CONSTRAINTS FACED BY FARMERS IN SUPPLY CHAIN MANAGEMENT OF ONION IN KURNOOL DISTRICT OF ANDHRA PRADESH

ABSTARCT

Onion is one of India's most highly watched agricultural commodities. Onion prices have a direct impact on the average person's consumption basket. After China, India is second in terms of area and production, and third in terms of export. The market is critical to the success of any business, but it is especially vital for agricultural products like onions, which are more difficult to sell due to their seasonality, and bulkiness. The bulk of the state's onion growers are resource poor and lack storage facilities, forcing them to sell their crop to wholesalers shortly after harvest when the price is lowest. This study seeks to identify numerous challenges and restrictions involved in managing the onion supply chain, as well as identify and analyse alternative solutions that may be used to optimise onion supply chain management. It was discovered that the onion supply chain is constrained by a lack of grading facilities, a lack of grading storage facilities, and a lack of infrastructure. It must be determined that the public and commercial sectors must work together in a public-private partnership to develop physical infrastructure, information distribution, and the services necessary for quality and constant improvement of the supply chain. A sample of 120 farmers were randomly selected from Kurnool district of Andhra Pradesh. Descriptive statistics including frequency, percentage, mean, standard deviation, mean scale value were used to analyse the data.

Key words: onion growers, supply chain, channels, problems, suggestions

INTRODUCTION

India is primarily an agricultural country, with more than 60% of the population directly involved in agricultural work or related occupations such as agro-industries. Onion (Allium cepa L.) is an important vegetable crop which is consumed worldwide. It is one of the oldest bulb crops known to mankind. Onion belongs to the family Alliaceae, genus *Allium* and species *cepa*. India ranks second in area and production in the world after China and third in export. In India, it is grown in an area of 19.14 million hectares with total production of 3112 million tonnes. Andhra Pradesh state in India ranks eighth in area under Onion cultivation. The area under crop was 44,600 hectares with a production of 7,22,090 metric tonnes during the year 2021-22. (National Horticulture Board & Ministry of Agriculture and Farmers welfare, Govt. of India 2021-22-3rd Advance Estimates). We export its considerable quantity to countries like Malaysia, Singapore, Sri Lanka, Bangladesh, Pakistan, Indonesia, UK, Gulf countries, etc. Our exports generally hover around 1.00 MMT per annum. But spiralling price of onion is always a cause for concern. The prices rise sky high in years of deficit production and nose dip when there is glut. Therefore, onion is generally referred as a high risk, high return crop for the farmers and traders. (Dr Sohan Premi and Dr B R Premi,2017). The very nature of small size of land holdings by the farmers, aberrant weather condition, and typical habits of consumption (buying fresh vegetables) of the consumers and poor supply chain infrastructure makes marketing for vegetables more critical. (Kiran Kumari and R.P. Singh Ratan). One of the most challenging tasks in today's food industry is controlling the product quality throughout the food supply chain. (Aiying Rong, 2011) Issues and methodologies requires to be researched for designing a farmer friendly and cost-effective supply chain so that we could add value to it as well as make this venture cost effective for small farmers. In spite, lot of efforts have been taken by extension agencies and scientists to materialize the potential of onion, the productivity of onion was stagnate over a period of time. The major reasons were traditional way of cultivation, dominance of local

varieties, lack of supporting facilities and wide fluctuation in market price of onion which make onion cultivation unprofitable (Shashidhar *et al.*,2020) This study attempts to identify various issues and constraints involved in managing supply chain in onion and identifying strategies that can be applied to optimize supply chain management of onion.

MATERIALS AND METHODS

The study was conducted in Kurnool district of Andhra Pradesh State, India during 2022. For the present exploratory study, Kurnool district of Andhra Pradesh was purposively selected based on highest area of onion production in the state. Four mandals with eight villages were selected and from each village 15 farmers were selected. Thus, the total sample contains 120 farmers from which the data was collected and interpreted and to study the constraints of onion in supply chain. Exploratory research design was followed in the study. A pre-tested interview schedule was used to collect the data through personal interview method. The data collected were tabulated and analyzed by using suitable statistical measures. Both primary and secondary data were collected. Primary household data were collected using the pretested well-structured schedule. Secondary data on area and production were collected from the various publications of the Directorate of Statistics & Economics, Agriculture and Horticulture of the state. Garrett ranking technique was used for the study. The major advantage of this technique as compared to simple frequency distribution is that here the items are arranged based on their importance from the point of view of Onion farmers.

Garrett's formula for converting ranks into per cent is given bellow.

$$\text{Percentage position} = 100*(Rij-0.5) / Nj;$$

where,

Rij = Rank given for i^{th} item by the j^{th} sample respondents

Nj = Number of items ranked by j^{th} sample respondents

After calculating percentage positions their corresponding Garrett values were taken from the Garrett's ranking table for each rank. Then, for each item the total score and mean score have been calculated based on frequency of rank given to each factor and total number of members. Total score was calculated by multiplying the number of members ranking each problem by their respective table values. Mean score was calculated by dividing the total score by the number of members. Based on highest mean score, the ranks were given for each item.

