Storage, Transport and Marketing of Agri. Produce: Q+A

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What should be the optimum Density of Markets? What are the factors that decide Location of Agriculture Market?

The availability and access to markets by all farmers in general, and small and marginal farmers in particular, is an important factor in the market architecture. National Commission on Agriculture (1976) had recommended a market within range of 5 km of farms, a distance negotiable by walk or cart within an hour. This assessment was subsequently also reiterated by National Commission on Farmers (2004). In pursuing this recommendation, the optimal market density is normally spoken of in relation to markets having a catchment area of 80 sq. km (5 km radius). The recommendation was originally made when road connectivity was minimal and farmers would bring their produce on head or on camel or bullock carts.

Similarly, assessing market density on the basis of production alone is not sufficient as the type of crop, number of harvests in a year and scope to increase cropping intensity will have a role in market footfall.

Following key factors, play a very important role in location of Agriculture Market-

- Road (or rail/waterway) connectivity to communicate produce to market.
- Reasonable travel time to wholesale market, linked to safe travel time for produce type (eg. shorter for milk, longer for grain) and cost of travel.
- Number of farmers served by a market
- Production quantity, the size of each market and its capacity to handle volumes should be factored for prevailing crop type.
- Consumer population in the State can also be assessed as a factor for added market requirement. However, with improved connectivity, the market channels including online marketing will actually mean that markets in the future will cater to nation-wide consumers under the unified national market.

What are the various constraints in doubling the income of small farmers?

The number of smallholders, consisting of marginal and small farmers (less than 2.0 ha land holding), has increased from 70 per cent of total land holding during 1970-71 to 85 per cent in 2010-11. The average size of land holding has declined from 2.28 hectare in 1970-71 to 1.15 hectare in 2010-11.

Small and marginal farmers, who may not hold formal land titles, are unable to access institutionalised credit. Banks tend to refuse to lend to FPOs due to disaggregated land holding or lack of other collateral. Small farmers do not have economies of scale and access to market or availability of information. Thus small landholding is not very profitable.

What can be the various ways that may help in doubling the income of small farmers?

Higher income realisation per unit of land is important for making small land holdings economically viable. Minimisation of transaction cost and tapping high value market are options to provide an opportunity to smallholders. This calls for increasing their effective

size through various alternatives available. These include cooperatives, producer's companies, cluster formation, etc. so as to reduce the transaction costs to cultivate per hectare and ensure better and collective participation in the marketing system.

Farmer producer organisations (FPOs), can be made as cooperatives or companies this will help to improve the situation of small farmer's condition by Increasing the Land Holding Size which is average .65 ha at present.

How to bring economies of scale at Farm Gate? Explain the role of FPO & SFAC in this regard?

Aim of Farmer producer organisations is to group farms together, to operate in collaboration as a large cluster. FPOs exist across the country, mainly registered under statutes such as the Cooperative Laws, and lately under the Companies Act as Producer Companies. Small Farmers' Agri-business Consortium (SFAC) is the nodal agency at the national level for the creation of FPOs. Cluster approach helps in bringing Economy Of scale at farm Gate. This helps in better management of farm inputs, the cultivation gets consolidated. FPOs can also be created for groups of farmers in close proximity to urban centres.

The benefits from grouping together of farms are essentially from generating viable logistics capacity in the supply of raw inputs (fertilizers, planting material, irrigation, etc.) leading to an incremental reduction in input costs. Similarly, farming on contiguous land allows a collective functioning, for the viable deployment of farm mechanisation, optimising labour costs, and for post-harvest activities.

The economy of scale from FPOs, can be obtained on the following principal fronts-

- Raw Inputs (eg. assured volume of fertilizer and planting material can lead to incremental reduction in input costs)
- Farm mechanisation (eg. contiguous farming can lead to viable deployment of harvesting combines or other farm mechanisation – incremental reduction to labour)
- Post-harvest Infrastructure (eg. capacity utilisation is justified for pack-houses, grain silos, transportation, etc – a transformational change in supply chain)
- Market access & connectivity (eg. control of value chain system shifts into hands of FPOs once meaningful volumes are available to transact on both supply and inputs)

What is Village Producer Organisations? How they can help in strengthening the financial health of small Farmers? How to improve the FPOs/VPOs?

