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POLICY DYNAMICS AND COMPETITIVE ADVANTAGE: QUIET REVOLUTION IN INDIAN AGRICULTURE

Abstract

Agriculture holds the key to India's growth and development from three angles. It absorbs around 65 percent of the population for employment and livelihood, remains the source of domestic food security and determines the potential growth in GDP. The sector however has been in stagnation since early 1990s. The reasons for this stagnation have been associated with areas like crop mixes, scalability, market linkages and the value chain orientation. Accordingly the government has initiated a new farm policy in 2000. Irrespective of a gradualism followed in the first phase of farm reforms, the macro policies responded for its positive dynamism in the high value farm sectors. This has made a structural transformation in the production systems of major crops in favor of a market orientation. For instance, India's agricultural exports have shown positive directions since the new policy interventions. Agricultural exports constitute around 12 percent of the total merchandise exports of India, which is mainly from a basket of high value crops viz, plantations, fruits, vegetables, spices and marine products. Yet the sector is not in its full potential, given issue related to lack of realistic risk mitigation systems and the poor linkages of farms and markets. India contemplates more realistic and applied economic policies in the

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second phase of its farm sector reforms (at state level) to create globally competent and sustainable value chains.

Key words:

India, Competitive Advantage, Value chains, Agriculture.

JEL: Q01, Q13, Q17, Q18.

I. Introduction

Economic performance of India in the post-reform period has been characterized by positive features across sectors. The average growth rate in the ten year period from 1992-93 to 2001-02 was around 6.0 percent. Though this new growth phase upgraded India's position in to the group of fast growing developing countries in the 1990s, the argument sustained that this growth was not significantly better than the annual average of 5.7 percent in the 1980s. The value addition highlighted in this phase of economic growth however had been that it inculcated the characteristics of sustainability compared to the earlier phases. The policy directions gained in the economic sectors have been attributed to this sustainability perception. For instance the economic growth experienced by India in the 1990s was accompanied by a remarkable stability in the external front, despite the East Asian (financial) crisis. At the social front, the poverty level also declined significantly in the post-reform period, at a faster rate than in the 1980s (Ahluwalia, 2000). From a financial perspective, India's growth during this phase had been largely accelerated by the availability of domestic savings which have increased over the decades. Further, the higher efficiency of resource use has been observed for the incremental capital output ratio of around 4 which is comparable to best in the world (R. Mohan, 2008)

The Green Revolution initiated in the agriculture sector of India in the regulated regime was mainly an import substitution strategy. It enhanced the production of essential staples like wheat and rice through a strategic support system, irrespective of the competitiveness of these crops in regions and locations. The sector continued to cater to two segments – domestic food security and employment as well as livelihood to majority of the population. The growth momentum in the agriculture sector however, could not be maintained in the post green revolution phase and accordingly the common criticism of India's economic growth arising out of the reforms was that it has been excessively fo-

cused on industrial and trade policy, with less focus on farm sub-sectors for sustainable and inclusive growth- based on comparative advantage. The stagnation or deceleration witnessed in the farm sector since mid 90s has been one of the basis for this criticism and it was substantiated with the low growth levels in the agriculture sector while high growth experienced in the manufacturing and service sectors since the large scale reform initiatives. The criticisms however, were countered by the notion that trade policy reforms would help agriculture (indirectly) for higher growth. This in fact was the beginning of a market driven growth perception for the sector through a demand side approach against the prevailing supply side management in the farm fronts. It has shown signs in the positive directions too. For instance the reduction of protection to industry, and the accompanying depreciation in the exchange rate tilted the relative prices in favor of agriculture and accelerated the phase of agricultural exports. The index of agricultural prices relative to manufactured products has increased by almost 30 percent in the 1990s (Ministry of Finance, 2003). The share of India's agricultural exports increased from 1.1 percent in 1990 to 1.9 percent in 1999.

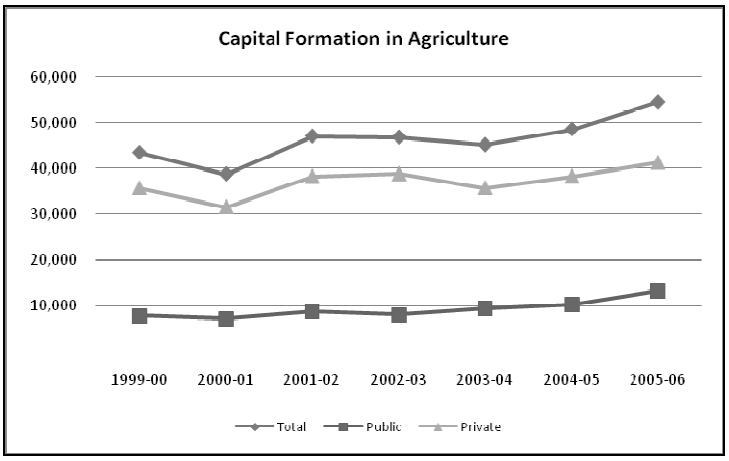
The paradigm shift in the farm sector however, could not catch up with the desired speed in the short run. It is worthwhile to mention in this context that public investment in agriculture has declined from 4.08 percent of the agriculture GDP in 1980 to 1.54 percent in 2002 to maintain a flat curve (chart 1). During the same period the food subsidy as share of the total government expenditure has increased from 2.33 percent to 3.64 percent. What it highlights is that India continued to pursue more of a supply side strategy in its vital farm sector against the sustainable demand driven growth module. This inertia adversely contributed to the efficiency of growth engines. The low investments implicated the crucial input sectors such as irrigation and drainage, soil conservation and water management systems, rural roads and transportation. Though the decline in crucial farm sector investments started much before the reform initiatives, it become sharper during the 1980s and 1990s (Gulati and Bathla 2001). The gradualist reform approach in the sector also could not accelerate the phase of private investments from the market players. For instance, the growth in private investment in agriculture after the reforms was not enough to offset the decline in public investments. There is yet a question as why the large private sector capital formation could not come up in the agri value chains. But generally it is agreed that the agri-eco system is not developed enough for the private capital to take its way forward. In other words the viability gaps existing in much of the farm fronts pull the private capital from investing. It is believed in this context that enhanced initial public investment will be imperative towards establishing a competitive agri-ecosystem for the private sector to gain confidence and thereby bring in higher investments.

