

Sustaining Agricultural Trade

Policy and Impact

An examination of the trends in agri-trade for the post-liberalisation period for India shows that agri-imports have grown at almost double the rate of agri-exports. However, due to the initial higher levels, agri-exports continue to be higher than agri-imports by one and a half times for 2003-04. The implications for agri-trade from the vantage point of foreign exchange have become quite limited, but the impact on domestic agriculture has been deepening. While over the years policy has focused relentlessly on non agri-exports, the share of India's agri-exports in world agri-exports is higher than the similar share of India's total exports in world total exports. When the top 15 agri-exports are considered, we do not see any discernible change in the composition, though commodities with a lower share show higher rates of growth. India seems to have avoided abrupt disruptions in its agri-trade patterns.

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I Introduction

Agri-trade has been one of the most “managed” of the sectors the world over. It started with keeping agriculture out of the purview of GATT. Thus while countries were willing to accept a common set of rules for trade in manufacturing, most countries were interested in keeping their autonomy with respect to agricultural trade. Later in 1995, agri-trade was included as one of the areas in the WTO but there was and still is a considerable hesitance in accepting one set of rules for agriculture from a whole lot of countries, be they developed or developing. In fact, the whole process of acceptance of even the common framework for discussion is a lesson in gradualism, though any kind of convergence is nowhere in sight.

On the other hand India for its own reasons, has been a reasonably conservative player for long. In the period after independence, it was felt that exposure to the world agri-markets had the potential to affect the prices of agricultural products (most important being food) in a negative way. Thus, most developing economies like India tried to control agri-trade and in the process tried keeping agricultural sector's external vulnerability low [Deepika and Deshpande 2003]. Further in India, more than 70 per cent of the employment occurred in agriculture and hence it was feared that any exposure to trade would jeopardise the livelihoods of that many people. In any case, it was not easy to penetrate the developed countries markets which were and continue to be fairly protectionist. And now by the end of July 2006 we have a situation almost signalling a breach of WTO discipline by developed nations.

Agricultural Trade Policy Framework in Brief

The planning process in India has been found guilty of neglecting the foreign trade sector in general and agri-trade in particular. A projection of balance of trade was attempted in the Second Five-Year Plan but it was expected that no significant increase in export earnings could be expected in the short run

[Planning Commission 1956:97-99]. There was what has been called, “export pessimism” with respect to exports. The theoretical underpinning for export pessimism was provided by Prebisch (1959:435-453) in the context of the deteriorating terms of trade. Nurske (1953) argued that the traditional (i.e., mainly agricultural) exports of the developing economies face inelastic demand. Within the trade sector too, traditional, i.e., agricultural exports were neglected by India. Whatever increase was to be there was to be expected and hence encouraged in the manufacturing sector. “Export promotion efforts were exclusively concentrated on non-traditional exports of manufactures, while most traditional exports were neglected. Very little was done to prevent or slow down the decline in India's relative share of the world market for its major traditional exports. In fact, the combination of trade policies actually employed added up to a positive discrimination against them” [Nayyar 1976:344]. In this period, the idea was to export only those agri-products which were surplus in the economy. On the agri-import front, India had a policy of allowing those imports where the domestic production was falling short of the domestic demand. Thus while agri-exports were high, they were not expected to have a bright future and dependence on agri-imports increased as the food security situation deteriorated from the mid-1960s.

It is true that in the post-war period most of the increase in world trade occurred in manufactures. However, over a period of time the reluctance to trade in agricultural commodities has declined. As some of the developed economies like the US, etc., started having agricultural surpluses they started to campaign for inclusion of agriculture in GATT/WTO. Many of the developing countries like India too saw an opportunity in liberalising agri-trade as they felt they had comparative cost advantage in case of some crops due to weather conditions or lower labour costs. Though the perception of higher risk in agri-trade continued, agri-trade also seemed to offer a prospect for increasing employment and income. It was felt that agriculture too could avail of the advantages which the manufacturing sector gets due to liberalisation. Slowly the idea that we should produce for export started gaining ground. On

the other hand, the arguments which were used against opening up in manufacturing, were also used against opening up in agriculture [Ahluwalia 1996].

In 1991, as a response to the external sector crisis, the liberalisation process got an impetus. The rupee was made partially convertible that year which affected the agri-trade too. In 1995 India signed the WTO and hence became a part of the Agreement on Agriculture (AoA). Later over the years more policy measures were introduced which removed the quantitative restrictions on agricultural imports, the role of canalising for imports was reduced but licensing for many agricultural exports continued, non-tariff barriers were converted into tariff barriers. There was also a large-scale withdrawal of export incentive schemes [Bhattacharyya 2004:79, 80].

The AoA has mainly focused on market access, domestic support commitments, export subsidy commitments, sanitary and phyto-sanitary measure, etc. Over a period of time, India has had to open up its agricultural sector and allow more imports. However, even in a more liberalised environment, India has basically followed the policy of allowing imports when domestic production has fallen short of the demand.

In this paper we make an attempt to examine the impact of opening up of the agricultural sector on the trends and composition of agri-trade. Actual trade outcomes are dependent on many other factors besides the policy, like infrastructure, quality, etc. Policy at best shows us the intentions of the government. Moreover, in reality there are many policies. At times, two policies could also be working in opposite directions. For example, the government could liberalise the imports (which would increase demand for imports) and at the same time allow the currency to be depreciated (which would dampen the demand for imports). The end result would be dependent on which of the forces is stronger [Sathe 1997].

It has been found that the agri-trade sector has been opened up only in a small measure and that too in small steps. Therefore, it would be misplaced on our part to expect that there would be great changes in agri-trade due to India's liberalisation from 1991 and/or due to inclusion of agriculture in the WTO in 1995. It is with these words of caution that we examine the changes in trends and composition of agri-trade in the post-1991 period.

