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A STUDY ON CASTOR VALUE CHAIN IN NAMAKKAL DISTRICT OF TAMIL NADU, INDIA

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ABSTRACT

Castor (*Ricinus communis L.*) is an important non-edible oilseed crop widely found in dry regions of the world. India is the single largest castor producer, accounting for more than 80 percent of the world's castor supply. Castor seed contains about 30% to 50% of oil content, which varies with varieties. Castor oil is extracted from castor seeds through mechanical pressing, solvent extraction, or a combination of pressing and extraction. In recent years, the castor oil processing industry faces a shortage of raw castor seeds in Tamil Nadu. At this junction, value chain analysis of castor in Namakkal district of Tamil Nadu can provide integrated, efficient and functional farmer-industry-trading-policy interface. The specific objectives taken for the study are (i) to analyze the castor value chain in study area and (ii) to find out constraints in the castor production and marketing and policy suggestions. A multistage random sampling technique was adopted with Namakkal district as Universe (first stage), Elachipalayam and Tiruchengode block as second stage unit, villages at third stage and farms households cultivating castor as ultimate sampling units. Five types of interview schedules were prepared separately for the castor farmers, processors, local traders, wholesalers, retailers. The value chain analysis and constraints analysis were carried out from the collected data. From the study, conceptual value chain of castor in the Namakkal district was developed and it gives insight into the value chain structure of the study area. The constructed castor value chain showed that various components like farmers, processors/oil mill, commission mandi/trader, and sheller-cum trader were affecting overall performance of the industry and makes it more competitive. Castor production and marketing in the study area affected by various socio-economic constraints. From the results, this study suggested that adopting contract farming business model in over all development of this sector may be useful in mitigating price fluctuation for the castor growers and processors that too erotic rainfed situation which will be ultimately beneficial to both the stake holders.

Keywords: Castor Value Chain, Socio-Economic Constraints, Contract Farming

Introduction

Castor (*Ricinus communis L.*) is an important non-edible oilseed crop widely found in dry regions of the world. It is grown both as a mixed crop and as a single crop. India is the single largest castor producer, accounting for more than 80 percent of the world's castor supply. India's overall output during 2018-19 is about 11.26 lakh tonnes and the overall area under cultivation is around 769570 hectares. Tamil Nadu is an important castor growing state in India. The major seasons for castor cultivation are June to July and November to December. Total cultivated area under castor is 0.044 lakh hectare and estimated Production is 0.016 lakh Tonnes (2017-18). Castor seed contains about 30% to 50% of oil content, which varies with varieties. Castor oil is extracted from castor seeds through mechanical pressing, solvent extraction, or a combination of pressing and extraction.

The production of castor oil is complicated and challenging. At the marketing point, farmers face several problems relating to price volatility, lack of accurate and up-to-date details, lack of proper standardization, grading of goods, inadequacy of institutional marketing issues such as damage, transport and storage costs, etc. Instability of commodity prices has always been a big concern of both farmers and consumers in an agriculturally driven country like India. The castor oil processing industry faces a shortage of raw castor seeds. At this junction, value chain analysis of castor in Namakkal district of Tamil Nadu can provide integrated, efficient and functional farmer-industry-trading-policy interface.

The specific objectives taken for the study are

i.   To analyze the castor value chain in study area and

ii. To find out constraints in the castor production and marketing and policy suggestions.

Materials and Methods

Tamil Nadu is one of the major castors producing state in India. Namakkal district of Tamil Nadu stood first rank in area under castor cultivation followed by Salem and Krishnagiri accounting to 1,707 hectares, 909 hectares and 767 hectares respectively. Hence, Namakkal district was purposively selected for the study.

A multistage random sampling technique was adopted with Namakkal district as Universe (first stage), Elachipalayam and Tiruchengode block as second stage unit, villages at third stage and farms households cultivating castor as ultimate sampling units. The data collection was carried out through personal interview using well-structured and pre-tested interview schedule. Five types of interview schedules were prepared separately for the castor farmers, processors, local traders, wholesalers, retailers. The reference year for the study was 2019-2020 and the collection of data from the sample respondents was taken up during months of February to April, 2020.

Value chain analysis

The value chain of any product make its impact on its final price of product. The component of a product always has its own role to play in existing value chain. In this study, we identified components of castor value chain and castor process value chain and analyzed through price spread and its efficiency.

Garrett's Ranking Technique

To study the constraints in castor production and marketing, Garrett's ranking technique was employed (Garette, 1969). The order of merit assigned by the respondents were converted in to ranks using the formula,

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

Where,

R_{ij} = rank given for i^{th} factor by j^{th} individual

N_j = number of factors ranked by j^{th} individual

Results and Discussion

Value Chain Analysis

The value chain map is a diagram of the various value chain actors operating in the castor crop and the product flow in the network. The movement of the product on the map is represented by the use of arrow marks. The channel also shows how the commodity or the product shifts its shape, from raw to process. A quick glance at the conceptual value chain of castor in the Namakkal district gives insight into the value chain structure of the study area. Commodities are passed from producer to consumer by commission market functionaries or intermediaries. Each of their roles or services involves a certain cost. Market intermediaries make a profit after achieving the cost of undertaking marketing operations, which is considered the Intermediary's margin. Figure .1 shows the value chain of castor processes in the region.

