Original Research Article

VALUE CHAIN OF SAFFLOWER –AN ANALYSIS AND IDENTIFICATION OF OPPORTUNITIES AHEAD

Abstract

Safflower is essentially a rabi season oil seed crop that grows well under the residual moisture with very limited requirement of water. This study traced the value chain of safflower in the Vikarabad district, in realization to the increased importance of safflower as a source of edible oil in the because of its nutritional status. The value chain analysis is helpful in identifying the product flow from producer to the consumers and defining the roles and responsibilities of all stakeholders along the chain. Value chain of safflower is complex with various stake holders along the chain and also the product flow is also observed through various channels. There is a lot of untapped potential for value addition in safflower, which if exploited would help all the stakeholders along the value chain by increasing the profits to them.

Findings: *The value chain of safflower is complex with the involvement of various stakeholders along the chain and the product flow was also observed to be through various channels. Though value addition to safflower has lot of potential but not exploited to the extent due to lack of knowledge and the complex nature of the crop.*

Key words: *Value chain, safflower, value addition, input supplier, wholesaler, traders, processors*.

Introduction:

India is one of the largest cultivator of oil seeds and largest importer of edible oils and the position of India in vegetable oil economy is fifth, with 20 percent of global area and 10 percent of the global production. In India 13 percent of the gross cropped area is occupied by oil seeds which contribute around 3 percent of gross national product of the country. The agro climatic conditions of the country are suitable for cultivation of around 9 oil seed crops out of which seven are edible and the remaining two are non-edible. According to the fourth advanced estimates 2020-2021, the oil seed production in the country is 36.10 million tons which is 2.88 million tons higher than the production of 2019-2020 [7].

Safflower (kusum/kardi) is being cultivated in India for its seed oil, colored florets and the orange red dye (Carthamin) extracted from the florets. Safflower seeds contain 24-36% oil and the oil is widely used for cooking purpose. The oil is considered healthy because of its linoleic acid content (78%), which is very useful for reducing blood cholesterol content. It is cultivated in various countries like USA, Mexico, Argentina and China [4].

Safflower is an important rabi season oil seed crop. Safflower plant is highly branched, herbaceous with a height ranging between 30 to 150 centimeters. Inflorescence of Safflower is broad, flat or slightly curved and densly bristled. Safflower is generally a cross pollinated crop. The optimum temperature for inducing flowering in safflower ranges between 24 to 32 degrees Celsius. Prolonged rains during the flowering stage show adverse impact on the seed development. High temperatures also show adverse effect by decreasing the seed weight. Safflower grows well in warm temperature and dry conditions. Safflower crops also show good results even in soils with coarse texture and poor water holding capacity if there was adequate rainfall in the Kharif season. Generally safflower crop requires deep soils with good amount of stored moisture. Safflower crop is well known for its capacity to restore the soil fertility and improving the physical properties of the soil [5].

Vikarabad district has major safflower market in the state and the area under safflower also has been increasing in the study area annually with acreage of 1807.01 acres in 2020-2021 to 3348.26 acres for rabi season, 2021-2022.

This study has taken up the analysis of the entire value chain of safflower in the study area in an attempt to track the chain of activities involved from the production stage to the marketing and final consumption stage. This study also furnishes the forward and backward linkages details which involves the input suppliers, middle men and the processors [1].

Methodology:

The study was initiated to map the value chain of safflower in Vikarabad district of Telangana were the area under the crop has been increasing and farmers are directly

involved in seed production to IIOR, Hyderabad and supplying the raw material to the Cold pressed oil processing unit at ARS, Tandur. From the district, 6 mandals and within the 6 mandals, 12 villages and from each village 10 farmers were selected for the study purpose. To map the entire value chain, commission agents/traders at APMC in the district were selected.

The data required for the selection of mandals was obtained from the Joint Directorate of Agriculture, Department of Agriculture (DOA) office in Vikarabad district and Directorate of Economics and Statistics,Hyderabad. Accordingly, Tandur, Basheerabad, Peddemul, Pudur, Kodangal and Nawabpet mandals in Vikarabad district were selected purposively.