II Trends and Impact of Agri-trade

Growth in Agri-trade since 1991: A BoP Perspective

Table 1 gives the trends in India's exports and imports of agricultural commodities for the period 1990-91 to 2003-04. Following the FAO classification, we have excluded "fishing and forestry" in agri-trade. We find that at an absolute level, agri-exports have been much higher than agri-imports. While in the earlier periods, agri-exports were slightly more than four times of the agri-imports, in the later periods agri-exports were higher by one-and-a-half times only. This bridging up of the gap could be taken as one pointer towards more imports occurring due to opening up of the economy. It follows from this that the rate of growth of the agri-imports has been close to double than that of agri-exports (at 24.86 per cent and 13.31 per cent respectively). On the other hand, we find the total exports and total imports

Figure 1: Percentage Share of India's Agricultural Trade in Total Trade



grew at about the same rate, i.e., at 17.12 per cent and 17.23 per cent respectively for the period considered.

Agri-exports as a share of total exports fall in a range of 10 to 16 per cent – and this share seems to have decreased over the period; while agri-imports fall within a range of 2 to 7 per cent – and this share seems to have increased over the period (Figure 1). Thus agri-exports were important at the beginning of the liberalisation period and continue to do so though their importance vis-à-vis agri-imports seems to have eroded somewhat in the later years. In terms of impact on the balance of trade (and therefore payments) situation, agri-imports have a small but rising impact for the period considered. This impact is much, much lower than what it was in the 1960s when it was close to 25 per cent of the total imports. Thus the share of agri-imports shows a cyclical pattern where its share increased sharply in the 1960s only to fall again very steeply since the mid-1970s. The share of agri-imports reduced as India acquired higher levels of foodgrain self-sufficiency since the mid-1970s. The share shows a gradually rising trend in the 1990s and the early part of the 21st century. On the other hand in the 1950s and 1960s, the share

Table 1: India's Exports and Imports of Agriculture Commodities

(Value in Rupee crore, at current prices)

Year	Agri-Exports	Total Exports	Per Cent of Agri-Exports in Total Exports	Agri-Imports	Total Imports	Per Cent of Agri-Imports in Total Imports	BOT Impact Ratio
1990-91	5053.08	32527.28	15.53	1205.86	43170.82	2.79	8.26
1991-92	6395.32	44041.81	14.52	1062.72	47850.84	2.22	8.11
1992-93	7297.15	53688.26	13.59	2306.14	63374.52	3.64	8.20
1993-94	10034.66	69748.85	14.39	1877.38	73101.01	2.57	8.33
1994-95	9686.12	82673.4	11.72	5233.92	89970.7	5.82	8.64
1995-96	17016.61	106353.35	16.00	5054.16	122678.14	4.12	9.63
1996-97	20153.66	118817.32	16.96	5668.34	138919.88	4.08	10.01
1997-98	20345.69	130100.64	15.64	7133.73	154176.29	4.63	9.66
1998-99	21142.09	139751.77	15.13	13052.35	178331.69	7.32	10.75
1999-2000	19297.92	159095.2	12.13	14107.9	215528.53	6.55	8.91
2000-01	20959.65	201356.45	10.41	9937.19	228306.64	4.35	7.19
2001-02	22305.9	209017.97	10.67	13672.74	245199.72	5.58	7.92
2002-03	25775.56	255137.28	10.10	15662.84	279205.87	5.61	7.75
2003-04	28238.39	291581.93	9.68	18625.92	353975.61	5.26	7.25
Rate of growth CV	13.31 45.22	17.12 59.04	— —	24.86 72.40	17.23 59.47	— —	— —

Notes: (1) Excluding fishing and forestry.

(2) CV = Coefficient of variation, rate of growth = compound growth as per cent per annum.

Source: *Agriculture Statistics at a Glance (2004)*, Ministry of Agriculture, Gol.

Figure 2: Balance of Trade Impact Ratio

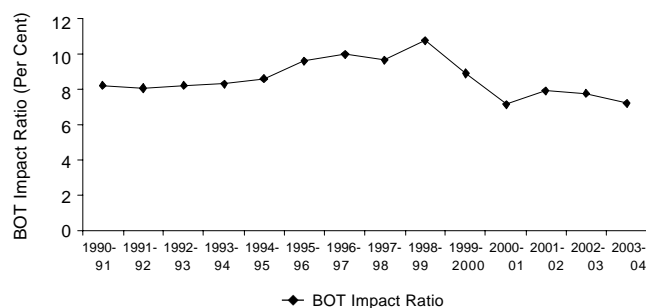
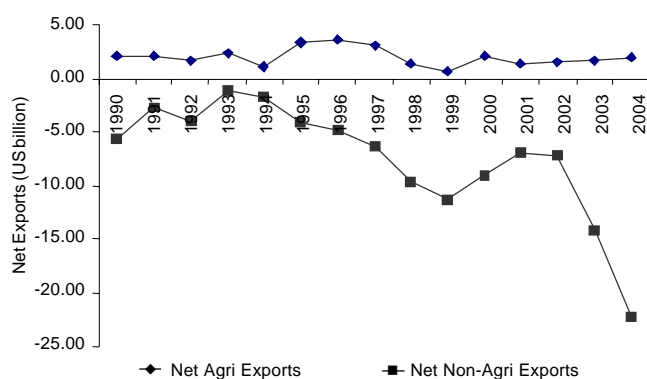


Figure 3: Net Exports of Agriculture and Non-Agriculture Sector



Source: Computations based on the data collected from *International Financial Statistics Yearbook*, IMF (2005, 2004, 1995) and www.fao.org

of agri-exports was almost 40 per cent of the total exports. However, over the years this share has declined quite steeply. This has been partly because of neglect of agri-exports, higher rates of growth of manufactures exports, etc.