RESULTS AND DISCUSSION

In Andhra Pradesh, onion retailing is unorganised and extremely fragmented, with a huge number of middlemen. It was discovered that conventional merchants with various outlet formats--market non-permanent stores, roadside sellers, wholesale dealers, and commission agents--serve as mediators between customers and farmers. Farmers sell their goods directly to end users at local marketplaces, or they sell through middleman agencies. The market is usually close to the farmland, and customers living in and around the area have access to the local market. However, marketing onions through agents and whole sellers is not close to the farm, and farmers must travel 10-15 kilometres on their own to sell their produce as wholesale. Farmers sell bulk of their produces to wholesalers and commission agents. With respect to market access and market orientation, three supply chains of onion is noticed in this study The research area's identified channels included

Channel-I: Producer - retailer – Consumer

Channel-II: Producer- wholesaler - Retailer - Consumer

Channel-III: Producer - wholesaler – commission agent-Retailer – Consumer

It was fairly customary to sell onions through middlemen. Farmers sell onion directly to wholesalers at wholesaler-set prices, and for truck marketing, traders or agents buy directly from farmers and deliver it to a central location where it is trucked to metro cities. Small farmers want to offer their produce to retailers directly. They were of the belief that when they sell directly to clients, the price per kilogramme is their option, and they harvest their goods in intervals based on local demand (Reddy, GP. et al. 2010).

Table.1 Constraints faced by onion growers in marketing of onion

S. No	Problems	Garrett's score	Garrett's mean score	Rank
1.	No grading facilities	8184	68.20	I
2.	Absence/Insufficient storage facilities	7440	62.00	II
3.	Fluctuation in market prices	7123	59.36	III
4.	Lack of timely market Information	7090	59.08	IV
5.	High cost of transportation	5815	48.46	V
6.	High commission charges	5349	44.58	VI
7.	Loading and unloading charges are more	5124	42.70	VII
8.	Illegal deductions while selling	3742	31.18	VIII
9.	Markets are far away	3134	26.12	IX
10.	Delayed cash payment	1959	16.33	X

The selected farmers revealed that No grading facilities was the main problem expressed with 68.20 Garrett's score by sample farmers (Rank-I). About 62.00 Garrett's score had reported for constraint of absence/ insufficient storage facilities which were ranked as second constraints while constraints as fluctuations in market prices with a Garrett's score of 59.36, lack of timely market information with a Garrett's score of 59.08, High cost of transportation with a mean score of 48.46, High commission charges with a mean score of 44.58, Loading and unloading charges with a mean score of 42.70, Illegal deductions while selling with a mean score of 31.18, Markets are far away with a mean score of 26.12 and Delayed cash payment with a mean score of 16.33. Gopala et al., (2012), Khandvi et al., (2013) and Amarnath et al., (2017), Nitin and. Goyal, S.K. (2022). They also observed that the fluctuation in market price has been found to be major problem in the marketing of onion grower. Lack of storage facility was found foremost constraints followed by lack of timely market information and high transportation cost. Due to lack of storage facilities at local level onion growers are bound to sell at price fixed by agent/ wholesalers. This stress selling reduces profit margin at grower's end. (Kiran Kumari and R.P. Singh 'Ratan)

