Policy Reform and Farm Sector Adjustment in India

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Summary: Policy reforms outside agriculture in the early 1990s accelerated growth in per capita incomes and food demand and also improved the terms of trade for the agriculture. Agricultural policies and institutions, traditionally focused on achieving food grain self sufficiency within a closed economy, have, however, been slow to adapt to a new environment of diversifying demand, more open markets, and a greater role for the private sector. Support price policy has remained delinked from domestic and international market realities, creating significant budgetary costs and market distortion. Inability to reform price policy and contain input subsidies has led to a decline in public investment in agriculture at a time when investment in new infrastructure and institutions is needed. Implementation of targeted safety net programs has proven difficult due to weak administrative capacity and local resource constraints. Reforms at the border, when implemented, have typically exposed inefficiencies in the domestic market that limit competitiveness. Consensus building for change in agricultural policy remains difficult in India. With the farm sector accounting for 25 percent of GDP and 60 percent of employment, there is a deep-rooted perception that the welfare of the poor is linked closely to the protection of agriculture. More research within economy-wide frameworks may be effective in evaluating impacts and provoking debate on fundamental reform. Also needed is research on the implications of market-oriented reforms for food price stability, and on impediments to private investment in agriculture.

Keywords: India, agriculture, policy, reform, adjustment.

1. Introduction

In 1991, India introduced major reforms to industrial and exchange rate policy that helped spark India's emergence as one of the fastest growing developing countries. Since 1990, annual GDP growth has averaged 5.6 percent, consumer price inflation has averaged just 8 percent, and the share of the population in poverty has dropped from 39 percent in 1987/88 to 26 percent in 1999/2000. External accounts, previously a chronic weakness of the Indian economy, have turned robust, with rising exports and current account surpluses pushing foreign reserves to more than $85 billion.

The 1991 reforms, and the growth they have spawned, have altered the economic environment for the agricultural sector and, in turn, created pressures for change in agricultural policy. Food demand is growing and diversifying, long-standing programs narrowly focused on food grain self-sufficiency are becoming increasingly expensive and out of step with market demand, and large outlays on input and price subsidies are constraining public investment in transforming institutions and market infrastructure. There have been some important changes in agricultural policy, including removal of quantitative trade restrictions required by the Uruguay Round Agreement on Agriculture (URAA), and unilateral steps to pare down regulation of domestic input and output markets. Political consensus for fundamental reform in agriculture has, however, remained elusive.

Thus, the story of adjustment to policy reform for Indian agriculture since 1990 has to do first with the impacts of reforms that occurred outside of agriculture and, second, with the impacts of reforms within agriculture. Until now, reforms outside agriculture have been the most prominent but, looking to the future, changes in domestic agricultural policy are likely to be increasingly important.

2. Non-Agricultural Reforms

Beginning with independence in 1947, India's agricultural and nonagricultural economies developed under a policy regime that included extensive controls on domestic production, trade, and pricing, quantitative restrictions on most foreign trade, and a managed, overvalued, exchange rate. The policy regime, through both border measures and domestic policies, afforded substantial protection to domestic industry, which, at the time of independence, was severely underdeveloped. By contrast, at least for the period since 1970, agricultural production was actually dis-protected (taxed), as the impacts of public investment and support measures were more than offset by border measures that maintained low prices relative to world markets. Thus, the entire economy labored under an anti-export bias, with agriculture also laboring under adverse terms of trade with the rest of the economy.

By the late 1980s, sluggish growth, lack of industrial competitiveness, and chronically weak balance of payments began to necessitate policy reform. Major change came in during 1991-93, when the last majority government to rule India implemented a sweeping reform of industrial licensing, pricing, and tax policies and began dismantling of restrictions on foreign trade of industrial goods. At the same time, the rupee was made convertible on the trade account, leading to sharp depreciation of the exchange rate over the next several years. The reforms initiated the process of making Indian industry more internationally competitive, strengthening the balance of payments, and boosting economic growth. Although there have been additional reforms since, none has been as fundamental and sweeping as the 1991-93 reforms.

The 1991-93 reforms have had at least two important impacts that affected the agricultural sector. First, they are widely agreed to have stimulated a significant improvement in the rate of economic growth. The Indian economy has now expanded at an annual rate of 5.6 percent (3.7 percent per capita) since 1990, ranking it among the fastest growing developing economies during the period. Perhaps as important, this strengthening was achieved while maintaining price stability. As a result, rising incomes have brought a steady decline in the incidence of poverty and driven the emergence of a significant, relatively affluent, middle class.

Second, although domestic and border policies directly affecting agriculture were not included in the reforms, reduced levels of industrial protection have improved incentives in the agricultural sector through a improvement in the domestic terms of trade. The terms of trade between Indian agriculture and industry reflected a bias against agriculture through the mid-1980s, but turned in favor of agriculture, particularly since 1990. Although agricultural policy changes later in the 1990s played a role in this reversal, reduced industrial protection was the key factor.

Figure 1. Income growth and poverty reduction in India
Figure 2. Relative prices and agricultural terms of trade for India

An additional, potentially significant, impact of the reforms stems from the strengthening of the balance of payments and its impact on policy priorities. Comfortable reserve levels and a much more resilient balance of payments have probably allowed policy makers to be less focused on agricultural self-sufficiency and more amenable to the modest unilateral opening of trade in agricultural goods that came later in the 1990s.

2.1 Impacts on Agriculture

The most important impact of the 1991 reforms on Indian agriculture has been the strengthening and diversification of food demand resulting from faster growth in per capita incomes. Per capita income is now about $2,530 at purchasing power parity (World Bank), and middle class households with annual incomes of more than $13,750 (at PPP) include roughly 150-200 million consumers; this group now comprises the fastest growing component of the population.

Rising incomes, particularly in lower- and middle-income households where the marginal propensity to spend on food is high, are having important impacts on food demand in India. Middle income and urban consumers are also likely to spend on upgrading and diversifying their diets. Indian food consumption patterns have diversified significantly during the 1980s and 1990s. Growth in demand for staple foods, such as wheat, rice, and coarse grains, which have been the focus of agricultural development policy, institutions, and spending, is now slowing. By contrast, demand for other foods, including fruits, vegetables, fats, and livestock products are now showing relatively high, even accelerating, growth.

