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*Presidential Address*

## **Agricultural Policies in India: Retrospect and Prospect<sup>§</sup>**

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Agriculture continues to be an important sector of Indian economy, though its share in the gross domestic product (GDP) has declined from about 50 per cent in early-1950s to 14 per cent in 2011-12. Employment in agriculture has also shown a decline, *albeit* slowly, and presently it accounts for 52 per cent of the country's total labour force. The declining share of agriculture in GDP and employment is consistent with the theory of economic development. However, a faster and sustainable growth in the sector remains vital for creation of jobs, enhancing incomes, and ensuring food security.

India has 140 million hectares of net cropped area, next only to that of the USA. Similarly, India's irrigated area (63.26 Mha net and 86.42 Mha gross) is also the second largest in the world, next only to China. The country is well-endowed with natural resources and diverse climatic conditions, and much of the land in India can be double cropped. Traditionally, crop production has accounted for over four-fifths of the agricultural output, but over the past two decades or so the situation has changed dramatically. The share of livestock in the agricultural production has risen sharply and now accounts for close to 30 per cent of the total agricultural output. Overall, the composition of agricultural output has gradually been shifting towards high-value crops and animal products, especially milk.

The performance of agricultural sector has been quite impressive, making the country self-reliant in food. The country has even started exporting some food products. This performance is due largely to green

revolution. During the Eleventh Five-Year Plan, the agriculture and allied sector has registered an average annual growth rate of 3.6 per cent, slightly lower than the target of 4.0 per cent, but higher than the average annual growth rate of 2.4 per cent attained during the Tenth Plan. This improved performance in recent years is also credited to the impressive growth in capital formation in the sector. The gross capital formation in agriculture and allied sector has more than doubled in the past 10 years with an average annual growth of 8.1 per cent.

As per the latest *Agricultural Statistics at a Glance* (2012), India is the world's largest producer of pulses, milk, many fresh fruits and vegetables, major spices, select fresh meats, select fibrous crops such as jute, several staples such as millets and castor oil seed. India is the second largest producer of wheat and rice, groundnut, fruits, vegetables, sugarcane, and cotton. India is also the world's third largest producer of cereals, rapeseed, tea, tobacco, eggs, several dry fruits, and roots and tuber crops.

### **Evolution of Agricultural Policies**

Agriculture has remained a highly regulated sector in India with government agencies and parastatals exercising a pervasive influence over it. These regulatory controls are imposed by both central and state governments. The state governments, however, continue to retain the constitutional authority over the sector. After independence, India pursued a policy of food self-sufficiency in staple foods — rice and wheat. The policies were initially focused on the expansion of cultivated area, introduction of land reforms, community development, and restructuring of rural credit institutions. Trade was strictly regulated through quota restrictions and high tariff rates.

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<sup>§</sup> Based on Presidential Address delivered on 10 September, 2013 at the 21<sup>st</sup> Annual Conference of Agricultural Economics Research Association (India) held at SKUAST-Kashmir, Srinagar.

The main policy measures in the agriculture sector were adopted in the mid-1960s. These included input subsidies, minimum support prices, public storage, procurement and distribution of foodgrains, and trade protection measures. The gains from green revolution technologies continued through the mid-1980s, but slowed down thereafter. Unlike reforms in other emerging economies of the world (e.g. Brazil and China), a series of reforms instituted in India in the early-1990s, left its agricultural sector relatively untouched, except for the removal of export controls. While reforms in agriculture have been modest, the macroeconomic reforms of the 1990s had two important impacts. First, the reforms increased per capita income and strengthened the domestic demand. Second, they reduced industrial protection and improved agriculture's terms of trade to attain food self-sufficiency, ensure remunerative prices to farmers, and maintain stable prices for consumers. India's protectionist trade policies, introduced in the 1960s, continued virtually unchanged, until the major economic reforms were introduced after signing the AoA (Agreement on Agriculture) under WTO.

### **Phase I: Pre-Green Revolution Period (1950-65)**

The main policy thrust in the first phase (after Independence) was on enhancing food production and improving food security through agrarian reforms and large-scale investment in irrigation and power. The first major agricultural legislation enacted by the state governments after Independence was the Zamindari Abolition Act (1950s). The basic objective of this policy was to eliminate land intermediaries, ensure ownership rights to the tillers of land, and ensure a permanent improvement in the quality of the landholding. The government made additional changes to the land ownership policy to ensure greater equity in the rural society. These decisions involved placing a ceiling on the size of holdings, state control on idle or unused lands, and the distribution of some of the idle land to the underprivileged rural people. Provisions were also made to ensure that recipients of this land do not lease out or sell the land. The consolidation of fragmented and scattered landholdings was encouraged so that farmers could have better access to mechanization and land improvements could be made. Other policy measures during this period included enhancing of farmers access to credit, markets and extension services.

### **Phase II: Green Revolution Period (1965-80)**

The second phase of agricultural and food policy started in the mid-1960s with the advent of green revolution. The adoption of improved crop technologies and seed varieties became the main source of growth during this period. The Government of India adopted the approach of importing and distributing the high-yielding varieties (HYVs) of wheat and rice for cultivation in the irrigated areas of the country. This was accompanied by the expansion of extension services and increase in the use of fertilizers, agro-chemicals and irrigation. A number of important institutions were set up during the 1960s and 1970s, including the Agricultural Prices Commission (now Commission for Agricultural Costs and Prices), the Food Corporation of India, the Central Warehousing Corporation, and State Agricultural Universities.

Another major policy decision was the nationalization of major commercial banks to enhance credit flow to the agricultural sector. Several other financial institutions, for example the National Bank for Agriculture and Rural Development (NABARD) and Regional Rural Banks (RRBs), were also established to achieve this objective. The cooperative credit societies were also strengthened.

This strategy produced quick results with a quantum jump in crop yields and consequently, in the foodgrain production. However, impact of the green revolution technology was largely confined to two crops, wheat and rice, and in the irrigated regions. The traditional low-yielding varieties of rice and wheat were replaced by the high-yielding varieties. Today, more than 80 per cent of the area under cereals is sown with high-yielding varieties. The use of fertilizers (NPK) has risen sharply over the past three decades, *albeit* from a low base. In 2011-12, the Indian farmers used almost 144.3 kg of fertilizer per hectare of cultivated land. The use of pesticides, including herbicides, increased until 1990, but has fallen steadily, partly due to the shift in emphasis, away from the heavy use of chemical pesticides to a more environment-friendly integrated pest management system.

The biggest achievement of the green revolution era was the attainment of self-sufficiency in foodgrains. The green revolution also had an impact on the agricultural input industry, resulting in a rapid growth in the fertilizer, seed and farm machinery industries. A

significant increase in the funding of agricultural research and extension, marketing of agricultural commodities and provision of credit to farmers was also noted.

### **Phase III: Post-Green Revolution Period (1980-91)**

The third phase in agricultural policy development started in the early-1980s and was characterized by the expansion of green revolution technology to other crops and regions. This resulted in a rapid growth in agricultural output. During this period, the main policies aimed at encouraging investment in the sector. Moreover, the agricultural economy started experiencing the process of diversification towards high-value commodities like milk, fish, poultry, vegetables and fruits. The growth in output of these commodities accelerated. Finally, the ongoing research on pulses, oilseeds and coarse grains started showing a positive impact with the expansion of these crops into the drier areas.

### **Phase IV: Economic Reforms Period (1991 onwards)**

Following several decades of sustained output growth, the focus of agricultural policy since 1991 has shifted to improving the functioning of markets, reducing excessive legislation, and liberalising agricultural trade. Economic reforms launched in the 1990s virtually by-passed the agriculture initially. However, the subsequent trade policy reforms have been aimed at liberalizing the export and import of agricultural and food commodities by gradually removing various restrictions and controls on agricultural trade.

Over the past 10-15 years, India's share in world agricultural trade has been gradually increasing, *albeit* from a low base. India has also taken an active role in promoting regional economic co-operation and trade in South Asia through the South Asian Association for Regional Cooperation (SAARC). In April 1993, a regional trading block was formed with the signing of the SAARC Preferential Trading Agreement, which was improvised in 2004 in the form of an Agreement on South Asian Free Trade Area (SAFTA) that supersedes the Agreement on SAARC Preferential Trading Arrangement.

However, there were several policy challenges facing the agricultural sector, including the need to reverse the sharp decline in output growth, which occurred in the late-1990s, and the need to ensure more sustainable use of the existing natural resources. A steady fall in the public sector investment in agriculture posed a big challenge which necessitated policy initiative to attract private investment in agriculture for the long-term growth and competitiveness of the sector. Another important challenge during this phase was on improving competitiveness along the agro-food chain, especially through enhancing efficiency in production, marketing and processing of agricultural commodities.

In 2000, the Government of India, for the first time, published a comprehensive agricultural policy statement — the National Agricultural Policy (NAP) that sets out clear objectives and measures for all the important sub-sectors of agriculture. Over the next two decades, this policy aims to attain an agricultural growth rate in excess of 4 per cent per annum. The main elements of the policy include:

- Efficient use of natural resources, while conserving soil, water and biodiversity.
- Growth with equity, i.e. growth which is widespread across regions and farmers.
- Growth that is demand-driven and caters to the domestic markets and maximizes benefits from exports of agricultural products in the face of challenges arising from economic liberalization and globalization.
- Growth that is sustainable technologically, environmentally and economically.