Fig.1. Constraints faced by onion growers in marketing of onion

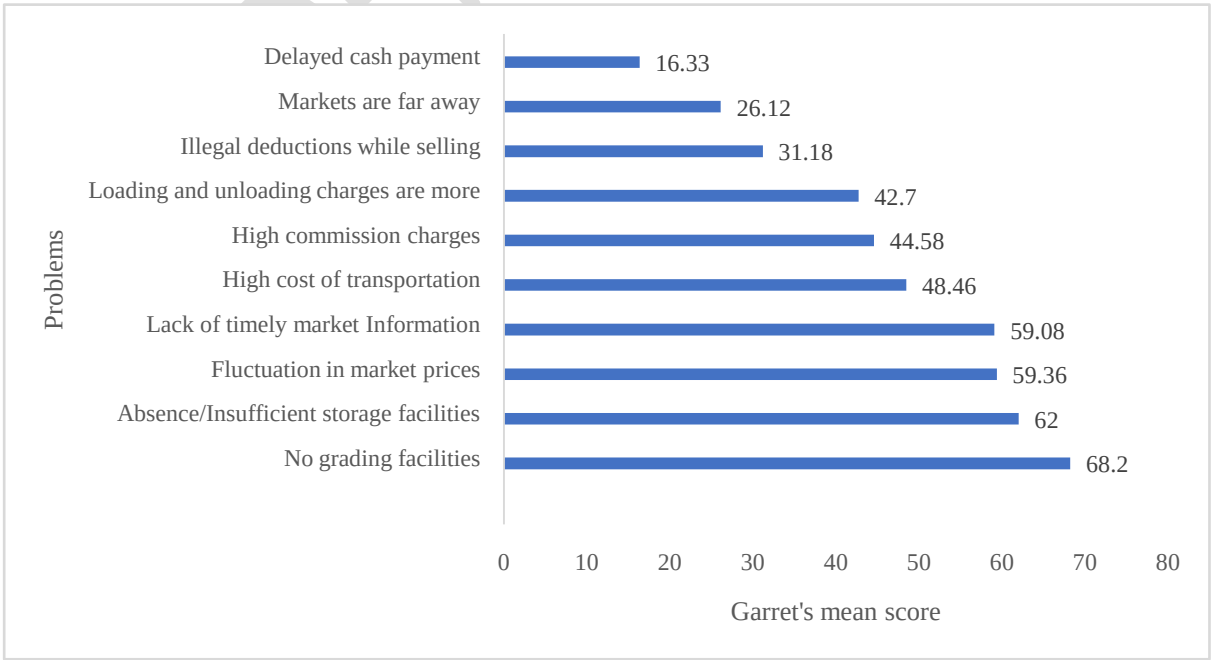


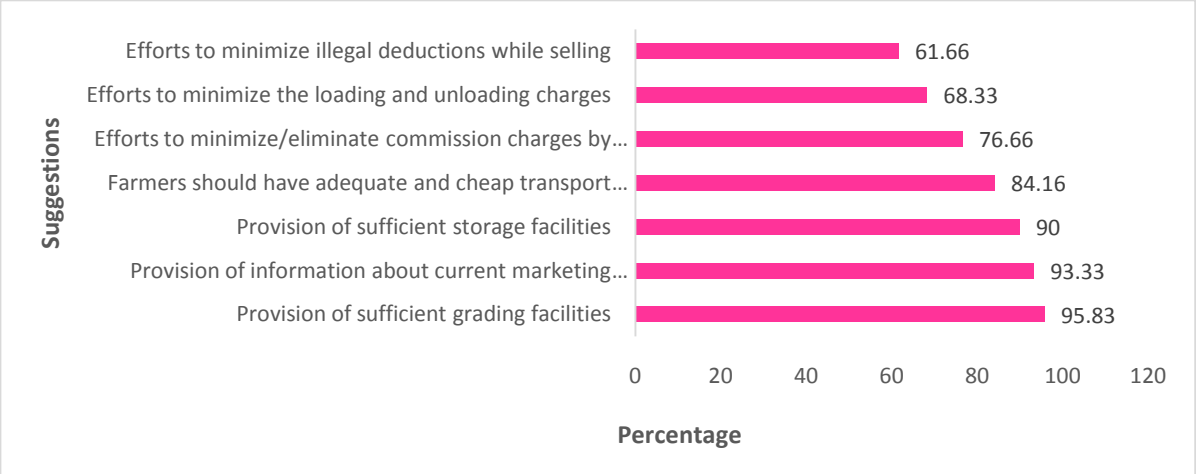
Table 2. Suggestions given by the onion farmers to overcome the problems

S. No	Suggestions	f	%	Rank
1	Provision of sufficient grading facilities	115	95.83	**I**
2	Provision of information about current marketing situations	112	93.33	**II**
3	Provision of sufficient storage facilities	108	90.00	**III**
4	Farmers should have adequate and cheap transport facilities which could enable them to take their surplus produce to the market	101	84.16	**IV**
5	Efforts to minimize/eliminate commission charges by the concerned authorities	92	76.66	**V**
6	Efforts to minimize the loading and unloading charges	82	68.33	**VI**
7	Efforts to minimize illegal deductions while selling	74	61.66	**VII**

From the Table 2 it is indicated that the various suggestions given by the onion farmers. Among these the major suggestion given by the farmers was Provision of sufficient grading facilities (95.83%) followed by 93.33 per cent of the farmers suggested provision of information about current marketing situations (Gopala *et al*,2012) provision of sufficient storage facilities (90.00%), Farmers should have adequate and cheap transport facilities which could enable them to take their surplus produce to the market(84.16%),efforts to minimize/eliminate the commission charges by the concerned authorities (76.66%), Efforts to minimize the loading and unloading charges (68.33%) and Efforts to minimize illegal deductions while selling (61.66%).As perceived by the respondent's provision of sufficient

grading facilities was suggested by majority of the onion farmers which could eliminate the most of the problems of onion farmers. It is incredibly challenging for the farmers to grade onions because there isn't enough infrastructure in place for such a facility. As a result, the price of produce will be lower for onions on the market. If there are adequate facilities for grading, quality of onion will be increased and there will be good prices for the farmers.

Fig.2. Suggestions given by the onion farmers to overcome the problems



CONCLUSION

In states where onion cultivation is abundant, such as Andhra Pradesh. The onion supply chain is a weak link in the onion's potential growth chain. Infrastructure, grading, and storage facilities are lacking. To improve price realisation, onion producers should have easier access to transportation, storage facilities, and market information. There is a need to supply market information as well as logistical help to onion producers in order to strengthen their existing marketing knowledge. Furthermore, manufacturing marketing tactics must be combined to minimise losses.

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