

Marketing Agricultural Produces: A Literature Study of India

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Abstract
Marketing infrastructure includes all those facilities and amenities needed for the smooth conduct of marketing in the economy. In this paper an attempt has been made to examine the status of different agricultural marketing infrastructures, their geographical spread in the different states of India and also the policy measures for strengthening of these infrastructural facilities. The infrastructural facilities in development are as necessary as foundations of a building. The existence of adequate marketing infrastructure are important not only for the performance of various marketing functions and expansion of the size of the markets but also for the transfer of appropriate price signals leading to improved marketing efficiency. The availability of different infrastructures affects the choice of technology to be adopted, reduces the cost of transportation, produces powerful impetus to production and also affects income distribution in favor of small and marginal farmers by raising their access to the market. The agriculture sector needs heavy investment for creation of basic infrastructures necessary for the overall economic development. In a developing country like India, marketing infrastructures play a pivotal role in fostering and sustaining the tempo of rural and economic development. Marketing is as critical to better performance in agriculture as farming itself. Though the role of infrastructure is the key element of any development programme, yet their role in distribution and marketing is the supreme.
Key Words: Appropriate; Distribution; Improved; Infrastructure; Supreme.

Introduction

To meet the objective of the study necessary data on agricultural marketing infrastructures such as agricultural produce markets, sub yards rural periodic markets, storage and warehousing facilities, roads, transport vehicles, grading, communication, and post harvest technology were collected from the annual report of various ministries & their directorate dealing in the subject i.e. Directorate of Marketing & Inspection, Ministry of Agriculture, GOI, New Delhi, National Horticulture Board, Ministry of Agriculture, GOI, New Delhi, Ministry of Transport, GOI, New Delhi, Directorate of Surface Transport, Department of Telecommunication, Ministry of Communication, Warehousing Corporations working under Ministry of Food & Civil Supply, Report of Expert Committee on Strengthening and Development of Agricultural Marketing etc. Entire information has been culled out from the published reports and websites of the ministries Singh Sukh Pal; (1996). The data has been analyses with the help of simple statistical tools and presented in tabular form Rangi, P.S. and M.S. Sidhu; (1996). Unusable delay in getting information about participation of the author in this Seminar from the organizers, single handedness of the researcher, time & resource constraints are the limiting factor for carrying out time series analysis, which might distort our policy for development of these marketing facilities.

Literature Review

Agricultural produce markets are actual buying and selling of agricultural commodities takes place in market yards, sub-yards and rural markets/ haats spread throughout the length and breadth of the country. Agricultural produce regulated markets have been playing a major role in the smooth distribution of food grains, oilseeds, fiber crops and fruits and vegetables to meet the supply and demand needs of the farmers, traders, processors and consumers of the State by Kahlon, A. S. and M.V. George;(1995). The research studies revealed that farmers on an average gets 8 to 10 per cent higher price and higher share in the consumer's rupee by selling their produce in the regulated markets compared to rural, village and unregulated wholesale markets. The benefits got by the farmers by sale of agricultural produce in the regulated market varies from area to area because of the variation in the spread of regulated markets over the regions and the existence of necessary infrastructural amenities/ facilities in these regulated markets by Jairath, M. S. (2004). There are 7157 agricultural produce regulated markets in the country by the end of March 2011. There is uneven spread of these regulated markets in the districts of the state. The average area served by each regulated market also varied considerably among the states of India. It varies from 103 Sq.Km per market in Punjab, 129 in West Bengal, 156 in Haryana, 305 in Andhra Pradesh, 347 in Assam, 350 in Mahrashtra, 383 in Karnataka and 394 in Uttar Pradesh Jairath, M. S. (2000). The states like Arunachal Pradesh, Himachal Pradesh, Meghalyaya, Sikkim, and Uttaranachal were among those where average area served by each market was more than one thousand sq.km. The average area served by each market works out to 28983 sq.km. Based on the recommendation of National Commission on Agriculture there should be one market for 80 sq. km of area. Accordingly there is a deficit of 34679 markets and need to promote more markets in various states.

