.09	
Switzerland(% share)	0.00	0.09	
<i>Food preparations not elsewhere specified (2106)</i>			30
Total Imports (US\$ million)	8.37	7.98	
USA (% share)	58.90	70.68	
Malaysia (% share)	0.00	5.76	
Switzerland (% share)	0.12	3.26	
China (% share)	2.39	2.88	
UK (% share)	4.54	2.88	
<i>Undenatured ethyl alcohol of an alcoholic strength by volume of 80% (2207)</i>			30
Total Imports (US\$ million)	0.62	5.89	
Brazil (% share)	0.00	90.15	
UK (% share)	35.48	6.79	
South Africa (% share)	27.42	1.02	
China (% share)	0.00	0.68	
France (% share)	6.45	0.51	
<i>Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80% (2208)</i>			182
Total Imports (US\$ million)	4.19	5.77	
UK (% share)	68.50	83.19	

	1996-97	2002-03	Applied Rate (%)
USA (% share)	5.73	6.93	
France (% share)	7.88	3.81	
Germany (% share)	1.19	1.21	
Nigeria (% share)	0.00	0.87	
<i>Unmanufactured tobacco; tobacco refuse (2401)</i>			30
Total Imports (US\$ million)	2.22	4.92	
Zimbabwe (% share)	11.26	41.06	
Greece (% share)	7.66	21.14	
UK (% share)	15.77	9.35	
Turkey (% share)	33.33	8.13	
Brazil (% share)	3.60	7.32	
<i>Cigars, cheroots, cigarillos and cigarettes, of tobacco (2402)</i>		30	
Total Imports (US\$ million)	3.85	3.71	
UK (% share)	64.16	31.54	
Singapore (% share)	4.68	24.80	
Switzerland (% share)	0.52	24.26	
Slovenia (% share)	0.00	7.55	
USA	14.81	3.77	

Source: CMIE, India Trades; and Arun Goyal, Custom Tariff (2002-03).

ANNEXURE XVI

TARIFF AND NON-TARIFF MEASURES FOR IDENTIFIED COMMODITIES FACED BY INDIA

Commodity	Importing markets	Average tariff rate	NTM coverage	NTM description
I. Primary Coconut, Brazil nut and Cashew nut	USA	0-0	100	Authorisation to protect plant health
	Japan	0-3	100	(i) Product characteristic requirement to protect human (ii) Labelling requirement for human health protection
	UAE France			
Pepper of genus piper	USA	0-0		
	Sri Lanka	25-25		
	UK			
	Canada	0-0	100	Authorisation for plant health protection
	UAE			
Wheat and meslin	Bangladesh	5-5		
	Philippines	3-10		
	UAE			
	Vietnam	0-0		
	Yemen			
Rice	Saudi Arabia	0		
	Nigeria	0	100	Prohibition

Commodity	Importing markets	Average tariff rate	NTM coverage	NTM description
	South Africa Kuwait UK	0	0	
Other oilseeds, whether or not broken	USA	0-0	100	Testing, inspection or quarantine requirement to protect human health
	Egypt	1-5	100	(i) Authorisation to protect plant health (ii) Product characteristic requirement to protect plant health
	Netherlands			
	Taiwan	8-20	100	(i) Control with licence (ii) Bank authorisation (iii) Authorisation for human health protection
	Turkey	4-4	100	Testing, inspection or quarantine requirement to protect human health
Cane or beet sugar in solid form	Indonesia	0-0	100	Automatic licence
	Malaysia	0-0	100	Licence for normally prohibited goods
	Bangladesh	25-25	100	Non-automatic licence
II. Semi-Processed				
Bovine meat, fresh	Malaysia	0-0	100	(i) Authorisation to protect human health (ii) Product characteristic requirement to protect human health
	Egypt	5-5	100	(i) Product characteristic requirement to protect human health

