

# Linking Farmers to Market : Opportunities & Challenges



**Editors :**

Chandra Shekara P

Hema Yadav

V.K. Jayagaghavendra Rao

Shikha Verma

**August 2019**



**CCS National Institute of Agricultural Marketing (CCS NIAM)**

(An Autonomous Organization of Ministry of Agriculture & Farmers Welfare, GoI)

Jaipur, Rajasthan, India, [www.ccsniam.gov.in](http://www.ccsniam.gov.in)

# Linking Farmers to Market : Opportunities & Challenges

Editors :

Chandra Shekara P

Hema Yadav

V.K. Jayagaghavendra Rao

Shikha Verma

**August 2019**



**CCS National Institute of Agricultural Marketing (CCS NIAM)**  
(An Autonomous Organization of Ministry of Agriculture & Farmers Welfare, GoI)  
Jaipur, Rajasthan, India, [www.ccsniam.gov.in](http://www.ccsniam.gov.in)



© 2019

**Editors :**

Chandra Shekara P

Hema Yadav

V.K. Jayagaghavendra Rao

ShikhaVerma

August 2019

**Printed at :**

Harihar Printers

J-97, Ashok Chwok,

Adarsh Nagar, Jaipur

302004

**Published by :**

**CCS National Institute of Agricultural Marketing (CCS NIAM)**

(An Autonomous Organization of Ministry of Agriculture & Farmers Welfare, GoI)

Jaipur, Rajasthan, India [www.ccsniam.gov.in](http://www.ccsniam.gov.in)



## FOREWARD



India is bestowed with one of the biggest network of Agricultural Universities and Agricultural Scientists serving the farming community. Every year, more than 80,000 Agricultural graduates are passing out from Agricultural Universities out of which 10,000 to 12,000 are postgraduates and doctoral students. They invest their precious two to three years of their productive period for completing their research work. These ten to twelve thousand research thesis need to make an effort to solve field level problems of farmers. Then only, Scientific Social Responsibility of professionals and institutions are fulfilled.

CCS NIAM made an attempt to harness the attention of these young minds towards field level problems of farmers through research internship programmes. These Researchers spent one month in CCS NIAM and work with a faculty member addressing a field level problems of the farmer.

First set of nine young Researchers from different parts of the country, try to address linking farmers to Midday Meal programme, Social Welfare Hostels, Function Halls, Urban Colonies, University Hostels, Warehouses so that market is assured to farmers produce on Win-Win mode.

I am sure, this book will inspire other interns to work on problem solving mode and inform Policy makers and Academicians about the local potential markets in Agriculture. I am sure; any concrete action in this direction is expected to benefit farming community definitely. This is the ultimate purpose of this book.

I would like to compliment all the interns and CCS NIAM faculty for joining hands in this mission.

A handwritten signature in black ink, appearing to read 'P. Chandra Shekara'.

**(Dr. P. Chandra Shekara)**  
Director General,  
CCS NIAM, Jaipur



## PREFACE



Doubling farmer's income, through market reforms, shortening the supply chain, and elimination of intermediaries are some of the steps in line with efforts to improve farmer's income. Linking farmers with markets becomes a buzzword and other interventions like contract farming, Private Mandi, private warehouses, direct sale to consumers by farmers & organizations of farmers - FPO's holds the key.

In this background NIAM internship programme of masters level graduates who have attempted to study direct marketing channel alternatives to hostels, residential houses hostel mess, 5star hotels, , function halls, mid-day meals programme, retail stores, through packing, retailing and selling and role of private warehouses, have been attempted through the able mentorship of Dr. P Chandrasekhara, DG NIAM. He is a champion in empowering farmers and transforming them into agripreneurs and leaders in Agribusiness. His philosophy of transforming the farmers from a mere producer of Agricultural goods and services into an effective and profit making Agripreneur is laudable.

Earlier too Dr.P. Chandrasekhara, has been instrumental and pivotal in upscaling the ACABC (Agri Clinics and Business centers) model where he transformed the predominantly sustenance based farmers and youth from a mere job seeker to a job giver. Is the first of its kind in India, because the sustenance farmer has been transformed into a commercial entrepreneur.

On the occasion of the foundation day of NIAM this book which is a collection of research studies conducted by NIAM highlights the scope and potential of the DIRECT MARKET LINKAGE in various sectors listed above holds the key to increase income of farmers, whilst avoiding middlemen and the share of the consumer rupee in percentage is going to increase for farmers.

NIAM has done a sincere effort, and I wish the authors, mentors and the head of NIAM, Dr P Chandrasekahara, DG, the very best on this occasion

**(V.K. JAYARAGHAVENDRA RAO)**  
PRINCIPAL SCIENTIST  
ICAR-NAARM, HYDERABAD



## FROM DESK OF EDITOR



CCS NIAM is a National Institute catering to the needs of Agricultural Marketing of the country. Through the mandate of training, education and research, Institute has outreached more than one lakh stakeholders which includes farmers, traders, entrepreneurs, corporate, development agencies, marketing offices, policy makers, researchers, students etc.

The Institute is playing pivotal role in research and project formulations on post harvest management, commodity futures, market information and communication, marketing, technology, grading and standardization, aggregation, operation and management of markets, supply chain, commodity analysis and market outlook.

CCS NIAM has initiated Research Internship Programme in the current year. The Research Internship programme aims to inculcate and promote research in agricultural marketing and agribusiness marketing to be undertaken by postgraduates and research scholars. It invites students of agriculture and management to participate in ongoing research or initiate a research project, undergo mentorship by NIAM faculty and develop network and collaboration.

We are pleased to get a good response for research internship programme from various Universities and Institutions. The research interns proposed to explore how effective linkages between farmers and markets can be developed. Model APLM Act, 2017 provides wider options and alternatives to farmers for marketing. Promotion of direct interface between farmers and processors/exporters/bulk-buyers/end users so as to reduce the price spread bringing advantage to both the producers and the consumers is an enabling provision in the act.

The present book has nine articles based on research work done by research interns under the guidance of faculty members of NIAM. The research work is based on primary data and explores the possibilities for making it a policy. The articles covers the various ways of developing institutional linkages between farmers to consumers through mid day meal programme, university hostels, social welfare schools, marriage halls, five star hotels, retail stores and residential areas of metropolitan cities. The articles also delves on linking farmers to warehouse and also how packaging can be an enabler in the value chain.

The articles provides a fresh look at the Agri Marketing ecosystem and how farmers and farmer groups need to leverage the emerging opportunities. The research work by young research aspirants in Agricultural Marketing is a new beginning and needs to be encouraged to have research solutions to have profitable value chains in our country.

A handwritten signature in blue ink, appearing to read 'Hema Yadav'.

**(Dr. Hema Yadav)**  
Director CCS NIAM, Jaipur



## Contents

| <b>S. No.</b> | <b>Tittle</b>                                                                                                | <b>Page No.</b> |
|---------------|--------------------------------------------------------------------------------------------------------------|-----------------|
| 1.            | Abstracts of Research Papers                                                                                 | 1-9             |
| 2.            | Linking Farmers to Mid Day Meals Programme : An Agricultural Marketing Perspective                           | 10-16           |
| 3.            | Linking Farmers to Social Welfare Hostels : Direct Marketing to Benefit Both                                 | 17-19           |
| 4.            | Linking Organic Farmers to Retail Stores – Bringing Efficiency in Supply Chain for Increasing Farmers Income | 20-26           |
| 5.            | Linking Farmers to Five Star Hotels - A Value Chain Approach                                                 | 27-37           |
| 6.            | Linking Farmers to Function Halls : Optimizing Supply Chain                                                  | 38-46           |
| 7.            | Role of Packaging and Long Distance Marketing of Vegetables                                                  | 47-57           |
| 8.            | Warehousing to Increase Farmers Income-Awarness is the Key                                                   | 58-64           |
| 9.            | Linking Farmers with University Hostel Mess-Direct Marketing Approach for Increasing Income of Farmers       | 65-70           |
| 10.           | Direct Marketing to Urban Consumers by FPO's : Linking Rural Production to Urban Consumption                 | 71-74           |
| 11.           | Research Interns and Guides                                                                                  | 75-76           |





## 1. ABSTRACTS OF RESEARCH PAPERS

### LINKING FARMERS TO MID DAY MEALS PROGRAMME : AN AGRICULTURAL MARKETING PERSPECTIVE.

ANGELIN KEERTHIGA A<sup>1</sup>, P. CHANDRA SHEKARA<sup>2</sup>, NITIN LAHOTI<sup>3</sup>

Email for correspondence : keerthikailamathy95@gmail.com

The Mid Day Meal Scheme (MDMS) is a school meal programme of the Government of India designed to better the nutritional standing of school-age children nationwide. In India, around 12 crore children in over 12 lakh schools and Education Guarantee Scheme centres are being served under the scheme. Rice, Wheat, Pulses, Oil and salt are being provided directly to the schools through FCI. Other ingredients are being purchased by the Noon Meal Organizers in the local markets. In this process, the crops grown by the farmers in a village ultimately lands up in the same village after going through a number of intermediaries. This study examines the possibilities of procuring these ingredients directly from the local farmers rather than the long, curved and twisted existing channels of procurement in force, which is making the scheme very costly and unwanted intermediaries are cornering the profits. The Government Higher Secondary School, Paalamadai village of Tirunelveli district, Tamil Nadu was studied for this purpose. A sample of 20 farmers was selected randomly and primary data was collected using structured pretested interview schedule. The challenges and suggestions in implementing the alternative method of procurement werelisted and ranked by the farmers. The ranked data was analyzed using Henry Garrett's ranking technique. The study reveals that, the government can save Rs. 73.632 for rice, Rs. 60.198 for Okra and Rs. 5.390 for Black gram for a student per year in proposed linkage. Similarly, the farmer can earn an additional profit of Rs.742.5, Rs. 43300 and Rs. 206 per acre of paddy, okra and black gram crops respectively. The major challenges in implementation of the proposed linkage are, delayed payment for the produce by the government, increased transportation cost for the farmers, lack of assured procurement by the government, lack of storage and processing facilities in the village, seasonal supply of the produce. Similarly, the suggestions apprehended by farmers reveal that delayed payment for the produce by the government, which is forcing the existing co-operative societies as an intermediary institution, mandatory procurement of the produce by the government for the scheme by promoting more FPOs and Public Private Partnership (PPP), establishing adequate storage facilities in the village are the major suggestions expressed. Based on the study, promoting market information among farmers and establishing adequate storage and processing facilities at the grass root level holds the key. PromotingPPPthrough strengthening partnership of existing co-operative societies and FPOs are suggested

**KEYWORDS :** Mid-day meal programme, linking farmers to market, Garrett Ranking Technique

---

<sup>1</sup>PG scholar, Department of Agricultural Economics, TNAU, Coimbatore (641003), Tamil Nadu, India

<sup>2</sup>Director General, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

<sup>3</sup>Innovation Manager, NABI, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## LINKING FARMERS TO SOCIAL WELFARE HOSTELS : DIRECT MARKETING TO BENEFIT BOTH

SHRUTI MISHRA<sup>1</sup>, RAMESH MITTAL<sup>2</sup>, NITIN LAHOTI<sup>3</sup>  
Email for correspondence : shrutimishra.jnkvv@gmail.com

This study explores the hostels provided to students coming from social and economically remote areas under Ministry of Tribal Affairs, GoI and Tribal Welfare Department, GoMP. The study attempts to look at the assistance provided to students for food, the procurement channels and price paid by hostel management and profits realized by farmers in same vicinity are abysmally low.

In this study, a direct linkage model is suggested through which farmers can directly sell their produce to the hostels in the vicinity. The farmers and hostels can be linked through FPO only if certain presumptions are met at all the three levels i.e. farmers, FPO and hostels. If the farmers are directly linked to hostels then they will earn a per kg gross margin of Rs 6.5 for paddy, Rs 9.9 for wheat, Rs 26.75 for pigeon pea, Rs 4.5 for potato and Rs 9 for onion crops respectively and a gross percentage margin of 37.14%, 53.8%, 47.15%, 45% and 75% for paddy, wheat, pigeon pea, potato and onion crops respectively.

The hostels can also save up to Rs 22.85, Rs 5 and Rs 2 for procuring per kg of pigeon pea, potato and onion crops respectively if they agreed to procure from local growers which will ultimately be government's savings.

**Keywords :** Marketing channels, cost, margin and gross margin

---

<sup>1</sup>PG scholar, Department of Agricultural Economics, JNKVV, Jabalpur

<sup>2</sup>Director, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan

# LINKING ORGANIC FARMERS TO RETAIL STORES – BRINGING EFFICIENCY IN SUPPLY CHAIN FOR INCREASING FARMERS INCOME

KAVIYA P<sup>1</sup>, SHIKHA VERMA<sup>2</sup>

Email for correspondence : kaviyatn@gmail.com

In recent years, there is health concern among consumers and environmental concerns among scientists, policy makers, hence organic farming holds the key. The Government of India has come up with policy initiatives to promote organic food. Such measures are expected to increase investment in organic food manufacturing and retailing. India has around 8,35,000 certified organic farmers and 1.81 million hectare area under organic certification and also there are 700 reliance fresh operating in 93 cities, 256 big bazars operating in 120 cities and 890 Easy day stores operating in 246 cities who are supplying fresh organic vegetables to consumers. The farmers presently are selling their produce to markets through a long marketing channel. These results in increased cost of transaction, increased marketing costs, reduce producer's share in consumer's rupee thereby less income. This study attempts to assess the feasibility and viability of direct linkages between organic farmers and retailers. This study analyses, the performance and status of retail stores and farming practices in Coimbatore district, Tamil Nadu. A sample of 30 farmers was selected randomly and primary data was collected using structured interview schedule. The study reveals that, the farmer can earn an additional profit of Rs.1, 99, 712.5, Rs.1, 04, 597.5 and Rs.79, 654.75 per acre of Tomato, Onion and Okra crops respectively. The challenges and suggestions in implementing this alternate method of procurement were listed and ranked by farmers. The ranked data was analysed using Henry Garrett's ranking technique. The results shows that the major challenges in implementation of the proposed direct linkage are Lesser price, Delayed payment, Transportation cost, No assurance of procurement, Organic conversion, Quality aspects and Certification cost. Similarly, the suggestions by farmers expected Premium price, Mandatory procurement by retailers, OTC payment, Organic awareness, Proper guidelines, Training, Reducing certification cost, Quality standards and pre harvest Contracts. Based on the empirical evidence the study suggests timely inspections regarding organic standards, premium prices, promoting market information among the farmers and organising awareness programs, training programs and there is a scope for the government to subsidise certification costs, creation of new FPOs. By these mechanisms, the linkage of organic farmers with retail stores will be more efficient.

**KEYWORDS :** Organic agriculture, linking organic farmers to Retail stores, Garrett Ranking Technique, Producer's share in consumer's rupee

---

<sup>1</sup>PG Scholar, Department of Agricultural Economics, OUAT, Bhubaneswar (751003), Odisha, India

<sup>2</sup>Training Consultant, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## LINKING FARMERS TO FIVE STAR HOTELS - A VALUE CHAIN APPROACH

PRIYANKA V<sup>1</sup>, SATISH CHANDRA PANT<sup>2</sup>

Email for correspondence : priyankavnp197@gmail.com

India has an acclaimed hospitality industry. Sourcing raw materials required to run a five star hotel from a well-trained, quality controlled group of producers from a village is a challenge... This provides a three-way opportunity for the producer, the value adder and the consumer with an opportunity to have menus to provide fresher foods, thereby repositioning that draw guests and farmers to increase their income and marketing platforms. The study was conducted in Karnataka state, the 5 star hotels of Sheraton and Taj group of hotels situated in J Venkatapura village of Sidlaghatta Taluk in Chikballapur District. Thirty farmers were selected randomly, primary data was collected and analysed. Marketing problems faced in existing channel were ranked using Henry Garrett ranking technique. Results indicate that grocery bill of hotels are very high, even though the vegetable growers sell the vegetables at meagre prices. This price gap is due to intermediaries and quality aspects. This price gap can be bridged by linking vegetable growers to five-star hotels through FPOs that leads to mutual benefit of both the parties. The vegetable growers become economically stable and have a better livelihood as well as the hotels get quantity, quality, and timely availability of vegetables at reasonable prices.

**KEY WORDS :** Hospitality industry, existing channel of marketing, Henry Garrett Ranking Technique

---

<sup>1</sup>PG Scholar, Department of Agricultural Economics, OUAT, Bhubaneswar, Odisha.

<sup>2</sup> Assistant Professor, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## LINKING FARMERS TO FUNCTION HALLS : OPTIMIZING SUPPLY CHAIN

BHAVYA P<sup>1</sup>, SATRAAM SINGH<sup>2</sup>

Email for correspondence : bhavya816@gmail.com

Indian marriages, which takes place in functions halls or convention centers or banquet halls, are great events where on an average around 1000 to 2000 plates of food are served to keep guests satiated. Indian wedding industry is turnover Rs 100,000 crore and is growing at 25 to 30 per cent annually. The estimated cost of a wedding with no expenses spared could be between Rs 5 lakh to Rs 5 crore, in India with this information it clears that marriage business is lucrative. In this paper, we examine the ways by which farmers can be linked with marriage halls to supply various items required for preparing dishes and cuisines. The present study was conducted in Arsikere taluk, Hassan district, and Karnataka state with a sample size of 30. Descriptive statistics was used for analysis. The results revealed that if farmers are directly linked with function halls, marketing and other costs can be saved up to of Rs. 46, 22,260 and increase the producer share in consumer rupee up to 50 per cent (Rs. 14, 98, 24,000) can be achieved.

**.Key words :** Marriage, Producer share in consumer rupee, Farmers, Function hall

---

<sup>1</sup>PG Scholar, Department of Agricultural Economics, UAS , Bangalore, India

<sup>2</sup>Deputy Director, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

# ROLE OF PACKAGING AND LONG DISTANCE MARKETING OF VEGETABLES

P NEELIMA<sup>1</sup>, N.S. RANAWAT<sup>2</sup>

Email for correspondence : neelima.pogiri@gmail.com

Vegetables constitute an essential part of daily diet especially when per capita incomes are rising. Each adult requires 284 gm. of vegetable per day for maintaining good health. Perishablenature of vegetables incur losses during marketing and returns to grower are reduced Packaging of vegetables gives a solution to this problem in reducing post-harvest losses and efficient marketing. In order to establish the role of packaging on increased returns on both these counts Ramabhadrapuram market in Vizianagaram district of Andhra Pradesh was purposively selected because of high production of vegetables in and around the village and it is also the major marketing source for cities nearby. The objectives of study were to study the role of packaging in marketing of vegetable produce, to identify constraints faced by farmers in procuring and usage of packaging materials, to estimate packaging losses and to suggest better packaging measures to increase shelf life of vegetable produce and reduce spoilage so that the net returns of the producer can be increased. Data was collected from 30 vegetable producers, 10 wholesalers, and 10 retailers with the help of pretested interview schedule and the secondary data of latest particulars was collected for better interpretation. The data was analysed in line with the objectives. Analytical tools like Henry Garrett's ranking technique, descriptive statistics were used. Results revealed that marketing costs per kg of tomato, brinjal and okra would include extra Rs.4.962, Rs.5.025, and Rs. 4.84 respectively as packaging costs, interestingly extra net income of Rs. 10.068, Rs. 8.975 and Rs. 8.26 respectively for per kg of each of the above vegetable were realised when marketed through FPOs directly to consumers and Rs.4.068, Rs.3.975 and Rs.3.26 when marketed to retail markets. The producers were asked to rank the problems in the proposed system of packaging their vegetable produce and marketing directly it may be concluded that. Packaging plays a very crucial role in post-harvest management and if ignored results in major losses to the produce and producer. The packaging loss of Tomato is 17.09%, which accounts for Rs. 92,565 loss on the produce in one-acre crop. Similarly, the packaging loss of Brinjal is 2.7%, which causes Rs.6650 loss in one acre of crop, and packaging loss of Okra is 3.36 % accounting for Rs.3275 loss in one-acre crop. The study concluded that packaging of vegetable produce enables safe and easy handling of the produce and thus protects it from spoilage. Post-harvest losses can be reduced by following better packaging practices. This leads to the increase in the availability of produce and reduction in the market prices. On the producer's part, all his produce will be sold at remunerative prices.

**KEY WORDS :** Packaging, Marketing, Henry Garrett's Ranking Technique

---

<sup>1</sup>PG scholar, Department of Agricultural Economics, Odisha University of Agricultural Technology, Bhubaneswar (751003), Odisha, India

<sup>2</sup>Consultant, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## WAREHOUSING TO INCREASE FARMERS INCOME-AWARENESS IS THE KEY

M V POOJA RANI<sup>1</sup>, SUCHI MATHUR<sup>2</sup>

Email of correspondence : venkatapoojarani@gmail.com

Farmers are required to use modern warehouses for storage of produce to avoid intermediaries and reap high benefits. Although the Government has created public modern warehousing facilities in Bobbili area of Vizianagaram District, its usage and adoption is not up to the mark. This study was conducted to understand the reasons of farmers not using the warehouse. Data was collected from the farmers, warehouses, farmer producer organisations and bankers. The reasons for not using the warehouse by farmers was that there is no premium price quoted for the produce, but the costs of storing is high and the modern storing is limited., Farmers also do not have awareness about the facility of warehouse receipt, increased transportation charge, problem of getting loans from the banks, high rental charges by the warehouse etc. are some of the reasons of not using the warehouse. The data was analysed by descriptive statistics and Garrets ranking. This study reveals that traders and civil supply corporations than by the individual farmers mostly use warehouses. Thereby cornering the profits which otherwise would have accrued to the farmers.

**KEY WORDS:** farmers used to adopt modern warehouses, Garrett's ranking

---

<sup>1</sup>PG scholar, Department of Agricultural Economics, OUAT, Bhubaneswar (751003), Odisha, India

<sup>2</sup>Assistant Director, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan

## LINKING FARMERS WITH UNIVERSITY HOSTEL MESS-DIRECT MARKETING APPROACH FOR INCREASING INCOME OF FARMERS

DEEPANSHU GOSWAMI<sup>1</sup>, HEMA YADAV<sup>2</sup>  
Email of correspondence : deepanshu.iabm@gmail.com

In India, farmer needs alternate markets to sell their produce. Linking farmers with university hostel mess is one such idea of direct linking farmers with institutions. In all over India 2, 94, 27,000 students live in 903 universities. Abundant food is procured from various sources to run the mess. Important sources are farmers. In the US and Canada also such programs are run by organizations which give support to local farmers to directly link institutions for providing local and safe food. India's APLM act 2017 is a major agriculture reform, which permits farmers to directly sell their produce to consumers to realise better profits to farmers. The direct market linkage has the potential to strengthen, profitability to farmers. The present study clearly concluded that such linkages are possible by a facilitator (FPO's - Farmer Producer organization). FPOs have enough resources to act as facilitators who can aggregate the demand and supply and can absorb risks, which an individual farmer could not bear, and supply the product consistently.

---

<sup>1</sup>PG Scholar, Department of AgriBusiness Management, IABM, Bikaner, Rajasthan, India

<sup>2</sup>Director, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## **DIRECT MARKETING TO URBAN CONSUMERS BY FPO'S : LINKING RURAL PRODUCTION TO URBAN CONSUMPTION**

**NAVDEEP<sup>1</sup>, SATHYENDRA<sup>2</sup>**

**Email for correspondence : navdeepnavi090@gmail.com**

Agricultural Produce has the longest chain from producer to consumer. There are a number of intermediaries in the market like the wholesalers, commission agents, traders, processors, retailers and so on. As it passes through each individual, the price of commodity increases. So, it is only the consumer who is finally made to bear the burden. Thus, the high price paid by the consumer does not reach the grower. It is pocketed only by the market intermediaries and therefore the producer share in consumer rupee is very less and the quality also deteriorates as these commodities move from one stage to another.

For the study, both farmers and consumers were interviewed to get information about their behaviour towards buying of fruits and vegetables from the farmers through FPOs as the consumers would get fresh fruits and vegetables at a lower price from the market and the farmers will get more share in the consumer rupee as compared to what they are getting in present market system.

The FPOs can be linked to the residential areas in 2 ways: Either they can be provided with a shop near the residential houses or they can be provided with a customized vehicle by the government so that they could sell the fruits and vegetables from farmers to the consumers in the metropolitan cities. To fix the prices adequate care should be taken. If the prices in FPOs are higher than the local market rate, there is no incentive to consumers. And if the prices fixed are lower than the wholesale market rates there is no incentives to farmers. The prices in FPOs shall have to be 10 to 15% above the wholesale rates and 10 to 12% less than the local retail price. By adopting this policy, the producer share in consumer rupee will be raised from 66.6% to 85.7% for okra, 66.6% to 87.5% for brinjal, 60% to 77.3% for roundgourd, 72.7% to 90% for watermelon and 71.4% to 91.6% for muskmelon.

The FPOs should take care of the demands of the consumers and the farmers should be aware of what the consumers need from them. The factors such as good quality, regular availability, variety, freshness should be considered while selling fruits and vegetables through FPOs. The interest of farmers should also be taken care of, as they demand immediate payment for their produce and the price should be higher than the current market price.

---

<sup>1</sup>PG Scholar, Department of Agri Business Management, PAU, Ludhiana, India

<sup>2</sup>Assistant Professor, Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## 2. LINKING FARMERS TO MID DAY MEALS PROGRAMME : AN AGRICULTURAL MARKETING PERSPECTIVE.

ANGELIN KEERTHIGA A<sup>1</sup>, P. CHANDRA SHEKARA<sup>2</sup>, NITIN LAHOTI<sup>3</sup>

Email for correspondence : keerthikailamathy95@gmail.com

### INTRODUCTION

The Mid Day Meal Scheme (MDMS) is a school meal programme of the Government of India designed to better the nutritional standing of school-age children nationwide. The programme supplies free lunch on working days for children in primary and upper primary classes in government, government aided, local body, Education Guarantee Scheme, and alternate innovative education centres, Madarsa and Maqtabs supported under Sarva Shiksha Abhiyan, and National Child Labour Project schools run by the ministry of labour.

In India, around 12 crore children in over 12 lakh schools and Education Guarantee Scheme centres are being served under the scheme. Around 2000 MT of rice and 500 MT of wheat was allocated for primary and upper primary schools for the year, 2017-18. Across the state of Tamil Nadu, 43,143 Noon Meal Centres are established, engaging one, 28,130 noon meal employees. Nearly, 53.82 lakhs children, studying in 43,787 Primary & Upper Primary schools are provided with hot cooked nutritious variety meals on all school working days (215 days) inside the school campus itself. About 7,612 Children studying in National Child Labour Special Schools are also provided with Nutritious variety meals in 16 districts for 312 days in a year.

The central and state governments share the cost of the Midday Meal Scheme, with the centre providing 60 percent and the state government contributing 40 percent. The central government provides grains and financing for other food. Costs for facilities, transportation, and labour are shared by the Central and state governments. In 2018, Rs.60,339.97 crore has been released in the union budget for the programme. The interim budget for 2019-20 has allocated Rs 11,000 crore additionally for the national programme of mid-day meals in schools. Similarly, the Annual allocation of Central Assistance for Tamil Nadu is Rs. 44417.06 lakh.

The raw materials required for providing food to the students were sourced from different destinations. In this regard, Rice, Pulses, Oil and Salt are being provided by the government at free of cost. Tamil Nadu State Civil Supplies Corporation supplies the indented quantity of each commodity by the Noon Meal Organizer available at each school. Nutritious Meal Organizers are authorized to draw money provided by the government required for Vegetables, banana, spices, condiments and fuel charges to incur the expenditure. These are procured by the Noon Meal Organizers in the local market

On the other hand, farmers sell their produce to markets through a long marketing channel. From the markets, Food Corporation of India (FCI) procures it and sells the required quantity of food grains to the schools through Public Distribution System (PDS). In this process, the crops grown by the farmers in a village ultimately lands up in the same village after going through a number of intermediaries. This results in reduced producer share in the consumer price, increased cost of transaction, increased cost of providing meals to the student under MDMS.

### REVIEW OF LITERATURE

Ahmed and Sharma, (2004) in their analysis concluded that if school feeding programmes with locally produced foods are successful in inducing farmers to adopt modern technology in maize production. The supply of maize shifts by 30 per cent and the demand curve by 26.6 per cent. The total benefits were potentially worth about USD 1.6 billion a year in 2003 prices. Of this 57 per cent would go to consumers and 43 per cent to producers.

