

An Enquiry into the Challenges of Organic Farming in Sikkim

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Abstract

Sikkim's state legislature passed the resolution of shifting to organic farming in 2003 and disbanded chemical farming in 2014 following which there has been a sizeable decline in produce. Organic methods have proven ineffective in combating pests and crop diseases, while organic farming land certification is expensive and a burden on farmers. The lack of proper marketing and improvisation in organic farming is glaring, while import of conventional produce from neighbouring states hampers the organic market. This study aims to explore the challenges faced by organic farming in Sikkim and to cite causes and remedies of such challenges.

Key-words: Sikkim, Organic, Agriculture, Environment, Economy

1. Introduction

India was not self-sufficient in food until 1964 and had to repeatedly ask for foreign aid. The Green Revolution was thus, a necessity whose importance cannot be downplayed even today. The use of chemical fertilisers and pesticides resulted in the development of high yielding variety of crops that transformed India from a food importer to a food exporter. At that time, these technological breakthroughs were lauded, and the practices slowly became mainstream.

Sixty years later, the side effects of widespread chemical use have started to show. The Malwa region in Punjab has been dubbed as the cancer belt of India – with the unusually high incidence of cancer cases being linked to the excessive use of chemical pesticides by cotton farmers. In its fifth National Report on Desertification, Land Degradation and Drought, the Government of India has conceded that land degradation is a major environmental concern for the country. The report revealed that one-third of India's soil is degraded while 25 percent of land is facing desertification which has affected its productivity and food security of millions across the country.

The solution to the problem is to build a sustainable agricultural system without the use of chemicals – a phenomenon that has been termed as “Organic Farming”. According to the United States

Department of Agriculture (USDA), “Organic Farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilisers, pesticides, hormones, feed, etc.) and to the maximum extent feasible relies upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilisation and plant protection. While the concept of organic farming is new to the country – and to most of the world – it is being increasingly hailed as the safe and preferred alternative to chemical-based farming. With consumers becoming increasingly health conscious, the Indian organic food market is projected to grow over 25 percent by 2020.

In spite of this, organic farming was perceived by many to be a second non-mainstream agricultural alternative – accounting for only 1 percent of the total agricultural produce of the country. However, Sikkim has shown the way for organic farming by becoming the country’s first organic state – a move which has emboldened other states (such as Andhra Pradesh) to replicate which has come to be widely known as the “Sikkim model”.

2. Literature Review

Muller (2009) points out the benefits of organic farming as a climate change adaptation and mitigation policy for developing countries. Aher et al. (2012) has examined how organic farming plays a role in the sustainable utilisation of resources in food production and in reducing pollution. However, Wynen and Vanzetti (2000) opine that the success of organic produce would be much greater if the organic produce were priced similarly to conventional produce, as for the most part, the lower demand for organic produce may be attributed to consumer aversion to higher prices.

In contrast, Dimitri & Kemp (2012) argue that farmers are expected to not only earn more but also to turn profits, thus justifying higher prices of organic produce. Siddaraju & Indira (2013) contributed a similar study where they have tried to highlight economic performance of organic and modern agriculture. They found that the performance of organic agriculture was more economically profitable comparing with the modern agricultural system and the income generated from organic agriculture is greater than that of modern agriculture. Singh and Grover (2011) have dealt with economic viability of organic farming on an empirical experience of wheat cultivation in Punjab. The study touches on the major issues of organic farming like area of production, total variable cost per acre and net returns of organic as well as inorganic cultivation. The study has revealed that the major share of organic area was dominated by wheat crop (about 15%) and the total variable cost on per acre for organic wheat cultivation has been found to be less compared to inorganic wheat. Simultaneously, the net returns over variable cost have been found to be higher for organic wheat (Rs.21895/acre) compared to the inorganic variety (Rs. 16700/acre).

Pandey & Singh (2012) hold the opinion that growth of organic farming is relatively slower in India than other countries. According to Reddy (2010), this is due to the fact that organic farming has been largely excluded from the agricultural policy of the country, resulting in less government assistance than in case of conventional farming. Archana (2013) has carried out the study on the role of Indian Government for the development of organic agriculture. The author argued that, for enhancing organic agriculture government interference is much needed in Indian Agricultural sector particularly in organic farming. By providing more subsidies and providing knowledge based on adverse effects of chemical based agriculture sector, organic agriculture can be encouraged.

