1.1 Introduction to Indian Agrarian Society

The biggest onus on government of any civilized society is to provide stable food supply to its population. In case of Indian government it is more obvious than any other country due to its enormous and rising population. Agricultural activities have impacted not only on different areas of agriculture like food processing, horticulture and seed business but also encompass every facet of Indian societies directly and indirectly. Some of the serious problems of Indian society are emanating from food insecurity and inequality in the distribution mechanism. The grim situation of Indian farmer's condition is illustrated by The Indian Nobel Prize Laureate AmartyaSen (Drèze and Sen 2002) that approximately half of the Indian children are undernourished. More than half of the adult Indian women suffer from anemia. These anemic pregnant mothers then run the risk of giving birth to malnourished babies. The gender discrimination, income disparities, social stratification, crimes etc. are all interwoven into the agricultural system.

The issues related to food are no more affecting only the marginal or underprivileged sections of the society. Food distribution issues compound the rural and urban divide and also strike every individual and section of our society. Drèze and Sen (2002) pointing further in chapter 'Hunger amidst Plenty' of their latest research regarding India's development comment that the food stock which is meant to mitigate any shortfall in food supply is not utilized in an earmarked way, as they are being accumulated at the cost of the poor who at the same time are excluded from the benefits of the Public Distribution System (PDS).

Notional inference from several case laws and judicial judgments in India shows that the Indian Constitution gives a statutory right to its citizen to safe, nutritious, culturally appropriate food, right to food-producing resources, and to the ability to sustain themselves, the right of peoples and communities to define their own agricultural, labor, fishing, food and land policy systems which are ecologically, socially, economically and culturally viable and appropriate to their unique circumstances.
Agriculture sector is the backbone of country's development and lifeline for majority of the population (65 per cent) based in rural areas and approximately more than 58 percent of the population still depends on agriculture for their livelihood. Presently being one of the major sustainers for job sector, there is unfortunately a trend of declining share of agriculture in country's GDP, from 48.7% in 1950 to 24.4 % in 1996-97 and further 18.7% in 2007. If India’s economy is to achieve an ambitious rate of growth, as high as 9-10% in the coming years, the country needs a strong pull-up support to agriculture sector which should grow at least at the rate of 4 per cent or higher.

For the current state of agricultural output, besides social and cultural factors responsible for the current poor state, the educational background has also to play its role. The present literacy rate adds to the problems of growth. A study (Mittal and Kumar, 2000) shows that the improvement in standards of rural literacy leads to growth in adoption of technology and the use of modern inputs like machine, fertilizers, and yield. In case of rice and wheat in India, literacy is found to have a positive and significant relation with crop productivity and a strong link with farm modernization. Rural education contributes to improvement in adoption of high yield variety seeds by about 25-47 percent, fertilizer use by 18-22 cent, about 6-8 per cent in modernization and 5-8 per cent to improvement in yields for rice and wheat.

1.2 The Problems and Prospects of Farming Communities in India

The Problems of farmers in India, related to agricultural activities have been tried to be solved through upliftment approach by the state and central governments in the form of several legal (land reforms and land consolidations schemes) and welfare measures. However these efforts of government have not borne the desired results. The various other state interventions, strategies as well as efforts by non-governmental organizations to arrest migration of the rural masses, which include promotion of income generation activities, have not succeeded in reversing this trend. One of the strong reasons could be the lack of well established forward and backward linkages (reliable and cooperative) such as extension advice, mechanization services, supply of seeds, fertilizers and credit, as also guaranteed and profitable markets for their produce (FAO: 2001).
There is a need to bring reforms in some of the government interventions to make the agricultural sector grow effectively in the light of changing structure of production, consumption and marketing.

1.3 The Role of State Government Laws

The Federal laws of India maintain that the agricultural activities come under the purview of state governments. The above provision gives immense opportunities and prospects for better agricultural development. But mere legal and policy reforms will not bring major changes in the Indian agricultural system. There must be an involvement of public and private sector players, a system popularly known as Public Private Partnerships (PPPs). There is widespread recognition of the potential for PPPs in agricultural development and this may be an important way of developing the capacity of agricultural innovation systems (Hall, 1998, 2001). Underpinning this potential, the significant and growing investments have been made by the private sector in agricultural research (Pray, 2002) and, encouraged by market friendly polices arising from a decade or so of economic liberalization and the growing role of the private sector in many developing countries has been noticed. There are a number of ways in which PPPs in agricultural research could arise based on the complementarities of assets and the overlapping of interest and agenda (Byerlee and Fisher 2002).