Commodity	Importing markets	Average tariff rate	NTM coverage	NTM description
				(ii) Testing, inspection & quarantine requirement to protect human health
	Oman	0-0	100	(i) Technical requirement to protect animal health (ii) Technical requirement n.e.s. (iii) Quarantine requirement
Bovine meat, frozen	Malaysia	0-0	100	(i) Authorisation to protect human health (ii) Product characteristic requirement (human health)
	Philippines	10-10	0	—
	Egypt	5-5	100	(i) Product requirement to protect human health (ii) Testing, inspection & quarantine requirement to protect human health
	Jordan	5-5	0	
Fish frozen excluding fish fillet	China	15-20	0	
	Japan	2-10	0	(i) Automatic licence (ii) Product requirement for human health (iii) Labeling requirement for human health
	USA	0-0	100	(i) Product characteristic requirement for human health (ii) Testing, inspection or quarantine requirement to protect human health
Crustacean, live fresh	USA	0-8	100	(i) Automatic licence (ii) Testing, inspection & quarantine requirement to protect human health

Commodity	Importing markets	Average tariff rate	NTM coverage	NTM description
Molluscs, fresh, chilled	Japan	1-10	0	
	Thailand	60-60	100	Product characteristic requirement for human health
	USA	0-5	100	(i) Product characteristic requirement for human health (ii) Testing, inspection & quarantine requirement to protect human health
	Japan	0-15		(i) Authorisation wild life global quota (ii) Product characteristic requirement for human health (iii) Labelling requirement for human health
Fruit and nut provisionally preserved	Saudi Arabia	12-12		
Coffee, whether or not roasted	USA	0-0		
Tea	Russia	5-10		
	Poland	15-15		
	USA	0-6		
	Kazakhstan	0-10	100	Technical requirement to protect human health
Castor, tung, sesame oil	Russia	5-5		
	USA	2-3	100	Countervailing duty
III. Processed				
Malt Extract	Bangladesh	25-38	100	Non automatic licence
	Nepal	5-15		

Commodity	Importing markets	Average tariff rate	NTM coverage	NTM description
	USA	9-18	100	(i) Tariff Quota (ii) Product characteristic requirement for human health (iii) Testing inspection & quarantine requirement to protect human health
Edible part of veg, fruit and nuts preserved by vinegar	USA	4-14	100	(i) Product characteristic requirement to protect human health (ii) Testing, inspection or quarantine requirement
Edible part of veg, fruit and nuts not preserved by vinegar	Indonesia	5-5		
	Sri Lanka	25-25		
	Malaysia	5-58		
Extracts of coffee, tea and mate	Oman	15-15		
	Sudan			(i) Product characteristic requirement for human health
	USA	0-0		(i) Testing inspection or quarantine requirement
Food prep not elsewhere specified	Mexico	3-23		(i) Authorisation for human health protection
	Malaysia	0-25		(i) Labelling requirement
				(ii) Product characteristic requirement to protect animal health
				(iii) Testing, inspection & quarantine requirement for animal health
				(iv) Packaging requirement
	USA			(i) Product characteristic requirement for human health (ii) Testing, inspection or quarantine requirement

Commodity	Importing markets	Average tariff rate	NTM coverage	NTM description
Unmanufactured tobacco	Russia Singapore	5-5 n/a		
Cigar and cigarettes of tobacco	Turkey USA	39-74 n/a		
Other mfrd. tobacco	Saudi Arabia	n/a		

Source: TRAINS database 2001.