Other benefits of organic farming have been explored by Subrahmanyeswari & Chander (2011) who examined the possibility of using organic farming as a tool for achieving gender equality in India.

Kundu (2012) has reported similar findings by working with women empowerment and has found that participation of women in different socio-economic activities based on the self help group model has resulted in a distinct improvement in their respective status.

3. Statement of the Problem

Organic farming is a practice that has been historically favoured by the farming community in the state of Sikkim. However in the course of time chemical fertilisers and pesticides replaced organic nutrients. With reference to the literature on Sikkim there is a plethora of descriptive work and hardly any exploratory efforts. If contemporary issues like community development and sustainable livelihood are taken into consideration, research on organic agriculture in the state would be beneficial at the national level in general and Sikkim in particular. This will have particularly resonant effects in the present scenario when Sikkim is the country's first organic state and other states are aiming to follow its model.

The present study could be beneficial for both policymakers as well as cultivators for the development of organic farming and sustainable livelihood practices in Sikkim. The study has, on a basis of a survey conducted by the authors, prepared a case study that explores the issues of organic farming in Sikkim and its effect on the livelihood of farmers and the economy of the state. It also looks into the problems that organic farming brings in its wake and how they can be mitigated. Thus it could be beneficial for providing a more holistic view of organic agriculture as it is carried out in the state of Sikkim.

4. Objectives of Study

In order to enquire into the challenges of organic farming in Sikkim, the following objectives were laid down:

- (i) Identify the various factors that define success of an agricultural scheme;
- (ii) Develop quantifiable measures of the factors as identified above;
- (iii) Assess the challenges faced by the organic farmers in Sikkim;
- (iv) Develop a model of mitigating said challenges;
- (v) Assess the viability of such model in the present context.

5. Research Methodology

In order to achieve the aforesaid objectives, the following research methodology has been adopted in this study:

- (i) A case study has been framed after careful consideration. The case study is completely factual, and the data presented therein is true. The study makes an enquiry into the state of affairs of organic farming in Sikkim, with regard to the condition of the farmers, the volume of yield, government aid and marketing initiatives of organic produce.
- (ii) The challenges faced by organic farming in Sikkim have been identified on the basis of the case study and the same have been summarised.
- (iii) The deeper problems that might arise from the problems and result in the failure of the organic farming initiative in the state have been identified.

6. An In-depth Analysis of the Sikkim Model of Organic Farming

In January 2016, Sikkim became India's first "100 percent organic" state. Today, all farming in Sikkim is carried out without the use of synthetic fertilisers and pesticides, providing access to safe food choices and making agriculture a more environment-friendly activity. Theseeds of the transition from chemical-based to organic farming that Sikkim effected were sown in 2003 when the

Pawan Chamling-led government decided to make Sikkim an organic farming state through a declaration in the legislative assembly.

The declaration outlined important measures to discourage use of artificial fertilizers and pesticides and gradually substitute plant nutrients by organic manures and fertilizers to control diseases and pests & insects as well. It also started basic infrastructure and statutory development providing the pre-requisites for initiation of actual organic farming in Sikkim, including the created markets for organic food products along with the evolution of related strategies. The Government of Sikkim had shown an outstanding inclusiveness through none-left-untouched vision and effective implementation of the organic programme. As a part of the capacity building, Govt. of Sikkim took many steps, from including study of organic farming in the school curriculum to training sessions at micro level.

A state-wide organic farming requires serious infrastructural facilities and basic amenities. The Sikkim Government not only standardised the products as per the market demand but also certified the agricultural products for their marketability. Making availability of recognised marketplace and infrastructural facilities for transportation played a pivotal role in the overall development of Sikkim as an organic state.

The Government of Sikkim realised that a behavioural shift in the habit of farmers to using organic requires a policy makeover where it is necessary to simultaneously encourage organic farming and make the chemical fertiliser and pesticides unavailable. From 2003, the state began reducing the subsidy on chemical pesticides and fertilisers by 10 per cent every year and banned them completely in 2014. Their sale and use were made punishable by law with an imprisonment of up to three months or a fine of up to Rs 1 lakh or both.