In recent days the attractions of PPPs are widely perceived to include following elements which make it more result oriented and competitive in nature than other systems or business models:

a. The researched is being conducted jointly and not independently;
b. Privately owned knowledge should be shared and materials may be accessed for public good research;
c. New sources of funding for public sector research;
d. And new delivery mechanisms for public technologies should be made for both parties.

In India Food Corporation of India (FCI), a state enterprise, acts as a nodal body procuring only for the food security concerns of the underprivileged, who are supplied rice, wheat, sugar and a few other commodities at subsidized prices through the public distribution system. The FCI should synchronize its activities with the
private players and explore joint venture for the betterment and advancement of Indian food distribution system.

1.4 Diversification in the Indian Agriculture

At present when diversification in production away from food grains is evident and many farmers are even quitting agriculture, there is a need to motivate through incentives to produce, thus FCI should procure the minimum possible and not the maximum available, and should act as competitor to the private procuring agencies (Mittal 2007). This will help in getting the farmers the best price for their produce. State food corporations should be allowed and encouraged to operate in all states. States should be free to set up public or joint venture companies for food procurement, transport and distribution if it is commercially viable (Virmani 2004). The role of private agencies in food procurement activities should be gradually enhanced.

The agriculture sector is shifting from a supply driven economy to a demand driven economy. The agricultural sector has outgrown the policies that contributed to the past success and is facing the new pressure as consumer income is rising and pattern of expenditure in consumer’s budget is shifting to more of non cereals (Landes, 2004; Mittal, 2006b). The post liberalizations era in India (1991 onwards) has brought transformation in the Indian agro-food system. It is undergoing rapid change and there is growing evidence that organized food supply chain in the form of backward integration for food supply will act as one of the alternative strategy for domestic firms as well as for multinational companies.

If successfully implemented, Contract Farming is considered by many as a crucial means for industrializing agriculture. It can be a viable venture for the producer (farmers) and also for the manufacturers (Industrialists). It is regarded as a strategy for agricultural transformation in developing countries because it has the potential to solve agricultural marketing problems (Little and Watts, 1994). Contract Farming has been promoted in the recent three decades as an institutional innovation to improve agricultural performance in less developed countries. This system was accepted and used as one of the promising institutional framework for the delivery of price incentives, technology and other agricultural inputs. Local Governments, private local firms, Multinational companies, some international aid and lending agencies etc.
have been involved in these contract farming schemes (Glover, 1994). Although there are different types, contract farming usually involves a central processing or exporting unit which buys growers’ harvest. The terms are arranged through contract; the grower provides land, labour and tools; while the purchasing unit provides credit and technical advice (Kirsten and Sartorious, 2002). The contract usually specifies the price, quantity and quality of produce, production conditions and delivery and grading requirements (Runsten and Key, 1996). The contract farming will have an important role in this transformation. An important concern in Indian agriculture is that while “front end” activities including wholesaling, processing, logistics, and retailing are rapidly expanding and consolidating, the “back end” activities of production agriculture have been continuously fragmenting (Gulati, 2008).

The recent growth and diversification of consumer demand and the expansion of organized agricultural processing and marketing ventures in India has the potential to boost the market opportunities, productivity, and incomes to farmers, including small holders. Among these institutions and innovations are various models of contract farming, including those led by cooperatives, by farmer groups, and by various types of private sector resource intermediation that develop backward linkages to growers. The challenges and the opportunities lie in linking the two ends and ensuring viable business opportunities for both farmers and agri-businesses, which will further strengthen the food sustainability of India in particular and global community in general.