ANNEXURE XVII

COMPARISON OF TARIFFS AND NTMs FACED BY INDIA AND COMPETING COUNTRIES IN SELECT MARKETS

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
I. Primary					
Cashew Nut (i) Brazil (55) (ii) India (35.04)	USA	0-0	None	100	Authorisation to protect human health
Pepper of genus piper neither crushed nor ground (i) Indonesia(43.49) (ii) India (35.37) (iii) Brazil (13.84)		USA	0-0	None	0
Pepper of the genus piper, crushed or ground (i) India (36.37) (ii) China (21.61) (iii) Malaysia (18.80)	USA	0-0	None	0	
Fruits of genus capsicum or pimenta, drd/crsh/grnd (i) Mexico (25.9) (ii) India (14.93) (iii) Chile (14.25)	USA	0-0	Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade area US Mexico Free Trade Area		

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
US-Israel Free Trade area Rates for ANDEAN Trade Preference Act (0.0)					
Durum Wheat (i) Australia (53.37) (ii) Canada (45.19) (iii) India (0.97)	Bangladesh		None	100	Product characteristic requirement to protect human health
Rice in husk (Paddy) (i) USA (72.75) (ii) India (13.64) (iii) Thailand (11.1)	Saudi Arabia	0-0	None	0	
Husked brown rice (i) Thailand (58.67) (ii) USA (20.7) (iii) India (19.27)	Saudi Arabia	0-0	None	0	
Semi milled rice (i) Thailand (47.03) (ii) India (25.85) (iii) USA (22.15)	Saudi Arabia	0-0	None	0	
Broken rice (i) Vietnam (32.16) (ii) India (22.39) (iii) Thailand (16.12)	Saudi Arabia	0-0	None	0	

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Rice in husk (Paddy) (i) USA (72.75) (ii) India (13.64) (iii) Thailand (11.1) (iv) Pakistan (1.44)	South Africa	0-0	None	0	
Husked Brown Rice (i) Thailand (58.67) (ii) USA (20.7) (iii) India (19.27) (iv) Australia (1.25)	South Africa	0-0	None	0	
Semi Milled Rice (i) Thailand (47.03) (ii) India (25.85) (iii) USA (22.15)	South Africa	0-0	None	0	
Broken Rice (i) Vietnam (32.16) (i) India (22.39) (ii) Thailand (16.12)	South Africa	0-0	None	0	
Sesamum Seed whether or not broken (i) Guatemala (32.78) (ii) Mexico (25.0) (iii) India (14.02)	USA	0-0	None	100	Testing, inspection or quarantine requirement to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Poppy Seed whether or not broken (i) Australia (58.49) (ii) Netherlands (18.35) (iii) Turkey (12.35) (iv) India (0.73)	USA	0-0	Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade area US Mexico Free Trade Area US-Israel Free Trade area Rates for ANDEAN Trade Preference Act (0.0)	100	Quota Product characteristic requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health
Other Oilseeds (i) India (42.15) (ii) Ethiopia (12.16) (iii) Nepal (9.21)	USA	0-0	None	100	Testing, inspection or quarantine requirement to protect human health
Cane/beet sug chem pure sucrose refind n.e.s. (i) Germany (86.60) (ii) Singapore (9.72) (iii) India (2.11)	Bangladesh	25-25	None	100	Non-automatic licence Licence for selected importers Authorisation to protect human health
II. Semi Processed					
Meat of bovine animals, boneless, fresh or chilled (i) Australia (88.52) (ii) New Zealand (8.68) (iii) India (1.13)	Malaysia	0-0	ASEAN FTA rate 0.0	100%	Authorisation to protect human health Product characteristic required for human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Carcasses/half-carcasses of bovine animals, frozen (i) Australia (53.84) (ii) India (23.07) (iii) New Zealand (21.15)	Malaysia	0-0	ASEAN FTA rate 0.0	100%	Authorisation to protect human health Product characteristic required to protect human health
Meat, bovine cuts with bone in, frozen (i) New Zealand (43.03) (ii) Australia (39.35) (iii) USA (9.63) (iv) India (5.69)	Malaysia	0-0	ASEAN FTA rate 0.0	100%	Authorisation to protect human health Product characteristic required to protect human health
Meat of bovine animals, boneless, frozen (i) India (74.84) (ii) Australia (10.92) (iii) New Zealand (9.4)	Malaysia	0-0	ASEAN FTA rate 0.0	100%	Authorisation to protect human health Product characteristic required to protect human health
Cod excluding liver, frozen (i) India (57.69) (ii) Neatherland (22.87) (iii) Singapore (7.08) (iv) USA (5.66) (v) Japan (4.45)	China	15-15		0%	

