Case study of farmers growing organic food products near Udaipur city

Abstract: Organic farming certainly holds significant promise, especially in a country like India with its diverse agro-climatic conditions and rich tradition of sustainable practices. Organic food products have grown in popularity due to increasing consumer awareness of health, environmental, and ethical concerns. While they often cost more due to more labor-intensive farming practices, many people believe the benefits outweigh the extra cost. A case study of organic farming in Udaipur highlights the use of sustainable methods such as vermicomposting, Amrit Jal (organic pesticide), and AmritMitti (organic fertilizer) by farmers growing cereals, pulses, legumes, vegetables, and fruits. These farmers rely on natural methods to improve soil health and control pests, promoting eco-friendly practices.Despite challenges like the cost of certification, labor intensity, and market access, there are growing opportunities due to the increasing demand for organic products. The rising consumer awareness of health and environmental benefits offers farmers a chance to sell their produce at premium prices, contributing to both sustainability and local economic growth. Farmers in Udaipur growing organic crops receive support from NGOs and local shopkeepers, which helps with finance, technical guidance, and marketing. However, they face challenges such as limited access to quality seeds, inadequate government support, and low or delayed profits from shopkeepers. They also wish to expand production but lack the financial resources for larger land, quality seeds, and organic manure. Despite these obstacles, their motivation to grow more varieties and improve productivity remains strong.

Keywords: Organic crop, organic manure, organic produce, farmers, higher productivity.

Introduction

Agriculture facilitates to meet the indispensable needs of human civilization by providing food, clothing, shelter, medicine and recreation. Hence, agriculture is the most important venture in the world. India's agricultural sector is still very important and considered to be the backbone of Indian economy. The Green Revolution in the 1960s boosted food production in countries like India through high-yielding seeds, improved equipment, and chemical fertilizers. However, this led to environmental damage, soil degradation, and health concerns due to excessive pesticide use. As a result, scientists and policymakers are now shifting focus towards more sustainable practices, emphasizing biological inputs over chemicals for long-term agricultural sustainability.Hence, the presence of chemicals and heavy metal content within the soil lead to the consumption of these harmful material through daily food intake by living creatures such as humans, animals *etc*.

Methodology

The case study explores organic farming practices through interviews with farmers, covering crop types, irrigation, agricultural practices, and manure use. It examines motivations, support systems, advantages, and challenges faced, such as market access and pest control. It also looks at marketing strategies for organic produce. The findings provide insights into promoting sustainable organic farming.

Results

In this phase the researcher has collected the qualitative data which has been systematically presented under the following heads:

CASE STUDY: 1

Background information

Mr. A was 45 years old farmer practicing farming since last 18 years. His farm was situated in *Birothi*village approximately 50 Kms away from Udaipur city. He himself was the owner of farm. Total area of farm was 5*bigha* (3.125 acres). He belongs to nuclear family system with wife and 3 children. His wife was homemaker as well as a farm woman rendering help in farming activities. The total farming activities were performed by the family members only. The farmer practices both mechanized and non-mechanized farming. He borrows a tractor for ploughing and uses a bullock plough. He owns 3 cows, a pair of oxen, and 6 goats. Although he has a pucca house near the farm, he doesn't own a private vehicle and relies on public transport or the shopkeeper's transport for delivering organic produce. His annual income is around Rs. 3 to 3.5 lakh.

Crops grown

The main crops grown were wheat (varieties: kalyansona and pahrmi), maize and barley, bengal gram (*chana)*, black gram *(urad)*, green gram *(moong)* and cow pea (*chavle*), potato, reddish and sweet potato, spinach, fenugreek leaves, lady's finger, bottle guard, cauliflower and cabbage was grown in his field.

Irrigation system and agricultural practice

The soil of his farm was *domat* soil and had an open well for irrigating the crops which can be easily seen from Plate 1. They also relied on rain water for irrigating crops during monsoon. Crop rotation practice was adopted by him. He kept on rotating the different things grown in his farm.

Plate 1: Open well in the farm for crop irrigation

Motivation

Earlier this farmer was working as field worker in *Mahan SevaSansthan*. *Mahan SevaSansthan* works in the tribal dominated, drought prone districts of Udaipur and Dungarpur in Southern Rajasthan, focusing on the blocks of Jhadol, Kotra and Kherwara in Udaipur District. *Mahan SevaSansthan* has been involved in the implementation of vermi compost units in the villages. From this organization he got an idea of preparing vermi compost (can be seen from Plate 2).

Plate 2: Farmer A preparing vermi compost at the site

Support system

Farmer A received support through three major channels. He secured financial assistance from Gramin Bank for setting up a vermi compost pit, facilitated by Access, a national organization supporting sustainable livelihoods. Additionally, his family provided financial support, and he personally contributed Rs. 50,000 from his own savings to the project.

Theorganization and shopkeeper, to whom he sells his produce, provide technical support to the farmers by inviting agricultural scientist, providing quality seeds to the farmers, organizing training at KVKs *etc*. Further, marketing support was given to him by the shopkeeper who was selling his organically grown food products in the city and assured him to purchase all the farm produce on regular basis at a good market price.