The declining public investment in rural infrastructure has been attributed to the deteriorating fiscal position of the state governments[1] and the tendency for politically popular but economically inefficient and even iniquitous subsidies against productive investments in crucial inputs and infrastructures (Ahluwalia, 2000). The inefficiency of subsidies emanates mainly out of the incapability of

making the benefits of growth reaching the target segments. For example, the direct benefit of subsidizing fertilizer and under pricing water and electricity goes mainly to fertilizer producers and high income farmers. This derives negative effects on the environment and production systems of the target farmers. On the other hand it leads to indiscriminate exploitation of water resources and also extends damage to soil. Inference therefore is that a phased elimination of fertilizer subsidies and the imposition of economically rational user charges for irrigation and electricity could raise resources to finance investment in rural infrastructure sectors, benefiting growth and equity. But competitive populism often makes it politically unviable to restructure subsidies.

Chart1

State of Capital formation in Indian Agriculture



Some of the crucial defensive policies initiated for promoting food grain self sufficiency in earlier years – when the country was short of food materials – continue to hinder agricultural diversification yet. For example, Government price support levels for food grains (minimum support price[2]) such as wheat are set on the basis of the recommendations of the Commission on Agricultural Costs and Prices (CACP)[3]. This technical body calibrates price supports levels without getting into the rational of it from economic and market angles. In recent years, support prices have been fixed at higher levels to encourage production levels. However, the fact remains that support price system is not getting aligned to the market prices whereby the farmers are encouraged to select the remunerative crop mix form a diversified production base.

Crop diversification in India is constrained by obsolete farm laws. For example the Essential Commodities Act[4] empowers state governments to impose restrictions on crops and movement of agricultural commodities across states and sometimes even district boundaries and to limit the maximum stock wholesalers and retailers can carry for certain commodities. This was designed to prevent exploitation – mainly of traders from diverting local supplies to other areas of scarcity or from hoarding supplies to raise prices. The practical consequence however, is that farmers and consumers are denied the benefit of an integrated (single) national market. It also prevents the development of modern trading establishments, which have a key role to play in the next stage of agricultural diversification. The government has recognized the need for change and accordingly removed certain products -- wheat, rice, coarse grains, edible oil, oilseeds and sugar -- from the purview of the act. However, this is not likely to make betterment, since state governments decide on their priority areas before any policy intervention. A repeal of the existing act and a centralized legislation is prescribed therefore to make it illegal for government authorities at any level to restrict movement or stocking of agricultural products (Planning Commission, 2001). This involves the constitutional makeovers to bring the subject from the state list to the concurrent list. Can India initiate for a constitutional amendment to save its agriculture is a question currently in debate.

Accordingly the Task Force on economic sectors[5] has made comprehensive proposals for review of several other outdated agricultural legislations (Planning Commission, 2001). For example, laws designed to protect land tenancy-discouraging marginal farmers from leasing out nonviable holdings to larger farmers for fear of being unable to reclaim the land from the tenant etc. Constraints like the Agricultural Produce Marketing Committee (APMC) [6] Act in various states compel traders to buy agricultural produce only in regulated markets, making it difficult for commercial traders to enter into contractual relationships with farmers. Development of a modern food processing sector, which is essential to the next stage of agricultural development, is also hampered by outdated and often contradictory laws and regulations regarding quality standards. New set of legislations therefore are expected to be evolved in the farm sector for making it vibrant for enhanced and integrated growth

II. Renewed Farm Thrust – New policy interventions

Recognizing the imperative of a new thrust in the farm front, government of India initiated for new set of farm policies to augment the sector for its enhanced contribution. The renewed thrust of the new policy framework was to break the inherited inward looking approach in a planned and regulated economy framework since independence, which aimed at averting the occurrence of famines and feed the domestic population. The thrust therefore aimed at de-

linking India's agriculture policy from a food supply perspective to a market perspective for growth, equity and inclusiveness. It included the alignment of production and distribution systems to benefit the farmers as well as consumers through a mediation of markets. The first ever National Agriculture Policy was announced in India in July, 2000. The new Policy framework hence sought to actualize the vast untapped growth potential of Indian agriculture – strengthening rural infrastructure to support faster agricultural development, promote value addition, accelerate the growth of agri businesses, create employment in rural areas, secure a fair standard of living for farmers and agricultural workers and their families, discourage migration to urban areas and face the challenges of inequality arising out of economic liberalization and globalization. The new policy envisaged to attain a growth rate in excess of 4 per cent per annum over the next two decades, by way of efficient use of resources and professional management of farms. It therefore included for conserving soil, water and biodiversity. The new policy recognized that growth needs to be demand driven and it should cater to domestic markets and maximizes benefits from exports of agricultural products in the face of the opportunities emerging from economic liberalization and globalization. Ultimately, it looks forward to growth, which is sustainable – technologically, economically and environmentally.