Studdert et. al., (2004) conducted a study in Indonesia of a school feeding programme, which included only locally produced food. The author found widespread acknowledgement that farmers were receiving benefits from the farmers

A background paper for the Millennium Project Task Force on Hunger describes how a locally sourced feeding programme in Guatemala shifted its acquisition of food from centralized industrial suppliers to local producers helped develop local markets (Caldes and Ahmed, 2004)

The United Nation World summit (2005) recommended the expansion of local school meal programmes using

homegrown foods where possible as one of the quick impact initiatives to achieve Millennium Development Goals, especially for the rural areas facing the dual challenge of high malnutrition and low agricultural productivity.

In United Kingdom, the East Ayrshire local authority initiated a pilot school meals programme in 2004 in 12 schools. Two evaluations of the programme conducted indicated that the economy has benefitted from the injected resources, generating employment in the firms. In addition, the 12 schools in the scheme benefit the economy by £160000. At present 70 per cent of the local food is sourced. (Sonnino, R, 2007)

Brinkman, A. (2007) estimated the potential benefits of a local purchase scheme in Kenya. The study concluded that if the school feeding programme in Kenya were to purchase maize, from smallholder farmers in high-potential area for maize, the annual incomes of 175000 farmers would increase by around USD 50 per smallholder.

Dwivedi Ritesh (2013) studied the scope of improving the Mid-day meal scheme stated that there is a need to coordinate the functioning of various departments with regard to Mid-Day Meal scheme. The village farmers should be entrusted the entire responsibilities of the implementation of the scheme at the village level.

## OBJECTIVES

Based on the statement of the research problem the following objectives are set for the study:

1. to understand the current procurement process under mid-day meal scheme, t
2. o assess the possibility of all procurement under mid-day meal scheme from local farmers
3. To assess socio-economic impact of procurement from local farmers.

## METHODOLOGY

For the study, the performance and status of Government Higher Secondary School, Paalamadai, Tirunelveli district, Tamil Nadu was selected. The school is providing mid-day meal prepared in school premises. For the year, 2018-19, the government for providing mid-day meal has approved 120 children. There are no specialized storage facilities available in the godown and only a part of the cooking area is being used as storage godown.

The assessment was done based on primary data collected from the local farmers using the pretested structured interview schedule. Simple random sampling was used in selecting sample respondents. The performance of the mid-day meal programme was collected from Noon meal organizers in the school. In addition, Tamil Nadu State Civil Supplies Corporation (TNSCSC) was interviewed to understand the method of distribution of rice, pulse, oil and salt to the schools. To get detailed information about the procurement of produce from the farmers, Modern rice mill (an integrated part of the TNSCSC) was studied. From primary data, the cost of providing food to the students for the existing system of MDMS and for the proposed system of direct linkage between farmers and the school was computed. Besides, the profit that farmers receive in the current and proposed mode of marketing was imputed. Finally, the decreased cost of providing food for the government and the additional profit that the farmers gain through the proposed linkage were found out.

Henry Garrett's ranking technique was used for ranking priorities, problems and suggestions, the procedure is explained below

This technique is used to evaluate the most significant factor that influences the respondent. As per this method, respondents have been asked to assign ranks for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Per cent position} = 100 (R_{ij} - 0.5) / N_j$$

Where,  $R_{ij}$  = Rank given for the  $i$ th variable by  $j$ th respondents

$N_j$  = Number of variable ranked by  $j$ th respondents

With the help of Garrett's Table, the percent position estimated is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of score is calculated. The factors having highest mean value is considered to be the most important factor.

For the present study, the respondents were asked to rank from one to seven for the problems they may face if any

direct linkage between the farmers and the schools were established. In addition, they have been asked to rank from one to nine for the factors that have to be established for the successful launch of linking farmers to the MDMS. These scores were computed mathematically and each factor has been assigned a rank based on its importance and influence over the farmers.

## RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented under the following heads:

### Reduction in cost of provision of food for the government:

The following table shows the cost of providing food to the students under MDMS for the current system and the proposed direct linkage between farmers and schools and the estimated deduction in provision cost.

The cost of providing 1kg of rice for the government is Rs.28.435. In addition, if the local farmers are linked directly to the schools, it will cost Rs.26 per kg of rice. This will save Rs. 2.435 per kg of rice for the government. Ultimately, the government saves Rs.8835.862 per year for a school providing food to 120 students. The major cause for this reduced cost is because of reduction in transportation cost and lower procurement price. Similarly, procuring okra and black gram from the local farmers will reduce the cost by Rs. 13.435 and Rs. 1.635 per kg of the produce respectively. Ultimately, if the proposed linkage of the schools and local farmers under MDMS is implemented the government can save, Rs. 73.632 for rice, Rs. 60.198 for Okra and Rs. 5.390 for Black gram for a student per year. These results are shown briefly in the following table

**Table 1: Comparison between cost of providing food in the current system and proposed direct linkage system**

| Commodity  | Particulars                         | Existing System (Rs./Kg) | Direct linkage (Rs./Kg) | Decreased cost (Rs./Kg) | Decreased cost / day (Rs) | Decreased cost / year (Rs.) |
|------------|-------------------------------------|--------------------------|-------------------------|-------------------------|---------------------------|-----------------------------|
| Paddy      | Procurement cost                    | 18                       | 16                      | 2                       | 41.097                    | 8835.862                    |
|            | Processing cost (Rs./kg)            | 10                       | 10                      | 0                       |                           |                             |
|            | Transportation cost (PU to schools) | 0.435                    | 0                       | 0.435                   |                           |                             |
|            | Total                               |                          | 28.435                  | 26                      | 2.435                     |                             |
| Okra       | Procurement cost                    | 38                       | 25                      | 13                      | 33.585                    | 7221.313                    |
|            | Processing cost (Rs./kg)            | 0                        | 0                       | 0                       |                           |                             |
|            | Transportation cost (PU to schools) | 0.435                    | 0                       | 0.435                   |                           |                             |
|            | Total                               | 38.435                   | 25                      | 13.435                  |                           |                             |
| Black gram | Procurement cost                    | 46.2                     | 45                      | 1.2                     | 3.008                     | 646.806                     |
|            | Processing cost (Rs./kg)            | 20                       | 20                      | 0                       |                           |                             |
|            | Transportation cost (PU to schools) | 0.435                    | 0                       | 0.435                   |                           |                             |
|            | Total                               |                          | 66.635                  | 65                      | 1.635                     |                             |

### Profit enhancement of farmers:

The following table shows the sale price of the produce under current marketing channel and the proposed direct linkage between farmers and schools and the imputed increase in profit of the farmers.

**Table 2: Comparison between profits received by the farmers in the current and proposed direct linkage system**

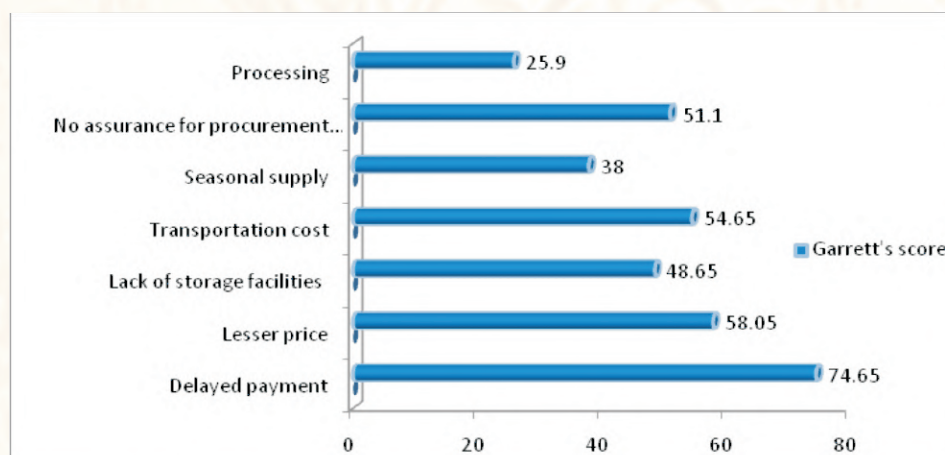
| Commodity  | Particulars                                | Existing System | Direct linkage | Increased profit (Rs./Kg) | Total increased profit (Rs./ac) |
|------------|--------------------------------------------|-----------------|----------------|---------------------------|---------------------------------|
| Paddy      | Sale price (Rs/Kg)                         | 15              | 16             | 1                         | 742.5                           |
|            | Transportation cost (Field to PU) (Rs./kg) | 0               | 0.67           | -0.67                     |                                 |
|            | Processing cost (Rs./kg)                   | 10              | 10             | 0                         |                                 |
|            | <b>Total</b>                               | <b>25</b>       | <b>26.67</b>   | <b>0.33</b>               |                                 |
| Okra       | Sale price (Rs/Kg)                         | 20              | 25             | 5                         | 43300                           |
|            | Transportation cost (Field to PU) (Rs./kg) | 0               | 0.67           | -0.67                     |                                 |
|            | Processing cost (Rs./kg)                   | 0               | 0              | 0                         |                                 |
|            | <b>Total</b>                               | <b>20</b>       | <b>25.67</b>   | <b>4.33</b>               |                                 |
| Black gram | Sale price (Rs/Kg)                         | 43.3            | 45             | 1.7                       | 206                             |
|            | Transportation cost (Field to PU) (Rs./kg) | 0               | 0.67           | -0.67                     |                                 |
|            | Processing cost (Rs./kg)                   | 20              | 20             | 0                         |                                 |
|            | <b>Total</b>                               | <b>63.3</b>     | <b>65.67</b>   | <b>1.03</b>               |                                 |

From the above table, it was found that when farmer sells his produce through the current marketing channel, the price received for the produce is Rs. 15 kg of paddy. In addition, if the farmer intends to sell his produce to the school for MDMS he can sell his produce at Rs. 16 per kg of produce. However, in case of the current marketing channel, the farmers need not pay for the transportation cost and if the proposed direct linkage channel is implemented the farmers need to bear an additional transportation cost of Rs. 0.67 per kg of the produce. Despite the inclusion of transportation cost, the farmers will get an additional profit of Rs. 0.33 per kg of paddy. Finally, the farmer will have an additional profit of Rs. 742.5 per acre for paddy. Similarly, the farmer can earn Rs. 43300 and Rs. 206 per acre of okra and black gram crops respectively. The following table shows the total gains that can be obtained by linking the farmers to the MDMS directly and the reduction in cost of providing the food for a student per year.

### Challenges apprehended by farmers in the direct channel with MDMS:

- Delayed payment for the produce sold.
- Comparatively lesser price realization as compared to selling at local markets
- Lack of storage and processing facilities leads to maintain a stock of the produce
- Transportation cost has to be borne by farmers
- Seasonal supply of the produce
- No assurance for the procurement of the produce by the government

The problems anticipated by the farmers in the proposed system of linking farmers to the school under MDMS directly and each of the problem statement was ranked from 1 to 7 based on the importance of each factor by the farmers is presented graphically as follows.

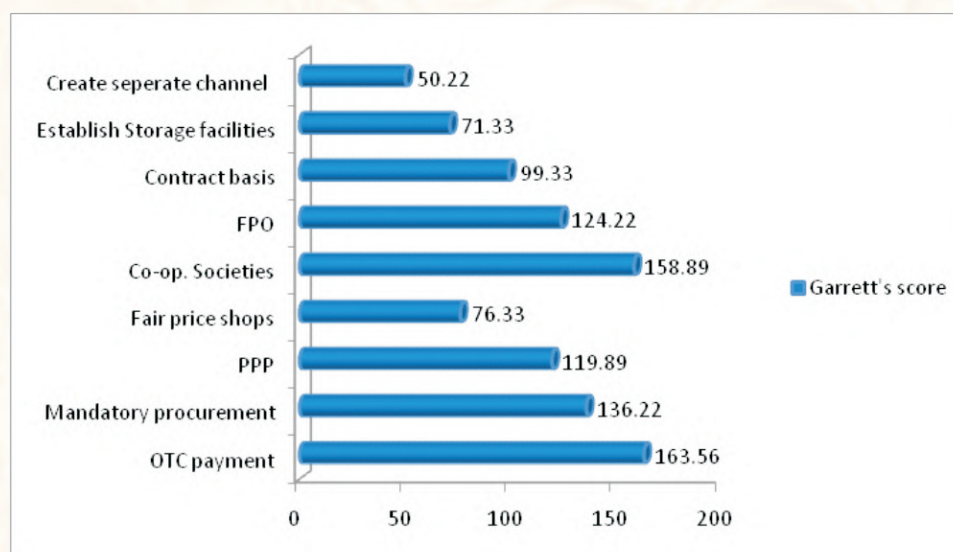


**Fig. 1: Average Garrett's scores of problems expected to arise in the process of linking farmers and schools.**

From the above graph, the most important problem that the farmers expect from the linkage of farmers to school under MDMS is delayed payment for their produce from the government. Secondly, they may get lower price, but computation reveals that the farmers tend to get more profit if they are willing to sell their produce to the government than the existing system. Therefore, awareness needs to be created among farmers through market information.

Farmers have to bear the transportation cost from the field to the Direct Procurement Centres (DPC) in the alternative method of procurement. However, in case of the existing marketing channel, the brokers or commission agents themselves take the produce from the field to the processing unit. Therefore, farmers find it difficult to bear the transportation cost. Lack of assured procurement of the produce by the school for MDMS may lead to loss to farmers, Lack of storage facilities in the school may result in spoilage. Since seasonal production of crops and lack of processing facilities, may result in loss to farmers in the new channel

Similarly, the farmers are asked to list out their suggestions for establishing the linkage and they were asked to rank from one to nine the steps to be taken by the government for successful implementation of the proposed marketing channel. The results are presented graphically



**Fig. 2: Average Garrett's scores of suggestions proposed by the respondents to link farmers and schools under MDMS.**

From the above graph, it is evident that making immediate cash payment to the farmers for the produce is the critical step to make farmers sell their produce directly to the school under MDMS. The second way to implement the new channel is to make Co-operative societies as an intermediary between the schools and the farmers. In this method, the government shall pay farmers through the co-operative societies operating at the local level.

Since farmers have no assurance for procurement of their produce by the government. Mandatory procurement of the produce from the local farmers for MDMS by the noon meal organizers must be initiated through an MOU. Through an (FPO) to be formed by local farmers for this purpose, so that other FPOs will not predatorily compete.

Establishing Public Private Partnership (PPP) has been strongly expressed to formalize private parties in this process, which will help in increasing the efficiency. Purchasing the produce from the local farmers for MDMS can be initiated on a contractual basis with a group of farmers or with a FPO through an MOU. The village level Fair price shops should be made as an intermediary, establishing sufficient storage facilities in the school and in the village. Lastly, establishing adequate processing units for converting paddy into rice in the vicinity have been expressed to avoid losses to farmers.

### **Challenges faced by Noon Meal Organizer:**

From the study it has been observed that the cost provided for the purchase of these commodities are very meager and insufficient. Only, Rs.0.82 and Rs.0.92 for a student per day is being provided for the purchase of vegetables for primary and upper primary students. With this allocation, the noon meal organizer himself purchases the required ingredients in the local market. In this regard, vegetable whichever has lower price will be purchased from the market. Given the circumstances, if the proposed method of connecting local farmers to local schools under MDMS has to be implemented, it would be difficult for the NMO to purchase the required quantity of vegetables within the allocated budget. NMO cannot get the vegetables at the least cost unless he compares with other vegetables in the market.

Another serious issue addressed by the NMO is that neither the schools nor the village has any storage facilities. In addition, it is impossible to store the produce procured from the farmers. Hence, if the proposed system of linking farmers to the schools has to be established, the most important requirement is adequate storage facilities at grass root level needs to be established under the GRAMEEN BHANDARAN YOJANA

### **POLICY IMPLICATIONS AND CONCLUSION**

The following policy implications are suggested for future line of work

The study clearly shows that the farmers earn more profit when linked to the school under MDMS than the existing marketing channel. However, the farmers presume that they would get lower prices in the alternative channel. This indicates lack of awareness about the market information among farmers. Therefore, there is a pressing need to promote awareness among the farmers about the benefits of the proposed system of linkage.

Lack of adequate storage and processing facilities in the school and at the local village level is a major shortcoming of the direct marketing proposed. So, sufficient storage and processing facilities must be established in appropriate conditions at grass root levels.

As proposed by the farmers, the existing Co-operative societies must be made more efficient and linkage between the local farmers and schools can be initiated through these co-operative societies. Promotion of Public Private Partnership (PPP) can also make the process more effective

Farmer Producer Organizations (FPOs) are very less in number and the existing ones are less competent. Even farmers are ignorant of the existence of FPOs. It is the need of the situation to promote increasing number of FPOs for achieving better profits by linking FPOs directly avoiding intermediaries

### **ACKNOWLEDGEMENT**

This research exertion has been done in part fulfillment of the requirement for the Research Internship Programme to Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, and Rajasthan.

## REFERENCES

- Sonnino, R. (2007). *Local School Meals in East Ayrshire, Scotland: A Case study*. Paper presented to the World Food Programme, Rome
- Studdert, L. J., Soerikman, K. M. Rasmussen and J. P. Habicht (2004). "Community based school feeding during Indonesia's economic crisis: Implementation, benefits and sustainability". *Food and Nutrition Bulletin* 25(2): 156-165
- Ahmed, A. U. and Sharma, M. (2004). *Food for education programs with locally produced food: Effects on farmers and consumers in Sub-Saharan Africa*. Washington DC, International Food Policy Institute.
- Caldes, N and A. U. Ahmed (2004). *Food for education: A review of program impacts*. Washington DC, International Food Policy Institute.
- World Summit outcome (2005).
- Brinkman, A (2007) *Costs and cost-outcome of school feeding programmes and feeding programmes for young children: Evidence and recommendations*. *International Journal of Educational Development*. 48:79-83.
- Dwivedi, Ritesh. (2013). *Mid-Day Meal: Scope of Improvement*. Mainstream. LI. 5-8



### 3. LINKING FARMERS TO SOCIAL WELFARE HOSTELS : DIRECT MARKETING TO BENEFIT BOTH

SHRUTI MISHRA<sup>1</sup>, RAMESH MITTAL<sup>2</sup>, NITIN LAHOTI<sup>3</sup>  
Email for correspondence : shrutimishra.jnkvv@gmail.com

The Govt. (both Central and State Govt.) for the purpose of providing accommodation to students/ youth/ women coming for their studies, sports, work and other kind of learning program to other places distant from their home provides them with hostels separately for boys and girls. Along with providing accommodation, they also provide basic facilities like sanitation, bedding, food etc. There are about more than 50 Govt. hostels established by different ministries that are accommodating around 10 lakh students throughout the country which is the potential for marketing directly

The Govt. hostels procure commodities for mess from local shops i.e. from informal channel on the other hand the farmers near these hostels sell his produce to either local shopkeepers or mandi. The commodity grown in same area reaches to the hostels after traversing a long marketing channel. There is a requirement on the side of hostels and there is a supply of same commodities required by the hostel in same market but those very same commodities reach the same market through a long marketing channel i.e. both farmers and hostels are opting for different channels to market and procure respectively without realizing that they can be linked directly and increase profits and reduce costs.

This ultimately results in reduced producer share in the consumer rupee, increased cost of production and thus decreasing the revenue or income realised by farmers. The study attempts to look at the assistance provided to students for food, their procurement channels and price paid by hostel management and the farmers in same vicinity that fetches low price for their produce and the channel they opt for procurement and marketing respectively.

#### METHODOLOGY

##### Area of Study :

- Sample District:- Narsinghpur, Madhya Pradesh

Sampling Village: - Surajgaon village

Sampling Respondents: - 20 farmers and one hostel- SC Excellence Senior Boys hostel, Block Level (Pre- Matric) which is selected purposively for the study.

- The respondents are selected using simple random sampling.
- Data collection:-
- The primary data is collected through pre tested interview schedule from both farmers and hostel / mess managers.
- The secondary data regarding the information about hostel and budget allocated is collected from Tribal Welfare Ministry site.

##### Analysis of Data :

The collected data is analyzed by using cost and margin concepts by presuming the certain conditions for linking farmers to hostel.

**Cost** is the value of the factors of production used in producing and distributing (marketing) the farm produce. Cost of production includes both fixed and variable cost.

(i) Fixed Cost:- These are fixed and include implements and tools, machinery, farm buildings, work animals etc.

(ii) Variable Cost:- These costs vary with the production and includes cost of seed, manure's and fertilizers, irrigation, labor and other variable costs.

**Margin** is the difference between selling price and cost.

Margin= Revenue- Cost

**Gross margin** is the difference between revenue and cost of produce divided by revenue. It is expressed in percentage.

Gross Margin= Revenue- Cost/ Revenue \* 100

## RESULTS AND DISCUSSION

The findings of the present study explore the scope of eliminating the informal channels and directly link the farmers to the hostels. There is an established procedure of procuring the paddy and wheat by hostels at subsidized rates from the District Cooperative Society but rest of the commodities are procured from the local market. For selling of the commodities (farm produce) by the farmers to the hostels and procurement of the same from farmers this study proposes a direct linkage model.

The basic idea behind the linkage is that the farmers if provided with a platform where they can directly sell their produce to local hostels they would be able to realise better revenue for their produce and on the other side the hostels will also get fresh, healthy and nutritious, locally available produce. This will help to boost domestic market. If both hostels and farmers accept on the three basic factors then the linkage may be established by considering certain presumptions that both farmers and hostels need to fulfill. These three factors are-

1. Fixed quantity
2. Quality standards of produce
3. Assured prices

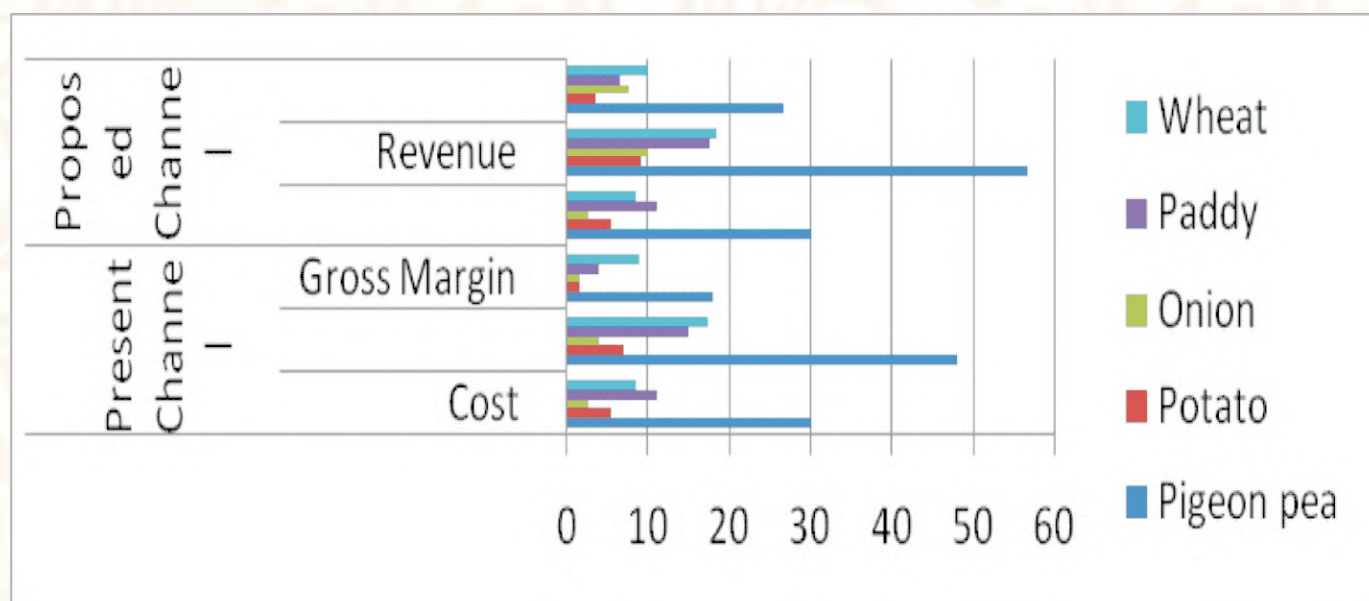


- The daily requirement of pigeon pea, potato, onion, paddy and wheat is 3.67 kg, 5 kg, 3 kg, 8.9 and 18.91 kilograms respectively and the charges of procurement of these commodities are Rs 79.6, Rs 14, Rs 12, Rs 16.9 and Rs 4.1 per kilogram in sampled hostel.
- The cost of production (Rs/ kg) for pigeon pea is 30, potato is 5.5, onion is 2.5, paddy is 11 and wheat is 8.15 respectively while the selling price (Rs/ kg) for the same commodities are 48, 7, 4, 15 and 17.35 respectively.

**Table 1: Margin of farmer in present v/s proposed channel**

| S. No | Crops      | Present Channel             |                 |                      | Proposed Channel            |                 |                      | Gross Percentage Margin | Net Margin (Rs/kg) |
|-------|------------|-----------------------------|-----------------|----------------------|-----------------------------|-----------------|----------------------|-------------------------|--------------------|
|       |            | Cost of Production (Rs/ kg) | Returns (Rs/kg) | Gross Margin (Rs/kg) | Cost of Production (Rs/ kg) | Returns (Rs/kg) | Gross Margin (Rs/kg) |                         |                    |
| 1.    | Pigeon pea | 30                          | 48              | 18                   | 30                          | 56.75           | 26.75                | 47.1                    | 8.75               |
| 2.    | Potato     | 5.5                         | 7               | 1.5                  | 5.5                         | 09              | 3.5                  | 38.8                    | 2                  |
| 3.    | Onion      | 2.5                         | 4               | 1.5                  | 2.5                         | 10              | 7.5                  | 75                      | 6                  |
| 4.    | Paddy      | 11                          | 15              | 4                    | 11                          | 17.5            | 6.5                  | 37.14                   | 2.5                |
| 5.    | Wheat      | 8.5                         | 17.35           | 8.85                 | 8.5                         | 18.4            | 9.9                  | 53.81                   | 1.05               |

**Fig. Gross Percentage Margin farmer earns through proposed channel**



### CONCLUSION

It is evident that the proposed direct marketing channel the net margin in rupees per kg of the produce. Hence, it is advisable to adopt and implement the direct linkage model to increase income of farmers.

### ACKNOWLEDGEMENT

The support from Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan and Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur, MP is duly acknowledged.

### REFERENCES

- Ahmed, A., & Sharma, M. (2007). *Home grown school feeding programs to support farmers in Africa: economic modeling and supply response*.
- De Carvalho, F., Dom, B. S., Fiadzigbey, M., Filer, S., Kpekpena, I., Lin, C., & Tanaka, Y. (2011). *Ghana school feeding program: Re-tooling for a sustainable future*. Ghana: Partnership for Child Development and the Ministry of Local Government and Rural Development.
- No, P. B. (2015). *Healthy meals in schools: Policy innovations linking agriculture, food systems and nutrition*.
- Serebour, R. (2017). *Assessing the implementation of the Ghanaschool feeding program (GSFP): A comparative case study of some selected schools in the Atwima Nwbiagya district and Atwima Mponua district of Ghana* (Master's thesis, The University of Bergen).
- Ibeanu, V., & Ayogu, R. (2011). *Nutritional Adequacy and Acceptability of Government School Lunch in Abuja Municipal, Nigeria*. *JOURNAL OF HOME ECONOMICS RESEARCH*, 14, 1-9.
- Kirwan, J., Ilbery, B., Maye, D., & Carey, J. (2013). *Grassroots social innovations and food localisation: An investigation of the Local Food programme in England*. *Global Environmental Change*, 23(5), 830-837.
- Holdsworth, M., & Spalding, D. (1997). *The development, implementation, monitoring and evaluation of a food and nutrition policy within a local health plan*. *Journal of human nutrition and dietetics*, 10(4), 209-217.
- Sims, R. (2010). *Putting place on the menu: The negotiation of locality in UK food tourism, from production to consumption*. *Journal of rural Studies*, 26(2), 105-115.



## 4. LINKING ORGANIC FARMERS TO RETAIL STORES – BRINGING EFFICIENCY IN SUPPLY CHAIN FOR INCREASING FARMERS INCOME

KAVIYA P<sup>1</sup>, SHIKHA VERMA<sup>2</sup>

Email for correspondence : kaviyatn@gmail.com

### INTRODUCTION

In recent years, there is health concern among consumers and environmental concerns among scientists, policy makers, hence organic farming holds the key. The Government of India has come up with policy initiatives to promote organic food. Such measures are expected to increase investment in organic food manufacturing and retailing.