Figure 3: Growth of food consumption in India

Indian agricultural policy and institutions are having difficulty adjusting to this new environment. When combined with official price and input policies and institutional inertia that continues to favor food grains, shifting demand patterns contributed to the large and costly buildup of wheat and rice surpluses beginning in 1997/98. Consumer demand is now signaling a need for policies, research and market institutions to change far faster than they have been able to adapt. Regulatory, industrial, tax, and investment policies have continued to impede private investment in agricultural research, marketing, and processing. In addition to the costs associated with the accumulation of grain surpluses (of which, more below), the results include poor public market and research infrastructure for new crops and products, and lack of food grading or effective food safety systems.

2.2 Terms of Trade Effects

The improvement in the domestic terms-of-trade for agriculture associated with the 1991-93 reforms has also had important impacts, even in the absence of major agricultural reforms. Improved incentives in agriculture have paralleled an increase in the level and role of private investment in the sector. This appears to have had some impact on several sub-sectors, such as poultry and horticulture, where demand and investment incentives have been particularly strong. Total investment in agriculture, however, remains low and has shown little growth, in part because burgeoning subsidy outlays are leading to a decline public investment. Although agriculture now accounts for 25 percent of GDP, total public and private investment in the sector amounts to only 1.6 percent of GDP. By contrast, economy-wide investment accounts for an impressive 24 percent of India's GDP.

Fig. 4: Terms of trade and gross agricultural capital formation in India

Another aspect of policy reform that is of concern to policy makers is the regional disparity in impacts, both in general and for agriculture. Better endowed regions, including those with better infrastructure and governance, have tended to register relatively strong growth in the post reform period, while others, including heavily populated states such as Uttar Pradesh and Bihar, have benefited little. While it may not be justified to blame this problem on the reforms that have been undertaken, as opposed to those that haven't, it is a concern of policy makers in India's democratic polity, and an argument that slows further reform.

3. Major Agricultural Policies

India's major domestic agricultural policy instruments include a system of minimum support prices for major crops, input subsidies on fertilizer, power, and irrigation water, and public investments in surface-, and to a lessor extent, groundwater irrigation. Historically, these interventions have been complemented with border measures, including quantitative restrictions on imports and exports, import tariffs, and state trading. These measures were applied in various combinations to different commodities but, except for traditional export crops such as tea, coffee, cashews, and spices, have effectively isolated Indian markets from world markets. In addition, until the 1991 devaluation, an overvalued rupee imposed roughly a 20 percent tax on domestic production.

The impacts of these policies on Indian agriculture have been documented in a number of studies (Gulati and Narayanan, Gulati and Kelley, USDA), which uniformly indicate that agricultural production in aggregate, has been, and continues to be, taxed by this policy regime. Although some commodities, principally oilseeds, have been fairly consistently net subsidized, and others have been net subsidized in occasional market conditions, the sector as a whole has remained net taxed, even following the 1991 devaluation. Although outlays on price supports and input subsidies are large, these have typically been more than offset by relatively low domestic farm-gate prices that are sustained behind the border measures.

Figure 5. Aggregate producer support estimates for India

An additional set of domestic policies affecting agriculture is not directly accounted for in the protection measures but are, perhaps, increasingly important in their impact on the sector's adjustment to expanding demand:

- The Essential Commodities Act (ECA), originally enacted after the Bengal Famine but still in force and used in the 1990s, empowers the central and state governments to impose restrictions on the storage and movement of commodities, such as food grains, pulses, and edible oils.
- Until recently, nearly all food processing industries required licenses and were limited to small-scale capacities. Although manufacture of many food products was removed from the list in the mid-1990s, production of a number of products is still confined to small-scale firms.
- Indian food safety regulations are now spread across 5 separate legislative acts, administered by 4 separate ministries.
- Finally, excise tax policy imposes sharply higher taxes on processed and packaged food items.

Although each of these issues have been the target of recent reforms by the central government, state governments are often much slower to adopt and implement changes. These regulations impose costs on the agricultural marketing and processing industries and additional taxes on farm production, as well as weakening the environment for private agri-business investment.

3.1 Domestic Food Aid

In addition to the range of domestic producer policies and programs, the GOI operates a Public Distribution System (PDS) that constitutes the largest domestic food aid program in the developing world. In this program, wheat and rice that are procured in price support operations by the Food Corporation of India (FCI), the domestic logistics agency, are distributed at subsidized prices through a national network of Fair Price Shops and distribution programs. The PDS also distributes other essential commodities, including such items as sugar and kerosene, but wheat and rice dominate. During the 1990s, the PDS distributed 21-26 million tons of wheat and rice annually. To assure that supplies are adequate to meet the needs of the PDS and provide price stability, the FCI maintains buffer stocks from domestically procured and, if necessary, imported grain.

Thus, in addition to the implicit subsidy provided to consumers as a result of the net taxation of domestic production through border measures, budgetary subsidies are provided to consumers through the PDS. The annual expenditure of the FCI in conducting its procurement, storage, and distribution activities is referred to as the "food subsidy." However, since this expenditure also includes logistical, storage, and price support costs, the actual consumer subsidy is only a subset of this outlay. In the recent circumstances of high internal prices, high stocks, and low volumes of distribution, the consumer subsidy element is likely small.

4. Agricultural Policy Reforms and Developments

None of India's domestic support policies faced discipline as a result of the Uruguay Round Agreement on Agriculture. AMS and other aggregate protection estimates, which consist primarily of price wedge calculations to account for the impact of border measures, indicate negative aggregate

support through the 1990s. Input subsidies are notified by India as support to small, resource poor farmers that is exempt under the URAA and, hence, excluded from the AMS calculation.[1]

The market access disciplines of the URAA, together with India's loss of its WTO balance of payments waiver in 1997, did lead to changes in India's border policies for a agricultural products. Changes, completed in April 2001, included the removal of quantitative import restrictions and establishment of tariffs for all agricultural imports. For major commodities, however, tariff bindings are sufficiently high to prevent imports, although some imports of high-value and processed items (fruits, nuts, canned goods, etc) are now occurring at bound rates. In most cases where significant imports have occurred, such as edible oils and cotton, it is because of a unilateral decision to set applied rates well below bound rates. For a few commodities, including soybeans (phyto-sanitary regulation) and corn (tariff rate-quota administration), non-tariff barriers are likely preventing trade at bound rates.