The new policy therefore specifically emphasized to promote technically sound, economically viable, environmentally non-degrading, and socially acceptable use of natural resources (land, water and genetic endowment) to promote sustainable growth of agriculture. The policy provided for the promotion of bio-technologies to evolve plants which consume less water, are drought resistant, pest resistant, more nutritious, high yielding and environmentally safe. Conservation of bio-resources through their preservation in Gene Banks and its conservation in their natural habitats through bio-diversity parks are prioritized. Priority is also attached to prevention of depleting bio-diversity. Balanced and conjunctive use of bio-mass, organic and inorganic fertilizers and controlled use of agro chemicals through integrated nutrients and pest management (INM & IPM) are given high emphasis.

A region specific strategy has been evolved, taking into account the agronomic, climatic and environmental conditions to realize the full growth potential of every region. Attention was attached to development of new crop varieties, particularly food crops, with higher nutritional value. Major thrust in this context had been the development of rain-fed and irrigated horticulture, floriculture, roots and tubers, plantation crops, aromatic and medicinal plants, bee-keeping and sericulture respectively for augmenting food supply, export promotion and generation of employment in the rural areas.

Development of animal husbandry, poultry, dairying and aqua-culture were identified as high potential areas in the efforts for diversifying agriculture. Increasing the availability of animal protein in the food basket and generating exportable surpluses has been identified as the tasks. An integrated approach to marine and inland fisheries was designed to promote sustainable aquaculture practices. The regionalization of agricultural research based on identified agro-

climatic zones is expected to boost the farm activities. Application of frontier sciences like bio-technology, remote sensing technologies, pre and post-harvest technologies, energy saving technologies, technology for environmental protection through national research system as well as proprietary research were identified as means to establish technology diffusion in the farm front. The research and extension linkages were identified to be strengthened through collaborations to improve quality and effectiveness of research and extension system.

Given the debate over the role of state and industry in the rejuvenation of the sector sustainable growth and inclusiveness, the new policy recognized the importance of government role in strategic areas where viability gaps exists for the private sector to intervene and make an impact in the short run. Accordingly supply of quality inputs such as seeds, fertilizers, plant protection chemicals, biopesticides, agricultural machinery and credit at reasonable rates to farmers were kept under the endeavor of the Government. Further the role of government was envisaged greatly to create a favorable economic environment for increasing capital formation and farmer's own investments by removing distortions in the incentive regime for agriculture, improving the terms of trade with manufacturing sectors and bringing about external and domestic market reforms. Rural electrification has been brought forward for higher priority as a prime mover for agriculture growth. The policy therefore proposed for the provision of quality power supply to farmers and ensures its reliability and affordability.

Bridging the gap between irrigation potential created and its utilization was a major theme of the new policy. Completion of all on-going projects, restoration and modernization of irrigation infrastructure including drainage, evolving and implementing an integrated plan of augmentation and management of national water resources therefore received special attention for augmenting the availability and use of irrigation water. Similarly, emphasis is laid on development of marketing infrastructure and techniques of preservation, storage and transportation with a view to reducing post-harvest losses and ensuring better returns. The setting up of agro-processing units in the producing areas to reduce wastage, especially of horticultural produce, increased value addition and creation of off-farm employment in rural areas was encouraged. Institutional reforms were envisaged to channelise energies for achieving greater productivity and production. The Government therefore has committed to provide active support for the promotion of cooperative form of enterprises and ensure greater autonomy and operational freedom as a means to improve their efficiency.

Debate over the capability of state infrastructure (like irrigation) to facilitate the crop diversification and high value agriculture remained for an answer. One of the major observations in this regards has been that the state sponsored infrastructure systems promotes traditional crop mixes. For instance, the water release by the government sponsored canal irrigation system will be during the grain crop seasons so that the farmers cultivating high value crops cannot depend on the same system for irrigating their crops. Hence, private irrigation systems are the option for the promotion of crop diversification and value added ag-

riculture systems. Infrastructure creation at the private domain therefore, seen as the means to gain desired growth and its sustainability.

Financing the farms continued to remain grey. The credit markets – both formal and informal- are incompatible to the farmers' requirements and therefore it brings in distress in the rural production systems. According to recent revelation around 46 farmers end their lives every day[7]. The new agriculture policy envisaged to provide a package insurance policy for the farmers, right from sowing of the crops to post-harvest operations, including market fluctuations in the prices of agricultural produce. The price structure and trade mechanism is proposed to be continuously reviewed to ensure a favorable economic environment for the agriculture sector and to bring about an equitable balance between the rural and the urban incomes. Initiatives are proposed to establish quality consciousness amongst farmers and agro processors. Grading and standardization of agricultural products are promoted for export enhancement. Application of science and technology in agriculture is highlighted through a regular system of interface between science and technology institutions. Towards ensuring the implementation of the proposed new policy framework, database for the agriculture sector was strengthened to ensure greater reliability of estimates and forecasting which could help in the process of planning and policy making.

Having done the policy for its impacts in the rural economy, its translation on the ground remained a task, given the multiple implementation agencies, the unchanged constitutional obligations and the interest groups (governments, farmer lobbies etc.) remained in the sector. Even after a decade of the new policy initiative much remains to be done for reaping the fruits of it. For instance, Macro Management Scheme has been launched after integrating 27 ongoing Centrally Sponsored Schemes to enable a shift from programmatic approach to a macro management mode of assistance to the states in the form of crop/area specific work plans, region based strategies, to provide flexibility to state governments and to ensure timely and effective application of limited financial resources. Common guidelines have been issued for national watershed development Project for Rain-fed Areas to harmonize the implementing norms with other watershed development programs. A watershed development fund with a corpus of Rs.200 crores each from National Bank for Agriculture and Rural Development (NABARD) and the Department of Agriculture & Cooperation (DAC) has been created.

