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75

Linking Farmers with Markets for Inclusive Growth in Indian Agriculture

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Preface

Smallholder cultivation is the hallmark of agriculture in India where the intensity and density of poverty continues to remain high in spite of the rapid economic progress achieved by the country during the last two decades. Out of 138 million farm-holdings, more than 85 per cent have an average size of less than 2 hectares and they account for about 45 per cent of the operated area. Most of these smallholders are compelled to operate largely in local markets due to the lack of connectivity or integration with lucrative markets at the state, national or global levels. However, the Indian agricultural market is undergoing a transformation and several market models have emerged to provide linkage to the farmers. But the small holders need to evolve a multi-pronged strategy to take advantage of these emerging opportunities.

Realizing the growing importance of linking farmers with markets, the National Academy of Agricultural Sciences (NAAS) organized on 25 July 2014 a brainstorming session (BSS) on the issue of 'Linking Farmers with Markets: Towards Inclusive Growth in Indian Agriculture' with Dr. Anjani Kumar, an Agricultural Economist, as the convener. The BSS was attended by a galaxy of eminent scholars, and the deliberations were enriched by their presence and lively participation. Besides the base paper, the presentations by other experts covered diverse themes including the challenges and opportunities for linking farmers with markets, evolving models of Research–Farmers–Agribusiness partnerships, and inclusive market-oriented development.

The policy paper is an output of the above deliberations, and I gratefully acknowledge the contribution of the Convener, the distinguished participants, reviewers and the editors of the policy paper.

S. Ayyappan
President, NAAS

List of Acronyms

APMC	Agricultural Produce Market Committee
BROMARK	Broiler Farmers Marketing Co-operative Limited
BSS	Brainstorming Session
FPCs	Farmer Producer Companies
FPOs	Farmers' Producers Organizations
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
LFTM	Linking Farmers To Markets
MMPO	Milk and Milk Product Order
NAAS	National Academy of Agricultural Sciences
NGO	Non-governmental Organization
SPS	Sanitary and Phyto-sanitary

Linking Farmers with Markets for Inclusive Growth in Indian Agriculture

1. INTRODUCTION

The food marketing system in India is undergoing a rapid transformation, which is being attributed to several factors including rising per capita income, urbanization, increasing market liberalization and globalization of the food economy. Consumption baskets are changing in favour of high-value commodities and integrated food supply chains have emerged as one of the fastest growing and most visible market phenomenon in India in the recent years. The increasing dietary diversification accompanied by growing concern for food safety and quality are accelerating this transformation in the food marketing system (Pingali, 2007; Birthal, 2008; Kumar, *et al*., 2011; Joshi and Kumar, 2011). Traditional marketing channels with *ad hoc* sales are being replaced, albeit slowly, by coordinated links between farmers, processors, retailers and others in the value chain.

These developments have led to the emergence of different market integration models like co-operative producers' associations, Farmer's Producers' Organizations (FPOs), Farmer Producer Companies (FPCs), and contract farming, among others. The new emerging marketing systems are expected to improve efficiency in production and marketing, and speed up a shift in agricultural production from subsistence to a commercial enterprise. The emergence of such markets and market integration models not only offers tremendous opportunities for enhancing social welfare (of both producers and consumers) but also poses challenges. The smallholders, particularly, may not be able to reap the benefits of the emerging opportunities. This aspect is crucial in the Indian context as Indian agriculture is dominated by smallholder farmers and the size of about 85 per cent of the operational holdings is less than 2 ha. In fact, the predominance of smallholders in Indian agriculture has been increasing over time and the emerging trends indicate that the number of smallholders would continue to grow in the future. Therefore, it is imperative to provide smallholders access to efficient markets in order to anchor inclusive growth in India. However, serious apprehensions are being expressed about the exclusion of smallholders from the emerging market opportunities. Their small-scale enterprise, low marketable surplus, weak technical capacity, lack of capital, high vulnerability to risks, and inability to comply with the emerging stringent food safety and quality standards, may act as barriers

to their participation in both domestic as well as global markets (Pingali, *et al.*, 2005; Gulati, *et al.*, 2007; Mehta, *et al.*, 2007; Ton, *et al*., 2014). In spite of the emergence of several innovative mechanisms of linking farmers to markets (LFTM), there has been a continuous fragmentation of the back-end activities of the agricultural production system in India, though the front-end activities have been expanding and consolidating rapidly. The great challenge lies in linking the two ends and ensuring viable business opportunities for all stakeholders along the value chain.