Another interesting thing we can discern is that of a very high variability, i.e., the coefficient of variation (CV) of agri-imports. The agri-imports have revealed themselves to be of very volatile nature for the said period. As is to be expected, their variability is more than that of the total imports. This is most likely a result of the policy regime which allows more imports when domestic production is falling short of the demand and controls imports when domestic production is adequate. On the other hand, that agri-exports are less volatile than the total exports, is a somewhat surprising result.

Next we look at the combined impact of agri-trade on the balance of trade situation. To that end, we have the BOT impact ratio, viz. $((\text{agri-exports} + \text{agri-imports}) / (\text{total exports} + \text{total imports})) \times 100$. Till the mid-1970s, agri-exports and agri-imports both had a high share in exports and imports respectively and hence were important from the point of view of balance of trade (Table 1 and Figure 2). However, as mentioned above, over a period their shares have been declining. It can be seen that the BOT impact ratio has decreased over the said period too. This is mainly because though the share of agri-imports has risen, the fall in agri-exports' share is steeper. If we also include the invisibles (which have grown at a higher rate than merchandise trade) or consider whole of the balance of payments statement, then the impact of agri-trade will be even lesser. Thus in spite

of the relative liberalisation of the agricultural sector, its impact on the external sector situation has been declining.

Relationship between Agri-trade and the Agri-economy

What is the magnitude of agri-trade with respect to the agri-economy of India? To what extent does agri-trade affect agri-economy? In Table 2 we have given the share of agri-trade in the agricultural gross domestic product.

That part of agriculture which is exported can be called the "export-oriented" agriculture and is given by the share of agri-exports in agri-GDP. This share has been rising over the period considered. Similarly, agri-imports as share of agri-GDP can be called the "import-affected" agriculture and it experienced a steep rise from 0.83 per cent to 3.57 per cent. Thus import-affected agriculture has been making a greater impact on domestic agriculture than before. But when we compare this with the non-agricultural trade, there are interesting issues. Figure 3 shows the net exports of agricultural and non-agricultural sectors. The imports in non-agricultural sector have increased alarmingly and the trade gap has widened substantially during the last decade. While the agricultural sector still has a positive trade gap indicating net positive impact on GDP, the non-agricultural trade seems to be draining the resources and this fact is rarely emphasised.

A look at the CVs shows that agri-GDP is reasonably stable at 36 per cent, while agri-imports are quite volatile at a high CV of 72 per cent. As mentioned earlier, the policy regime ensures that most of the agri-imports occur when the domestic production falls short of the demand. Agri-exports on the other hand seem to be having a moderate kind of volatility at 45 per cent CV.

We have also presented the agri-trade intensity ratio, viz. $(\text{agri-trade}/\text{agri-GDP}) \times 100$. This share was around 4 per cent in 1990-91 and over the period it has almost doubled. This in

Table 2: Share of India's Exports and Imports in Agricultural GDP at Factor Cost at Current Prices
(Value in Rupee crore, at current prices)

Year	Agri Exports	Agri Imports	Agri-GDP* (At Current Prices)	Export-Oriented Agri-culture	Import-Affected Agri-culture	Agri-Trade Intensity Ratio
1990-91	5053.08	1205.86	145734	3.47	0.83	4.29
1991-92	6395.32	1062.72	170767	3.75	0.62	4.36
1992-93	7297.15	2306.14	191243	3.82	1.21	5.02
1993-94	10034.66	1877.38	221834	4.52	0.85	5.36
1994-95	9686.12	5233.92	255193	3.80	2.05	5.84
1995-96	17016.61	5054.16	277846	6.12	1.82	7.94
1996-97	20153.66	5668.34	334030	6.03	1.70	7.73
1997-98	20345.69	7133.73	353490	5.76	2.02	7.77
1998-99	21142.09	13052.35	406498	5.20	3.21	8.41
1999-2000	19297.92	14107.9	422392	4.57	3.34	7.90
2000-01	20959.65	9937.19	423523	4.95	2.35	7.29
2001-02	22305.9	13672.74	463104	4.82	2.95	7.76
2002-03	25775.56	15662.84	456369	5.65	3.43	9.08
2003-04	28238.39	18625.92	521538(QE)	5.41	3.57	8.98
Rate of growth						
CV	13.31	24.86	10.08	—	—	
	45.22	72.40	36.70	—	—	

Notes: (1) * Gross domestic product at factor cost from agriculture (excluding forestry and logging and fishing).

(2) QE = Quick estimates.

(3) CV = Coefficient of variation, rate of growth = compound growth as per cent per annum.

Source: *Agricultural Statistics at a Glance (2004)*, Ministry of Agriculture, Gol.

itself is not a very modest share and has the potential to have important implications for the agri-economy and therefore the economy as such. If agri-trade continues to grow at this rate then in the future it may play an even more important role.

Relationship between Agri-trade of India and the World

Though India's agri-trade intensity ratio has been rising, how big a player is India in the world? Does India's entry or exit at aggregate level make any difference to the world agri-trade?

To make this international comparison, we have used the FAO data. The government of India data used in the earlier tables, is in rupees and therefore incorporates the impact of the depreciation of currency. The FAO data reveal the amount of dollars earned/spent through agri-trade.

In Table 3 we have given the share of India's agri-trade in world agri-trade; and share of India's trade in world trade.

It can be observed that the agri-exports in dollar terms went on rising quite rapidly from 1991 till 1996. It is interesting to note that from 1997 onwards agri-exports declined in absolute terms, and did not reach the 1997 level till 2003 (this movement is not captured by the rupee data). When India's agri-exports were declining in absolute terms, the world agri-exports were also declining. They came to the earlier levels one year before India, i.e., in 2002.