From each village 10 farmers were selected at random. The data on farm characteristic details on cultivation practices adopted in safflower cultivation, marketing of Safflower and problems in production and marketing are collected from the farmers through interview method with the help of pre-tested schedule. Major regulated market for safflower in the district was Tandur, APMC, was selected to track the entire value chain. The study also intended to study market functionaries, intermediaries at various levels of marketing as it is essential for identifying the entire value chain. Commission agents are agents between farmers and traders/processors in marketing of safflower seeds. Traders purchase the raw material oilseeds from the AMC market yard. Most of the commission agents are licensed. Oil processing units situated in and around Vikarabad and even Hyderabad purchase the safflower seeds from the farmers, traders/commission agents and process the produce to derive the value added output.

RESULTS AND DISCUSSION

Safflower, a typical value chain includes primary activities and supporting activities which also includes value addition. Value chain analysis is the process of understanding the entire structure and functioning of the value chain by breaking the entire chain of activities into its sub parts. Value chain of safflower, which is presented in the study, involves various activities that takes place at various levels, starting with input supply and continuing through product processing, and distribution. As product moves through

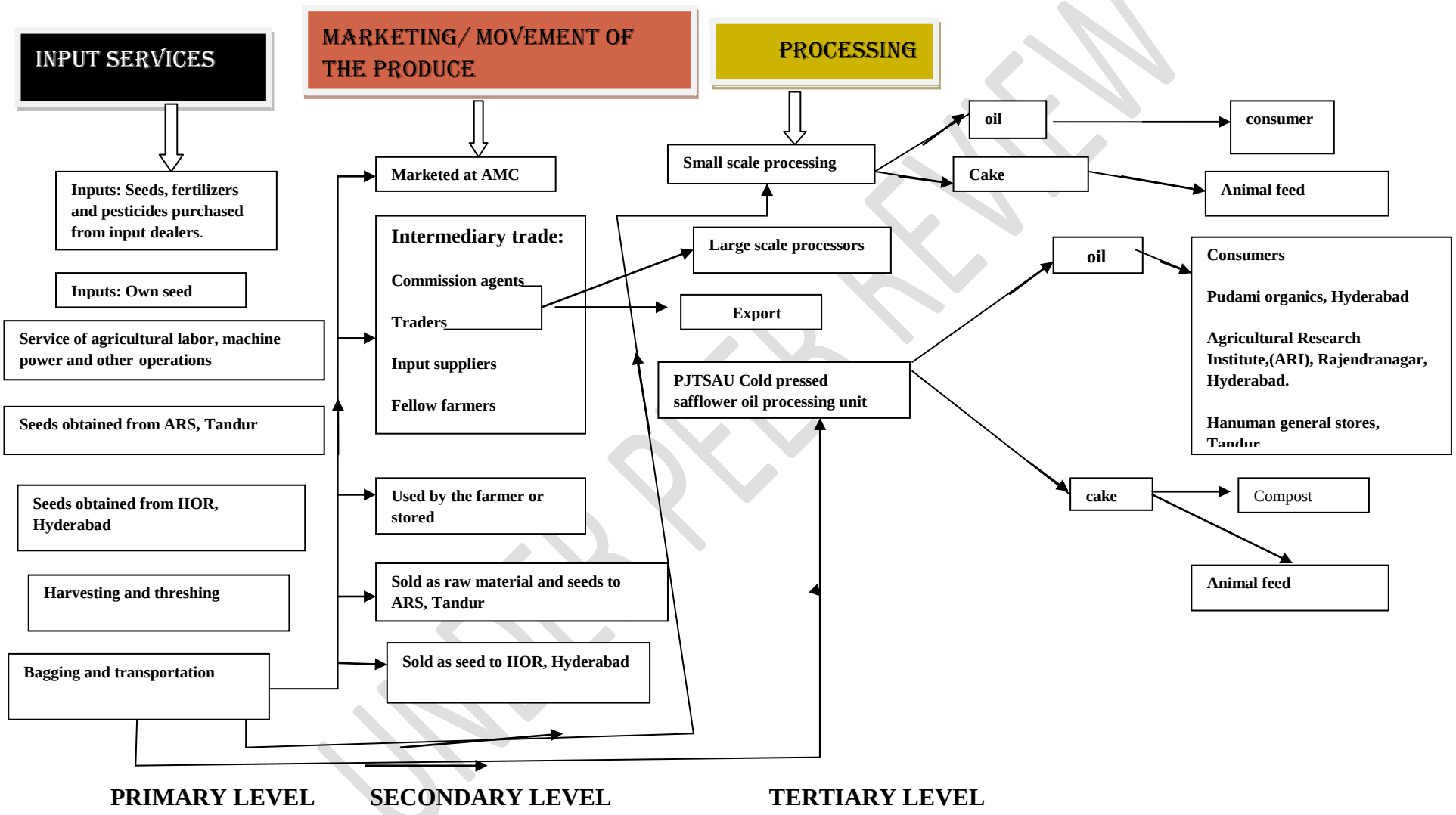
the various stages along the value chain, transactions take place between various stake holders, money and information were exchanged and value addition occurs progressively. Thus, there is a need to measure the value addition, promotion of enterprise, product quality assurance and linkages among the farmers, processors, retailers and develop competitive market place for the value added products which is essential as it improves the returns to all the stakeholders along the value chain.