Although not necessarily linked to multilateral disciplines, there are several policy reforms or developments in Indian agriculture worth discussing in the context of adjustment problems faced by the sector and policy makers:

- Grain Producer Price Policy and Food Grain Surpluses
- Targeting Domestic Food Aid Programs
- Removal of Export Restraints
- Tariffication of Vegetable Oil Imports
- Fertilizer Subsidy Reform

4.1 Grain Producer Price Policy and Food Grain Surpluses

Perhaps the most observable development in Indian agriculture since the mid-1990s has been the accumulation of large government-owned surpluses of wheat and rice, and the country's emergence as a significant and subsidizing exporter of these commodities. The stockpiles and subsidized exports, occurring when roughly 260 million Indians continue to live in poverty, have corresponded with internal wheat and rice prices that have become high relative to world markets, and with actual declines in per capita food grain consumption. Addressing these problems is now a major challenge to Indian policy makers.

The current circumstances likely stem from longer-term changes in consumer demand, together with developments in producer price and PDS policies (see below). Although there is controversy on this issue, recent analyses of consumer demand based on National Sample Survey data (Kumar) suggest that, while low income groups still show significant and positive income elasticities of demand, the elasticities for higher income groups, and for the economy as a whole, are near zero. There is good evidence that aggregate demand is shifting away from wheat and rice.

National minimum support prices (MSPs) for food grains and other major commodities are recommended annually by the Commission on Agricultural Costs and Prices (CACP), but actually set by a Ministerial committee chaired by the Prime Minister. The CACP recommendations are based on a number of factors, but primarily costs of production, and domestic and global market conditions. Historically, both recommended and actual MSPs for wheat and rice generally increased only slowly and remained well below import parity prices. The MSPs are defended by FCI open market purchases only in the major surplus producing areas, primarily Punjab, Haryana, western Uttar Pradesh, and Andhra Pradesh.

[1] Estimates of levels of protection for India suggest that, even if the input subsidies on fertilizer, power, and water were included in the AMS, the AMS would still be negative. See Gulati and Kelley, Gulati and Narayanan, Gulati and Mullen, USDA.

Beginning in the late-1990s, the MSPs set for wheat and rice became increasingly out of step with domestic market conditions. One key factor was (and still is) that the COP concept used in setting the price became a "full cost" measure that, in addition to variable input costs, included the rental value of land, the imputed value of family labor, and a return to management. Another was that swings in domestic prices associated with the removal and re-imposition of export restraints during his period motivated the government to compensate farmers with higher MSPs. With these developments, the MSPs became disconnected from domestic market conditions and, as world prices fell after 1996/97, from competitive world market prices. The tendency for MSPs to rise has likely been exacerbated as MSP benefits contribute to escalation of land rental values, labor, and management costs.

Figure 6. Indian wheat support price, production costs, and world price

An important factor affecting MSP policy in the 1990s concerns the changing political dimensions of the policy when India entered an (ongoing) era of relatively fragile coalition governments in the mid-1990s. The MSP decisions became important to coalition building and maintenance and, even when CACB recommendations called for freezing the MSPs, they were overridden at the Ministerial level. Another important dimension is that the MSP mechanism is one of the few effective levers available to Indian policy makers and there is a tendency to try to use it to achieve multiple policy goals, including both price stabilization and income support.

It is unclear whether these circumstances should be categorized as a result of ineffective policy reform, or of the absence of reform. However, the failure of price policy to successfully adapt to the new environment has had a number of impacts. First, breaking with the historical pattern, domestic wheat and rice prices have moved above both import parity and domestic market clearing levels. While benefiting the relatively few wheat and rice producers receiving the MSP, higher consumer prices have undoubtedly had negative impacts. Per capita wheat and rice consumption has actually declined in the last several years, as declines in open market consumption have not been offset by subsidized distribution. A recent study of the economy-wide impacts of increasing the wheat and rice MSPs when they are above market clearing levels found that the reduced consumption and investment associated with higher prices for these goods actually reduced GDP (Parikh, Ganesh-Kumar and Darbha).

Second, by maintaining high prices, the government has become responsible for the storage and transport of most of the marketed surplus of wheat and rice in the country; some observers have termed it a "de facto" nationalization of grain trade. In addition to raising budgetary costs, there is now little incentive for private investment in grain storage, handling or distribution, with the exception of fees traders can earn in the export of subsidized grain allocated by the government.

Third, the budgetary cost of FCI operations under current policies has now reached about $5 billion. When combined with the cost of subsidies on fertilizer and other inputs, the subsidy bill has burgeoned to about $14 billion annually, or about 22 percent of the value of agricultural output. Perhaps more significantly, annual subsidy outlays now far exceed both public ($1 billion in 2001/02) and private ($2.8 billion) capital formation in agriculture. There is a strong case to be made for subsidy outlays crowding out new investment in agriculture at a time when it is sorely needed.

Finally, the policy of maintaining high wheat and rice prices has also contributed to emergent environmental problems, particularly associated with the intensive wheat-rice cropping system in northern India. When combined with the low cost of irrigation water, much of which is either free, stolen, or subsidized, the strong price incentives for wheat and rice are contributing to the rapid deterioration of ground water resources, and rising concern with deteriorating soil fertility in some areas.

Figure 7. Food grain consumption and the food subsidy in India

4.2 Targeting Domestic Food Aid Programs

The wheat and rice surpluses that emerged in the late 1990s have been driven by a combination of the MSP policies described above, and declines in the amount of grain distributed from government stocks resulting from efforts to reform the programs. The reform has attempted to reshape the traditional PDS, which was an untargeted program, into a less wasteful program better targeted on lower income consumers. The new Targeted Public Distribution Program (TPDS) that came into being in the mid-1990s attempted to differentiate between consumers based on income. Consumers at or below the poverty line (below poverty line: BPL) were to be given access to grain at heavily subsidized rates, while above poverty line (APL) consumers were to have access only at a price equivalent to 90 percent of the government's "economic cost."

Although targeting may have improved, the impact of the reform was to sharply reduce the amount of wheat and rice distributed by the government. BPL distribution lagged because of both costs and administrative problems in certifying BPL consumers at the state and local level. APL distribution remained negligible at first because the high APL administered price was above market prices. Gradually distribution levels have increased, but remain below pre-reform levels. Implementation of income-based targeting remains a problem, but reduced BPL and APL prices, larger individual limits for BPL consumers, and more distribution through other programs, including fixed price sales to flour millers, have helped rebuild government distribution.

In addition to contributing to the build up of government stocks and "food subsidy" costs, the PDS reforms have, at least initially, contributed to higher domestic market prices and reduced per capita consumption. The reduced levels of distribution from government stocks, alongside increased government procurement in price support operations, has contributed to higher overall wheat and rice prices and reduced per capita consumption. It is unclear, however, whether any improved targeting that has been achieved might have offset these impacts for BPL consumers.