As envisaged for region specific strategies to develop high value agriculture, technology missions for the integrated development of horticulture in the backward regions have been launched. Seed legislation is revised to provide fillip to varietal research and plant breeding. Legislation was enacted for the protection of plant varieties and farmers' rights. This is likely to stimulate investment and initiative both in public and private sector for development of new plant varieties and a vibrant seed industry. The new national seed policy therefore was expected to substantiate the efforts in the farm sector for growth and sustainability. A scheme for seed crop insurance has been launched to cover the risks in-

volved in seed production. The seed bank has been established to meet contingent requirements of seed in the wake of natural calamities.

To increase the availability, flexibility and security in the flow of credit to the farmers, all eligible farmers are proposed to be covered under the farmer credit cards scheme within 3 years. A personal insurance package is proposed to be extended to card holders covering them against risk to life and injury. Also a scheme has been introduced for provision of capital subsidy for construction/modernization and expansion of cold storages and storages for horticultural produce. Rural infrastructure development fund corpus has been increased in 2001-02 with an interest rate reduction for the loans disbursed by NABARD.

Creation of a single market for agriculture commodities yet remains as a conceptual term. Despite the amendments in the APMC acts, the implementation of it in its full spirit is pending. There are fears that some states may lose while other gain in the process of establishing the uniform markets and therefore compensating the states remain a task. Networking of market information has been launched with the objective to provide farmers latest information on price movements of agricultural commodities and other essential data. For cooperative sector reforms, a new bill was formulated and introduced in Parliament replacing the existing multi-state cooperative societies act, 1984. Formulation of new subsidy linked scheme enabled for the establishment of rural godowns. Promotional schemes are introduced in food processing industries for value addition through the excise exemptions and other interventions. A standing committee of union ministers and chief ministers were constituted to consider issues concerning agricultural strategies, food management and promotion of agriculture exports. The committee has approved the outline of the proposed grain bank scheme which will be extended to BPL families in identified areas. Government has established commodity exchanges to trade in farm commodities. But the government interference continues in the futures markets with the fluctuating price and inflation levels[8].

III. Production Advantage – The Quite Revolution

Though much of the actions envisaged in the new plan could not get translated into action, Indian agriculture has responded the new policy initiatives reflecting the production advantage as well as the competitiveness in select domains. If the agriculture operations were confined to traditional grains in the earlier years it acquired a paradigm shit to high value crops in the current phase of growth. This is perceived as the outcome of the enhanced production advantage brought out by the new policy initiatives. This transition included an increasing diversity in a range of crops and greater sophistication of the sector with the creation of critical infrastructure facilities. For instance, the abolition of licensing

and automatic investment approvals for food processing (except few critical ones) enhanced the incentive of private sector.

One of the main indicators of the changing profile of the farm economy has been the shift in the crop composition and the level of crop diversification accordingly. The crop composition of Indian agriculture has undergone structural change in the recent years with a bias towards high value crops which are likely to yield better returns to the farmers. The shift from traditional grain crops to high value crops like fruits, vegetables, floriculture and spices indicates the quest for commercial farming Indian farmer are awaiting in a competitive market ambience. The charts (2 & 3) below depict the structural transformation of crops in India between 1990–91 and 2005–06.

At a macro level, along with the structural transformation in the crop composition**,** the direction of agriculture trade also has undergone upward shifts. For instance, India's agricultural exports increased from US $ 5.9 billion during 2001-02 to US$ 6.4 billion during 2003-04. Agricultural exports constitute 12 percent of the total merchandise exports of India (Chart 4). Commodity wise analysis of export basket proposes that the high value farm produce has contributed mostly to this hike in the share of international trade in farm products. The main segments are plantation produce, fruits and vegetables as well as spices and marine products (charts 5 &6).