The decline in the agri-export earnings starting from 1997 has been attributed to the south-east Asian crisis, slow down in the world economy and decrease in the agricultural prices [Bhalla 2004:49-51]. However, this kind of a decline is not discernible for India's total exports, where the fall occurs only in one year of 1998 and immediately the exports come to earlier levels. For the world total exports too, there is a fall for only one year, i.e., 1998. Thus the world agri-trade and India's agri-trade seem to have faced a turn down from 1997 to 2002/2003. The commodities which experienced this decline will be examined in the next section.

The share of India's agri-exports in world agri-exports have been given in brackets. This share has increased 0.94 per cent in 1990 to 1.17 in 2004. In fact this share is greater than India's total exports' share in world total exports for all the years considered. Here it increased from 0.54 in 1990 to 0.79 in 2004. Thus though India is by and large a marginal player in the world markets, it is somewhat better off with respect to agri-exports than the total exports. This is somewhat surprising result in view of the fact that so much was done to increase non-agricultural exports of India. In spite of the earlier neglect and later indifference and hesitance towards agri-exports, they seem to have a higher share than the total exports.

India's agri-exports and imports have increased at a much higher rate (i.e., 6.08 and 13.54 per cent respectively) than the world agri-trade, which has grown at a rate of 3 per cent approximately. India's agri-imports have grown at a rate greater than that for the total imports (13.5 and 10.3 respectively). When we examine the CVs, we find that world agri-exports (which is similar to agri-imports at the global level) has a remarkably low CV and is the most stable variable at 17 per cent. Its variability is 12 percentage point lower than that for the world trade (at 29 per cent). This is surprising because it is usually said that world trade in agriculture is highly volatile. (However, these CVs are computed on raw data. If we adjust for the trend, then the pattern may reverse.)

III Commodity Composition of Agri-trade

Composition of Exports

We now examine the commodities which were largely responsible for the changes revealed above. In Appendix Table A1 we have given top 15 export commodities for the period 1990-2003. Taking this table as the base, we have derived Table 4 which gives the percentage share for each of the commodity and we

Table 3: India's Share in World Trade
(Value in US billion \$)

Year	India		World		India		World	
	Agri Exports	Agri Imports	Agri Exports	Agri Imports	Total Exports	Total Imports	Total Exports	Total Imports
1990	3.07 (0.94)	1.08 (0.31)	326.23	352.73	17.9 (0.54)	23.6 (0.68)	3334.4	3455.4
1991	2.80 (0.85)	0.74 (0.21)	329.22	354.32	17.6 (0.51)	20.4 (0.57)	3436.3	3578.3
1992	2.95(0.82)	1.35 (0.35)	357.98	387.63	19.6 (0.52)	23.6 (0.61)	3775.9	3884.9
1993	3.36 (0.99)	1.04 (0.29)	339.28	356.60	21.6 (0.57)	22.8 (0.59)	3767.7	3840.2
1994	3.24 (0.83)	2.20 (0.54)	389.00	404.95	25.0 (0.58)	26.8 (0.61)	4289.9	4365
1995	5.49 (1.24)	2.22 (0.48)	443.47	462.67	30.6 (0.60)	34.7 (0.67)	5130.3	5213.9
1996	5.85 (1.26)	2.21 (0.46)	465.80	480.53	33.1 (0.62)	37.9 (0.69)	5350.2	5471.3
1997	5.66 (1.24)	2.58 (0.55)	457.88	468.88	35.0 (0.63)	41.4 (0.73)	5539.3	5647.4
1998	5.23 (1.19)	3.83 (0.84)	438.24	457.51	33.4 (0.61)	43.0 (0.77)	5451.4	5579.1
1999	4.64 (1.11)	3.97 (0.89)	417.20	443.54	35.7 (0.63)	47.0 (0.81)	5645.1	5802.5
2000	4.95 (1.20)	2.88 (0.66)	412.00	434.92	42.4 (0.66)	51.5 (0.78)	6376.7	6571.1
2001	5.23 (1.27)	3.92 (0.89)	413.64	439.40	43.4 (0.71)	50.4 (0.80)	6130.1	6335.7
2002	5.52 (1.25)	4.02 (0.87)	442.29	464.62	49.3 (0.77)	56.5 (0.86)	6428.6	6575.3
2003	6.50 (1.24)	4.90 (0.89)	523.88	550.13	57.1 (0.76)	71.2 (0.93)	7469.0	7657.9
2004	7.05 (1.17)	5.11 (0.81)	604.33	634.51	71.8 (0.79)	94.1 (1.01)	9052.5	9318.5
Rate of growth	6.08	13.54	3.25	3.15	9.75	10.30	6.50	6.50
CV	28.66	50.82	17.59	16.86	43.20	47.19	29.21	29.25

Notes: (1) Agriculture trade excluding fishery and forestry products.
(2) Brackets in second and third column give the share in world agri-exports and imports respectively. Brackets in sixth and seventh column give the share in world's total exports and imports respectively.

(3) CV = Coefficient of variation, rate of growth = compound growth as per cent per annum.

Sources: (1) *Food and Agriculture Organisation of the United Nations Trade and Commerce Year Book* (2003 (vol 57), 2002 (vol 56), 2001 (vol 55), 2000 (vol 54), 1999 (vol 53), 1997 (vol 51), 1996 (vol 50)).

(2) *International Financial Statistics Yearbook*, IMF (2005, 2004, 1995).

have divided the entire period into three phases and the whole of the 15 year period has also been considered.

From Appendix Table A1, we can identify the commodities which explain the fall in agri-exports from 1997. In 1997, the steepest fall can be observed for wheat, sugar refined and cotton lint. Almost all other commodities either experienced an increase or remained almost the same for the said period. Further in 1999, when agri-exports reached a rock bottom of \$4.6 bn, it was because of the fall in exports of “milled paddy rice” (which continued for some time), cotton lint, wheat and sugar. Once these commodities picked up, the aggregate agri-exports also picked up.

