Chapter 1

Introduction

"It is in the agriculture sector that the battle for long-term economic development will be won or lost" Gunnar Myrdal

The above statement made by Gunnar Myrdal\(^1\) more than three decades ago is very pertinent for India even today. Despite its declining share in GDP, agriculture still remains the backbone of the Indian economy. Agriculture is still a major source of wage goods like food, fibre and fuel and also provides raw material for a large number of industries. Agriculture boosts the economy through backward and forward linkages. It provides livelihood to over 60% of the population and a cushion for the ratio between the urban and rural income. Apart from its importance for the balanced and accelerated development of the overall economy, the basic characteristic of the agricultural production process which distinguishes it from industry explains why the agricultural sector cannot be entirely left to market forces. To elaborate, first, unlike industry, where the presence of excess capacity makes production more elastic, agricultural production in any given period is fixed by production conditions from the supply side. Second, the scale of operation in agriculture tends to be much smaller as compared to the industry. The ability of farmers to hold stocks is also limited. Therefore, taking these two together, one can argue that agricultural supply can not be adjusted rapidly. Third, along with slow supply adjustment, output is also subject to large fluctuations induced by weather and other natural forces. And fourth, while supply adjustment is slow and tends to fluctuate a good deal, the demand for agricultural commodities tends to be price-inelastic, resulting thereby, in a great deal of fluctuations in agricultural prices and income (Patnaik, 2003).

On the other hand, looking at it from the demand side, large fluctuations in agricultural prices have profound influence on the inter-sectoral distribution of income and the levels of consumption because a majority of the poor in India do not have incomes that are index-linked. Government intervention in agriculture can also be justified from within the framework of neoclassical economics on three grounds. These are: 'the public goods' argument, the equity or 'merit good' argument and the

\(^1\) Myrdal Gunnar (1968): Asian Drama, New York: Pantheon
'market failure' argument. First, some goods and services do not lend themselves to individual pricing because of collective use. In this case, the state as the collective interest holder is the best provider. Second, some goods and services are for all community members regardless of their ability and willingness to pay the market price. Lastly, market failures tend to result from structural rigidities due to the lack of responsiveness to price signals (Dedehouanou and Ufford, 2000; Batley, 1994; Smith and Thomson, 1991). Thus, agricultural markets have remained under constant scrutiny and governments in both the developed and the developing countries have been required to intervene in agricultural marketing.

In agriculture, although the government has no direct role in the production and investment decisions of farmers, it did and still does influence the legal and economic environment in which farmers and other economic agents operate. Indirectly government policies have unintended effects. The policies concerning industrial protection, exchange rates and interest rates, and other fiscal and monetary policies can strongly influence the incentives for agriculture vis-à-vis other sectors. Directly, government affects agriculture through sector-specific measures. For example, it subsidises farmers (mostly in developed countries); tries to stabilise prices; imposes import tariffs and quotas; provides food subsidies for urban areas; supports the use of fertilizer; builds irrigation systems; offers extension services; controls marketing; and provides credit, often at below market rates. On the basis of the impact on output, the way in which governments can intervene to alter market incentives in agriculture can be put under three categories (following Schultz, 1978). First, there are economic policies that are neutral with respect to the opportunity cost of agricultural production. Second, there are those where agricultural production is overvalued. Third, there are policies through which agricultural production is undervalued.

Typically, the high income developed countries fall into the second category. Product price support in these countries maintains high farm incomes and leads to surplus generation. On the other hand, with respect to consumption, setting high support prices discourages consumers thereby expanding excess supply. The excess supply can be stored or dumped on the world market using export subsidies. If the exporting country does not store the excess supply, its excess supply becomes perfectly inelastic for prices below its internal support price. The export subsidy becomes the difference
between the domestic and world price that is required to sell the excess supply (Philip, 1988).

1.1 Agricultural policy in India prior to the liberalization of 1991

In India, the history of government intervention in agriculture dates back to the early forties when the country faced famine and consequent food shortages. Many committees were set up to frame and recommend market intervention policies. The strongest intervention began in the mid-1960s which has been closely associated with the adoption and the spread of the new agricultural technology. The massive food shortages and the near famine-like conditions in some parts of the country due to the successive poor harvests resulted into the dependence on food aid and costly food imports. It compelled the government to follow the policy of self-sufficiency in food production. This coincided with the advent of the high yielding varieties of wheat and rice which later came to be known as the ‘green revolution’.

The adoption of these new varieties involved the use of the modern inputs and investments on the part of the farmers. For this, it was necessary to create adequate incentives through a favourable price environment for the farmers. To achieve this objective, the strategy was built on three foundations. One of these three foundations was to assure a remunerative price and market environment to the farmers, the other two being the provision of an improved package of farming technologies to the farmers and creating a system for the supply of critical modern inputs including credit for agriculture. As a part of an agricultural development strategy, a package of market intervention policies was launched and developed over the years. The instruments for market intervention currently in vogue include, *inter alia*, (a) minimum support prices; (b) buffer stocking; (c) subsidised distribution of food grains through the public distribution system (PDS); (d) levy on rice millers and sugar mills; (e) subsidies on fertilizer; (f) lower user charges for canal water and electricity for irrigation; and (g) regulation on domestic trade practices including, *inter alia*, stocking restrictions. Apart from these, another important component of agricultural policy till the reform began in 1991 was the tightly controlled trade and the exchange rate policy.
In the case of agriculture, except for a few traditional commercial crops, the rest of the agricultural sector was insulated from the world agricultural markets through almost total control of exports and imports. The estimated surplus over domestic consumption requirements determined the marginal quantities to be exported and *vice versa* for imports. More importantly, foodgrains, sugar and edible oils were imported in times of scarcity to prevent domestic prices of essential commodities from rising and to impart a measure of stability to the domestic prices in the interest of both the producers and the consumers. The financial policy was also aimed to mobilise resources for public sector expenditures and for co-operative and institutional credit to the rural sector with a view to facilitating private investment in infrastructure and encouraging the adoption of the new technology. This policy was instrumental in accelerating agricultural growth and in raising the output and income level of a large number of cultivators particularly in the irrigated regions of the country. The rapid growth consequent to the adoption of the new seed-fertilizer technology resulted in rising foodgrains production, enabling the country to meet the demands of foodgrains.