Chart 2

Crop composition – 1990–91

Chart 3

Crop Composition – 2005–06

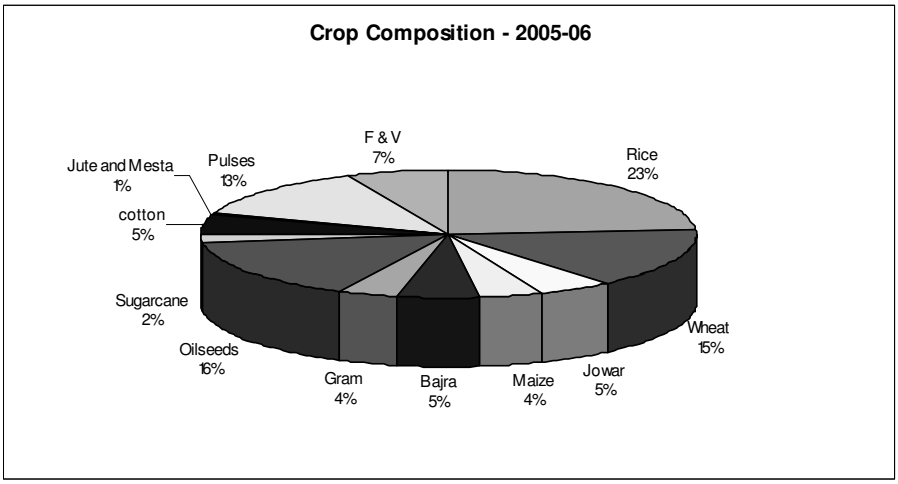


Chart 4

India's Agricultural Trade since 1991

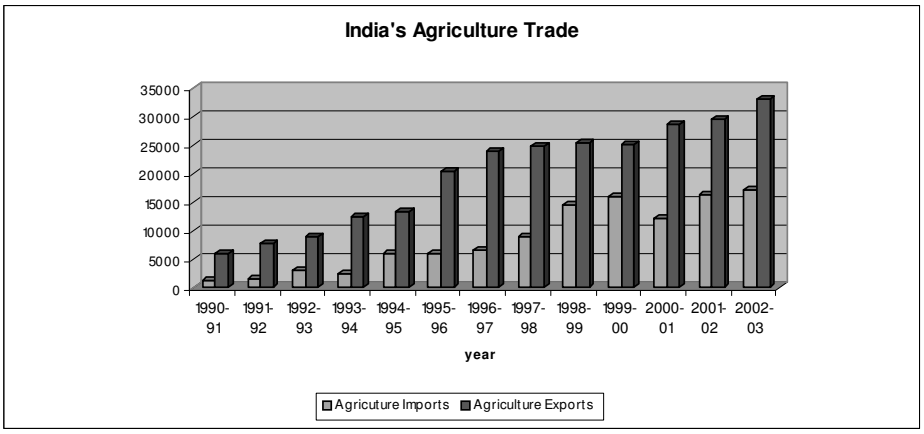


Chart 5

Commodity-wise exports 1990–91

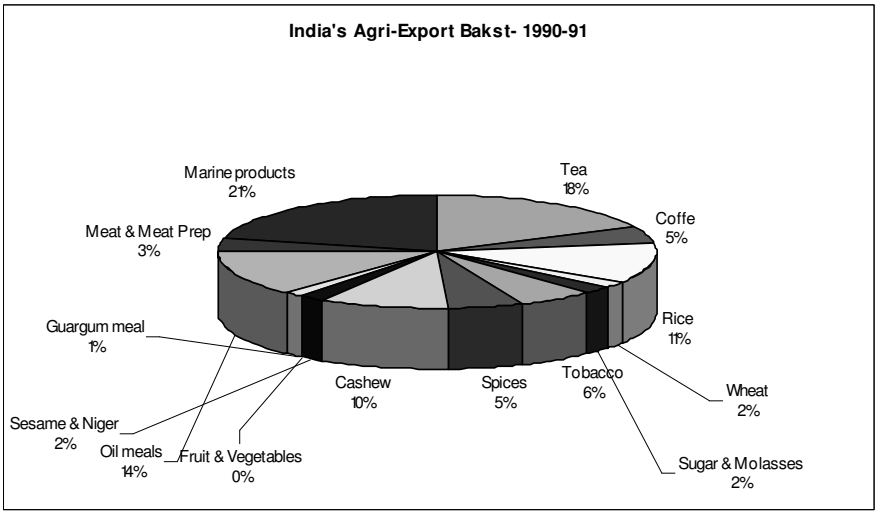
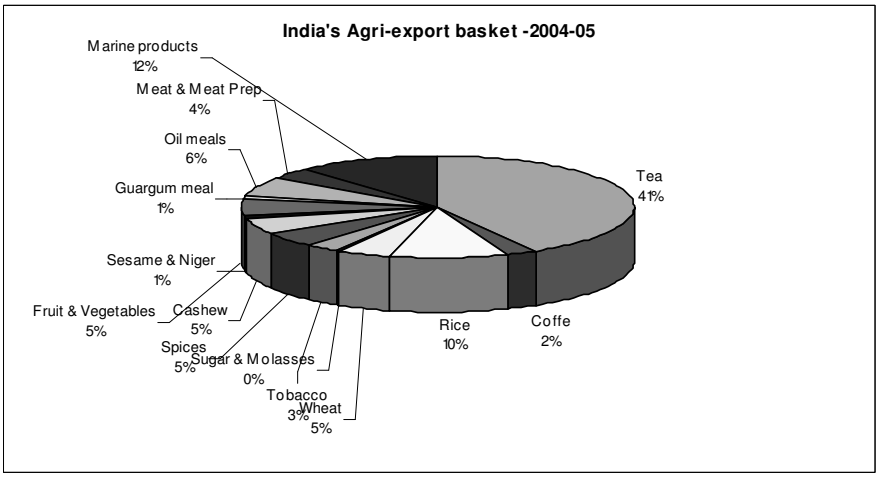


Chart 6

Commodity-wise exports 2004–05

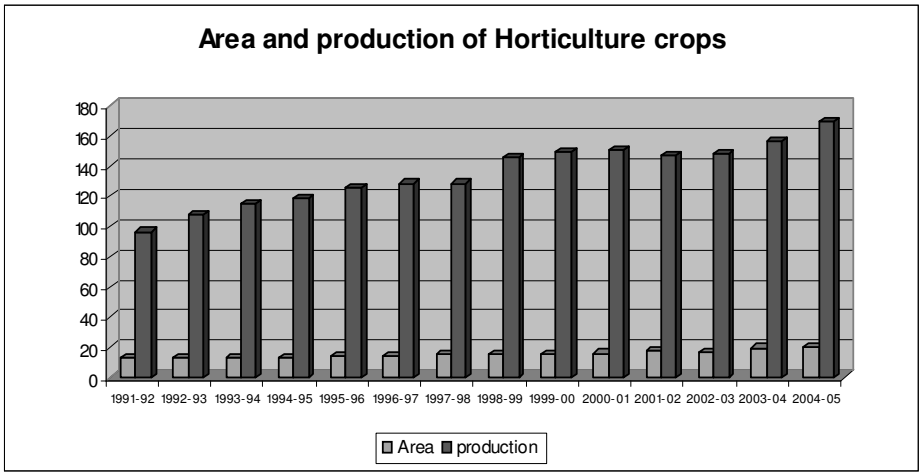


IV. Competitive Advantage and High Value agriculture

Since 1990 the share of High Value crops are growing in the Indian crop basket. Horticulture crops find a significant place in the new crop basket of the Indian agriculture sector, in terms of area production and yield. The major crop segments within the horticulture are fruits, vegetables, floriculture, spices and plantation crops. There is a significant increase in the area and production of fruits in India. The Vegetables sector registers high growth in terms of area, Production and productivity. Floriculture crops also register high levels of growth in area, production and yield. Spices crops are growing at very impressive rate of 6.98% and 7.33 percent in terms of area and production respectively. This has been driving Indian agriculture to a demand led growth track with higher export potential for sustainability.