Although there were initial apprehensions about farmers refusing organic techniques, the Sikkimese people were originally organic farmers, well-accustomed to traditional ways of making manures and pesticides. The government campaigned and organised various programmes and seminars to encourage the native people to return to their traditional and biological techniques for making manures and pesticides but in a more scientific way.

The transition from chemical-based to organic farming was easy for Sikkim as the per hectare consumption of fertilisers in Sikkim was already among the lowest in the country (at 5.8 kg per hectare). Farmers had also traditionally never used chemicals in the cultivation of cardamom, one of the main cash crops of the state. The government saw huge potential for the trade of high-value crops such as cardamom and ginger and, hence, the 2003 resolution to the effect was passed in the Sikkim Legislative Assembly.

Of all steps taken by the Sikkim government towards becoming an organic farming state, the largest effort was devoted to getting all its agricultural land (78,000 ha) certified as organic. From the beginning of the state's organic plan in 2003 until 2010, the state had got only 8,000 ha certified. But with the launch of SOM (Sikkim Organic Mission) in 2010, the proportion of certified land in Sikkim saw a steady increase. Farms spread over 18,234 ha were certified in 2010-11, 19,216 ha in 2011-12, and 19,188 ha in 2012-13. Finally, by December 2015, the entire agriculture land in Sikkim had been converted into "certified organic". The work of over 12 years culminated in the spread of organic farming to over 75,000 hectares of land in Sikkim and it was certified as India's

first organic state. Contrary to initial speculation, the title is not merely cosmetic as out of 1.24 million tonnes of organic produce of the country, Sikkim accounts for 80000 million.

7. Case Study

We visited 16 farms spread over the four districts of the state—North Sikkim, South Sikkim, West Sikkim and East Sikkim—in November 2017 and found that the farmers' experience of organic farming was far from satisfactory.

In Poklok-Denchung gram panchayat near Namchi, the headquarters of South Sikkim district, 85-year-old Nar Bahadur Rai is a disappointed farmer who grows maize, ginger and cardamom on their two-hectare (ha) farm. Since 2011-12, when he stopped using synthetic chemicals, his ginger production has plunged to only a third of the amount he used to grow. A fungal disease called sheath blight has affected his crop and Rai has received no medicines for it from the government and that the manure promised was also in short supply.

Six kilometres away, farmer Revathy Sharma faces other challenges. He grows pulses and maize on his small farm of about 0.6 ha. His pulse yield has fallen drastically since he switched to organic farming. "When chemicals were allowed, I could grow 280 to 300 kg of pulses and now, after 4 years, I barely manage to grow 80 to 85 kg." he says. Sharma cites low productivity of seeds and the outbreak of pest attacks as the culprits.

In West Sikkim district, Dawa Cessering Lepcha, confirms that his ginger yield has halved since he stopped using chemicals. "Pest attacks are common, and we have not received sufficient training on dealing with them. The department taught us how to make some medicine for pest attacks, but that was ineffective," he says. Sharma from South Sikkim says he has reverted to the traditional practice of using cow dung and cow urine to fight pest attacks, none of which match the effectiveness of chemical pesticides.

Government data shows that apart from Sikkim mandarins (a native orange variety of Sikkim), the productivity of every crop has either remained stable or improved slightly from 2010-11 to 2015-16. But we found that only two of 14 private farmers reported an increase in yield and one said that his ginger yield had stabilised after an initial decline. Seven farmers who grew rice, maize, ginger, cardamom, pulses and vegetables said that their yield has worsened since they stopped using chemicals.

The farmers are unable to charge a premium price for their produce – which is usually the norm for organic produce. One of the farmers told us that ginger used to sell for Rs.1,500 per maund (1 maund equals 37 kg), but now fetches only Rs.1,000-1,200 per maund. The reasons for this reduced price are varied: some cite a general decline in market prices, while others say organic produce commands a lower price than conventional produce as it tends to spoil faster. Farmers also complain that they still depend on middlemen for the sale of produce, often at exploitatively low prices.