From Table 4 we can discern that over the 14-year period considered, there have been no major upheavals in the composition of the agri-exports. Data show that for the entire period, top five commodities account for around 50 per cent of the exports. If we consider top five commodities, all except milled paddy rice show a consistent decline in their share for the period considered, i.e., from 1990-95 to 2001-04. Tea and cashewnuts shelled, which have been India’s traditionally major exports show a decline in their importance over these 15-year period. If we consider bottom five, then it is a mixed picture. Sugar refined and sesame seed show an increase in the share. Shares of onions dry and coffee extracts have remained almost the same. Two out of top 15 commodities, viz, tea and cotton lint show a negative rate of growth. Somewhat higher rates of growth are shown by the commodities which are lower in the share. This shows that probably high share, high ranking commodities have reached a plateau, while low ranking commodities are growing at a higher rate.

A look at the CVs shows that greatest stability is shown by the traditional exports of tea and cashewnuts shelled. The “new” exports like wheat, sugar refined show the highest level of variability. Cotton lint also shows very high level of variability.

It would be worthwhile to identify commodities which have the greatest positive impact on the agri-exports. Such commodities should have (i) high share in the total agri-exports, implying that the commodity has a high influence in exports; (ii) high rate of growth implying that the commodity has a good potential in the world markets; and (iii) low variability implying that the commodity has a certain amount of stability over the years.

Wheat, sugar refined have high rates of growth but low share and high variability. Tea, cashewnuts shelled have high share and low variability; but the rate of growth is low. Cake of soya beans has fairly high share and variability on the lower side but its rate of growth is quite low. Milled paddy rice seems to be the only commodity which has a high share, high rate of growth and moderate variability.

Composition of Imports

Concerns have been raised by many authors as well as earlier in this paper about the high growth rate of imports. Let us now identify the commodities which have been leading here. Appendix Table A2 gives the top 15 agri-imports in absolute terms. The top two imports are related to consumption of edible oil. Edible oil comes back again in ninth place in the form of “oil” of sunflower seed, and in eleventh place as fatty acids. The third place goes to cashewnuts, which are imported for the purpose of re-export. India has a labour cost advantage in this commodity. The import of cotton lint has increased phenomenally in the said period. The fourth place is taken up by pulses nes, and chick peas appear in the 13th place.

Based on these absolute values, we have generated Table 5. As is to be expected, the most important thing that we can discern from Table 5 is the very high share of “oil” of palm and oil of soya beans (around 34 per cent) in total agri-imports. When oil of sunflower seed and fatty acids oils are added to them the share goes up to almost 40 per cent. The share of pulses nes and chick peas adds up to 5.4 per cent for the period 1990-2003. Over the three phases, the shares of oil of palm and oil of soya beans and cotton lint have increased significantly and all these three commodities show high rates of growth. All these commodities also show a high rate of variability. On the other hand, the shares of cashewnuts, wheat and sugar refined have declined. Wheat shows a high and negative rate of growth along with a very high

Table 4: India’s Commodity Composition of Agricultural Exports
(Value in percentage)

No	Commodity	Phase I 1990- 95	Phase II 1996- 2000	Phase III 2000- 04	Phase IV 1990- 04	Growth Rate 1990-04	CV 1990- 2004
(1)	Milled paddy rice	15.06	17.66	17.42	16.73	10.19	53.1
(2)	Cake of soyabean	11.69	10.33	7.89	9.98	2.43	34.12
(3)	Tea	11.69	8.11	5.78	8.52	-1.29	22.39
(4)	Cashewnuts shelled	9.19	7.66	6.75	7.86	3.56	22.89
(5)	Coffee, green	5.47	5.42	2.5	4.49	1.11	44.16
(6)	Buffalo meat	2.37	3.43	4.66	3.48	14.11	54.61
(7)	Tobacco leaves	3.19	3.44	2.72	3.12	46.23	30.77
(8)	Oil of castor beans	3.05	3.22	2.27	2.86	5.44	38.81
(9)	Cotton lint	4.5	2.55	1.02	2.69	-14.44	114.62
(10)	Wheat	0.99	1.1	5.52	2.5	26.49	125.16
(11)	Sugar refined	1.31	0.79	3.38	1.8	16.07	120.36
(12)	Pepper, white/long/black	1.48	2.38	0.54	1.49	26.49	64.89
(13)	Sesame seed	1.16	1.53	2.06	1.58	12.41	54.42
(14)	Onions, dry	1.69	1.06	1.81	1.51	5.23	44.76
(15)	Coffee extracts	1.02	1.58	1.18	1.27	13.09	48.2

Notes: (1) First three columns show average percentage share of agriculture products in total agriculture exports. (2) GR = Compound growth as per cent per annum. (3) CV= Coefficient of variation.