4.3 Removal of Export Restraints

Through the 1980s and early 1990s, Indian agriculture was burdened with export restrictions and overvalued exchange rates that resulted in net taxation of the sector. Exports of agricultural goods were restricted through myriad controls, including prohibitions, licenses, quotas, marketing controls and minimum export prices for the sake of domestic food security. For a number of products, the quantitative controls on exports were administered through trading enterprises in the public and cooperative sectors.

Agricultural export policies began to change in 1994 and, barring the occasional reversal, have been progressively liberalized. The Ministry of Commerce, through the Director General of Foreign Trade, notifies the imposition or elimination of export restrictions in order to promote exports, while ensuring an "adequate" domestic supply of essential commodities at "reasonable" prices. Reforms have included reductions in products subject to state trading, relaxation of export quotas, the abolition of minimum export prices (MEPs), and increased credit availability for exports. In 2000, India also began to provide significant budgetary subsidies to support exports of surplus cereals, when the combination of declining world prices and higher domestic prices made Indian wheat and rice uncompetitive in world markets.

Developments in the Indian rice market since the removal of export restraints may be indicative of the impacts of this type of reform. Exports of common rice were opened up for private traders in 1994/95 and, although exports are small relative to production, India immediately became a major player in the international rice market, selling primarily into the lower end of the market. Since 2000/01, exports have turned sluggish because Indian rice has been less price-competitive, with India actually providing subsidies for rice exports.

The exports have helped moderate the growth of surplus rice stocks and, together with higher MSPs and reduced domestic distribution of subsidized rice, contributed to a strengthening of domestic prices. The growth in exports, together with the relaxation of earlier policies limiting rice milling to small-scale enterprises, also appear to be stimulating investment in modern rice milling and grading equipment. The opening up of exports exposed the inefficiency of domestic rice marketing and processing infrastructure, and the absence of quality and grading standards needed to compete in world markets. Although the bulk of India's rice continues to be processed in inefficient, small-scale mills, and with no formal grading standards, the rice export business has sparked investment in better technology for processing and grading. In some cases, primarily with relatively high-value basmati rice, the export business is also beginning to stimulate backward integration involving exporters, millers, and contract producers in order to ensure quality.

The overall welfare impacts of the easing of export restraints for rice or other crops, such as cotton and wheat, have not been studied. An important rationale for restraining exports was to ensure adequate domestic supplies and affordable, stable prices for low- income consumers. The combination of higher MSPs and removal of export restraints have benefited producers, at least in some regions. Higher consumer prices and recent declines in per capita rice consumption suggest that at least some consumers have been adversely effected. However, it is unclear to what extent these impacts have been driven by changes in export policy, as opposed to MSP and food distribution policies.

Figure 8. Trends in wholesale prices in India
Figure 9. Rice trade and protection in India

4.4 Tariffication of Vegetable Oil Imports

Although the 1991-93 economic reforms substantially liberalized India's external trade regime for many nonagricultural goods, progress in phasing out quantitative restrictions on consumer goods, including agricultural products, remained slow. Except for the liberalization of import licensing on sugar and cotton in 1994, most agricultural products remained subject to import controls. In 1997, with an improved balance-of-payments situation, India agreed to phase out quantitative import restrictions and QRs were finally lifted in April 2001. Although Indian policy makers feared that QR removal would lead to a surge in imports, even establishing a "war room" to track imports of 300 sensitive items (about two-thirds agricultural products), this surge did not occur. Imports increased in some categories, including high-value and processed items with tariffs of 50-100 percent, but not to levels that threatened domestic producers. By the end of 2002, imports of only a few sensitive commodities, including copra and coconut, remain controlled by state trading enterprises.

Figure 10. Edible oil imports and tariffs in India

Oilseeds and products are a major sector of domestic production and consumption that has, perhaps, been the most affected by import liberalization policy during the 1990s. Trade policy changes in the sector have, however, been mostly unilateral, rather than mandated by URAA disciplines. Until 1993/94, all edible oil imports were controlled by the STC, which based import decisions on domestic market conditions and policy goals. Imports were reduced sharply during 1987-1993, as the government attempted to boost incentives and technology use in domestic production.

In 1993/94, the government abandoned this approach when it opened imports to private traders, subject only to tariffs that were set well below bound rates. Imports picked up slowly at first, but surged in the late 1990s, eventually making India the world's largest importer. Tariffs for most oils have now been raised to 65-85 percent, but remain well below the bound rates of 300 percent. In part, hikes in the tariff on palm oil, the major imported oil, as well as rapeseed and sunflower oils, are constrained by the relatively low 45 percent bound rate for soybean oil, the second largest imported oil. Despite the higher tariffs, oil imports have continued to expand, accounting for about 45 percent of domestic oil consumption.

The swings in oil import policy have clearly had an impact on domestic oil prices and consumption. There have also been less pronounced impacts on oilseed prices and production. Import restraints during 1987-93 led to higher domestic oil and oilseed prices and planted area, but yield gains were limited to a few areas where the higher prices induced temporary oilseed cultivation on higher quality land. Since 1994, with reduced protection for oils and no effective MSP program for oilseeds, oilseed area has tended to decline and yields to stagnate, while capacity utilization rates in the oilseed processing industry have fallen. The other side of the story, however, is that since 1993 consumers have benefited from lower domestic oil prices and significant gains in consumption.

Again, the overall welfare implications of the changes in oil import policy have not been analyzed. Farmers and oilseed processors regularly lobby for restrictions on oil imports, and some policy makers have been looking for non-tariff restrictions to get around the low 45-percent bound rate for soybean oil so that they can have more flexibility to raise the rates for palm and other oils. Also largely unanalyzed are various policy options for improving the competitiveness of the domestic oilseed and products industry. One option is to shift from reliance on oil import tariffs as the tool for intervention, to a more effective MSP program for oilseeds that would provide price stability directly to growers. There is ample evidence that the current approach of taxing oil imports primarily benefits oilseed processors and traders. Another option is ease restrictions on oilseed imports and on the scale of domestic processing facilities to foster the development of a more efficient domestic processing industry. Inadequate scale and poor technology now make most of India's processing capacity inefficient by world standards and incapable of producing high quality oil and feed protein.