The share of specialized markets like fruits and vegetables in total regulated markets is low. Only few states have separate Fruit and Vegetables wholesale regulated markets. Their availability is not even one per thousand-sq. km. Area. Even the horticulture States which accounts for nearly 20 per cent of fruits and vegetables production does not have even one regulated market per 00' sq. km area by Jairath, M. S. (1996). Further the markets, which have been exclusively developed for handling of fruits and vegetables, do not have sufficient facilities for handling the total produce available in the area. Most of the regulated markets at present still awfully lacks facilities for handling produce as less space for auction platform, inadequate number of shops and godowns in the premises etc. and hence reduces the effective participation of traders. Absence of storage godowns at market level further perpetuates the problems of traders in general and continuous movement of goods in particular. Various State government recently initiated a process of direct marketing by producers to the consumers in the country by initiating the concept of Apni Mandi (Punjab), Rythu Bazar (Andhra Pradesh), Uzahaver Shandies (T.N.) and Shetkoori bazers in Maharashtra. But these markets have been promoted so far only at the State headquarter and some district headquarters adjoining to the state by Government of India, (2001). A rural periodic market/ haats is the first contact point for producer – sellers for en-cashing his agricultural produce and income. There are about 27,294 rural periodic markets in the country. The minimum necessary infrastructural facilities do not exist in these rural periodic markets by Government of India (2009).

Besides above after market reform initiatives for alternative marketing methods have also been taken by Government of India (2006). License for Direct Marketing has been granted in Maharashtra to M/S Aditya Birla Retail Ltd, Ruch Soya Industries, M/s Tina Oils, etc & in Gujarat to Borsad Agro Marketing Pvt. Ltd., Reliance Agri Products Distribution Pvt. Ltd., Reliance Fresh, etc. In Madhya Pradesh and Rajasthan to ITC e-choupal. In Uttar Pradesh to Haryali Kisan Bazar. Similarly license for Electronic Spot Exchange has also been granted to National Spot Exchange Ltd. (NSEL), NCDEX Spot Exchange Ltd. (NSPOT) and National Agriculture Produce Marketing Company of India Ltd. (NAPMC) by Surarchith, N.K. and Singh, U. S. (2013). Today such facilities are available in the states of Maharashtra, Karnataka, Gujarat, Rajasthan, Bihar, Orissa and Madhya Pradesh for trading commodities e.g. cotton, caster seeds, maize, deshi chana, guar, betel nut, etc. License for Contract Farming has also been extended in the state of Maharashtra to NDDB-ION Exchange, EECOFARMS, MAHYCO- MAHINDRA, Jain Irrigation, Hindustan Liver Ltd.etc & Punjab- Nijjer Agro Foods Ltd; United Breweries Ltd; Satnam Overseas, Tata Chemicals Ltd, etc. In Tamil Nadu to Apachi Cotton and in Andhra Pradesh to Venkey's Hatchery by Singh, U.S., & Bradosti, H. (2015).

Storage infrastructures are capital-intensive marketing infrastructure is necessary for carrying the agricultural produce from production seasons to consuming periods Singh, U.S. (2015). Lack of inadequate scientific storage facilities cause heavy losses to farmers in terms of huge wastage of quantity and quality of crops in general and of fruits and vegetables in particular. Seasonal fluctuations in prices are aggravated in the absence of these facilities. To have storage facilities in the country, the Agricultural Produce (Development and Warehousing) Corporation Act was enacted in 1956 by Singh, U.S. (2011). The State Governments also enacted the warehousing Acts during July 1957 to August 1958 by Singh, U.S. (2011). The scheme of Warehousing, Rural Godowns and Cold storage's have been initiated in public, cooperative and private sectors in the country to meet the storage needs of the producers in different areas. The total storage capacity available at the end of 2011 of CWC, SWC, and FCI is about 75 million tonnes. It is estimated that about 25 million tones of grains are stored in the form of CAP (covered & plinth). The Rural Godowns under NCRG Scheme initiated in 1979 have constructed rural godowns of 15 million tonnes. capacity. Under the Gramen Bhandaran Yojana of GOI, about 67 M.T. capacities (Table -3) have been created in the country up to March 2011. Keeping in view the agricultural production in the country, the available storage facilities/ capacities are short looking Singh, U.S. & Bradosti, H. (2015). Looking at the production trends and assuming 70 percent as marketed surplus, a storage capacity of 150 MT is needed. Cold Storage: With a view to enhance shelf life of perishables, cold storages in the country have also been promoted. Presently a total of 5274 cold storages (Table -4) are in the country with a total capacity of 24.31 million tonnes by Singh, U. S., Mishra, U.S., & Mishra, B.B. (2014). Most of these cold storage units are in the private sector. Public and cooperative sector accounts for a very small capacity. The present storage capacity of cold stores is sufficient for only 12 percent of the total production of fruits and vegetables. There are two states where there is no cold storage is available by Singh, U. S., & Yadav, A.K. (2013). On the other hand states like Assam, Himachal Pradesh, Jammu & Kashmir, Kerala, Sikkim and Tamilnadu have cold storage capacity available only for one percent of their produce. There are only four states i.e. Punjab, Uttar Pradesh, West Bengal and Rajasthan which have more than all India average capacity available for their produce. The demand for cold storage facilities is there for other agricultural products also. Presently density of cold storage is about two per thousand sq. km of area. Looking to the available quantities of perishable products (fruits & vegetables) the cold storage capacity available in the country is inadequate and requires their promotion both in the production as well as consuming areas of the State by Singh, U. S., & Pratap, B.R. (2013).

