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Agricultural Marketing In India – A Case Study on Logistics and Supply Chain Management

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Abstract:- *National Commission on Agriculture had proposed market density, where the market should be established within a distance of 5km to farm i.e it should be in such a way that the farmer should reach the farm either by walk or by cart within an hour. Market density comprises of different variables such as time taken to reach the market, connectivity of farm with market, number of farmers in the region, type of farm output, production and access through road or rail to unified national market, size of market, time radius where the farmers take one or two hours to reach farm to markets. West Bengal and Punjab have similar density ratio of APMC markets, sub market yards and Rural Periodical Markets, Odisha, Assam, Meghalaya, Arunachal Pradesh and Jharkhand low density ratio.*

Market is derived from the Latin word called Mercatus, which is defined as a place where both buyers and sellers meet at one point to exchange their products and services.` Actually there are some conditions to satisfy the market which are also known as components of market such as the extent of products, buyers, sellers, association between buyers and sellers. The dimensions of a market are locaThe components of market structure comprises market conduct and performance which focuses on market power, different types of products, specifications necessary for the business organizations to enter into the market, flow of market information, degree of integration. The dynamics of market structure ascertains the market conduct and performance.

Introduction

According to American Marketing Association, Marketing is defined as an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stake holders. According to Philip Kotler, Marketing is defined as a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others.According to the social definition, Marketing is defined as the societal process by which individuals and groups obtain what they need and want through creating, offering and freely exchanging products and services of value with others.

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Objectives:

- To study the logistic problems faced by the farmers from the selected villages in the district

-To find out the ways to overcome the logistic problems

Analysis of the study

1) Needs, wants and Demands:- Needs are the basic human requirements such as food, clothing and shelter to survive.

Wants are the specific objects which satisfy the needs, they are the strong needs for recreation, education and entertainment, these wants were shaped according to our society. Demands:- It is the integration of desire, willingness and ability to purchasarket. When the short term fund was dealt in the market it was known as money market and when the long term fund was dealt in the market it was known as capital market.

AGRICULTURAL MARKETING:- Agriculture refers to the practice of farming which includes cultivation of soil to grow crops and rear animals to provide food and other agricultural products to the consumers. Marketing is the process of moving the product from the point of production to the point of consumption. According to Thomson, Agricultural Marketing refers to the different activities and agencies which organize and conduct them to move the products produced at farm to market where the customers purchase. So this Agricultural Marketing comprises of marketing agencies, distribution channels, cost and price involved in producing, storing, packaging, transporting and distributing the farm output from farm to market.

Agriculture Marketing connects the farm and non-farm sectors. Actually villagers use to interchange their products in the village itself, as the population was increasing there is a necessity to serve the farm output in towns and cities, so it is essential to develop the storage, transportation, distribution facilities in villages. So Agricultural Marketing is not just buying and selling the agricultural products but it goes on different stages to reach the customer. The National Commission of Agriculture had stated Agriculture Marketing as the process to produce saleable farm output which comprises of pre, post harvest operations, assembling, grading, storage, transportation and distribution. The main objective of Agricultural Marketing is to study the problems faced by the farmers in distributing the farm products from farm to market and market to consumer.

EVOLUTION OF AGRICULTURAL MARKETING:-

The government had supported the farmers by developing their sector to increase the farm products and meet the demand in the market, it had provided financial support like credit facilities, subsidies to the farmers. It had established Food Corporation of India in 1964 and Agricultural Price Commissions in 1965. In past FCI use to purchase the farm produce directly from the farmers at minimum price.

Before Independence the government use to regulate the prices of farm output. Karanjia Cotton Market was the first regulated market which was initiated in 1886 under Hyderabad Residency Order. Berar Cotton and Grain Market Act was the first marketing legislation which was initiated in the year 1897 which acts as a role model of legislation in other parts of the country, this act has given an authority to British Resident to provide an area for the purchase and sale of farm output and formed a committee to direct the regulated markets.