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Cod excluding liver, frozen (i) Russian Federation (88) (ii) Korea (3.8) (iii) USA (2.27) (iv) Japan (0.97) (v) India (0.01)	China	20-20		0%	
Sardines (i) USA (22.65) (ii) Mexico (16.05) (iii) Philipines (13.26) (iv) India (0.88)	China	20-20	None	0%	
Other fish excluding liver and roes (i) India (98.68)	China	20-20	None	0%	
Other Frozen Fish excluding liver and roes (i) Norway (25.34) (ii) Japan (6.54) (iii) Korea (5.85) (iv) India (3.68)	China	6-0	None	100%	Authorisation for wildlife global quota Product characteristics to protect human health Labelling required to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Other Salmonidae excluding livers and roes frozen (i) Chile (36.4) (ii) China (34) (iii) Indonesia (14.36) (iv) India (8.06)	USA	0-0	None	100%	Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Sol excluding livers and roes frozen (i) Netherlands (81.36) (ii) Canada (5.62) (iii) Belgium (5.21) (iv) Japan (3.94) (v) India (0.21)	USA		US-Canada FTA US-Israel FTA US-Mexico FTA Rates for Andean Trade Preference Act	100%	Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Cod excluding livers and roes frozen (i) Russian Rep. (45.56) (ii) Japan (20.65) (iii) Denmark (13.26) (iv) India (2.43)	USA	0-0	None	100%	Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Sardines (i) Portugal (41.61) (ii) Venezuela (22.84) (iii) Japan (9.55) (iv) India (1.20)	USA			100%	Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Coal Fish excluding livers and roes (i) Japan (57.44) (ii) Korea (20.13) (iii) India (13.91)	USA	0-0	None	100%	Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Mackerel excluding livers and roes (i) Norway (24.73) (ii) India (24.00) (iii) Vietnam (7.86)	USA	0-0	None	100%	Product characteristics to protect human health Authorisation to protect wildlife
Other Frozen Fish (i) China TW (24.92) (ii) India (9.98) (iii) Argentina (8.81)	USA	0-0	None	100%	Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Rock Lobster (i) Australia (25.27) (ii) Cuba (23.84) (iii) South Africa (18.30) (iv) India (6.63)	Japan	1-1	None	0-0	Authorisation to protect wildlife Product characteristics to protect human health Labelling required to protect human health
Lobster Frozen (i) USA (5.24) (ii) Sri Lanka (2.1) (iii) Philippines (1.83) (iv) South Africa (1.34)	Japan	1-1	None	0-0	Authorisation to protect wildlife Product characteristics to protect human health Labelling required to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Shrimps and prawn frozen (i) Indonesia (25.75) (ii) India (21.22) (iii) Thailand (9.91)	Japan	1-1	None	0-0	Authorisation to protect wildlife Product characteristics to protect human health Labelling required to protect human health
Crabs frozen (i) Russian Fed. (46.62) (ii) USA (21.78) (iii) Canada (21.05) (iv) India (0.79)	Japan	4-4	None	0-0	Authorisation to protect wildlife Product characteristics to protect human health Labelling required to protect human health
Shrimps and prawns not frozen (i) China TW (31.64) (ii) China (22.84) (iii) Australia (15.87) (iv) India (0.14)	Japan	1-5	GSPs rate for LDCs GSP rate 4.0	0-0	Authorisation to protect wildlife Product characteristics to protect human health Labelling required to protect human health
Shrimps and prawns frozen (i) India (20.43) (ii) Bangladesh (11.25) (iii) Canada (9.20)	Thailand	60-60	None	100%	Product characteristics to protect human health
Other Frozen Crustaceans (i) India (42.61) (ii) China (32.38) (iii) Indonesia (18.93)	Thailand	60-60	None	100%	Product characteristics to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Shrimps and prawns not frozen (i) Iceland (27.97) (ii) Greenland (26.43) (iii) India (6.01)	Thailand	60-60	None	100%	Product characteristics to protect human health
Crabs not frozen (i) Pakistan (45.79) (ii) India (29.13)	Thailand	60-60	None	100%	Product characteristics to protect human health
Rock Lobster (i) Australia (18.43) (ii) Brazil (14.86) (iii) Bahamas (13.75) (iv) India (0.16)	USA	0-0	None	100%	Authorisation to protect wildlife Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Shrimps and Prawn Frozen (i) Thailand (26.93) (ii) Ecuador (21.89) (iii) Mexico (14.15) (iv) India (4.81)	USA	0-0	None	100%	Authorisation to protect wildlife Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Crabs Frozen (i) Russian Fed. (53.12) (ii) Canada (36.43) (iii) India (0.29) (iv) Mexico (1.33)	USA	0-8	GSP Caribbean Basin US-Canada FTA US-Mexico FTA GSP 0.0	100%	Authorisation to protect wildlife Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Other Frozen Crustacean (i) China (25.17) (ii) Brazil (18.01) (iii) China TW (16.66) (iv) India (0.15)	USA	0-0	None	100%	Anti dumping duty Authorisation to protect wildlife Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Shrimps and prawn not frozen (i) India (42.11) (ii) Thailand (12.94) (iii) Canada (10.28)	USA	0-0	None	100%	Authorisation to protect wildlife Product characteristics to protect human health Testing, inspection or quarantine requirement to protect human health
Coffee neither roasted nor decaffeinated (i) India(40.04) (ii) Costa Rica (11.46) (iii) Colombia (10.5)	Russia	5-5	None	0%	
Coffee roasted not decaffeinated (i) Italy(14.24) (ii) Finland (13.55) (iii) Germany (12.99) (iv) India (0.91)	Russia	10-10	None	0%	