Mapping the Value Chain of Safflower:

The value chain mapping is done to understand the nature of the chain actors and the relationships among them, which includes the flow of products through the chain to consumer. This operation was conducted in both qualitative and quantitative terms with the help of figures representing the all the stake holders of the chain, linkages among them and various operations of the chain starting from pre-production which involves supply of raw materials to farmers, to product processing and marketing. The value chain map which is developed, includes all the actors involved in the chain and the potential relationship among the actors of the value chain. The information furnished through mapping of value chain was obtained through a systematic survey conducted in the Vikarabad district with help of well structured pre-tested interview schedules which were used for interacting and collecting the data from the farmers, market intermediaries, processors and market officials. This study also has presented the certain secondary data which was collected from the district agricultural department and the APMC market. Value chain would furnish sophisticated and clear sequence of activities involved in the product movement from producer to consumer [2].

The detailed value chain of safflower is explained in three levels, primary level, secondary level and tertiary level. The activities in the primary level are pre-production and production related activities. In the secondary level activities are related to the movement of the produce and in the tertiary activities value addition has been explained [3].

Figure 1 : Flow chart showing input services and processing



PRIMARY LEVEL:

Production of safflower includes all the inputs and input suppliers utilized in the production of safflower. The inputs included seeds, fertilizers and pesticides obtained from the local dealers, research station as well as from the Indian institute of oil seeds research, Hyderabad. For the production of safflower various activities are carried out which are land preparation, sowing, application of fertilizers, spraying, weeding and harvesting and threshing. Later it follows bagging for marketing of the produce to various stakeholders.

The primary level key players are the farmers and the input suppliers who involved in supplying good quality inputs to the farmers in required quantities. The input suppliers supply seeds and fertilizers to some farmers on credit basis also. Farmers also clean and stores the safflower seeds for their oil and next season seed requirement.

SECONDARY LEVEL:

It involves primary marketing and the movement of the produce from the initial stakeholder in the value chain i.e. farmer. The stakeholders involved in the secondary level are AMC (Agricultural Marketing Committee), fellow farmers, local traders, commission agent, money lenders, processors and the seed producing institutions. Farmers generally sell to the fellow farmers to avoid the cost of marketing in the study area. Sometimes the produce is sold to the input suppliers who have given the inputs to the farmers on credit basis. Few farmers were selling the produce by approaching the licensed commission agents in the APMC market. It was also observed that the farmers of Mariyapur village are involved in seed production to IIOR, Hyderabad, hence they sell the produce directly to them. Most of the farmers in Tandur and Basheerabad mandal preferred to sell the produce to the ARS, Tandur cold pressed processing unit because they were receiving the benchmark MSP price at the research station. Few other farmers were selling to the locally available processing units to reduce the cost of transportation.