The policy also seeks to utilize large areas of wasteland for agriculture and afforestation. Moreover, the NAP calls for special efforts to raise crop productivity to meet the growing domestic demand for food and agricultural products. The major focus is on horticulture, floriculture, roots and tubers, plantation crops, aromatic and medicinal plants and bee-keeping. Higher emphasis is also placed on raising the production of animal and fish products.

While the overall investment (public and private) in agriculture remains low (1% of the GDP), the reforms in domestic regulations would improve the incentive structure for increasing private sector



investment in the agro-food sector and thus enhancing productivity growth. The new policy also proposes to re-channel resources from agricultural input and price support measures to capital investment in the sector. The NAP also mentions private sector participation through contract farming, assured markets for crops, especially for oilseeds, cotton and horticultural crops, increased flow of institutional credit, and strengthening and revamping of the cooperative credit system and agricultural insurance as other important issues deserving policy attention. The NAP is a very comprehensive statement covering almost all dimensions of the Indian agriculture. The land reforms launched during the 1950s and revisited in 1970s also find place in this document. The policy states that *“Indian agriculture is characterized by pre-dominance of small and marginal farmers. Institutional reforms will be so pursued as to channelize their energies for achieving greater productivity and production. The approach to rural development and land reforms will focus on the following areas:*

- Consolidation of holdings all over the country on the pattern of north-western states;
- Redistribution of ceiling surplus lands and waste lands among the landless farmers, unemployed youths with initial startup capital;
- Tenancy reforms to recognize the rights of the tenants and share croppers;
- Development of lease markets for increasing the size of holdings by making legal provisions for giving private lands on lease for cultivation and agribusiness;
- Updation and improvement of land records, computerization and issue of land pass-books to the farmers; and
- Recognition of women's rights in land.

### Current Agricultural Policies

The process of formulating and implementing agricultural policies in India is very complex, involving a number of ministries, departments and institutions at both the centre and the state levels. The Union Ministry of Agriculture, under the guidance of the Planning Commission, provides the broad guidelines for agricultural policies. However, the implementation and administration of agricultural policies remain the

responsibility of respective state governments. The allocation of funds to agriculture is guided by the Planning Commission and is routed primarily through the Ministry of Agriculture to various departments. Box 1 gives an idea of the number of ministries, departments, and institutions involved in evolving, implementing and monitoring agricultural policies.

### Land Reforms

Indian agriculture is dominated by a large number of small-scale operators that are predominantly owner-operators. In 1995-96, there were 115 million farmers operating on an average holding size of 1.41 hectares. This number increased to 137.76 million in 2010-11. About 67 per cent of the landholdings have an average size of only 0.38 ha, and another 17.9 per cent have an average size of 1.42 ha.

Land reforms now need to address three important issues: (i) to map land carefully and assign conclusive titles, (ii) to facilitate land leasing, and (iii) to create a fair but speedy process of land acquisition for public purposes. The National Land Records Modernization Programme (NLRMP) which started in 2008, aims at updating and digitizing land records by the end of the Twelfth Plan. Eventually, the intent is to move from presumptive title — where registration of land does not imply that the owner's title is legally valid — to conclusive title, where it does. Digitization will help enormously in lowering the cost of land transaction, while conclusive title will eliminate legal uncertainty and the need to use the government as an intermediary for acquiring land so as to 'cleanse' the title. Given the importance of this programme, its rollout in various states needs to be accelerated.

For large public welfare projects, such as the proposed National Industrial and Manufacturing Zones and National Highway Project, large-scale land acquisition may be necessary. Given that the people currently living on the identified land will suffer significant costs, including the loss of property and livelihoods, a balance has to be drawn between the need for economic growth and the costs imposed on the displaced. The Land Acquisition, Rehabilitation and Resettlement Bill 2011 passed by the Lok Sabha recently, is likely to ensure the Right to Consent, Fair Compensation and Transparency to farmers in the process.

**Box 1**

<b>Ministries and public institutions involved in implementation and monitoring of agricultural policies in India</b>		
Particulars	Agencies at central level	Agencies at regional/state level
Production	Ministries of Agriculture, Food Processing, Water Resource, Energy, and the ICAR	Ministries of Agriculture, Horticulture, Food Industry/ Processing, Irrigation, Power, SAUs
Prices	Ministries of Agriculture, Food Processing, Commerce, and Commission on Agricultural Costs and Prices	Ministries of Agriculture and Finance, SAUs
Marketing	Ministries of Agriculture, and Rural Development, APEDA, Directorate of Marketing and Inspections, NAFED, Food Corporation of India (FCI), Cotton Corporation of India (CCI), Central Warehousing Corporation (CWC), Jute Corporation of India (JCI), National Dairy Development Board (NDDB), Special marketing/processing corporations, Commodity Boards,	Ministry of Agriculture, Directorate of Agricultural Marketing, State Level - Agricultural Cooperative Marketing Federation, State Level – Agricultural Marketing Boards, Primary, Central and State level marketing societies/unions, Special marketing/processing societies, Tribal Cooperative Marketing Federation (TRIFED)
Credits	Ministry of Finance, Reserve Bank of India, and National Bank for Agriculture and Rural Development (NABARD)	Ministry of Finance, State Level Bankers Committee, Regional Offices of NABARD, Commercial Banks, Credit Cooperatives, Regional Rural Banks
Trade	Ministry of Commerce, Commodity Boards, Agricultural and Processed Food Export Development Authority (APEDA), National Agricultural Cooperative Marketing Federation (NAFED)	Agri Export Zones (AEZs), Ministry of Agriculture
Research	Indian Council of Agricultural Research, Veterinary Council of India (VCI), Indian Council of Forest Research (ICFR), Central Agricultural Universities, Deemed Universities	State Agricultural Universities, Private Agricultural Colleges, Private Institutions and Autonomous Institutions
Education	Indian Council of Agricultural Research, Indian Institute of Management, Central Agricultural Universities, MANAGE, IRMA, NIAM	State Agricultural Universities, Private Colleges, Agribusiness Management Institutes (e.g. CABM)
Extension	Ministry of Agriculture, Indian Council of Agricultural Research	State Agricultural Universities, Krishi Vigyan Kendras, Krishi Gyan Kendras, State Government Departments

**Agricultural Credit Policy**

The Third Five-Year Plan emphasized the urgent need to create an institution to provide funds for investment in the agricultural sector. This resulted in the establishment of the Agricultural Refinance Corporation (ARC) in 1963. In 1969, the Lead Bank Scheme was introduced with the primary objective of taking a territorial approach to rural development. The

scheme involved commercial banks, cooperative institutions, government, and semi-government agencies in the process of economic development. The nationalisation of 14 scheduled commercial banks in 1969 made this transition easier and influenced further developments in banking for agriculture. However, during 1990s, a cut on bank branch network in the rural areas; fall in the credit-deposit ratios; disproportionate decline in credit to small and marginal farmers; and a

worsening of the regional inequalities in rural banking were noted. The gap so created was attempted to be filled with expansion of micro credit projects in the rural area. However, this met with only limited success due to high transaction costs.

Several issues in the area of rural credit still remain to be addressed. The major one relates to the provision of cheap and timely credit to the small and marginal farmers with low transaction costs and associated risks. Another issue relates to the developing of ways to provide working credit to tenant farmers. The recent developments in credit policy include agricultural loans waiver of margin/ security; advances granted for agricultural purposes being treated as NPA (non-productive asset); incentives to bank branches to finance self-help groups with minimum of bureaucratic procedures; and launching of Kisan Credit Card Scheme.

### Marketing Reforms and Policies

The process of market regulations started in the mid-1960s with the enactment of Agricultural Produce Market Regulation Act (APMC). It is, however, noted that in many ways the physical markets are restrictive, over-regulated and monopolistic. Direct procurement from the farmers was seldom permitted; in most states private players were not permitted to create private mandis; cartelization of local traders often resulted in lower price realization by the farmers; and there was often lack of transparency in the process of price formation and dissemination.

There has remained a huge variation in the density of regulated markets in different parts of the country. While the all-India average area served by a regulated market is 459 sq km, the same is 103 sq km for Punjab and 11,215 sq km in Meghalaya. The National Commission on Farmers had suggested that the services of a market should be available within a radius of 5 km. This and the monopoly of APMCs have led to large intermediation and have effectively resulted in limiting the access of farmers to market.

