



Sikkim's Organic Mission: Role for Farmer Producer Organisations

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ABSTRACT

Sikkim has been declared India's first fully organic state in 2016. Complete conversion to organic farming could have been a great opportunity for Sikkimese farmers to get potential prices for their organic crops. Yet, small and unorganized agricultural holdings, lack of simultaneous development of reliable markets and other region-specific constraints have hindered its farmers from deriving potential benefits from the state's Organic Mission. Majority of the farmers still sell their organic products through road-side stalls or local markets. Failure to reach premium organic markets has diluted the very objective of this organic mission. However, when small farmers aggregate themselves into some form of farmer collectives, they can overcome several constraints as a group. Aggregation will lead to economies of scale giving them more bargaining power in both input and output markets. For extending credit, formal institutions prefer farmer groups to individuals. One such form of Farmer Collectives is the Farmer Producer Organisation (FPOs). In Sikkim, FPOs were registered in 2017. With the objective of ensuring better incomes for farmers by organizing them, FPOs can assist the state's organic mission in several ways. This paper aims to explore and identify the role that can be played by FPOs in further enhancing the organic mission and finally benefitting the small farmers of this mountainous state.

1. Introduction

In India, after the Green Revolution chemical inputs were heavily used replacing the organic inputs. High yielding variety seeds, chemical fertiliser and pesticides replaced local seeds, organic manure and locally prepared pesticides respectively. Eventually, continuous use of chemical fertilisers and pesticides degraded both physical environment and biological environment (Sharma *et al.*, 2013). This unsustainable and unhealthy system of growing our food has to be soon replaced by a sustainable way of farming that takes care of both environment and human health.

Organic farming, a sustainable alternative to the conventional farming, is becoming popular mainly due to the growing awareness among producers and consumers regarding product quality, soil and human health, environmental and lifestyle concerns (Lal *et al.*, 2019). Also,

rising demand for chemical-free food has made it an attractive agribusiness activity. Organic farming is practised in about 37.2 million hectares of organic agricultural land in the world while organic food market valued about \$59.1 billion in 2010 (Willer and Kilcher, 2012). In India, during 2017-18, organic farming was practised in around 1.78 million hectares and total organic production was 1.70 million metric tonnes (APEDA, 2018). Earlier most of the organic products were exported to USA and Europe from the developing countries, while now markets for these products have emerged in developing countries itself due to rise in supermarkets and upper middle-class population (Reardon and Berdeque, 2003). Small farmers can seize this opportunity of rising demand for organic products to improve their livelihoods.

For the small and marginal farmers of India's hilly states like Sikkim, organic farming of high value crops is geographically compatible and economically beneficial (Subba, 2014).

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However, region-specific constraints make production, processing and marketing of such organic products difficult as most of the crops grown here are high-value low-volume perishable crops. During informal interactions, local growers in Sikkim have also reported other challenges of organic farming like organic crops having shorter shelf life and being more susceptible to diseases as compared to inorganic crops.

As long as Sikkimese farmers operate individually, overcoming these constraints will be difficult. However, certified organic producers groups can enable the hill farmers overcome such constraints. This paper discusses Sikkim's organic mission and existing bottlenecks and also proposes FPOs as a possible approach to overcome the existing barriers through a collective action and realize the best outcome of this policy

2. Sikkim and its Organic Mission

Sikkim is a small land-locked state in Northeast India. Around 89 per cent people are based in rural areas and are dependent on land while around 64 per cent people directly depend on agriculture for livelihood. Agro-climatic conditions in the state varies from sub-tropical to alpine creating a favourable region for a wide variety of crops, fruits, vegetables and commercial crops to grow. Such ecological environment supports cultivation of variety of crops but at a smaller scale. In Sikkim, most of the land are steep, mountainous and rocky slopes leaving very little land for agriculture. Only 17.18 per cent of the total geographical land of Sikkim is available for cultivation of which less than 9 percent is irrigated (Sikkim Development Report, 2008). Green Revolution benefitted other states having developed irrigation facilities in terms of increased production and productivity whereas, hilly states like Sikkim and other North-eastern states could not be benefitted due to lack of adequate and timely fertiliser, undeveloped irrigation and fragile soils (Sharma *et al.*, 2000). In Sikkim, organic farming was traditionally practised in its rural areas since many years. However, when chemical substitutes for plant nutrients and pesticides were easily available in the later years, wide use of chemicals in the farms occurred since 1975-76 (Subba, 2014). Still, large areas under some particular crops like large cardamom remained untouched by chemicals though. Thus, chemical fertiliser usage in the state (12 kg/ha) was quite below the national average (90 kg/ha). This helped later in easy adoption of organic farming. Sikkimese farmers own an average of 1.9 hectares of farmland. Thus, to maintain environment quality and traditional farming of the state, a