Chart 7

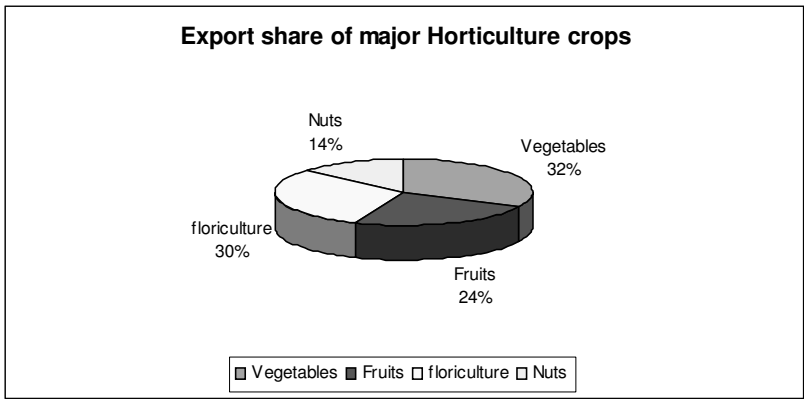
Trend in area and production under Horticulture



Source: Indian Horticulture Data Base, 2005

Chart 8

Export share of Horticulture Crops



V. Farm Risk Management – The Grey Area

With the above structural transformation in the farm sector, the farm risk proofing yet remains a grey area for gaining the desired growth and sustain it. The risk perceptions of farmers are varied and its mitigation options still remain unknown. One of the major risks in the Indian farming sector has been the difference between the risk perception at the government levels and the realities at the farm levels. This in other words implies the incompatibility of the policies with the farmers' actual problems. Reducing the risk that farmers faces remains the major task towards bringing agriculture to its potential growth path. It is to mention in this context that farmer suicides in India explain more economics than politics. It is seen as a manifestation of the failure of farmers to carry out a profitable or sustainable economic activity. It has therefore, been widely believed and acknowledged that only by addressing the high risk constraints of the farmers, the agriculture development strategy can make the requisite impact through technology and other policy interventions

There remains significant variation in the farm risk perceptions and dimensions. Farm sector innovations for productivity enhancement and growth in India is limited to the extent farmers themselves are capable of taking the risk of such innovations. Often it happens such that the farmers are not very sure of the harvest and therefore they confine the farming activity limited to selected crops – as a means to avert potential internal and external risks. One of the major risks in the farm sector currently has been the perception of risk itself by different stakeholders. The general perception of farm risk (among the officials) in India is

related to post harvest infrastructure, weather fluctuations or market failures. Do the farmers really perceive the risk along with these official perceptions or are they viewing it differently? Hardly a question of this sort is asked. The fact of the matter however, is that farmer perceives risks differently given the farm ambience and the modes and relations of production works in the spatial unit. Mitigating farmer risk therefore involves the analysis of internal and external risk variables from a spatial perspective.

From an Internal perspective**,** the major risk that farmers perceive are emanating from internal (controllable) variables. This includes the non-availability of quality seed at the time of sowing, the supply constrains of fertilizers and pesticides during crop development and the lack of extension services to adopt improved farming systems. There are instances that the farmers are unable to get the quality paddy seeds so that the seed replacement ratio goes to zero or the replacement period stretches to 4 or 5 years. Similarly the fertilizer supply is inadequate that the traders charge exorbitant rates for fertilizers by which farmers find it uneconomical to carry on with the farming. It is worthwhile to mention in this context that interaction with farmers in few villages of Orissa reveals that fertilizer is sold at around 50% premium during normal crop sowing seasons due to supply shortages by state agencies. There are instances that this premium goes up to seven times higher that of the normal prices, if the farmer is availing it on credit (barter for paddy at the time of harvest). In other words, the exploitation at the farm level is yet a major risk for Indian farmers to tackle with.

With the limited scope of irrigation cover in the farm land, monsoon failure comes next to inputs in the risk priority of Indian farmers. The lack of technology for accurate warning systems and also the lower levels land addition under irrigation cover accelerates this risk element. At the same time innovation of newer seed varieties and other inputs depends largely on the education (awareness) of farmers and their capacity to take the risk associated with it. It is however, true that there is little extension and farm services available in the system whereby farmers are checked from innovating newer technologies in the farms. Though the concept of weather based insurance schemes are convinced, of late, as a means to mitigate farmer risks, hardly any conceptual framework remains for the diffusion of information and extension services to enable farmers with ways and means to benefit from innovative farm practices. This opens the scope for further research on the real effect of information and communication technologies (ICT) in reaching out to farmers to any useful inference on their farming practices.

Technology specific risks hold the farmers from innovative farming practices. Incompatibility between technology and investment capacity of farmers leads to improper adoption of technologies and hence end up in loss of faith in the extension system. The question arises therefore is can the extension system reach to a level of sophistication wherein it is feasible to customize and reconfigure the technology packs to suit the requirements of farmers varying across circumstances and according to the capacity of investments. Rural last mile de-

livery of services is the need therefore. Hence, it is to develop the technology matrix (scenarios) which will help farmers to determine the adoption level like;

Low Investment – Low risk	High Investment – Law risk
Low Investment – High risk	High Investment – High risk

The external risk factors remain in areas related to price of the produce, output levels, institutional and technology related. Crop failures arising out of erratic weather conditions, loss occurred due to pest, deceases and market failures are main concerns of the farmers. There are strategies in which risks are shared with or transferred to others. But the top risk management choice of farmers from external angles has been the crop insurance. The crop insurance scheme in India was started on a limited way in 1972. Between 1972 to 1979 and 1979 to 1985 pilot crop insurance schemes were introduced in many crop segments. During 1985 to 1999 comprehensive crop insurance scheme were established. The national agricultural insurance scheme (NAIS) however, is not flexible to the regions and crops which are climatically and geographically sensitive to risk from various local specific sources. Private participation in this service delivery again is constrained by viability constraints.