Regulation of markets: Under the Agricultural Produce Market committee Act, the farm produce need to sold at regulated markets, with registered intermediaries. Restrictions were imposed on the storage and movement of farm output by Central and State governments through Essential

Commodities Act. The transportation and marketing of agri produce were not developed scientifically .

- Input Subsidies:- The farmer needs inputs like seeds, fertilizers, electricity, fuel, irrigation for cultivation, these inputs should be provided at a subsidy by the governments to farmers.
- Minimum Support Prices:- The Government of India had introduced minimum support price system for different products, these prices were determined by the government according to the cost involved in producing the crops.
- Food Subsidies:- India has introduced National Food Security Act in the year 2013 in order to make low income customers to eat. Food Corporation of India and other government and other Government and State agencies purchase food grains from farmers at minimum support prices and sell the farm output at subsidized prices by Public Distribution system.

Important Changes in the Marketing System:- In order to increase the profits of farmers in Agriculture sector the Government of India had introduced some important changes in agriculture sector:-

- Direct Marketing:- It is the process of selling the farm output directly to consumers. There are two forms of direct marketing which are as follows i.e farmer's market and direct sourcing from farmers field by processors. The farm output was moved fastly from producers to consumers, it gives more profits for producers as they sell directly to consumers, the consumers are benefited as they purchase the farm output at less price. Nearly 488 markets were established in different states like Apnamandis in Punjab, Haryana, Rythu Bazars in Andhra Pradesh Telangana, Uzhavar Sandhais in Tamil Nadu, Shetkari Bazaars in Maharashtra and Raitha Santhe in Karnataka.

- Contract Farming:- It is process of making an agreement between farmers and buyers regarding the production and sales of agricultural products. This technique was expanded to non crop activities like poultry for both eggs and broiler functions in different states of the country. Contract farming is a marketing strategy which helps the small farmers to directly sell their produce, the process of vertical integration helps to shift the techniques of management in farming, it provides surety in their sales, it reduces the risks involved in marketing of agri produce and it increases the institutional credit facilities. The contract farmers were restricted to their production to the direct demand and the farmers development was integrated with contractor's capacity to increase their market share.

- Private wholesale markets:- The wholesale markets play an important role in dividing the large quantity of farm produce into small quantities, they were well packed, labeled and supplied to retailers.

- Retail Markets:- The retail markets in farming were established

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with less cost, less facilities, which were most probably established in streets, the farm produce was organized on own or rented stalls on the streets and some farm outputs were given for rent or for lease. When new retail markets were established or existing retail markets were developed in such a way that they can be established in towns and cities, so they redevelop the stalls for vendors, water supplies, drainage system was improved and the garbages were designed in such a way that they were collected daily. SAFAL is the fruit and vegetable marketing subsidiary which was operated in Delhi where 400 retail outlets with 350 tonnes of fresh produce was gathered from 180 farmers associations which includes 8000 farmers.

- Farmer Producer Organizations:- It is a type of producer organization which consists of small and medium farmers which was established for the purpose of helping the farmers in production, marketing, transportation and distribution of farm output to develop their economical and financial status in the society. Rashtriya Krishi Vikas Yojana was introduced during XII plan which supports Farmer Producer Organizations development. Farmer Producer Company which was registered under the Companies Act provides benefits to farmers such as the financial and non financial inputs, services and technology to reduce the transaction costs. The states like Maharashtra, Madhya Pradesh and Kerala had performed well in FPCs. Most of these FPCs concentrate on crop planning, technology infusion, supply of inputs, marketing, post harvest management, transport, storage of agricultural output.

- Cooperatives in Agricultural Marketing:- Co-operatives are the alliance of farmers for the process of production, marketing and availing the institutional credit facilities for agricultural products and co-operation with customers to purchase their goods and service.