In this backdrop, the National Academy of Agricultural Sciences (NAAS) decided to organise a Brainstorming Session (BSS) on 26 July 2014 to deliberate on the issues in detail and come up with some concrete institutional and policy options for exploring and accelerating the inclusive processes and approaches of linking farmers with markets. This Policy Paper is the outcome of the above BSS and is based on the views and experiences shared by the distinguished participants of the session. The basic premise of this policy paper is to assess different frameworks of linking farmers to markets, their strengths and weaknesses, the barriers that smallholders face in accessing markets, and the possible options available for overcoming those barriers to entry into the markets.

2. TYPES OF MARKET LINKAGES: STRENGTHS AND WEAKNESSES

There is no dispute that linking farmers with markets is required for ensuring sustainable and inclusive growth. There is also a conscious realization, particularly among the researchers and academia, that the production-push focus alone is no longer a viable strategy to ensure remunerative agriculture. In fact, the issues pertaining to LFTM have generated an intense policy debate worldwide. However, the debate is not focused on the rationality of linking farmers with markets but is more concerned with the issue of making it inclusive and efficient. What policy mix and institutional frameworks are required to promote LFTM? The LFTM has several direct and indirect benefits. Its direct benefits include assured markets, reduced risks, remunerative prices, reduced transaction costs, improved quality and safety of the produce, improved supply of inputs, availability of credit, and the potential for risk-sharing, among other things. In this context, the concept of “linking farmers to markets” should be restructured into that of “how to support farmers to derive benefits from their linkages to markets?” The support mechanisms for linking farmers to markets would depend on the farmers’ marketing strategies on one hand, and on products and market characteristics, on the other hand.

The concept of "linking farmers to market" can embrace an entire range of activities, from the very small and localized to the very large and globalised. For farmers, the potential advantages of integrating with their buyers may be numerous. The integration with different types of buyers also poses several challenges. These challenges are especially complex for the small-holders. The potential benefits of closer integration between farmers and different types of buyers along with the concomitant potential threats are presented briefly in Table 1.

Table 1. Type of Market Integration: Opportunities and Threats for Small Farmers

Type of Linkage	Opportunities	Threats
Direct between farmers and traders	• Time tested • Possibility of long-term sustainability • Formalization not needed • Possibility of training in production and handling • Possibility of getting many supplementary services	• Irregularity in payment • Limited access to high-value markets • No hedging against unforeseen events (like disease outbreak)
Farmers and retailers	• Availability of reliable market at agreed price • Opportunities for improvement in quality • Possibility of diversification towards niche products	• Limitations in meeting variety, quality and safety specifications • Potential of conflict with social obligations because of prior commitment • Potential of deferred payment for longer periods • High risk without involvement of state agencies as a third party
Farmers to exporters	• Potential of high returns • Access to inputs, technical assistance on credit • Exporter often provided transport and packaging • Improvement in quality and reduction in post harvest losses	• Increase in risk because of greater volatility • Difficulty in compliance with standards (for example, organic, quality, traceability, and sanitary and phyto-sanitary SPS measures, among others). Possibility of exclusion due to diseconomies of scale

Type of Linkage	Opportunities	Threats
Direct between farmers and agro-processors	• Access to secure markets at the agreed price • Access to additional markets in addition to fresh markets • Access to high quality inputs and technical assistance • Access to transport • Possibility of higher share in the consumers' rupee • Improvement in knowledge in post-harvest handling	• Possibility of inadequate market for the processed products, thereby putting sustainability in question • Possibility of exclusion due to limitations in meeting variety, quality and safety specifications • Lack of opportunities for realisation of higher prices in the open market • Risk of delayed payments
Contract farming	• Access to improved inputs, technical know-how, among others • Marketing organized by company • Reduced price risk • Access to credit for subsistence expenses	• Frequent mistrust between farmers on one hand, and companies and their employees, on the other • May lead to breach of contract in the event of contracted price being lower than the market price • Difficulty if State/Non-governmental organization (NGO) not involved • Dictation of enterprise pattern may restrict farmers from exploring alternate opportunities
Linkage promoted by leading farmer(s)	• Input and output marketing taken care of • Greater bargaining power • Economies of scale	• Leading farmer(s) may withdraw from the venture • Possibility of deferred payment • Excessive dependence on an individual
Linkages through co-operatives	• Access to improved inputs, technical assistance, among other benefits • Marketing, packaging, grading and storage and processing organized by the co-operative • Potential for scaling up of their business • Greater bargaining power and lower risk • Assured market	• Co-operatives often depend on subsidies and internal managerial assistance • Possibility of bearing the loss because of inefficient management of co-operatives • Possibility of low quality input supply • Deferred payment • Static price fixation

It is clear from Table 1 that the heterogeneity in geographical locations, social and cultural policy, and institutional settings offer opportunities for the evolution of different approaches of linkages between farmers and markets. Further, the strategies of linkage between farmers and markets would also depend on the farmers. The typology of the farmers depend on their level of resource endowment and on the type of their linkage to markets.