The total land under organic farming increased from 11 million hectare in 1999 to 69.8 million hectares in 2018, and the total number of organic producers increased from two Lakh in 1999 to 2.7 million in 2018. In India, the traditional method of agriculture was by default organic with negligible use of chemical inputs. Looking at the premium that consumers were willing to pay for organic food products prompted some Indian retailers to enter the organic food supply business. India has the largest number of organic producers in the world, according to World of Organic Agriculture Report 2018 published in February. With eight, 35,000 certified organic producers globally; it is home to more than 30 percent of total number of organic producers (2.7 million) in the World. India contributes only 2.59 percent (1.81 million hectare) of the total area (69.8 million hectare). Tamil Nadu Organic Certification Department (TNOCD) was established in the year 2007- 2008 to carryout inspection and certification of organic production system in accordance with NPOP (National Programme for Organic Production), which was launched by Government of India in the year 2000 and notified in October 2001 under the Foreign Trade and Development Act (FTDR Act). In all over the India, there are 700 reliance fresh operating in 93 cities, 256 big bazars operating in 120 cities and 890 Easy day stores operating in 246 cities.

Paradoxically farmers sell their produce to markets through a long marketing channel, resulting in increased costs of transaction, marketing, reduced producer's share in consumer's rupee and thereby less income. This study attempts to assess the feasibility and viability of direct linkages between organic farmers and retailers.

### REVIEW OF LITERATURE

Only about 8% of the total organic produce is consumed by the domestic market (Raste, 2004). In terms of brands, there are both company and retail brands. The distribution of organic products is through channels like exclusive stores/outlets, co-operative buyers' groups (Ghosh, 2004), and conventional shops/outlets for food. The organic products in Indian markets cost a premium of atleast/almost double the price of the conventional products. Further, supermarkets and processors (Garibay and Jyoti, 2005) account for more than 50% of all organic sales in the domestic market.

Further, a stagnating local market, small volumes limited and scattered product range, irregular supply line, high prices for organic produce, limited number of processed products, lack of domestic and international market information on suppliers, prices and qualities, lack of consumer awareness, absence of Fair Trade Practices, insufficient storage and post-harvest facilities as well as adequate technical knowledge, lack of segregated cold storage facilities for perishable products, unreliable transportation systems, high costs of certification, especially for small farmers, and certification primarily based on documentation, because most small farmers are illiterate, hence marketing of organic produce is weak (Mahale, 2002).

Only about 20% of the consumers in India are aware of organic produce and only 10% had ever bought it. However, price premium can decline as economies of scale are attained in marketing and distribution (Krissoff, 1998) or due to rapid expansion in supply in the absence of market development for organic produce (Lampkin and Padel, 1994). The logo "India Organic" will be used for certified organic products only if certified by a government approved accreditation agency (Mahale, 2002).

## OBJECTIVES

The specific objectives of the study are

1. To suggest a possible linkage in order to link retailers to the local Organic farmers of the nearby villages,
2. To identify the challenges faced by the organic farmers in marketing and realising premium prices,
3. To compare organic farming with conventional farming with respect to production, marketing, selling prices and quality aspects and
4. To understand the current procurement channels used by retailers.

## METHODOLOGY

The assessment was done based on primary data collected from the 20 local Organic and 10 conventional farmers and 3 Organic retail stores. Data was collected using pretested structured interview schedule. Simple random sampling was used in sampling respondents. &Department of Sustainable Organic Agriculture at Coimbatore was studied for understanding the process of certification of organic produce. The profits and share in consumer rupee accrued to farmers in existing system and proposed system of direct linkage between farmers and the Retailers was computed

Henry Garrett is ranking of problems and priorities.

Most significant factor, which influences the farmers, were computed by this method. Respondents assign ranks for all factors and the outcomes of such ranking have been converted into scores by the following formula:

$$\text{Per cent position} = 100 (R_{ij} - 0.5) / N_j$$

Where,  $R_{ij}$  = Rank given for the  $i$ th variable by  $j$ th respondents

$N_j$  = Number of variable ranked by  $j$ th respondents

With the help of Garrett's Table, the percent position is estimated and that position is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of scores are computed. The factors having highest mean value is considered the most important factor.

For the current study, the respondents have been asked to rank from one to seven for the factors that have to be established for the successful launch of linking farmers to the retailers. These scores were manipulated mathematically and each factor has been assigned a rank based on its importance and influence over the farmers.

## RESULTS AND DISCUSSION

The findings of the present study are discussed and presented under following heads:

### Profit enhancement of farmers:

The following table shows the sale price and profit under conventional and proposed organic farming and the estimated increase in profit of the farmer.

**Table 1: Comparison of profits received by farmers in conventional and Organic farming**

| Commodity | Particulars                       | Existing System (Rs./Kg) | Direct linkage (Rs./Kg) | Increased profit (Rs./Kg) | Increased profit (Rs./ac)                                                 | Final Profit (Rs./yr)                                       |
|-----------|-----------------------------------|--------------------------|-------------------------|---------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------|
| Tomato    | Sale price                        | 48                       | 57.84                   | 9.84                      | <b>1, 99, 712.5</b><br><b>(43.91% increased than existing)</b>            | <b>1,97,212.5</b><br><b>(Certification cost Rs.2500/yr)</b> |
|           | Transportation cost (Field to PU) | 0.5                      | 0.65                    | -0.15                     |                                                                           |                                                             |
|           | Marketing cost                    | 4.1                      | 1.7                     | 2.4                       |                                                                           |                                                             |
|           | Cost of cultivation               | 6.4                      | 2.24                    | 4.16                      |                                                                           |                                                             |
|           | <b>Profit</b>                     | <b>37</b>                | <b>53.25</b>            | <b>16.25</b>              |                                                                           |                                                             |
| Onion     | Sale price                        | 45                       | 54.23                   | 9.23                      | <b>1, 04, 597.5</b><br><b>(81.13% increased than existing)</b>            | <b>1,02,097</b><br><b>(Certification cost Rs.2500/yr)</b>   |
|           | Transportation cost (Field to PU) | 0.5                      | 0.65                    | -0.15                     |                                                                           |                                                             |
|           | Marketing cost                    | 2.8                      | 0.45                    | 2.35                      |                                                                           |                                                             |
|           | Cost of cultivation               | 15.2                     | 5.13                    | 10.07                     |                                                                           |                                                             |
|           | <b>Profit</b>                     | <b>26.5</b>              | <b>48</b>               | <b>21.5</b>               |                                                                           |                                                             |
| Okra      | Sale price                        | 37                       | 44.6                    | 7.6                       | <b>79, 654.75</b><br><b>(106.28% increased than existing i.e., twice)</b> | <b>77,154.75</b><br><b>(Certification cost Rs.2500/yr)</b>  |
|           | Transportation cost (Field to PU) | 0.5                      | 0.65                    | -0.15                     |                                                                           |                                                             |
|           | Marketing cost                    | 2.8                      | 0.45                    | 2.35                      |                                                                           |                                                             |
|           | Cost of cultivation               | 15.08                    | 5.09                    | 9.9                       |                                                                           |                                                             |
|           | <b>Profit</b>                     | <b>18.62</b>             | <b>38.41</b>            | <b>19.79</b>              |                                                                           |                                                             |

From the above table, it is evident that when the farmer sells his produce through the current marketing channel, the price received for the produce is Rs.48 per kg of tomato. In addition, if the organic farmers intends to sell his produce to the retailers he can sell his produce at Rs.57.84 per kg of produce. However, in case of current marketing channel, the farmers need not pay for the transportation cost. However, in the proposed direct linkage channel farmers need to bear an additional transportation cost of Rs.0.15 per kg of the produce. Despite the inclusion of transportation cost, the farmers will get an additional profit of Rs.16.25 per kg of tomato. Finally, the farmer will have an additional profit of Rs.1, 99, 712.5 per acre for tomato. Similarly, the farmer can earn Rs1, 04, 597.5 and Rs.79, 654.75 per acre of onion and Okra crops respectively, which excludes certification cost of Rs.2500/year.

#### **Producer's share in consumer's rupee:**

The following table shows the cost of procuring fresh vegetables in the current system and proposed direct linkage system of organic farmers and retail stores.

From the above table, it is evident that when the farmer sells his produce through the current marketing channel, the price received for the produce is Rs.48 per kg of tomato. In addition, if the organic farmers intends to sell his produce to the retailers he can sell his produce at Rs.57.84 per kg of produce. However, in case of current marketing channel, the farmers need not pay for the transportation cost. However, in the proposed direct linkage channel farmers need to bear an additional transportation cost of Rs.0.15 per kg of the produce. Despite the inclusion of transportation cost, the farmers will get an additional profit of Rs.16.25 per kg of tomato. Finally, the farmer will have an additional profit of Rs.1, 99, 712.5 per acre for tomato. Similarly, the farmer can earn Rs1, 04, 597.5 and Rs.79, 654.75 per acre of onion and Okra crops respectively, which excludes certification cost of Rs.2500/year.

#### Producer's share in consumer's rupee:

The following table shows the cost of procuring fresh vegetables in the current system and proposed direct linkage system of organic farmers and retail stores.

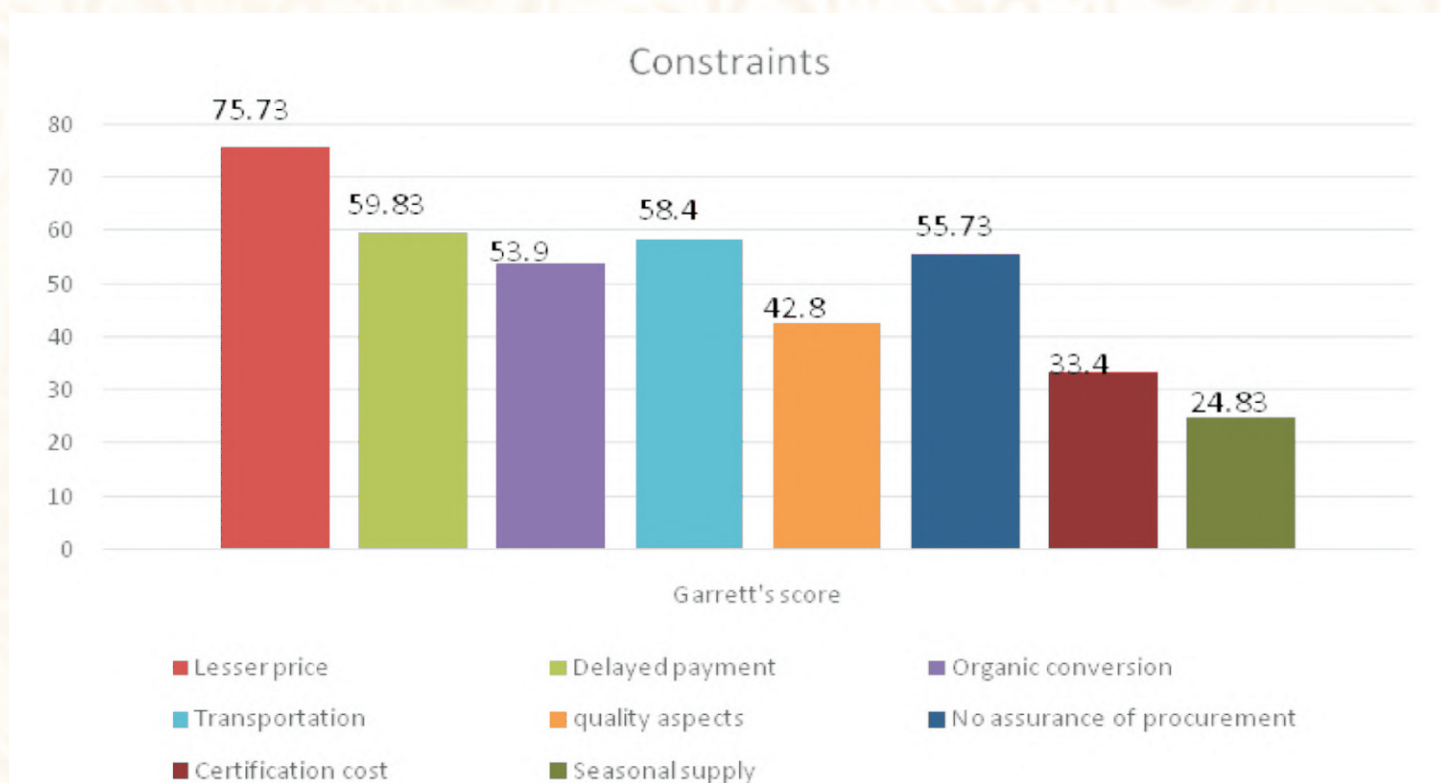
**Table 2: Comparison between cost of procuring fresh organic vegetables in the current system and proposed direct linkage system**

| Commodity | Particulars          | Existing System (Rs./Kg) | Direct linkage (Rs./Kg) | Producer's share in consumer's rupee (Rs./kg) |
|-----------|----------------------|--------------------------|-------------------------|-----------------------------------------------|
| Tomato    | Procurement cost     | 42                       | 57.84                   | 12.68                                         |
|           | Marketing cost       | 1                        | 1                       |                                               |
|           | Transportation cost  | 3.16                     | 0                       |                                               |
|           | <b>Total cost</b>    | <b>46.16</b>             | <b>58.84</b>            |                                               |
|           | <b>Selling price</b> | <b>65</b>                | <b>65</b>               |                                               |
|           | <b>Profit</b>        | <b>18.84</b>             | <b>6.16</b>             |                                               |
| Onion     | Procurement cost     | 43                       | 54.23                   | 12.23                                         |
|           | Marketing cost       | 1                        | 1                       |                                               |
|           | Transportation cost  | 3.16                     | 0                       |                                               |
|           | <b>Total cost</b>    | <b>49.16</b>             | <b>55.23</b>            |                                               |
|           | <b>Selling price</b> | <b>60</b>                | <b>60</b>               |                                               |
|           | <b>Profit</b>        | <b>17</b>                | <b>4.77</b>             |                                               |
| Okra      | Procurement cost     | 37                       | 44.6                    | 4.44                                          |
|           | Marketing cost       | 1                        | 1                       |                                               |
|           | Transportation cost  | 3.16                     | 0                       |                                               |
|           | <b>Total cost</b>    | <b>41.16</b>             | <b>45.6</b>             |                                               |
|           | <b>Selling price</b> | <b>50</b>                | <b>50</b>               |                                               |
|           | <b>Profit</b>        | <b>8.84</b>              | <b>4.4</b>              |                                               |

The cost of procuring 1kg of tomato from the farmers is Rs.42. In addition, if the local organic farmers are linked directly to the retailers, it will cost Rs.57.84 per kg of tomato. This shows Rs.12.68, which is the money consumers are spending in purchasing one kg of tomato from the retailers, which will be the producer's share. Ultimately, the Producer's share in consumer's rupee will be Rs.78, 679.4 per year for purchasing 17kg of tomato per day. The major cause for this producers share is because of procuring organic vegetables at premium prices and reduced transportation cost. Similarly, procuring onion and Okra from the local organic farmers will give producers share in consumers rupee Rs.12.23 and Rs.4.44 per kg of the produce respectively. Ultimately, if the proposed linkage of the retailers and local farmers is implemented, the farmers will get their share in consumer's rupee i.e., Rs.75, 887.15 for onion and Rs.16, 206 for Okra. These results prove that linking organic producers to retailers is very helpful to increase income of farmers.

#### Apprehension by the farmers for the new system of linking organic producers with retailers

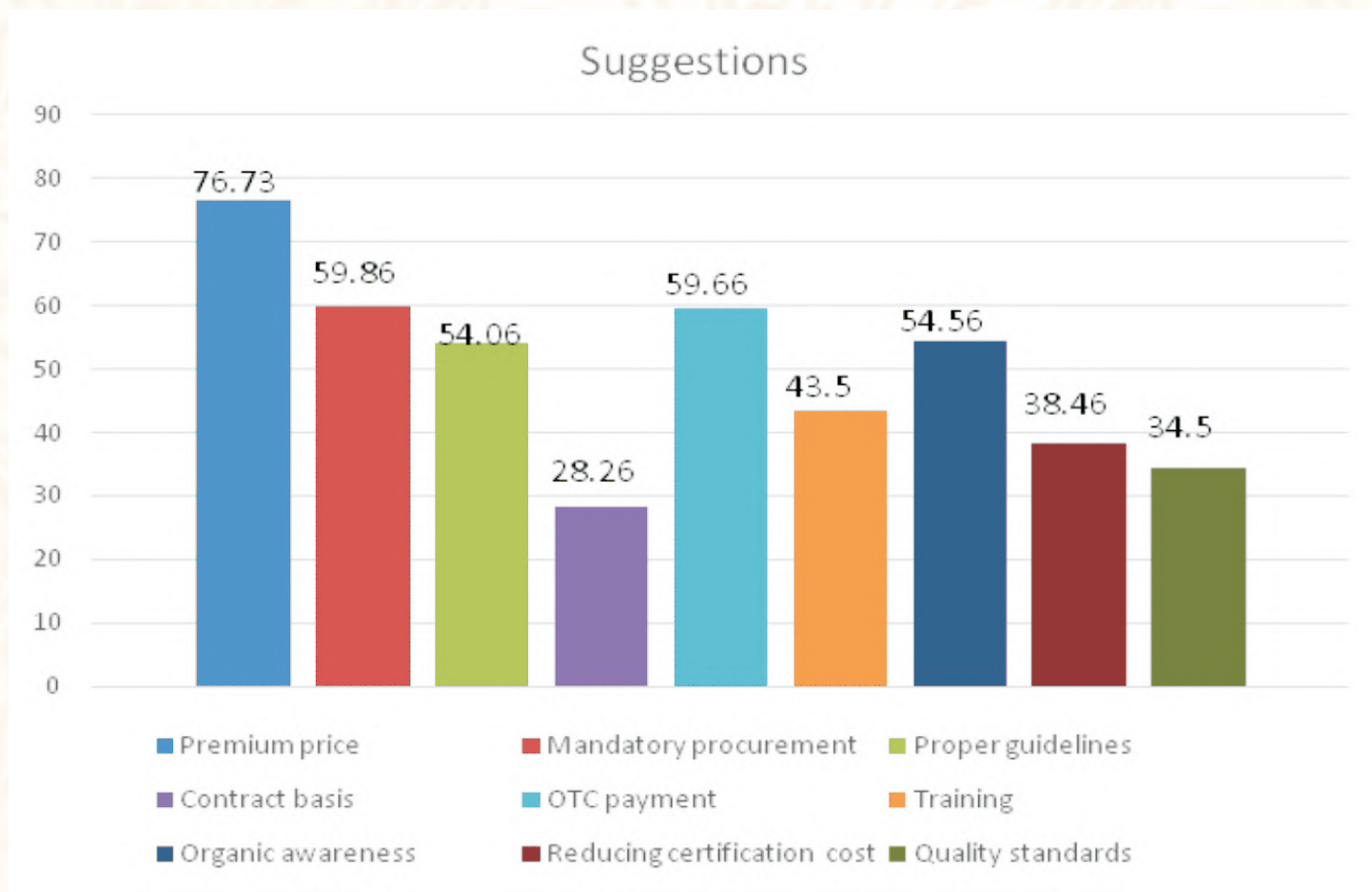
The farmers expressed the following apprehension in the proposed system of linking organic farmers with retailers. Each of the problem statement was ranked from one to eight based on the importance of each factor by farmers. The ranked data and is presented as below:



**Fig. 1: Average Garrett's scores of problems expected to arise in the process of linking farmers and retailers.**

The most important apprehension from "linking organic farmers with retail stores" is that the farmers expect premium prices, and they may not get premium price by retailers. Secondly, the payment can be delayed after selling. Thirdly, farmers have to bear the transportation cost from the field to the retail stores. Fourth, the conversion of conventional to organic is difficult, as there is no assurance of procurement, the quality parameters are not maintained in organic farming and certification cost is not affordable and are high. Lastly, due to seasonal nature the supply cannot be made throughout the year.

The suggestions for establishing the linkage between organic producer and retailer and steps to be taken by the government were as follows:



**Fig. 2: Average Garrett's scores of suggestions proposed by the respondents to link farmers and Retailers.**

To conclude the study reveals that the organically produced produce should get premium prices. There is no assurance for procurement by retailers. Therefore, mandatory procurement needs to be assured on cash payment by retailers. To further empower and transform the government should organise Organic awareness and skill based training programs, frame guidelines to the farmers for efficient production of organic produce,

Producers express reducing the certification cost seriously, as they are unable to afford. Purchasing the produce from the local farmers through FPO based contracts...since farmers lack knowledge on quality standards in organic farming. Awareness and training is required.

### **POLICY IMPLICATIONS AND CONCLUSION**

The following policy implications have emerged out of this study

The study clearly shows that organic farmers earn more profit when linked to the Organic retail stores than the existing marketing channel. However, the Farmers presume that they would get lower prices this is due to lack of awareness about the market information of organic produces among the farmers. Therefore, there is a pressing need to promote market information of organic produces among the farmers for realising premium prices.

The proposed organic farming to retailers channel must be made more efficient through inspections conducted at retail stores for checking procurement price, payment method, certification by Organic certification inspectors.

To absorb losses, subsidy and financial support can be given to farmers during their organic conversion period (3-4 years) as he gets lesser yield and higher cost of cultivation and reducing the cost of certification and

retailers increased approachability to farmer, needs to be emphasised Providing regular training on cultivation techniques of organic agriculture from seed to grain and suggesting organic farmers to follow integrated farming system to protect themselves from undesired situations., is the need of the hour. New Linkages by creating new FPOs and providing awareness about supplying organic produces through e-commerce., needs to be done Organic Farmers can also sell their produce to nearby collection centres of e-commerce stores. For example, Big Basket. These collections are located in Metropolitan cities such as Chennai, Bangalore, Mumbai, etc. Farmers can sell directly or through FPOs.

**ACKNOWLEDGEMENT :** This research exertion has been in part fulfilment of the requirement for the Research Internship Programme to Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, and Rajasthan.

## REFERENCES

- Arpita Mukherjee, Avantika Kapoor & Souvik Dutta. (2018). *Organic Food Business in India: A Survey of Companies*. Indian Council for Research on International Economic Relations, New Delhi, India.
- Balasubramanian (2005): "Going Organic: Problems of Upscaling and Extension", presentation at the National Planning Workshop on Technical Co-operation Programme on Organic Agriculture, July 18-19, MoA/FAO, NCOF, Ghaziabad.
- Pandey, J., & Singh, A. (2012). Opportunities and constraints in organic farming: An Indian perspective. *Journal of Scientific Research*, 56, 47-72.
- Ramesh, P., Panwar, N. R., Singh, A. B., Ramana, S., Yadav, S. K., Shrivastava, R., & Rao, A. S. (2010). Status of organic farming in India. *Current Science*, 98(9), 1190-1194.
- Sharma, S., Shukla, R., Leua, A., Parmar, G., & Chaudhari, B. (2016). Consumers' awareness and opinion regarding organic food products in south Gujarat. *International Journal of Farm Sciences*, 6(3), 206-215.
- Sukhpal singh, (2006). Organic produce supply chains in India. Centre for Management in Agriculture (CMA), Indian Institute of Management, Ahmedabad.
- Thompson, G D (1998): "Consumer Demand for Organic Foods: What We Know and What We Need to Know", *American Journal of Agricultural Economics*, 80 (4), 1113-1118.
- Vijayalakshmi, K (2005): "Organic farming initiatives in Tamilnadu: A bird's eye view", a presentation at the National Planning Workshop on Technical Co-operation Programme on Organic Agriculture, July 18-19, MoA/FAO, NCOF, Ghaziabad.
- Willer, H., & Lernoud, J. (2017). *The World of Organic Agriculture: Statistics and Emerging Trends*. Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM), Germany.
- TNAU Agritech portal, Agricultural marketing & Agribusiness  
[http://agritech.tnau.ac.in/agricultural\\_marketing/agrimark\\_Marketing%20channels.html](http://agritech.tnau.ac.in/agricultural_marketing/agrimark_Marketing%20channels.html)  
 About Big Bazar, [https://en.wikipedia.org/wiki/Big\\_Bazar](https://en.wikipedia.org/wiki/Big_Bazar)  
 About Reliance fresh, [https://en.wikipedia.org/wiki/Reliance\\_fresh](https://en.wikipedia.org/wiki/Reliance_fresh)  
 About Easy day, [https://en.wikipedia.org/wiki/Easy\\_day](https://en.wikipedia.org/wiki/Easy_day)  
[https://apeda.gov.in/apedawebsite/organic/NewTariff/Fee\\_Structure\\_of\\_TNOCD.pdf](https://apeda.gov.in/apedawebsite/organic/NewTariff/Fee_Structure_of_TNOCD.pdf)  
[https://en.m.wikipedia.org/wiki/IFOAM\\_-\\_Organics\\_International&ved](https://en.m.wikipedia.org/wiki/IFOAM_-_Organics_International&ved)  
<https://www.iscoporganiccertification.org>  
<https://unstats.un.org/unsd/methods/m49/m49regin.htm>.



## 5. LINKING FARMERS TO FIVE STAR HOTELS - A VALUE CHAIN APPROACH

PRIYANKA V<sup>1</sup>, SATISH CHANDRA PANT<sup>2</sup>

Email for correspondence : priyankavnp197@gmail.com

### INTRODUCTION

India is an agrarian country, where more than 50% of population is depend on agriculture for their livelihood. India's diverse climate ensure availability of all varieties of fresh fruits and vegetables. It ranks second in fruit and vegetable production in the world. According to Ministry of Agriculture and Farmer's Welfare 2017-18, India produced 187367 '000 metric tons of vegetables. The area under cultivation of fruits stood at 10123 '000 hectares.

India is largest producer of ginger and okra amongst vegetables, ranks second in production of potatoes, onions, cauliflowers, brinjal, cabbages, etc. and third in tomatoes. The vast production base offers India tremendous opportunities for export and different business entities with in country. During 2017-18, India exported vegetables worth Rest. Vegetables with 65% market share majorly dominate 5181.78 crores, Indian fruits, and vegetable market. (Technova research analysis).

Department of agriculture and cooperation, Ministry of Agriculture, Govt. of India has also identified farmer producer organization (FPO) registered under special provisions of the Companies Act, 1956 as the most appropriate institutional form around which to mobilize farmers and build their capacity to collectively leverage their production and marketing strength. On to date in Karnataka there are 125 FPO's of which 119 are registered and 6 are under the process of registration (DOACF, GOI).

### Hotel Industry

The Indian hospitality industry has emerged as one of the key industries driving the growth of the services sector and, thereby, the Indian economy. The tourism and hospitality sector's direct contribution to GDP in 2016 was US\$ 47 billion (hotel industry research, CARE Ratings 2017). In addition, this in India accounts for 7.5% of GDP and is the third largest foreign exchange earner for the country.

There are 106 five-star alliances in India comprising number of hotels, as India is one of the most popular tourists and faster developing country in the world. These hotels are more interested to serve the better needs of the varied human races. Among them food is the most important part of their business for which they consider many quality and quantity standards to purchase. There is a beautiful quote, "High quality food, every-day of the year", which is also an essential business motto of the hotel management regarding the quality of food they food. As India comprises of many 5-star alliances with number of branches, a greater number of farmers will be benefitted if they are linked with hotel industry for marketing of their produce.

### REVIEW OF LITERATURE

Hubsch (1996) propounded that dramatic changes have taken place in the hotel industry's attitude toward food and beverage operations in the last ten years. The most significant change in attitude has been that food and beverage has become important as a potential source of new profits.

Amlani (2016), president of NRAI, described that the total food services market today stands at INR 3, 09,110 crores and has grown at 7.7% since our last report in 2013. This is projected to grow to INR 4, 98,130 crores at a CAGR of 10% by 2021. This year alone, the Indian restaurant sector will create direct employment for 5.8 million people and contribute a whopping INR 22.400 crores by way of taxes to the Indian economy.

Taneja (2008) analyzed to a wholesale dealer of vegetables, two years ago he would sell 50 kilos of foreign vegetables but now he sells anywhere 200 to 300 kg per. He says a big portion of this produce is consumed by hotels. Most hotels these days serve every kind of cuisine. The discerning well-travelled foodie does not mind emptying his pocket to pamper his taste buds. The number of diners and those willing to experiment with food as gone up. In Chennai, the increase in the number of corporate clients, foreign delegations, and the IT industry has forced restaurants and hotels to use vegetables that are more exotic. "We have tandoori cauliflower, but to suit the

taste of foreigner guest we now also have tandoori broccoli,” the most commonly used exotic vegetables across Indian hotels are broccoli and colorful bell peppers.