Constraint Analysis

Garrett scoring technique was employed to analyze constraints in castor industry. The following five constraints were identified as very important. They were,

1. Wide intra and Inter Seasonal Price Variations
2. Lack of skilled labours
3. Uncertain Supplies
4. Heavy competition
5. Fluctuating and Uncertain Demand

The identified constraints were ranked by Garrett scoring technique. From the results, it was found that uncertain supplies was ranked first (Garrett score: 64.1) followed by Wide intra and inter seasonal price variation (Garrett score: 60.3). Fluctuating and uncertain demand ranked third (Garrett score: 41.4) followed by Heavy competition (Garrett score: 39.8) and Lack of skilled labours (Garrett score: 35.3). The details were given in table .1

Conclusion

The constructed castor value chain showed that various components like farmers, processors/oil mill, commission mandi/trader, and sheller-cum trader were affecting overall performance of the industry and makes it more competitive. Castor production and marketing in the study area affected by various socio-economic constraints and the results from the Garrett ranking showed that seasonal availability was the major constraints followed by others. From the results, this study suggested that adopting contract farming business model in over all development of this sector may be useful in mitigating price fluctuation for the castor growers and processors that too erotic rainfed situation which will be ultimately beneficial to both the stake holders. All the stake holders in the castor processing and marketing should be educated about the government policies and programmes and the current events at national and global level through proper training facilities which would in turn enable the Namakkal castor sector to compete in global environment.
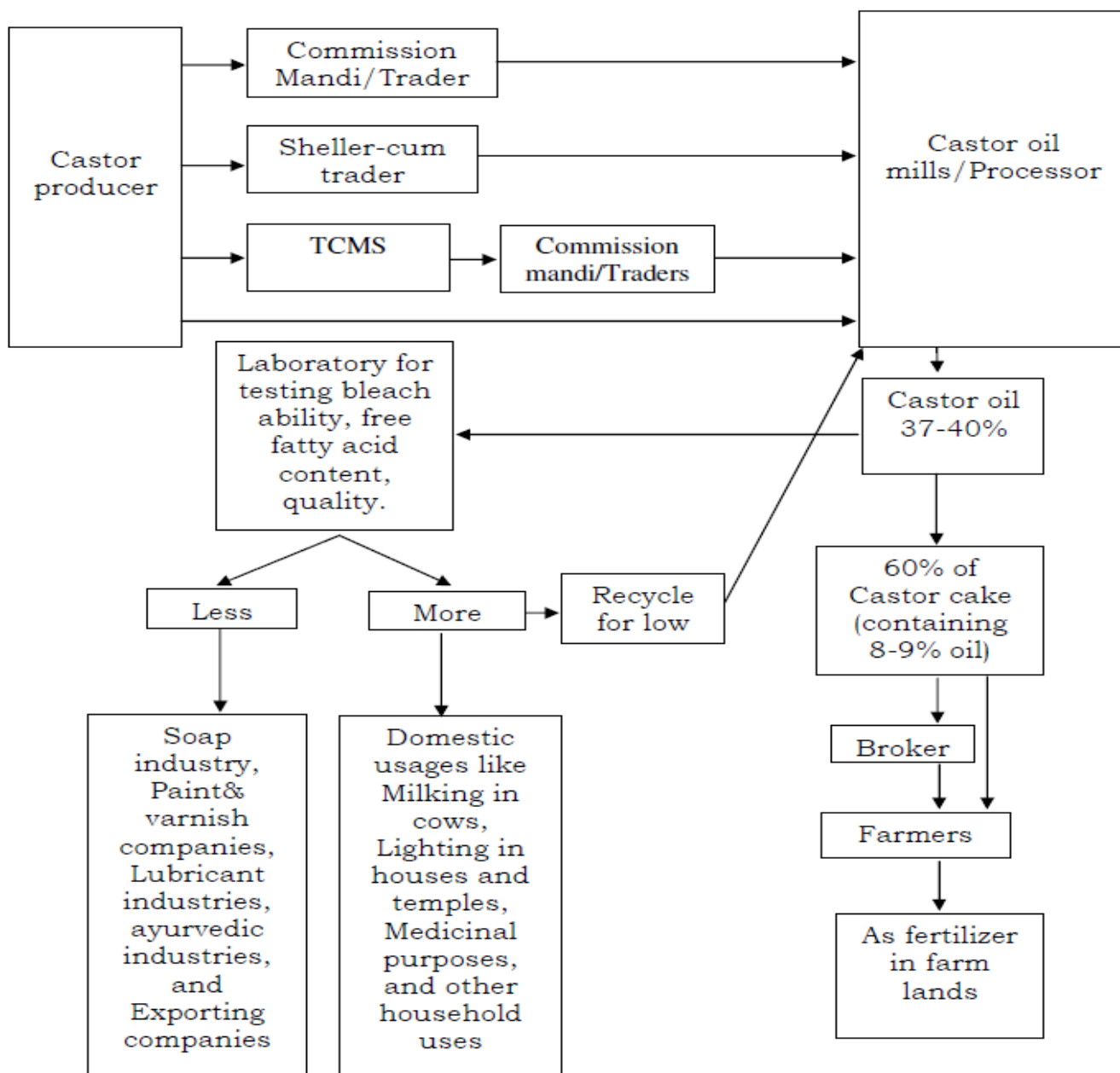
Fig. 1: Conceptual diagram of Castor Value Chain in the study area

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Table 1 : Constraint Analysis

Factors	Factors	Average Score	RANK
F1	Wide intra and inter seasonal price variation	60.3	2
F2	Lack of skilled labours	35.3	5
F3	Uncertain Supplies	64.1	1
F4	Heavy competition	39.8	4
F5	Fluctuating and uncertain demand ranked	41.4	3

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