3. LINKING FARMERS' WITH MARKETS: OPPORTUNITIES FOR SMALLHOLDERS

Linking farmers with markets offers numerous opportunities. It allows farmers' access to a reliable market, ensures a guaranteed and stable pricing structure, and improves access to credits, inputs, production and marketing services, including seeds, fertilizers, training, extension, transport, and even land preparation. At a wider level, the farmers' linkages, especially with new emerging marketing models, open up new avenues for marketing of the farm's produce, and for stimulating technology and skill transfer, while also improving farmers' compliance with sanitary and phyto-sanitary standards. One of the arguments for linking farmers to markets is that it would facilitate enhancement in the farmers' overall welfare. Most of the approaches of LFTM like the setting up of farmer organizations, cooperatives, and similar forms of collective action are considered as avenues to reduce high transaction costs (Markelova, *et al*., 2009; Valentinov, 2007). They can be oriented towards improving production, marketing, or livelihoods, in general, while sometimes even serving many purposes simultaneously (Bernard and Seyoum Taffesse, 2009; Bernard, *et al*., 2008; Francesconi and Heerink, 2011).

Most studies have been focused on impacts in terms of access to output markets, output prices, marketable surplus, and farmer profits (Birthal, *et al*., 2009; Sharma, *et al*., 2009; Kumar, *et al.*, 2013; Bernard, *et al*., 2008; Holloway, *et al*., 2000). The available studies in India indicate that integration between farmers and formal markets like, cooperatives, and corporate markets, among others, has offered higher profits and lower costs to the contract farmer as compared to those accruing to the non-contract farmers. In addition to the assured markets and stable prices offered to the farmers, the backward linkages have helped in reducing transaction and marketing costs while yielding higher returns to contract farmers. Farmers dealing in dairy, poultry, vegetables and fruits, and contract farmers appear to save significantly on production and transaction costs, as most of these costs are borne by the contracting firms, which have resulted in the accrual of higher net profits to the contract farmers in comparison to their counterparts who have no contracts.

For instance, in the case of Nestle in Punjab, the net profits of contract farmers were more than double of those accruing to the non-contract farmers. In the case of Milkfed too, contract farmers earned 33 per cent more net profit per tonne of milk sold as compared to the profits earned by the non-Milkfed farmers. In another study of contract farming, the net returns received by the contract farmers in Rajasthan were found to be 73 per cent higher than those received by the non-contract farmers (Birthal, *et al*., 2008). Kumar, *et al*. (2013) have also reported a significant increase in the profits accruing to farmers linked with markets through contractual arrangements. Roy and Thorat (2008) showed that in India, marketing co-operatives for grapes reduced transaction costs and improved their bargaining power to earn more. However, there is a felt need to extend their focus and analyze the effects of group membership on access to information and innovation, input intensification, commercialization and broader household welfare.

In the case of poultry, the contract poultry growers fetch about 13 per cent higher returns than the non-contract farmers. The costs of inputs like chicks, medicines, and the feed that are provided by the integrators, account for about 75 per cent of the total production cost. Also, the poultry integrators bear the bulk of both production and marketing risks and insulate the farmers from uncertainty (Gulati, *et al*., 2007).

These examples cannot, however, be simply generalized. There are also cases wherein models of linkage between farmers and markets did not improve the farmers' situation, and wherein such arrangements were dissolved after a disappointing experience (Markelova, *et al.*, 2009; Poulton, *et al*., 2010). Nonetheless, the models based on collective action like cooperatives and FPOs have been largely successful, especially for high-value crops. The empirical evidence for foodgrains and other staples is yet to come (Barrett, 2008; Berdegue, 2001).