Chumsang Lepcha, a farmer in North Sikkim, owns 7 ha of land and grows maize, cardamom, millets, buckwheat, squash and some vegetables. He also has a vermi-composting pit. Lepcha says that though his crop yield has stabilised since he shifted to organic farming in 2010, it still does not earn him a higher price. The middlemen to whom he sells his produce claim that they do not care whether the food is organic or not.

The state government admits that marketing initiatives are lagging due to the paucity of funds. It has now zeroed in on four high-value crops like large cardamom, ginger, turmeric and buck-wheat for profitable domestic sale and export. However, not every crop can be processed and the marketing of fresh produce such as fruits and vegetables remains a challenge.

8. Findings

The problems faced by the farmers in Sikkim and the challenges in front of the Sikkim Government which are hampering organic farming from achieving its true potential can be summarised as follows:

Reduction in Agricultural Produce: The major problem plaguing organic farming in the state is decline in yield. Permanent disbandment of chemical-based pesticides have resulted in the development of crop diseases which were easily combated erstwhile. Similarly, the ban on chemical fertilisers has resulted in the absence of high yielding crops. Thus, the farmers are faced with low produce to begin with and even that is reduced by the outbreak of crop diseases and pest attacks which organic methods are unable to combat.

Lack of Proper Government Aid: Although the entire state of Sikkim has been certified as organic, the government does not have the required resources to aid the farmers all throughout the state. Although it is true that the Sikkimese farmers have traditionally tilted towards organic methods, most of them made selective use of chemical pesticides and fertilisers to keep the crops free from disease, pest attacks and to increase their yield and earnings. Although the government had won them over by promising them proper training in the latest techniques in organic farming and in the use of better organic manure and pesticides, it has – according to the farmers interviewed- largely failed in this regard. Training has been sporadic and non-holistic, while the promised new types of manure and fertilisers have largely failed to reach the farmers.

Lack of Proper Marketing Initiatives: One cannot distinguish between conventional produce and organic produce by mere inspection. Organic yield needs to be tagged by a definite form of identification, which would help in justifying their premium prices to interested potential customers. In the same vein, the organic produce from Sikkim was decided by the government to be marketed under the brand name of “Sikkim Organic” so as to distinguish them from general produce and to gain a strong foothold on market niches where the demand of organic produce is high. However, the initiative has suffered due to paucity of funds and the lack of proper marketing strategies. It would seem that lack of proper funds has rendered the government unable to market all organic produce under the brand “Sikkim Organic” resulting in the new plan to market only four cash crops under that brand. It would seem that the officials in-charge of framing and executing marketing strategies for organic products hail from a conventional agricultural background and do not have a very sound understanding of organic farming.

Distribution Channel: Agriculture, both conventional and organic, are plagued by an inefficient distribution channel in which there is unneeded abundance of middlemen. The middlemen increase the cost of distribution and while when the organic produce reaches the final customer it might cost Rs.50, the farmer might get only Rs.10, with the remaining Rs.40 going to the middlemen. The middlemen are also unsuitable for a state that is fully organic because they do not operate in niche markets and are only concerned with their own profits. Thus, whether the produce they are selling is organically produced or produced through chemical-based farming methods is of no importance to them. They actually damage the entire distribution channel of organic produce.

Land Certification: There are two types of organic certification systems in India: Third Party Certification, which is essential for exports, and Participatory Guarantee System (PGS), meant only for domestic sales. While Third Party Certification is an expensive affair, especially for an individual farmer, PGS involves almost no cost. Sikkim has spent an average of Rs.8,400 per ha for three years for third party certification and is now expected to pay about Rs.1,425 per ha per annum for renewal of certification. This means that the three-year cost of renewal will be a little more than half the cost of conversion. Between 2010 and March 2016, SOM has spent about Rs.77crores, 78 percent of which (about Rs.60 crores) has been spent on certification and related processes. Such high cost of certifications is unsustainable in the long-term and impractical as it deters the government from allocating the budget to more important activities such as training the farmers in the latest methods of organic farming and providing them with effective organic pesticides and manure to increase the yield.