resolution was passed in the Sikkim Legislative Assembly in 2003 to transform Sikkim into a totally organic state. Use of chemical inputs and subsidies on these lands were completely prohibited and the state was aimed to be made fully organic by 2015.

In the initial stage, large scale support on chemical fertilisers, insecticides and pesticides were removed. Experts were mobilised to conduct massive public awareness and disseminate techniques of organic farming to the farmers. In the next stage, around hundred villages were selected and termed 'Bio-villages' where farmers were trained on organic farming techniques and producing organic manure through rural composting, herbal composting and vermi-composting, by making use of locally available materials (Sikkim Towards Fully Organic State by 2015, 2012). Local medicinal plants were used as organic pesticides. Subsidies were provided for improvement and construction of manure production infrastructures like vermin compost pits. Certified organic manures were made available. Organic farming was integrated with livestock for dung and animal manures. Government of Sikkim formed a joint venture with Indian Farmers Fertiliser Cooperative Limited (IFFCO) called SIKKIM IFFCO ORGANIC LTD which will provide the farmers with agri-inputs, bio-fertilisers, processing and marketing of organic produce assisting the state in its organic mission. An MoU was signed with Sikkim State Cooperative Supply and Marketing Federation Limited (SIMFED) to provide market linkage to the certified farmers. Eventually Sikkim was proclaimed as a fully organic state of India by the Prime Minister on 18th of January 2016. The Mission has positive impact on cost of production which is lower than under the inorganic farming. Benefits of organic farming on human health and environment have been experienced by the farmers. However, simultaneous development of marketing has been a bottleneck not properly attended. As a result, the farmers are not able to enjoy the financial gains as they should have and which they deserved (Partap, 2013).

3. Experiences: Global and Indian

Besides being environmentally safe, organic farming has also proved to be economically lucrative for farmers around the globe. Organic farmers in Syria have been benefitted with better employment opportunities and higher export earnings from organic farming (Issa and Hamm, 2017). In many developing countries, it has also been used to improve household food security or to achieve a reduction of input costs. It can act as a tool for poverty reduction. In Thailand, organic farmers spent 56 per cent lesser on health than

conventional farmers leaving them with more income to spend on other necessities (Setboonsarng & Lavado, 2008).

However, organic agriculture has lower yields and incurs high cost of certification. For example organic coffee had average yield of 522 kg while conventional coffee farming had a yield of 812 kgs in Nicaragua. While comparing organic and conventional farming in Croatia, Loncaric et al. (2008) found that farmers in organic farming experience lower yields which are not sufficient to meet the demand of rising population. OA resulted in 15-22 percent lower yields and incurred higher costs than conventional agriculture. But loss in yield occurs after transition only for the first 3-4 years (Ramaiyan et al 2008). Moreover, not only production but marketing of these products should also be developed simultaneously. Small farmers face exclusion. In Mexico's organic coffee market, small farmers are excluded by the high cost of organic certification and a competitive market that favours the large farmers. In Brazil, buyers often delay the purchase of organic produce from small farmers in order to force them to sell at lower prices (Blanc, 2009). Thus, collective marketing through farmer groups can be a solution.

In Nicaragua, it was mandatory for small coffee farmers to be a member of cooperative in order to be organically certified due to two main reasons: high-cost of certification and lack of a marketing channel outside the cooperatives. Such groups reduce the cost of inspection, certification, monitoring and supervision as well as to export their produce (Ramaiyan, 2008). Sikkim farmers shifted adopted organic farming with assistance from the state government. Mandal et al. (2008) suggests that high costs of certification can be reduced substantially by organising themselves under farmer collectives. In Meghalaya, the cost of certification for organic spices is Rs. 12,500 per hectare which is being borne by the Spice Board of India. Subba (2014) has pointed lack of a co-operative marketing for organic foods as a disadvantage for Sikkimese farmers.