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Other Green Tea (i) China (52.48) (ii) India (16.42) (iii) France (14.3)	Russia	5-5	None	0%	
Black Tea (i) India (71.29) (ii) Sri Lanka (25.52) (iii) Bangladesh (0.91)	Russia	10-10	None	0%	
Other Black Tea (i) India (64.55) (ii) Georgia (9.46)	Russia	5-5	None	0%	
III. Processed					
Mixes & doughs for prep of bakers wares (i) Canada (97.52) (ii) China (0.49) (iii) New Zealand (0.35) (iv) India (0.22)	USA	9-10	GSP (0.0) Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	Tariff Quota Product characteristics requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Malt extract; flour, meal, milk, etc. prod, etc. n.e.s. (i) Canada (59.06) (ii) Hongkong (5.49) (iii) India (0.18)	USA	0-16	LDC rates (0.0) Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	
Cucumbers, gherkins, prep/pres vinegar/ acetic acid (i) Canada (25.3) (ii) Hungary (21.93) (iii) India (5.65)	Australia	5-5	MFN RATE (5.0) Preference for Canada (2.0)	100	Quarantine to protect human health
Onions, prepared/preserved by vinegar/acetic acid (i) Israel (46.85) (ii) India (23.07) (iii) Italy (20.27)	Australia	5-5	MFN RATE (5.0) Preference for Canada (2.0)	100	Quarantine to protect human health
Vegt/fruit/nuts, etc. n.e.s. prep/pres by vinegar, etc. (i) China (28.31) (ii) UK (11.03) (iii) Thailand (10.57) (iv) India (2.88)	Australia	5-5	MFN RATE (5.0) Preference for Canada (2.0)	100	Quarantine to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Cucumbers, gherkins, prep/pres vinegar/ acetic acid (i) Canada (53.88) (ii) India (9.53) (iii) Germany (6.53)	USA	10-10	GSP(0.0) Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade area US-Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	Product characteristic requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health
Vegt/fruit/nuts, etc. n.e.s. prep/pres by vinegar, etc. (i) Mexico (57.62) (ii) Spain (20.02) (iii) Greece (5.89) (iv) India (0.25)	USA	6-15	Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US-Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	Product characateristic requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health
Cucumbers, gherkins, prep/pres vinegar/ acetic acid (i) Canada (25.3) (ii) Hungary (21.93) (iii) Croatia (11.11) (iv) India (5.65)	Australia	5-5	MFN RATE (5.0) Preference for Canada (2.0)	100	Quarantine to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Onions, prepared/ preserved by vinegar/ acetic acid (i) Israel (46.85) (ii) India (23.07) (iii) Italy (20.27)	Australia	5-5	MFN RATE (5.0) Preference for Canada (2.0)	100	Quarantine to protect human health
Vegt/fruit/nuts, etc. n.e.s. prep/pres by vinegar, etc. (i) China (28.31) (ii) UK (11.03) (iii) Thailand (10.57) (iv) India (2.88)	Australia	5-5		100	Quarantine to protect human health
Cucumbers, gherkins, prep/pres vinegar/ acetic acid (i) Canada (53.88) (ii) India (9.53) (iii) Germany (6.53)	USA	10-10	Non-MFN tariff: 35 GSP(0.0) Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US-Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	Product characteristic requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Onions, prepared/ preserved by vinegar/ acetic acid (i) Mexico (57.62) (ii) Canada (1.66) (iii) India (0.25)	USA	6-15	MFN Tariff: 8.00 Non MFN Tariff: 20.00 GSP:0.0 Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US-Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	Product characteristic requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health
Protein concentrates & textured protein substances (i) Canada (35.43) (ii) Germany (12.03) (iii) France (7.36) (iv) India (2.07)	USA	5-10	GSP:0.0 Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US-Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	100	Product characteristic requirement to conduct drug abuse Testing, inspection or quarantine requirement to protect human health
Tobacco, not stemmed/ stripped (i) Kyrgyzstan (18.52) (ii) Moldova (10.99) (iii) Turkey (10.61) (iv) India (5.83)	Russian Fed	5-5	None	0	