**1.2 The critique of planning framework**

Until the beginning of the economic reforms in the early-90s, scholars have criticised the policy followed during the planed era on several grounds like increasing the regional inequality in productivity and income, high rural poverty, regional bias in government operations, poor performance of the government operations in the procurement and the distribution of the foodgrains etc. But the general thrust of the agricultural policy within the framework of planning had not been seriously questioned. However, in the wake of the introduction of the new economic policy, all the aspects of the planning framework and the associated macro-economic policy have come under serious attack. The arguments are:

First, that the macro-economic policies under the planning framework were discriminatory against the agriculture. The inward-looking import substitution development strategy aimed at the rapid industrialisation is said to have shifted resources from tradable agriculture to industry by turning the terms of trade against the agriculture.
Second, that the overvalued exchange rate not only made the import and domestic production of the agricultural inputs more costly it also adversely affected all exports and specially hurt agricultural exports (Singh, 1994).

Third, that the sector specific policies at all stages of production, consumption and marketing of agricultural produce worked against agriculture. Such policies have restricted the role of competitive markets in India (Gulati and Kelly, 1999; World Bank, 1999; Gulati, 1998). The stringent market regulation and restrictions and other commodity specific controls prescribed within institutional and price policy measures (insulation of domestic markets from external competition and import-export bans) debilitate markets. A proliferation of the impediments to the domestic agriculture trade leads to inefficient and non-competitive markets that often result in lesser market opportunities. All these factors suppress the effective incentives for cultivators/traders and further dissuade them from responding to market signals in the allocation of the resources and divert resources away from agriculture sector, which is again detrimental to the growth in the output and productivity of crops.

It is further argued that the subsidies given on the agricultural inputs also led to resource misallocation. Some of the studies suggest that the volume of the subsidies on fertilizer is not entirely attributable to the farm sector (Gulati, 1989; Tyagi, 1991; Vidya Sagar, 1993). According to one study, the various subsidies given to the agricultural sector on account of fertilizer, irrigation and electricity were estimated to be of the order of Rs. 90.9 billion per year during the 1980s (Gulati, 1986). These subsidies placed an unsustainable burden on the state, reducing the capacity of the government to undertake large investments and have benefited the producers of a few crops and that too in a few of the states (Gulati and Sharma, 1992, 1994). Such subsidies also failed to compensate the farmers for the negative impact of the lower administered price paid on the outputs; led to discrimination against agriculture due to the overvalued currency; and resulted in higher input prices due to the excessive protection given to industry. It is argued that the net effect has been that the agricultural sector was subject to negative protection and was discriminated against (Mody, 1989).
1.3 Agriculture policy in India in post-reform period

Since the beginning of the 1990s the two biggest events in Indian economic history – the emergence of a market-based reform project and an incremental re-integration with the global economy – began to take shape. The process of stabilisation and adjustment initiated in 1991 has been associated with sweeping reform of the industrial licensing, pricing, and tax policies and the dismantling of the restrictions on the foreign trade in industrial goods. The economic reforms involved the devaluation of the rupee by 18 per cent against the dollar and the exchange rate was left to be determined by the market forces. The changes in the industrial and the trade policy were introduced to expose the industry to competition by reducing the protection hitherto enjoyed by the industrial sector. These changes were expected to improve the terms of the trade for the agricultural sector and to help attract more investible resources for this sector. Though the programme did not initially cover the agriculture sector, it was recognised that the economic reforms may not succeed in their objective of ensuring the broad based growth in incomes and productive employment without the sustained development of the agricultural sector.

The package of reforms in agriculture is based on the diagnosis that while the sector remained net disprotected the subsidies arising out of the inappropriate pricing of the inputs and the outputs led to the inefficient use of resources and eroded the capacity of the government to finance public investment in the agricultural sector. For correcting these so-called distortions, several suggestions are made by scholars. These suggestions revolve around “setting prices right” and include the withdrawal of subsidies on inputs, targeting the public distribution system to only the poor, abolition of the food management system and its attendant costs and the liberalization of the trade in agricultural commodities (Bhagwati and Srinivasan, 1993; Pursell and Gulati, 1993; Vyas, 1994; and Singh, 1994).

As a result, the post-reform period witnessed a dilution of the supportive mechanisms that were built up, in stages, in the post-independence period to protect the farmers from the uncertainties of the market (Patnaik, 2003). During the post-reform period, the government not only cut the subsidies on major inputs, but also absolved itself of

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2 In spite of subsidies on inputs, as the output prices were maintained at below world levels, the agriculture sector has been net taxed (Gulati and Sharma, 1994).
the responsibility to produce or procure and distribute these inputs at the farm gates. The share of the input subsidies (on fertilisers, power and irrigation) in the GDP which was 0.6 per cent in 1980-81, rose to the level of 2.5 per cent in 1990-91 and then fell to 2.1 per cent in 1999-2000. The fall in the share of the input subsidies in GDP after 1991 was the result of a conscious official policy that aimed at restricting the subsidy provision, particularly for fertilizers (Gulati and Narayanan, 2003).