Reefer Vans/ Containers: For transport of perishable produce to domestic and export markets reefer vans/ containers are required. Their availability increased from 431 in 2001 to 3711 during 2011 but this is extremely low looking to the need for transportation of perishable commodities from one area to another by Singh, U. S., & Padhi, S.K. (2013). Thus the country would also need reefer containers/ vans for transport of perishable commodities for domestic and export marketing. Transport and communication infrastructure is a well-developed and efficient system of transportation helps in the expansion of markets, reduces the transport time and costs of transportation of the commodities. Roads in movement of produce are just like the arteries in human body for blood circulation by Singh, U. S., & Mishra, U.S. (2015). Village roads in India is about 26.50 lakh Km. Majority of the agricultural produce, producer of the tribal areas and perishable farm products are still confined to village markets for sale of their produce for want of surfaced roads and sufficient means of transportation. Railway wagons are also used for transportation of agricultural commodities from wholesale markets to consumption centers. Railway route length in the country is not sufficient and electrified track is not even bare minimum. The existing rail facilities in the country are highly inadequate. Rail lines even do not connect some of the districts in the country by Singh, U. S., & Mishra, U.S. (2014). The air cargo facilities are also available in limited number of States. Existing air cargo facilities are in poor condition and much below the international standards. Besides above telephone is also used as means of communication for marketing of produce in India. Number of mobile enable services is addressing the information needs of the stakeholders to some extent by Singh, U. S., & Mishra, U.S. (2013). The dissemination of market information on price, arrival and other related information is provided at low cost and wider coverage. In the field of agricultural marketing presently mobile services are provided by IFFCO, Airtel, Reuters, ITC and MS Swaminathan Research Foundation. The Communication Technology has taken a big leap forward and received the national recognition as the key driver for development and growth. The gross telephone subscribers in the country reached about 562.21 million as of December 2009 (mobile telephone subscribers about 525.16 million) as compared to 384.79 million (mobile telephone subscribers about 346.89 million) as of December 2008. The overall tale- density reached 47.89 per cent in December 2009 as compared to 33.23 per cent in December 2008 by Singh, U. S. (2013).

Processing infrastructure is a strong and effective food-processing sector plays a significant supportive role in diversification and commercialization of agriculture. Processing function adds value to the products and enhances the income of the farmers in addition to generation of employment in the economy. A number of agro-processing units for processing of different agricultural products have been established in the country in recent past with the increasing consumer demand for processed products. The processing capacity of the existing units has also been enhanced. Huge post - harvest losses of fruits and vegetables is there in absence of the processing units. Presently only 2.3 per cent of total production of fruits and vegetables is being processed in the country. Though the country offers vast potential for establishing agro-processing units like for oilseeds, food grains and sugarcane, yet their availability in the number of State is almost negligible. Cleaning, grading and packaging infrastructure is to help the consumers by supplying good quality products at reasonable prices and to help the producer – farmers in realizing the remunerative prices of their produce and also for smooth conduct of trade transactions by adopting a common trade language, grading and standardization of agricultural commodities is a necessary step and of pivotal importance to attain efficient marketing by Sherwani, K., & Singh, U.S. (2015). Grading and standardization of commodities also helps in collection and dissemination of accurate market information, cooperatively pooling of produce, adoption of group marketing system, prevention of health hazards on account of adulteration by harmful products and also creates quality consciousness among the masses of the country. Realizing the importance of the grading and standardization, a pioneer attempt has been made by the Government through an enactment of legislation “The Agricultural Produce (Grading and Marketing) Act, 1937. Under this act, the grade standard has been notified for 184 agricultural commodities so far. The commodities graded under this act bear AGMARK label on the products, which is an indication of purity and of quality goods. The AGMARK grading is done both for internal consumption and or for export. Food parks and packs houses in specialized growing regions, India is second largest producer of fruits & vegetables. With a view to tap export markets and catering to the need of bulk buyers, mechanical graded and packed house are required in the horticulture growing areas. Certain activities like cleaning, washing, grading, packaging, refrigerated transportation etc. are to undertaken in conformity to international trade, To address these problems, APEDA an implemented a scheme for catering Export Oriented Agri- Zones. Under the scheme so far about 111 grading and pack houses has been established so far to answer the need of export markets. Besides these, food parks have also been established in the country with a view to give exposure to farmer – producer. Though 56 food parks have been established in the country, yet their availability is confined to only 20 states.