4. INCOCLUSIVENESS OF NEW MODELS OF LINKING FARMERS WITH MARKETS

There are apprehensions that the smallholders may be excluded from the new institutional arrangements of integrating farmers with markets. These arguments are based on the fears that in order to reduce their transition costs, firms may be induced to enter into tie-ups with a few larger farmers rather than dealing with a large number of scattered small holders. Also, large farmers are better placed in many of the aspects of production and supply such as the capacity to invest in production-related inputs, technology information, and high risk-bearing ability.

However, it is also a fact that large farmers enjoy better access to market information and a strong bargaining power, which may erode the firm's advantage in terms of lower transaction costs.

Several studies have been carried out to assess the extent of participation of smallholders in different market integration models. Most of the studies concluded that the smallholders were well represented in the diverse modes of LFTM. The results of these studies do not support any evidence for a systematic or deliberate bias against the smallholders' participation in the different models of market integration (Birthal, *et al.*, 2007; Kumar, *et al.*, 2013; Roy and Thorat, 2008; Fischer and Qaim, 2014). These arrangements provide a range of models of linking farmers with the markets. For instance the integration of dairy represents two types of institutional arrangements–integration of farmers with co-operatives, and integration of farmers with corporates. Operation Flood (1970-96) brought about a major breakthrough in the Indian dairy sector. However, following the amendment of the Milk and Milk Product Order (MMPO) in March 2002, a number of private companies have come up in the Indian dairy market and are scaling-up their procurement and processing activities. This is also working to the advantage of the milk producers.

The approach to integration with farmers is similar in both the co-operative and private sector models. The price of liquid milk is determined by the fat content of the milk. Farmers voluntarily join the co-operative and, members have the freedom to explore other marketing opportunities. A similar condition holds for farmers contracting with Nestle and other private firms. Apart from the phenomenon of direct buying and selling, the farmers receive inputs and extension services. Nestle, for example, provides a number of services such as veterinary services, medicines, and feed supplies at breakeven prices. Nestle follows two types of contracting arrangements. In the case of producers with more than 25 milch animals, it enters into a direct legal contract with them. In the case of smaller farmers, milk is procured through agents who have a legal contract with Nestle.

Venkateshwara Hatcheries started its contract broiler operations during the mid-1990s in South and western India. In their model broiler, prices are fixed by the All India Broilers Farmers Marketing Co-operative Limited (BROMARK), with growers also receiving a share of the additional profit earned due to rising market prices, as well as an incentive for better feed conversion efficiency. Contract farming in poultry has been successful in India due to the presence of strong backward linkages. The nature of contracting has been instrumental in removing growers' risk through

buyback guarantees and the provision of coping against production failure. There are also many other stories of inclusive market participation pertaining to horticultural crops, basmati rice and medicinal plants.

5. CONSTRAINTS REGARDING SMALLHOLDERS ACCESS TO AGRICULTURAL MARKETS

The small-scale farmers face many constraints which impede them from harnessing the potential benefits of the marketing opportunities available to them. These constraints are linked to the issues of production, transactions, and the exchange of products. The farmers, who often live in remote areas with poor infrastructure, face high transaction costs that significantly reduce their incentives for market participation in terms of both agricultural outputs as well as input markets (Barrett, 2008; Key, *et al*., 2000; Omamo, 1998). Marginal and small farmers with low assets have limited access to services, including effective extension and rural credit. Access to these services is an important precondition for upgrading the production systems (Reardon, *et al*., 2009; Wiggins, *et al*., 2010).

The constraints can be defined and categorized in several ways on the basis of the existing literature and several empirical studies. In order to facilitate a clear understanding of the different types of constraints affecting LFTM, a simple framework of various constraints has been depicted in Table 2.

Table 2. Constraints Faced by Smallholders in Accessing Agricultural Markets

Constraint Type / category	Constraints
Resource constraints	• Small and fragmented holdings • Structural, chemical and microbial changes in soil fertility • Changes in irrigation and rainfall pattern • Education • Working capital (cash, labour, etc.)
Technological constraints	• Labour productivity • Land productivity • Technical efficiency • Storage capacity • Know how
Subsistence needs	• Household dependency structure • Off-farm income

Constraint Type / category	Constraints
Financial constraints	• Credits • Cash-flow deficit
Product constraints	• Volume (low marketable surplus) • Variable product quality • Seasonality fluctuations in production • Staple crops cultivation needs
Locational constraints	• Geography • Weather • Culture and traditions • Legal • Infrastructure

Source: Adapted from Pedro, *et al.* (2013).