The agricultural marketing policies in the country have moved considerable distance away from the restrictive regulations of 1960s and 1970s, dominated by the excessive and needless use of the Essential Commodities Act and other restrictive laws. To further reform the sector, a model Agricultural Produce

Marketing (Development and Regulation) Act was formulated in 2003 and circulated to all the state governments for amending respective Act. The rules under the Act were also circulated in August 2007. The reforms proposed under the Act include :

- Replacement of fragmented nature of markets by an integrated and unified market place
- Permission for direct procurement from farmers
- Promotion of grading and quality control services
- Introduction of single point reasonable market fee within the state.
- Formulation and implementation of legal and institutional framework for contract farming
- Simplification and introduction of a “unified” single licensing system
- Single window clearances to replace multiple authorities for various market operations.
- Simplification of market tax laws
- Encouragement of private investment in market infrastructure development
- Permitting functioning of private mandis outside the purview of the APMC Act
- Creation of ‘Special Markets’ for commodity or commodity group specific
- Permitting electronic pan-geographic spot mandis
- Promotion of commodity exchanges
- Linking spot markets closely with futures markets for price discovery
- Managing market committees more professionally
- The Essential Commodities Act should be either repealed or provisions relating to stock limits and movement restrictions removed from its purview.

In 2004, there were 7418 (2402 principal markets and 5016 sub-market yards) regulated markets, to which the central government provided assistance in establishing the required market infrastructure and in setting up rural warehouses. The number of regulated markets, however, came down to 7190 (2456 principal and 4734 sub-market yards) as on 31st March 2013 with the Bihar State Government repealing the APMC Act.

There is an urgent need to legalize contract farming in the interest of farmers as well as the “sponsors”. There should be an institutional arrangement to record all contractual arrangements with a government body or a local body such as the Panchayat. There is a strong need for an independent market regulator for the issue of single registration/license to the market functionaries to transact their business in the entire state and collect single point market fee, specially for ‘Contract Farming’ (including recording, registration and dispute settlement) and direct marketing or sourcing of produce from the farmers, setting markets in more than one market area and to ensure transparency and quality service to the farmers.

The Terminal Markets are wholesale markets which ensure better price realization and timely payment of sales proceeds to the producer, lower price payable by the final consumer, and remove impediments to smooth supply of raw materials to agro-industries and minimize post-harvest losses and wastages by allowing direct procurement from the producer. The private sector can bring in the required investment and management skills for successful development of these markets.

The Central Government is committed to support the initiative by providing equity assistance up to 49 per cent of the project equity, returnable at par on successful operation of the project through the Venture Capital Fund of the Small Farmers Agribusiness Consortium. The Terminal Market Complex (TMC), based on PPP model, at Patna (Bihar) and Perundurai and Chennai (Tamil Nadu) have been approved under the National Horticulture Mission (NHM).

The recent rapid growth in the organized retail has attracted attention of media as well as elected representatives. The critics fear that organized retail will be to the detriment of the large multitude of small retailers. These fears appear to be largely misplaced as the retail space that would be occupied by the large corporates would remain insignificant. It also needs to be recognized that small retailers in India have inherent advantages. They are located next to the consumer, know them well, some even by name, offer sale on credit, and enjoy low fixed costs.

The organized food retail business in India is among the least developed in the world. A large chunk of fresh fruits and vegetables is lost because of

inadequate post-harvest handling, cold storage, and processing facilities and convenient marketing channels. A huge quantity of grains too is wasted because of improper handling and storage, pest infestation and poor logistics management. The farmer gets low price as his produce varies in size, shape and quality. The small harvest lots do not bring economies of scale in transportation and lower net realization. With the growth of organized retailing, new supply chain structures, using global technologies and best practices and offering customized product and services, will become possible. Involvement of global players in retailing would improve services to consumer and would lead to efficiency in supply chain, reducing costs and realization of better prices, benefiting both the supplier and the end consumer.

The enactment of the Warehousing (Development and Regulation) Act 2007 in October 2010 should facilitate improved commodity financing and also give a fillip to attracting investment in warehousing. This along with initiatives being taken both by the government and the private sector in setting up cold storages and grading, standardization and quality certification would significantly contribute to modernizing agricultural marketing practices. Under the legislation, Warehouse Receipts (WRs) have become negotiable instruments that can be traded. The legislation also provides for the establishment of a Warehouse Development and Regulatory Authority (WDRA) to regulate the WR system. Notwithstanding the lacunae in the legislation, this is landmark legislation and will provide a lot of fillip to both collateral commodities financing as well as the growth of private sector investment in agriculture warehousing.

The establishment of commodity exchanges in recent past has provided a new platform for price discovery and price risk management for the farming community. The challenge is to widen farmer participation in the exchanges and ensure that the exchanges provide a platform for genuine price discovery and hedging opportunities for the farming community. Futures markets, by themselves cannot improve supply efficiency and boost agriculture credit and financing of the agricultural sector unless concomitant reforms take place along the entire value chain. The next generation of reforms should facilitate emergence of pan-Indian electronic trading platforms (Spot Exchanges) leading to an integrated market.



Simultaneously, there should be freeing of the “futures” market by providing autonomy to the Forward Markets Commission (FMC), empowering it to regulate the ‘futures’ market professionally *sans* government control and interference.

An electronic spot exchange will ensure greater transparency in price determination as electronic screen terminals across the country will display the prices and quantities of various commodities traded. Transparency of transaction would help governments in addressing evasion of mandi taxes. Electronic exchanges will promote quality standardization which would ensure greater access to finance from banks and other financial institutions (FIs) to the farmer. Transaction costs are lower under the electronic auction system as compared to the current mandi system by about 10 per cent.

Futures markets provide a platform for risk mitigation, price discovery, arbitrage and clearing and settlement. For speculators, hedgers, and other traders, trading in the futures markets offers an opportunity for financial leverage. The participants in the exchange are able to control a large quantity of a commodity with a comparatively small amount of capital, because of the small margin, normally set at 2-5 per cent of the value of commodity. There are, however, a number of misconceptions and concerns about future exchanges, few of which are briefed hereunder.

**Price Volatility** — Empirical evidence suggests that the introduction of derivatives does not destabilize the underlying market; either there is no effect or there is a decline in volatility. Further, the literature strongly suggests that the introduction of derivatives tends to improve the liquidity and informativeness of markets. To the extent that carrying costs are predictable, price smoothing through storage becomes an arbitrage activity. If agents are risk averse, this should lead to increase inter-temporal price smoothing. Futures markets may also influence spot prices if they have an effect on the behaviour of producers. Since futures markets allow the producers to hedge price risk, the existence of futures may affect a producer’s decision of what to produce, how much to produce, and what production techniques to use. In addition, the futures price may contain information about anticipated demand that can feed back into production decisions.

**Futures Trading and Inflation** — It is widely recognized that prices of several agricultural commodities have been rising at the global level in

recent years, and India has been no exception. Apart from the increase in money supply which has contributed to the price rise, inflation in food articles has been primarily due to continuous shortages on the supply side and increase in demand which has led to an upward thrust to prices. Further, global shortages in agricultural commodities also got translated into higher domestic prices with the correlation between international and domestic prices being very strong. It needs to be noted that the annual average inflation in both pulses and cereals has been generally higher than the overall inflation rate even in the period prior to the introduction of futures trading in these commodities. Growing current account deficit and fiscal deficit are also responsible for inflation in the country. Some observers have noted that the benefit of futures trading to farmers has been limited due to lack of awareness. It is true that the direct participation of farmers on the futures trading platform has been limited in India as elsewhere.

### Price Policy

The major objective of the price policy is to protect both producers and consumers. Currently, food security system and price policy basically consist of three instruments: procurement prices/minimum support prices (MSP), buffer stocks operations, and the public distribution system (PDS). Originally, the price support policy of the government aimed at providing a safety net or insurance to farmers against sharp fall in farm gate prices. Subsequently, however, need was felt to provide remunerative prices to farmers for maintaining food security and increase farm incomes. The policy has had a positive effect on farm income and led to economic transformation, particularly in well-endowed, mainly irrigated, regions.

Besides announcement of MSP, the government also organizes procurement operations of concerned agricultural commodities through various public and co-operative agencies such as Food Corporation of India, Cotton Corporation of India, Jute Corporation of India, Central Warehousing Corporation, National Agricultural Co-operative Marketing Federation of India Ltd, National Consumer Co-operative Federation of India Ltd and Tobacco Board. The state governments also appoint state agencies to undertake price support scheme (PSS) operations. The Department of Agriculture and Cooperation is the nodal agency to implement PSS.

**Market Intervention Scheme (MIS)** — For horticultural and agricultural commodities, not covered under the MSP, Market Intervention Scheme (MIS) provides ad hoc support measure. If price of a commodity covered under MIS falls below the specified “economic” level, the Government of India can intervene, on the request of the state government, by purchasing the product at intervention price, not exceeding the cost of production. The central and state governments share equally the losses incurred in the implementation of MIS. However, the loss is restricted up to 25 per cent of the total procurement value including Market Intervention Price (MIP) paid to the farmer plus permitted overhead expenses. Profit earned, if any, in the implementation of the MIS is retained by the procuring agencies. The MIS is implemented when there is at least 10 per cent increase in production or 10 per cent decrease in the ruling prices over the previous normal year.

**Procurement of Foodgrains** — With increasing MSP over the years and assured purchase through more robust procurement machinery, the percentage of procurement of foodgrains like wheat and paddy to the total quantity produced is also increasing (around 42% of total production of wheat in 2012-13 and 36% of rice in 2011-12). The procurement of wheat and rice is done in both centralized (through FCI) and decentralized (State agencies) modes.