The policy on agricultural credit also underwent significant changes as part of the larger programme of financial liberalization. The RBI's Committee on the Financial System (Narasimham Committee) made a sharp pitch for delinking monetary policy from the objective of redistribution, which was at the centre of social and development banking (RBI, 1991). It argued that the banks should function on a commercial basis, and that profitability should be the prime concern in their activities. The banks were also to be permitted to close their rural branches, in the name of rationalisation of the branch networks. The recommendations of the Narasimham Committee, except a few, were implemented to a large extent in the 1990s. As a result, the period of financial liberalization witnessed the reversal of the achievements in rural banking that characterised the two decades after the nationalisation of banks. The flow of credit to the rural areas declined sharply in the 1990s (Shetty, 1997; Ramachandran and Swaminathan, 2001, 2005; Chavan, 2002, 2005). The rate of growth of credit supply to the rural areas fell from 12.6 per cent between 1980 and 1990 to 3.2 per cent between 1990 and 2000.

As discussed earlier, the proponents of liberalization argued that the existing laws on agricultural marketing discriminate against the farmers and the traders by not allowing them to maximise their gains, both in the domestic as well as in the international markets. Following this the government started reorienting the policies towards agricultural sector. A continuous reduction in controls on the internal and the external public and private trade through relaxations in the zonal restrictions and the quantitative restrictions on the exports and imports, the de-canalisation measures in the output markets and many more policies are in process. The domestic policies relating to the production, supply and the distribution of the various agricultural commodities under the Essential Commodities Act, 1955 and the State Agricultural Produce Market Act, 1966 have been brought under review for appropriate
modifications. In the case of cereals, the provision of fixing the procurement prices and the public agencies trying to procure the pre-decided quantities of the grains by imposing several formal and informal restrictions has been replaced by a system of minimum support prices.

India’s external trade policy which was heavily controlled by government parastatals until the early-90s through a web of quantitative restrictions, licensing and the canalisation of exports and imports has undergone considerable change since then. Though agriculture was not covered in the trade liberalization measures taken during the years of 1991-92, apart from the relaxation of some export controls, the pace of the reform of external policies in the agricultural sector picked up in 1993-94. Since then, significant measures have been taken to liberalise agricultural trade policy. Tariffs have been reduced, the quantitative restrictions on the agricultural trade have been removed, and the agricultural trade has been decanalised in the case of the most of the commodities. The provision of the Minimum Export Price (MEP) has been withdrawn. The move towards agricultural trade liberalization was triggered both by internal policy assessments as well as the external developments such as the WTO agreements.

The signing of the Dunkel text in April 1994 which became effective January 1995 onwards has committed India to multilateralism. The provisions relating to agriculture are contained in the Agreement on Agriculture (AoA), also known as the Uruguay Round Agriculture Agreement (URAA), and the Agreement on the Application of Sanitary and Phytosanitary Measures, which form part of the WTO agreement. The URAA requires all non-tariff barriers to agricultural trade to be tariffified and converted into their tariff equivalents. The resulting tariffs were to be reduced by a simple average of 36 per cent over a period of 6 years in the case of the developed countries and 24 per cent over a period of 10 years for the developing countries. However, many of the developing countries, including India, were permitted to offer the ceiling bindings instead of the tariffification. These bindings were not subject to the reduction commitments. India bound 3375 of its 6-digit commodity tariff lines including 683 commodity tariff lines relating to agricultural products. India was allowed to maintain quantitative restrictions (QRs) because of potential balance of payments problems. However, India’s QRs were later challenged in the Dispute
Settlement Body of the WTO and India lost its plea for their continued use. Accordingly, India’s QRs were removed during the period of 1999-2001. India took the opportunity under GATT Article XXVIII to renegotiate and raise the tariff bindings on 15 agricultural tariff lines for which it had very low or zero tariffs. These included skimmed milk powder, spelt wheat, corn, paddy, rice, maize, millet, sorghum, rapeseed, colza and mustard oil, and fresh grapes among others.

1.4 Indian agriculture during post-reform period

The changes introduced in the agriculture policy during 1990s as discussed in previous section, represent a fundamental departure from the past regime and indicates a greater reliance on market forces where price signals have assumed a more significant role, than before. With the dilution of the government’s supportive mechanisms during the post-reform period farmers were exposed to the working of the market. For example, the rationale for the provision of input subsidies has historically been to provide the farmers with remunerative as well as stable prices to enable them to adopt the new technologies and raise yields and also to compensate for the imperfections in the capital market and the risks associated with the adoption of the new and the high-cost technologies. Sen (1992) argues that the agricultural growth of the 1980s was primarily due to a more intensive use of fertilisers and pesticides; there was a perfect negative correlation between the yield of the food grains and the prices of the fertilisers relative to the food grains. There is also evidence that the marginal and the small farmers benefited significantly from input subsidies. The estimates of Acharya and Jogi (2004) show that 36.4 percent of the total input subsidies were availed of by the marginal and the small farmers while their corresponding share in the ownership of the operated area was 36 percent. Therefore, given these benefits, the withdrawal of the input subsidies is certainly having short-