### OBJECTIVES

1. To study the existing supply chain of vegetables in the study area.
2. To identify the problems in the existing supply and value chain of vegetables.
3. To identify the indicators considered by the hoteliers for sourcing vegetables
4. To design marketing paradigm for linking farmers to hotels.

### METHODOLOGY

Descriptive research design was used to study the existing mechanism in the vegetables marketing between farmers and hotels. The study was analysed based on the primary data collected from The study was conducted at J Venkatapura post of Chikballapur District and Bangalore of Karnataka State to analyse the proposed upscaling system of vegetables marketing from farmer to hotels. For the better results, the current prices of vegetables were collected from nearby APMC (Sidlaghatta) and Shandies (Yelahanka Raithu Bazaar).

The analysis was done based on the primary data collected from the 30 local vegetable growers using the prepared structured interview schedule. Multistage random sampling was used in selecting the respondents. The details regarding performance, structure and other crucial details of 5-star hotels was collected from Purchasing Managers of the hotel procurement department. For the better analysis, the current prices of vegetables were collected from the nearby APMC (Sidlaghatta) and Shandy (Yelahanka Raithu Bazaar).

Descriptive statistics were used for analysis of data wherever needed. Henry Garrett's Ranking Technique was used for ranking the marketing problems of farmers.

Henry Garrett's Ranking Technique: This technique was used to evaluate the problems faced by the researchers. The orders of merit given by respondents were converted into rank by using the formula. To find out the most significant factor, which influences respondent, Garrett's technique was used. As per this method, respondents have been asked to assign ranks for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Percent position} = 100(R_{ij} - 0.5) / N_j$$

Where,  $R_{ij}$  = Rank given for the  $i$ th variable by  $j$ th respondents

$N_j$  = Number of variables ranked by  $j$ th respondents.

For the current analysis, the respondents were asked to rank from one to 5 for the problems they are facing in the existing marketing system. Based on the data earned the problems are classified into two different groups and then analysed. The scores were normalised, and each problem has been assigned a rank based on its importance and influence over the vegetable growers.

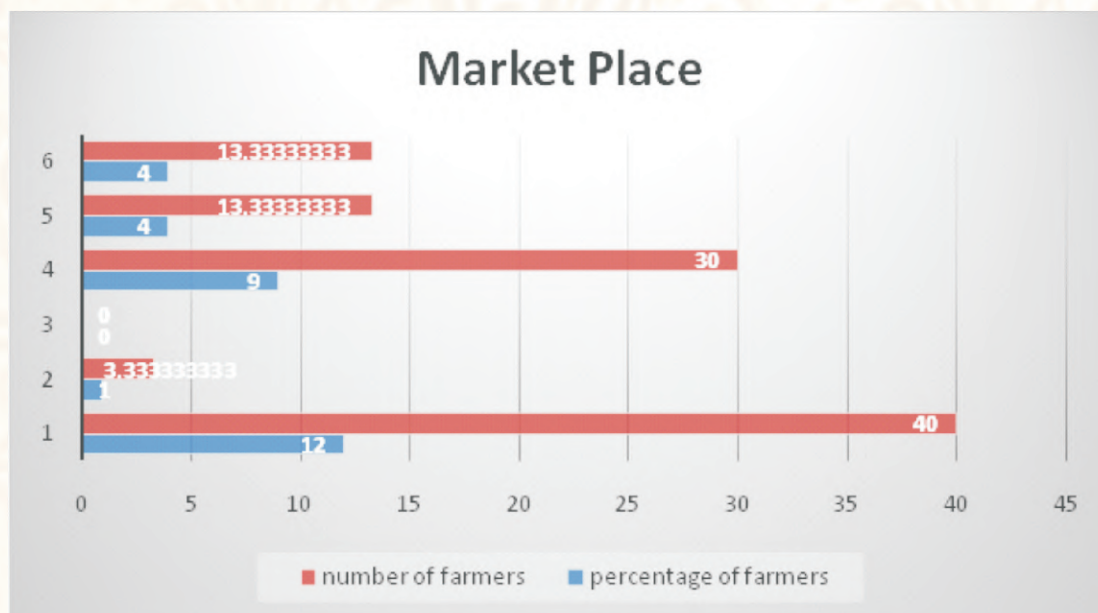
### RESULTS AND DISCUSSION

The analysis of the present research as well as relevant discussion have been presented under following heads:

#### **Agricultural Marketing Practices adopted by Farmers:**

It is evident from figure 1, that, out of 30 farmers 12 are selling their produce to the local vendor at their doorstep. This type of marketing will incur less marketing costs but reduces the percentage of producers share in consumer's rupee, if the farmer had sold through other channels.

**Figure 1: Different forms of marketing those farmers adopted for marketing of vegetables.**



**Table 1, Average prices of tomato, potato and cauliflower at different markets.**

Prices in rupees/Kg of Tomato, Potato and Cauliflower that farmers realised in existing marketing channels

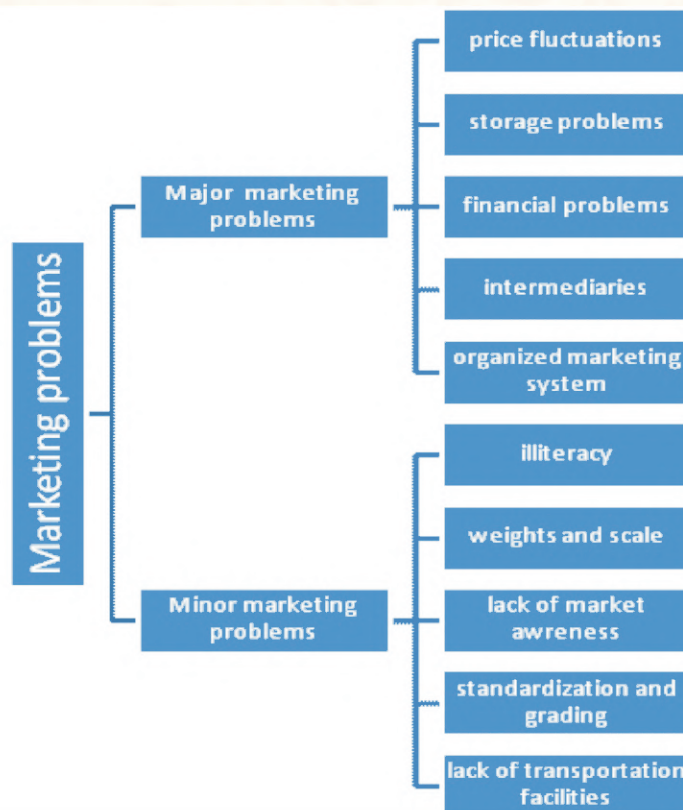
| Sr. No. | Place of marketing                | Tomato | Potato | Cauliflower |
|---------|-----------------------------------|--------|--------|-------------|
| 1       | In door step to local vendor      | -      | 20     | -           |
| 2       | Weekly market (Shandi, haat etc.) | -      | -      | -           |
| 3       | In retail shop                    | -      | -      | -           |
| 4       | In APMC                           | 18.8   | -      | 6           |
| 5       | Local trader's place              | 10     | -      | -           |
| 6       | Other (Reliance, marts etc.)      | -      | 15     | -           |
|         | Total                             | 14.4   | 17.5   | 6           |

From the table 1, it is found that farmers confined selling of their produce in only few markets even though there are different channels. The reason to sell their produce in local market is due lack of time, labour and market awareness.

**Challenges faced by the farmers during marketing of their produce:**The farmers were asked to rank the problems from 1 to 5 in marketing of their produce, according to their scale given problems are divided into major and minor marketing problems. The data collected is analyzed by Henry Garrett's Ranking Technique.

**Table 2. PROBLEM RANKING MATRIX-Weighted averages of the different marketing problems faced by farmers based on the rankings given by them**

| Sr. No. | Problems                           | 1  | 2  | 3  | 4 | 5  | Weighted average of the rankings |
|---------|------------------------------------|----|----|----|---|----|----------------------------------|
| A       | Illiteracy                         | 1  | 2  | 5  | 9 | 13 | 46.43                            |
| B       | Intermediaries                     | 4  | 11 | 6  | 7 | 2  | 96.06                            |
| C       | Weights and scales                 | 2  | 4  | 10 | 8 | 6  | 72.2                             |
| D       | Financial problems                 | 5  | 12 | 7  | 4 | 2  | <b>102.06</b>                    |
| E       | Lack of organized marketing system | 1  | 18 | 6  | 3 | 2  | 101.06                           |
| F       | Lack of transportation facilities  | 0  | 5  | 11 | 7 | 7  | 67.23                            |
| G       | Standardization and grading        | 1  | 6  | 13 | 5 | 5  | 74.16                            |
| H       | Lack of market awareness           | 1  | 7  | 8  | 8 | 6  | 69.2                             |
| I       | Storage facilities                 | 24 | 3  | 0  | 1 | 2  | <b>134.06</b>                    |
| J       | Price fluctuations                 | 29 | 1  | 0  | 0 | 0  | <b>145.13</b>                    |



**Chart 1 classification of marketing problems based on above weighted averages in table 2.**

| Sr. No. | Percent position $100(R_{ij}-0.5)/N_j$ | Calculated value | Garrett's value |
|---------|----------------------------------------|------------------|-----------------|
| 1       | $100(1-0.5)/5$                         | 10               | 75              |
| 2       | $100(2-0.5)/5$                         | 30               | 60              |
| 3       | $100(3-0.5)/5$                         | 50               | 50              |
| 4       | $100(4-0.5)/5$                         | 70               | 39              |
| 5       | $100(5-0.5)/5$                         | 90               | 24              |

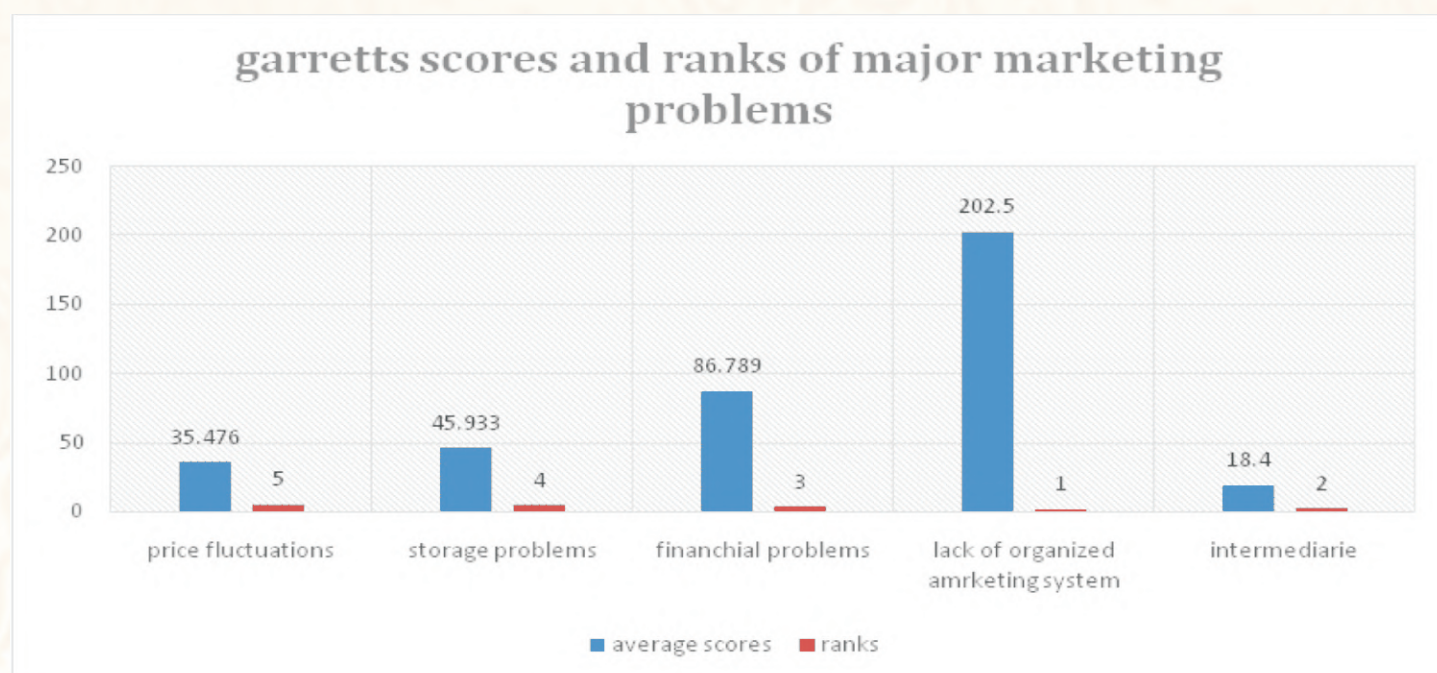
**Table 3 Percent Position and Garrett's Values.**

The ranks were calculated by Garrett's ranking formula. The Garrett's value is calculated based on ranks. The Garrett's table and scores of problems are listed in above table, and multiplied to records of scores in table 5.2.1a, finally by adding each row; the total Garrett's scores were obtained.

Percent position =  $100(R_{ij}-0.5)/N_j$ .

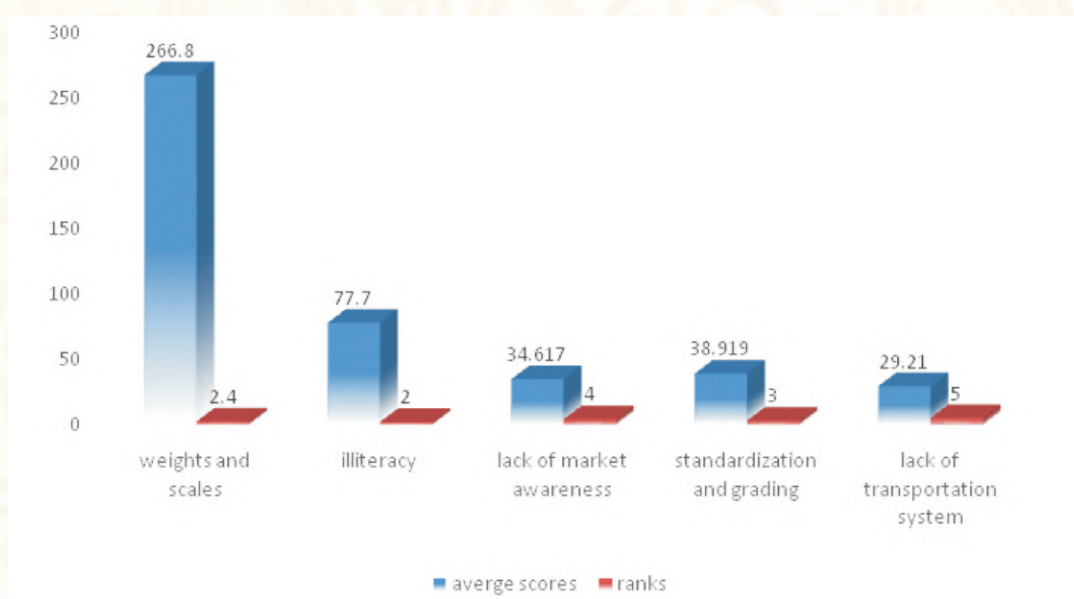
Where,  $R_{ij}$  = Rank given for  $i$ th variable by  $j$ th respondents

$N_j$  = Number of variables ranked by  $j$ th respondents.



**Figure 2 Garrets scores and ranks for major marketing problems.**

From the above table 2, we can identify that lack of organized market is the topmost issue of farmers in marketing as it is ranked first, which can be addressed in linking farmers with hotels. Intermediaries are the agents who take almost all the producer's share in consumer rupee, which can be eliminated by linking farmers to hotels as they are directly dealing with the consumers.



**Figure 3 Garrets scores and ranks of minor marketing problems.**

From the figure 3, it is clear that the respondents are facing problems with weights and scales among all the minor problems the existing situation, which is not a big issue in the direct marketing chain to hotels. Illiteracy will become the major issue in the direct linkage if suitable measures not undertaken as it deals with tender and online systems. The market awareness issue will not be much affecting factor if respondents are linked to the direct linkage which deals with tender system, where the details of all the costs, prices etc. will be mentioned.

**Comparison of marketing costs incurred in direct linkage and existing marketing linkage:**

- Existing marketing channel of vegetables distribution:  
**Producers – Commission agent – Wholesaler/Vendor – Hotels.**
- Proposed marketing channel of vegetables distribution to hotels:  
**Producers – Co-operative societies – Hotels.**

The table below compares the costs incurred in both the linkages. Per Kg

| COSTS<br>(Rs/Kg)    | EXISTING LINKAGE |        |              | DIRECT LINKAGE to Hotels |        |              |
|---------------------|------------------|--------|--------------|--------------------------|--------|--------------|
|                     | TOMATO           | POTATO | CAULI-FLOWER | TOMATO                   | POTATO | CAULI-FLOWER |
| Transportation      | 1.3              | 0      | 0            | 1.3                      | 1.3    | 1.3          |
| Loading & unloading | 0.6              | 0      | 0            | 0                        | 0      | 0            |
| Commission agent    | 10               | 0      | 0            | 0                        | 0      | 0            |
| Packing charges     | 0.3              | 0      | 0            | 4.4                      | 0.5    | 0.6          |
| Quality charges     | 0                | 0      | 0            | 0.5                      | 0.5    | 0.5          |
| Total costs         | 12.2             | 0      | 0            | 6.24                     | 2.3    | 2.4          |

**Table 4 Comparison of costs incurred in different linkages.**

**Note: The costs of marketing in potato and cauliflower in existing linkage is zero because 100% vegetable growers in the survey area selling their produce to contract vendors at their farm-gate.**

The analysis part of above table shows that, the per kg marketing costs of direct linkage is more than the existing linkage except tomato such as, per kg costs of tomato, potato and cauliflower are Rs (12.2:6.24), Rs (0:2.3) and Rs (0:2.4) respectively. These higher costs may not affect farmers more because the prices fetched to the prices are far higher than the costs.

**Comparison of total costs and profits gained in direct linkage and existing marketing linkage:**

| Vegetables                   |               | Tomato | Potato | Cauliflower |
|------------------------------|---------------|--------|--------|-------------|
| Existing Linkage             | Total Costs   | 13.89  | 1.71   | 1           |
|                              | Total Returns | 16.3   | 6      | 16.6        |
|                              | Net Returns   | 2.41   | 4.29   | 15.6        |
| Direct Linkage               | Total Costs   | 7.3    | 3.37   | 2.76        |
|                              | Total Returns | 33.4   | 15.25  | 20.04       |
|                              | Net Returns   | 26.1   | 11.88  | 17.28       |
| Net Profits to Farmer Per Kg |               | 23.69  | 7.59   | 1.68        |

**Table 5 Total costs and net returns of the two linkages.**

**Note: Net Returns (NR) = Total Returns (TR)-Total Costs (TC).**

The table 5, clearly depicts that the costs are higher in case of direct marketing compared to the costs in existing linkage except in tomato. There is huge cost difference of tomato between existing marketing and direct marketing this is due to high commission and transportation costs in existing channel. The net returns per kg is much higher in case of direct channel than existing channel. The vegetable growers are gaining extra profit of Rs.23.69, Rs.7.59 and Rs.1.68 of tomato, potato and cauliflower vegetables respectively.

From the tables 4. in addition, 5, it is evident that the vegetable growers are highly benefited from the direct marketing channel to hotels and increases the level of income and standard of living.

#### **Standards adopted by Hoteliers during procurement of vegetables:**

According to the data elicited from hotel managers the main standards to be maintained for quality of vegetables by farmers are:

**1. Quality :** The quality aspect includes many indicators such as size, colour, shape, hygiene and some

certification from the government authorities. FSSAI certification is the one of the important parameters the hotels will consider while procurement of the vegetables.

2. **Quantity : Assured quantity of produce**

3. **Availability**

4. **Standardization**

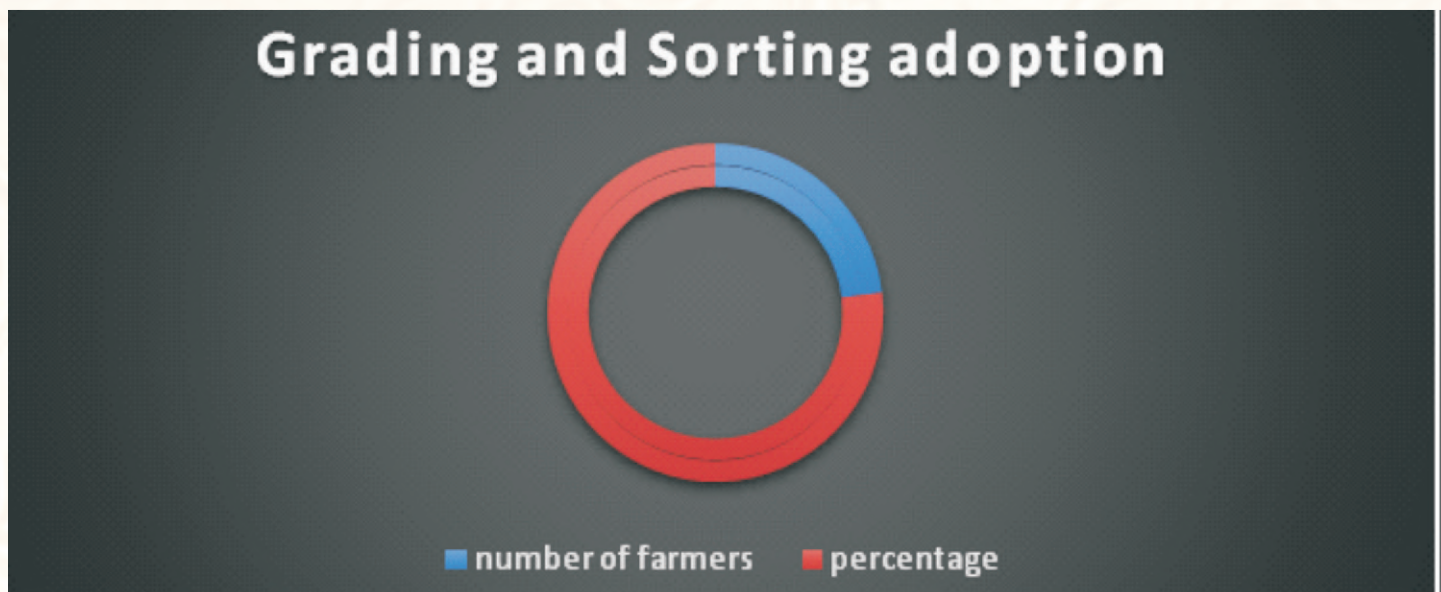
**Table 6 Expected quantity of vegetables per kg.**

| Sr. No. | Vegetables  | Expected quantity per Kg     |
|---------|-------------|------------------------------|
| 1       | Tomato      | 8-10 numbers                 |
| 2       | Potato      | 6-8 numbers                  |
| 3       | Cauliflower | Only flower (1f=0.5-0.75 kg) |
| 4       | Onion       | 8-10 numbers                 |

Data in table6 indicates that per kg of tomato, potato and onion should contain 8-10, 6-8, and 8-10 number respectively. This is the most important indicator that the hotel procurement department want farmers to maintain. Accordingly, the farmer should undergo grading and sorting activities to satisfy the hotel management which the farmers are already adopting in the existing situation.

**Indicators adopted by farmers in the study area:**

**Level of adoption of Grading and Sorting method by farmers.**



**Level Adoption of Grading and Sorting by farmers.**

From the figure 76.6% farmers are adopting the grading and sorting and 23.3% are not adopting

| Sr. No. | Parameters considered by Hotelier | Farmers (yes/no)                         |
|---------|-----------------------------------|------------------------------------------|
| 1       | Grading and sorting               | Yes (Majority of farmers are practicing) |
| 2       | FSSAI                             | No                                       |
| 3       | Standardization                   | No                                       |
| 4       | Quantity                          | No                                       |

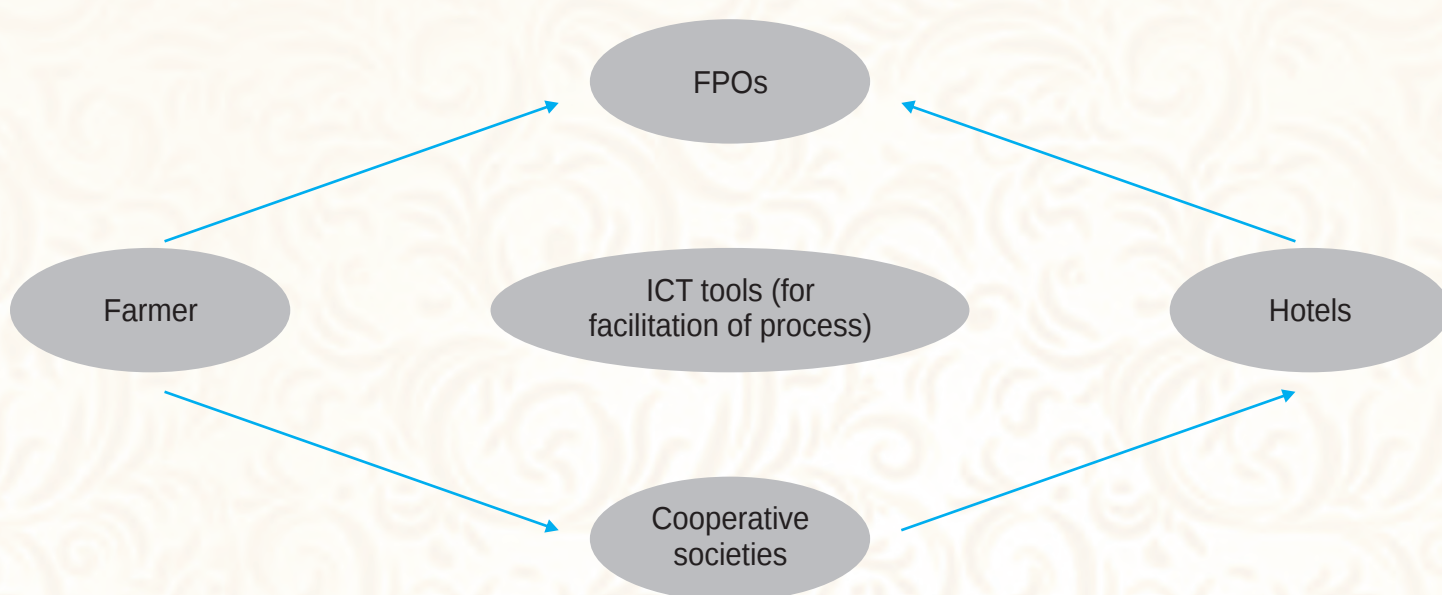
**Table 7, Indicators considered by the hotels while procurement and their adoption status by farmers.**

In table 8 Yes indicates farmers adopting the parameters already while No indicates not adopting.

From the table 8, we can infer that, farmers are already adopting 50% of indicators that the hotels expect for vegetable procurement. Farmers are not maintaining FSSAI certification and statutory quantity protocols.

**Proposed package of marketing practices designed for direct linkage:**

The following design is suggested as an appropriate package of marketing practices,



**Figure 7, proposed channels of direct marketing.**

The figure 6, shows the different proposed channels of marketing of farmers produce through the study

## SUMMARY AND CONCLUSIONS

The analysis of the report shows that price of per kg tomato is Rs.16.3 when farmer sells his produce in the existing marketing channel. In addition, if they are linked directly to the 5-star hotels, they will get the price of Rs.33.4 per kg of tomato, where there is a huge price benefit of Rs.23.69. Similarly, the farmers will get prices of Rs.15.25 and Rs.20.04, which creates an extra benefit of Rs.10.3 and Rs.4.44 per kg of potato and cauliflower respectively.

On the other-side, the total costs per kg of tomato in existing linkage is Rs.13.8 where as it is Rs.7.3 in case of direct linkage. The high costs in existing linkage is due to exhaustive application of fertilizers, transportation and commission costs. There is a huge cost difference of Rs.6.59 per kg of tomato. Long marketing channels and doorstep on farm selling of produce are main factors, which are reducing producer's share in the consumer's rupee. According to this study, the same condition exists for almost all the vegetables growers.

The farmers will be bearing extra marketing costs in the direct linkage to hotels compared to the existing linkage except tomato as it includes quality management aspect. However, according to the primary data from hotel management, the costs will be considered while calculating prices.