Village produce organisations can be developed as a joint venture of FPOs, or JV of a private company and FPO, or with public private participation. It is formed in such a way that an entire village region is developed for a predetermined set of agricultural produce, as well as it helps with post-production activities.

For example, a region having strength in producing fibre crops can be developed as a VPO to include small handloom, weavers or handicraft units. Similarly, a village that has appropriate agro-climatic environment for mangoes can also intercrop tomato and other vegetables and take up post-production management such as aggregation, packaging,

branding and dispatch to markets.

An example is of grapes production around Nasik, where entire regions around villages are working to expand productivity and enhancing post -production.

GOVT SUPPORT FOR IMPROVING THE FUNCTIONING OF FPOS

- Grant of matching equity (cash infusion of upto Rs. 10 lakhs) to enhance the credit worthiness of registered FPOs (Farmer Producer Company – FPC).
- Credit Guarantee Cover to Eligible Lending Institution (ELI) to minimise their lending risks.

After mobilisation of farmers into a group, there is very little support in marketing, value added logistics or in B2B interactions. So there is a need for incubation support to FPOs so that they have a greater clarity of their value chain involvement and can address their concerns better.

What are the impacts of Agricultural Trade Policy and Tariff Changes Over Indian Agriculture?

A stable trade regime helps both farmers and stakeholders in building market relationships.

There have been frequent and short term changes in Agriculture Policy and tariff regimes. For example in case of Wheat, Pulses, edible oils import tariffs has shown frequent changes. Taking the case of wheat as an example, in the last eight years (between 2007-08 and 2014-15), the import tariff was largely zero. In September 2016 the import duty was 10 per cent and brought down to zero in December 2016. In case of pulses, during the last 10 years, the imports were allowed at zero tariff. Only during March, 2017, the import duty on Tur dal was raised from zero to 10 per cent.

Such frequent changes are triggered by concerns of consumer unease over prices, but cause disruptions in cultivation patterns at domestic farms. Import policy for agriculture is often considered as a price support and price stabilisation tool, which is inclined more towards consumers.

Minimum Export Price (MEP) is a tool to restrict or ban the export of a commodity in response to rising prices in the domestic market.

Do you think is there any requirement of Agriculture Trade Policy in case of India? Discuss how such policy can be a game changer?

The Foreign Trade Policy by the Department of Commerce usually takes a long term view (3 years at present). But there is no corresponding Agricultural Trade Policy in the country. Agriculture is unpredictable, subject to vagaries of nature on the domestic front and markets uncertainties. A short term view of trade policy can add further to the risks and uncertainties.

Agricultural trade policy should balance the interest of both the producers and the consumers, in addition to long term food and nutritional security concerns of the country. A long term view of trade over 5-10 years period should be focussed upon.

What is the concept of Future Trading? Discuss the role of Future Trading in doubling the income of farmers?

A futures trading is an agreement between two parties eg. buyer and a seller to purchase an asset at a specified date and price in future. It works as a hedge against any sudden change in prices. Although, the Futures markets and exchanges suffer from inefficiencies like-

- Infrequent trading, lack of effective participation of trading members,
- Poor physical delivery in many commodity markets,
- Absence of well-developed grading and harmonised standards, and
- Other market imperfections.

Futures market can be developed as an alternative marketing channel for farmers.

Steps to promote Future Trading

- *Remove entry barriers for farmer participation*– Framer Participation is limited due to the entry barriers in the form of membership criteria, stringent KYC norms, margin requirements, etc. By making it easier and simpler for farmer producer companies to take membership of exchanges, farmers can be encouraged to formal, regulated, cash-less markets.
- Boost warehouse-based sales and commodity finance
- *Expand the digital Mandi network* – The Model APLM Act 2017, provides for multiple online platforms.

In India due to lack of Storage Facilities a major chunk of Food Grains is wasted. Comment on the Govt efforts in this regard? Suggest few Innovative ways for providing adequate storage facilities?