Manure used

Farmer has not used chemical pesticides or fertilizers on his farm for the past 18 years. Initially, he used cow dung and cow urine as fertilizers and pesticides. Currently, he exclusively uses vermi compost, which he prepares himself at his farm from agricultural and animal waste.

Plate 3: Prepared organic fertilizer at farm

Advantages

Farmer expressed that, after using a combination of all the three-support system *i.e.*, for organic farming they had started gaining more profit and increased crop production. The quality of land also improved and they had psychological satisfaction with the feeling that they are not harming the earth through farming. He also expressed that he had gain knowledge about the harmful impact of pesticides on health and land. He gained lot of popularity in his social circle and

now he has become one of the progressive farmer who is encouraging other farmers to go for organic farming in his village.

Plate 4: Farm of the Farmer A with grown organic crop

Constraints

Farmer reported facing few problems in organic farming due to his extensive experience as a field worker. He benefits from a good relationship with a shop owner who offers better prices for his organic products. However, he believes the government should provide more support to raise awareness and promote organic farming. Despite his desire to expand his business, he lacks sufficient land. He also highlighted the need for a warehouse and cold storage in the village to store produce in good condition for longer periods.

CASE STUDY: 2

Background information

Mr. B is a farmer of 55 years having his own farm situated in *Birothi*village which is approximately 50 Kms away from Udaipur city. Total area of farm was 2*bigha* (1.25acres). Farmer lives in a joint family of 8 members, all of whom contribute to farming activities. He owns 2 cows, a pair of oxen, 3 goats, and 4 rabbits. The family uses both mechanized (borrowed tractor) and non-mechanized (bullock plough) farming practices. They live in a semi-pucca house near the farm. Farmer A uses public transport for commuting to Udaipur city and for selling organic products, often utilizing the shopkeeper's transport. His income from

organic farming is Rs. 2-2.5 lakh per year, with an additional Rs. 70,000 from his sons. The total family income is around Rs. 2.7-3.2 lakh annually.

Crops grown

The main crops grown were among cereal wheat (kalyansona), and barley, bengal gram (*chana)*, green gram *(moong)* and cow pea (*chavle*), potato, reddish, carrot and sweet potato, coriander leaves, spinach and fenugreek leaves, lady's finger, brinjal, bottle guard, bitter gourd and cauliflower were grown in his field.

Irrigation system and agricultural practice

For irrigation of the crops, he was dependent on rain water during monsoon and his neighboring farmer's water resource, as he was not having his own well. He hired the help on payment basis as per the number of hours water facility is used for irrigation. The type of soil in his field was *domat* soil. Crop rotation practice was adopted by him.

Motivation

Farmer B has mentioned that Farmer A of his own village who was doing organic farming since long as mentioned in the case study of Farmer A. Farmer A was the person who only told him to practice organic farming, the importance of organic farming and vermi composting. Farmer A was helping him in getting quality seeds, preparing vermi compost at his field and marketing his farm produce in Udaipur city.

Support system

Farmer B reported that Farmer A helped him in getting the financial support from an organization called Access for establishing vermi composting pit at his farm. His vermi composting pit can be seen from Plate no. 5.

Plate 5: Farmer B with his vermi compost pit

Manure used

Initially when he started farming, using chemical based fertilizers and pesticides in his farm. He expressed that by using those chemicals the land quality of farm deteriorated. But since he started preparing his own vermi compost as an organic manure he totally shifted to organic farming. Apart from this, he was also using cow dung mixture with cow urine as a soil conditioner.

Advantages

After starting organic farming, he earned more profit as compared to conventional method of farming. The quality of land also improved and hence felt that his land productivity is increased. He felt no burden of debts for the purchase of chemical fertilizers. He has also gained lot of knowledge about making vermi compost and can render knowledge to other farmers also.

Constraints

Farmer B faces financial challenges in purchasing quality seeds and hiring transport for his produce. He also struggles with irrigation, as he doesn't own a well. While he wants to increase his income, his small landholding limits his ability to expand. Additionally, he often faces delays in transporting his organic produce

to the market and does not always receive timely payment for his profits.

Plate 6: Farmer B's farm with organic wheat crop

CASE STUDY: 3

Background information

Farmer C, aged 49, has been practicing organic farming for 9 years on his 2bigha (1.25 acres) farm in Village Mokat, Udaipur, Rajasthan. He and his wife are educated up to 8th and 5th standard, respectively, and live in a nuclear family of 5. Farming and cattle rearing are his main occupations. He owns 4 cows, 2 pairs of oxen, 8 goats, 4 rabbits, and 4 hens. He uses both mechanized (own tractor) and non-mechanized (2 bullock ploughs) farming methods. He lives in a pucca house near his farm, uses public transport and his own motorcycle to travel to Udaipur, and sells organic produce to a shopkeeper there. His annual income is around Rs. 3.5 to 4 lakh.

Crops grown

The main crops grown by Farmer C were wheat, maize, barley and rice, bengal gram (*chana)*, black gram *(urad)*, green gram *(moong)* and cowpea *(chavle)*, potato, reddish and sweet potato, spinach, coriander leaves and fenugreek leaves lady's finger, bottle guard, capsicum, green chili, cauliflower, cabbage, tomato, guava, pomegranate and banana.