Figure 11. Competitiveness of oilseed production and oil processing in India

4.5 Fertilizer Subsidy Reform

Input subsidies have remained largely unaffected by reforms. The budgetary outlays on the major input subsidies for inputs on fertilizer, power, surface water, as well as the smaller amounts spent on seeds, pesticides, and credit, have not been subject to discipline under the URAA. The subsidy outlays are below the *de minimis* levels permitted in the URAA and, at any rate, each of the major subsidies has been notified as a subsidy for low income and resource poor farmers and, hence, not subjected to discipline.

On a unilateral basis, the fertilizer subsidy is among the largest in terms of budgetary cost and has been a focus of a number of reform efforts. In 1999/2000, the fertilizer subsidy out lay was Rs 132 billion ($2.75 billion), equivalent to 0.75 percent of GDP. Each reform effort, including the proposals of the 1997 "High Powered Fertilizer Pricing Policy Review Committee," has faced problems in implementation. Although markets for some fertilizer products have been decontrolled and subsidies reduced, the big ticket subsidies have remained largely in tact.

A key problem in sustaining political support for reducing fertilizer subsidies is that, as structured, the subsidies have a broad constituency. The subsidy regime includes price subsidies for farmers, as well for domestic producers of some products, particularly urea. Estimates by Gulati and Narayanan indicate that, in the triennium ending in 1999/2000, about 60 percent of the fertilizer subsidy benefited farmers, and about 40 percent benefited fertilizer producers, particularly the least efficient manufacturer's of urea.

In addition to the costs associated with the distortion of output markets and the diversion of scarce public funds from priority investments in research and infrastructure, there is growing evidence that the under-pricing of power and irrigation water has become environmentally harmful. Soil depletion, groundwater contamination and, particularly, groundwater depletion are reported to be increasingly important problems, particularly in regions where intensive wheat-rice double cropping has become common practice. In recent years, generous support of output prices through MSPs, together with

fertilizer and water subsidies, as strengthened incentives for intensive wheat-rice cultivation that may not be environmentally sustainable.

The fertilizer subsidy regime has been the subject of considerable study and plans for phased reduction or elimination, but little action. The perceived adjustment costs to farmers, particularly small farmers, and the clear threat to the financial viability of some fertilizer plants, have, so far, prevented implementation of reforms. Continued study of the economy-wide benefits of subsidy reform, and a more comprehensive understanding of environmental costs of current policies may contribute to the reform debate.

4.6 Market and Regulatory Reform

India's domestic agricultural markets and processing industry have, historically, been subject to a virtual thicket of regulation, mostly intended to protect consumers and promote labor-intensive industry, but also severely limiting private investment and new technology in the sector. Beginning in 2002, however, several small steps have been taken to liberalize domestic agricultural markets. Among these changes are:

- The temporary removal of licensing requirements, stocking limits, and movement restrictions for wheat, paddy/rice, coarse grains, edible oilseeds and edible oils under the Essential Commodities Act.
- Removal of plant scale restrictions and licensing requirements for most food processing activities.
- Removal of the restrictions on futures trading on 54 commodities, including wheat, rice, oilseeds and pulses.
- Reform of the Milk and Milk Products Order to no longer restrict investments in new processing capacity.

These reforms are likely to help improve the environment for private investment to improve agricultural marketing infrastructure and the food processing industry. It is, however, unclear whether these reforms will be sufficient to spark large amounts of private domestic and foreign investment, or whether additional reforms and/or public infrastructure investments, particularly in transport and power, will be needed to adequately improve the investment climate.

5. Summary of Issues and Analytical Needs

The Indian experience with policy reform in agriculture is, so far, primarily one that highlights the difficulties in formulating and implementing reforms needed for the sector to adapt to its changing environment. Developments outside agriculture are creating pressure for change in traditional policies and institutions focused on food grain self-sufficiency. The changing environment, and the failure to adapt to it, has had a number of implications and lessons:

- Support price policy, particularly for wheat and rice, has remained delinked from domestic and international market realities, creating significant budgetary costs and market distortion. Although initial upward adjustments in domestic prices may have been justified due to the prevailing negative support to cereals, policy was unable to adjust with market conditions. In addition to potential political costs, policy makers remain concerned with the impact of market-oriented reform on self-sufficiency, the level and stability of food prices, farm incomes, and farm employment.

- The inability to reform price policy and contain input subsidies has led to a decline in public investment in agriculture at a time when investment in new infrastructure and institutions is needed. Although the incentives and climate for private investment have improved, it may not be able to fully substitute for weak public investment.

- Implementation of targeted safety net programs, such as the TPDS, has proven difficult in India's as a result of weak administrative capacity and resource constraints at the local level. The ineffectiveness of targeted programs that could help address adjustment costs borne by low-income groups undermines political capacity to move forward with market-oriented reforms.

- Reforms at the border, when they have been implemented, have typically exposed inefficiencies in the domestic market that limit competitiveness. These weaknesses limit the benefits of border reform and, at least in India's case, will require significant investment in transport and marketing infrastructure and institutional capacities to overcome.

Consensus-building for change in agricultural policy has been very difficult in India. There is a great deal of inertia in current policies and institutions, in part because of the belief that these policies have served India well in achieving food grain self-sufficiency, but also because these long-standing policies have created powerful vested interests. Perhaps more importantly, the fact that the farm sector accounts for about 25 percent of GDP and 60 percent of employment, gives rise to the deep-rooted perception that the welfare of the poor is linked closely to the protection of agriculture. In India's new era of coalition governments, it has been increasingly difficult for policy makers to take risks on agricultural policy reform that could entail significant short-run adjustment costs. Although there is a significant and growing reform-minded constituency, there is little doubt that the largely defensive positions taken by India in the recent Cancun Ministerial have been popular in India.

It is unclear how optimistic one should be about the potential impact better information and analysis in India's policy process, there would appear to be some significant analytical gaps to be filled. First, although policies largely maintained low and stable cereal prices through the 1970s and 1980s, current farm policy seems to rely on the proposition that higher producer prices will have positive long run benefits for employment and income generation among the poor. Even in a country where the average consumer spends about 55 percent of their income on food, and the poor spend upwards of 70 percent, it is rare to find an advocate of the potential long run benefit of lower food prices. More research and analysis within economy-wide frameworks may be effective in evaluating these options, and in provoking debate and consensus on development strategy.