- Food and agro processing:- Food and agro processing industries are the industries which were under developed due to less investment, poor infrastructure, less credit facilities, lack of availability of processing different crops. Many reforms were introduced to develop the food processing industries and in the distribution channels of food processing. The APMC Act was implemented differently in different states, the food processors needs to market their agricultural produce directly to customers, in some states the agricultural processors need not pay mandi tax but in some states the agricultural processors need to pay tax to mandis, in some states the processors need to pay tax at consumption point.

CHALLENGES OF AGRICULTURAL MARKETING:- The process of marketing and moving the agricultural products in local and international markets from production to consumption. The activities of collecting, grading, processing, preserving, transportation and financing the agricultural products were involved in agricultural marketing. So while

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marketing the agricultural produce farmers, processors face some typical problems while marketing the agricultural produce:-

- Small and fragmented lands:- Due to the division of lands into small parts, the process of production became very difficult, this had increased the cost of production, transportation and marketing of farm output.

- Lack of ware housing and storage facilities:- Farmers were lack of storage and ware housing facilities at production and processing points, since the farm output was perishable therefore the farmers were offering the farm output at less price.

- Lack of transportation facilities:- The agriculture sector was affected mostly by transportation facilities as most of the farmers were lack of refrigerated vechlies to distribute the farm output from farm to market. Appropriate roads were not formed to distribute the farm output to mandis, so this had increased the transportation costs.

- Lack of institutional credit facilities:- Due to the strict rules in giving loans for farmers in agriculture sector, they go for money lenders who offer the loan at high rate of interest which affects the farmers. In order to repay the amount the farmers sell the farm output at less price and they will not store the agricultural output until they get profitable price.

- Lack of proper Grading and Standardization:- Due to improper grading and weighing facilities in agriculture sector the farmers were not able to measure the farm output accurately therefore they were selling the farm output at less price which does not give profits and just makes them to survive. Electronic weigh bridges were not found in all markets.

- Poor handling, processing, packing and packaging facilities:- Due to improper and lack of technology in processing, packing and packaging facilities the farmers were selling the produce at less price.

- Lack of market information:- Many villages in India were underdeveloped, due to the lack of infrastructure in villages, improper Information and Communication technology, farmers were not aware of present and future prices prevailed in the market, so they sell their farm output at the price offered by middlemen.

- Existing large number of middlemen:- Due to improper transportation, storage and infrastructural facilities farmers were not able to sell their output directly to customers, so middlemen were involved to sell their output, the farmers sell the farm output to these middlemen at low prices as they were illiterate , they were not aware of minimum support prices announced by government and they cannot provide the above facilities.

- Lack of farmers organizations:- The farmers in India do not have any voluntary organizations to form into a group, due to their illiteracy they cannot share their information among them, they cannot share their ideas, they cannot implement new

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technology in farming, they cannot use the government subsidies, schemes introduced to them simultaneously traders were formed into groups and able to get profitable prices for their produce.

- Inadequate research on marketing:- The government was focused on increasing the farm output but it was giving less importance on new techniques to be implemented in processing, storage and distribution activities which show a major impact on profitability of farm output, they should conduct a survey on customers tastes and preferences so that the farmer can produce according to their needs.

- High market charges:- Agricultural Produce Market Committees were permitted to collect the market fee of 0.5-2 percent sale value of the produce, commission charges range between 1 to 2.5 percent in food grains and 4 to 8 percent in fruits and vegetables, purchase tax, weighment charges and hamal charges are need to be paid so on and average it was around 15 percent which is very high and the farmers cannot pay the fee.

MARKET ARCHITECTURE:- The major part of agriculture was contributed by small and marginal farmers who had occupied 85 percent of the land and forty percent of marketable surpluses. The National Commission on Agriculture which was formed in 1970 with an objective to establish 30,000 markets near to villages with a radius of 5 km. Local shandies were established. The country had 30 states, 700 districts and 120 million land holdings. Approximately one billion tonnes of food grains, horticulture, spices, oil seeds, spices, plantation crops, milk etc were produced.