Major factors which are responsible for the vertical integration between seller and buyer are needed for the products with the following characteristics (Minot, 2007):

For economically important quality variation / high-value products, vertical coordination is more likely when customers (e.g., processors, retailers) are willing to pay a premium for a product, variety or attribute. This premium should be enough to cover the additional cost of producing it and the cost of the CF arrangement. Farm-level investments in human and physical capital, or specialized inputs are needed to raise the quality. CF will provide farmers the incentives and the means to make these specific investments. High perishability increases the need for farmers and buyers to coordinate the timing of harvest and delivery. In addition, the farmer’s bargaining power is seriously weakened once the product is harvested. Within some contractually
guaranteed outlet, the farmer is not likely to produce such perishable products. For technically difficult production, farmers may not enter into the production of technically difficult crops, because they do not have the technical skills, the inputs and the credit needed. As part of a CF arrangement, buyers can provide technical assistance, specialized inputs and credit. Farmers in developing countries may not have the available cash to purchase inputs at planting time, so the contract allows the buyer to provide them on credit and to recover the cost of the inputs by deducting it from the payment to farmers after harvest.

Food is the largest consumption category in India

![Food Consumption in India](image)

Figure 1.1 Food SCM for sustainable and efficient Development

1.5 Aims and Objectives of the Study

Through promoting competition, economies of scale and improved efficiency in the supply chain, product prices would lower, especially in food and grocery sector (Mukherjee and Patel 2005). As shown in figure 1.1 Food is the largest consumption categories in India and their exist a huge potential for further growth and development of Food SCM. In this backdrop, the thrust and objective of the present research is to study and ascertain the problems related to Food Supply Chain Management (FSCM). Further to find out reasons of why the agriculture sector
deserves an urgent attention from policy intervention point of view. Some of the important objectives desired to be achieved by the study are listed below.

a. To find the role of policy interventions like timely legal reforms and also simultaneous review and evaluation of the impact of the policies and taking immediate steps to rectify the negative impacts if caused by any of the policies.

b. To explore the potential of improvement in agriculture sector through an improvement and strengthening at all the levels of the supply chain like inputs delivery, credit, irrigation facility, agricultural diversification, procurement, minimizing post harvest loses, cold storage chains, better and efficient processing and marketing techniques, efficient storage, warehouses and also efficient and competitive retailing.

c. To analyze the definitions of the applicability, equitability and enforceability of food supply chain linkages in the backward directions.

d. To identify crops, value added products and services in the food chain in different regions suited and possibility for contract farming, precision farming, organic farming, trading, processing, transportation, storage, communication, financing and delivery of the value in the supply chain.

e. To suggest suitable institutional, procedural and legal arrangements for building relationships, disbursal and recovery, safeguards to ensure contract performance measures against non-performance and arbitration procedures to resolve disputes.

f. To explore policies for Government practitioners who will gain some insight into the way in which the shifting nexus of food industry activity might be addressed in pursuit of policy goals.

g. To study the existing food SCM for different food items and its variants and trace the linkages in the chain in different parts of India.

h. To investigate the scope of market oriented diversification in agriculture and agribusiness in India to accelerate the economic development.

i. To assess the policies, institutional and infrastructural support, and the regulatory mechanism to facilitate food SCM and suggest reforms.
j. To analyze the General Contract laws, Land tenure laws and Contract enforcement mechanism for food SCM efficacy and identify the gaps in them.
k. To find the means and ways to improve the chain efficiency and promote the mutually beneficial relationships and trust on each other in the system.
l. To recommend the integrated legal framework for food SCM in the country.
m. To promote the value chains in food supply in the national interest.

Consolidation at the top of the Value Chain in India is currently riding a tide of organized retail expansion, especially in the food and grocery segments, which have been growing at annual rates between 16 and 50 percent over the past few years (Gulati and Reardon 2008). The top 10 Indian organized food and grocery retailers grew at the rate of 72.4 percent from 2002 to 2007 (Planet Retail, 2008). While total food and groceries account for nearly 60 percent of total retail sales in India, food and grocery sales by organized sector firms account for only a little more than 10 percent of total organized sector retail sales, indicating that there is ample scope for scaling up of organized food and grocery retailing. The high growth rate of the top players in India's organized food and grocery segment suggests that this sector will occupy a growing share of both the food and grocery market and the overall retail market in India which has grown about 13 percent annually from 2002-03 to 2006-07 (Trivedi, 2008). As in retailing, the role of organized food processing firms within the overall food processing industry (organized and unorganized) has increased from 64 percent in 1984-85 to 81 percent in 2000-01, and is likely to have grown further in the last couple of years (Bhavani et.al. 2007). Considerable new capacity is being added in the organized food processing sector.