The major and minor marketing problems that are faced by farmers during marketing of their produce reveal that, **intermediaries and lack of organized market** this is overcome in the proposed direct marketing to hotels where farmers will directly supply to hotels. This avoids losses to farmers and they will be getting a fixed monthly payment through RTGs/Cheques. The important factor is computer illiteracy and online literacy without which farmers will lose and get into the trap of the intermediaries. Therefore there is a need to empower and transform the farmers for this new marketing skill through online platforms.

As quality expectations are high from the sourcing hotels, the farmers should be more alert for regrading and sorting of produce and supply to the hotels. The inferior produce to be marketed to near-by shandies. The lesser graded produce should go for processing to recover their marginal costs. This contingency plan must be inculcated among farmers.

## SUGGESTIONS

The following suggestions may be considered for further research and development based on the above results.

The present research clearly indicates that the profits earned by the proposed direct marketing channel are much higher than the existing channel to sell at the doorstep and on farm. Therefore, the need of the hour is to strengthen the linkages with proper policy implications from state and central governments.

As hoteliers demand stringent quality parameters, certifications and standardized packaging, which incur a cost to the supplier's end needs to be done. However, the price realization is far better than other channel and suppliers get better profits by direct marketing. As the initial investment for direct marketing and supplying to hotels is high and individual farmer cannot bear the huge initial cost, farmers should do this through organizing themselves into FPOs or Cooperatives to share the financial burden, to increase marketing opportunities, to increase negotiations power and to enhance other operational capabilities for better linkage and profit. In addition, skill-based training programmes focused on quality, hygiene, certification and linkage process i.e. tendering and payment has to be incorporated through various Govt. and NGOs in the farmer's interest.

During the survey, it was observed that farmers were not showing an interest towards the hotel linkage because of lack of guidance and awareness about the innovative market. Hence, the sensitization campaign has to be initiated in collaboration with 5-star hotels.

## ACKNOWLEDGEMENT

This research exertion has been done in partial fulfillment of the requirement for the Research Internship Programme to Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, Rajasthan.

## REFERENCES

Amlani, R. (2016) NRAI Report.

Area and Production of Horticultural crops: All India, Ministry of Agriculture and Farmer's Welfare 2017-18.

Dhaka, B. L. and Poonia, M. K. (2010). Identification of Constraints Encountered by the Farmers in Production and Marketing of Vegetables in Bundi District of Rajasthan. *Indian Journal of Agricultural Marketing*, 24(1):20-25.

Food Sector- Fruits and Vegetables, Technova Research and Analysis (2015).

Food Sector- Fruits and Vegetables, Director General and Foreign Trade, Technova Research and Analysis, Indian Trade Agency (2015).

Hotel industry research, CARE Ratings 2017.

Hubsch, A.W. (1996). *Cornell Hotel and Restaurant Administration Quarterly*. Hotel Food and Beverage Management. 7. pp. 9-11.

Indian Hotel Industry Survey 2016-2017, the Federation of Hotel and Restaurant Associations of India.

Taneja, S.T. (2008). *The New Exotic Platter*. Available at <http://www.hindu.com>.



## 6. LINKING FARMERS TO FUNCTION HALLS : OPTIMIZING SUPPLY CHAIN

BHAVYA P<sup>1</sup>, SATTRAM SINGH<sup>2</sup>

Email for correspondence : bhavya816@gmail.com

### INTRODUCTION

India is known for its unity in diversity, colorful culture and traditions. Festivals, celebrations and functions are inevitable in Indian customs. Marriages are the one of the best places to observe its varied traditions and it takes places in Functions hall or conventions centers or banquet halls. Marriages apart from being a symbol of culture, is a lucrative business opportunity. Currently, the country has a population of around 1.25 billion and considering an average family with five members, there are around 250million families in India. With about one marriage per family every 20 years, the country averages roughly 10 million marriages every year. (Census of India, 2001). Indian wedding industry has a turnover Rs 100,000 crore and is growing at 25 to 30 per cent annually. The estimated cost of a wedding with no expenses spared could be between Rs 5 lakh to Rs 5 crore per marriage, in India ([www.businessinsider.in](http://www.businessinsider.in)) and India had approximately 1,25,000 function halls either owned by private or community or government ([www.businessinsider.in](http://www.businessinsider.in))

The sector wise expenditure in a marriage is depicted below

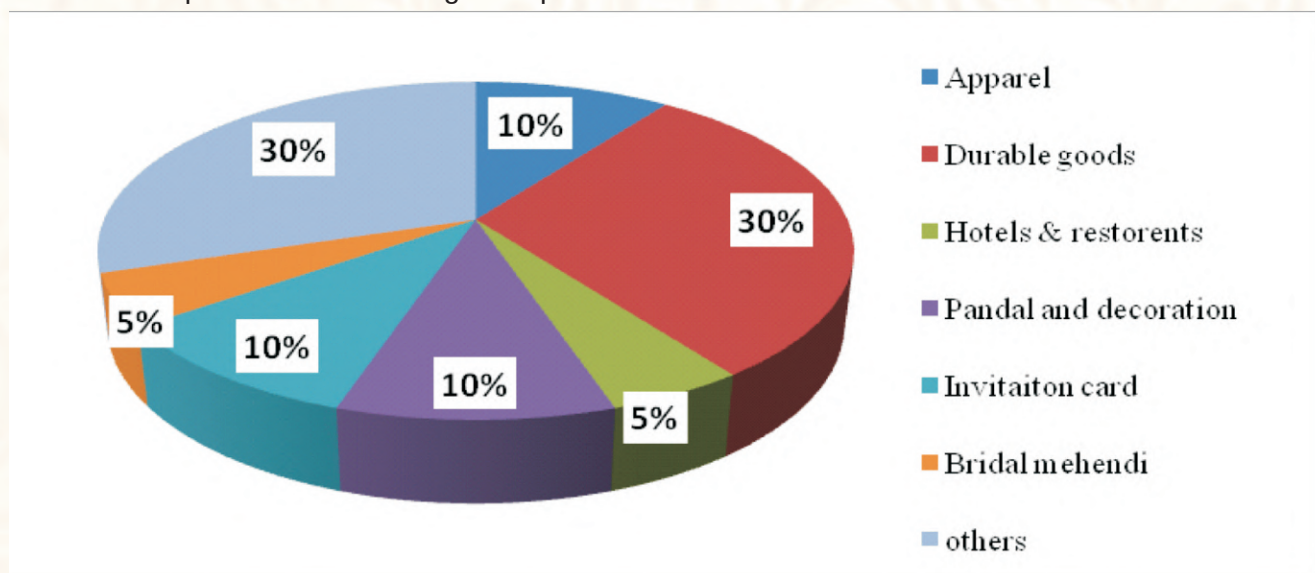


Fig: Sector wise wedding market in India.

Note: Durable and others includes utensils, electronic items, furniture's, equipment, jewellery, photography, food items, transportation & other miscellaneous.

From the discussion above it is clear that marriage business is a lucrative industry. In this paper, we examine the ways by which farmers can be linked with stakeholders of marriage halls.

The general supply chain can be presented in the following ways

1. Producer - village traders – primary wholesalers – Secondary wholesalers - Retailers – caterers – consumer
2. Producer - village traders – primary wholesalers – Processing industry - Retailers –caterers – consumer
3. Producer – wholesalers – retailers – caterers – consumers
4. Producers – wholesalers – caterers – consumers
5. Producers – processing industry –retailers – caterers – consumers
6. Producers – processing industry – caterers – consumers

It is well known that longer the supply chain, lower is the share of farmers in consumer rupee. Various initiatives in marketing have tried to shorten the supply chain so that farmers realize better prices. I.e. direct marketing. One of the reasons could be due to high transaction cost involved in the process (for instance time). However, if the farmers can be linked directly to caterer, for supply of raw materials it will reduce the transaction costs at both ends and benefit both the parties. The study had the following objectives

1. To map the existing Supply chain used by farmers in the study area.
2. To examine the models for linking farmers directly with caterers.
3. To identify bottlenecks in direct marketing with caterers.

### METHODOLOGY

The study locale, Karnataka state, Hassan District, Arsikere taluk, Arsikere Hobli, function halls, caterers, villages and farmers formed the sampling frame. Simple purposive sampling procedure was adopted for the selection of the respondents. Caterers were identified based on snowball method and information was collected from three caterers. In the second stage, Kasabahobli which is very near to taluk headquarters was selected. In third stage potential farmers from three selected villages mainly who grow flowers/ fruits and vegetables based on the secondary data in the 10 to 15 km radius from the taluk headquarter were interviewed (n=30).

### RESULTS AND DISCUSSION

The socio-economic characteristics of the sample are presented in the Table 1 it indicates that, Majority (86%) were male farmers with an average age of 52 years and average farm experience of 25 years. Most of the farmers (37 %) studied primary school followed by matriculation (34 %) only one graduate was found in the sample. Average work force of farm households were three.

**Table 1 Socio-Economic Characteristics of the Sample Respondents (n=30)**

| Sr. No. | Particular                | Frequency | Percentage (%) |
|---------|---------------------------|-----------|----------------|
| 1.      | Gender                    |           |                |
|         | 1. Male                   | 26        | 86.66          |
|         | 2. Female                 | 04        | 13.33          |
| 2.      | Age (years )              | 52        |                |
| 3.      | Education                 |           |                |
|         | 1. Illiterate             | 05        | 16.66          |
|         | 2. Primary                | 11        | 36.66          |
|         | 3. Matriculation          | 10        | 33.33          |
|         | 4. College (I & II PUC)   | 03        | 10.00          |
|         | 5. Graduation             | 01        | 3.33           |
| 4.      | Farming Experience (Yrs.) | 25        |                |
| 5.      | Total work force (No.)    | 03        |                |

**Note: Percentage to the total**

The land holding patterns of the farm households is depicted in the table 2. Average total land areas of the farm households is 1 hectare 60 guntas (40 guntas is one acre) of which nearly half the area is rainfed. Majority cultivated Green gram & Red gram in an area of one ha, followed by vegetables (Green chilli & Tomato) in an area of 80 guntas (2 acres). Banana was cultivated in an average area of 60 guntas (1.5 acres) and coconut plantation was one ha (250 palms).

**Table 2 Land holding pattern of the sample respondents (n=30)**

| Sr. No. | Particular                 | Area (Hector) |
|---------|----------------------------|---------------|
| 1.      | Irrigated                  | 0.6 (37.50)   |
|         | Rained                     | 0.8 (50.00)   |
|         | Fallow land                | 0.2 (12.50)   |
|         | Total land area            | 1.6 (100)     |
| 2.      | Pulses cultivating area    |               |
|         | 1. Green gram              | 0.43 (43)     |
|         | 2. Red gram                | 0.62(62)      |
|         | Total                      | 1.00(100)     |
| 3.      | Vegetable cultivating area |               |
|         | 1. Green chilli            | 0.35(43)      |
|         | 2. Tomato                  | 0.45(56)      |
|         | Total                      | 0.80(100)     |
| 4.      | Banana                     | 0.60          |
| 5.      | Coconut (Number )          | 250           |

**Note: Figure in the Parenthesis Indicate that Percentage to the Total.**

The summary statistics of select crops is presented in the table 3. The cost of cultivation of green gram is Rs.22376/ha followed by Redgram Rs. 29005/ha, Tomato Rs. 133841/ha, Green chilli Rs. 127320/ha, and Banana Rs. 330366/ha. The cost of cultivation is highest in Banana as it is input and labour intensive. Return per rupee of investment (ROI) is the highest in tomato when compared with green chilli. In case of pulses, it was red gram (1.27) followed by green gram. The cost of cultivation of coconut is Rs. 97840/ha with an average yield of 11840 nuts /ha and each nut fetches average price was Rs. 16. The return per rupee of cost of coconut in the area is 1.93 that means each rupee investment was generating 1.93 rupees return. It is the major source of income for the farmers in the study area.

**Table 3 Summary of cost and return of selected crops (Rs. /Hector)**

| Sr. No. | Crop             | COC (TVC + TFC) | Market ing cost(MC) | Total COC | Yield (Qtl) | Market Price (Rs/Qtl) | Gross return | COP Rs/Qtl | Net return | Returns per rupee of cost |
|---------|------------------|-----------------|---------------------|-----------|-------------|-----------------------|--------------|------------|------------|---------------------------|
|         |                  | (1)             | (2)                 | (1)+(2)=3 |             |                       | (4)          |            | (4)-(3)    | (3)/(2)                   |
| 1.      | Green gram       | 22376           | 2800                | 25176     | 5.30        | 5600                  | 29680        | 4750       | 4504       | 1.17                      |
| 2.      | Red gram         | 29005           | 3100                | 32105     | 10.25       | 4000                  | 41000        | 3132       | 8895       | 1.27                      |
| 3.      | Tomato           | 133841          | 85000               | 218841    | 421         | 1950                  | 820000       | 520        | 601159     | 3.74                      |
| 4.      | Green chilli     | 127320          | 70400               | 197720    | 328         | 2400                  | 787200       | 602        | 594280     | 3.98                      |
| 5.      | Banana           | 330366          | 30264               | 360630    | 294         | 2500                  | 735000       | 1227       | 374370     | 2.03                      |
| 6.      | Coconut (Number) | 75224           | 22616               | 97840     | 11840       | 16                    | 189440       | 8          | 91600      | 1.93                      |

Note: COC- Cost of cultivation, TVC- Total variable cost, TFC – Total fixed cost, MC- Marketing cost including packing materials cost, transportation and loading and unloading charges of produce, marketing commission and miscellaneous charges. Paid out cost: Variable cost & Marketing cost.

**Existing supply chain in the study area for selected crops:** Major crops of the region in terms of area viegreen gram, red gram, green chilli, tomato, banana and coconut crops were selected and supply chain analysis was done, there were six stake holders actively involved in marketing greengram and red gram(fig 2) to consumer. Theprice difference in the selling price to retail price Rs. 84/kg and Rs. 80/kg respectively in green gram and red gram.

### Green gram



Difference price: Rs. 84/kg  
(SP – RP)

### Red gram



Difference price: Rs. 80/kg  
(SP – RP)

(Note: MC: Marketing cost, SP: Selling price, RP: Retail price)

**Fig 2: Existing supply chain of green gram and red gram in the study area.**

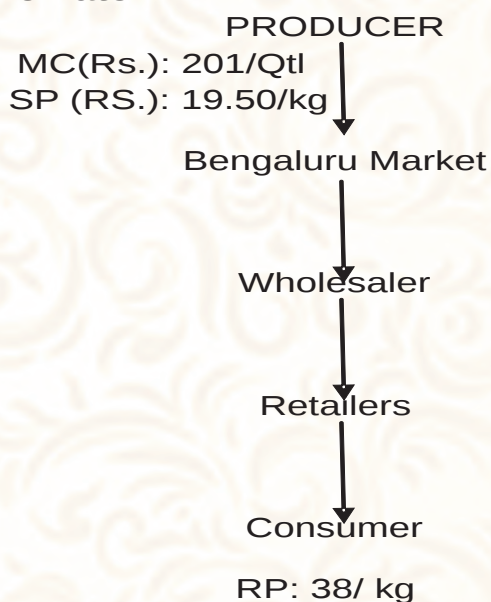
Existing supply chain of green chilli and tomato crops are depicted in the fig.3 revealing that marketing cost of tomato per quintal was Rs. 201, due to long marketing distance and packaging materials of tomato crop. The price difference between retail price and producer price was highest in green chillies Rs. 70/ Kg followed by tomato Rs. 18.50 per kg.

### Green chilli



Difference price: Rs. 70/kg  
(RP – SP)

### Tomato



Difference price: Rs. 18.50/kg  
(RP – SP)

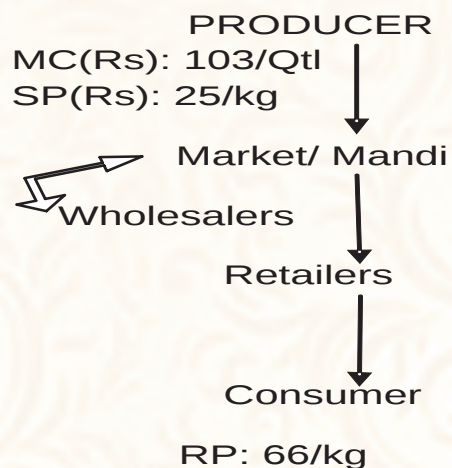
Note: MC: Market price, SP: selling price, RP: Retail price

**Fig 3: Existing supply chain of green chllies and tomato in the study area**

Existing supply chains of banana and coconut crop are depicted in fig 4. The Banana supply chain is shorter than the coconut supply chain, even though producer share in consumer rupee was highest in coconut than the banana crop. Marketing cost of banana was Rs. 103/ qtl followed coconut Rs. 22/1000 nut.

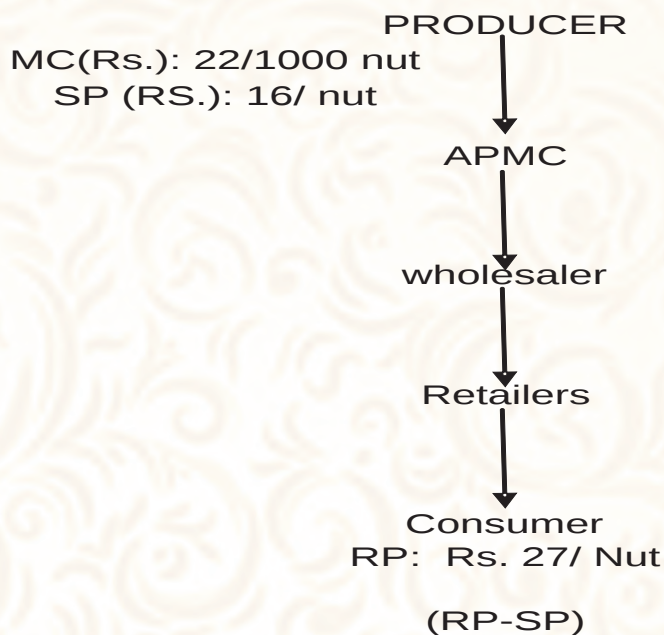
Major constraints faced by the farmers in marketing are presented in the table 4. Price volatility is the major problem faced by the farmers with mean scores of 61.15 followed by high market commission (mean score: 60.75). There is need for cold storage facilities for the farmers to store their produce during GLUT (when supply exceeds demand)

### BANANA



Difference price: Rs.41  
(RP-SP)  
Difference price: Rs. 11

### COCONUT



**Fig. 4 Existing supply chain of green chillies and tomato in the study area**

Note: MC: Market price, SP: selling price, RP: Retail price.

**Table 5 Constraints faced by the farmers in Marketing (n=30)**

| Sr. No. | Constraints                | Mean score | Rank |
|---------|----------------------------|------------|------|
| 1.      | Price volatility           | 61.15      | I    |
| 2.      | High Market commission     | 60.75      | II   |
| 3.      | Lack of cold storage       | 58.10      | III  |
| 4.      | Long distance market       | 49.75      | IV   |
| 5.      | Lack of market information | 38.25      | V    |
| 6.      | Transportation problem     | 32.20      | VI   |

To link with farmers to function halls, there is a need for information on caterers who will buy it directly from farmers. Table 6 and 7 provide information regarding the caterers.

**Table 6 Information on catering service**

| Sr. No. | Particular               | Numbers |
|---------|--------------------------|---------|
| 1.      | Work force               | 26      |
| 2.      | Marriage orders per year | 35-40   |
| 3.      | Cost for 1000 dishes     | 250000  |
| 4.      | Per meal cost (Rs.)      | 250     |

**Table 7 Purchasing of raw materials for food production**

| Sr. No. | Particular          | Marketing place                      | TC (Rs.)           | Distance (km) | Requirement of food material for 1000 people |
|---------|---------------------|--------------------------------------|--------------------|---------------|----------------------------------------------|
| 1.      | Cereals             | 1. Provision store<br>2. Retail shop | 500-600<br>300-400 | 3<br>2        | 100 kg                                       |
| 2.      | Pulses              | 1. APMC<br>2. Retail shop            | 450-550<br>300-400 | 4<br>2        | 45-50 kg                                     |
| 3.      | Banana & Vegetables | Tiptur Market                        | 600-800            | 25            | 1000 kg & 35 kg                              |
| 4.      | Sweet (No)          | Bakerie, Hotels, Own preparation     | 100-150            | 2             | 1200 (no)                                    |

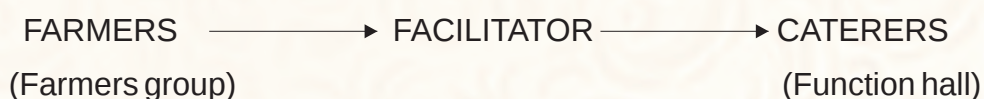
Information on the function hall is depicted in the table 8 this reveals that most of the selected function halls are community owned with the seating capacity of 1800 to 2000 and demand for the function hall highest during Jan15 to June and August to December with the average rent of Rs. 39800.

**Table 8 Information on the selected function hall**

| SI No. | Particular                                                | Particular                                         |
|--------|-----------------------------------------------------------|----------------------------------------------------|
| 1.     | Type of ownership                                         | Community                                          |
| 2.     | Seating capacity (No.)                                    | 1800-2000                                          |
| 3.     | Marriages per year                                        | 100-110                                            |
| 4.     | Peak demand months                                        | Jan 15 <sup>th</sup> to June<br>August to December |
| 5.     | Rent per marriage (Rs.)                                   | 39800                                              |
| 6.     | Currently function hall providing any caterers service    | no                                                 |
| 7.     | Any other function hall in the study area                 | no                                                 |
| 8.     | Would recommend any caterers to customer                  | Yes, based on their DEMAND                         |
| 9.     | Will you ready to facilitate linking of farmers to caters | Yes, with the approval from<br>administrators.     |
| 10.    | Expected commission in Rs.                                | 5000 to 6000 per month                             |

It is well known that longer the supply chain, lower is the share of farmers in consumer rupee. Figure 8 clearly revealed that all the crops except coconut (59 percent) and tomato (50%) growers, are getting less than 50 percent of producer share in the consumer rupee. In case of cost of cultivation, marketing cost (packing materials cost, transportation, loading and unloading charges of produce, marketing commission and miscellaneous charges) also forms a major component, as in tomato it constitute about 63 % and in green chilli it is 55 %. Based on the rank given by the farmers, price volatility, lack of infrastructure (table 8) were the major constraints for them to do well in agriculture.

Based on this, we are proposing following model to link farmers with caterers



**Role of Farmers:**

1. Group formation
2. Should have minimum corpus fund for transaction & other miscellaneous purpose.
3. Appointing of facilitator
4. Ready to sell their produce to function hall

**Role of Facilitator:**

1. Facilitate for transaction of produce from farmer to caters
2. Maintaining of the book & records

**Caterers:**

1. Ready to purchase from the farmers

**Function hall:**

1. Administer should agree for this linking
2. Provide space for produce storage

Maintaining of loyalty, honesty & sincerity from the all the stakeholder is necessary for successful linking of farmers to function hall.

Cost and returns on the proposed supply chain model is presented in the table 9. This indicates that total demand for the selected crops in the study area from all the function hall per marriage for 3 meals will be 3537 tons and the marketing cost incurred for the total demand will be Rs. 46,22,260, selling price for the demand will be Rs. 9,35,55,000 retail price will be Rs. 2,43,07,90,000 and price difference for the total demand will be Rs. 14,98,24,000 in the study area.

**Table 9 Cost and Return of the Proposed Supply Chain Model (n= 30)**

| Sr. No. | Particular            | Quantity (kg) | for three meals (kg) | Total demand in the study area per year | MC (Rs.) | Selling price (Rs.) of total demand (1) | Retail price (Rs.) (2) | Price difference (Rs.) (2)–(1) |
|---------|-----------------------|---------------|----------------------|-----------------------------------------|----------|-----------------------------------------|------------------------|--------------------------------|
| 1.      | Red gram & green gram | 35            | 105                  | 115 tons                                | 692300   | 5520000                                 | 14375000               | 8855000                        |
| 2.      | Banana                | 1000          | 3000                 | 3300 tons                               | 3399000  | 82500000                                | 217800000              | 135300000                      |
| 3.      | Green chilli & Tomato | 30            | 90                   | 99 tons                                 | 300960   | 2475000                                 | 6534000                | 4059000                        |
| 4.      | Coconut               | 7             | 21                   | 23 tons                                 | 230000   | 2760000                                 | 4370000                | 1610000                        |
|         | Total                 |               |                      | 3537                                    | 4622260  | 9,3255000                               | 24,3079000             | 14,98,24000                    |

**Based on the results discussed so far the following Policy suggestions are recommended:**

1. Farmers and caterers can be encouraged to go for the recommended supply chain
2. Proper monitoring mechanism should be there in place for storage with special emphasis on storage of perishables
3. Training for the facilitators must be given
4. Training for the farmers with respect to quality parameters in crop production need to be oriented
5. In order to minimize the marketing risk, government should lend the helping hand by constructing warehouses and cold storage structures in potential areas
6. In order to minimize the production risk, crop insurance should be popularized among farmers.
7. Awareness needs to be created for farmers regarding weather parameters and package of practices for scheduling their production with demand coming from the function halls during marriage season
8. Government should incentivize caterers to purchase directly from the farmers

**REFERENCE**

*www.businessinsider.in.*

*www.indianretailer.com*

NARAYANA GOWDA, K., SHIVANNA, H., MANDANNA, P. K., UMESH, K. B., VENKATAREDDY, T. N., NEENA JOSHI, ANANDA, T. N., SURESH, S. V. AND BALAKRISHNA, J., 2012, *Tuttu Tyagyavalla. Univ. Agril. Sci., Bengaluru.*



## 7. ROLE OF PACKAGING AND LONG DISTANCE MARKETING OF VEGETABLES

P NEELIMA<sup>1</sup>, N.S. RANAWAT<sup>2</sup>

Email for correspondence : neelima.pogiri@gmail.com

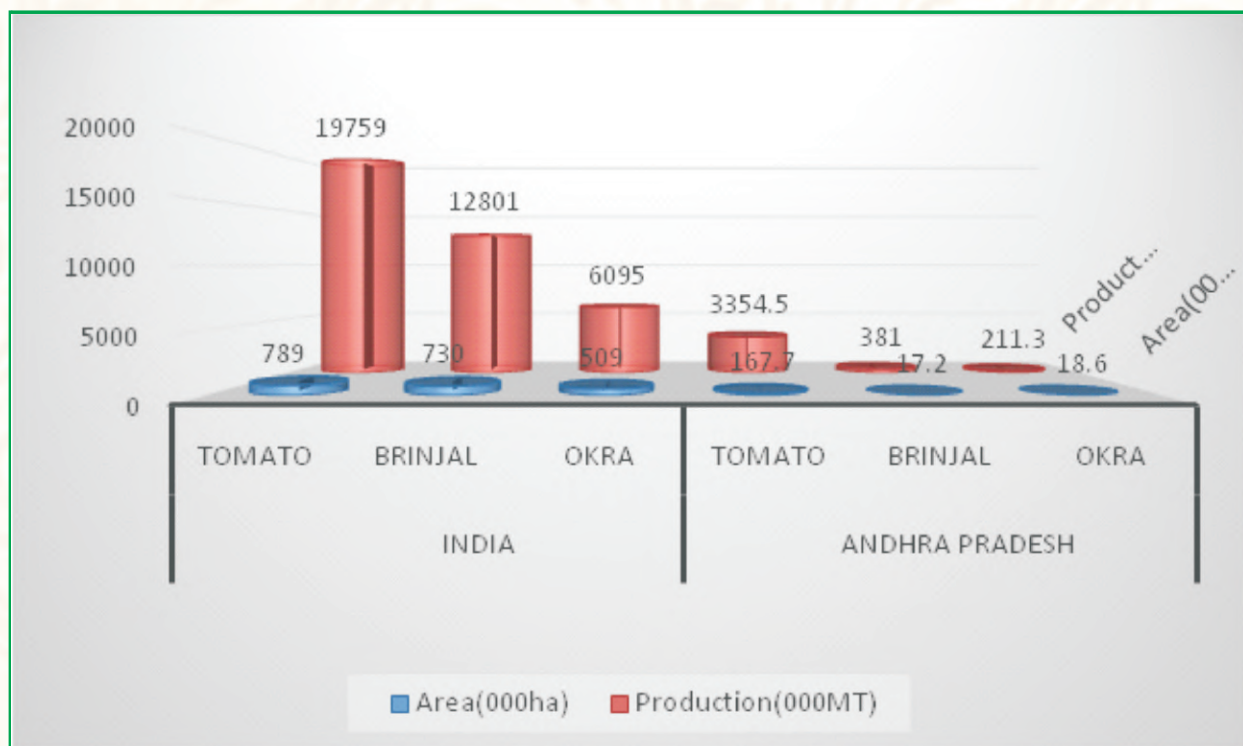
### INTRODUCTION

Vegetables constitute an essential part of daily diet especially when per capita incomes are rising. Each adult requires 284 gm. of vegetable per day for maintaining good health. Perishableness of vegetables incur losses during marketing and returns to grower are reduced. Packaging of vegetables gives a solution to this problem in reducing post-harvest losses and efficient marketing. . India ranks second in world in production of vegetables at 187.5 million tons per annum which contributes to 14% of vegetable production in the world and 61.33% of total horticultural produce in the country. Perishability, quality deterioration, decay and rotting are common in vegetables if not handled properly. Both respiratory and transpiration rates are proportional to temperature increase and hence product quickly dries, wilts, spoils unless properly taken care of. It has been variously estimated that 4.58-12.44% of the vegetable produce and 30-40% of vegetable and fruits together is lost before consumption because of poor post-harvest management practices.