The scheme of Decentralized Procurement (DCP) of foodgrains was introduced in 1997-98 for rice and wheat with a view to enhance the efficiency of procurement and the Public Distribution System and to encourage local procurement and reduce out go of food subsidy. At present, the states of West Bengal, Madhya Pradesh, Chhattisgarh, Uttarakhand, Andaman and Nicobar Islands, Odisha, Tamil Nadu, Karnataka and Kerala are procuring rice under the decentralized procurement scheme. The Government of India is actively pursuing this issue with the remaining state governments to adopt the DCP scheme.

The average annual combined procurement of wheat and rice has increased from 38.22 Mt during 2000-01 to 2006-07 to 56.99 Mt during 2007-08 to 2010-11. The comfortable position of central stocks of foodgrains and procurement increase helps deliver more towards the food security.

**Market Taxes on MSP** — Some of the state governments have viewed the growing size of procured

agricultural commodities as an opportunity for realizing more revenues. Thus, it is noted that the rate of VAT has been increased in Punjab and Andhra Pradesh, and purchase tax has been imposed in Madhya Pradesh. The high level of taxes and other statutory duties in states like Punjab, Haryana, Andhra Pradesh have driven away the private traders and bulk purchasers from the market, forcing the government agencies to step into procure more so as to protect farmers from market risks.

Some states announce bonus on procurement of wheat or rice over and above the MSP fixed by the central government that cause price distortions in the market at national level. Since MSP takes care of all the relevant economic factors like cost of production, marketability and cost of living, etc. and the government decides the MSP by taking into account various socio-political and economic considerations, there is no justification for any state announcing such a bonus over and above the national MSP.

**Reforming Price Policy** — So far, the price guarantee to farmers could not be implemented in all the states and markets for obvious reasons. Further, it has not been found feasible for the public agencies to procure the marketed surplus of each and every commodity everywhere in the country to prevent price falling below a floor level; nor would this be desirable. Thus, some innovative mechanisms have to be devised to protect producers against the risk of the price falling below the threshold level throughout the country. One way of doing this is to provide a price guarantee for all the major crops grown in each state either through MSPs or a Minimum Insured Price (MIP). The basis for the MIP could be the paid-out cost or average price of the past three or four seasons. The MSP should be restricted to basic staples like paddy and wheat, and it should be made effective through a procurement mechanism in all the districts that have a reasonable surplus of the crops. All other major crops should be covered by the MIP.

**Food Security Concerns** — To ensure the food security in the country, the agricultural price policy should shift focus on harnessing the agricultural potential of low productivity regions like Bihar, eastern Uttar Pradesh, Odisha, Assam, Madhya Pradesh, and Chhattisgarh. This can be done by extending procurement operations under MSPs therein including remunerative and assured prices. It is stated that the

Government of India is focusing on the eastern region of the country where there is good potential to harness ample natural resources for enhancing agricultural production under a programme namely, "Bringing Green Revolution to Eastern India (BGREI)." As a result, against an average production of 42.60 Mt of rice in the 7 Eastern States of Assam, Bihar, Chhattisgarh, Jharkhand, Odisha, Uttar Pradesh (eastern part) and West Bengal prior to launch of BGREI, the production increased to 46.97 Mt in 2010-11, 55.27 Mt in 2011-12 and 55.62 Mt in 2012-13.

The Targeted Public Distribution System is one of the core programmes of the Government of India which plays a vital role in ensuring food security of the people. Under the TPDS, subsidized foodgrains are provided to about 18 crore households under Below Poverty Line [including Antyodaya Anna Yojana (AAY)] and Above Poverty Line categories, through a network of more than 5 lakh fair price shops in the country. Besides, the government is also implementing schemes to specifically address the nutrition-related concerns, especially among women and children, through schemes like Integrated Child Development Services, Mid-Day Meals, etc. If the 1960s saw India as an importer of food aid, today, India is poised to commit over 60 Mt of home-grown and nutri-millets to fulfill the legal entitlements under the Food Security Act. The National Food Security ordinance has been passed in July, 2013 and government is keen to implement the same in different states.

### Food Security Bill 2013

The Food Security Bill, 2013, was passed by Lok Sabha in August 2013. It gives right to the people to receive adequate quantity of foodgrains at affordable prices. The Bill has special focus on the needs of poorest of the poor, women and children. In case of non-supply of foodgrains, people will get Food Security Allowance. The Bill provides a wide scale redressal mechanism and penalty for non-compliance by public servant or authority. Other features of the Bill are as follows:

1. Coverage of two-thirds population to get highly subsidized foodgrains
2. Poorest of the poor continues to get 35 kg foodgrains per household per month at subsidized price

3. Eligible households to be identified by the states
4. Special focus on nutritional support to women and children
5. Food security allowance in case of non-supply of foodgrains
6. States to get assistance for intra-state transportation and handling of foodgrains
7. Reforms for doorstep delivery of foodgrains
8. Women empowerment—Eldest women will be the head of a household
9. Grievance redressal mechanism at district level
10. Social audits and vigilance committees to ensure transparency and accountability, and
11. Penalty for non-compliance.

### Agricultural Subsidies and Investment

Agricultural subsidies are of two kinds: investment subsidies and input subsidies. Investment subsidies aim to improve the farm productivity on sustainable level by encouraging farmers to develop infrastructural facilities like installation of drip irrigation system, construction of rain water harvesting system, and acquiring farm implements. The input subsidies are provided primarily through subsidizing fertilizers, irrigation water, and power (electricity) used for irrigation and other agricultural purposes. From time to time, input subsidies have also been provided on seeds, as well as on herbicides and pesticides. In addition, commercial banks, cooperatives and regional rural banks are required to provide credit to agricultural producers at interest rates below the market rate.

One of the most contentious issues in India about input subsidies is how much of these subsidies actually find their ways to the farmers and how much are siphoned away along the path. Further, the debate is also about the real beneficiaries of the subsidies, small or large, poor or rich, and well-endowed or less-endowed areas. Other issues of concern are to what extent input and price support subsidies are essential for sustaining increased farm productivities or to what extent these subsidies damage the environment.

The fertilizer subsidy has increased significantly from 0.85 per cent of GDP in 1990-91 to about 1.50 per cent of GDP in 2011-12. Further, these subsidies are concentrated in a few states, namely, Uttar Pradesh, Andhra Pradesh, Maharashtra, Madhya Pradesh, and

Punjab. Rice is the most heavily subsidized crop, followed by wheat, sugarcane and cotton. These four crops account for about two-thirds of the total fertilizer subsidy. The small and marginal farmers have a larger share in fertilizer subsidies as against their share in the total area cultivated by them. Thus, any cut in fertilizer subsidies will hurt the small and marginal farmers most as they are not benefitted much from price support programme.

The biggest problem in agricultural subsidy is its targeting to the deserving beneficiaries. Only 30 per cent subsidies go to marginal, small, and medium farmers. There is an urgent need to increase the subsidies to investment categories and to make the distribution of subsidies transparent, targeted, and short-term in nature.

Until 1980, the public investment in rural/agricultural infrastructure continued to rise and contributed to the rapid growth in agricultural output. Since early-1980s, however, the increase in investment in rural infrastructure ceased and has steadily fallen over. More specifically, from 4 per cent of total GDP in the early-1980s the public investment in agriculture fell to about 1.5 per cent in 2002. The decline in public investments in agriculture is considered to have had an adverse impact on the development of rural infrastructure and on the long-term growth prospects for the farm sector. However, the policy measures initiated during the previous decade resulted in gradual rise in public investment and also attracted private investment too. In the year 2010-11, the total investment in agriculture and allied sector was estimated at 2.7 per cent of the total GDP (Table 1).

### Agricultural Research, Extension, and Education

The major reforms in agricultural research and education took place in the 1960s with the establishment of first Farm University at Pantnagar on the land grant system in the US. This resulted in the development of the State Agricultural University System in the country. This approach revolutionized the system of agricultural education, research, and extension in India, under the auspices of the Indian Council of Agricultural Research (ICAR). As a result, a strong agricultural research and development programme has emerged through the publicly funded National Agricultural Research System (NARS)

**Table 1. Public and private investment in agricultural and allied sectors as percentage of total GDP**

Year	Public investment	Private investment	Total investment
2004-05	0.5	1.8	2.3
2005-06	0.6	1.9	2.4
2006-07	0.6	1.8	2.4
2007-08	0.5	1.9	2.5
2008-09	0.5	2.4	2.9
2009-10	0.5	2.3	2.7
<b>2010-11</b>	<b>0.4</b>	<b>2.3</b>	<b>2.7</b>

Source: *National Accounts Statistics* (various issues), Central Statistical Organisation, GOI.

consisting of ICAR with its wide network of research institutions and SAUs. The strong emphasis on research has contributed to a number of technology driven revolutions including the green (foodgrains) revolution, white (milk) revolution, blue (fish) revolution and the golden (oilseeds) revolution.