Much of Indian agricultural policy, and fear of market oriented reform, is based on the perception that increasing the role of private traders, and particularly reducing import barriers, will increase domestic price volatility. Thus, Indian WTO positions typically strive to maintain bound rates at levels that will prevent trade, and to also have the right to introduce QRs through safeguard or other mechanisms. Research may be able to play a role by evaluating the extent to which these perceptions may be true, and by examining options for providing producer and consumer price stability with less market distortion.

Border reforms that have occurred have tended to expose inefficiency in India's domestic agricultural markets stemming from heavy regulation, poor technology, and substantial under investment--both public and private. It is increasingly clear that the transformation of agricultural marketing and processing in India will require massive private investment. While steps have been taken reduce the web of regulation that has deterred private investment, and private investment has increased, much more is needed. Research may be able to play a role in examining the climate for private investment and identifying reforms that may stimulate domestic a foreign investment in the sector.

The process of policy reform in India is plagued by weak financial and administrative capacity at the central and, particularly, state government levels. Food subsidy targeting, farm extension, improvement in water use efficiency and in collecting power tariffs, and identifying alternative price support mechanisms are all examples where capacity problems affect options for reform. More research that identifies successful national or local level solutions to these problems in India and elsewhere may help address these problems.

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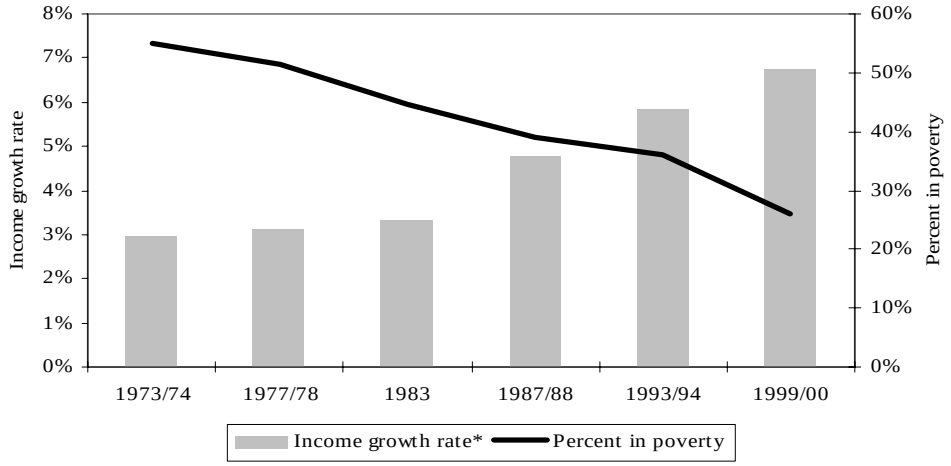
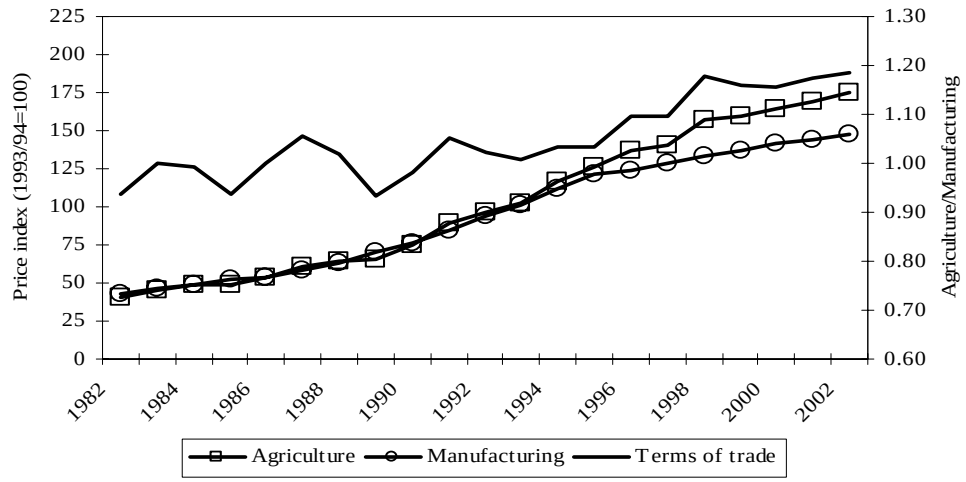
Figure 1. Income growth and poverty reduction in India



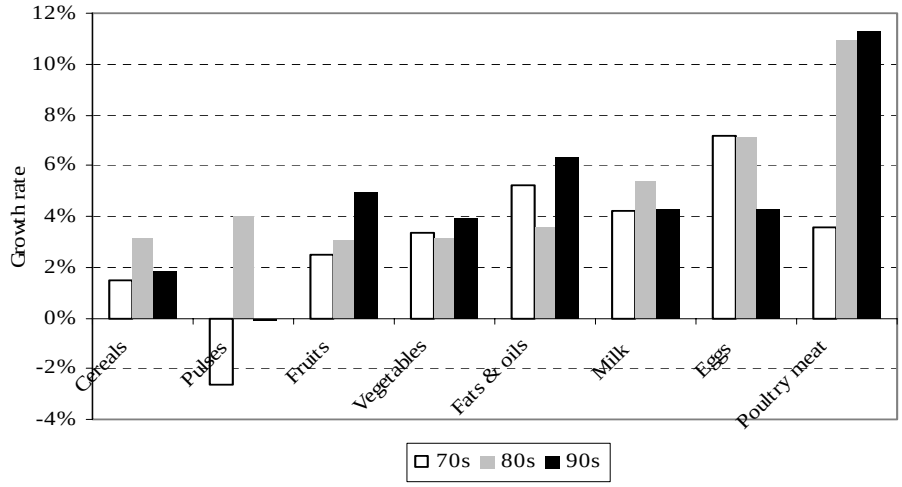
* Income growth rate for preceding 5 years.
Source: Economic Survey, GOI.