Approximately there are 2284 regulated markets, 2339 main market yards, 4276 sub market yards, 22,932 rural periodic markets were visited by farmers, they are operated weekly once in a market. The rural periodical markets were not able to achieve the objectives of National Agricultural Commission, they are not helping the farmers to reach the wholesale agricultural markets.

EXISTING MARKET ARCHITECTURE:-

Rural periodical markets:- The Rural periodical markets were established at villages which are known as haats or shandies once or twice in a week. They generally sell food grains, fruits, vegetables etc in these markets. There are 22,932 markets by 31/3/2017. These markets were supervised by gram panchayats, municipalities like State Agricultural Marketing Boards or Agricultural Produce Market Committee. The small and marginal farmers sell their produce in these markets since they cannot visit urban markets to get higher prices for their farm output. So these markets were called differently with different names, these markets were called as Rythu Bazaars in Andhra Pradesh and Telangana which sell perishable goods like grains, fruits vegetables etc.

APMC Markets:- The present market consists of 2,284 APMC'S, 2339 main markets which were operated in 6,615 locations and 4276 sub market yards. The sub market yards are under main market yards which were associated by APMC. The sub market yards were lack of infrastructure, man power and techniques compared to main market

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yard. The main markets were divided into primary, secondary and terminal markets. The principal or sub market yards have their own areas, due to these restrictions the farmers were not able to directly contact their customers outside the APMC's. Due to low financial and economical status the farmers were not able to transport their produce to urban markets to earn more profits. The small and marginal farmers find difficulty in distributing the produce to APMC'S, therefore they go for middlemen system where they sell their produce to these middlemen. The sub market yards were formed and function as government procurement agencies who do not have open auction system, which just handle five percent of the farm output carried by main or principal market yards, the sub market yards were not able to regularize their operations.

Primary Rural Agricultural Markets:- These markets were established in rural , semi urban or urban markets. According to their potential these markets will play as Farmer-Consumer Direct Market which acts as a stage to sell their produce to wholesale markets. These markets were constructed with a boundary wall or with a fencing, they were connected to roads or to internal roads, they were provided with an efficient transport system for cold and dry storage, electricity facilities, internet facilities, water facilities, sitting or selling platforms, weighing devices, platforms to dry, washing facilities, cleaning, sorting, grading and packaging, office space. Aggregation platforms were established to sell both perishable and non perishable farm produces in the markets. Rural Periodical Markets use these aggregation of platforms to sell their farm output in order to process, sort, grade, pack and

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Density of markets:- National Commission on Agriculture had proposed market density, where the market should be established within a distance of 5km to farm i.e it should be in such a way that the farmer should reach the farm either by walk or by cart within an hour. Market density comprises of different variables such as time taken to reach the market, connectivity of farm with market, number of farmers in the region, type of farm output, production and access through road or rail to unified national market, size of market, time radius where the farmers take one or two hours to reach farm to markets. West Bengal and Punjab have similar density ratio of APMC markets, sub market yards and Rural Periodical Markets, Odisha, Assam, Meghalaya, Arunachal Pradesh and Jharkhand low density ratio.

distribute the farm output in Agricultural Produce Market Committees. Rashtriya Krishi Vikas Yojana, Integrated Scheme for Agricultural Marketing, Mission for Integrated Development of Horticulture and MNREGA provides funds to develop these markets at central and state levels. Farmer Producer Organizations were established to reduce the problem of fragmentation of land by combining the land into different clusters to produce different crops so that the inputs can be managed in a better way to produce maximum output. Nearly 1080 Farmer Producer Organizations were established in our country, they were established under Cooperative Laws or Companies Act as Producer Companies.

Primary Rural Agri Market Centers:- With the development of New Market Architecture, the farmers need to redesign the existing markets by moving the farm produce to different

consumption points. In the first stage the Primary Rural Agri Market Centers will act as back end spokes that forward hub spoke network.