**Table: 1. Area, Production and Productivity of major vegetables in India and A.P**

| Year 2018-19         | India  |         |       | Andhra Pradesh |         |       |
|----------------------|--------|---------|-------|----------------|---------|-------|
|                      | Tomato | Brinjal | Okra  | Tomato         | Brinjal | Okra  |
| Area(000ha)          | 789    | 730     | 509   | 167.7          | 17.2    | 18.6  |
| Production(000MT)    | 19759  | 12801   | 6095  | 3354.5         | 381     | 211.3 |
| Productivity (MT/ha) | 25.04  | 17.53   | 11.97 | 20.00          | 22.15   | 11.36 |

Source: Ministry of Agriculture and Farmers' welfare,  
Open Govt Data(OGD) platform India, data.gov.in



**Fig.1: Bar graph showing area, production and productivity of Tomato, Brinjal and Okra in India and Andhra Pradesh**

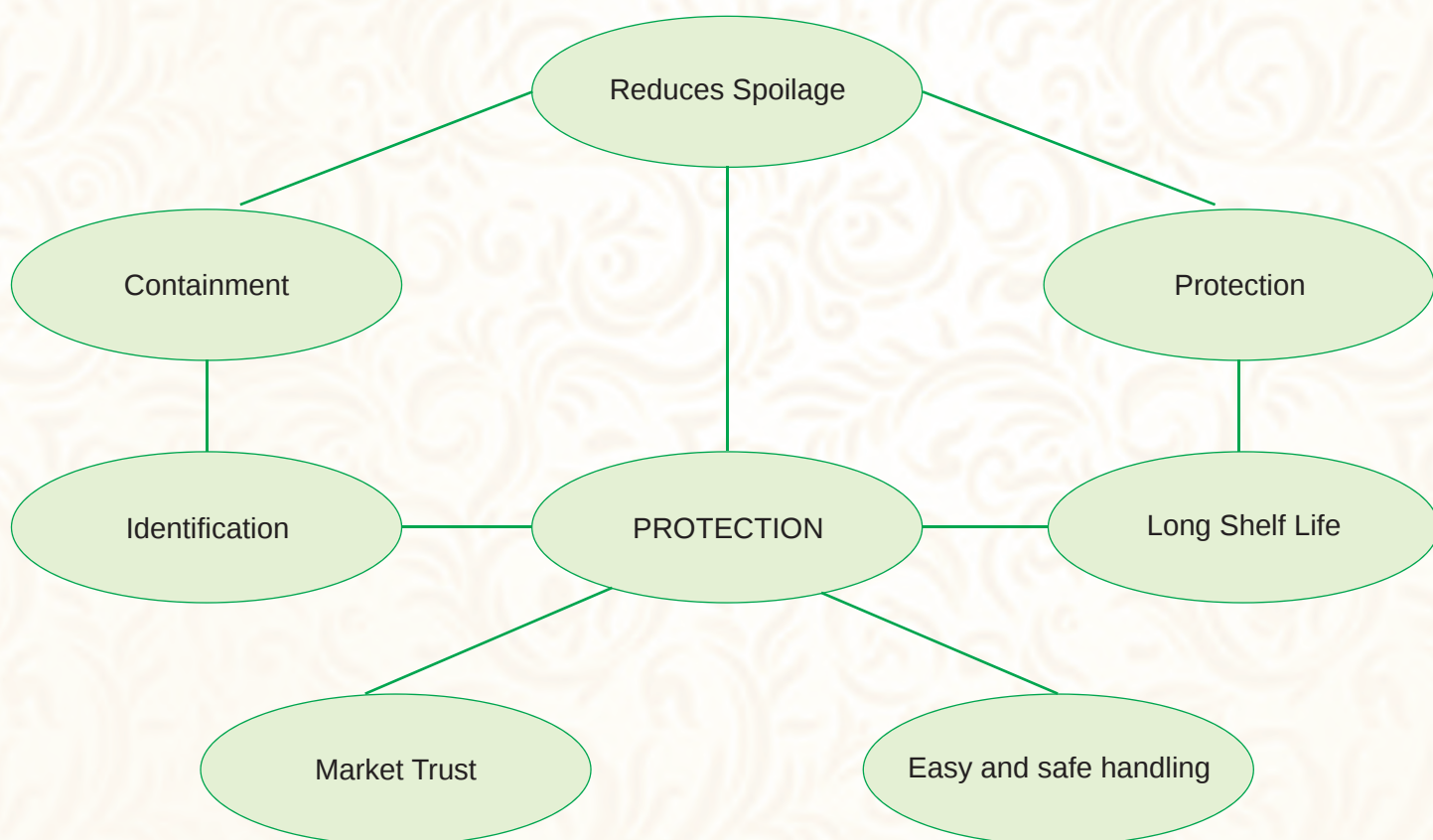
### PACKAGING

Packaging is one of the most important steps in the long and complicated journey from grower to consumer. Bags, crates, hampers, baskets, trays, wooden boxes, polythene wraps, film packaging, bulk bins, palletised containers are convenient for handling, transporting, and marketing fresh produce. The trend in recent years has moved towards a wider range of package sizes to accommodate the diverse needs of wholesalers, consumers, food service buyers and processing operations.

Packing and packaging materials contribute a significant cost to the produce industry; so it is important that producers, packers, shippers, buyers and consumers have a clear understanding of wide range of packaging options available.

### PACKAGING POINTS

- **SHELF LIFE** : Packaging of the produce enhances shelf life and lessens deterioration of it.
- **PROTECTION** : The package protects the produce from mechanical damage and poor environmental conditions during handling and distribution.
- **CONTAINMENT** : The container must enclose the produce in convenient units for handling and distribution.
- **IDENTIFICATION** : The package must identify and provide useful information regarding the produce.
- **RECYCLABILITY** : Many export markets have waste disposal restrictions for package materials. The packaging material must be recyclable and biodegradable keeping in view of environmental issues.



**Table 2: Post-harvest losses of vegetables at various stages**

| Vegetables  | Average Quantity Purchased | Stages          |                     |                           |                 | Total losses    |
|-------------|----------------------------|-----------------|---------------------|---------------------------|-----------------|-----------------|
|             |                            | Harvesting      | Grading & Packaging | Handling & Transportation | Marketing       |                 |
| Potato      | 10.24                      | 0.15<br>(1.46)  | 0.08<br>(0.78)      | 0.06<br>(0.59)            | 0.7<br>(6.68)   | 0.36<br>(3.52)  |
| Tomato      | 5.56                       | 0.22<br>(3.59)  | 0.95<br>(17.08)     | 0.18<br>(3.24)            | 0.05<br>(0.89)  | 1.38<br>(24.83) |
| Cauliflower | 1.24                       | 0.13<br>(10.48) | 0.08<br>(6.450)     | 0.03<br>(2.42)            | 0.02<br>(1.61)  | 0.26<br>(20.96) |
| Cabbage     | 1.32                       | 0.12<br>(9.09)  | 0.10<br>(7.57)      | 0.04<br>(3.03)            | 0.01<br>(0.75)  | 0.27<br>(20.45) |
| Onion       | 2.48                       | 0.03<br>(1.21)  | 0.07<br>(2.82)      | 0.08<br>(3.23)            | 0.09<br>(3.63)  | 0.27<br>(10.88) |
| Brinjal     | 1.85                       | 0.14<br>(7.56)  | 0.05<br>(2.70)      | 0.12<br>(6.48)            | 0.10<br>(5.51)  | 0.41<br>(22.16) |
| Okra        | 1.49                       | 0.09<br>(6.04)  | 0.05<br>(3.36)      | 0.02<br>(1.34)            | 0.07<br>(4.690) | 0.23<br>(15.44) |
| Pumpkin     | 1.38                       | 0.04<br>(2.89)  | 0.03<br>(2.17)      | 0.01<br>(0.72)            | 0.02<br>(1.45)  | 0.10<br>(7.24)  |
| Chilly      | 0.85                       | 0.01<br>(1.17)  | 0.04<br>(4.70)      | 0.08<br>(9.41)            | 0.06<br>(7.06)  | 0.19<br>(22.35) |

*Note: Figures in parentheses represents percentage of the total production*

**Source: Economic analysis of post-harvest losses of major vegetables in Allahabad district of Uttar Pradesh by Harsh Bodh Paliwal 2**

**RESEARCH PROBLEM :** Farmers sell their produce through a long marketing channel. This leads to increase in the price spread and reduction in share of producer in consumers' rupee, which is all a result of lack of awareness of farmers about using packaging materials and marketing on their own. On the other hand, even if the farmers are conscious about packaging, there are some problems faced by them in procuring and using the packaging materials. In addition, farmers face more post-harvest losses due to non-packaging and improper packaging of their vegetable produce.

**Marketing channels opted by vegetable producers in the survey area :**

Producer → Trader → Wholesaler → Retailer → Consumer

Producer → Wholesaler → Retailer → Consumer

Producer → Retailer → Consumer

### OBJECTIVES

- To study the role of packaging in the marketing of vegetables.
- To increase the net profits of producers and to increase their share in consumers' rupee by suggesting proper packaging and marketing practices.
- To know the constraints faced by farmers in procuring and usage of packing materials.
- To study the quantity of packaging losses occurring in the marketing of vegetables.

### METHODOLOGY

For the current study, 30 vegetable producers were selected using Simple Random sampling method and were interviewed using the pretested interview schedule to collect primary data regarding their practices of packaging and problems faced by them. A total of 10 wholesalers, 10 retailers and a few commission agents were also interviewed to have a broader view on the packaging and marketing chain of vegetables. Data regarding general particulars of the village and villagers was collected from Village Panchayat Office.

The costs of cultivation, packaging, transporting and marketing of vegetable produce of producers, traders, wholesalers and retailers and net profits were computed. Finally, assessment of post-harvest losses, constraints faced by producers in procurement and usage of vegetable produce was assessed. Three major vegetables i.e., tomato, brinjal and okra were selected for the current study as the area under these vegetables were maximum in the village and because they are highly perishable.

Henry Garrett's ranking technique was used to evaluate the most significant factor, which is felt by the respondent. Respondents have been asked to assign ranks for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Per cent position} = 100 (R_{ij} - 0.5) / N_j$$

Where,  $R_{ij}$  = Rank given for the  $i$ th variable by  $j$ th respondents

$N_j$  = Number of variable ranked by  $j$ th respondents

With the help of Garrett's Table, the percent position estimated is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of score is calculated. The factors having highest mean value is considered as the most important factor.

For the current study, the respondents were asked to rank from one to eight for the problems considered by them for not following packaging practices in marketing of their produce. These scores were manipulated mathematically and each factor has been assigned a rank based on its importance and influence over the farmers.

## RESULTS AND DISCUSSION

The findings of the present study as well as relevant discussion have been presented under following heads:

### Existing supply chain :

Currently, the farmers are selling their produce immediately after harvest at the nearby village market to wholesalers or retailers. They are carrying their produce to the village market by using gunny bags, net bags, plastic crates etc. and adopting the following market channels.

Producer → Trader → Wholesaler → Retailer → Consumer

Producer → Wholesaler → Retailer → Consumer

Through these channels, farmers receive an average price of Rs.46.9, Rs. 16.10, and Rs. 16.9 for tomato, brinjal and okra respectively. This forms a very small portion of producer's share in consumer's rupee.

### Proposed supply chain:

In order to realise better prices for their produce, farmers are proposed to market their produce to distance high demand/ bigger markets around the village by following better packaging practices. Packaging of vegetable produce increases shelf life, reduces spoilage, provides easy handling and thus reduces post-harvest losses, which plays a significant role in marketing. The packaging materials proposed are plastic crates for tomatoes, corrugated fibre boxes for brinjal and jute bags for okra which are all spoilage reducing and cost-effective for the producers while handling in bulk.

The new supply chain will be

Producer → Consumer

Producer → Retailer → Consumer

The possible solution to tackle this problem could be the establishment of producer co-operatives and linking farmers to FPOs to switch to various activities in relation to packaging and marketing of major vegetables. Since FPOs link farmers directly to the residential areas of the city where the farmers are provided with a new platform for selling their own produce to the people of metropolitan cities directly without any intermediary such as retailers or wholesalers, it would enable a farmer to gain maximum possible share a consumer spends on purchasing the agricultural produce. It will not only help to reduce the packaging and post-harvest losses but also will increase the negotiating power of producers in marketing. The net returns of the producer can be increased meaningfully

### Rise in the net profits of farmers due to proposed supply chain

#### TOMATO :

Data revealed that the cost incurred to the producer for selling one quintal of Tomato in the existing practice is Rs.5.71 and the net returns earned by him are Rs. 39.26 per kg. If the producer follows packaging and access distant markets, the cost of production per kg of tomato produce will be increased to Rs.10.672 and the net returns per quintal will rise to Rs. 43.328 if marketed to retailer markets and RS. 49.328 If linked to consumers directly. Though the marketing costs show a rise of Rs. 4.962 to the producer, it will give a rise of Rs.6.6 and RS. 15.03 income for retail markets and consumer market respectively per kg of produce. Ultimately, the increase in producer's net income from per acre per year of Tomato is Rs.80107.06 and Rs.198259.06 in case of retailer and consumer marketing respectively. The Producer's share in consumer's rupee will also be increased from 74.95 to 90% and 100% respectively. The results are given in Table 3

| Cost particulars                                |                 | Costs and income in existing practice (Rs./kg) | Proposing costs and income (Rs./ kg) | Change in costs and income (Rs. /kg ) | Increase in producer's profits (Rs. /ac)   |                                             |
|-------------------------------------------------|-----------------|------------------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------------|---------------------------------------------|
|                                                 |                 |                                                |                                      |                                       | Retailer                                   | FPO                                         |
| Packaging                                       |                 | 0.2                                            | 0.2                                  | 0                                     | 40053.53                                   | 99129.53                                    |
| Transportation                                  |                 | 0.5                                            | 4.805                                | 4.305                                 |                                            |                                             |
| Loading                                         |                 | 0                                              | 0.387                                | 0.387                                 |                                            |                                             |
| Unloading                                       |                 | 0                                              | 0.27                                 | 0.27                                  |                                            |                                             |
| Total marketing costs                           |                 | 0.7                                            | 5.662                                | 4.962                                 |                                            |                                             |
| Total cost of production (Rs. / kg)             |                 | 5.71                                           | 10.672                               | 4.962                                 |                                            |                                             |
| Gross income received by the farmers (Rs. / kg) | <b>Retailer</b> | 44.97                                          | 54                                   | 6.60                                  | 80107.06<br>per year<br><b>10.36% rise</b> | 198259.06<br>per year<br><b>25.64% rise</b> |
|                                                 | <b>FPO</b>      | 44.97                                          | 60                                   | 15.03                                 |                                            |                                             |
| Net profit received by the farmer (Rs./ kg)     | <b>Retailer</b> | 39.26                                          | 43.328                               | 4.068                                 |                                            |                                             |
|                                                 | <b>FPO</b>      | 39.26                                          | 49.328                               | 10.068                                |                                            |                                             |
| Producer's share in consumer's rupee (%)        | <b>Retailer</b> | 74.95                                          | 90                                   | 15.05                                 |                                            |                                             |
|                                                 | <b>FPO</b>      | 74.95                                          | 100                                  | 25.05                                 |                                            |                                             |

| Cost particulars                               |                 | Costs and income in existing practice (Rs./kg) | Proposing costs and income (Rs./kg) | Change in costs and income (Rs. / kg) | Increase in net profits (Rs. /ac) |             |
|------------------------------------------------|-----------------|------------------------------------------------|-------------------------------------|---------------------------------------|-----------------------------------|-------------|
|                                                |                 |                                                |                                     |                                       | Retailer                          | FPO         |
| Packaging                                      |                 | 0.03                                           | 0.25                                | 0.22                                  | 39114                             | 88,314      |
| Transportation                                 |                 | 0.5                                            | 4.805                               | 4.305                                 |                                   |             |
| Loading                                        |                 | 0                                              | 0.255                               | 0.255                                 |                                   |             |
| Unloading                                      |                 | 0                                              | 0.245                               | 0.245                                 |                                   |             |
| Total marketing costs                          |                 | 0.53                                           | 5.555                               | 5.025                                 |                                   |             |
| Total cost of production (Rs./ kg)             |                 | 4.997                                          | 10.022                              | 5.025                                 | 78228                             | 1,76,628    |
| Gross income received by the farmers (Rs./ kg) | <b>Retailer</b> | 16                                             | 25                                  | 9                                     | 36.13% rise                       | 81.56% rise |
|                                                | <b>FPO</b>      | 16                                             | 30                                  | 14                                    |                                   |             |
| Net income received by the farmer (Rs./ kg)    | <b>Retailer</b> | 11.003                                         | 14.978                              | 3.975                                 |                                   |             |
|                                                | <b>FPO</b>      | 11.003                                         | 19.978                              | 8.975                                 |                                   |             |
| Producer's                                     | <b>Retailer</b> | 53.33                                          | 83.33                               | 33.33                                 |                                   |             |

## OKRA :

From the primary data collected, it was analysed that the cost incurred to the producer for selling one quintal of Okra in the existing practice is Rs. 9.137 and the net returns earned by him is 7.499. If the producer adopts the proposing plan, the cost of production per kg of okra produce will be increased to Rs.13.977 and the net returns per kg will rise to Rs. 11.023 if marketed to retailer markets and Rs. 16.023 if linked to consumers directly. Though the marketing costs show a rise of Rs. 4.84 to the producer, it will give a rise of Rs.3.26 and Rs.8.26 income for retail markets and consumer market respectively per kg of produce. Ultimately, the increase in producer's net income from per acre per year of Okra is Rs. 25225.88 and Rs. 63915.88 in case of retailer and consumer marketing respectively. The Producer's share in consumer's rupee will also be increased from 56.33 to 83.33% and 100% respectively. The results are shown briefly in the following table.

**Table 5 : Comparison between profits received by the farmers in the existing and proposal system in case of OKRA**

| Cost particulars                                |                 | Costs and income in existing practice (Rs./kg) | Proposal costs and income (Rs./ kg) | Change in costs and income (Rs. /kg ) | Increase in producer's profits(Rs. /ac)                  |                                                        |
|-------------------------------------------------|-----------------|------------------------------------------------|-------------------------------------|---------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
|                                                 |                 |                                                |                                     |                                       | Retailer                                                 | FPO                                                    |
| Packaging                                       |                 | 0.03                                           | 0.03                                | 0                                     | 12,612.94<br>25,225.88<br>per year<br><b>50.14% rise</b> | 31,957.94<br>63,915.88<br>per year<br><b>110% rise</b> |
| Transportation                                  |                 | 0.5                                            | 4.805                               | 4.305                                 |                                                          |                                                        |
| Loading                                         |                 | 0                                              | 0.29                                | 0.29                                  |                                                          |                                                        |
| Unloading                                       |                 | 0                                              | 0.245                               | 0.245                                 |                                                          |                                                        |
| Total marketing costs                           |                 | 0.53                                           | 5.37                                | 4.84                                  |                                                          |                                                        |
| Total cost of production (Rs. / kg)             |                 | 9.137                                          | 13.977                              | 4.84                                  |                                                          |                                                        |
| Gross income received by the farmers (Rs. / kg) | <b>Retailer</b> | 16.90                                          | 25                                  | 9.50                                  |                                                          |                                                        |
|                                                 | <b>FPO</b>      | 16.90                                          | 30                                  | 14.50                                 |                                                          |                                                        |
| Net profit received by the farmer (Rs./ kg)     | <b>Retailer</b> | 7.763                                          | 11.023                              | 3.26                                  |                                                          |                                                        |
|                                                 | <b>FPO</b>      | 7.763                                          | 16.023                              | 8.26                                  |                                                          |                                                        |
| Producer's share in consumer's rupee (%)        | <b>Retailer</b> | 56.33                                          | 83.33                               | 27                                    |                                                          |                                                        |
|                                                 | <b>FPO</b>      | 56.33                                          | 100                                 | 43.67                                 |                                                          |                                                        |

**Table 6 : Estimated increase in profits of farmers from the proposed plan per acre per crop season:**

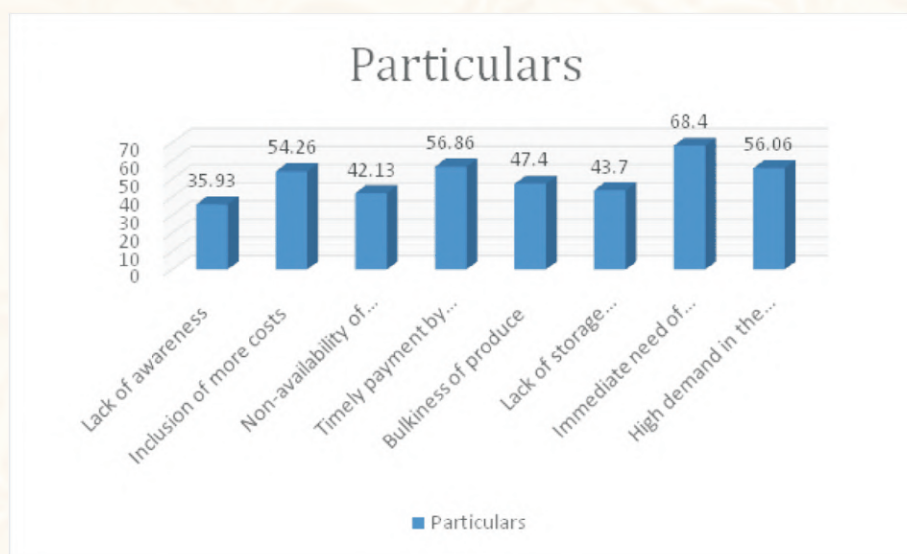
| VEGETABLE      | Increased cost of production (Rs. / kg) | Increased profit (Rs. /kg) |        | Increased profit (Rs./ac / year) |             |
|----------------|-----------------------------------------|----------------------------|--------|----------------------------------|-------------|
|                |                                         | RETAIL MARKETS             | FPO    | RETAIL MARKETS                   | FPO         |
| <b>TOMATO</b>  | 4.962                                   | 4.068                      | 10.068 | 80,107.06                        | 1,98,259.06 |
| <b>BRINJAL</b> | 5.555                                   | 3.975                      | 8.975  | 88314                            | 1,76,628    |
| <b>OKRA</b>    | 4.84                                    | 3.26                       | 8.26   | 25,408.44                        | 63,915.88   |

**Problems apprehended by producers :**

**The producers ranked the data, which is presented below :**

**Problems listed by the farmers for not following packaging practices :**

1. Lack of awareness
2. High packaging costs
3. Non availability of packaging materials
4. Regular and timely payment by wholesalers and retailers
5. Lack of storage facilities
6. Bulkiness of the produce
7. Immediate sales due to high need of money
8. High demand for the produce at local markets



**Fig 2 : Average Garrett's score of problems listed by farmers for not marketing their produce using packaging practices**

From the above graph, it is deciphered that farmers need immediate payments for their produce and it is being met by regular and timely payments by market intermediaries and high demand for the produce in the local market. Therefore, they are not going for packaging and marketing to distance markets. The next reason they state is

packaging and marketing costs, are high; more the bulkiness of the produce, the lesser will be the cost of packaging/marketing per unit. The farmers expressed that they are aware of packaging and procurement, but they are not ready to follow them. The attitude of the producers should be changed in order to make a shift.

#### Calculation of packaging losses :

Packaging plays a very crucial role in post-harvest management and if it is ignored, it results in major loss of the produce. The packaging loss of Tomato is

| VEGETABLE      | Production<br>(kg/ac) | Packaging<br>loss (%) | Post-<br>harvest<br>loss<br>(%) | Quantity<br>loss<br>(kg/ac) | Loss in terms<br>of income<br>(Rs. / ac) |
|----------------|-----------------------|-----------------------|---------------------------------|-----------------------------|------------------------------------------|
| <b>TOMATO</b>  | 9846                  | 17.09                 | 24.83                           | 1683                        | 92565                                    |
| <b>BRINJAL</b> | 9840                  | 2.7                   | 22.16                           | 266                         | 6650                                     |
| <b>OKRA</b>    | 3896                  | 3.36                  | 15.44                           | 131                         | 3275                                     |

17.09 %, which accounts for Rs. 92565 loss on the produce from one-acre crop. Similarly, the packaging loss of Brinjal is 2.7% which causes Rs.6650 loss on one acre of crop and packaging loss of Okra is 3.36 % accounting for Rs.3275 loss on one-acre crop area.

#### POLICY SUGGESTIONS

- Attitude of farmers towards packaging practices should be changed as it is profitable
- The packaging materials proposed through this study are plastic crates for tomatoes, corrugated fibre boxes for brinjal and jute bags for okra which are all spoilage reducing and cost-effective for the producers while handling in bulk. Therefore, awareness needs to be created.
- Farmers should follow better packaging practices for marketing their produce to nearby high demand areas/distance markets to reduce the packaging and post-harvest losses and to make an increase in their net profits.
- Establishment of producer co-operatives and FPOs to switch various activities in relation to packaging and marketing of major vegetables. It will not only help to reduce the packaging and post-harvest losses but also increases the negotiating power of producers in marketing.
- FPOs link farmers directly to the residential areas of the city where the farmers are provided with a new platform for selling their own produce to the people of metropolitan cities directly without any intermediary such as retailers or wholesalers. It would enable a farmer to gain maximum share in the consumer rupee.
- Precooling of vegetables before packaging increases shelf life, thereby avoids distress sale
- Refrigerated container packaging is highly helpful for long distance transport.

#### ACKNOWLEDGEMENT

This research exertion has been done in part fulfilment of the requirement for the Research Internship Programme to Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, and Rajasthan.

## REFERENCES :

Daniel Goodwin. 2011. *Protective packaging and distribution*, Michigan state University

E. Garrett's statistics in Psychology and Education, Feffer and Simans Private Limited, 21969, p.329

Hosahalli S. Ramaswamy. 2015. *Post-harvest technologies of Fruits and Vegetables*, Mc. Gill University

Vanee Chohenchab, Paul Singh, Jay Singh. 2017. *Packaging and distribution of fresh fruits and vegetables*, California

## e-references :

Horticulture-Statistical Year Book India 2018, Ministry of statistics and programme implementation, Government of India

Ministry of Agriculture and Farmers' welfare [mofpi.nic.in/sites/default/files/selection.pdf](http://mofpi.nic.in/sites/default/files/selection.pdf)



## 8. WAREHOUSING TO INCREASE FARMERS INCOME-AWARENESS IS THE KEY

M V Pooja Rani<sup>1</sup>, Suchi Mathur<sup>2</sup>

Email of correspondence : venkatapoojarani@gmail.com

### INTRODUCTION

Better agricultural marketing facilities enable the farmers to think beyond subsistence, expand production, enhance productivity and thus bring in more revenue. Warehousing is one of the most significant aspects of agricultural marketing to minimise risk, avoid distress sale and capture the market when better prices are realised.

There are three public sector agencies are involved in building large-scale storage and warehouse capacities in the country. These are the food corporation of India [FCI], central warehouse corporation [CWC] and state warehouse corporation [SWC].

### Review of literature

Recent studies on **utilisation pattern of warehouses :**

Saxena [2003] in his paper found that the storage makes possible to take advantage of the anticipated increase in prices. Processing units like flourmills/ rice mills demand wheat and rice throughout the year. For an efficient running of the mills and for economy as a completely adequate supply of raw material is needed. This requirement is only be met by good storage system. Storage can also create job opportunities in different sectors from labourers to transporters, traders, financiers and a variety of government it can be game changer in agricultural marketing.