Figure 2. Relative prices and agricultural terms of trade for India



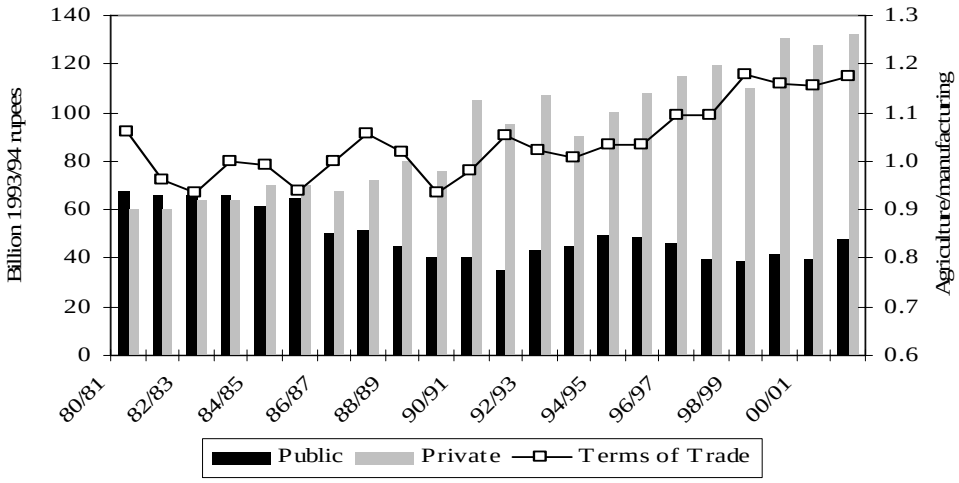
Source: Economic Survey, GOI.

Figure 3. Growth in food consumption in India



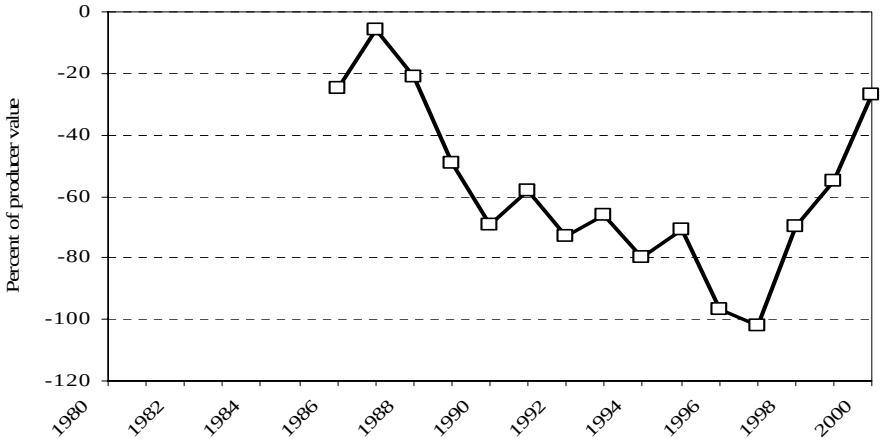
Source: FAO

Figure 4. Terms of trade and gross agricultural capital formation in India



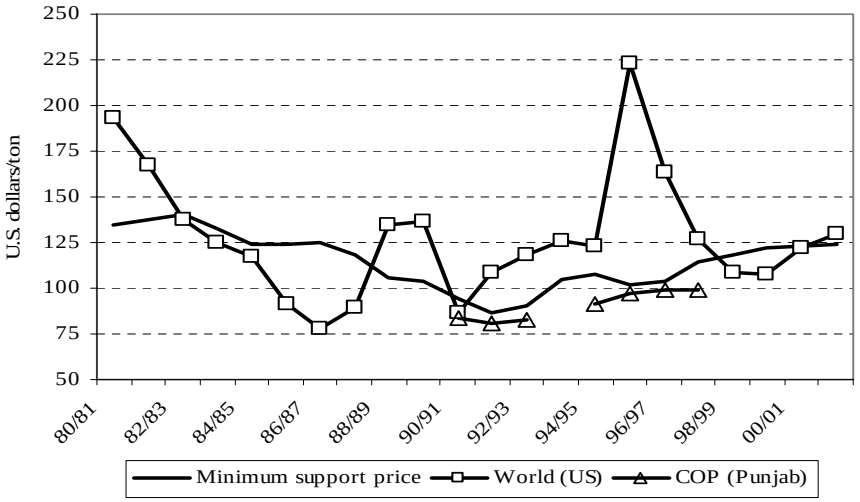
Source: Economic Survey, GOI.

Figure 5. Aggregate producer support estimates for India



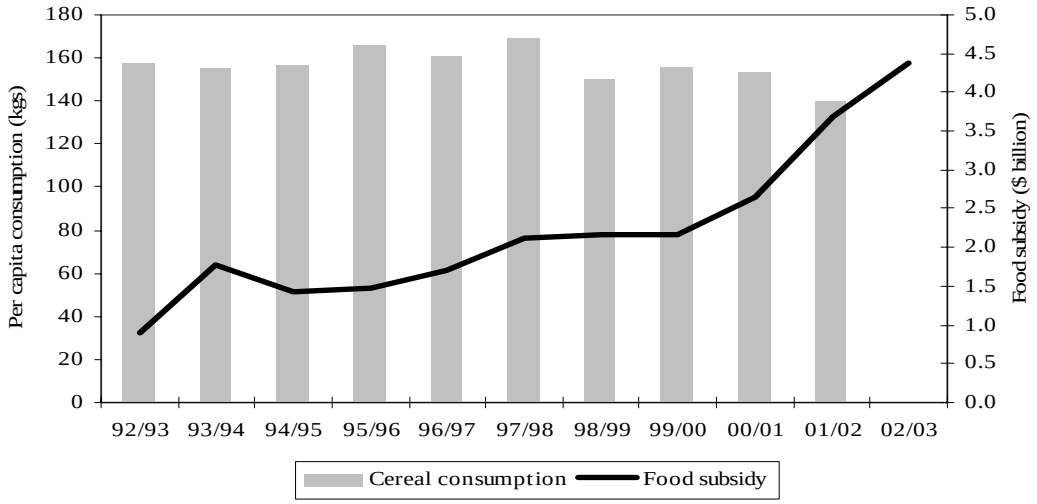
Source: Gulati and Narayanan

Figure 6. Indian wheat support price, production costs, and world price



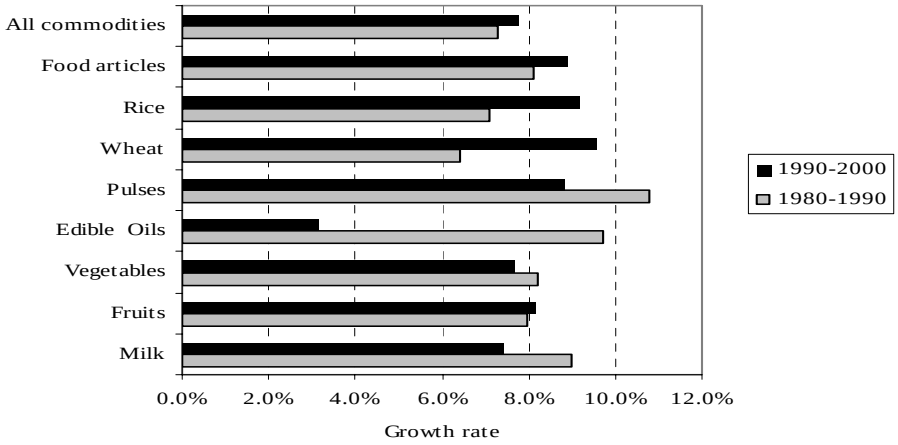
Sources: USDA/ERS, GOI.