The number of ICAR research units increased as well as the number of coordinated research programmes rose from a handful to about 100 and that of State Agricultural Universities rose to over 50. Moreover, ICAR's involvement and investment in extension through training by *Krishi Vigyan Kendras* (KVKs) and frontline demonstrations also increased substantially. The World Bank sponsored National Agricultural Technology Project (NATP) was established in 1998 and ambitious National Agricultural Innovative Project in 2008 to give boost to research activities. The NARS continues to be largely publicly funded sharing less than one per cent of agricultural GDP.

### Agricultural Trade Policies

Despite having a comparative advantage in production of many agri-food products, India's share in international trade remains as small as about 1.5 per cent. By commodity, India's share in total world exports of dairy products is 0.2 per cent, of cereals 1.4 per cent, of coffee, tea and spices 4.4 per cent; and of fisheries 2.6 per cent. Brazil gives India tough competition in case of sugar, coffee, tobacco and mango. USA competes for groundnut, rice, tobacco, grape, apples, wheat, poultry meat and fish exports while China has recently emerged as a major



**Table 2. Competitive strength of India's agricultural exports**

(in per cent)

Commodity	Major exporting countries/major competing suppliers for India	India's share in world exports
Groundnut	Argentina (32.7)	17.2
Tea	Sri Lanka (23.3), Kenya (18.6)	8.7
Rice	Thailand (35.2), Viet Nam (12.5), USA (11.3), Pakistan (11.1)	4.1
Sugar	Brazil (43.6), Thailand (10.6), France (5.2), Mexico (3.5), Germany (2.4)	2.3
Coffee	Brazil (22.3), Viet Nam (7.8), Germany (7.7), Colombia (7.4), Switzerland (4.8)	2.0
Tobacco	Germany (14.3), Netherlands (14.2), Brazil (7.5), Poland (4.6), USA (4.3)	1.7
Mangoes	Mexico (15.9), Netherlands (12.8), Brazil (10.9), Peru (8.9), Thailand (7.4)	1.1
Potatoes	Netherlands (22.3), France (15.5), Germany (8.8), Egypt (5.8), Canada (5.2)	1.0
Tomatoes	Mexico (25.2), Netherlands (18.4), Spain (14.1), Morocco (5.4), Turkey (5.2)	0.9
Grapes	Chile (19.4), USA (15.2), Italy (9.3), Netherlands (7.9), Turkey (7.9)	0.8
Wheat	USA (23.7), France (14.4), Australia (13.4), Canada (12.2)	0.1
Rapeseed	Canada (43.2), Australia (10.2), France (10.1), Ukraine (5.9), UK (3.9)	0
Cocoa	Côte d'Ivoire (29.2), Ghana (25.5), Nigeria (8.7), Netherlands (6.6), Indonesia (6)	0
Apples	Italy (14.2), USA (13.6), China (13.1), France (10.6), Chile (9.7)	0
Bananas	Ecuador (24.2), Belgium (14.3), Colombia (8.8), Costa Rica (7.8), Guatemala (5.1)	0
Cucumbers	Spain (28.3), Netherlands (20.5), Mexico (13.1), Canada (6.9), Jordan (6.3)	0
Poultry meat	Brazil (28.4), USA (17.7), Netherlands (8.9), France (5.8), Poland (4.7)	0
Fish	China (11.5), Norway (9.4), USA (5.3), Viet Nam (4.4), Canada (3.9)	2.6
Eggs	Netherlands (21.6), USA (9.1), Turkey (8.9), Germany (7.4), Poland (6.3)	0.2

Source: Author's compilation from ITC Trade Map, 2012

Note: Figures within the brackets are the percentage share in total world export of respective countries.

competitor for groundnut, apples and fish. Relative competitive strengths of Indian major agri-products is shown in Table 2.

The agricultural trade policy has been basically designed to pursue twin objectives of food self-sufficiency and promotion of exports of the so-called 'commercial crops'. These twin objectives witnessed four phases of implementation of the policy:

1. The country adopted the policy of protectionism after Independence under which agricultural trade was strictly regulated with high tariffs and quantitative restrictions and was channelled through public trading agencies. Regulation and control of agricultural trade was taken over by the canalizing agencies, State Trading Corporation (STC) and the cooperative federations. Public sector agencies played the important role of importing inputs, particularly fertilizers and chemicals.
2. In the phase starting from the mid-1960s, this policy was pursued more rigorously, and food self-sufficiency became the corner stone of the development strategies in agriculture. Two severe droughts in 1965-66 and 1966-67, and the difficulties in importing foodgrains from food surplus countries forced the policymakers to opt for such a policy. The policy continued till early-1990s.
3. The economic reforms of 1991-92 brought about major changes in India's import trade barriers. India's agricultural export policies liberalized in part since 1994 in terms of reduction in products subject to state trading, relaxation of export quotas, and removal of minimum export prices.
4. Finally, under the WTO regime, India had to revamp its policy of import substitution to an open economy with export-oriented growth in agriculture. Agricultural trade policies of India

were to be structured in line with the WTO commitments under three pillars of Agreement on Agriculture (AoA) (i) Market access (reduction in import tariffs), (ii) Domestic support (reduction in farm subsidies) and limits on public stock holdings of grains for food security, and (iii) Export subsidies.

The Government of India utilizes a variety of policy instruments in attempting to achieve the commitments made at the WTO front. These measures include:

- Border measures such as tariffs, quotas, and non-tariff measures to protect domestic producers from import competition, manage domestic price levels, and guarantee domestic supply.
- Domestic subsidies to inputs, outputs, transportation, storage, and consumption to reduce producer costs and consumer prices.

### Market Access

Even though export-oriented measures were taken in the post-WTO period, the issue of import protection continued to be important in the agricultural trade policies. This is justified due to the reason that the early years of the Uruguay Round Agreement did not cause much difficulty because international prices of bulk products were high. Subsequently, as international prices fell, India's imports started to steadily rise. Over the three year period of 1996-99, imports almost doubled to reach a peak of USD 3.7 billion in 1999. This caused concern as policymakers' expectation of big gains in export earnings in the post-WTO period through increased market access to developed country's markets did not materialize. This surge in imports threatened the domestic production of the staple food products. For example, the world price for cereals in 2001 was only 50 per cent of the price recorded in the mid-1990s. This occurred at a time when India had large and rising stocks of rice and wheat.

Understanding that the international prices were far more volatile than domestic prices, allowing foodgrains imports to any sizeable extent would have been tantamount to importing price instability. It was this concern of the policymakers which prompted India to find out measures of WTO compatible import protection measures. Therefore, while quantitative restrictions were eliminated on industrial products,

market access regime for agricultural products did not undergo a parallel process of liberalization. The rules of the WTO agreement fortunately permitted India to maintain quantitative restrictions on agricultural products under the balance-of-payments exception and during the negotiations they were allowed to offer ceiling bindings on the products on which such restrictions were maintained.

Consequently, India had bounded its agricultural tariffs at 100 per cent for commodities, 150 per cent for processed products and 300 per cent for some edible oils. Only on a few products including cereals and milk products, the pre-existing GATT bindings at zero tariffs were carried forward. With such high bound levels India was under no pressure to bring down its applied levels of tariffs. Even so, the applied rates of duty trended lower. It was not until April 1, 2001 that India decided to lift all quantitative restrictions, following the ruling in a WTO dispute that the balance-of-payments justification for these restrictions had ceased to exist.

The elimination of tariff restrictions in 2001 led India to increase tariffs in a number of agricultural products because of the fear of large-scale imports. In the year 2000, in view of the impending phase-out of quantitative import restrictions, India re-negotiated the bound tariffs and raised them from zero to 60 per cent for skimmed milk powder, from zero to 60 per cent to 80 per cent for maize, rice and certain other cereals, and from 45 per cent to 75 per cent for rapeseed, colza and mustard oils. In these re-negotiations, India made compensatory reductions in a number of agricultural products. A wide gap between applied and bound tariff rates still existed for most products. These gaps provided India with the discretionary ability to adjust tariffs to balance competing producer and consumer interests. In order to further protect the domestic economy with import surge, India offered tariff-rate-quotas (TRQ) at a lower in-quota tariff in respect of skimmed milk powder, maize and rape, colza and mustard oils (Table 3).