4. Challenges Despite Organic Mission

Marketing: Poorly developed marketing networks have prevented the farmers from earning potential prices. Majority of world's small farmers still take their produce to the nearby towns and sell it to wholesaler (Kledal et al., 2013). In Sikkim, recently emerged FPOs aim to help farmers skip this unprofitable link and reach premium markets outside the state. However, to enter these highly organized markets, farmers must supply large quantity of quality produce consistently and reliably. Doing so is impossible for Sikkimese organic farmers individually

but possible if they organise themselves into a farmers' group.

Economies of Scale:

Hill farmers in Sikkim cultivate crops in small quantities in small land plots. Adoption of organic agriculture has depressed the yields further (Chettri, 2015). Due to low availability of labour and low level of farm mechanisation, scale of operations is small in hills. When they use inputs in smaller amounts and also sell output in smaller amounts, they face high costs of cultivation. They can realise higher prices by selling to high value markets only through some form of farmer collectives.

Lack of post-production infrastructure:

Poorly developed post-harvest infrastructure has always kept farm income and opportunities at low levels. Sikkim mostly grows horticultural crops that need either quick transportation to nearby commercial centres or cold storage facilities within the state. The state lacks both. On top of that, poor road network, minimal processing facilities and weak marketing channel compel the farmer to sell at local markets or to the middlemen at lower prices.

Access to Credit:

Sikkimese farmers also rarely approach formal lending institutions which require farmers to present different documents before considering them eligible for credit. Besides, getting loan is even more complicated in Sikkim because land cannot be held as collateral; as a result, farmers are heavily indebted to traders, commission agents and middlemen leaving them very little space for bargaining on prices.

Ban on inorganic vegetables:

In April 2018, around ten metric tonnes of inorganic fruits and vegetables from Siliguri were dumped and buried near Rangpo. However, total production in Sikkim could not meet the state's demand and resulted in severe shortage of fruits and vegetables doubling the prices. Later the ban was gradually lifted for some vegetables. During field visits, some farmers even complained that instead of Sikkim's organic produce fetching higher prices, inorganic vegetables from Siliguri are undeservingly sold at very high prices only few rupees lesser than the state's organic produce. Since the products are mostly sold at local markets or roadside stalls where locals are not ready to pay premium prices, the mission is unable to provide higher returns to the farmers.

5. Role For FPOS In Organic Farming

In 2017, around 30 FPOs were registered in Sikkim in order to aggregate the state's small farmers to enable them in production and marketing activities. Since most of the Sikkimese farmers are small and do not possess volume individually (both inputs and outputs), FPOs ensure better income through aggregation and economies of scale. Farmer organisations can play a significant role in promotion of organic agriculture (Singh, 2004). Another study by Chettri (2015) has found empirical results supporting the notion that if organic farmers are organised as a group, they can benefit themselves more compared to individual organic farmers. It has been found that across 4 districts of Sikkim, group-based organic farmers could utilise government facilities and other resources more effectively than individual organic farmers. Also, organic farmer groups in East Sikkim were able to find proper marketing channels for their produce. Finally, mean per capita income was also higher for group-based farmers than individual farmers. Thus, organic farmers can be benefitted more if they organise themselves into groups.

Different aspects where FPOs can help:

Economies of Scale through aggregation:

Farmers in rural areas of Sikkim produce crops in small quantities and consume inputs in smaller amounts. Thus, they face high costs of cultivation. Aggregation and supply of their produce to high value markets through farmer groups can fetch higher prices. Collective provision or purchase of expensive inputs can be made accessible to small farmers also (Singh, 2004). The strength of FPOs lay in the collective action of farmers which results in economies of scale and increased bargaining power with the farmers. Thus, if Sikkimese farmers aggregate themselves under a producer organisation and aggregate their demand for inputs and sale of outputs, they will gain greater volume and economies of scale. As such, average cost for inputs will fall while the outputs will be sold at higher prices.

Market:

Even after certification, major amount of organic crops in Sikkim are sold within the state. Organic farming has become only partially-successful for the Sikkimese farmers as their high-value organic crops are sold mostly within the state at lower prices. Such products can fetch good prices only when they reach bigger cities like Delhi, Bangalore and Mumbai where supermarkets, retail chains and large processing firms are emerging rapidly and urban population's demand for healthy organic food is increasing. FPOs have the ability to directly connect these small hill farmers of Sikkim to the

high-value markets of the metropolitan cities provided the farmers supply quality output. FPOs through fair and transparent transaction with bulk buyers can provide assured markets and best price for the organic produce. FPOs can deal with contracting companies for selling organic produce to secure best possible prices.