The Primary Rural Agricultural Market Centers will play two important roles such as local retail markets for the farmers to sell farm output to consumers at nearby farm locations and secondly as aggregation/pooling/assembly centers to move the farm output to market destinations. They take up the services at village level logistics hub, where they pool up the farm output, assayed and graded to link up with the next level markets, post production activities were also provided in this level which were located near to farms. These centers will act as assembly points for small farmers can dispose their loads and connect it to intermediaries existed in the market.

Collection facilities should located in such a way that they can reach the farm within one hour and they should focus on cleaning, grading, packing, labeling etc. The Primary Rural Agri Markets will accept more number of farmers to send their produce to Wholesale markets all over the country, this may create market to market competition for farmers benefit. Some employment opportunities were created near the farm centers such as small pack houses, mini storages, supporting processing units etc, existing aggregators can act as managers for these facilities. By the creation of such retail and collection centers the farmers can generate high returns throughout the supply chain.

Stable Trade Regime:- Due to deficiency in the production of oil seeds they need to be imported, by taking the data of last ten years it was predicted that the Agricultural trade policy and tariff charges were changing. During the last eight years i.e from 2007 to 2015 the import charges of wheat were zero. In August 2015 the import charges were increased from 0 to 10 percent, in the month of October these charges were increased to 25 percent, again in the month of September 2016 the tariff charges were decreased to 10 percent and it was decreased to zero in December 2016 and in March 2017 it was raised to10 percent. In the last ten years, the imports charges were zero for pulses, in March 2017 the import charges on Tur Dal was increased from zero to 10 percent. The import charges on crude palm oil was sixty percent in January 2007, it was reduced to zero in April 2008, it had zero percent for five years, it was increased to 2.5 percent in January 2013, 7.5 percent in December 2014, 12.5 percent in September 2015 and it was reduced to 7.5 percent in September 2016. The import charges on refined palm oil was 67.5 percent in January 2007, it was reduced to 57.5 percent in the next year, it was reduced to 27.5 percent in April 2008 and it was increased to 15 percent in the next eight years. The import policies in Agriculture sector are used for price support and price stabilization tool for consumers.

EXPORT STATUS OF AGRICULTURE SECTOR:- India is the largest producer of cereals, fruits, vegetables and milk. It plays an important role in encouraging the foreign exchange operations in the country, it increases the remuneration to all stakeholders in the supply chain, India is the exporter of cereals, animal products, processed foods, fruits and vegetables, floriculture and seeds. Agricultural and Processed Food Products Export Development Authority predicted the exports as US$ 16.27 billions in 2016-17, the major percent of these exports was shared by cereals

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animal products among these basmati rice and meat. The exporters face some problems in agriculture since the agricultural land was divided into small pieces, they produce different types of agri products with different varieties, size, maturity time, harvesting time etc. The percentage of share in export of agri products is around 2.2 percent in India and it ranks 9th globally. Pre Harvest Intervals are need to be introduced for different crops in order to use pesticides in right quantity for different time periods, harvesting should be done at right time, high technology packaging must be implemented, refrigerated transportation facilities should be used. In order to develop exports in our country, Farmer producer organizations or Village producer organizations should form into a group to produce the required quantity and quality of output. Agricultural and Processed Food Products Exports Development Authority in the Ministry of Commerce in integration with Department of Agriculture, Cooperation &Farmer's Welfare had formed into a group to locate the farm lands, identify the problems faced by the farmers in farming regarding the quality of seeds, pesticides and nutrients used, periodical verification of fruits and vegetables to measure their maturity levels, Central Government Agencies will handle the concerns of post harvesting. It is necessary to determine the sea ports in order to distribute the agricultural produce which is perishable fastly.