Market Information System (MIS) is farmers need information to aid them in planning their operations right from the time they plant these seeds until the produce posses the hands in the market. Market information helps

the farmers in comparing the prices offered by different firms in different markets and also in the selection of alternative outlets available. The MIS reduces business risks of farmer - sellers and traders by Pattnaik, S., Mishra, U.S., & Singh, U.S. (2012). There are 435 MIS centers in the country. Wholesale prices of important agricultural commodities from selected markets are collected daily by these centers and are transmitted to Head office for further transmission to TV and AIR stations. Electronic medium has been used for transmission of information in various industries. However, their use in agricultural markets is relatively low. Markets of some States are linked with National Information Network (NIC-NET) to provide the speedy and timely dissemination of market information to the growers. Under the scheme about 3011agmarknet nodes (Table -7) have been promoted in the country so far. Out of these 92 percent have been promoted in the agricultural markets where as remaining are used for monitoring and follow up. The availability of agmarknet nodes per 000' Sq. Km of area is not even one. However their availability per 000' tones of produce is six. Concerted efforts are required to expand the agmarknet nodes in the states of Assam, Bihar, Jharkhand, Manipur, West Bengal, Orissa, Punjab, Uttar Pradesh and Uttaranchal by Bradosti H., & Singh, U.S. (2015).

Risk management & e – trading infrastructure is agricultural commodities experiences wide fluctuations in their prices largely due to monsoon and their seasonality. Due to these fluctuations farmers faces huge uncertainties. Derivates products like forward, future and options are the risk management tools which can be used to avoid the impact of unexpected price changes in future price movements. Forward and future contracts enable price discovery. The price discovery function allows important economic decisions to be made as to which commodity produce, how much to sell and what prices, how much to store and for how long. This is also a form of direct marketing and enhances the share of farmer in consumer rupee. Thus has assumes special importance in recent times. Commodity future markets in the country have been promoted by establishing various exchanges. At present their number is 29 only. However, only 20 exchanges are effectively working (Table-8). Future trading in agricultural commodities has also been allowed for 54 commodities. Forward trading has been extended to 39 agricultural commodities only. However the transaction undertaken through these exchanges so far has been minimal but experiencing a rising trend. All out efforts are needed to establish more exchanges for enhancing trading in agricultural commodities as well e-trading so as to promote direct marketing of produce.Post-harvest technology infrastructure especially for perishables, less perishables and non- perishable commodities is of critical importance to preserve their quantity and quality. A substantial quantity of produce is lost on account of poor post harvest technology and careless harvesting, assembling, preserving, packaging and use of technology for quality control. State Agricultural Marketing Board, Directorate of Horticulture and Post-Harvest Technology Centers established for specific crops by ICAR has initiated the process for promotion of Post Harvest Technology in the form of providing of know-how on different aspects to the farmers and orchardists of the country. In some of the States, State Agricultural Marketing Board offer services to the traders and processors in providing of technical consultancy, preparation of techno – economic feasibility report, quality control guidance, assessment of packaging necessity of different fruits and advisory services to fruits and vegetables processing units. Marketing education and training is increasing need to provide market education and training to the farmer – producers, traders, marketing personnel, policy makers etc. on a continuous basis based on regular research studies. These improves know how and decision taking power of the farmers as to when, where and in what form to sell the produce. The Directorate of Marketing & Inspection, State Agricultural Marketing Board, State Marketing Department, Agricultural University and National Institute of Agricultural Marketing are engaged for helping the farmers and market functionaries in these areas. However, the available inputs in these areas are not sufficient to cater to the needs of all the growers and other stakeholder because of varied agro-climatic conditions.