The wide gap between India's bound and applied tariffs on agricultural products has been a matter of concern for India's trading partners. The gap occurred principally because India has been reducing the applied tariffs unilaterally and autonomously. For instance, in the case of certain edible oils, the duty has been eliminated, although the bound level is as much as 300

**Table 3. Basic customs duty on selection products**

Product	Bound rates ad valorem (%)	Schedule rates of BCD	Remarks	Rates under exemption
Meat and poultry	35-150	30-100	All tariff lines are at 30 except chicks cut in pieces at 100	
Milk	40-100 TRQ of 10,000 tonne bound at 15 for SMP	30-60		TRQ of 50,000 tonne at zero for SMP
Peas, beans, lentils	100	30		Zero from 2007-08 onwards
Fresh fruits	30-150	25-50		
Rice	70-80	70-80		The BCD of 70 on milled rice was fully exempted during 2009-12 but raised in 2012-13
Wheat	100	50-100		Zero until 1.4.2013
Tea, coffee	100-150	100		
Spices	100-150	30-70		
Vegetable edible oils	45-300 TRQ of 150,000 for rapeseed, coiza and mustard oils at 45	0-7.5	Zero for crude oil and 7.5 for refined	
Sugar	100-150	100		10 for raw and white sugar (conditional on end-use and registration)
Wool	25-100	5-10		
Cotton	100-150	0-30	BCD on cotton, carded not carded and combed is zero	

Source: Goyal, Arun BIG's Easy Reference Customs Tariff 2013-14, 34th Budget edition

per cent ad valorem. High bound or statutory applied tariffs on some basic foodstuff products are needed in India in the context of high volatility in international commodity prices, which in the past has been exacerbated by the domestic support and export subsidy practices of industrialized countries. India cannot afford to allow a situation to develop in which a sudden drop in international prices threatens to rob millions of farmers of their livelihood. Once special agricultural safeguards have been agreed to in the WTO, during future multilateral negotiations there would be greater willingness on the part of India to bring down the bound duties on agricultural products across the board. In the meantime, in order to impart greater stability to the applied tariff regime, India could take a step autonomously towards lowering the statutory rates to

the exempted levels, particularly in cases in which the exempted levels have remained low for many years.

### Input Subsidies

The input subsidies are the far most expensive instrument of India's food and agricultural policy regime, requiring a steadily larger budget share. The government pays fertilizer producers directly in exchange for the companies selling fertilizer at lower than market prices. Presently (November 2012), farmers pay only 58 to 73 per cent of the delivered cost of potassic and phosphatic fertilizers, while the rest is borne by the government as subsidy. Irrigation and electricity, on the other hand, are supplied directly to farmers at prices that are below the production cost.

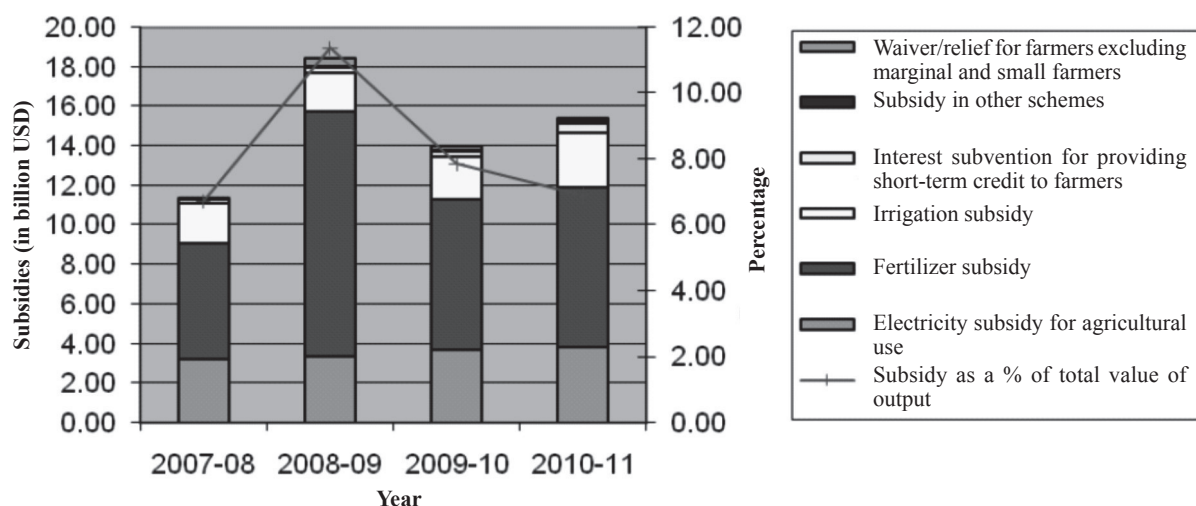


Figure 1. Trend in non product specific subsidies in India

The cost of agricultural input subsidies as a share of agricultural output almost doubled from 6.0 per cent in 2003-04 to 11.6 per cent in 2009-10, driven mostly by large increase in the subsidies to fertilizer and electricity (Figure 1).

According to GoI reports, input subsidies have resulted in overutilization of inputs. This overutilization has in turn led to soil degradation, soil nutrient imbalance, environmental pollution, and groundwater depletion, all of which have caused decreased effectiveness of inputs. The growing cost of input and food subsidies has also contributed to fiscal deficits in many states.

Food subsidies were instituted to minimize the impact of higher food prices on the consumers. In general, domestic support to agriculture needs to move from measures that cause more than minimal trade-distortion and effects on production to measures that do not have such effects, from input to investment subsidies and from consumption subsidies in kind to direct or conditional cash transfers. The funds so saved might be used for greater public investment in physical infrastructure and in research, extension and measures to safeguard animal health. Moreover, organic agriculture, which uses little pesticides and experiences relatively little nitrate runoff, should be encouraged with subsidies.

Replacement crops can also reduce the country's reliance on subsidies. For instance, instead of importing sugar, a nation can make sugar from sugar beets, maple sap, or sweetener from stevia plant. Paper and clothes

can be made of hemp instead of trees and cotton. Soybean plant cellulose can replace plastic (made from oil). Ethanol from farm waste or hempseed oil can replace gasoline. Rainforest medicinal plants grown locally can replace many imported medicines. Such measures can reduce farmers' dependency on subsidies.

The first task in fertilizers must be to extend the Nutrient Based Subsidy (NBS) scheme to urea. The NBS should be fixed in nominal terms, allowing inflation to erode it in real terms over time. An alternative could be to shift to the system of conditional cash transfers, whereby direct payments are made on the condition that farmers get soil analysis done and know the proportions of nutrients suitable for their holdings.

Agricultural credit subsidy may be phased out and the policy initiatives in future must aim at improving the adequacy of credit. To avoid the pitfalls of leakage and diversion of benefits, the TPDS must be replaced by a system of conditional cash transfers, in which the transfers are conditional on the beneficiary families sending children to primary schools and meeting basic health care requirements. To cut down the burden of Food Corporation of India of open-ended procurement, the private sector be engaged in foodgrains trade by not limiting exports, reducing or eliminating purchase tax, abolishing levies on rice-millers, and finally eliminating restrictions on stocks and inter-state movement. Alternatively, schemes such as deficiency payments may be introduced.



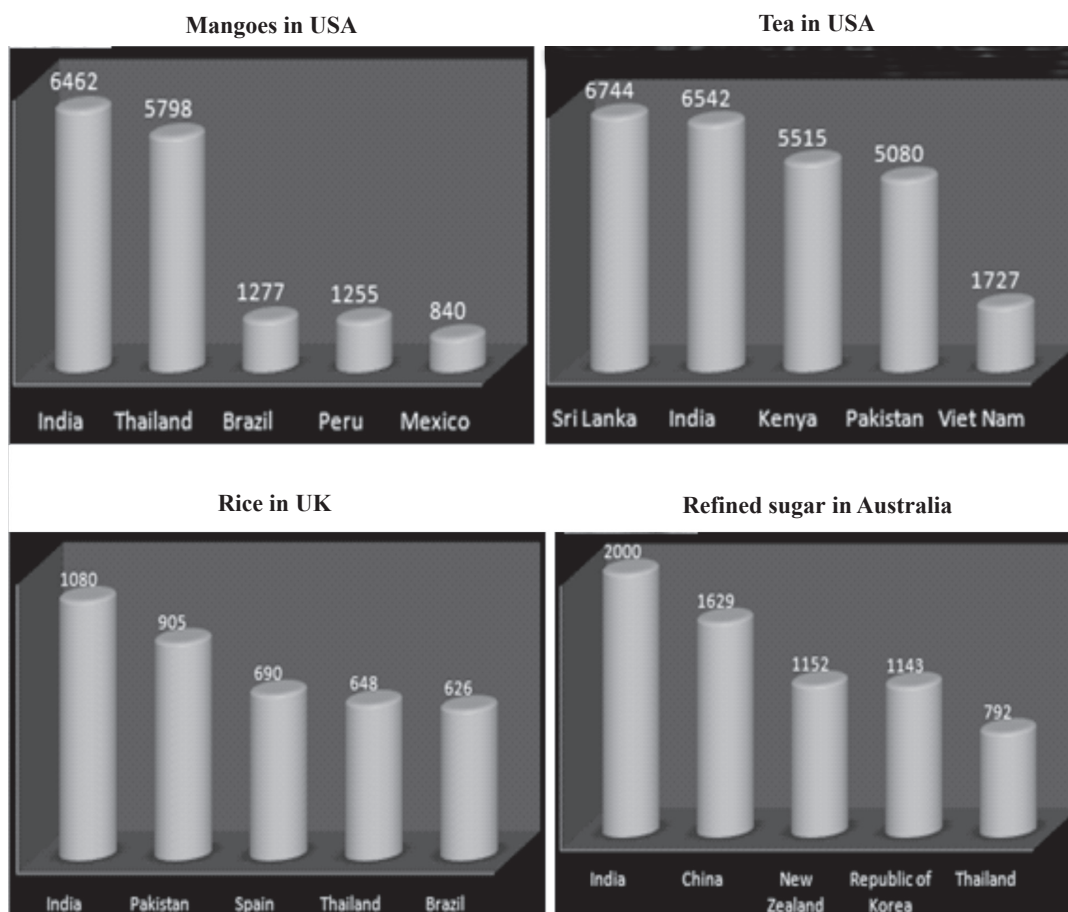
## Export Controls

India's policy on exports of key agricultural product in the past has reflected a greater concern for the consumer than for the farmer. Exports are curtailed or prohibited if there is an estimated shortfall in domestic production in order to pre-empt an upward pressure on prices. Recently, however, the government has tended to show greater sensitivity to the interests of the farmer and there has been a willingness to give them the opportunity to sell the produce in the international market in which they can earn a better price. The government has been influenced also by the criticism coming from outside the borders as export control measures have played a role in exacerbating price spikes on global markets at times of shortages. Since a number of countries have adopted measures for restricting exports of foodstuffs in particular, and effective disciplines on such restrictions are lacking in the WTO Agreement, there has been a growing demand

(in the G20) and elsewhere for a worldwide political consensus on prohibiting such restrictions. The time has, therefore, come for the government to go for the alternative of limiting exports, if needed, through export duty rather than prohibition or quantitative restriction.

