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Organic value chain study: Opportunities, constraints and strategies for promotion of organic horticulture in Kerala

Organic agriculture is one of the production system which is supportive to the environment. The scope and potential of organic agriculture especially of fruits and vegetable farming is continuously increasing in today's scenario. Organic agriculture in India is in a growth stage with abundant opportunities and risks. Advancements in agriculture related technologies and management are crucial for accelerated and sustainable development of Indian organic agriculture sector. Integrated Organic Farming System (IOFS) models promises to meet 70-80% of organic inputs within farms and should be given impetus for promotion. According to All India Network Programme on Organic Farming (AI-NPOF), organic production is more of a description of the agricultural methods used on a farm, rather than food which combines tradition, innovation and science. Initiatives to introduce cold chain, food parks and other modern marketing strategies, and integrating value chain in fruits and vegetables have come as a fresh boost to Indian agriculture and increased the pace of transformation of the sector into a commercial and market driven enterprise. The analysis of the behaviour and perception of organic farmers, value addition centres and consumers in Palakkad, Kerala reveals that organic fruits and vegetables have huge potential inside and outside Kerala. So the value addition centres need to grow up accordingly to the new age requirement which can benefit both organic farmers as well as consumers.

ORGANIC gardening or biodynamic production of fruits and vegetables crops offers much scope for diversification and entrepreneurship development in Indian agriculture.

Among all the states, Madhya Pradesh has covered largest area under organic certification followed by Rajasthan, Maharashtra and Uttar Pradesh. During 2016, Sikkim has achieved a remarkable distinction of converting its entire cultivable land (> 76,000 ha) under organic certification. The organic agriculture has grown many folds and by 2014-15, India has brought 4.89 m ha area under organic certification process. Out of this, cultivated area accounts for 1.18 m ha (24.1%) while remaining 3.71 m ha (75.9%) is wild forest harvest collection area. Currently, India ranks 10th among the countries having cultivable land under organic certification. In terms of wild collection, India ranks 3rd next to Finland and Zambia. Sikkim state in India has been declared as organic State from January 2016 and has highest net sown area (100%) under organic certification while Madhya Pradesh is having largest area (232,887 ha) under organic production system. The domestic market for organic products in the year 2014-15 was estimated at ₹ 875 crore. India is a country with different agro-climatic zones where each state produces its own specialty products. Different parts of India have developed their own local or regional systems for ecological agriculture that are now gathered in one umbrella term *jaivickrishi* or *jaivikkheti*. In its simplistic form, organic agriculture may be defined as 'a kind of diversified agriculture wherein crops and livestock are managed through use of integrated technologies with preference to depend on resources available either at farm or locally'. The organic community has adopted four basic principles, viz. principle of health, ecology, fairness, and care. Organic production of fruits and vegetables can be made more popular and profitable through the well acclaimed Integrated Organic Farming Systems. Crop + dairy are the pre-dominant farming systems practiced traditionally by Indian farmers over the centuries. Analysis of farming systems practiced by 732 marginal households across the 30 NARP zones indicated existence of 38 types of farming systems. Out of this, 47% of households had crop + dairy, 11% had crop + dairy + goat and 9% households had crop + dairy + poultry systems. Hence, natural strength exists in the country for promotion of organic and towards organic agriculture. Integrated Organic Farming Sytems (IOFS) models established at Coimbatore (Tamil Nadu) and Umaim (Meghalaya) under

All India Network Programme on Organic Farming (AI-NPOF), could improve the net returns by 3 to 7 times compared to existing systems. India being emerged as the leading horticultural country of the world with a total annual production of 224 million tonnes of horticultural crops from 22 million hectare area can now afford to adopt practices like Integrated Organic Farming Systems (IOFS) as it can ensure the highest standard of food production with the minimum environmental impact with even highly vulnerable climatic conditions using the available resources. A study has been conducted on impact assessment of organic value chain development for promotion of organic horticulture in Kerala. The objectives of the study were to study the impact of different value chain in marketing especially of fruits and vegetables in Palakkad district, to study the impact of each value chain in the overall development of the farmer income in the study area and to study the impact of packaging organic fruits and vegetables in improvement of overall value chain in Palakkad district.

The study has been conducted at Palakkad, Kerala by identifying organic farmers who were working on different value chain of marketing fruits and vegetables and how best it could be linked to consumers for better price advantage through proper integration of value chain. The study is based on primary data and secondary data collected through sample survey of farmers' cultivating organic fruits and vegetables and also farmer groups and the value addition centres in Palakkad, Kerala. The study covers farmers cultivating mango, jackfruit and short term vegetable crops. From the district, 8 farmers and 4 cluster groups or value addition centres as well as 8 consumers of organic fruits and vegetables were selected for sampling. The data were collected from selected farmers of different panchayats of the district and consumers were selected from the urban town area of Palakkad. The secondary data were collected from departments of approved agencies working in organic agriculture. The data collected were tabulated and analysed using simple percentages and indices. The analysis of the impact in integrating value chain in organic fruits and vegetables were done through simple indices.