### Studies on warehouse receipt as an instrument of credit :

Pal and Wadha [2007] expressed that a well-developed warehouse system can provide focus for development of entire commodity chain, providing incentives for a part of different parties, including farmers, financiers, traders, processors, public sector buyers, investors in storage capacity, by issuance of warehouse receipts.

Mahanta [2012] reported that, warehouse receipts could greatly facilitate the financing of agriculture as it could serve as highly credible collateral for agricultural credit. The importance of these receipts includes that they can provide surplus producing farmers with a market window, which can help them to secure the best possible deal, by allowing them to deal directly with downstream buyers and financiers, and overcome the asymmetric power relationship within the market chain. Farmers can overcome the constraints by depositing their crops in warehouse that dries, cleans and grades them according to established standards, and holds them until they wish to sell. Farmers to access agricultural credit can use warehouse receipts issued against the stock.

Bhat (2011) says that it is important that the products be readily available to be delivered to customers on demand. By warehousing a product close to the customers, delivery time can be reduced or off-the shelf supply can be achieved thereby improving customer's services. The faster, on time delivery can help increase sales. Many storage warehouses are centrally located in areas adjacent to key destinations and where transportation is accessible Bhatt (2007). Warehouses owned by big businesses are often large enough to accommodate a good number of consumers in the country of operation. This allows them to easily distribute the goods without having to ship from to country. In addition, the development of internet has had a great influence on the system of warehousing. Internet based stores do not need any physical point of selling only require storage warehouse to gather all needed goods for the consumer.

There is also the technological environment organizational model by Tornatzky and Fleischer (1990) model framework which had internal and external factors that affect adoption of an innovation, in their analysis they conclude that diffusion of an innovation is influenced by three factors: Technology, Organizational and

Environmental factors that the TOE framework identifies these factors that influence the process by which it adopts, implements and uses technological innovations.

Studies by Tornatzky and Fleischer (1990); Rogers Thond (1999), Zulu Et al (2005) conclude that technological factors include both the existing such as traditional storage methods and technology in use and new technologies relevant to the firm; organizational factors as descriptive measures about the organizational such as scope, size and the amount of slack resources available internally and environmental factors as the area in which a firm conducts its business – its industry, competitors and dealings with the government. In this case, if the farmers who frequently use the warehouse develop positive attitude, they would be more willing to adopt it than of they were suspicious of it or of the service providers.

Tanksale and Jha. (2014) developed, a mathematical model to optimize food grains storage and transport for public distribution system in India and the results of the study showed that, improper planning and scheduling of the moment of food grains resulted in uplifted food grains, excess transportation cost and underutilisation of available storage capacity, which would in turn increased operational cost of FCI.

Javed et al. (2015) in their own study on the overview of grain drying and storage problems indicated that on farm storage was important in India as it stored the surplus of a short duration. They also revealed that the use of driers and scientific storage practices, if followed, can reduce the loss by about 6 % and this would save Rs.13500 million every year , and make available an additional 9 million tonnes of grain to feed the people.

According to the report of National Institute of Public Finance (2015) stated that the majority of respondents across the surveyed districts showed no shortage of warehousing facilities. Due to consequent years of bad yields, there was an excess supply of warehouses in most of the districts surveyed, driving rents down. In low productivity areas on other hand, there was a lack of warehouses mainly due to low necessity for storage. This was true of north 24 Parganas, where the banks reported that the warehousing capacity in rural areas was very small and the culture of warehousing was yet to really take off.

Adigal and Singh (2015) reported that the total turnover of CWC increased from Rs.849.25 cr. to 1528.19 cr. During 2013. During the year under report, 2.03 Lakh MT constructed storage capacities was added. The average capacity utilisation was reduced to 86% from 93% achieved during 2012-13 mainly due to lower stock positions of FCI in view of shortfall of procurement as well as liquidation of stocks through PDS and export.

Esther et al. (2014) in their study on the grain storage management in management in India revealed that even though the production of food grains was steadily increasing over the years, the post-harvest losses were constant at 10%. Out of this 6% was due to absence of proper storage facilities. In India, food grains were stored were stored using traditional structures by small farmers. Therefore, there was a need for research to develop management guidelines for safe storage and drying to ensure quality management of stored grains.

### **OBJECTIVES OF THE STUDY**

- To assess the utilisation pattern of warehouse facilities by the farmers.
- To understand the relationship between price discovery and storage.
- To study the effectiveness of public warehouse corporation vs private warehouses.

### **METHODOLOGY**

The details of investigation and methods adopted by the researcher are given below:

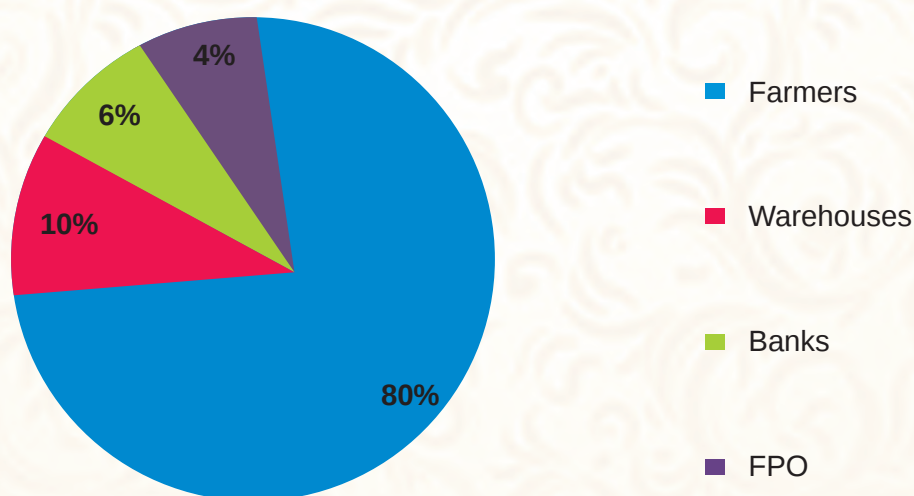
#### **Sampling size**

It includes the collection of data from 40 farmers, 5 warehouses [FCI, SWC, and PRIVATE], 3 banks (from Karur vyshya bank, oriental Bank of commerce, Bank of Baroda) and two farmer producer organisations.

### Sampling frame & type of respondents

| Particulars                      | Number |
|----------------------------------|--------|
| Farmers (Small and Marginal)     | 40     |
| Warehouses (executives/Managers) | 5      |
| Banks                            | 3      |
| Farmer producer organisations    | 2      |

### Graphical representation of sample size in percentages



The data collected for the commodities Paddy and Black Gram from the farmers who were storing in the warehouse and for Jaggery from farmers who storing their produce in the cold storage.

### COLLECTION OF DATA

**PRIMARY DATA :** The data was collected from the farmers, FPO and banks through pretested interview schedules, personal interviews, structured questionnaires, and focussed group discussions. Demographic data on family composition, land holding, asset structure of sample farmers, storage of produce in warehouse, bank loans advances against warehouse receipts were collected.

**SECONDARY DATA :** Secondary data relevant to the study were collected from the Agricultural department, warehousing records and from websites.

### RESULTS AND DISCUSSIONS

Garrets technique is used to evaluate the most significant factor, which influences the respondent for the dependant variable that is warehouse utilisation in the study. As per this method, respondents have been asked to assign ranks for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Per cent position} = 100 (R_{ij} - 0.5) / N_j$$

Where,  $R_{ij}$  = Rank given for the  $i$ th variable by  $j$ th respondents

$N_j$  = Number of variables ranked by  $j$ th respondents

With the help of Garrett's Table, the percent position estimated is converted into scores. Then for each factor,

the scores of each individual are added and then total value of scores and mean values of score are obtained. The factors having highest mean value is considered the most important factor.

In this study, the respondents were asked to rank from one to 7 for the problems they may face for the direct linkage of warehouse and farmers. In addition, they have been asked for the factors that have to be established for the successful launch of farmers in the warehouse. These scores were computed and each factor has been assigned a rank based on its importance and influence on farmers. Decision-making

#### Farmers Profit comparison in existing system and warehouse

| Commodity  | Particulars                                | Existing System (Rs./Kg) | Direct Linkage (Rs./Kg) | Increased profit (Rs./Kg) | Total increased profit (Rs./ac) |
|------------|--------------------------------------------|--------------------------|-------------------------|---------------------------|---------------------------------|
| Paddy      | Sale price (Rs/Kg)                         | 17.5                     | 19.7                    | 2.2                       | 3427.2                          |
|            | Transportation cost (Field to PU) (Rs./kg) | 0                        | 0.66                    | -0.66                     |                                 |
|            | Processing cost (Rs./kg)                   | 0                        | 0                       | 0                         |                                 |
|            | Cost of cultivation                        | 6.6                      | 6.6                     | 0                         |                                 |
|            | Storage cost                               |                          | 0.01                    | -0.01                     |                                 |
|            | <b>Total</b>                               | <b>10.9</b>              | <b>12.43</b>            | <b>1.53</b>               |                                 |
| Black gram | Sale price (Rs/Kg)                         | 43.3                     | 46.2                    | 2.9                       | 818                             |
|            | Transportation cost (Field to PU) (Rs./kg) | 0                        | 1.87                    | -1.87                     |                                 |
|            | Processing cost (Rs./kg)                   | 15                       | 15                      | 0                         |                                 |
|            | Storage cost                               |                          | 0.0075                  | -0.0075                   |                                 |
|            | Cost of cultivation                        | 2                        | 2                       | 0                         |                                 |
|            | <b>Total</b>                               | <b>26.3</b>              | <b>27.32</b>            | <b>1.02</b>               |                                 |

#### Profit comparison in existing marketing channel and through cold storage

| Commodity | Particulars                                | Existing System (Rs./Kg) | Cold storage (Rs./Kg) | Increased profit (Rs./Kg) | Total increased profit (Rs./ac) |
|-----------|--------------------------------------------|--------------------------|-----------------------|---------------------------|---------------------------------|
| Jaggery   | Sale price (Rs/Kg)                         | 40                       | 44.4                  | 4.4                       | 8750                            |
|           | Transportation cost (Field to PU) (Rs./kg) | 0                        | 0.5                   | -0.5                      |                                 |
|           | Processing cost (Rs./kg)                   | 6.4                      | 6.4                   | 0                         |                                 |
|           | Cost of cultivation                        | 10                       | 10                    | 0                         |                                 |
|           | Storage costs                              |                          | 1.4                   | -1.4                      |                                 |
|           | <b>Total</b>                               | <b>23.6</b>              | <b>26.1</b>           | <b>2.5</b>                |                                 |

it is evident from table above that when the producer sells his produce through the current marketing channel; the price received for the produce is Rs17.5 kg of paddy. In addition, if the farmer intends to sell his produce after storing at warehouse he will get Rs.19.7 per kg of produce. However, in case of the current marketing channel, the farmers need not pay for the transportation cost and warehouse rent. If the proposed system is implemented the farmers need to bear an additional transportation cost of Rs.0.66 per kg of the produce and warehouse rent as 0.01Rs/Kg. Despite the inclusion of transportation cost, warehouse rent the farmers will get an additional profit of Rs.1.53 per kg of paddy. Finally, the farmer will have an additional profit of Rs.3427.2 per acre for paddy similarly; the farmer can earn Rs. 818 per acre of black gram crop. Similarly, in case of processed good like Jaggery currently the farmer is getting Rs.40/kg. However, after storing in cold storage he need to bear the transportation cost, cold storage rent. Even though the farmer is getting profit of 8750.

#### Marketable surplus of paddy :

The farmer consumes 640Kgs of 2240Kgs of paddy produced per acre, the marketable surplus of the farmer after keeping the remaining produce in warehouse is 2448 as the profit of paddy is 1.53Rs/Kg.

#### Marketable surplus of Black Gram :

The farmers consumes 60Kgs of 800Kgs of black gram produced per acre, the marketable surplus of farmer after keeping in warehouse is 754.8 as the profit of black gram 1.02Rs/Kg.

#### Marketable surplus of Jaggery :

The farmers consumes 20Kgs of 3500Kgs of Jaggery produced per acre, the marketable surplus of farmer after keeping in cold storage is 8700 as the profit of Jaggery is 2.5Rs/Kg.

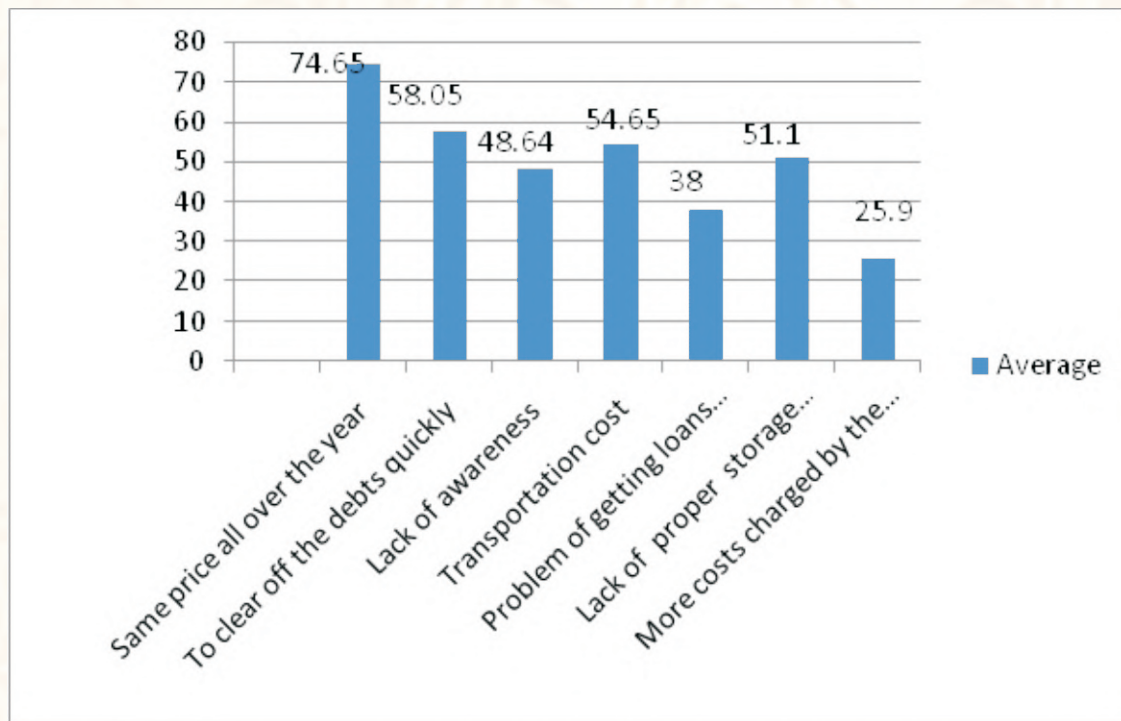
**Challenges faced by the farmers :** Farmers asked the farmers to list down the problems in the proposed system of utilisation of the warehousing facilities and each of the problem statement was ranked from one to seven based on the importance of each factor by the farmers itself. Garrett's Ranking Technique was employed to analyse the ranked data and is presented as

#### Garrett's Ranking for the reasons elicited by farmers for not using the warehouses

| Particulars                          | Garrett's score |     |     |     |     |     |     | Average | Rank |
|--------------------------------------|-----------------|-----|-----|-----|-----|-----|-----|---------|------|
|                                      | 1               | 2   | 3   | 4   | 5   | 6   | 7   |         |      |
| Same price all over the year         | 1422            | 660 | 114 | 0   | 0   | 0   | 0   | 74.65   | 1    |
| To clear off the debts quickly       | 474             | 528 | 285 | 250 | 258 | 0   | 0   | 58.05   | 2    |
| Lack of awareness                    | 158             | 396 | 342 | 100 | 430 | 140 | 0   | 48.65   | 5    |
| Transportation cost                  | 0               | 330 | 456 | 550 | 86  | 70  | 42  | 54.65   | 3    |
| Problem of getting loans from banks  | 79              | 66  | 57  | 200 | 301 | 315 | 147 | 38      | 6    |
| Lack of proper storage facilities    | 0               | 132 | 456 | 300 | 172 | 245 | 63  | 51.1    | 4    |
| More costs charged by the warehouses | 79              | 0   | 0   | 100 | 43  | 280 | 378 | 25.9    | 7    |

From the above table, the most important problem that the farmers expect to arise from “utilisation of warehousing facilities by farmers” is price of the produce is not changing it will be same all over the year. Another major factor is farmers want to clear off their debts soon after selling the harvested produce. They are assuming that they will not get money in between the period of storage apart from that they would not have any idea about the warehouse receipts to utilise the credit facility to clear off their debts, needs. However, since farmers tend to get more profit if they are willing to sell their produce after storage in warehouse and when favourable market prices prevail. Therefore, farmers need awareness on market information.

Following these factors, the farmers have to abide the transportation cost from the field to the warehouses in the proposed system. However, in case of the existing channel, the commission agents or the cooperative societies themselves take the produce from the field to the processing unit. Therefore, farmers find it difficult to bear the transportation cost. In some areas, even the farmers are willing to keep produce in the warehouses but local warehouses are not sufficient to store the maximum produce of that area. Therefore, schemes like GRAMEEN BHANDARAN YOJANA to create local godowns is the need of the hour. The others problems alleged by the farmers are problem of getting loans and higher costs charged by warehouses, which is reducing their profits



**Garrett is ranking of problems to use warehouse storage**

### **POLICY IMPLICATIONS AND CONCLUSIONS**

- 1) The farmers presume that if they sell their produce at one go, they will earn the profit at a time and they are not clear about the alternative channels. In this regard, more awareness camps may be organized to make them aware about the benefits of using the services of warehouse. Most of the farmers are not aware about the services offered by warehouses and the benefits
- 2) The public warehouses should offer incentives for adoption of the usage of the modern warehouses to encourage farmers to adopt the usage of the facilities.
- 3) These incentives can be in the form of the earning points for promotions depending on the frequency and volume of farmer produce, discounts on the bills or allocation of free space for temporary storage in the farm produce for farmers who consistently use the warehouses.

4) The warehouses may offer the loan facility to the farmer to encourage the services of warehouses facilities.

**ACKNOWLEDGEMENT :** This research exertion has been done in part fulfilment of the requirement for the Research Internship Programme to Chaudhary Charan Singh National Institute of Agricultural Marketing, Jaipur, and Rajasthan.

#### **REFERENCES**

Adigal V S Shradda Singh 2015. *Agricultural Marketing vis-à-vis warehousing facility. The business & Management Review*, Volume 5(4):43-50.

Esther Magdalene Sharon, M., Kavitha Abhirami, C.V and Alagusundaram, K .2014. *Grain Storage Management in India. Journal of post-harvest Technology*. 02(01):012-024

Javed Ali, Aaushi Sharma, and poonam Rani. 2015. *Overview of grain drying and storage problems in India Journal of Traditional Knowledge*. 8(2):225-229

Mahanta, D, 2012. *Review of warehouse receipt. As An Instrument for Financing India International journal of Scientific and Technology Research*. 1(9):2277-8616.

Pal and Wadhwa 2007 *Commodity price volatility and special safeguard mechanics. Economics and political weekly*. 42(5):417-27

Saxena H.K. 2003 *"Economics of storage of wheat in East Utter Pradesh"* published by Northern Book Center, New Delhi. ISBN 81-7211-136-3

Tanksale, A and Jha, J.K 2010. *Developing a mathematical model to optimize food grains storage and transport for public distribution system in India. Applied soft computing*. 1-10.



## 9. LINKING FARMERS WITH UNIVERSITY HOSTEL MESS-DIRECT MARKETING APPROACH FOR INCREASING INCOME OF FARMERS

DEEPANSHU GOSWAMI<sup>1</sup>, HEMA YADAV<sup>2</sup>

Email of correspondence : deepanshu.iabm@gmail.com

### INTRODUCTION

The direct market linkage between farmer and prospective hostels has to be done keeping profitability to farmers & assuring local and safe food consumption by students thereby creating a win-win situation for both the buyer and supplier. Foreign experiences on the emerging method has the following advantages:

- Farm-to-college programs connect colleges and universities with producers in their area to provide local farm products for meals and special events on campus.
- National farm to school network envisions a nation in which farm to school program an essential component of strong and just local and regional food system ensuring the health of all schoolchildren, farms, environment, economy and communities.

In April 2017, the Union Ministry of Agriculture and Farmers Welfare, India drafted the Model Agricultural Produce and Livestock Marketing (Promotion & Facilitation) Act, 2017. The draft law seeks to overhaul the existing legal framework related to the marketing of agriculture produce and will replace the Agricultural Produce Market Committee (APMC) Act.

The policy of model APLM Act, 2017 is a major agro-reform as it provides wider options for farmers to sell produce and get better prices. It has reduced price spread by enabling direct contact between farmers and consumers or other end-user categories.

### The salient features of Model APLM Act, 2017

- Disintermediation of food supply chain by integration of farmers, processors, exporters, bulk retailers and consumers.
- Promotion of direct interface between farmers and processors/exporters/bulk-buyers/end users to reduce the price spread bringing advantage to both the producers and the consumers.
- Enabling declaration of warehouses/silos/cold storages and other structures/space as market sub-yard to provide better market access/ linkages to the farmers.
- Giving freedom to the agriculturalists to sell their produce to the buyers and at the place and time of their choice, to whomsoever and wherever they get better prices.

Almost every university in the country have their hostels for students. In which two, 94, 27,000 students reside in 903 universities in India. Abundant of food is cooked for them in those hostels mess. These universities hostel mess procure the food from the various channels either from the government suppliers or from the private markets. In these universities either the tenders are released for running the mess or co-operative mess are run by the students themselves. They procure the food from the various channels readily available to them, such as.

### Procurement Channels university hostel mess opt for:

- ✓ Hostel → Caterers → Purchasing Department → Wholesale/ Retail Shops/ Govt. shops
- ✓ Hostel → Mess manager → Wholesale/ Retail Shops

These hostels arrange food for students under their management by appointing cook or by giving tender to private caterer. These hostels procure their raw food materials from wholesale/ retail shopkeeper/ Mandi or Govt. shops. On the other hand, the farmers near these hostels sell his produce to either these local shopkeepers or Mandi.

The hostels have demand and there is plenty of supply from farmers' side of same food items required by the hostel. In the marketing of these food items/ agricultural produce transportation cost, inadequate market infrastructure, lack of market information, lack of processing units, storage facility, price fluctuation come out as a major problem that leads to decrease in the revenue/ income fetched by farmers. Direct linking farmers to local buyers such as hostel mess can solve these problems. There is a requirement of a facilitator who can link the producer and the consumer.

### OBJECTIVES

The purpose of the study is to increase opportunities for earning higher incomes to farmers by providing an alternate channel for selling their produce at a profitable price

The following objectives were set for the study:

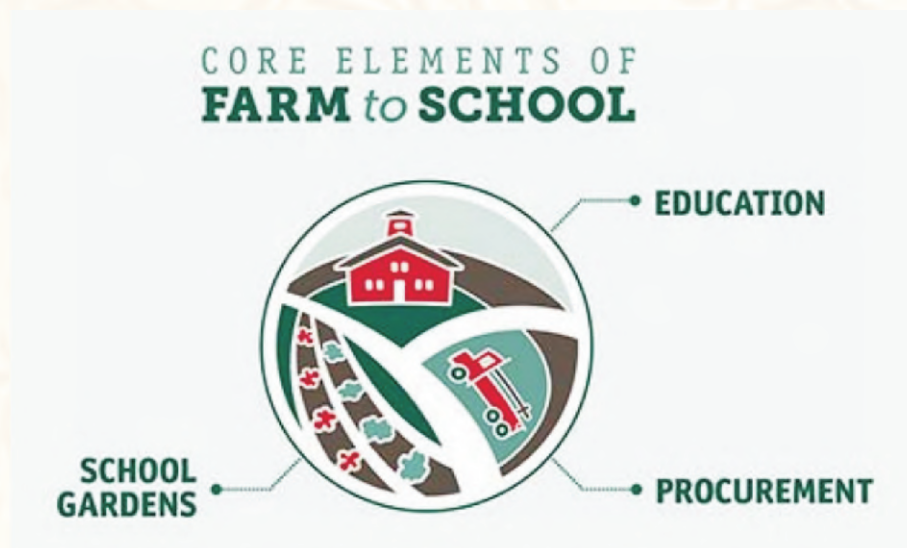
- a) To study the existing food procurement mechanism in the university hostel mess from the FPO/ Farmers.
- b) To study the benefits of the university linkage program to farmers profits
- c) To assess the profit gaps in existing mechanism of farmers & university hostel
- d) To explore the possibility of the linkage of local farmers & University hostels
- e) To suggest a roadmap for direct linkage

### METHODOLOGY

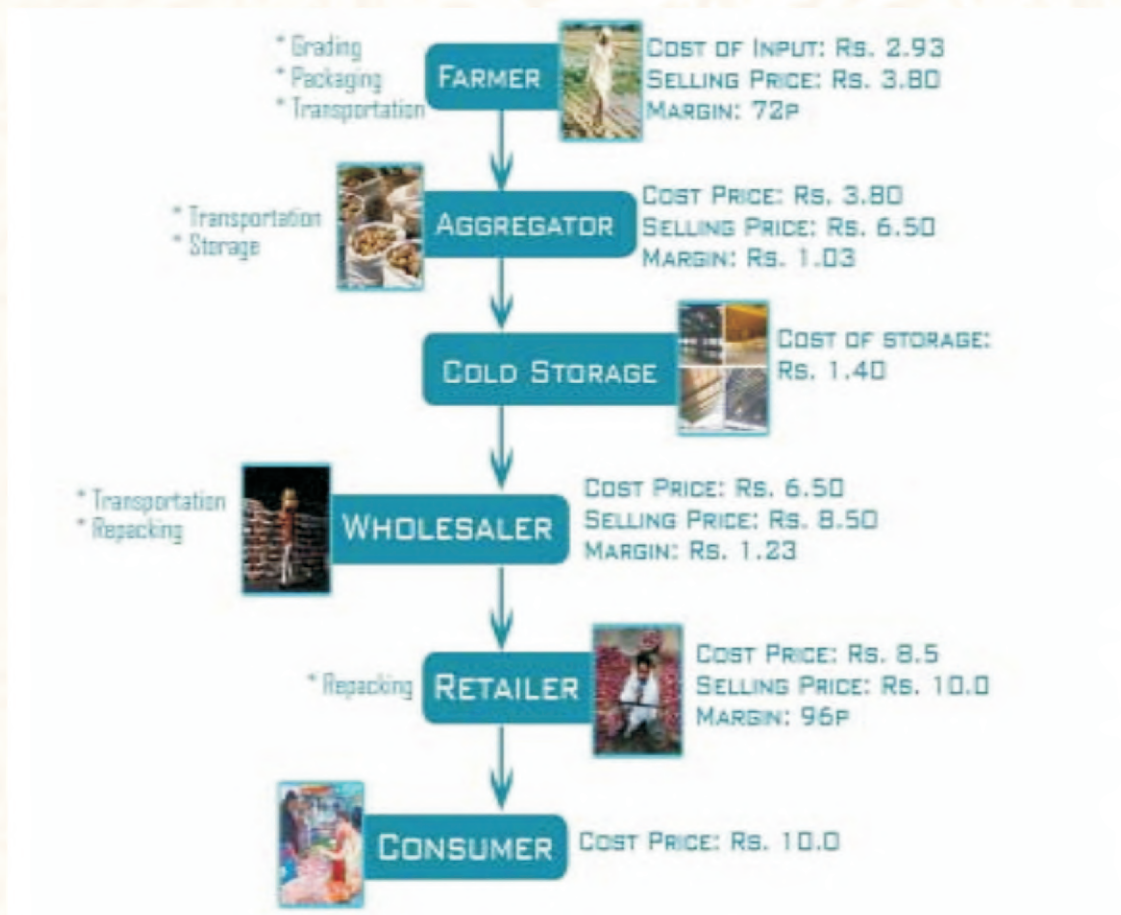
The study was conducted in Punjab Agriculture University, Ludhiana to understand the existing mechanism of procurement of food in hostel mess from FPO/ Farmers. Descriptive research design was used. Primary data was collected using pretested interview schedule. Twenty farmers, FPO's linked with this program, hostel mess contractors, university administration and students were interviewed. The secondary data sources were used for interpretation and drawing conclusions.

### RESULT AND DISCUSSIONS

The purchase from farmers or FPO is beneficial to both the producer and consumer. For ex. Moong Dal is sold by the farmer in the wholesale market at 45/kg, whereas in retail market the price is 90/kg. However, to the hostel, the farmer is directly selling it at the price of 67/kg ( $45 + 22$  (50% of difference)).