In a nutshell, the farmers' risk mitigating system in India is not developed enough to command the desired growth rates in agriculture through a technology led and market driven path. The integration of risk cover systems combining provision of inputs, extension and farm services along with technology, innovation and market linkages holds the potential for India's agriculture recovery and productivity enhancements. The uncertainty of markets and unreliable weather conditions prevents insurance agencies from extending the services uniformly across the regions and states in the country. Simultaneously, India lacks a technology policy for agriculture sector to take the sector forward and integrate it with the national economy for growth and sustainability.

Intervention areas identified therefore are in mitigating the critical risks of farmers, which can rejuvenate the farm sector and establish a growth synergy in the farm economies.

a. Inputs – Availability, quality and price through better administration, regulation and supply management
b. Technology – Customization of technology to suit the risk bearing ability of farmers and provision of farm finance
c. Natural and biological – Risk management instruments
d. Market – Efficient market mechanisms and farmers' access to such markets, price support in distress situations

In this context there have been questions on the recent (politically motivated) loan waiver as a potential instrument to mitigate the high level of risk that farmers are shouldering? One argument in this regard has been that loan waiver promotes the farmers' willingness to access farm credit and thereby sustain the level of farm operations. But it is unlikely to expand the operational spheres given the unchanged risk scenarios in other critical areas. It is in this context worthwhile to suggest for a comparative cost benefit analysis of the waived loan amount and the opportunity cost of not using those funds for risk cover activities of farmers, which potentially could have enhanced the productivity and confidence level of farmers. This is difficult economics in a complex political environment. It is therefore the national farm policy framework which will reverse the risk scenario of farmers to bring the sector to a growth track.

VI. Conclusions and Strategic Way forward

It is generally agreed that India possesses four outstanding competitive advantages in agriculture comparable to those of any other country in the world. First**,** it has regions, which are climatically favorable for cultivation of every commercially important plant species grown in other parts of the world – ranging from temperate orchard crops such as almonds and apples to tropical mangoes and pineapple. Second, the country already possesses the largest acreage of irrigated land in the world with 40% of the potential still to be tapped. Third, the gap between present productivity and proven technological potential is very large for most crops; yet even so, the country is already among the world's top three producers of tea, cotton, sugar, food grains, groundnut, coffee, eggs and milk. Fourth, the country has an abundance of available skilled, educated, technical and scientific manpower. These diverse advantages call for location-specific and crop-specific strategies for India to leverage the domestic and global competitiveness.

Constant and sustained value addition in agriculture is one way to enhance the share of agriculture in the GDP in the medium term. The demand for high value crops has for instance, been growing at 3-5 per cent per year, while demand for food grains is stagnant. The projections suggest that the food basket in India will continue to diversify with the rise in the per capita incomes. Consumption of milk, fruits, vegetables, meat, eggs and fish etc are on the rise. The income effect on consumption of cereals is negative and that of high-value commodities is positive and significant (Joshi, Gulati 2006). The average and marginal propensities to consume high value foods among the rural and urban consumers are high in India (Sundaresan 2007)[9]. Hence the policy needs to be pro-crop diversification and high value agriculture**.** The need therefore is to gradually shift the rural consumption base to a market led food security establishment by reducing the levels of subsidies and increased investments. The policy framework should, therefore, reflect the options for small and marginal farm-

ers to integrate into a virtuous cycle and effectively participate in the market mechanism in the long run towards enhancing the income levels to access the desired food from market. The interplay of market and prices can incentivise farmers better than subsidies and therefore procurement of food grains at the ruling market price would be more beneficial[10].

Food security remains as the focal point of India's agriculture policy and therefore arriving at a sustainable food security approach is vital for pulling agriculture sector up through value chains. Justifications for pursuing a policy framework hampering the scope and opportunities of diversified agriculture in India remained largely in perceptive spheres than in physical terms. The fluctuating food grain stock levels and the stagnating or declining land coverage under major food grain crops remains the source of such perceptions. For example, the total area under food grains has declined from 127 million hectres in 1990-91 to 113 million hectres in 2002-03. Similarly the 2006 food procurement shortage accelerated the speculations of a decelerated food grain stock levels in the future. The 2006 food grain crisis however was the imbalance in wheat procurement, out of interplay between government and private players in an environment of competitive prices and markets and not of significant production shortages. The high ruling market price for wheat was facilitated by a host factors like increased demand from private sector, higher international price levels associated with the anticipation of higher future prices (indicated by futures market) and thereby the decision of farmers to hold their produce. The spot markets responded in tandem with the futures and the prices of wheat in the spot market rose to about Rs.900/ quintal (Hapur market). This forced the government to announce a bonus to the farmers and finally the government declared its decision to import from the international market to meet out the domestic food requirements.

The manifestations of food security concerns distorting farm policies and hampering the scope of crop diversification are quite vivid from other perspectives like the continuance of MSP as tool of food grain procurement, increasing subsidy levels and reducing investments in farm infrastructures and excessive grain procurement levels in Food Corporation of India (FCI) Godowns while the hunger levels are on the rise. The relevant questions towards addressing the food security concerns and the establishment of a diversified agriculture policy in India have been; what should be the ideal policy that will balance the food security and crop diversification, which can solve the short and long-term concerns? While doing this, how to ensure adequate supply of cereals and staples (Wheat, rice, pulses, edible oils, sugar etc.) to the marginalized population in the short and medium term? What are the instruments that can be deployed and how should they be deployed?