Despite efforts at WTO forum, Indian exports have not been able to make their mark in most of the agri-importing countries. India's agricultural products' export markets do not coincide with the major importing countries for the respective products in the world market (Annexure I). This implies that Indian export products do not get acceptance in these markets. The possible reasons for the mismatch and absence of India in major importing countries are as follows:

One of the reasons of losing our export share in major importing nations for the commodities of export interest to India is the high final landing price in these markets as compared to other competing suppliers. Figure 2 supports the situation, taking the instances of



**Figure 2. Price comparisons for select export items in major importing countries**

*Source: Author's calculations*

prices of mangoes and tea in case of USA, rice in case of UK and sugar in case of Australia.

The poor price competitiveness in the form of high C.I.F is further aggravated by the presence of high tariff/import duty rates levied in the importing developed country markets. The European Union, Japan, and the United States use, to varying degrees, such protection tools: low but highly dispersed ad valorem tariffs, specific duties, seasonal tariffs, tariff escalation, and preferential access along with tariff-rate quotas.

Marine products, which are the highest export earner of India, attract zero per cent duty in USA and 5 per cent in Japan (refers to shrimp and prawns). In the European countries, duty on shrimp is around 7 per cent to 8.5 per cent and for different marine products duty rate varies from 0 to 18 per cent. China, which is the third largest importer of fish from India, applies 21 per cent MFN duty though general duty in China is 70 per cent. Oil meal and cakes are the second biggest agricultural exports of India. Their import to Indonesia is free. Korea and Japan levy 3 per cent and 4.2 per cent duty on oil cake. The duty rate in Singapore is 12 per cent, while Bangladesh applies highest duty at 15 per cent, MFN. India's rice export attracts zero per cent duty in South Africa, Bangladesh and Malaysia and 50 per cent in Philippines. Indonesia imposes specific duty of Indonesian Rupiah 430 per kg.

Wheat from India is imported freely into Indonesia and Malaysia, while other trading partners impose a small duty, e.g. Korea Republic imposes a duty of 1.9 per cent, Bangladesh 5 per cent and Philippine impose a 7 per cent duty on feed grade wheat and 3 per cent on other wheat. There is no duty on India's maize exports to Bangladesh and Indonesia, while Sri Lanka and the Philippines impose tariffs of 35 per cent and 40 per cent, respectively. Oilseeds like rapeseed/ mustard and groundnut are imported without duty into the EU, Oman and Japan; Singapore and Nepal levy 11.7 per cent and 10 per cent duty, respectively.

The duty imposed on sugar varies from zero per cent in Malaysia and the EU for limited shipments under the SP agreement to 20 per cent in Indonesia and Pakistan and 25 per cent in Bangladesh. There is no duty on India's cotton exports to major destinations, except China, which imposes a duty of 54 per cent.

Bangladesh, India's major trading partner, imposes a tariff of 37.5 per cent on milk imports. On other livestock products, Oman imposes a 5 per cent duty on eggs and no duty on sheep meat. Malaysia also does not impose any duty on sheep meat. The tariff on coffee imports to Russia was 5 per cent and zero per cent in the US. The EU imposed zero per cent duty on caffeinated coffee that is not roasted and 8.3 per cent duty on de-caffeinated coffee. Duty rate on roasted coffee is 7.5 per cent for non-decaffeinated and 9 per cent on caffeinated. Like coffee, Russia imposes a 5 per cent duty on tea imports. Duty on tea imports into the EU varies from zero to 3.2 per cent, and from zero to about 6.3 per cent in the US. The rate of duty on tobacco is 5 per cent in Russia. The EU and the US impose specific duties on tobacco. In the EU, flue cured Virginia tobacco from India is charged at EUR 18.4 to EUR 22 per 100 kg, while the rate of duty in the US ranges from USD 0.77 to USD 0.85 per kg.

The prevalence of non-tariff barriers, as highlighted in Annexure II and high cost of compliance worsen the price competitiveness of Indian agro-exports. The compliance of sanitary and phyto-sanitary requirements of most trading partners calls for substantial investment in developing quality standards and infrastructural facilities. These non-tariff barriers are important in view of WTO commitments. This becomes important due to the fact that about 14 per cent of Indian agricultural exports are subject to only NTMs and 79 per cent are subject to both Tariffs and NTMs.

It is generally expressed that farm exports from India are not given fair treatment in some developed countries. It is also believed that sanitary and phyto-sanitary (SPS) measures are applied in the guise of protecting plant, human and animal life to keep a check on exports. These measures are believed to be applied in an indiscriminate manner, lack transparency and are costly in compliance. These apprehensions are largely based on the survey of exporters whose exports were detained or rejected in the importing countries and provide anecdotal evidence of NTBs on selected products. These relate to export of spices, fishery products, rice, tea, and egg powder. Moreover, there are also general bans on the exports of some products.

Export of meat and milk to the EU and that of mango to US and Japan is subject to strong conditions. The EU bans imports of meat from India due to rinderpest disease in Indian livestock (cattle, buffaloes,

sheep, goat, etc). While the country has been free of rinderpest since 1995, the ban has not yet been lifted. Exports of milk to the EU are not permitted due to quality control measures. The research literature supports the existence of non-tariff barriers in the case of exports of spices, peanut, fish products, rice, tea, and egg powder. India's exports of chilli and pepper have faced NTBs in Spain, Italy and Germany. India's peanut exports also face severe standard requirements in the EU markets. Some tests are required only for products from India and Egypt, whereas exports from other countries are exempt from these tests. India has made good progress to improve aflatoxin standards of peanut and to meet the various regulations and requirements of the EU. There are several reports of the rejection of basmati and non-basmati rice shipments to the US on the grounds of low hygiene standards. The US regulations require the manual sorting of rice and the treatment for weevils. The issue of pesticides residues is frequently raised by the EU and Japan. Pesticide residues are also a concern in the case of tea exports to the EU.

In the light of strict import controls in both developed as well as developing countries in the form of tariff as well as non-tariff measures, it is important for India to develop a focused and suitable trade policy which ensures a strong linkage between the domestic and international markets. The policy should take holistic view of food security, poverty alleviation, sustainable development, WTO rules and India's commitments therein. Some of the steps taken under Foreign Trade Policy in this context include:

- A new scheme called Vishesh Krishi Upaj Yojana, has been introduced to boost the exports of fruits, vegetables, flowers, minor forest produce and their value-added products.
- Duty-free import of capital goods under the Export Promotion Capital Goods (EPCG) scheme.
- Capital goods imported under EPCG for agriculture permitted to be installed anywhere in the agri-export zones.
- Assistance to States for Infrastructure Development of Exports (ASIDE); funds to be also utilized for the development of agri-export zones.
- Import of seeds, bulbs, tubers and planting material has been liberalized.
- Export of plant portions, derivatives and extracts has been liberalized with a view to promote exports of medicinal plants and herbal products.

Export policy for food commodities and non-food agricultural commodities is expected to vary. The well established policy of encouraging exports of commercial crops has to continue. Further, our trade policy needs to be inclined towards the commodities in which we have a comparative advantage. A study by Reddy and Badri Narayanan (1992) has revealed that we do not have any comparative advantage as a wheat exporter. Therefore, our policy should not encourage the export of wheat. We have distinct advantages in rice, and can emerge as a moderate exporter of rice. We need to continue the export of basmati rice to West Asia, Europe and the US, but should recognize the limit beyond which we will not be able to export basmati and other fragrant rice varieties. The potential market for rice is in South East Asian countries, Indonesia, Malaysia and Philippines and in East Asian countries, Japan and South Korea.

To summarize, the following could be used as guidelines:

- Commodities such as cereals deserve an export thrust only after the domestic demand is satisfied.
- Commodities with large fluctuations in the supply or in prices (cotton, sugar) should be traded with caution, unless compensatory mechanisms are put in place, such as forward trading to compensate for the risk and uncertainty.
- Commodities where we have dynamic comparative advantage, such as fruits and vegetables (because of diverse climate and soil conditions), and dairy products (because of large cattle herd and low cost of production) should receive special attention.
- The commodities having growing world market (rice for the East Asian markets, millets for cattle feed, and maize and barley as industrial raw materials) should be given high priority in our export strategy.