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3 The USA and some other countries in the dispute settlement body of WTO challenged India’s continuation of QRs on the plea of BoP position. In view of its improved position in the matter of foreign balance, India lost the plea for retention of QRs on account of BoP position both at dispute settlement body as well as at the Appellate body. According to the understanding arrived at between the parties regarding the reasonable period of time latest by March 2001, India removed the QRs on 714 items including 142 commodities belonging to the category of agricultural commodities during 1999-00. On the occasion of Export and Import policy announcement on 31 March 2001, the minister announced the removal QRs on the remaining 715 items, thereby ending the ‘License Permit Raj’. With the removal of 715 items from the list which include 142 groups belonging to agriculture, QRs on imports have been completely abolished and obligation to replace QRs by tariffs has fulfilled. QRs are now maintained on imports of only about 5 percent of tariff lines (538 items) under articles XX and XXI of GATT on grounds of health, safety and moral conduct.
term adverse effects on the levels of agricultural profitability even if it is assumed that all the reduced expenditure on the subsidy would be invested in agriculture.

The viability of agriculture depends critically on the ratio between the output price and the input price. If the profitability is to be maintained at the same level it would require a more than proportionate increase in the output price. According to an estimate (Sen, 1992), maintenance of the relative prices resulting from one rupee cut in the fertiliser subsidy would require a transfer of ten rupees to the farmers either from the government or from the consumers. Both forms of transfer have significant fiscal and the welfare implications. The proponents of the reform argue that in order to compensate for the input price rise, output prices (i.e. procurement prices) could be raised by the government (Parikh, 1997). However, raising output prices involves two further issues (Sen, 1992; Acharya, 2000; Acharya and Jogi, 2004). First, a large share of the farmers in India do not generate a marketable surplus; most of the production of the marginal and the small farmers go into household consumption and these groups would be adversely affected by the higher prices of the inputs. Secondly, the procurement operations of the government take place only in a few states and regions. As such, the geographical reach of a rise in the procurement price may be limited. The essence of these arguments is that the input subsidies and the output prices cannot be treated as substitutes.

The vast literature on the supply responsiveness of the farmers also shows that the relationship between the prices and the output is very weak (Rao, 1988, 1989; Sen, 1992; Ghosh, 1992; Nayyar and Sen, 1994; Hazell et al, 1995; Vaidyanathan, 2000). No doubt, there are major issues related to the accuracy of the economic models used to estimate the supply response in agriculture such as the measurement and the control of the different effects. Nonetheless, the range of the long-run supply elasticity of the aggregate agricultural output has historically been between 0.1 and 0.5 in the developing countries (Rao, 1989). According to Rao, the resulting efficiency loss is quite small⁴. The studies also show that the responsiveness of the yield-raising inputs to the output prices is not significant. In fact, it is the other factors such as the inputs,

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⁴ As Vaidyanathan (2000) argued, even a 15 percent improvement in TOT with a price elasticity of aggregate supply of 0.3, will raise output by about 5 per cent which is equal to less than the additional output in two years at present growth rates, hardly form any basis to project a sustained increase in the growth rate.
the technology, the institutions and the infrastructure that dominantly determine the
growth in farm output. Chand (2004) argues that there was no significant relationship
between the terms of trade and output growth in Indian agriculture. He observes three
sets of patterns of output and price interaction in Indian agriculture in the 1990s: the
output growth of cereals slowed down while prices were rising; the output growth of
fruits and vegetables improved when the extent of the price rise was small; the output
growth of oilseeds fell along with a fall in the prices. On the basis of these results,
Chand argues that attempts to increase the production by raising prices alone do not
produce the results if efforts on the technological fronts, input use and irrigation are
ignored.

The changes introduced in the agriculture trade policy during the 1990s also represent
a fundamental departure from the past regime and points to a greater degree of
openness. The liberalization of the agricultural trade was put forward as an important
step towards imparting efficiency to Indian agriculture. Indeed, one of the most
important arguments put forward in support of trade liberalization was that it would
improve the prospects of an export-led growth process in agriculture. However, some
scholars have warned against export orientation of Indian agriculture (Patnaik, 1996).
But their views were not paid attention to, as the pro-liberalization lobby dominated
the policy decisions at that time. Similarly, the fear concerning imports following the
trade liberalization were brushed aside because the domestic prices of most of the
agricultural commodities, except edible oils, were then either lower than the
international prices or were not cost effective imports.

The new international trade agreement has generated intense debate among Indian
academicians and policy makers because of its likely implications for national and
household food security, the levels of poverty and the regional disparities in
development. This debate is well warranted. There are several reasons for this. First,
the domestic prices of essential commodities like staple cereals cannot be delinked
from the levels of income of the masses. Second, the relative price structure that
prevails in the world market is not based on the comparative advantage that different
countries have in producing various commodities but reflects only the residual
market. Third, the world market price structure is highly distorted due to the support
given by the developed countries to their farmers. Fourth, the increased alignment of
the domestic and the world prices after trade liberalization would import the volatility of international prices - formed in highly imperfect and monopolised market environments - into Indian agriculture and; fifth, the small country assumption does not hold for India. The experience suggests that India's entry into the world market immediately affects world prices and as a consequence the actual gain from free trade would be much smaller than what is anticipated. The most recent evidence of this is in the case of sugar. World sugar prices ruled around $290 per tonne during the first quarter of 2009. When the market realised that there would be a sugar shortage in India, prices increased up to around $470 per tonne in the third quarter of 2009. By the end of the year, world sugar prices had doubled (Chand, 2010).