TERTIARY LEVEL:

Tertiary level involves value addition to the raw material i.e. safflower seeds which is essential for fetching remunerative price to the farmers. The main players at this level are the processors. The processors sometimes obtain the produce from the traders and sometimes directly from the farmers. The processors who were obtaining the raw material from the farmers were located in around the Vikarabad district and few were located outside the Vikarabad district. As if now the only value added product developed and marketed in the district is safflower oil. Although various other products like herbal tea, dye and cosmetics can be obtained they are not very popular and are in very nascent stages. The processing of safflower includes pre-cleaning for removal of dust and other particles followed by mechanical extraction of oil. The oil outcome from 100kg of safflower seeds is 25-30 kg only. Safflower oil produced and marketed by the University is being manufactured in the Research station located in Tandur mandal of Vikarabad district. It is marketed not only in the district but also outside the district as it supplies the processed oil to the Pudami organics located at Bandlaguda, Hyderabad and being sold at the University. The processors located in and around district also sell the product directly to the consumers or sometimes through wholesalers and retailers in urban and semi-urban areas. It was also identified that farmers who are cultivating safflower also process the oil by themselves directly and offer to the fellow farmers and relatives at remunerative prices.

Conclusion:

Through value chain analysis of safflower, it was observed that the chain is complicated as it is involving many stakeholders and also the product flow is also through various channels. The potential for value addition in safflower is very high but it is unexploited due to lack of knowledge about value addition and also the poor popularity about various value added products that could be developed from Safflower such as herbal tea from flower florets and orange red dye Carthamin. The crop is mostly non-popular and negelected among the farmers due to the complexity of the crop i.e. spiny nature because of which the labor assembling is difficult task. Development of non-spiny varieties which are suitable for climate conditions and good yield potential is very

essential. Production and promotion other value added products from safflower is very essential as it increases the profitability to the all stakeholders along the value chain.

Thus it highlighted the need for enterprise development, enhancement of product quality and safety, quantitative measurement of value addition along the chain, promotion of coordinated linkages among farmers, processors and retailers, and improvement of the competitive position of individual enterprises in the marketplace [6].

Recommendations:

1. The crop has to be promoted among the farming community as it has lot of potential for value additions which is helpful in increasing the farmers' income.
2. There is a need for the government to provide subsidies for Safflower farmers.
3. There is need for the development of the Safflower varieties with high oil content and non-spiny varieties with similar oil content same as the spiny varieties.
4. There is need for the popularization of various value added products of Safflower and training in development of the various value added products.

REFERENCES:

1. Adhikari, K.B., Regmi, P.P., Gautam, D.M., Thapa, R.B and Joshi, G.R. 2017. Value chain analysis of orthodox tea: Evidence from Ilam district of Nepal. *Journal of Agriculture and Forestry University.* 1: 61-68.
2. Devi, I.S., Suhasini, K and Prabhakar, B.N. 2017. Value chain of groundnut-An analysis of constraints and opportunities ahead. *Indian Journal of Economics and Development.* 13(2a): 341-346.
3. Cucagnaa, M.E and Goldsmith, P.D. 2017. Value adding in the agri-food value chain. *International Food and Agribusiness Management Review*.
4. Hambisa, E.N and Geda, M.B. 2019. Analysis of soybean value chain in Buno Bedele zone, South western Ethiopia. *Ethiopian Journal of Environmental Studies & Management*. 12(5): 509 – 519.

5. Hellin, J and Meijer,M. 2006. Guide lines for value chain analysis. Food and Agricultural organization of the United Nations (FAO), Rome, Italy.
6. Igwenagu M. O., Ohajianya D. O., Nwaiwu I. U. O., Gbolagun, A.O and Ehirim, N. C. 2020. value chain mapping and actors value added share in the catfish value chain in Imo state, Nigeria*. Journal of Agriculture and Food Sciences*. 18 (2): 120-134.
7. Karuni, Y.A and Suhasini, K. 2017. Value chain analysis of paddy in Nalgonda district – A conceptual framework. *International Journal of Pure and Applied Biosciences.* 5(4): 1567-1575.
8. Menegaes, J.F. and Nunes, U.R. 2020. Safflower: Importance , uses and economical exploitation. *Scientia Agraria Paranaensis.* ISSN: 1983-1471 .
9. Narayan, J. 2015. Economics of production and marketing of safflower in Parbhani district. *M.Sc. Thesis.* Vasanthrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra, India.
10. Trienekens, J.H. 2011. Agricultural value chains in developing countries; A framework for analysis. *International Food and Agribusiness Management Review.* 14(2): 51-83.
11. National Mission on oilseeds and oil palm. 2018. Present status of the oil seed crops and vegetable oils in India.