Post harvest loses in India generally range from 5-10% for the non-perishable commodities and about 30% for the perishable commodities (Singh, 2002). Further food lost in India, during different stages is also well illustrated in figure 1.2. Following are some of the prominent problems associated with the FSCM which results in food wastages.

i. Lack of appropriate and advanced techniques, capital and knowledge deployment and lack of information about the flow of products to markets.

ii. Lack of transparency, tracking and traceability in the supply chain.

iii. Lesser control of product safety and quality across the supply chain.
iv. Investment, benefits and risks not shared by all the partners in the food supply chain.

v. Poor shelf life of products and lack of farmer’s awareness and knowledge.

vi. Lack of storage and other post harvest facilities, absence of innovative technology, including cool chain, poor and uneconomic handling, transportation, storage etc. causing post harvest losses in food products.

Huge wastage across the supply chain leads to lower level of processing and hence low value addition...

<table>
<thead>
<tr>
<th>Segment</th>
<th>India</th>
<th>Other Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and Vegetables</td>
<td>2.2%</td>
<td>US A (65 %), Philippines (78%)</td>
</tr>
<tr>
<td>Marine</td>
<td>26%</td>
<td>60-70% in developed countries</td>
</tr>
<tr>
<td>Poultry</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Buffalo Meat</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td>35%</td>
<td>60-75% in developed countries</td>
</tr>
</tbody>
</table>

Figure 1.2 Food Processing Sector in India (Britt- Louise Anderson, SIWI)

The expansion of organized food processing and food and grocery retailing is inducing greater competition among multiple private sector players, contributing to a virtuous cycle of growth, consolidation, and modernization, capturing economies of scale in line with the rising market demand. This competition among firms has created pressure to compress supply chains, cut costs, and achieve increased competitiveness in the domestic and global market. In this context, contract farming models are among the mechanisms for streamlining procurement and logistics services that are high on the agenda of organized retailers and agro-processors. There is fragmentation at the
Bottom of the Supply Chain in agriculture production; the trend in India is towards fragmentation rather than consolidation of the land holding. The average size of landholdings declined from 2.2 hectares in 1970-71 to 1.06 hectares in 2003. Nearly 88 per cent of the farmers have less than 2 hectares of land, and account for about 44 percent of the operated area (NSSO, 2006). Although these farms are small, indications are that they are more efficient than larger farms in terms of land productivity, presumably due to a high share of family labour on small farms.

The share of marginal and small farms (of less than 2 hectares) in the total value of agricultural output is about 51 percent, substantially higher than their 44 percent share of area operated (Srivastava, 2008).

Thus much of the production is outsourced to contractors and sub-contractors in a large diversity of low-cost operating locations. Local investors usually own the production sites and they are independent businesses. By outsourcing part of the supply chain, responsibility also shifts from a single organisation to many more, depending upon the nature of the product market. Hence, the supply chain becomes more complex and culturally diverse. According to Porter (1998), who describes the present business model, single companies are not able to survive on their own; they can survive only as part of the supply or value chain in an increasingly competitive business environment. Christopher (1993) also stressed that it is the supply chain, which will bring true competitive advantage to companies, by satisfying customers’ needs and lowering operating costs.

Therefore the role of SCM is critical in managing issues that arise across organisational boundaries, improving corporate competitiveness and profitability in today’s operating environment (Wood, 1997; BSR, 2001). Christopher (1998) emphasised that individual businesses no longer compete as solely autonomous entities, but rather as supply chains.

Indian retailing is highly fragmented and the organized sector in the country is at a very nascent stage accounting to only around 4% of the total. But the retail sector is a very attractive potential frontier for the corporate India. Retail trade is expected to grow at 13 per cent per annum during 2007-12. Its value will then be about US$ 590 billion in 2011-12 (ICRIER 2008).

Along with organised supply chain system and sound legal policies India’s rural segment can benefit immensely. There is a lot of scope for the development in
the economic conditions of the rural population. Today the annual turnover of Wal-Mart is higher than the size of entire retail industry of India (Ahmad, 2010). The entry of National and transnational corporation in agribusiness will augment the rise of organised sectors which in return will inevitably bring tremendous development for infrastructure and opening of India's economy to outsiders world.

References


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