India incurs post-harvest fruits and vegetable losses worth over two lakh crores each year largely owing to the absence of modern cold storage facilities and lack of proper food processing units. The total storage capacity in India is over 300 lakh tonnes, and there is an additional requirement of cold storage of about 370 lakh tonnes for fruit and vegetable storage alone. The existing cold storage capacity in India is confined mostly for storing potato, while the majority of fruit and vegetables are sold at local or regional markets which do not have cold storage facility.

Govt Of India enacted Agricultural Produce (Development & Warehousing) Corporations Act, 1956, which provided three tier warehousing system in the country, involving a Central Warehousing Corporation, State Warehousing Corporations and Cooperatives. Presently, there are three main agencies in the public sector engaged in building large scale storage/warehousing capacity viz., Food Corporation of India (FCI), Central warehousing Corporation (CWC) and State Warehousing Corporation (SWCs). The capacity available with FCI is used mainly for storage of food grains for the Central Pool Stock. FCI owns storage capacity and also hires storage capacity from other sources like CWC, SWCs and private owners. The main functions of the CWC and SWC are to acquire and build warehouses at suitable places and to operate them for storage of agricultural production,

fertilizers, and certain other items including industrial goods.

Storage and handling facilities need to be strengthened in the fruit and vegetable in the farm gate as well as in the markets, thereby providing infrastructure facilities to promote increased productivity and to reduce post-harvest losses. A lot of positive steps have been initiated by the Government of India by launching the National Horticulture Mission. Different stakeholders like growers, entrepreneur, technologists, private sector, Government should come forward together to initiate a consolidated approach on storage, marketing, transportation, technological support and processing facilities for horticultural crops that no doubt, play an important role in the Indian economy. Decent amount of Storage capacity has been created under the Agricultural Marketing Infrastructure sub-scheme (erstwhile Rural Godown Scheme) of the Integrated Scheme for Agricultural Marketing (ISAM).

Earlier, cold storages largely located in potato growing areas such as Uttar Pradesh, Punjab and West Bengal were mainly designed for a single commodity. Most of these used old technology in terms of construction, thermal insulation and refrigeration systems with practically no automation. Nowadays, with the use of improved technology, shelf life is being extended by adopting controlled atmosphere (CA) storage in which oxygen is maintained at about 5 per cent and carbon dioxide at 1 to 3 per cent, while temperature is adjusted to the particular commodity, particularly fruits such as apples and pears.

Hybrid cold storages powered by solar energy that can help store a range of other vegetables and fruit at affordable rates have already been initiated by non-governmental organisations with the help of farmers' groups. Solar-powered vehicles, already introduced in some remote villages, running on improved rural roads that connect farmers to urban markets can provide a good solution to farmers' post-harvest problems.

Explain the disparities in capacity utilisation of Warehousing Facilities vis-à-vis Small Framers and various regions across India?

Small Farmers and Warehousing Facilities

Small farm holdings contribute about 54 per cent of marketable surplus. Small farmers, due to lack of with-holding ability, are compelled to undertake a sale immediately after harvest. Their inability to hold on to harvested stocks is largely due to financial limitations. Also there is no direct access of warehousing facilities to Small Farmers.

Regional Disparity in terms of Capacity Utilisation of Warehousing Facilities

Data on capacity utilization of storage available in public sector, under FCI, CWC and SWC, that the north zone has better utilisation compared to States covered under south zone. The higher capacity utilisation in northern region is also due to the use by the central agencies to store stocks procured by them in that region. Majority of farmers being Small and Marginal is also the cause for low capacity Utilisation as they don't consider its helpful to store their produce in warehouse.

Discuss how Integrated Scheme for Agricultural Marketing (ISAM) integrates the various schemes and may prove to be more effective than other schemes?

Integrated Scheme for Agricultural Marketing (ISAM) is an umbrella scheme of the following five sub schemes:

- Agricultural Marketing Infrastructure (AMI) [(i) Grameen Bhandaran Yojna (GBY), also known as Rural Godown Scheme; and (ii) Scheme for Strengthening/Development of Agricultural Marketing Infrastructure, Grading & Standardization (AMIGS) have been subsumed into one scheme Agricultural Marketing Infrastructure (AMI)]
- Marketing Research and Information Network (MRIN)
- Strengthening of Agmark Grading Facilities (SAGF),
- Agribusiness Development (ABD) through Venture Capital Assistance (VCA) and Project Development Facility (PDF) and
- Choudhary Charan Singh National Institute of Agriculture Marketing (NIAM).

