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Dr. Asok Kumar Bose
Senior faculty of Bhawanipur
Education Society College,
Dept. of Commerce, under
university of Calcutta, West
Bengal, India.

Vivek Patwari
Faculty of Bhawanipur
Education Society College,
Dept. of Commerce, under
university of Calcutta, West
Bengal, India.

Subhendu Banerjee
Faculty of Bhawanipur
Education Society College,
Dept. of Commerce, under
university of Calcutta, West
Bengal, India.

Correspondence:

Dr. Asok Kumar Bose
Senior faculty of Bhawanipur
Education Society College,
Dept. of Commerce, under
university of Calcutta, West
Bengal, India.

Organic Farming – Its Effects and Benefits: A Study on Tiny Hilly State of India.

Dr. Asok Kumar Bose, Vivek Patwari, Subhendu Banerjee

Abstract

Organic farming is a very popular system adopted by Sikkim. Today all farming in Sikkim is carried out without the use of synthetic fertilizer and pesticides. After 2003 entry of chemical inputs for farmland was restricted and their sales banned. The provocation for future organic agriculture will be keep up to its environmental interest, enhance yields and cut prices while encountering the threats of climate change and a rising world population. A large number of rural areas were studied as bio-villages in Sikkim by the department of food security and agriculture development in association with Maple Orgtech (India) LTD. Organic cultivation is in a growing stage in India. Around 2.78 million hectare of cultivatable land was under organic farming. The first move as regards to transformation of Sikkim state into organic was the acceptance of bio-village initiative applying EM Technology. Organic farming has enabled abundant opportunity and expansion in the state of Sikkim but the small farmers are yet to be exploited of their favourable parts. As a whole, organic farming has lessen expenses of cultivation. Sikkim is tenacious to make idle any agrochemicals, pesticides, synthetic materials and other additives excepting organic verified products.

Keywords: Public Relations Officer, health facilities, communication, Public Relationship Channels

Introduction

Organic farming is a technique or production system used to produce food and fibre. It involves much more than choosing not to use pesticides, genetically modified organism fertilizers, growth hormones and antibiotic, organic farming is an ecological management policy to preserve and increase the soil fertility and protect social erosion and consequently promotes ecological balance and conserve bio diversity.

In the present contest it is highlighted that the tiny hilly state Sikkim become India's first 100% organic state in January 2016. Today all farming in Sikkim is carried out without the use of synthetic fertilizers and pesticides, providing access to safer food choices and making agriculture a more environment friendly activity. It has implemented organic practices on around 75000 hectares of agricultural land and converted to certified organic land by implementing organic practices and principles as per guideline laid down in national programme for organic production. After 2003 entry of chemical inputs for farm land was restricted and their sale banned. Farmers therefore, had no option but to go organic. Organic cultivation is face of chemical pesticides and chemical fertilizers as it tries to strike a harmonious balance with complex series of ecosystem. In the term, organic farming leads in subsistence of agriculture, bio-diversity conservation and environmental protection. Sustainable farming will also help in building the soil health, resulting in sustainable increased crop production. Above all, it will also boost the tourism industry in the tiny land locked Himalayan state. Resorts as well as homestay have already been marketing themselves as completely organic where tourists can pluck, cook and relish fresh organic food from their kitchen garden.

Need and Importance:

Organic farming is an agricultural arrangement which developed initially in the 20th Century in response quickly transforming farming strategies analysed with traditional agriculture, organic farming uses lesser pesticides, dwindles soil depletion, reduces nitrate extracting into

ground water, and surface water and to bring back animal wastes into the farm. These welfares are reverse assessed by inflated food cost for purchasers and overall lower capitulates. The provocation for future organic agriculture will be keep up to its environmental interest, enhance yields and cut prices while encountering the threads of climate change and a rising world population.

Organic vegetables cultivation is the very favoured practice ensured by farmers in which vegetables crops are increased by the help of organic refuse such as animal refuse, plant waste, crop waste, farm refuse and biological substances. In order to retain the soil active, these organic substances become transformed into bio fertilizers which discharge alimentative to crops which generates a supportable eco friendly environment without any adulteration. Organic vegetables farming keeps out synthetic inputs such as chemical fertilizers, pesticides, hormones, feed additives etc to the highest range. This assists the soil to keep its alimentative. The need of the organic farming is to outline estimates to prevent utility of fake fertilizers and pesticides and slowly switch plant nutrients by organic systems and fertilizers in addition to manage diseases and insect pests by biological modes.

