

Developing the Supply Chain for Sustainable Agricultural Development in India

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Introduction

Agricultural marketing is a critical weak link in the Indian agricultural value-chain. Lack of a proper supply chain adds to the marketing risks of the farmers. This arises from several sources: poor infrastructure, post-harvest technologies and poor supply chain logistics and continued wastage due to inappropriate packing and handling, added with lack of quality processing, leads to lower prices, impoverishment, and even suicides. Lack of cold storage chains and warehousing facilities, urgent need for electricity with constant supply load factor, modern warehouses, market connectivity and limited agri-processing facilities ensure that smallholder farmers (82% of farmers have landholdings less than 5 acres) are not able to leverage on the existing agricultural subsidies like free electricity, subsidised diesel, fertilisers, water and cheap credit which are mis-targeted. Creating a proper logistics framework and improving the marketing channels for the small-holder farmers is critical not only from the farmers' perspectives, but also from the perspective of the consumer.

The problems of the cold storage sector, the warehousing sector and the packaging / distribution networks, deserve to be studied in-depth. We need to study the wastages in different stages of the food chain and try to reduce waste. There is a need to create awareness about the utility of smaller warehouses, the warehouse receipts scheme, better logistics and the aggregator model for smallholder farmers as also the utility of the commodity exchanges among farmers, government officials, traders, and Banks. How do we create a chain of modern small warehouse which will benefit the smallholder farmers of the country? Creating a special fund & providing low cost funds to banks for on-lending will lead to quick additional warehousing capacity creation. Allowing banks, financial institutions, foreign investors, retail individuals and pension funds, hedge funds to invest in commodity exchanges will enable better market exposure, trading volumes and stable prices in the commodity exchanges and better margins for smallholder farmers

The goal is to ensure a low-cost self-sustainable model for agricultural development which is smallholder farmer-driven with space for value-driven interventions from various stake-holders such as Govt. agencies, exporters, processors, research agencies, universities, market agencies, banks, warehouses, transport agencies, farmers, farmer producer organisations, joint liability groups, and all others involved in on-farm, off-farm and allied activities such as horticulture, pisciculture, animal husbandry and forestry. The purpose is to enable sustained and inclusive agricultural growth for all farmers, leading to poverty reduction. The purpose is also to enhance the performance of the agriculture sector significantly with higher private sector investment, higher production and higher price realisation by farmers so that doubling of farmer income by 2022, is possible. The key objectives are:

- a. Strengthen all backward and forward linkages for agriculture market development and private investment in agriculture.
- b. Facilitate improved access to technology, knowledge, finance, infrastructure and better inputs through convergent delivery mechanisms.
- c. Increase farmers price realisation through increased access to market and better bargaining power through formation of Farmer Producer Companies.

- d. Enable institutional development for better market structures, investment facilitation and research for overall sector development.

The Project could have 4 major outputs:

Output 1:

Enable formation of farmer producer groups / co-operatives for maximising profits to farmers and strengthening their collective bargaining power

- a. Planning & monitoring market development in key agri-clusters.
- b. Enable formation of farmers' groups and producer organisations.
- c. Support formation of market linkages between buyers and farmers.
- d. Build institutional capacity to regulate markets and facilitate private investment.

Output 2:

Ensure effective accessibility of farmers to clear, reliable and dynamic market information in a transparent framework

- a. Develop and operationalise an online market information system for mobiles.
- b. Support operationalisation of KVKs as convergent delivery points for quality inputs, knowledge & technology transfer.
- c. Build institutional capacity to better interpret, process, and regulate information.

Output 3:

Strengthening the marketing chain and market Infrastructure, wherein smallholder farmers are also effective partners

- a. Enable the development of crop specific effective marketing chain (including logistics) for identified major crops in Bihar context.
- b. Enable administrative reform and institutional quality in agriculture department, related agencies and agriculture research.

Output 4:

Establish and operationalise institutional and regulatory reforms and build the capacity of Govt. agencies/NGOs/corporates.