In Haryana and Punjab, Tomato production during 2017-18, according to the first advance estimate, is likely to be 7.8% higher than that of the previous year. However, it is 20% higher than the average production of the past five years. Similarly, potato production is estimated to be 1.5% higher than that of the previous year. However, compared with the average production of the past five years, it is 8.7% higher. These figures indicate that farmers are producing more without good returns. Season after season, farmers face price uncertainties mainly owing to fluctuations in demand and supply caused by bumper or poor production, speculation and hoarding by traders. Vegetables are purchased for Re 1 from farmer but retailer sell it for Re 20 to consumer. This is causing glut situation, in order to smoothen the demand the case of potato supply chain in Punjab during off-season is depicted in figure 1.



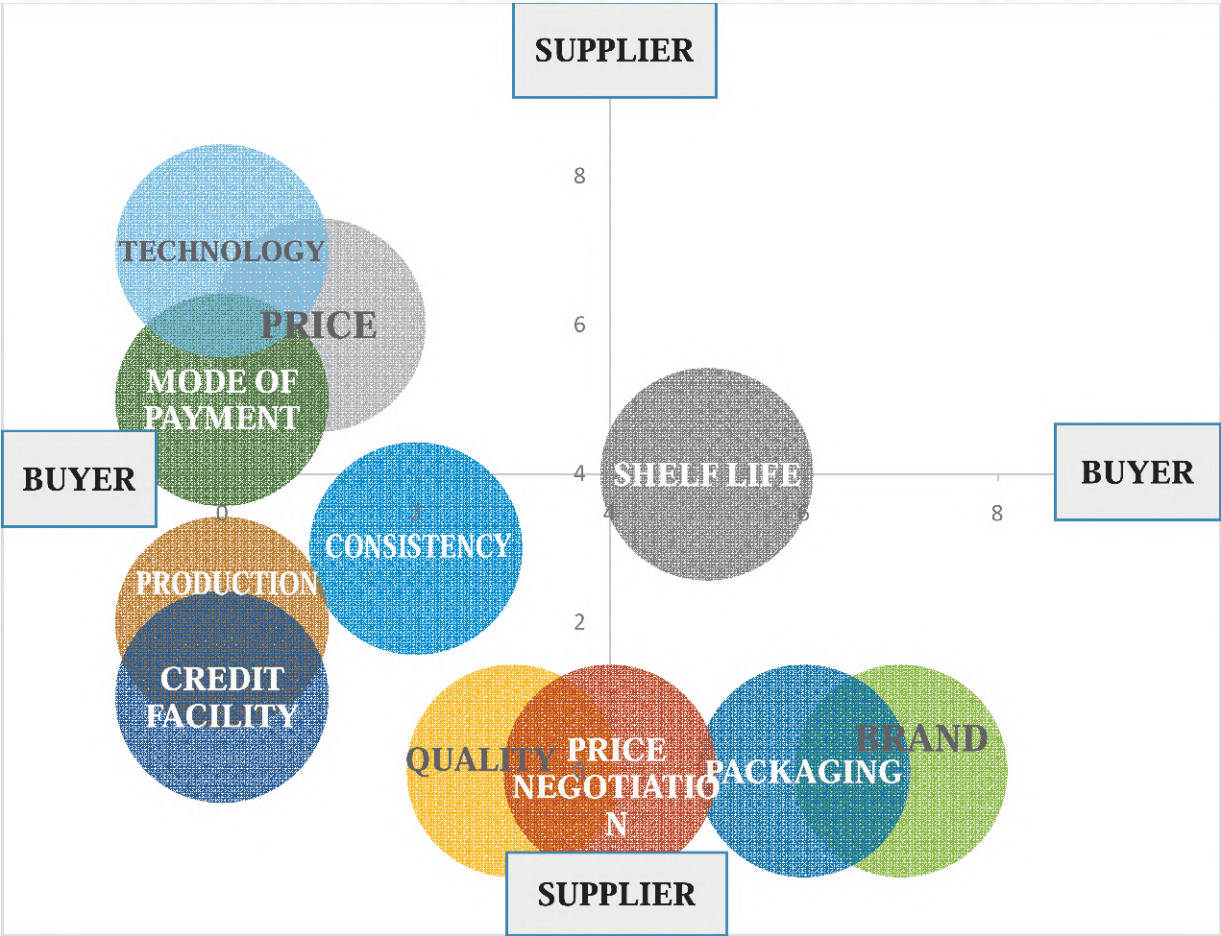
**Figure No. 1- Common potato supply chain in Punjab during off-season**

Comparing the cost of providing food material in the current system (Retail) and proposed direct linkage system, it is observed that in some items it is profitable to link them directly with FPO, some to farmers and some with existing channel because of the variation in price and capacity. For ex. In above table wheat, rice and tomato has a profit of 6.38%, 57.89% and no risk profit respectively to procure from FPO whereas potato, pulses and turmeric have a profit of 40%, 56.52% and 88.89% respectively to procure from the farmer. However, in case of processed mustard oil it is profitable to procure directly from the retail shop because of its large production capacity brings economies of scale to the big companies.

However, FPO's can act as a facilitator between the linkage systems because they also have risk bearing capacity as it is seen in the case of tomato.

Some companies have also seen the potential market to sell their product directly to the institutions; Dawat has introduced one Tota chawal variety especially for the institutions at the price of 45/-kg only. Which is good quality rice as per the feedback from the mess managers.

**Table No. 1- Comparison between cost of providing food in the current system and proposed direct linkage system**



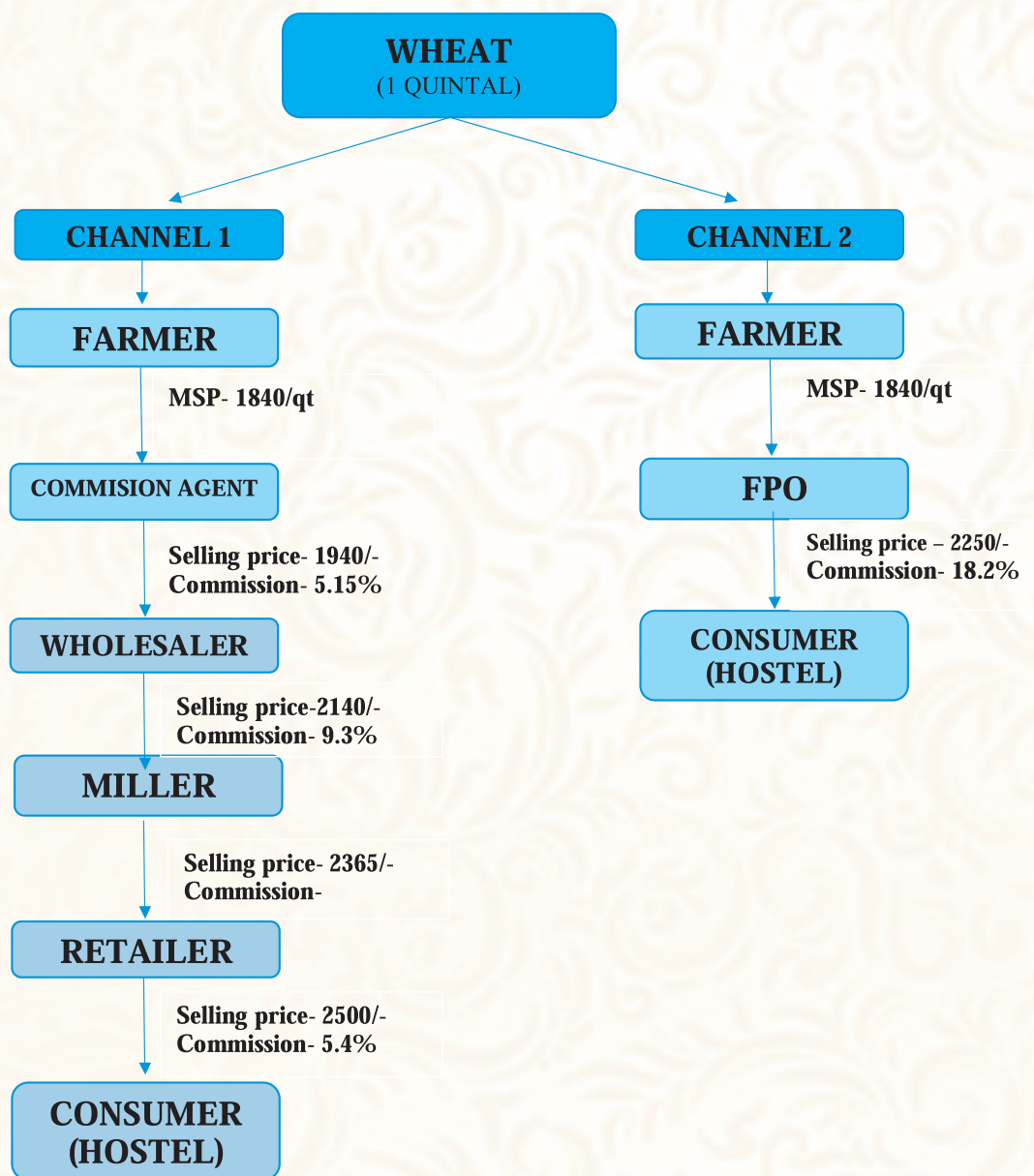
**Figure No. 2- Negotiable constraints for both buyer and supplier**

In Figure No. 2 depicts constraints for both buyers and suppliers with direct linkage. For buyers it is price and inconsistent availability of products, a buyer would prefer to buy readily available product at a reasonable price. The brand of the product is not important.

On the other hand, the supplier seeks credit for production, which is not available in direct linkage. A huge quantity of production causes glut as supplier is producing more than demand.

**POLICY IMPLICATIONS AND CONCLUSIONS**

The proposed channel for direct linking to hostels is depicted in Channel 2 Figure No. 3. The saving in intermediate costs should accrue to farmers.



### Policy implications :

Sourcing hostel requirements of ration, fruits, vegetables etc., should have a ratio for example that university hostel mess contractor has to buy 60% of material from the local farmer or FPO and 40% of the material can be purchased from any source. FPO can act as a facilitator for providing multi-commodity material but FPO should be assisted by the university. University centralized stores can be open which will act as an alternate market for the farmer/FPO to sell their products and mandate for the university hostels to buy the material only from these university centralized stores

### The implementation plan :

The government support is necessary to carry out the alternate direct linking plan. The options can be merged to make policy or provision for the benefits of the farmers. The process can take place by making the provisions and strengthening the FPO's by providing necessary assistance.

## REFERENCES

- Ministry of Agriculture & Farmers welfare, [http://agricoop.gov.in/sites/default/files/APLM\\_ACT\\_2017\\_0.pdf](http://agricoop.gov.in/sites/default/files/APLM_ACT_2017_0.pdf)
- Jagran josh, <https://www.jagranjosh.com/articles/ias-exam-features-of-aplm-act-2017-1519827004-1>
- UGC 2016-17 annual report, <https://www.ugc.ac.in/stats.aspx>
- About PAU, [https://en.wikipedia.org/wiki/Punjab\\_Agricultural\\_University](https://en.wikipedia.org/wiki/Punjab_Agricultural_University)
- Global SHG/FPO, about us, <http://www.globalselfhelpgroup.apnikheti.co.in/>
- Farm to college, <http://www.farmtocollege.org/about-farm-to-college/>
- NFSM, <http://www.farmtoschool.org/about>
- NFSM, <http://www.farmtoschool.org/about/what-is-farm-to-school>
- The Hindu, <https://www.thehindu.com/news/national/why-are-farmers-not-getting-a-fair-price/article24068937.ece>
- Times of India, <https://timesofindia.indiatimes.com/business/india-business/why-vegetables-sell-for-re-1-but-you-buy-for-rs-20/articleshow/66933311.cms>
- Role of FPO'S, <https://www.biotecharticles.com/Agriculture-Article/Role-of-Farmer-Producer-s-Organizations-FPO-s-in-Improving-Market-Access-4141.html>
- Farm promotions, <https://www.mercola.com/article/agriculture.htm>
- Importance of packaging, <http://westernpackaging.com/five-agricultural-packaging-products-wholesale-retail/>



## 10. DIRECT MARKETING TO URBAN CONSUMERS BY FPO'S : LINKING RURAL PRODUCTION TO URBAN CONSUMPTION

NAVDEEP<sup>1</sup>, SATHYENDRA<sup>2</sup>

Email for correspondence : navdeepnavi090@gmail.com

Agricultural Produce has the longest chain from producer to consumer. There are a number of intermediaries in the market like the wholesalers, commission agents, traders, processors, retailers and so on. As it passes through each individual, the price of commodity increases. So, it is only the consumer who is finally made to bear the burden. Thus, the high price paid by the consumer does not reach the grower. It is pocketed only by the market intermediaries and therefore the producer share in consumer rupee is very less and the quality also deteriorates as these commodities move from one stage to another.

For the study, both farmers and consumers were interviewed to get information about their behaviour towards buying of fruits and vegetables from the farmers through FPOs as the consumers would get fresh fruits and vegetables at a lower price from the market and the farmers will get more share in the consumer rupee as compared to what they are getting in present market system.

The FPOs can be linked to the residential areas in 2 ways: Either they can be provided with a shop near the residential houses or they can be provided with a customized vehicle by the government so that they could sell the fruits and vegetables from farmers to the consumers in the metropolitan cities. To fix the prices adequate care should be taken. If the prices in FPOs are higher than the local market rate, there is no incentive to consumers. And if the prices fixed are lower than the wholesale market rates there is no incentives to farmers. The prices in FPOs shall have to be 10 to 15% above the wholesale rates and 10 to 12% less than the local retail price. By adopting this policy, the producer share in consumer rupee will be raised from **66.6% to 85.7%** for okra, **66.6% to 87.5%** for brinjal, **60% to 77.3%** for roundgourd, **72.7% to 90%** for watermelon and **71.4% to 91.6%** for muskmelon.

The FPOs should take care of the demands of the consumers and the farmers should be aware of what the consumers need from them. The factors such as good quality, regular availability, variety, freshness should be considered while selling fruits and vegetables through FPOs. The interest of farmers should also be taken care of, as they demand immediate payment for their produce and the price should be higher than the current market price.

### BACKGROUND

- India ranks **second** in fruits and vegetables production in the world, after China
- India produced **97.378 million metric tonnes of fruits** and **187.367 million metric tonnes of vegetables**. The area under cultivation of **fruits** is **6577 thousand hectares** and under **vegetables** is **10126 thousand hectares** (Ministry of Agriculture and Farmer's welfare, 2018-19)
- In **Punjab** state, fruits and vegetables are grown in an area of **1.92 lakh** hectares producing **37.34 lakh tonnes** with average productivity of **19.39 tonne per hectare**
- Farmer Producer Organizations are groups of rural producers coming together based on principle of membership, to pursue specific common interests of their members. Develop technical and economic activities that benefit their members and maintain relations with partners. It is a registered body and a legal entity. Producers are shareholders in the organization.
- A **residential area** is a land used in which housing predominates, as opposed to industrial and commercial areas. Housing may vary significantly between, and through, residential areas. These include single-family housing, multi-family housing, or mobile homes. Zoning for residential use may permit some services or work opportunities or may totally exclude business and industry. It may permit high density land use or only permit low density uses. Residential zoning usually includes a smaller FAR (floor area ratio) than business, commercial or industrial/manufacturing zoning. The area may be large or small. According to Ministry of

Statistics and Programme Implementation, there are 24,46,88,900 residential houses in India and 53,97,467 residential houses in Punjab

### **The specific objectives of the study:**

1. To study the marketing channel of selected agricultural commodities in study area.
2. To examine the problems faced by the farmer in present marketing channel in study area.
3. To understand the consumer buying behaviour towards direct linking of vegetables and fruits from farmers through FPOs.
4. To identify the feasibilities of linking FPOs into residential houses of metropolitan cities.

## **METHODOLOGY**

**RESEARCH DESIGN :** Descriptive research design is applied to analyse and formulate the existing mechanism in the vegetables marketing between FPOs and consumers

**SELECTION OF STUDY AREA :** The proposed study was conducted in Ludhiana district of Punjab.

**SAMPLING METHOD :** Multistage Purposive Sampling Method was used in the study

**SAMPLING UNITS :** 32 Farmers and 30 Consumers from Residential houses of Ludhiana city

**SELECTION OF COMMODITY :** 5 Seasonal vegetables and fruits which are now available in market are selected for study i.e., Okra, Brinjal, Round gourd, Watermelon, Muskmelon

## **RESULTS AND DISCUSSIONS**

### **1. Problems faced by sampled farmers in present marketing system:**

The farmers were asked to list down the problems that they are facing in the present market situation and each of the problem statement was ranked from 1 to 4 based on the importance of each factor by the farmers itself. The most important problem that the farmers think in the present marketing system is absence of fair price. This is because the farmers get very less share in consumer's rupee and most of the share goes into the pocket of middlemen such as wholesalers and retailers. Another major problem they listed was lack of storage as most of the farm produce is wasted because it is not stored under proper conditions. Besides these two major problems, farmers said that they don't have proper means of transport and they get less number of buyers.

### **2. Factors considered while selling fruits and vegetables through FPOs:**

The farmers surveyed were asked to rank the factors they consider for selling their produce through FPOs to the residents of the nearby societies. Farmers consider immediate cash payment for their produce as the most important factor if they sell their produce through the FPOs. They want more than market price for their fruits and vegetables and they want that the FPO should provide a continuous marketing facility for their produce otherwise their produce will be in excess and it will be wasted and the farmers will face losses. Grading and packaging is least preferred.

### **3. Factors that affect while buying the vegetables and fruits listed by the sampled consumers:**

The respondent consumers were asked to rank 4 factors that are preferred by them while buying fruits and vegetables. As rated by the consumers, they prefer quality of products as compared to price. Availability of products matter as if the commodity they want is not available, they would not compromise on buying something that is not liked by them. The consumers consider convenience as the least important factor as they can travel a few kms more to get a good quality product.

### **4. Expectations of the sampled consumers from the FPOs for buying of fruits and vegetables:**

For selling fruits and vegetables in a society, farmers and the FPOs must be aware of the expectations of the

consumers that what they want regarding the fruits and vegetables. so, the consumers were asked about their expectations and the results were analysed. In present scenario, people have good quality on top priority and hence demand good quality products may it be fruits or vegetables. Consumers want to have fresh vegetables and fruits because of health concerns and taste. The consumers want that FPOs should sell the fruits and vegetables at prices lower from the market and the products should be available on regular basis as if FPOs provide the products once a week, on the other days they will have to go to other places for purchasing fruits and vegetables, which is not preferred. If the fruits and vegetables are available on the doors of consumers, they will not have to travel anywhere to purchase the products and also they will save the fuel costs. People have different tastes and preferences, so the consumers want that the all the vegetables should be available to them so that they can make choices on their own.

### **Proposed Pricing Policy for linking FPOs to Residential Houses:**

1. To fix the prices adequate care should be taken. If the prices in FPOs are higher than the local market rate, there is no incentive to consumers. And if the prices fixed are lower than the wholesale market rates there is no incentives to farmers.
2. The prices in FPOs shall have to be 10 to 15% above the wholesale rates and 10 to 12% less than the local retail price

### **POLICY SUGGESTIONS**

The following suggestions may be considered for further research and development based on the above results.

1. **Construction of retail outlet in Residential Areas :** A shop should be provided to the FPOs so that they can sell fruits and vegetables from the farmers near the residential houses of the cities so that people may not have to go to the markets far away from their homes and the residents would get fresh vegetables near their residence.
2. **Provide financial assistance to FPOs for customized transport vehicle :** for transportation of fruits and vegetables from farm to the residential areas of cities, the FPOs should be provided with some financial assistance for the customised transport vehicle.
3. **Provide proper guidance to FPOs for utilising the fund provided by SFAC/NABARD :** Since people running the FPOs are not having sufficient knowledge and experience to run the FPOs, they should be provided with proper guidance and a procedure should be laid for utilising the share capital provided by the SFAC or NABARD.
4. **Create awareness about FPOs and its benefits to farmers :** Farmers are not aware of the benefits they can get by selling their produce through FPOs and very less number of farmers is connected to the FPOs. The farmers should know that by selling their agricultural commodities through FPOs, they can get better price for their produce as compared to the present marketing system.
5. **FPOs might be ranked according to their efficiency and transactions :** The FPOs who would be selling fruits and vegetables through FPOs might be ranked by the consumers according to their performance in selling the produce and FPOs should try to improve their performance and efficiency and extra benefit should be provided to those who are performing well.
6. **Creating awareness on quality, packaging, grading and standardization of commodities in FPOs :** As ranked by the consumers, they prefer good quality over all other parameters. Hence, proper emphasis should be laid on the good quality of fruits and vegetables sold to the residents of metropolitan cities. The farmers should be aware that what the demand of consumers is.
7. **FPOs should follow HOPCOMS model of Karnataka while selling agricultural commodities :** The HOPCOMS model of Karnataka can be used in setting a pricing policy for the FPOs. If the prices in FPOs are higher than the local market rate, there is no incentive to consumers. And if the prices fixed are lower than the

wholesale market rates there is no incentives to farmers. The prices in FPOs shall have to be 15% above the wholesale rates and 12% less than the local retail price. In this way, the consumers will have to pay 12% less than the present retail price and farmers will be getting 15% more than the present wholesale price.

8. **Create consumer Awareness on FPOs :** Consumers are not aware about selling of agricultural produce by the farmers. They should be provided with sufficient knowledge about the existence of these farmer producer organizations so that they can purchase fresh fruits and vegetables from the farmers at prices lesser than market through these FPOs.

### CONCLUSION

- FPOs can be profitably linked to the residential houses of metropolitan cities like Ludhiana as it would be a win-win situation for the farmers, consumers and the FPOs.
1. The consumers will have to pay less from the price they are paying now.
  2. The farmers would get more price for their produce
  3. The profit arising from selling in residential houses may be utilised by the FPOs for developing their infrastructure facilities.

### REFERENCES

*National Paper - PLP 2019-20*

*Title : Farmer Producers' Organizations (FPOs): Status, Issues & Suggested Policy Reforms(2019)*

*NABARD Portal On Farmer Producers' Organisations*

*data.gov.in*

*Ministry of Agriculture and Farmer's welfare*

## 11. RESEARCH INTERNS AND GUIDES

### Linking Farmers to Mid Day Meals Programme : An Agricultural Marketing Perspective.



**Research Intern :**  
**ANGELIN KEERTHIGA**  
Tamil Nadu Agricultural University ,  
Tamil Nadu



**Research Guide :**  
**Dr. P. Chandra Shekha**  
Director General – CCS NIAM

### Linking Farmers to Social Welfare Hostels : Direct Marketing to Benefit Both



**Research Intern :**  
**Shruti Mishra**  
Jawaharlal Nehru  
KrishiVishwaVidyalaya, Jabalpur



**Research Guide :**  
**Dr. Ramesh Mittal**  
Director – CCS NIAM

### Linking Farmers with University Hostel Mess-Direct Marketing Approach for Increasing Income of Farmers



**Research Intern :**  
**Deepanshu Goswami**  
IABM, Bikaner  
Institute of Agri Business  
Management, Bikaner



**Research Guide :**  
**Dr. Hema Yadav**  
Director – CCS NIAM

### Linking Farmers to Function Halls : Optimizing Supply Chain



**Research Intern :**  
**Bhavya .A.P**  
University of Agricultural  
Sciences, Bangalore



**Research Guide :**  
**Dr. Satram Singh**  
Deputy Director-CCS NIAM

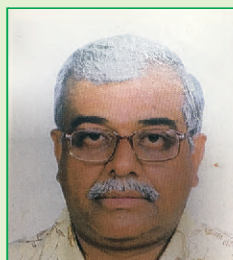
## Role of Packaging and Long Distance Marketing of Vegetables



**Research Intern :**

**P. Neelima**

Orissa University of Agriculture and Technology, Orissa



**Research Guide :**

**Mr. N.S Ranawat**

Consultant ( S&S) – CCS NIAM

## Linking Farmers to Five Star Hotels - A Value Chain Approach



**Research Intern :**

**Priyanka V.**

Orissa University of Agriculture and Technology, Orissa



**Research Guide :**

**Dr. Satish Chandra Pant**

Assistant Professor – CCS NIAM

## Warehousing to Increase Farmers Income-Awareness is the Key



**Research Intern :**

**M. V Pooja Rani**

Orissa University of Agriculture and Technology, Orissa



**Research Guide :**

**Dr. Suchi Mathur**

Assistant Director – CCS NIAM

## Linking Organic Farmers to Retail Stores – Bringing Efficiency in Supply Chain for Increasing Farmers Income



**Research Intern :**

**Kaviya P.**

Orissa University of Agriculture and Technology, Orissa



**Research Guide :**

**Miss Shikha Verma**

International Training Consultant- CCS NIAM

## Direct Marketing to Urban Consumers by FPO's : Linking Rural Production to Urban Consumption



**Research Intern :**

**Navdeep**

Punjab Agricultural University , Ludhiana



**Research Guide :**

**Mr. Satyendra Kumar**

Assistant Professor- CCS NIAM

## About Editors



associated with several professional activities.

Dr. P. Chandra Shekara, PhD. Agricultural Extension Education is working as Director General of CCS NIAM Jaipur. Professional in the field of Agriculture with 28 years of experience and expertise in the areas namely Agricultural Extension Management, Agri-Entrepreneurship Development and Public-Private-Partnership. Worked as Director (Agricultural Extension) at National Institute of Agricultural Extension Management (MANAGE). Founder Director of Centre for Agri-Entrepreneurship Development (CAD), MANAGE. Programme Director of US-India-Africa Triangular International Programme funded by USAID, India, in which Agriculture Extension Professionals from Kenya, Liberia, Malawi and other 17 African and Asian countries were trained in Agricultural Extension Management during 2013-18. Organized more than 300 national and international level training programs on different aspects of Agricultural Extension Management. Published 80 Technical papers including 21 books, made 10 films and actively



Dr. Hema Yadav, EMIB, MBA, PhD and currently Director at CCS National Institute of Agricultural Marketing Jaipur. Dr Hema Yadav, joined CCS NIAM in 2005. Prior to joining NIAM She was lecturer, Department of College Education, Govt of Rajasthan from 1992 to 2005. Specialized in International business, agribusiness management, Remote sensing and GIS, land use planning and terrain analysis. Put in 13 yrs of experience in different aspects of agricultural marketing agribusiness education, teaching, training and consultancy. In the area of agribusiness education she was Programme Coordinator from 2008 to 2017 of NIAM's two years Post Graduate Diploma in Management (Agri-Business Management), a flagship program of NIAM approved by AICTE. Organized five and international training programmes in the area of Agricultural marketing under USAID-Africa- India trilateral programme and under Feed the Future.



Dr. V.K. Jayaraghavendra Rao, born First September Nineteen Sixty-Three, in Bengaluru, presently works as Principal Scientist (Agril Extn), NAARM, holds a B.Sc. (Agri) & M.Sc. (Agril Extn). From UAS, Bengaluru, Ph.D. from IARI New Delhi, and MBA from IGNOU. Completed 19 Research projects of International and national level projects of ISNAR, NATP, NAIP, besides institute projects. Conducted more than a hundred training programmes on topics; PRA, Multimedia, priority setting, Content development, Video, Web, and mobile-based Digital production, serving both e-extension & m-extension. Has developed apps for problem prioritization of farmers. Imparted Field Experience Training (FET) to foundation course of Agricultural Scientists and Senior level trainees etc. Has guided Ph.D. & MBA students both at NAARM and outside, Teaches courses to PGDMA (Post Graduate Diploma in Agriculture Programme) of NAARM, on Marketing, Rural Marketing, Branding and Advertising, & Agri Input and Output marketing, done consultancy projects for companies like RELIANCE, COROMANDAL etc. Delivered more than 200 guest lectures at MANAGE, NIRD, NIAM, BSDU, SAMETI, APHRDI, MCHRD, RELIANCE, SAU, & ICAR Institutes Has more than 104 publications, training manuals articles books, book chapters, reports etc.,



Miss Shikha Verma Post Graduate Diploma holder in Agri Business Management from CCS NIAM, Jaipur is currently working as Consultant for International Training Programme at CCS NIAM. Associated with International Programme and implementation of Research Internship Programme. Served Bayer Crop Science as Business Development Manager.

A graduate in Agriculture from Chaudhary Sarwan Kumar Himachal Pradesh Krishi Vishwavidyalaya, Palampur (HP)