Table1 presents the mean analysis regarding the logistics and supply chain problems faced by the respondents in agriculture sector. It was found that majority of the respondents share their opinion stating that the respondents loss of goods in transportation is high (4.19) difference between final consumer price and farmers selling price is high (4.19), followed by lack of quick transport facilities (4.16), SazzadParwez, 2014, lack of refrigeration vehicles for the transportation of different agricultural products (4.16), lack of effective distribution channels (4.12), existence of malpractices in the distribution channels(4.07), Dr S.Saravanan,2013, lack of proper marketing channels from farmer to mandi (4.01), lack of knowledge on post harvesting techniques (3.96), SazzadParwez, 2014, lack of transparency in pricing at local mandis (3.94), lack of knowledge about intermediaries in the markets (3.83), Lack of knowledge about the demand of agricultural products in the market (3.71), lack of linkage between farmer and processing units (3.66), SazzadParwez, 2014, lack of knowledge about international market (3.60), lack of storage facilities (3.38), lack of processing facilities (3.24), lack of packaging facilities (3.20)

While considering the SD analysis, the respondents opinion was less deviated in case of lack of transparency in pricing at local mandies (0.69), the respondents opinion was also lack of marketing channel from farmer to mandies (0.74).

References:

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Table 1. Logistics and supply chain problems challenged by the respondents in agriculture sector.

S.NO	Respondents opinion	SA	A	N	DA	SDA	Total	Mean	SD
	Scale Values(S)	5	4	3	2	1			
1.	Lack of marketing channel from farmer to mandi(F)	75	318	22	0	16	431	4.01	0.74
	F*S	375	1272	66	0	16	1729(79.8)		
2.	Lack of linkage between farmer and processing units	145	133	47	73	33	431	3.66	1.30
	F*S	725	532	141	146	33	1577(73.1)		
3.	Lack of effective distribution channels	157	219	23	13	19	431	4.12	0.96
	F*S	785	876	69	26	19	1775(82.3)		
4.	Existence of malpractices in the distribution channels	172	165	53	33	8	431	4.07	0.99
	F*S	860	660	159	66	8	1753(81.3)		
5.	Lack of processing facilities	20	162	152	96	1	431	3.24	0.85
	F*S	100	648	456	192	1	1397(64.8)		
6.	Lack of packaging facilities	23	163	141	85	19	431	3.20	0.96
	F*S	115	652	423	170	19	1379(63.9)		
7.	Lack of storage facilities	71	110	166	79	5	431	3.38	1.00
	F*S	355	440	498	158	5	1456(67.5)		
8.	Lack of knowledge on post harvesting techniques	120	230	34	36	11	431	3.96	0.96
	F*S	600	920	102	72	11	79.1(1705)		
9.	Lack of knowledge about international market	28	245	120	35	3	431	3.60	0.75
	F*S	140	980	360	70	3	1553(72.0)		
10.	Lack of knowledge about the demand of agricultural	97	182	89	57	6	431	3.71	1.00

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	products in the market.								
	F*S	485	728	267	114	6	1600(74.2)		
11.	Lack of knowledge about intermediaries in the markets	146	160	44	67	14	431	3.83	1.15
	F*S	730	640	132	134	14	1650(76.5)		
12.	Lack of quick transport facilities	167	204	23	34	3	431	4.16	0.89
	F*S	835	816	69	68	3	1791(83.1)		
13.	Loss of goods in transportation is high	189	180	31	16	15	431	4.19	0.89
	F*S	945	720	93	32	15	1805(83.7)		
14.	Lack of refrigeration vehicles for the transportation of different agricultural products	103	235	65	19	9	431	4.16	0.96
	F*S	515	940	195	38	9	1697(78.7)		
15.	Difference between final consumer price and farmers selling price is high	96	223	71	35	6	431	4.19	0.90
	F*S	480	892	213	70	6	1661(77.0)		
16.	Lack of transparency in pricing at local mandis	82	299	29	19	2	431	3.94	0.69
	F*S	410	1196	87	38	2	1733(80.4)		

Note- Figures in the brackets indicate percentage

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