- a. Assessment of current issues and constraints including benchmarking of best practices adopted by other states in India in terms of institutional structure and regulations for Agriculture Market Development.
- b. Develop institutional structure including policies, regulations, organization structure, and roles and responsibilities of the intuitions envisaged.
- c. Establishment and operationalization of the institutions including staffing strategy, drafting of operational manuals, training and capacity building.

- d. Support implementation of action plan for functional & structural reforms in the Agriculture Department.
- e. Develop and implement an agriculture schemes management information system to facilitate timely decision making and ensuring maximum coverage of the schemes.

Post-Harvest Interventions

Without proper post-harvest facilities, farmers find it very difficult to enhance profit margins. The State APMC Acts and Essential Commodities Act and a host of outmoded Acts have outlived their utility value and more efficient and modern warehouses, cold storages and private mandis/markets are all essential today. For the smallholder farmer, diversification into animal husbandry and fisheries in ponds is an essential need to diversify risks. ! New Technologies which help to reduce costs and risks, better access to storages, fair spot markets, commodity exchanges where farmer producer organisations co-exist with traders, cheap credit are all essential for commercialising agriculture.

More Farmer Associations, Farmer Producer Groups and Joint Liability Groups are needed today to offset the pernicious strangle-hold of traders and agents and ensure better margins for themselves. Capital Investment for enhancing land productivity, building up the assets base and diversifying from subsistence farming into commercial farming, is essential if the smallholder farmer is to survive. Organised retail (though as yet only 3% of the total retail market) is expected to double its share every three years or so and therefore is likely to play a profound role in influencing the nature of future agricultural markets. Other game-changers are the National Food Security Bill, which will be sourcing huge volumes of foods from domestic producers and the National Marketing System for agricultural produce as announced in the Union Budget for 2015-16. Traditional production and supply arrangements are unlikely to prove adequate in meeting challenges posed by these three major developments.

An integrated project should provide end-to-end support to producers of high-value agricultural produce [fruits & vegetables (F&V), milk (dairy) and sheep, pigs, goats, poultry (animal rearing)]. The key activities which will help smallholder farmers are project production support, aggregation of produce, value-addition of produce, trading and marketing (product development, packaging, branding, distribution, and retailing), better financial services. Subsidised credit for farmers, trade credit, warehouse receipts and contract farming arrangements by the financing banks are needed to reduce banks' credit risk and result in better financing of smallholder farmers. Small-scale warehouse may be designed and financed as farmers can hold on to their stocks when the markets are flooded with stock arrivals, store in cold storages/godowns and sell when market prices are more advantageous. Contract farming for smallholder farmers can increase productivity and gain access to high-value markets but unnecessary players in the value chain need to be removed to reduce costs.

Supply Chain Interventions and Outcomes

The expected outcomes would be:

- a. Organise all farmers into groups that are equipped to improve production and access the market via joint liability groups, farmer producer companies or cooperative associations.

- b. Facilitate private investment in warehouse storage and supply chain for agriculture and horticulture produce.
- c. Increased smallholder farmer access to credit and crop insurance.
- d. Enhance price information access through mobiles/IT to all farmers.
- e. Improve functioning of KVK extension services and increase private sector participation.
- f. Introduce regulatory reforms for improved market access and farm price realisation for poor and marginal farmers.
- g. Strengthen existing grass-roots agencies and institutions with appropriate reforms/restructuring for:
 - i. regulating agricultural markets by farmers and not traders;
 - ii. sharing up-to-date scientific, technical and market information
 - iii. attracting long-term capital investments into agriculture
 - iv. commissioning innovative studies and market risk analysis