Its aim is to encourage new technologies, promoting investment, improving the outreach of the schemes and removing constraints that hinder efficient and effective outcomes.

Under AMI Scheme, capital investment subsidy at the rate of 25% of the capital cost for general category beneficiary and at the rate of 33.33% for special category beneficiary is provided for construction/creation of scientific godowns and other marketing infrastructure in the country.

What is Warehouse Receipts System? How is it helpful in reducing the wastage and ensuring financial security of farmers?

The warehouse receipt (WR) is a document in hard or soft form issued by the warehouse operator to the goods owner and certifies the title to the deposited commodities, its type, quantity and quality (grades) and facilitates storage, access to credit and futures trade. The quantity stored can be used as collateral to avail a loan. Negotiable Warehouse Receipt (NWR) is issued in token of acceptance of goods. The NWR also gives an assurance that the goods will remain safe upto the end of the initial storage period.

A warehouse receipt finance system helps the farmers by preventing distress sale by knocking the doors of informal lending sector as they charge heavy interest rates.

What is the Pledge Loan Scheme? How farmers get benefitted from such schemes?

During harvesting season there is huge arrival of commodities for a short period which leads to substantial fall in market prices of the commodity. Farmers do not have capacity to hold their stock, so they have to sell their produce at a very less rate in the market.

The pledge loan scheme provides the farmer the opportunity to hold produce in the APMC godown and gets 75% of the value as loan. As the prices of the commodity rise in the market the farmer sells his produce in the market and repays his loan and thus gets higher price for his produce reasonable levels.

What is Agriculture Value Chain? Is there any requirement of setting up of National Value System Partnership Platform?

It is combination of goods and services necessary for an agricultural product to move

from the farm to the consumer. Agriculture Value System brings together the collective power of all the stakeholders in the agricultural ecosystem – the government, private companies, educational, NGOs and from research and development.

A National Value system Partnership will help in following manner-

- It will Support the Government's vision and priorities for doubling farmers' income through improved productivity and market linkages.
- It will help to provide food and nutritional security and enable healthy and affordable choices across the food value chain.
- It will enhance the environmental sustainability of agriculture and will help in meeting the challenges of a changing climate.

Discuss the various measures Taken by Government for Improving Rural Road Infrastructure to promote Agriculture Marketing.

Rural roads connect villages giving access to rural population to the National Highways through Major District Roads and State Highways. Around 59 per cent of the total road length is accounted by rural roads largely built under Jawahar Rojgar Yojna. These roads are of limited value from the point of view of movement of heavy traffic. Some of the government's measures to improve rural road infrastructure are as follows:

- Pradhan Mantri Gram Sadak Yojana (PMGSY) a fully funded Centrally Sponsored Scheme to provide all weather road connectivity in rural areas of the country. The programme envisages connecting all habitations with a population of 500 persons and above in the plain areas and 250 persons and above in hill States, the tribal and the desert areas.
- District Rural Roads Plans (DRRPs) have been developed for all the districts of the country and Core Network has been drawn out of the DRRP to provide for at least a single connectivity to every target habitation. This planning exercise has been carried out with full involvement of the three tier Panchayati Raj Institutions.
- Online monitoring, management and accounting system has been developed under the PMGSY for coordination and management in Road Construction.
- PPP Partnership for Construction of Rural Roads

Explain how Agricultural Price Prediction / Agricultural Price Forecasting helps farmers to get the best value of their produce?

Price forecasting helps in assessing the demand and in accordance adjusting the supply. Main aim of agricultural commodity price forecasting is to allow farmers and policy makers to take better-informed decisions and to manage price risk. Restructuring of Directorate of Marketing Inspection into the Directorate of Marketing Intelligence will help for near accurate and timely price forecasting.

Case study of Karnataka-State Agriculture department has signed an Agreement with Microsoft to develop and Agriculture Price Forecasting Model. Its in accordance with the initiative of Doubling the Farmer's income.