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Tobacco, partly or wholly stemmed/stripped (i) India (23.94) (ii) China (13.04) (iii) Canada (12.95)	Russian Fed.	5-5	None	0	
Tobacco refuse (waste) (i) Canada (23.48) (ii) Czech Rep (13.91) (iii) Germany (13.73)	Russian Fed.	5-5	None	0	
Cigarettes containing tobacco (i) USA (38.35) (ii) UK (21.31) (iii) China (11.26) (iv) India (0.44)	Malaysia	165-319	ASEAN FTA rate: 165.2	0	
Cigarettes containing tobacco (i) Canada (27.82) (ii) Japan (18.15) (iii) UK (12.73) (iv) India (2.25)	USA	NA	LDC rates(0.0) Caribbean Basin Economic Recovery Act (0.0) US-Canada Free Trade Area US-Mexico Free Trade Area US-Israel Free Trade Area Rates for ANDEAN Trade Preference Act (0.0)	0	

Commodity/ exporting country	Importing country*	Average tariff rate	Preferential arrangement	NTM coverage	NTM description
Mfr tobacco & substitutes n.e.s. (i) China (56.66) (ii) India (42.82) (iii) France (0.51)	USA	0-4	General rate :4.0 WTO bound rate: 3.5	0	
Smoking tobacco (i) Oman (73.18) (ii) China (10.50) (iii) India (5.43) (iv) USA (3.98)	Saudi Arabia	30-30	none	0	

*Importing country listed is the major export destination for India for that particular commodity.

Figures in the bracket depict percentage share of the country in the total import of the corresponding importing country.

Source: TRAINS database 2000.