The Scope of the Project and Requirements

- i. Identify potential crops and develop agribusiness potential, assess current status and develop a broad roadmap/action plan for improving productivity and meeting agribusiness needs aligned to specific agro-climatic zones. This needs in-depth understanding of smallholder farmers' issues and perspectives, mandate and functioning of various state and district level administrative support systems, policy and the banking and legal framework.
- ii. Detailed assessment of agricultural commodity marketing infrastructure, warehousing systems, covering existing market infrastructure, value addition/processing facilities, existing and future commodity growth and demand both for regulated markets and private markets and for principal crops produced/handled.
- iii. Analyse business models promoted to maximise returns for farmers and provide assured quality backward / forward linkages. This could include exploring options of contract farming, creating farmer producers companies (FPCs) and buy-back opportunities with leading processors, exporters or large retailers.
- iv. Assessment of role of key private sector agents and companies and their value chain operating modalities feasible options and incentives for them to invest in the state, including innovative approaches for private sector partnerships and financing PPPs.
- v. Study existing institutional structures for agriculture and allied activities and develop a roadmap based on best practices, to restructure the agencies for effectiveness/efficiency.
- vi. Develop model for agricultural marketing officials/marketing department agency as a facilitator to promote market-led extension and increase farmers' access to markets based on existing marketing bodies- agencies, cooperative societies, federations, nodal organisations in the district and roles played.
- vii. Assess the institutional capacity of agriculture research institutions in the state,

comment on research output into farming practices, and develop a detailed action plan for improving institutional capacity of agricultural research institutions in the State.

- viii. Study various (existing) Rules, Acts and guidelines applicable to the agriculture sector and prepare regulatory reforms to be introduced for increased private sector participation in providing various services (such as technology, finance, market and infrastructure) to the farmers.

Based on above analysis options combining commodity and spatial targeting for interventions based on contiguity and agro-climatic needs should be kept in mind while arriving at the options for commodities growth. All options with potentials, risks and mitigation measures, need to be spelt out with expected outputs and outcomes of the Project and suggested timelines for implementation. Developing baseline data for project measurement and log-frame purposes, is necessary.

Implementing Change

All assessment reports need to be incorporated with a set of detailed recommendations based on gap analysis, best practices elsewhere and policy parameters. The implementation phase will focus on delivering/implementing the set of recommendations that follows from the various set of studies during inception phase of the project. This would include implementation support to the farmers and the State Govts. for improving agriculture production, productivity and agriculture extension services based on best practices as under:

- a) Support KVK operationalisation as convergent delivery points for inputs, knowledge & technology transfer and reduce constraints faced by farmers in accessing better quality and timely inputs, knowledge and technology.
- b) Develop KVKs as convergent service delivery points and support implementation of the action plan and provide implementation support and provide training & capacity building support to extension officers, smallholder farmers and other stakeholders.
- c) Develop an e-Kisan Management Information System for a mobile-based platform to monitor service delivery and implement appropriate interventions both at micro and macro level for reducing post-harvest losses and increasing returns to farmers.
- d) Facilitate implementation of state level specific strategies for market led extension over and above the common actions required in all districts.
- e) Conduct Pilots on innovative agricultural practices and also support experiments in agricultural research. Pilot and scale up of the agriculture market information systems in the state and linking it up with national commodity exchange market.
- f) Facilitate and ensure greater availability and access of institutional credit and crop insurance.
- g) Provide support to the state government and allied agencies of the Government in accessing resources and effective implementation of various central and state schemes for agriculture development including productivity enhancement, marketing, food processing, post harvesting facilities.
- i) Organise smallholder farmers into groups that are equipped to access markets through producer companies. Setting up of FPC/ producers association and providing capacity building support so that they are viable and sustainable within a two year time frame. Develop direct market linkages between retail chains/ global commodity trade companies/ consumer product companies and farmers/ FPCs' for improved farmer price realisation.