Marketing institutional infrastructure has been created in the country during the last 60 years: Public Sector Marketing Organizations: Food Corporation of India (FCI), Cotton Corporation of India (CCI), Jute Corporation of India (JCI), State Trading Corporation (STC), Commodity Boards – Tea, Coffee, Cardamom, Rubber, Tobacco, Spices, Areca nut, Horticultural Crops, Dairy Products (NDDB), Directorate of Marketing and Inspection (DMI), Agricultural Produce Market Committees (APMCs), State Agricultural Marketing Boards (SAMBs), Council of State Agricultural Marketing Boards (COSAMB), Commission for Agricultural Costs and Prices (CACP), Commodities Export Councils, Agricultural and Processed Products Export Development Authority (APEDA) Cooperative Marketing Institutions: Primary, Central and State level Marketing Societies, Unions, and Federations, Special Commodities Marketing Societies (Sugarcane, Cotton, Oilseeds, Milk etc.), Processing Societies Cotton Processing and Ginning Societies, Oilseeds Processing Societies, Fruits and Vegetables Preservation Societies, Sugarcane Crushing Societies, Milk Processing and Chilling Societies; etc, National Agricultural Cooperative Marketing Federation (NAFED), National Cooperative Development Corporation (NCDC), Tribal Cooperative Marketing Federation (TRIFED).

CONCLUSION & SUGGESTIONS

It is not our intention to repeat the conclusions already drawn rather pinpoint those, which deserve special intention. There is a strong need for (i) Creation of necessary infrastructural facilities in all the regulated markets of the country. (ii) Regulation of all primary and secondary wholesale markets to minimize the variation in their spread. (iii)Develop the periodic/rural markets with minimum necessary infrastructural facilities as these are the main contact points for sale of agricultural produce by the small size farm operators. On storage front also there is need for (i) Construction of more scientific storage structures especially in rural areas for protection of produced agricultural output. (ii) Private sector involvement is necessary for creation of more storage structures and cold stores as it is highly capital intensive marketing infrastructure. With the liberalization and favorable trade environment in the country, Rakesh Mohan Committee estimates that goods and passenger traffic are likely to grow more than 2.7 and 2.5 times between the years 1992 – 2000 and the existing road net work is in no way geared up for this production boom (Devi Prasad, 1996). As such there is an urgent need to speed up the work of all weather-surfaced roads, double lane road and rapid expansion of transportation system in the various States. Besides this railway lines have to be extended to remote areas too.

It is also suggested that (i) The existing processing facilities for rice milling, flour milling, pulses milling, oil extraction, cotton ginning and sugarcane milling are inadequate and need to be augmented and modernized to meet the growing demand for quality products in domestic as well as for export markets. (ii)The processing facilities also need to be augmented for processing the perishable products to expand their demand in domestic as well as in export market in view of increase in their production in future. (iii)There is need for maintenance of sanitary and phytosanitary standards both for domestic market and external trade.

Keeping in view the globalization grading has to be strengthened on war footing basis. It is suggested that (1) Grading units should be promoted at the village level with the help of private sector participation. (2) There is need for expansion of network of State Agmark laboratories at all district headquarters and in important markets of the country to ensure the availability of State Grading laboratories to the consumers of all areas. (3) The Grading standards for the remaining Commodities should also be formulated. (4) Compulsory grading and quality control be introduced for the total trade so as to reduce further chances of adulteration. The necessary infrastructural facilities for this are created by the Central and State Governments to prevent health hazards. (5) Consumers and traders should be educated about the advantages of Agmark grading by adoption of different publicity measures. The graded products should be made popular among masses. (6) Since the grading facilities at producer's level are nearly non existence it will be worthwhile if State Directorate of Marketing in collaboration with National Institute of Agricultural Marketing undertake detailed techno economic feasibility studies. (7) It is also suggested that Government should go for compulsory grading at producer's level. The State Government should expand administrative facilities in the markets to make the grading of agricultural commodities popular at the producer's level. (8) Presently there exists wide spectrum of Grade Standards for agricultural commodities adopted by different organizations as FCI, NAFED, and State Cooperative Marketing Federations, Civil supplies Department, Central and State Warehousing corporations. This creates confusion among the farmer – sellers and consumers. To avoid this it is suggested that Agmark standards formulated for commercial grading by Directorate of Marketing & Inspection should be adopted by all these organizations. (9) Consumers Service Centers equipped with consumer service laboratories be set up in the States to facilitate the consumers to lodge complaints and re-dressal of their grievances in respect of Agmark products. The samples brought by the consumers at these centers should be quickly got analyses for appropriate action by the competent authorities. (10) The Training Center for Grading is established in the various States for imparting special training to persons interested in Grading of Special commodities produced in different area of India.

There is need to promote proper packaging after grading so that further chances of adulteration or temptation may not be there. Risk management and e-trading have to be popularizing by educating various stakeholders. For this a separate resource center should be established in National Institute of Agricultural Marketing at the earliest. As all the above mentioned infrastructural facilities are crucial and requires large investment, it is suggested that offering incentives and creating enabling conditions would increase private sector participation and enhance the availability of agricultural marketing infrastructure in the country.

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