Perception on value chain of organic produce

The perception of eight organic farmers cultivating fruits and vegetables as well as the work done by four value addition centres in the district along with eight consumers were taken for survey and their opinion towards different marketing mix attributes were also studied and presented as under.

Organic farmer

The perception of 8 organic farmers about different attributes of marketing mix of fruits and vegetables were recorded through a pre-developed questionnaire and analysed accordingly. The farmers were asked the awareness about the produce they are cultivating and the knowledge they have in placing their produce in a graded, packed and labelled form to the customer. The farmers producing mangoes and jackfruit were producing organic produce by default as they do not use any fertiliser or chemical for cultivation and they rely on the Govt. machinary like krishibhavans for certification process. All of them were seeking the help of value addition centres for grading, packing, labeling and transportation of the produce. The farmers doesn't have a role to play in pricing factor since it is done by the value addition centres themselves but the farmers get a premium price for their produce according to the grade they are producing.

Value addition centres

The perception of 4 value addition centres in Palakkad district were taken for the study. All were the farmer cluster groups which sell the produce collected from the farmers to retailers or consumers. The cluster groups collect produce from the member farmers and after proper grading, packing and labelling as per customer requirement; prices are fixed according to the market rates. The fruits like jackfruit will be cut open and then packed and labeled, mangoes are made into boxes of 5 kg and labelled. All the fruits and vegetables are harvested and collected, brought to a consolidation centre and then graded and after proper segregation of different grades, packing is done according to the grade and then labelled by the centre and priced according to the market they are going to be sold. All these 4 centres are not professionally run. They have all records being kept as the traceability of the produce and market are properly recorded. The results reveal that the unavailability of professional consolidators are affecting the real expansion of the concept. It is also one of the reason why farmers are not opting for such linkages for getting better income for their produce.

Consumers

Eight selected consumers of organic fruits and vegetables in Palakkad urban town were surveyed to know their perception. The consumers are now more health conscious and they prefer organic produce than the normal produce. The consciousness of the consumers has been increasing steadily since the Kasargode Endosulphan issue. The consumers were ready to pay a premium price for the organic produce. The consumers were of the mixed opinion on certified organic and by virtue organic. The respondents selected were from elite class as well as upper middle class who are the purchasers of organic produce. The respondents were youngsters and middle aged people and they were well aware of the use of organic produce and they are of the opinion that organic produce should be certified and value chain needs to more stronger to ensure traceability and ensure quality of the produce.

Perception of farmers and consumers analysis

An analysis based on the survey of organic farmers, consumers and value addition centres using the elements of marketing mix was conducted.

Product

Product is considered as one of the prime elements in the marketing mix. In organic fruits and vegetables marketing, all production aspects consolidate to become a product. Proper planning of the production cycle,

selection of crop cycle, pre and post harvesting techniques deployment, all add to the product attributes. The product here was jackfruit, mango or vegetables and in case of jackfruit, the farmers harvest it when they are getting an indent or order from the collection centres. Then they grade it and cut it and take the flakes and remove the seeds and pack in food grade containers and then it will be taken by the collection centres and transported to the centres and from the centres they are transported to the retail shops as per the intend received by the centre. Here the traceability, cleanliness, appeal, packaging are all comprising to form a product and the perception of the consumers towards such an organic produce is positive and their preference is high. In case of mango and vegetables, grading happens according to shape, size and texture and fully matured fruit or vegetable is packed either in tray or carton boxes which are supplied by the consolidation centres. When it reaches the retail store it is displayed in trays and consumers take it physically. Here packaging is not happening as in other products which had a negative impact on the customer as there is no information available about the production process, genuineness of organic nature of the produce which has a slightly lower preference for consumers.

Price

The pricing factor is highly influenced by the market and so there is high influence of demand and supply which will have a fluctuating impact. The system of value addition centres and collection centres are good enough to address the product process quality and timely supply management of all agri-produce. But the results of the survey shows that the value addition centres taken for survey does not have state of the art infrastructure like grading and packing line, cold storage, ripening chamber, cold chain logistics which create an awkward situation while fixing price and either the consumer is affected with a higher price or the farmer is affected with a lower price. So the perceptions of consumers as well as farmers are not satisfactory when we analyse pricing factor. Apart from this, all organic fruits and vegetables are priced higher by these value addition centres and so the customers find it difficult to digest.

Place (distribution)

The place or distribution is one of the important attribute of marketing mix. Fruits and vegetables are filled in crates and transported in trucks, to avoid damages while in transit. Other packing methods as per the requirement of the customer are also considered rarely. Timely availability and adequate supply are considered as the most desirable features in the marketing of agricultural produce. To sustain in the market, it is essential to ensure the supply at right time and right place. The perception of the farmers here in this attribute is that they don't have any facility to transport so they depend on the collection centre vehicle and they just load it according to the order received. While the value addition centres will take the produce from the farm gate and bring to consolidation point and segregate and supply to different retail and wholesale points within a time frame of 24 hours. Even this requires proper planning and the lack of infrastructure is really creating problems in better price discovery for the farmers. The consumers on the other hand feel that the produce is reaching stores after a day and most of them are moderately happy on the freshness and quality of the produce received; but as the products are organic in nature they are ready to accept it even at a premium price. The lack of a professional supply chain creates issues in consistent supply.