1.4.1 The issues relating to trade liberalization

The ongoing debate on agricultural trade liberalization under the Doha Round of trade negotiations also brought to the fore a range of the issues which pose serious challenges to the formulation of trade policies. There is quite a distance between the cup and the lip which one can see on the basis of the experience of the last ten years of WTO functioning.

First, it was expected during the Uruguay Round negotiations on agriculture that once the Agreement on Agriculture (AoA) managed to remove the distortions which had so far plagued the global farm trade, more countries would be in a position to participate in the international trade in agricultural goods. Hypothetically, by increasing the number of countries that would be open to the world price signals, the “shocks” (arising, say, from unexpected production shortfalls) would be absorbed by a greater number of markets thus cushioning the effect of such shocks on world prices and bringing down the price instability in the global farm trade. However, data reveal that agricultural prices have remained quite volatile. A number of factors, both from the supply side as well as the demand side, contribute to this high volatility. From the supply side, a distinguishing feature of the international agricultural trade is that only a limited number of exporting countries dominate international trade. The share of the top five exporters remained as high as 98 per cent of global exports. Even for a widely produced crop like rice, the share of the top five exporters is more than 76 per cent and for all cereals the share of the top five is almost 75 per cent (Pal and Wadhwa, 2007).
As a result of this trade pattern, any abnormal weather conditions or any other supply shocks in these major exporting countries tend to have a high impact on aggregate supply and, hence, on international prices. From the demand side, since only a small percentage of the total production of agricultural commodities actually enters into trade, therefore, compared to the total usage of these commodities, the exportable surplus is very low. For example, only 0.34 percent of the world’s total rice production goes to the international market while in the case of wheat it is only 2 percent (average for 2000 to 2005). To put these figures into perspective, the world’s total rice exports are only about 2 percent of India’s rice production, while in the case of wheat it is only 16 percent. In the case of cereals, this is around 50 percent of India’s production; in pulses, the world’s total exports are only 10 percent of India’s production. Not surprisingly then, according to one estimate, if India imported just 2.5 million tones of rice this could result in a 24% hike in the world prices -doubling the import quantity would increase prices three times.

Second, the removal of the tariff and the non-tariff barriers to trade does not guarantee perfectly competitive market structures. The existence of pronounced economies of scale and scope as well as the irreversibility of investments may lead to the imperfect market structures even after liberalization (WTO, 1997). Multinational firms and the trading agencies enjoy a unique position as oligopolists-cum-oligopsonists in international agricultural markets. Economic theory suggests that in the export market these oligopolists would charge a price higher than the marginal cost and while sourcing the products from the developing countries these oligopsonists will pay a price much lower than what they would have paid under perfectly competitive conditions. Therefore, a rise in the international prices due to the agricultural trade reforms, as predicted by many studies, may not pass-on fully to the farmers and/or the developing countries.

Third, the expanded access to the markets of the industrialised countries promised to the developing countries under the AoA has been very slow in materialising. There have been tendencies to either under implement these commitments or to implement them in a manner that makes the fruits of liberalization unavailable to the developing countries. The existence of high average tariffs, tariff peaks, and the tariff escalation continue to distort the world agriculture trade. It has been pointed out that the un-
weighted average formula for the tariff cuts used under UR allowed many developed countries to maintain high tariffs on the sensitive products while satisfying WTO commitments by reducing the tariff on the items where there is little domestic production or which are reasonably competitive internationally (Pursell and Gupta 1999, p.54). This policy (dirty tariffication) resulted in the continuation of the high border protection for several high value agricultural commodities by the developed countries. The tariff peaks are the duty rates which exceed the limit of 15 percent. The tariff peaks are often concealed by non ad-valorem rates in the major developed countries and disproportionately affect developing country exports. The products with highest rates include milk, meat, sugar, butter and cheese and tobacco. The EU has more than one third of its tariff lines at rates above 15 per cent followed by Japan with 16.5 per cent peak tariffs. Hoekman et al. (2002) point out that such tariff peaks are often concentrated in the products that are of export interest to the developing countries. They include major agricultural staple food products such as sugar, cereal and fish; tobacco and certain alcoholic beverages; fruits and vegetables; and food industry products with a high sugar content.

Fourth, the domestic support in the developed countries led to low international commodity prices which have forced many developing countries out of the farm trade. Though, many of the developing countries are low cost producers of agricultural goods they have not been able to compete with the artificially cheap exports from the developed countries. The implementation experience of more than ten years shows that the domestic subsidy reduction commitments turned out to be the least binding of all WTO commitments. The farm support given by OECD countries still amounts to more than US$300 billion a year, which is about half the total value of international trade in agricultural goods that in 2003 was around US$ 674 billion.

Therefore, given the highly distorted international trade environment, the majority of the developing countries have been emphasising that the focus of trade policy must shift away from the realisation of the free-trade ideal, as has been the case hitherto, to one that provides the space to use instruments for meeting these development concerns.