9. Problems that Might Arise of the Challenges

Challenges, when left unsolved may result in several problems. These are summarised as follows:

Migration of Farmers: Generic low yield, destruction of crops by pests and diseases and lack of proper aid from the government might lead the farmers to migrate to non-organic states such as West Bengal. Lowland areas such as Siliguri which are very near to Sikkim have no ban on using chemicals in farming and have high yield which they export and even supply to other states (including Sikkim). Higher yields generate more earnings for farmers in that region and ensure smoother lifestyles, which might motivate farmers to migrate from Sikkim to other parts of the country.

Loss of Organic Produce Market: In between low yields of marketable produce and regular pest and disease outbreaks, there is a large gap between demand and supply of organic produce. Interestingly, Sikkim shifted to organic farming with the aim of becoming self-sufficient in food production – an agenda since forgone by its regular food crop imports from neighbouring West Bengal. Dismal distribution channels and the presence of middlemen uninterested in distributing to niche markets results in the failure of Sikkim’s organic produce to meet demands therein. Lack of restriction on imports of cheaper conventional produce from other states has seen the brand “Sikkim Organic” biting the dust as it falls behind in the intense competition on all fronts. All these factors widen the gap between the demand and supply between organically produced crops.

High Food Import Costs: As the gap between demand and supply of agricultural produce widens, it will be increasingly difficult for Sikkim to feed its domestic populace and the tourists that visit the state every year. Ever since the state went fully organic the influx of tourists has seen an increase of 25 percent annually – due to Sikkim’s focus on wellness tourism – which compounds problems. The state has already been actively engaged in bringing agricultural products from other states to meet the gap in supply. The cost of such buyouts will only increase with time if the core challenges are not addressed and mitigated.

10. The Way Forward – Mitigating Challenges to Organic Farming in Sikkim

As has been previously explained in detail, the challenges that Sikkim faces in the realm of organic farming will deter it from achieving the true potential. In addition to this, the challenges are of vicious nature – birthing more long-term problems which would be difficult to solve. Thus, it is necessary to have a plan for the mitigation of these challenges. After careful consideration, we have the following to be sustainable measures to mitigate the challenges:

- (i) Sikkim must aim for an improvement in its organic farming policy and implementation. Instead of spending a large chunk of its budget on third party certification, Sikkim must demarcate areas which are not expected to contribute to export and switch to PGS certification.
- (ii) It must ensure greater focus on training farmers to help them sustain organic farming. The state can achieve this by increasing its budget allocations to incorporate more training sessions for farmers and ensuring availability of bio-inputs. It must support farmers till the time each farmer is able to manage her farm with inputs produced on the farm itself. Sikkim must also assess the performance of the policy so far to ascertain which areas need work. It is important for the state to get data on the frequency and nature of pest attacks and organise research in those areas.
- (iii) The state must ensure that farmers get the price organic food deserves, even for fresh produce. Marketing of produce must be streamlined to enable the average consumer in Sikkim to access locally grown organic food. It is not enough to state that organic farming has proved beneficial to the environment in Sikkim. The state must commission an impact study to evaluate whether the shift to organic farming has had the desired effect.
- (iv) Produce of Sikkim have always gone to traditional markets via established channels. But now with new produce and that too organic, disruption of traditional markets will happen. This will engender new opportunities to garner greater value. These opportunities must be seized. Export markets can be tapped to get better value but then produce must be at a particular scale as well as quality standards.
- (v) If the pricing of produce is stabilised and with modern farm practices, organic farming proposes to change the life and lifestyles of our farmers and young people as much as it did during the green revolution in Punjab.

11. Conclusion

It is no secret that the current method of chemical-based farming is not a sustainable agricultural practice as it is harmful to both humans and the environment. Organic farming is the only viable alternative that has presented itself. In this context, the story of Sikkim takes the spotlight since it has shown the courage to be the only state in the country to produce crops in a completely organic manner. While all of us pray for the success of this initiative, as such success will open doors to further innovation in the field of organic farming, the Sikkim model is plagued with several challenges which need to be nipped in the bud so as to prevent them from burgeoning to unmanageable size. The present study has taken a step in that regard, citing possible solutions to the challenges. Further research into the state of affairs of organic Sikkim needs to be carried out in order to regularly assess the situation and provide mitigating measures which will benefit the government, the farmers, the environment and, above all, India.

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