### Concluding Remarks and Implications

Indian agriculture is becoming export-oriented after having attained nearly self-sufficiency in basic food production. In addition to the traditional export

commodities, India is now also an exporter of rice and wheat, as well as livestock products. The direction of trade is also changing. Although, trade with the neighbouring countries in the region continues to dominate, trade with OECD country markets is becoming important, especially for exports of high-value food products. The emerging agricultural policy directions include liberalization of the sector by cutting tariffs, removing QRs, globalization of agriculture by providing outward look to the mindset; and focusing on commercial dimensions of agriculture as never before. As a result, there has been an increase in the private investment in agriculture (besides public investment), farmers are becoming market-oriented, level of value addition has gone up, agricultural exports are growing, and farm income is rising.

None the less, a number of critical issues remain to be solved such as significant dependence of agriculture on vagaries of nature, monsoon being inconsistent and unpredictable; small and fragmented landholdings, land reforms not being pursued; lack of infrastructure for marketing of perishable commodities efficiently and effectively; shortage of labour for farm operations in general and of skilled labour in particular; high cost of critical farm inputs, e.g., hybrid seeds, agro-chemicals, etc; lack of market assurance; low and stagnating returns per unit area; and inadequate government support.

The major challenges before the policymakers are sustainability of farm productivity; protection of environment; degradation of natural resources like land; depleting sources of water; and value addition and agribusiness. Moreover, the drive for more downstream processing of agricultural products and greater competitiveness along the agro-food chain are also key priorities. Addressing of the problems being confronted by farmers as mentioned above and macro level challenges before policymakers call for inclusion of the followings in the policy framework:

- **Legalization of Leasing of Agricultural Land** — The leasing of land for agricultural use is not permitted in many states, except Punjab, West Bengal, Maharashtra, and Tamil Nadu. Though land lease is in practice. Legalization of land-leasing will attract entrepreneurs with passion for agriculture to undertake commercial farming. Such entrepreneurs will adopt scientific technology to

attain maximum yield and also to maintain the soil health in a sustainable manner. Small landholders will prefer to lease out their fields without the risk of losing title and will seek engagement elsewhere. This will lead to consolidation of landholdings and size of holdings will become sufficiently large for adoption of technology.

- **Liberalization of APMC Act** — Flexibility in APMC Act will enable farmers to benefit from demand–supply phenomenon. Currently, this benefit is reaped in by middlemen, as buyers are not allowed to trade directly with farmers. Investment in food processing industry is also not happening due to this reason. Under APMC Act, operating cost is high which is keeping the investors away.
- **Investment in Infrastructure in Agricultural Sector** — The infrastructures like roads, canals, micro irrigation, tube-wells, warehouses, food processing facility, etc. are important for the growth in agriculture. Investment in such infrastructure is to be made by the government as well as attract private investment to make agriculture processing viable. Higher the investment, better would be the growth and income of farmers.
- **Skill Development** — Skill deficit in agriculture has been a major concern. It hampers the adoption of technology and mechanization of agriculture. Looking at the importance of agricultural productivity to ensure food security, mechanism to institutionalize skill development is critical to growth. Skilled drivers, operators and technicians in agriculture will arrest the growing inefficiencies and encourage farmers to adopt modern technology for higher yields.
- **Accurate Forecast of Monsoon** — More than 50 per cent of foodgrains production is dependent on monsoon. Accuracy in forecast of monsoon is important for sustaining and enhancing productivity. Scientific technology is available for proper forecasting for adoption.
- **Producer Company at Village Level** — Landholdings are fragmented making agriculture less remunerative. Concept of producer company is well thought out proposition for small farmers to aggregate not only resources for efficient



utilization but also decision-making process like what crop to grow, which varieties to use, where to buy seed from, when to sow, etc. Producer company concept facilitates this in most democratic manner for the benefit of all.

- **Mechanization of Small Farms** — Shortage of labour is the biggest pain farmers are experiencing post-MNREGA. Mechanization is the answer. This is not possible unless sufficient skills are developed at the village level. Besides, government needs to provide support, especially at the initial stages, for promotion and adoption of mechanized operations.
- **Regulatory Authority in Agriculture** — Land being a precious resource of the country with high population, cannot be allowed to be under-used. Regulatory authority in agriculture must develop processes and systems to gauge and monitor optimum utilization of land for foodgrain production.
- **Government Support Commensurates with Farmers in Agriculturally-advanced Countries** — In the global economy, farmers from not so rich countries suffer due to uneven support of the government. In a free market, support needs to be equitable to provide level playing fields to all and remove any natural or manmade advantages in the larger interests of the farmers with lower income.
- **Food Processing** — Food habits in urban India are fast changing, creating the need to promote food processing. A proper mechanism is to be tabled in a phased manner to encourage changes in food habits in the urban areas. Cold chains, warehouses, processing facilities, etc. will automatically flourish as a result of growing demand for processed foods in the urban areas. This will also establish strong linkages between rural and urban economy for mutual benefits.
- **Leverage Potential of Hills** — Hills are boon for any nation. They provide diversity in climate, flora-fauna and opportunity to grow what cannot be grown in the plains. The potential of hills has to be assessed properly and investments on infrastructure have to be made to exploit the opportunity for the benefit of all.

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**Annexure I****India's export markets do not match with the major importers**

Commodities	India's top export partners#	Major importing countries	Competing suppliers in importing markets*	India's share in import markets (%)
Grape	UAE (54.81),	USA	Chile (60.2), Mexico (32.7), Peru (3.7)	0
	Bangladesh (37.50)	Netherlands	South Africa (36.6) , Chile (18.1) , Brazil (6.9)	4.9
		UK	Turkey (15.7), South Africa (15.5), Chile (14.3)	2.9
Mangoes	Saudi Arabia (33.88),	USA	Mexico (56), Peru (11), Brazil (8.8)	0.5
	Netherlands (18.60),	Netherlands	Brazil (47.6), Peru (25.1), Mexico (3.3)	0
	UK (10.33)	China	Thailand (81), Indonesia (15.2),	0
Oranges	Bangladesh (93.32),	Russian Fed	Egypt (29.5), South Africa (26.1) Turkey (15.7)	0
	Nepal ( 3.11)	France	Spain (73), South Africa (11) , Tunisia (3.8)	0
		Netherlands	South Africa (40.5), Spain (20)	0
Onions	Bangladesh (26.88),	USA	Mexico (65.2), Canada (13.5), Peru (11.4)	0
	Malaysia (23.20), UAE (17.99), Sri Lanka (10.09)	UK	Netherlands (40), Spain (18.3) , Poland (8.5)	0.3
Tomatoes	Pakistan (49.67),	USA	Mexico (83), Canada (15.9), Guatemala (0.4)	0
	UAE (32.80), Bangladesh (11.95)	Germany	Netherlands (27.8), Egypt (15.2) , France (7.9)	0

*Source:* Author's compilation from ITC Trade Map, 2012

*Note:* Figures within the brackets are the percentage share in total world export of respective countries

**Annexure II****Non-tariff barriers on India's agricultural exports to the EU, USA and Japan**

Product	Non-tariff barriers	Country
Spices (chillies)	No uniform standard and common regulation in EU. No fixed permitted level of aflatoxin or pesticide residue. Adversely affecting spices exports from India.	Spain, Italy and Germany
Meat	India free from rinderpest since 1995 still export to EU not permitted	EU
Milk	Exports to EU not permitted as Indian cows are not mechanically milked	EU
Fishery product	EU put a ban in 1997. Allows only the form at its approved plants in India. EU standards for fishery products are very stringent, cumbersome, and costly	EU
Peanut	Aflatoxin standards of EU are more stringent than international standards on India's export. Prescribed testing method known as Dutch code and other required methods are very rigorous and very costly. Permissible limits are different in different countries and keep changing. Some tests are required only for India and Egypt and not for exports from USA and Argentina.	EU
Mango and mango pulp	Requirement of costly vapour heat treatment for export of fresh mango, labelling, pesticide residues.	US, Japan, and Jordan
Rice	Pesticide residues consignment of basmati and rice rejected in US on ground of being filthy and containing foreign matter. US regulation require manual sorting of rice and fumigants and weevils have to be blown out. Delay in clearing consignments, repeated tests.	EU, Japan, USA
Tea	Pesticide residue. Complaint of high residue level of Ethicon in Darjeeling tea	EU and Germany
Fish	Anti-dumping duty imposed by US on Indian shrimp in 2005	USA
Tobacco	Internationally permissible level of DDT residue is 6 ppm while Japan and USA had set their DDT levels at much lower level; Japan insists on 0.4 ppm of DDT level Indian tobacco has DDT level of 1-2 ppm which is well below the international standard but Japan does not allow tobacco import from India.	Japan, USA
Egg powder	Consignment first time subjected to additional criteria of MRPL (minimum required performance limit) in May 2003 despite valid equivalence issued by EU. No action on applications for equivalence for 7-8 years.	EU

*Sources:* Adapted from Jha (2003 ); Mehta and George (2003); RIS (2003)