Source: Computations based on data from www.fao.org

Table 5: India’s Commodity Composition of Agricultural Imports
(Value in percentage)

No	Commodity	Phase I 1990- 95	Phase II 1996- 2000	Phase III 2000- 04	Phase IV 1990- 04	Growth Rate 1990- 04	CV 1990- 2004
(1)	Oil of palm	12.13	29.17	30.86	26.39	34.99	79.08
(2)	Oil of soyabean	2.39	5.39	12.47	7.79	33.38	107.02
(3)	Cashewnuts	10.85	3.56	5.74	5.99	7.14	65.94
(4)	Cotton lint	4.79	4.34	7.13	5.63	45.79	90.59
(5)	Pulses	4.51	1.97	4.19	3.44	7.36	72.86
(6)	Silk, raw and waste	5.62	2.48	3.01	3.35	5.55	32.55
(7)	Wheat	3.77	5.43	0	2.77	-25.62	145.22
(8)	Sugar refined	8.76	2.34	0.07	2.69	56.83	234.88
(9)	Oil of sunflower seed	0.73	5.7	0.96	2.66	311.24	111.51
(10)	Wool, greasy	4.52	2.34	1.85	2.58	2.22	18.48
(11)	Fatty acids oils 431.31	1.74	2.97	2.17	2.38	19.72	58.3
(12)	Wool, scoured	3.39	1.92	1.9	2.21	5.76	33.55
(13)	Chickpeas	2.44	1.47	2.23	1.99	4.39	87.07
(14)	Almonds	2.31	1.76	1.36	1.7	7.47	41.82
(15)	Beans, dry	2.15	0.84	2.07	1.63	9.64	81.33

Notes: (1) First three columns show average percentage share of agriculture products in total agriculture imports. (2) GR = Compound growth as per cent per annum. (3) CV= Coefficient of variation.

Source: Computations based on data from www.fao.org

level of variability. In fact we find that wheat and sugar refined both show a very high degree of variability in exports as well as imports (Table 4). Cotton lint imports have increased at a steep rate of 45 per cent per annum, while export of the same commodity has shown a negative figure. Similar to the pattern of exports, the top five commodities account for around 50 per cent of the total imports. However, here we find that it is the higher ranking imports which show higher growth rates as compared to lower ranking imports.

Most of the top agri-imports belong to the category of food items. Cashewnuts are imported for re-exports. Cotton lint, silk, raw and waste and two types of wool are non-food crops.

What are the major changes in composition of imports that have occurred in the last 15 years?

What we see in 1990s is the furtherance of the trends arisen in the mid-1970s, i.e., decline in the imports of cereals especially wheat and increase in the imports of other food items like oil and pulses. Share of edible oil imports has increased massively, while the share of pulses has remained almost stable. The imports of these commodities are a matter of concern and have been raised earlier in debates [Ramesh Chand et al 2004; Sathé 2004].

IV Movement in Quantity and Price

We have been examining changes in the value of agricultural exports and imports for the post-1990 period. However, the value is a result of changes in price and quantity both. It is important to find out the relative importance of change in price and change in quantity in the overall change in value. In case of exports, it is good for the economy if prices have increased more than quantity. In case of imports, it is better for the economy if quantity increase has been more than price increase. We have already examined the top 15 agricultural exports and imports. The quantity figure for each of these commodities is available from the FAO data base. To gauge the relative importance of quantity and price we have done the following exercise.

We have estimated the growth rate of the 15 commodities in value terms. Then we have found the growth rate for each of the commodity in quantity terms. Next we have computed the ratio of both and multiplied by 100. The results have been presented in Table 6 for agri-exports and for agri-imports in Table 7. In Table 6 column 3 gives the rate of growth of exports in value terms, column 4 gives the rate of growth of quantity for the period 1990-2003. Column 5 gives the ratio between rate of growth in value to rate of growth in quantity as a percentage. Wherever the ratio is higher than 100, for that commodity the increase in value has been more than that of quantity and hence the increase in value of exports has been more due to increase in prices than increase in quantity. Thus we construe the movement in prices in an indirect way. Wherever the ratio is lower than 100, the opposite holds. The best movement has been for "pepper, white/long/black" (No 12) where the quantity exported has decreased at a rate of 4 per cent, but the value has increased at a high rate of 26 per cent for the said period. Thus for a smaller quantity, India has been earning higher amounts because of steep increase in prices. The economy has benefited in a similar fashion in case of "tobacco leaves" Table 6, (No 7). The worst case is that of tea (No 3) where value has decreased but quantity exported has increased albeit at a very small rate. Here it means that we have exported higher quantities of tea for lower

prices. In case of cotton lint (No 9) both value and quantity have decreased but value has decreased more and hence here the trade movement has not been very beneficial for India. In the case of eight (out of 15) commodities quantity grew at a higher rate than price.

Next step is to find what has been more volatile, quantity or value. In columns 6 and 7, we have presented the CV for value and quantity of agri-exports, followed by their ratio multiplied by 100 in the 8th column. We find that in case of eight commodities value has been more volatile than quantity. Thus we can deduce that out of the top 15 agri-exports, in case of more than 50 per cent of the commodities quantity grew at a higher rate than prices which is not a very positive movement; and that value was more volatile than quantity.

Table 6: Growth Rates and CVs of Values and Quantities of Agri-exports for 1990-2004

No	Commodity	Growth Rate of Agri-Exports in Value	Growth Rate of Agri-Exports in Quantity	¾*100	CV of Agri-Exports in Value	CV of Agri-Exports in Quantity	6/7*100
1	2	3	4	5	6	7	8
(1)	Milled paddy rice	10.19	15.49	65.78	53.1	70.25	75.58
(2)	Cake of soyabeans	2.43	2.33	104.29	34.12	24.94	136.80
(3)	Tea	-1.29	0.1	-1290	22.39	12.18	183.82
(4)	Cashewnuts shelled	3.56	5.65	63.00	22.89	27.33	83.75
(5)	Coffee, green	1.11	4.5	24.66	44.16	21.98	200.90
(6)	Buffalo meat	14.11	13.43	105.06	54.61	54.23	100.70
(7)	Tobacco leaves	46.23	4.6	1005	30.77	28.68	107.28
(8)	Oil of castor beans	5.44	4.08	133.33	38.81	31.6	122.81
(9)	Cotton lint	-14.44	-13.5	106.96	114.62	102.69	111.61
(10)	Wheat	26.49	25.48	103.96	125.16	131.16	95.42
(11)	Sugar refined	16.07	17.82	90.17	120.36	135.77	88.64
(12)	Pepper, white/long/black	26.49	-4.02	658.95	64.89	37.81	171.62
(13)	Sesame seed	12.41	12.3	100.89	54.42	56.46	96.38
(14)	Onions, dry	5.23	6.18	84.62	44.76	46.75	95.74
(15)	Coffee extracts	13.09	18.77	69.73	48.2	57.35	84.04