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5 WTDR (2007), RIS, New-Delhi.
Although the proponents of trade liberalization have made significant claims about the gains that would arise from the dropping of the tariff walls in the ongoing negotiation under the Doha Round, the empirical evidence provided by the stylised models fails to provide the clinching proof that the lesser players in the global economy would have much to gain from the process. In a series of papers published during the past few years, World Bank economists have provided detailed projections by simulating the possible outcomes of the Doha Round negotiations. The broad results from these studies lead to two varying interpretations. The first one, regarding the effect of the ongoing trade liberalization efforts on the real income up to 2015 shows that the results are significantly favourable for the developing countries since their expected real income gains are considerably larger than their existing share in the global production. Thus, while the developing countries as a whole account for a quarter of the global production at present, they would be able to enjoy one third of the global gains in the real income that is expected annually until 2015. An alternate view would be that the results are pointing to the increasing gulf between the relatively prosperous and the poorer regions and countries. In overall terms, it could be said that the disproportionately large gains for the developed countries would reinforce the status of the lesser share of the developing countries even after the so-called “development round” has been implemented.

Several Indian scholars have attempted to assess the implications of the trade liberalization in agricultural commodities for growth, welfare and inter-regional inequalities (Bhagwati and Srivinasan, 1993; Nayyar and Sen, 1994; Pursell and Gupta, 1993; Parikh et.al., 1993; Bhalla, 1995; Acharya, 1997). While some of them suggested full liberalization of the trade in the agricultural commodities others favoured a gradual and cautious approach towards trade liberalization which implies linking the price structure in the domestic market with that in the world market. Meanwhile, the debate on the likely impact of the economic liberalization in general and trade liberalization in particular on domestic agriculture and in turn the farmers’ income cum livelihood is still inconclusive. Nonetheless, the above discussion on implementation experiences of WTO underscores the fact that, the liberalization of imports may have a negative effect on the Indian agrarian economy for a number of

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7 The most quoted of these papers are by Kym Anderson, Will Martin and Dominique van der Mensbrugghe (2005 and 2006) and Van der Mensbrugghe (2004)
reasons. First, on account of the huge subsidisation of agriculture by most of the developed countries (which implies that imports are sold below the cost of the production in India); second, the imperfect nature of the world agricultural markets and third, on account of the higher volatility of the agricultural prices in the international markets, which in turn gets transmitted to the domestic markets (Sekhar, 2004).

For example, in 2003, the agricultural exports by the developed countries continued to be sold below the cost of production:

- Wheat was exported at an average price of 28 per cent below the cost of the production.
- Soybeans were exported at an average price of 10 per cent below the cost of the production.
- Corn was exported at an average price of 10 per cent below the cost of the production.
- Cotton was exported at an average price of 47 per cent below the cost of the production.
- Rice was exported at an average price of 26 per cent below the cost of the production.

Each of the five major export commodities saw a significant jump in export dumping in the seven years (1997–2003) subsequent to the 1996 US Farm Bill as compared to the previous seven years (1990–96):

- Wheat dumping levels increased from an average of 27 per cent per year pre-
  1996 Farm Bill to 37 per cent per year post-1996 Farm Bill.
- Soybean dumping levels increased from an average of 2 per cent per year pre-
  1996 Farm Bill to 11.8 per cent post-1996 Farm Bill.
- Maize dumping levels increased from an average of 6.8 per cent per year pre-
  1996 Farm Bill to 19.2 per cent post-1996 Farm Bill.
- Cotton dumping levels increased from an average of 29.4 per cent pre-1996
  Farm Bill to an average of 48.4 per cent post-1996 Farm Bill.

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8 Murphy et al. (2005)
Rice dumping levels increased from an average of 13.5 per cent pre-1996 Farm Bill to an average of 19.2 per cent post-1996 Farm Bill.\textsuperscript{9}

On account of the dumping by these US-based companies, the prices in the world markets of these agricultural products were far below their costs of the production in India. Hence, Indian farmers engaged in the production of some of these crops were denied their share in the world market and driven out of their domestic market. In August 1999, the soybean and soy oil import policy was liberalized in India. As a result, the subsidized imports of the soybeans were dumped\textsuperscript{10} on the Indian market. These imports amounted in total to three million tonnes in one year (a 60 per cent rise compared to earlier years) and the cost of it was nearly US $1 billion. Within one growing season, prices crashed by more than two-thirds and millions of the oilseed-producing farmers lost their market unable even to recover what they had spent on the cultivation\textsuperscript{11}. Similarly, in the background of the greater integration between the domestic and the international markets after the mid-1990s domestic prices of cotton, tea, coffee, spices and many fruits and vegetables fell following a sharp fall in the corresponding international prices. Due to the absence of quota controls as in the post-WTO period and the ineffectiveness of the low tariffs, the surge in the imports of various crops contributed in different degrees to the decline in their domestic prices (Bhalia, 2004; Ghosh, 2005).

Moreover, the domestic supports in the developed countries also negatively affected the market access of the developing countries in the third world country markets by distorting the prices in those markets. Regarding India’s share in the global agricultural trade, the initial years of the reform were quite favourable for agricultural exports. The domestic liberalization and the devaluation of the exchange rate gave a boost to the agricultural export. In a short span of five years the agricultural exports rose from $3.2 billion in 1991-92 to $6.87 billion during 1996-97. This also resulted in an increase in the share of the agricultural exports from below 18 percent to more than 20 percent in the total Indian export. It led to the view that Indian agriculture is highly competitive and that free trade would help the country harness it’s the vast

\textsuperscript{9} Ibid.
\textsuperscript{10} Dumping has been used in the economic sense of sales below cost and not in the legal sense as understood under the Anti-Dumping Agreement
\textsuperscript{11} Mittal (2005)
export potential (Gulati and Sharma, 1994). Contrary to these expectations, the price situation changed dramatically after 1996 following the implementation of the URAA. Due to the sharp decline in the global prices of agricultural commodities, the export earnings from the agricultural commodities started falling since 1997-98 and reached $5.8 billion in 1999-2000. Therefore, the momentum gained in agricultural exports with the start of the process of the economic reform got reversed in the post-WTO period. After this initial setback during the UR AoA implementation period (1995-2001), India’s agricultural exports started recovering when the global prices started looking up since the early 2000s. However, the promise of an export-led growth process in the agricultural sector still remained unfulfilled till 2007-08.