NOTES

- ¹ The SSR for North-East/North Africa declined from 85 to 63 during 1974-76 and 1997-99. However, for South Asia, SSR increased from 98 to 102 during the same period.
- ² All the domestic agricultural support programmes are categorised into: Amber box (trade distorting subsidies), Green and Blue boxes (minimally trade distorting subsidies). All the Amber box subsidies are subjected to reduction commitments based on a total subsidy measure known as total Aggregate Measure of Support (AMS). The AMS covers both the product and non-product specific subsidies.
- ³ For example, among the developing countries, *Vietnam's* rapid agricultural development during the 1990s because of the economic renovation programme, *Doi Moi* introduced in 1986. As part of this programme, subsidies were provided to increase agricultural production and exports. Particularly, support programme was launched to help coffee growers which facilitated upgradation of quality and reduction of production costs (USDA, 2001). Similarly, in China reforms were initiated for agricultural development. As a result of production incentives through input subsidies, agricultural production rippled and the undernourished population declined. (FAO, 2001)
- ⁴ For the development of competitive food processing sector, most developing countries are too small to reach the necessary economies of scale. Where developing countries have made significant inroads into food processing – for example, orange juice production in Brazil, canned pineapples in Thailand and soluble coffee production in Columbia and Brazil – the scale required for efficient production means that upstream access to raw materials and downstream access to markets must also be secured on a large scale. Many developing countries lack the raw materials, capital and market access to make processing viable. (UNCTAD, 2000)
- ⁵ For instance, in the USA, over 80 per cent of beef supply is controlled by four firms (OECD, 2001). It is also estimated that these firms control over 80 per cent of US maize exports and 65 per cent of US soybean exports; four firms control 60 per cent of domestic grain handling and 25 per cent of compound feed production. Similarly, in Australia, over 75 per cent of retail food distribution system is controlled by three firms. (FAO, 2003)

- ⁶ For example, contract farming and technology transfer in Punjab by Pepsi India has led to tomato yields to rise from 16 tonnes/ha in 1989 to 52 tonnes/ha by 1999. (Pepsi Foods, 2000)
- ⁷ Food has been categorised into Bulk, Intermediate and Consumer Processed Products. Bulk commodities consist of raw grains, oilseeds, tobacco, cotton, etc. Intermediate processed commodities consist of semi-processed goods such as flours, beans and oils. Fresh horticultural products consist of unprocessed fruits and vegetables such as bananas and tomatoes. Consumer products include beverages, bakery products and ready to eat cereals and snack food, preserved fruit and vegetables.
- ⁸ The methodology for identifying major food products is as follows. All the agricultural products (i.e. 02 to 24 HS Code) have been broadly categorised into Primary, Semi-Processed and Processed based on level of processing and consumption. For example, semi-processed are intermediate consumer goods while processed are final consumer goods. Second, under each sub-category, all products at 4-digit HS Code have been sorted and ranked (in term of their value of exports/imports). The products that constitute about 70-80 per cent of the value of the sub-category have been considered as major products.
- ⁹ This is a reflection of intra-industry trade. As discussed earlier, there is high firm concentration in meat industry in USA.
- ¹⁰ It may be noted that Pepper has been a traditional export item for India. But, in recent years pepper imports have been on the rise. Vietnam besides emerging as a major competitor for India in the world market is also emerging as an important import source.
- ¹¹ The protein consumption, including meat, poultry, dairy and fish, has risen by 16 to 21 per cent of all food expenditure between 1970 and 1990. Fruit and vegetable consumption has also risen by more than third. On the other hand, in just six-year time, the cereal consumption dropped from 50 per cent to 37 per cent of all food expenditure. (CII - McKinsey, 1998)
- ¹² G/AG/NG/S/6, "Agricultural Trade performance by developing Countries", WTO Secretariat *Background Paper*.
- ¹³ With reference to India, 405 consignments were rejected by USA during 2001-02. Black pepper was rejected on account of *filth or adulteration*; fisheries and marine products on account of *filth, salmonella and insanitary*. (Mehta et al. 2002)

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