- j) Facilitate investments for the agriculture marketing network, based on the selection criteria and preparation of the core sub-projects. Provide implementation support for priority market infrastructure interventions/ supply chain and development of investment prioritisation criteria program framework.
- k) Support and facilitate private investment in farming, supply chain management, warehousing and transport, pledge and warehouse receipts finance and weather-based crop insurance schemes.
- l) Establish and operationalise an institution for agriculture market regulation and development. This would include framing of appropriate rules and guidelines and creating an appropriate institutional structure for agriculture development through increased private investment and improved market access by farmers.
- m) Facilitate transfer of best practices to KVKs from elsewhere in India and abroad through, visits, knowledge transfer lectures, pilot projects and exchange visits. Capacity building and reform related support to Government's agri- related agencies and institutions.

The Way Out

After the 1992 economic reforms, farmers have suffered and the weaker ones have no way out except by committing suicide. Debt write-offs are regularly touted as a panacea by various state/central governments. But, such announcements play havoc with the bank repayment cycles. Other steps like creation of RRBs and NABARD, revival of Cooperatives, 2007, various agricultural insurance schemes, especially the 2016 version, called the Prime Minister Fasal Bima Yojna with very low and affordable premium rates (2 per cent for Kharif crops and 1.5 per cent for Rabi crops) would be a boost to the farmers and a good safety net for their risks. The efforts at promoting financial inclusion in utilising Jan Dhan Yojna, the Aadhar Card and the Mobile Phones are noteworthy and will be a boon for the farmers. The new health insurance and accident insurance schemes and the micro-pension schemes are very important in securing financial inclusion for the farmers. The doubling of Farmer Incomes by 2022 is also very important if the net income is considered. There must be a mechanism to control the galloping input costs of farmers.

The costs of HYV seeds, fertilisers and pesticides have trebled in just 6 to 7 years and have negated the gains made in the 11th Five Year Plan when the agriculture sector recorded 14 per cent overall growth. The creation of the National Agricultural Market using the e-platform in 2016 is another important innovation and will reduce the impact of APMC controls which have become trader-dominated and have strangled farmer incomes. The Pradhan Mantri Sinchai Yojna (PMSY) announced in the 2016-17 Budget for providing irrigation to farmers (only 44 per cent of our agricultural farms is irrigated today) is another boost to the farmers as the idea is to irrigate all fields of farmers. The Accelerated irrigation Benefits Program will help irrigate 80.68 lakh hectares while the PMSY would bring 28.5 lakh hectares under irrigation. These need to be followed up and monitored systematically. The Soil Health card and the Organic Farming Initiative in the North East are very Important Schemes. But such initiatives must be accompanied by proper training and technical advice as regards manure, green manure, chemical fertilisers and crop certification processes. The MGNREGA Scheme has to be revived with the budgetary expenditure increased to Rs. 38,500 crore and must be accompanied by systemic efforts to ensure that these funds are not wasted as was being done earlier. Irrigation facilities like ponds and wells must actually be dug so that farmers benefit ultimately and not politicians or contractors.

Perspectives

Some major initiatives are yet to be taken. The computerisation of land records was initiated in 1975 and as on date has only been completed in Karnataka. Land consolidation and land re-alignment as also land mutations need to be taken up on an urgent basis. Cooperatives need to be revived and without the help of vested interests. More Farmer Clubs, Joint Liability Groups and Farmers Associations as also Farmer Producer Organisations need to be set up urgently. Mobile-based apps for farmers about crop prices, agri-inputs and prices, various Central/State government schemes and farmer advisories need to be in place with the help of NGOs/State Governments. Local seed villages, better connectivity with Mandis (roads/bridges) are essential as are stable input costs. The need to use water judiciously and not waste water, better water drainage systems and micro-irrigation devices (drip, sprinklers) are all very essential. More producer companies and production cooperatives are urgently needed. HYV seeds, diversification of risks with animal husbandry, dairy, fisheries, floriculture, vegetable cultivation are needed urgently. How to increase the net income of farmers is the ultimate test of the Rural Economy. To achieve double digit GDP growth, agricultural GDP must be enhanced to 5 per cent soon. That is the challenge to India if we aspire to be a World Power. Without enriching our farmers, India will fail.