The increased alignment of the domestic and the world prices after the trade liberalization can also effectively import the volatility in international prices to the domestic prices (Nayyar and Sen, 1994). The volatility of the domestic prices creates different types of problems. On the one hand, it increases the uncertainties in cultivation, and on the other hand, it provides misleading price signals to the domestic producers of specific crops. Such misleading prices signals have the potential to effect shifts in the cropping pattern which can be ecologically unsound and economically unviable in the medium term. The extreme volatility in the commodity prices, particularly of food commodities, adversely affects the poor agricultural labourers and those engaged in the unorganized sector because their wages are not index linked. For the exporters, price volatility increases cash-flow variability and reduces the collateral value of the inventories. Both these factors result in rising borrowing costs.

Thus, the fall in the prices of crops, combined with price volatility, have potential consequences that can damage domestic agriculture production by making it unprofitable as well as more risky. Analyses of the countries that have opened their

12 Examples of misleading price signals leading to cropping pattern shifts are the cases of vanilla in Kerala and soybean in Maharashtra. The most important reason for the rapid adoption of vanilla crop in upland Kerala was that while the prices of all the other major crops grown in the region were falling, vanilla prices were increasing. In 1995-96, the domestic price of processed vanilla was Rs 2,000 per kg, which rose to Rs 8,000 per kg in 2001-02. In 2002-03 and 2003-04, the domestic price shot up to Rs 15,000 per kg. The rise in the price of processed vanilla was due to a cyclone-led fall in the production in Madagascar, which is the most important vanilla-exporting country. Production in Madagascar increased after June 2004, when the gestation period for the replanted crop ended. As a result, vanilla prices fell sharply to Rs 1,618 in January 2005. Many farmers, who had replaced their coffee plantations with vanilla, were left helpless as a switch-back to coffee would have involved another gestation period of at least 3 years (see Nair and Ramakumar, 2007).
markets significantly to trade and are price takers in the world commodity markets with limited fiscal resources also show that the behaviour of global commodity prices (both in terms of level and fluctuation) results in amplified pressures on the governments of these countries to counteract the transmission to internal markets of the perceived distortions in world prices caused by the subsidies and the high protection in the industrialized countries.

In the Indian context, contrary to the expectations and the anticipations with the changes in the macroeconomic policy framework and the trade liberalization, the agricultural sector in India neither experienced any significant growth subsequent to the initiation of economic reforms in 1991 nor did it derive the expected benefits from the trade liberalization. As a matter of fact, when compared with the immediate pre-liberalization period (1980-83 to 1990-93), the agricultural growth in India recorded a visible deceleration during the post-liberalization period (1990-93 to 2003-06). This happened at a time when the rest of the economy was growing at an unprecedented rate. The manufacturing output, seen as the bellwether for the policy stance since 1991, has even registered double digit growth in some of the recent years. The growth of the service economy has been less spectacular but more steady over a longer period. The slowdown in the agricultural growth not only affects agricultural income and the growth of the economy but also affects self-reliance and the self-sufficiency in agricultural products acquired after a hard struggle for the first four decades since independence.

The observed slowdown in Indian agricultural growth at the time of the emergence of a market-based reform project and the incremental re-introduction to the global economy give rise to a set of the questions: what are the features of the observed slowdown in agricultural growth? Is this deceleration linked intrinsically to the reform process? What impact does change in the agriculture policy have on farm profitability/income? In other words, was state intervention in the agricultural output market sufficient enough to protect the farmers' income and provide enough incentives to them?

With the increasing influence of the global prices of agricultural commodities on domestic food prices and production under the more liberal and open trade regime, the question to be asked is: Does the long run trend in the global prices of agricultural
commodities pose any serious threat to domestic agriculture? Further, how have the global prices of agricultural commodities moved over time and what factors influence their movements? The other interrelated and important issue relates to whether the increased alignment of the domestic and the world prices after the trade liberalization led to any significant rise in domestic price volatility? And has domestic price volatility played a significant role in determining the trajectory of agricultural growth since 1991?

The trade policies that are designed to regulate the volume of trade flows are found to be an effective instrument in imparting stability to domestic prices. With the opening up of the economy to outside competition and with the greater integration with the world economy it is necessary to examine what role the changed trade policy plays in imparting stability to domestic prices and influencing the average level of prices. The liberalization of the agricultural trade to impart efficiency to Indian agriculture through the export-led growth process also raises the question whether the agricultural trade liberalization led to any significant change in the composition of the trade basket? Is there enough export demand for our products? Or, can India manage to export its excess production at times of glut in the domestic production? Another important but a related question is: does India possess exportable surpluses?