Figure 7. Food grain consumption and the food subsidy in India



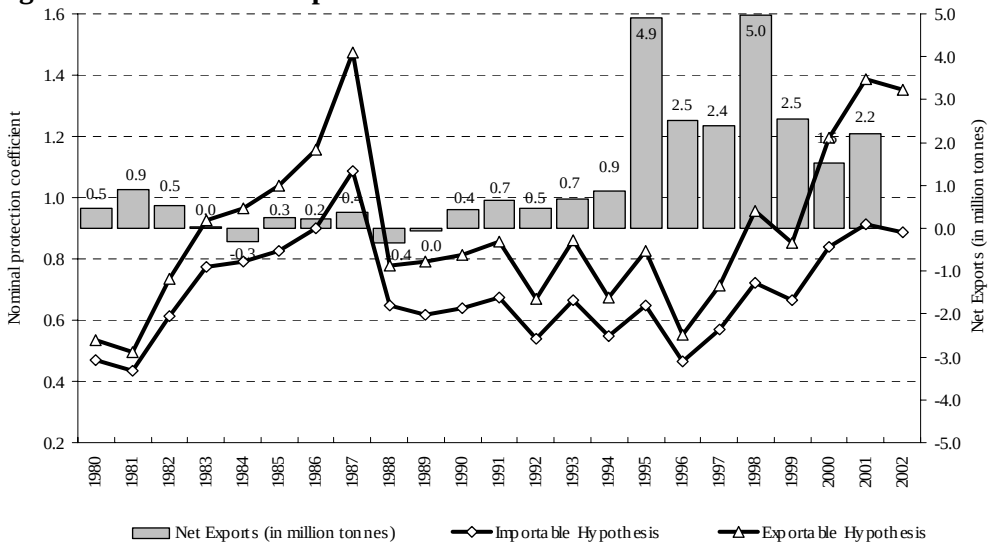
Source: Economic Survey, GOI.

Figure 8. Trends in wholesale prices in India



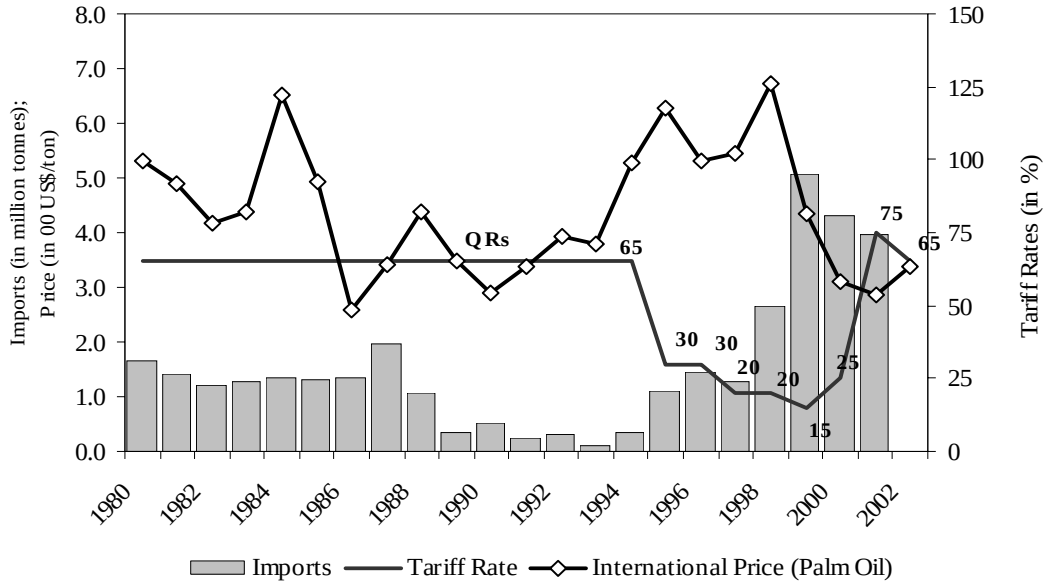
Source: Economic Survey, GOI.

Figure 9. Rice trade and protection in India



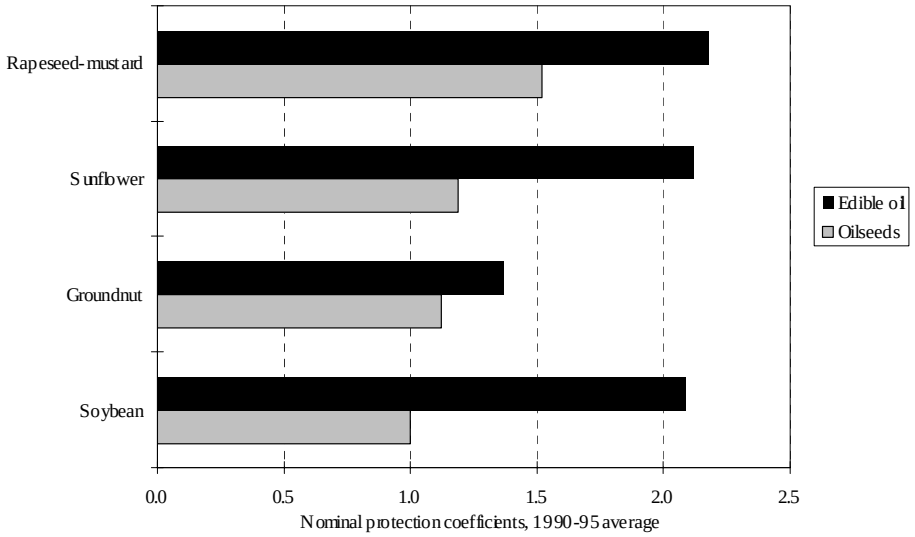
Source: Gulati and Mullen

Figure 10. Edible oil imports and tariffs in India



Source: Gulati and Mullen

Figure 11. Competitiveness of oilseed production and oil processing in India



Source: Gulati and Kelley