Organic farming employs methodology to attain quality crop capitulates without maltreating the natural environment or the human beings who live and work on it. Basically, organic cultivation depends on organic or natural fertilisers like:

- A. Compost manure
- B. Green manure
- C. Bone meal

The more significance of organic cultivation are:

- a. It employs commonly happening materials for farming while preventing the work of synthetic materials which increases agro-process health.
- b. Organic yield carries less or no chemicals and are secure to eat up.
- c. It depends on organic or common fertilizers such as compost manure, green manure, bone meal etc,
- d. Enhances soil productivity, high value crops leading to justifiable growth.
- e. Maintaining domestic species
- f. Reduces aid load on governments and natural manipulation engaged with it.
- g. Rein vigorates ground water level, lessen endanger of the food chain, ceases the significant health problems generated owing to chemical fertilizers and pesticides.
- h. It also encourages tourism as it has hither to been commenced in northeast India where resorts are retailing themselves as entirely organic where visitors can pluck, cook, and relish kitchen gardens
- i. It safeguards long term potency of soil, supplies crop nutrients by soil micro organism, nitrogen independence through the operation of legumes and biological nitrogen fixation, disease and pest control, livestock management and save general environment. Hence, it restricts the application of modern agricultural system that are injurious for human fitness and strength.

Literature Review:

1. Barnali Das (2018): Organic farming-A study on Sikkim.

In this article different good sides of organic farming is highlighted and suggested that the government including private players required to do structural changes in agricultural sectors.

2. B. Satish Rao, Faculty, National Bank Staff College, Lucknow (July 2017): Study of organic cultivation in Sikkim.

In this paper, author showed that organic agriculture with low cost of production will have direct impact on Indian agricultural trade in global market. There are number of issues related to organic which confront its adoption like low yield compared to traditional system etc.

3. Ingrid Heindorf (March 2019): Sikkim's state policy on organic farming and Sikkim organic mission, india. In this article author describe that as first state in the world as 100% organic, the government of Sikkim has adopted the policy to phase- out of chemical fertilisers and pesticides and given ban on sale and use of chemical pesticides.

4. ICAR-NOFRI (January 2019): Training manual on organic farming.

In this paper, it is presented that the policy implemented a phase- out of chemical fertilizers and pesticides and achieved a total ban on sale and use of chemical pesticides.

5. Megha Nidhi Dahal & Others (May 2017 Vol.X11): Sikkim Today.

Here authors tried to reveal how the state given its due recognition for being vanguard of organic farming in the country. Overnight, the agricultural practices followed by generations after generations of sikkimese heritage and the healthy way of life and living encouraged and promoted became the talking point nationally and internationally.

Objective of the Study:

In spite of the endeavour done by some of the strategies by the Government, organic farming has not been adapted to set foot in the agricultural maintenance in India. In the present paper it is highlighted that more consciousness should be generated among farming families about the advantages of organic farming setting an instance of Sikkimese in this track which other state may follow. Therefore, a survey has been made over the following: -

- a) As a first organic state, how all farm lands are certified organic.
- b) Socio-economic situations such as consumption and market development, cultural features as well as health, education, rural upliftment, strategic and reasonable tourism.
- c) The organic farming strategy executed by state has weed out chemical fertilisers and pesticides.
- d) The conversion has benefitted huge numbers farming communities.
- e) Sikkim has placed an instance for other Indian states and countries globally for extraordinary upscale agro-ecology.

Methodology:

Both primary and secondary data are assembled for the study. Secondary data about development made was collected from the Gram-Panchayat office, yuksom, National organic farming institute Sikkim; animal progress

report of horticulture and cash crops 2011-2016, development dept. of Sikkim.

Primary data from the alternative organic cultivators on production and marketing features of crops camouflaging, inter alia, operational possessions, cost and returns for the area setup under organic crops with the help of interview technique, employing the programmes outline for the study. Analysis and conversation made with the farmers on several positions associated with convenience of inputs, credit, expansion facilities, marketing etc. and limitations thereof. Conversation was retained with all the collaborators, shear holders i.e. horticulture dept, agriculture dept, lead bank, Sikkim state cooperative supply, Krishi vigyan kendra etc of the organic mission to find out the issues associated to execution situations. Both primary data as well as secondary data were collected from Mayal Paradise homestay, Yuksom, word no 1, West Sikkim.

Conceptual Framework:

a. National Scenario:

Sikkim is a tiny and multiracial state in india is 100% organic state. In the year 2018, Sikkim is the first organic state in india achieved a distinguished honour from U.N.O. Since 2003 Sikkim begin their organic creativity and also commenced to do remarkable investments in respect of farming schooling and training. Therefore, in 2003 a large number of rural areas were studied as bio-villages by the department of food security and agriculture development in association with Maple orgtech (India) Ltd. Consequently, around 15000 cultivators and 14000 acres of land in Sikkim were promoted under the plan of action. The market for organic foods is spreading, cultivators are working towards organic farming for philosophical grounds, ecological asymmetry, food, water and air adulteration etc. are the considerable anxieties and organic farming culture is being considered as a relieve.