The extent to which the international prices influence domestic prices depends upon the government intervention in the form of policies either at the border or as price support mechanisms which have the potential consequence of weakening the link or preventing the transmission of the movements in international prices. Along with the international prices, the government policies also affect the domestic prices both directly and indirectly. Typically, the indirect effects result from the impact of macroeconomic policies on the exchange rate whereas the direct effects result from the impact of government intervention in agriculture in the pursuance of its objective of keeping the domestic prices at a reasonable level. In this context, the obvious question is, whether the observed variability in domestic prices during the post-WTO period was due to government intervention in the agriculture market or whether government intervention helped in reducing the variability in the domestic prices?
The overall objective of this thesis is to find answers for the above set of questions with a view to examining the effect of the market-based reform project in addressing the observed slow growth of the agricultural sector since 1991.

1.5 Objectives

In brief, the thesis focuses on the following objectives:

I. To analyse the agricultural growth performance and document the movement of the factors that have been recognised as being the determinants of agricultural growth with a view to identifying the proximate causes of the slowdown.

II. To document and analyse the impact of the past and the current agriculture price policy on farm profitability with a view to identifying the causes of the slowdown in agricultural production.

III. To analyse the potential consequences of the behaviour of international prices in terms of their level and variability on domestic agriculture with a view to their possible role in determining the trajectory of agricultural growth since 1991.

IV. To analyse whether the observed variability in domestic prices was shaped by the incomplete transmission of the price signals to domestic prices due to government intervention in agriculture or whether the government intervention has helped lower the variability in domestic prices.

1.6 Scheme of the Chapters

The introduction is followed by the eight chapters in this thesis:

The second chapter deals with the trends in agricultural growth performance in terms of output, productivity and the area under the cultivation at the all-India level. This chapter tries to identify the proximate causes of the slowdown in agricultural growth and documents the movement of the factors which have been recognised as being the determinants of the growth during the study period chosen for this research.

For analysing the impacts of the changes introduced in the agricultural price policy during the post-reform period on farm profitability/income and in turn production, it is important to examine the relationship of the prices with the cost and the income.
The third chapter examines that relationship and documents the trend in farm profitability in order to assess the viability of farming. An attempt is also made in this chapter to critically examine the evolution of the foodgrain policy.

In addition to the impact of the change in the agricultural price policy on farm profitability/income in the post-reform period, another important issue that has gained greater significance during the post-reform period is the behaviour of the international prices due to the incremental re-integration of the domestic economy with the global economy. The behaviour of the international prices that has acquired greater influence on the domestic food prices and production than before is analysed in the fourth chapter. The analysis documents the factors influencing the movement in global agricultural commodity prices. However, the integration with the world economy also has a potential consequence that can damage the agricultural growth independently of influencing the level of the domestic prices as it can increase the volatility of the domestic prices due to the highly volatile nature of the global prices of agricultural commodities. So the variability of the world and the domestic prices is also examined.

The trade policies that are designed to regulate the volume of the trade flows are found to be an effective instrument in imparting the stability to domestic prices along with influencing the average level of the prices. The fifth chapter analyses the trade policy regime in agriculture in the national context outlining its rationale and structure over the past quarter of a century. Since, the actual trade outcome is dependent on many factors and the trade policy at best gives an idea about the government’s intentions, it also makes an attempt to analyse the export and the import patterns of the selected agricultural commodities in the light of the domestic demand and the supply situation along with the changes in the international prices and the Indian agricultural trade policy.

The sixth chapter is an analysis of the impacts of the international prices on the domestic prices by making a comparison between the domestic and the international prices. In order to make a comparison one requires knowing “the price” at which the domestic producers compete with the traded commodities. To compute that price, adjustments were made in international prices to arrive at “the price or reference price” for the domestic producers. This comparison also gives an idea of the price competitiveness of Indian producers. As a part of this comparison, the observed gap
between the domestic and the reference prices is then compared with the existed applied tariff duty/export subsidy rate in order to assess the adequacy of the same in order to fathom how far the trade policies were successful in maintaining the profitability/competitiveness of domestic production.

In the seventh chapter a decomposition model is used in order to separate out the factors responsible for changes in the domestic prices and quantify their effects on the domestic prices with the key variables in the model being trade prices, the exchange rate and the agricultural trade policies. The model used in the decomposition allows one to measure the impacts of the different variables on the variability of the domestic prices under the scenario in which there is complete transmission of the price signals and also after cancelling out the effect of the incomplete transmission arising from government intervention as well as the poor infrastructure. The results obtained from the analysis can be used to draw the inferences regarding the role of the government intervention in terms of imparting stability in the domestic prices.

The last chapter summarises the findings and concludes the thesis.

1.7 The approach and the methodology

To deal with the objectives of the thesis, the analysis is confined to six principal agricultural commodities. Two of these, rice and wheat, are from the group of cereal crops; the remaining four- of which groundnut, rape/mustard seed and soybean are important oilseeds and sugarcane a leading crop among the rest- belong to the group of cash crops. The selection of the agricultural commodities was largely dictated by the three factors: the importance of the commodity in the trade basket; the current importance and the potential future impact of these commodities on food security and livelihoods; and the availability of data.

The only exception regarding the selection of crops is while dealing with the second objective. In this case the analysis is confined to the only wheat and rice because of the level of the protection offered to these crops by the state.

Though, the study makes an attempt to address the observed slow growth of the agricultural sector since 1991, to examine the consequences of the market-based
reform project, the analysis partly covers the decade of 1980s as well in order to give a comparative picture.

The specific approach and the methodology adopted in achieving its broad objectives are described in the relevant chapters of the thesis. The study uses only secondary sources of information. The data were collected from various national and international sources which are explained in the relevant chapters of the thesis.