Value-addition:

Sikkim grows large cardamom, oranges, ginger and turmeric. Farmers have reported that organic crops have shorter shelf-life than the inorganic crops. After harvesting, most of the farmers immediately sell away the crops to the middlemen. These middlemen clean and sort the crops in their godowns and further sell the crops to other agents at higher prices. If the processes like cleaning, sorting, processing, packaging and labelling are done by farmers themselves collectively, they can get better prices compared to what they get by selling crops directly at farmgate.

Input production:

In Sikkim, fertilisers are prepared by the farmers using locally available farm residues. Thus, cost of fertiliser consists of only manual labour cost. Cost of fertiliser will involve manual labour costs for collecting, transportation composting and applying. In a study about Nicaragua, Valkila (2009) has found that fertilisation cost is lower for organic farmers than inorganic farmers if organic materials are easily available near their farms. FPOs can produce inputs at low costs so that the profit margin expands.

Awareness:

It's difficult to reach each individual farmer and provide hands-on training to all of them. All the stakeholders of organic farming, i.e. farmers, consumers, government agencies, marketing agencies, etc can be sensitised by Local Resource Person (LRP) about the importance of organic agriculture in terms of health, environment and market prospects through FPOs. This will not only expand organic market in the future but also encourage the state to extend more support.

Training:

Only those organic crops fetch premium prices that meet certain quality standards. In East Sikkim, farmers reported that some of them were spraying pesticides directly to the plant which was actually meant for roots. Thus, right knowledge disseminated through regular trainings and demonstrations is necessary to enable the farmers to grow quality crops in order to make it marketable.

Infrastructure:

During field visits, it has been learnt from farmers that organic crops have lower shelf- life and more susceptible to diseases. Villages lack cold storages necessary for keeping organic products fresh. Inadequate transportation infrastructure further delays quick transport of these crops. A production facility for biofertiliser and biopesticides can be established to produce and supply organic inputs to deficit areas. Sikkim currently exports large cardamom. But to gain maximum benefit from such exports, food safety requirements, high level of coordination and a strong processing sector are necessary (Kledal et al., 2013). However, it is almost impossible to setup these facilities by individual farmers. Rather, it requires a collective action by the farmers.

Involving Self Help Groups(SHG):

Organic farming highly depends on the usage of manures, organic fertilizers, bio-fertilizers, vermi-compost, bio-pesticides, etc. Thus, regular and adequate supply of organic inputs is necessary for rapid expansion of organic farming in this mountainous state. For this, FPOs can involve SHGs for producing certified organic inputs. The transfer of technology for production of certified organic inputs along with training, financial assistance, facilities for distribution and marketing should form the major components of such schemes for the SHGs.

Exports:

Rising demand for organic food in the developed countries has motivated the developing countries to increase land under organic farming. US and the European Union are the biggest consumers of organic food (more than 90 % in the last two decades) (Sahota, 2017). FPOs can link with buyers in these countries and grow and export products that meet their criteria.

6. Conclusion

Sikkimese farmers have hardly benefitted from the state-wide organic mission as most of the farmers still sell their produce through roadside stalls or local markets. Very less products manage to reach the large markets in Indian cities and to the rest of the world, no doubt, through a series of middlemen. This situation calls for institutional arrangements that can enable Sikkimese farmers overcome the existing constraints and directly reach the markets they deserve. FPOs can play this important role in complementing the state's organic mission if they are supported through appropriate policies by the government. Collective action

should be encouraged that can provide numerous benefits to the small farmers of the state. FPOs can also be used to provide a stronger link for dissemination of information on new techniques and initiatives. Even the formal lending institutions should be made aware of the concept of FPOs and encourage provision of collateral-free loans to them. To make FPOs more effective, the state should focus on creating infrastructural facilities (irrigation, road, storage and warehousing) and promoting research. Farmers are fulfilling their duty by shifting to organic farming. Now it's with the government to ensure that organic certification is up to international standards and the crops find reliable and profitable markets so that farmers receive the potential prices for their organic produce. Integrating organic mission with the FPOs can be a viable solution in the days to come.

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