The second phase of agriculture reforms in India therefore has to address broad policy questions identified above and establish an enabling framework for (a) long term strategy on crop diversification, insurance and forward trading, (b) limiting the scope and coverage of minimum support price and (c) fixing a price band to trigger the open market operations in agriculture markets. Under this

policy framework, the procurement operations were to be organized strictly as business operation, the responsibility of PDS to be passed on to the states and later to Panchayati Raj institutions and establish linkages between price and trade policies. These policies however, could not be implemented in the pretext of its perceived negative implications on the domestic food security front. This further confirms the fact that food security issues continue to hamper the growth potential of agriculture sector in India. Agriculture sector has to achieve the triple bottom lines viz; competitiveness, sustainability and inclusiveness.

Notes

[1.] Agriculture remains in the state list of the Indian Constitution and therefore the state governments are the decision makers of the micro level farm practices. The capital formation in the agriculture sector therefore will have its reflection in the fiscal policy of the states.

[2]. With a view to ensure remunerative prices to farmers and to enhance the supply of essential food commodities, the government of India announces Minimum support Price (MSP) for major agricultural commodities and organize purchase operations through public and cooperative organizations such as Food Corporation of India (FCI), Jute Corporation of India (JCI), Cotton Corporation of India (CCI), National Agriculture Cooperative Marketing Federation of India (NAFED), Pulses, Oil Seed and Tobacco Boards, besides other agencies designated by the state governments. The support prices for various agriculture commodities are decided after taking into account the recommendations of the commission for agriculture costs and prices, views of the state governments and the central Ministries.

[3]. Commission for Agriculture Costs and Prices (1985) is the technical agency advises the government on the Minimum support price of major agricultural commodities with a view to evolving the balance and integrate the price structure in the perspective of the overall needs of the economy and with due regards to the interests of producers and consumers. To formulate the recommendations on the level of minimum support prices and other non-price measures, the Commission takes into account, apart from a comprehensive view of the entire structure of the economy of a particular commodity or group of commodities, the factors like i) Cost of production ii) Changes in input prices iii) Input-output price parity iv) Trends in market prices v) demand and supply vi) Inter-crop price parity vii) Effect on industrial cost structure viii) Effect on cost of living ix) Effect on general price level x) International price situation xi) Parity between prices paid and prices received by the farmers xii) Effect on issue prices and implications for subsidy.

[4.] The Essential Commodities Act, 1955 gives powers to control production, supply and distribution of essential commodities for maintaining or increasing supplies and for securing their equitable distribution and availability at fair prices. Using the powers under the Act, various Ministries/Departments of the

Central Government have issued Control Orders for regulating production, distribution, quality aspects and movements pertaining to the commodities which are essential and administered by them.

The Essential Commodities Act is being implemented by the State Governments/UT Administrations by availing of the delegated powers under the Act. The State Governments/UT Administrations have issued various Control Orders to regulate various aspects of trading in Essential Commodities such as food grains, edible oils, pulses kerosene, sugar etc. The Central Government regularly monitors the action taken by State Governments/UT Administrations to implement the provisions of the Essential Commodities Act, 1955.

[5.] The Planning Commission, Government of India constitute task forces on various sectors for the preparation of the provisions for Five Year Plans. The task force holds interaction with different stake holders to arrive at the changes required to be brought in the economic sectors for enhanced growth and sustainability.

[6.] Under the APMC Act, only the State Governments were permitted to set up markets. Monopolistic practices and modalities of the State-controlled markets have prevented private investment in the sector. The licensing of traders in the regulated markets has led to the monopoly of the licensed traders acting as a major entry barrier for a new entrepreneur. The traders, commission agents and other functionaries organize themselves into associations, which generally do not allow easy entry of new persons, stifling the very spirit of competitive functioning.

[7.] The rural distress arising out of credit and financing systems of agriculture is evident from the suicide rates. The farmer suicides explain the incompatibility of farm credit systems with the market structures whereby farming become uneconomical and non-sustainable. Average daily farmer suicide rate (2007) in India is reported to be 46, with a total of 16632 farmer suicide cases reported with 2369 women. According to the National Crime Records Bureau (NCRB) farmer suicide constitutes around 15 percent of the total suicides happening in the country (TOI, 16th December 2008 p. 7)

[8.] The Forward Contract Regulation (FCR) Bill 2006 has created for the modernization of commodity market system in India. Currently there are four main commodity exchanges in India – Multi Commodity Exchange of India (MCX), National Commodity and Derivatives Exchange (NCDEX), National Multi Commodity Exchange of India (NMCE) and the National Board of Trade (NBOT).

[9.] The National Sample survey Organization (NSSO) 43rd round survey of consumption expenditure reports suggest that the average and marginal propensities to consume food items like milk, fish, meat and egg is higher in the rural and urban consumers. The marginal propensity to consume these goods are higher among the lower income categories indicating the emerging trend in the consumption patterns towards high value foods (for more details see C. S. Sundaresan, 2007).

[10.] There are observations that the state intervention was one of the reasons for the grain (wheat) market chaos in 2006 and the instruments used by the

government were not compatible with the forces of market (Subramani 2006, Bhatt, 2006). The major wheat producing states have exerted pressure on the private sector from procuring wheat at a price ruled by the market. For instance UP government has fixed a ceiling for purchase by the private traders and big corporate firms directly from the farmers. These instances raised significant questions like (a) Should MSP be a tool for food procurement? (b) Can government interventions in agriculture be done away with?

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