Organic cultivation is in a growing phase in India. Around 2.78 million hectare of cultivable land was under organic farming as of March 2020, India has 835000 organic cultivators, as yet, and Sikkim has been the sole Indian state to have entirely set off organic. A greater number of states have at best a fraction of their net scatter area under organic farming. India is home to 30% of the total organic growers in the globe but reports for just 2.59% (1.5 million hectares) of the entire organic farming area of 57.8 million hectares as stated by the global organic Agriculture 2018 report.

b. International Scenario:

Worldwide 1.5% cultivated land is organic. The nations with the sizeable organic portion of their entire farming area are Liechtenstein (38.5%), Samoa (34.5%) and Austria (24.7%). In sixteen nations 10%

or more of all farming land is organic. Organic output is growing quickly throughout NORTH -AMERICA. Fruits, vegetables are main organic products in Canada. Cuba has been a creative world boss in low input supportable agriculture. Organic showing is increasing throughout Latin America, Asia, China, and Japan.

Organic Farming as A Strategy: Analysis and Findings in Respect of Eco-System & Livelihoods:

The first move as regards to transformation of Sikkim state into organic was the acceptance of bio-village initiative applying E M Technology. Since 2003, 396 hamlets were recognised as bio-villages by the department of Food security and agricultural department in alliance with Maple Orgtech (India). About 15000 cultivators and 14000 acres of land in Sikkim were promoted under the scheme.

The practice of transforming Sikkim into a 100% organic state was first traced in 2010 with the float of the Sikkim Organic Mission. The year wise progress of 100% organic are noted below:

2003: Sikkim starts disheartening use of chemical fertilisers, cuts fertilisers grant by 10%.

2003-09: State accepts 396 hamlets as bio-villages to inspect organic data.

2006-09: Ginger transforming units is accepted at Birdang farms, West Sikkim. Ginger is one of the four valuable crops chosen by Sikkim for its commercial prospect.

2010: Sikkim organic mission is started to accelerate transformation of Sikkim into a 100% organic state.

2010-11: Above 18234 ha of land is verified. Self-regulated green houses are confirmed for making disease free good planting material.

2011-12: 19216 ha land is verified

2012-13: 19188 additional land is verified.

2015: Total agricultural area in the state is transformed to “certified organic”

2016: Sikkim is customarily proclaimed a” 100% organic” state.

Table 1: Outcome Graph from Sikkim Organic Mission.

	East	West	North	South
1.Villages Covered	120	153	43	80
2.Beneficiaries	4067	5810	1442	2681
3. Area (Acre)	4067	5810	1442	2681

[SOURCE: Agricultural Dept., Govt of Sikkim]

India classifies 33rd. place as per the entire cultivated land area under organic farming.

India is the actual exporter of more than organic products under 19 type. For example, Basmati and non-basmati rice, tea and coffee, spices, dry food, medicinal and herbal plants, vegetables etc. to Europe, USA, Canada, and Asian countries.

Table 2: Phase wise Targets and Achievements of Sikkim Organic Mission

Sl. No	Phase	F.Y	Proposed Area (Ha)	Achieved Area (Ha)	Achieved (%)
1	1	2010-11	18000	18234.33	101.31
2	11	2011-12	18000	19255.11	107.00
3	111	2012-13	14000	19288.15	137.77

Source: Sikkim organic mission—Journey of fully organic farming state, 2015

Table 3: District wise. And phase wise targets and achievements.

Particulars	Districts	Phase-1	Phase-2	Phase-3
1.Area of achievements	East	4900	6019	7613
	South	5466	4573	4486
	West	5118	5301	6390
	North	2755	3361	791
2. No. of farmers involved (In ha. Per farmer)	East	1.10	1.12	1.045
	South	1.20	0.86	1.06
	West	1.20	0.86	1.06
	North	1.96	1.48	1.26

Source: Sikkim organic mission (2015).