Source: Computations based on data from www.fao.org

Table 7: Growth Rates and CVs of Values and Quantities of Agri-Imports for 1990-2004

No	Commodity	Growth Rate of Agri-Imports in Value	Growth Rate of Agri-Imports in Quantity	¾*100	CV of Agri-Imports in Value	CV of Agri-Imports in Quantity	6/7*100
1	2	3	4	5	6	7	8
(1)	Oil of palm	34.99	28.27	123.77	79.08	82.71	95.61
(2)	Oil of soyabean	33.38	39.79	83.89	107.02	112.6	95.04
(3)	Cashewnuts	7.14	10.08	70.83	65.94	72.52	90.92
(4)	Cotton lint	45.79	51.13	89.55	90.59	103	87.95
(5)	Pulses	7.36	7.25	101.51	72.86	74.27	98.10
(6)	Silk, raw and waste	5.55	10.19	54.46	32.55	52.58	61.90
(7)	Wheat	-25.62	-22.04	116.24	145.22	145.9	99.53
(8)	Sugar refined	56.83	61.28	92.73	234.88	208.6	112.59
(9)	Oil of sunflower seed	311.24	292.36	106.45	111.51	119.9	93.00
(10)	Wool, greasy	2.22	4.08	54.41	18.48	20.9	88.42
(11)	Fatty acids oils 431.31	19.72	19.01	103.73	58.3	61.41	94.93
(12)	Wool scoured	5.76	10.08	57.14	33.55	45.2	74.22
(13)	Chick peas	4.39	5.34	82.20	87.07	87.47	99.54
(14)	Almonds	7.47	5.44	137.31	41.82	27.65	151.24
(15)	Beans, dry	9.64	10.08	95.63	81.33	88.45	91.95

Source: Computations based on data from www.fao.org

In Table 7, we have done a similar exercise for agri-imports. Here the the economy stands to benefit if the quantity grows at a higher rate as compared value. In case of raw silk and waste (No 6) and “scoured wool” (No 12) both value and quantity have increased but quantity shows almost double rate of growth which is a positive for the economy. In case of wheat (No 7) both value and quantity have decreased but the decrease in case of value is steeper and hence better for the economy. In case of 10 commodities the movement of quantity has been better than that of prices and hence has helped the economy. Out of 15 commodities, in case of thirteen commodities quantity has been more volatile as compared to value.

Conclusions

In this paper we have made an attempt to review the changes in the trends and composition of agri-trade from 1990 till 2004. In this period, India has moved away from the earlier general apathy towards trade and particular suspicion towards agri-trade. A trade policy regime which is more open was being put in place in the said period. We find that with respect to agri-trade, India has followed a policy of taking small steps at a time. As a result, the changes that have occurred in agri-trade have been very gradual and steady.

Till the mid-1970s, agri-trade had important implications for the balance of trade situation. At times, agri-imports accounted for around 25 per cent of total imports (which became the *raison de'etre* for pursuing self-sufficiency in foodgrains) and agri-exports were around 40 per cent of total exports. Over the years, this situation has changed. It is interesting to find that the implications of agri-trade for the balance of trade and foreign exchange availability situation have become quite limited and can be expected to decrease further in the future. What we are witnessing now is the dual phenomenon of the foreign exchange constraint becoming much less stringent (due to many factors like FII's, services export, etc) on one hand, and on the other hand a decreasing role of agri-trade from the foreign exchange availability perspective. This gives more leeway to the policy-makers in deciding the agri-trade policy. The policy-makers have had to balance the interests of the consumers and those of the farmers. This is easier to achieve when the external situation is comfortable. On the other hand, agri-trade is having a greater impact on the domestic agriculture as the share of “import-affected” and “export-oriented” agriculture both, have been rising and can be expected to do so in the future. The sum of the share of agricultural exports and imports in agricultural GDP has increased to around 10 per cent, i.e, doubled over the period. This is not a very marginal share. If agri-trade continues to grow at the current rate then it

Appendix Table A1: India's Exports of Major Commodities (1990-2004)
(Value in 1000\$)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Milled paddy rice	258472	309765	370498	411738	385759	1411729	886436	899326	1491789	717027	653477	695674	1202408	888592	1448462
Cake of soyabeans	244287	268574	422694	553608	388527	567182	764744	733937	415571	367041	438614	459238	274796	653689	530299
Tea	594191	490292	360933	331845	308399	359054	282579	497239	518258	406106	431596	367207	326629	333408	377742
Cashewnuts shelled	247183	275317	283043	334499	398287	383068	338320	325879	362560	570595	418488	366789	396790	360994	515778
Coffee, green	125683	116615	111305	137741	283955	369386	308935	344797	334292	264748	174622	151905	142590	157295	157109
Buffalo meat	49171	66433	76643	73649	86828	143175	140399	171652	160949	152541	276529	243743	263703	305870	320886
Tobacco leaves	108321	128786	135117	117842	58921	117395	184934	247721	137349	188612	147255	129612	151844	172143	207021
Oil of castor beans	110000	64000	48000	86134	120580	208334	153976	137739	144211	221292	191409	127395	100979	117851	206980
Cotton lint	454020	122326	68882	207063	37415	50963	410751	197549	38171	11312	13725	5942	9851	163047	69558
Wheat	17436	59197	3880	66	13549	113696	195567	0.001	326	1	92433	296215	361917	513620	322056
Sugar refined	510	22879	120358	35676	15653	78628	137229	31101	854	1151	36587	284684	322235	191300	23302
Pepper, white/long/back	56318	29672	28543	59154	75074	59909	114795	131172	146020	164402	70617	41589	35900	27422	26781
Sesame seed	44664	32404	33312	17547	41299	73131	68874	73505	68388	76235	115256	125200	76709	152269	146220
Onions, dry	50910	61399	45443	58458	65619	71565	74416	54690	42269	47141	61512	74028	74427	153829	137095
Coffee extracts	16996	5440	25823	32688	46275	85696	78117	105443	79274	67467	85780	89529	59069	73343	65165