Promotion

Another important attribute of marketing mix which contributes to the value chain is promotion. It is really important to recognize that simply being 'organic' may not sell your product if the product does not have attributes that consumers are looking for such as taste, packaging, convenience, health. There may be other more attractive alternatives. The consumers are not satisfied by the products supplied by the value addition centres in Palakkad and the farmers thus are not getting any benefits as far as prestige or brand value for the produce they are selling is concerned. Even though there are consolidation centres for farmers the perception of farmers and consumers towards the promotion is moderate which is not satisfactory.

Salient findings

The perception of the organic farmers is positive and more farmers want to take up organic agriculture as their livelihood. To encourage and promote organic farming in the country, support may be given to the organic farmers such as subsidy for inputs and certification in order to ensure the farmers to produce safe and healthy food to consumers. Farmers must be trained in organic farming and organic certification. More research has to be undertaken on packaging of organic produce which can enhance the quality and shelf life of the organic produce. To popularise the concept of organic production and marketing a strong, consumer awareness has to be created. Organising seminar, public meetings, Kisan gosthis, exposure visits and proving the relevant literature are needed to bring in more consumer awareness. Farmers must go for certification for getting better price for their produce. Weekly marketing of organic produce may be tried. Promotion of organic farm tours will boost morale of the farmer as well as consumers. Value addition and innovations are also important to successfully market organic products. The organic market is relatively unexploited in terms of product development, and there are many opportunities for new products which can meet consumers' needs. Supply chains, or other types of networks assist in information sharing and problem solving, and can be both vertical and horizontal. The issues of consistent quality supply are being raised by buyers, including retailers, wholesalers, and processors which need to be addressed through proper integration on value chain. The scope of marketing organic produce through online marketing has to be sought out. The awareness among the educated younger generation about food products and the positive effect of them in the economic and environmental sustainability is positively encouraging. Pricing controls has to be devised for organic products to keep prices for the consumers under check. Value addition centres need to go for branding packaging and certification of FSSAI Jaivik Bharat logo for their fresh

produce in liason with the concerned agencies. The new set of green consumers developing in the urban area need to tapped trough a proper value chain mechanism. A value chain mechanism has to be evolved for the betterment of farmers and consumers in large.

Conclusion

The analysis of the behaviour and perception of organic farmers, value addition centres and consumers in Palakkad reveal organic fruits and vegetables have huge potential inside and outside Kerala. The produce from Palakkad has got special geographical significance because of its unique topographic features especially mangoes, jackfruit and vegetables due to its off season production. As new generation retailing and food processing industry demand to link any fruits and vegetables from anywhere in the world at anytime, the support mechanism (i.e. the backend service) will be highly sought out from very professionally run organizations. So the value addition centres need to grow up according to the new age requirement which can benefit both organic farmers as well as consumers. Give the emerging demand for organic agricultural products abroad, development of domestic market is must not only to have possibilities of hedging risks but also to hone one's instinct towards the green consumers. The certification agencies as well as APEDA will have a higher role to play with the emerging challenges for organic products, since the consumer perception and response will depend on the credibility of the offering agency. Another concern is the non-inclusion of farmers' in the pricing mechanism. External calamities and erratic monsoons exacerbate the situation, resulting in hoarding, shortages and food inflation. The value chain has to expand itself to make available all those indigenous and exotic varieties of fruits and vegetables in the rural area to urban market, in a manner that will help the producers and users in large, in terms of quality, quantity based on a fair pricing method. The main revenue generation strategy for the organic farmers will be by sale of fruits and vegetables by linking the rural agricultural produce to the urban market as demanded and fetching maximum prices to the farmer groups thereby making available quality organic produce to the urban customers. Organizing farm tourism promotional events and arranging trips to the producer areas for the urban customers to interact with farmers will help these customers to have a better understanding of the modus operandi of these farms in turn working out a successful viable proposition for the farmers and consumers.

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ORGANIC SPICES

A value chain analysis of three major spices–ginger, turmeric, and chilli in the north-eastern region–was done to work out comparative costs and returns, mapping of value chain actors and estimation of compliance cost, investment and margins along the value chains. The states having the highest areas under the selected spices were selected and compared with the state adopting organic production practices. Sikkim was purposively chosen as control state as it has largest area under organic production.

In north-eastern region, ginger is grown in three farm situation—upland, terrace and *jhum*/*shifting* cultivation. The non-adopter states of Meghalaya, Mizoram, Arunachal Pradesh and adopter state, Sikkim were selected for the study. Major collection centres were identified in the selected states. The per hectare cost of cultivation of ginger in organic state was high due to the relatively higher price of organic rhizomes than in the non-adopter states. The net returns, however was highest in the organic adopter state. A huge return gap of 60.98%, 77.83% and 64.85% was observed between the states of Meghalaya, Mizoram, Arunachal Pradesh with Sikkim. These evidences implied that cultivation of organic ginger fetches premium prices. The producers' share in the consumer rupee for the organic adopted state was fairly higher than the non-adopted states.

Source: ICAR Annual Report (2020)