The aggregate number of cultivators engaged in organic farming are 14232, 17814, and 17333 throughout phase 1, 2 and 3 separately. The farmers are gained as organic farming supports to maintain and nurse the nutrients of the soil in addition to excessive financial gain in their investment. Organic farming has enabled abundant opportunity and expansion in the state of Sikkim, but the small farmers are

yet to be exploited of their favourable parts. As a whole, organic farming has lessen expenses of cultivation. There was a contraction in expenditure of cultivation per acre by 36% in the matters of organic farming. The worth of planting per acre of ginger, as an example, both under normal and organic cultivation is given below: (table-4)

Table 4

Sl. No	Items of Expenditure	NORMAL CONDITION(RS)	ORGANIC CONDITION(RS)
1.	Field preparation	5000	2500
2.	Nursery and planting/ sowing (800 kgs in normal and 600 kgs In organic cultivation @ RS.40 per kg)	32000	24000
3.	Fertiliser/ Manures	10000	5000
4.	Weeding	6000	3000
5.	Plant protection	8000	1000
6.	Wages	10000	4000
7.	Miscellaneous expenditure	4000	1500
8.	Total	75000	41000

Source: Dept of Agriculture, govt of Sikkim

Basically organic farming in Sikkim includes:

- Sikkim Mandarin Orange
- Black Cardamom
- Large Cardamom
- Ginger
- Baby Corn
- Turmeric

Cash crops includes orange, large cardamom, ginger, turmeric, cherry paper, baby corn, pulses having huge demand both in national and international level.

Economy:

The economy is primarily agrarian, in spite of maximum of the land being unsuited for agriculture due to the precipitous and rocky slopes. The agro -ecological disparity of Sikkim supplies useful micro climate eco system for the cultivation of a variety of species with low cost possibilities. Sizeable cardamom, ginger, turmeric, Cinna mom, garlic etc. are some of the possible species developed on farm lands and agro forestry arrangement. Sikkim is regarded as one of the wealthy store house of plant variety of which above 95% have medicinal utility. Abundant plant species have excessive market request mainly for their medicinal and therapeutic possessions. In Sikkim countless non- timber forest goods from the agro forestry orders and adjoining forests are gathered for their food and medicinal merit.

Bee- keeping is an ancient conventional exercise and an intrinsic part of earning creation venture to lot of farmers. The original and aboriginal groups of Sikkim have ample

conventional bio technological awareness of traditional food preparing and product improvement. Conventional food products are normally classified into (a) Fermented and (b) Alcoholic beverages, produced by microorganism and non-fermented foods

Findings:

Sikkim is a small replica Indian Himalayan state which has done astonishing development in embracing environmental guarantee in expansion scheme and initiatives. The organic of this hilly small state has since fully grown to adopting numerous sides of defendable farming, manufacturing and utilization of nutritious food, augmentation, value chain evaluation, marketing, social and business undertaking and suitable product improvement.

Sikkim is tenacious to make idle any agro chemicals, pesticides, synthetic materials other additives excepting organic verified products for plant conservation and organic fertilisers. Sikkim has pursued some moral ideas to stimulate the organic evolution are:

- The concept of health.
- The proposition of ecology.
- The doctrine of fairness.
- The basis of care.

Conclusion:

The Sikkim state strategy on organic cultivation was set in place in 2014. So as to secure that no chemical applications for farming are applied in the state, a regulation was approved namely ‘‘ The Sikkim Agriculture, Horticulture, input and Livestock Feed Regulatory Act 2014’’ which

controlled the import, sale, circulation and application of inorganic agricultural, horticultural inputs and livestock feed. The local and aboriginal groups of Sikkim have been managing, ploughing and transforming conventional food crops which support their cultures and livelihoods accordingly assuring community flexibility in a dynamic environment. It is inspiring to notice, a lot of literate adolescent become interested in organic cultivation and associated sectors. The state requires to motivate additional juvenile businessman and start-ups to initiate in the sphere of organic farming. The state of Sikkim should assist agrarian sections retrieve modified weather and climate facts that they can comfortably appreciate and use to draw conclusion to augment their farming exercises. It is crucial to utilize a unified proposal to assist co -design and provide dependable and clear to recognise facts Sikkim has functioned extremely separately over the last 25 years. The state has abolished distribution, nutrition measures are up and it is on route to set off a completely educated state by 2020-21. Collaborate with the state's tourism possibilities these will be numerous chances of building each family in Sikkim financially ensure many times over, and making a tight future for Sikkim.

Recommendations:

The following proposal shall be taken into account to keep up organic farming: -

1. A study disclosed that Government retained farms are branded with biofertilizers and bio-practices, large number of farmers have collected neither of any inputs from the Government.
2. The Government has also drained to small on empowering farmers to manufacture their own organic inputs.
3. Huge money is to be drained to instruct the farmers, or else production will decrease.
4. Use of conventional exercise i.e. application of cow dung and cow urine to challenge pest strikes are not as productive as chemicals.
5. In the other way, genuine measures shall be introduced to develop organic farming so that huge number of human beings may conquer food crunch and at the same time the farmers may not hurt by losses.

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