Source: www.fao.org

Appendix Table A2: India's Imports of Major Commodities (1990-2004)
(Value in 1000\$)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Oil of palm	153966	72320	88000	27068	155740	552899	648730	612617	1114188	1229079	906661	836225	1211810	1808277	1684982
Oil of soyabean	21491	20543	43092	20029	29375	72060	14254	33812	299721	283931	201281	506187	540146	565440	627293
Cashewnuts	75041	109340	143006	154464	221099	235625	17027	15722	36599	267529	213965	96007	254233	293884	386707
Cotton lint	311	1899	82940	5885	162146	161513	8795	21316	90306	289034	262246	454800	252985	333282	239278
Pulses	81740	22321	56349	64230	72059	93672	111006	94023	48935	17012	33719	251414	242326	136421	123016
Silk, raw and waste	56988	60441	84852	85967	104456	93863	60214	58949	62248	95868	105808	139117	133087	134983	134028
Wheat	12472	0	269825	40208	123	3221	113053	267025	279595	180046	640	187	0	53	25
Sugar refined	5202	0	0	117	685525	66927	481	46693	160644	152811	765	7260	5935	89	173
Oil of sunflower seed	0	0	0	3	8349	54901	150501	92218	225459	204352	209638	61385	20926	65504	24249
Wool, greasy	71101	48728	70479	54035	64058	83125	82685	86402	69954	64450	58378	67153	86658	94308	84212
Fatty acids oils 431.31	3607	17958	17926	32222	34100	45026	72541	106366	98942	116184	64754	80383	90826	118437	100373
Wool, scoured	30989	32499	49279	65125	48190	67474	80125	75712	47718	49809	43603	71702	78238	92699	98744
Chick peas	60152	32488	26962	51122	27204	12829	41137	125825	34548	5122	20654	191895	70630	87051	51225
Almonds	25544	16319	36120	32063	43603	46139	46435	67179	55142	40454	63518	45694	42983	53106	101629
Beans, dry	53111	24998	8967	15826	40499	42315	27215	37051	31838	15319	18280	55849	74406	154071	86484

Source: www.fao.org

could have the potential to impact India's agricultural sector in a more meaningful way.

It is well known that India is a marginal player in the world trade. But relatively speaking, share of agri-exports in world agri-exports is higher than the share of total exports in the world exports. This is surprising in view of the higher importance and encouragement given to exports of manufactures over agri-exports. It is also a bit contrary to the expectations that India's agri-exports and world agri-exports are, in fact, less volatile than the India's total exports and world total exports, respectively. That requires a review of our trade policy especially for agricultural sector.

It is widely known that from the period from 1950-51 onwards, agri-exports share in total exports has shown a declining trend. We find that this has persisted in the post-1990 period too. Immediately after the signing of the WTO and hence AoA, world trade in agriculture showed a decline. India's agri-exports (in dollar terms) also declined from 1997 onwards and came to the earlier level only in 2003. Agri-imports, on the other hand showed first an increasing share and reached a peak in the late 1960s. As the food security situation improved by mid-1970s, their share has been falling only to rise in the post-1991 period. The agri-imports have grown at a much higher rate than agri-exports in the post-1991 period and they also have been much more volatile as compared to agri-exports.

When top 15 exports are considered, the composition of agri-exports does not show any major change in the period from 1990 to 2003. Milled paddy rice which is the largest export item had a share of 16 per cent in agri-exports. It also shows a high rate of growth at 10 per cent and its variability was at a moderate level of 53 per cent. The commodities which have a lower share (e.g., wheat, pepper) show higher rates of growth as compared to other top commodities. In case of more than 50 per cent of the commodities, quantity grew at a higher rate than price movement which is not very good for the economy. When top 15 imports are considered, we find that edible oils and pulses add up to 45 per cent of the total agri-imports. Thus agri-imports are concentrated in these two commodities, where domestic production has not kept pace with the demand. In case of 75 per cent of the import commodities, the quantity has grown at a higher rate than prices, which is good for the economy. Though by and large, India's agri-exports and imports are mutually exclusive, three important overlap commodities are wheat, sugar and cotton lint.

The objectives of the liberalisation of agricultural sector will have to match with the over all objectives of the economic policy in general and the agricultural sector in particular. One major objective of the agricultural policy and agri-trade policy has been to balance the demands of the consumers and the farmers on one hand; and improve the food security situation on the other hand. Under the pre-1991 policy configuration the focus was on increasing the production by making institutional, technological and infrastructural changes. In the post-1991 period the focus has shifted to comparative advantage. We can expect that there will be a gradual shift of resources in favour of export-oriented agriculture; while some commodities may have to be imported if India is inefficient in their production and most importantly this will have to be done without harming the farmer.

There was an apprehension that as part of WTO, India would have to accept a level of opening up which is more than what is good for it. It was felt that while agri-imports would flood the markets and make the farmer unviable; agri-exports had the

potential to decrease the domestic supply and harm the consumer. However, what we have found is that no sharp changes have occurred in either of the two. India has used the provisions available under the WTO (like bound rates, etc) in a judicious manner. While a large part of our imports still consist of commodities falling short domestically, no phenomenal increases in exports have occurred to destabilise the domestic markets. [PW]

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