6. STRATEGIES FOR STRENGTHENING SMALLHOLDERS ACCESS TO MARKETS

It is fair to assume that all small farmers have their own strategies to improve and maximize income. The experience and studies suggest that for them to remain in business there are two ways, (i) let these farmers and markets evolve overtime by themselves, (ii) there is a need for induced shortening of the distance through certain strategic interventions. Fortunately in India, a number of LFTM models are being experimented with and these efforts have achieved a good deal of success. The relevance and importance of each type of LFTM model, however, may vary from product to product. The experiences have also shown that the potential benefits of LFTM are product-and content-specific. This implies that one size and one approach would not fit everywhere.

We also have empirical evidence to suggest that players in the value chain such as producers and buying agents, including traders, firms, corporates, and exporters, among others; institutions such as farmers' organizations, and cooperatives; and the institutional / legal environment and arrangements such as infrastructure and Information and Communication Technology (ICT), and contractual framework policies, among other things, play a significant role in linking farmers to an efficient market.

In many cases, farmers' organizations make it easier for the small farmers to engage with markets and to draw benefits from their linkages with the markets.

FPOs can cover a large scope of activities and functions in the commodity chain such as collection, grading, post-harvest operations and storage. However, they may also face many challenges such as the terms of the contract itself, and their access to infrastructure and market information, among other things. The role of contractual arrangements should be carefully examined. Improved infrastructure is strongly associated with better functioning of markets (IFAD, 2011). However, such arrangements are often lacking in rural areas because the intervention of the State agencies is inadequate and the local communities do not have sufficient financial and management capacities to strengthen the arrangements. Different market-related infrastructures can be considered as drivers of new market opportunities for smallholders, which include energy and water infrastructure, rural roads, transportation and market information. The institutional environment is another important pillar under which the identified mechanisms including FPOs and contracts work.

The question, therefore, remains as to what strategies would strengthen smallholders' access to markets. Clearly, there is no one strategy that could fit all the bills. Instead there is a need for multiple strategies and an integration approach that would be deemed appropriate for specific products, locations, market types, and types of farmers. In this situation, however, the role of the State is crucial in creating an enabling institutional environment that would support the development of agricultural value chains wherein smallholders can find better market opportunities. The policies and institutional environments must be geared towards the creation of more effective and competitive market arrangements, and dynamic non-market arrangements with a synergy between agricultural and macro-economic policies. According to the specific context, their concrete actions may result from one or a combination of strategies for strengthening markets linkages. Once this happens, and there is evidence of a reduction in the number of farmers not linked to markets, the dream of inclusive growth in Indian agriculture would be realized.

This deliberation was also timely, as the new Government at the Centre is all set to work on transforming agricultural markets in India. The talks about creating more markets at the doorsteps of farmers, and creation of a warehouse, the promise to invigorate post-harvest lending on warehouse receipts, and revival of the Agricultural Produce Market Committee (APMC) Act are all measures that are seemingly directed towards bringing farmers, especially smallholders with lesser means, closer to the markets. The distinguished panelists and participants discussed these issues in

greater detail and suggested several viable strategies for strengthening the linkage between farmers and markets.

7. THE WAY FORWARD: POLICY OPTIONS AND ACTIONS

There are several issues that need to be pondered upon in detail, followed by a concerted dialogue to promote LFTM. Some of the salient ones that emerged during the deliberations to strengthen LFTM may be expounded as follows:

- Differentiated strategies could be evolved to cater to the needs of different categories of farmers.
- The strengths, opportunities, benefits and threats need to be clearly analyzed for each model before its execution.
- The imperative measures include arrangement of the requisite finances, registration of contracts, creation of an assured market and linked prices, and laying down of risk aversion plans.
- A uniform size does not fit everywhere and, therefore, different models, tailored to meet regional needs, should be evolved.
- The delineation of agri-business zones for different commodities should be undertaken as per a cluster-based approach. Markets should be developed in a 'hub-and-spoke approach' for the marketing of farm outputs and inputs.
- The commodity-based processing sector needs to be developed and farmers should be encouraged to undertake market aligned production.
- The NARS should emphasize the adoption of market-driven agricultural technologies to ensure better productivity, returns, feedback, satisfaction and awards, and ultimately higher agri-GDP growth.
- Due emphasis needs to be given to market research and intelligence, and virtual incubation and mentoring should be encouraged to promote new entrepreneurship.
- It is also crucial to evolve innovative licensing models for risk-sharing and equity participation in order to strengthen linkages and partnerships among different kinds of stakeholders.

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Note: The designations and affiliations of the participants are as on the date of BSS.

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