Irrigation system and agricultural practice

Farmer C's farm has brown soil and an open well for irrigation, with rainwater also serving as a source during the rainy season. He practices sustainable agriculture, aiming for greater production on smaller land. Harvesting is done on

his farm with the help of family members and machines.

Plate 7: Open well situated at farm of Farmer C

Motivation

With the inputs of CEO, NGO named as GayatriSevaSansthan who motivated him for organic farming. GayatriSevaSansthan has its own rural training centre in his village where he attended many trainings and inspired by trainers to whom he came into contact. He also delivers a lecture for organic farming and more farming in smaller field among the farmers.

Support system

Full assurance was given by officials of NGO in all means such as technical, financial and marketing support. NGO helps in getting the good quality seeds and plants to him. The fencing of field was also made with the support of this NGO to avoid stray animals in his field. From family he got a great extent of psychological support.

Manure used

In case of Farmer C the organic manure and pesticide used were different from two previous farmers. He was using *AmritMitti*(Plate 8)and *Amrit Jal* (Plate 9) in his field. Ingredients for *Amrit Jal* included cow dung (1litre), cow urine (1 liter), jaggery (50 grams) and water (10 litres). All the above ingredients were mixed together and kept for three days. Mixture was stirred, clock and anti-clock

wise 2 to 3 times in a day. Next day, he took one liter of this concentrate mixture and mixed it with 10 liters of water. This preparation is called*Amrit Jal*.

Farmer C creates **AmritMitti** by collecting topsoil from beneath trees or bushes, which contains essential minerals and dormant microbes. He mixes this topsoil with moist biomass from surrounding areas, which is chopped and dried. The dried biomass is soaked in **Amrit Jal** for 24 hours, activating microbes that help speed up decomposition. The process involves alternating layers of soaked biomass and topsoil, which are spread in the field and moistened with Amrit Jal. The mixture is kept moist throughout to accelerate decomposition, and after 30days, the **AmritMitti** is ready to be used as organic manure.

Plate 8: Crop of lady's finger grown in *AmritMitti* in the farm of Farmer C

Plate 9: Prepared *Amrit Jal* at the farm of Farmer C

After starting organic farming, he had received good profit and he believed that the production may be increased in the future. The quality of land had improved. He gained good knowledge about preparing organic manure and organic farming methods. His social circle had also increased as he had attended many trainings and now he also delivers lectures in farm training programmes. He also mentioned that the decision to go for organic farming helped him financially which have improved the standard of living also.

Constraints

Farmer C has not faced issues with the distribution system, income, or production. He credits **GayatriSevaSansthan** for introducing him to organic

farming, which he believes has greatly benefited him and his village. The organization is also helping improve the green cover in the area. Farmer C advocates for other farmers in Rajasthan to adopt organic farming, emphasizing that government support in raising awareness is crucial. His only challenge is the lack of financial resources to purchase more land for expanding his organic farming and becoming a progressive farmer.

CASE STUDY: 4

Background information

Farmer D, a 46-year-old female, has been practicing organic farming with her husband and three sons for 6 years. Her farm is located in Village Mokat, Udaipur, Rajasthan, covering 5bigha (3.125 acres). Neither she nor her husband is highly educated (husband completed 8th grade), and they live in a nuclear family of 5. Farming, along with cattle rearing, is their main livelihood. She owns 2 cows, a pair of oxen, 9 goats, and 2 buffaloes. They use both mechanized (own tractor) and non-mechanized (bullock plough) methods. She lives in a pucca house near the farm, with electricity and household appliances like a TV, refrigerator, and cooking gas. The family uses public transport to travel to Udaipur city and for transporting organic produce to a shopkeeper for market surveys. Their annual income from farming is approximately Rs. 2.5-3 lakh, and her two sons also work as laborers in Udaipur during the off-season.

Crops grown

The main crops grown by Farmer D were wheat, maize and barley, bengal gram (*chana)*, black gram *(urad)*, green gram *(moong)*, Red gram (*Arhar/Toor*) and Lentil (*Massor*), potato, reddish, carrot, ginger and sweet potato, spinach and fenugreek leaves were grown, beans, bitter gourd, bottle gourd, brinjal, cabbage, cucumber, lady finger, pumpkin, ridge gourd and *tindori*, guava, mango, papaya, orange, and pomegranate.

Irrigation system and agricultural practice

Farmer D's farm has brown soil, with irrigation provided by rainwater during the monsoon and an open well located on the farm. She practices crop rotation to optimize organic farming yields and follows sustainable agricultural practices, such as planting with minimal space between crops to reduce moisture loss from the soil. This technical knowledge was effectively shared with her by an NGO working in the area.

Plate 11: Open well in farm of Farmer D

Motivation

The farmer has attended many trainings, demonstrations and camps organized in their village by GayatriSevaSansthan, after getting lot of information on advantages on organic farming and assurance of help in all manner from the NGO.They received the quality seeds and plant sapling from the NGO with the instruction that they have to take utmost care of them. NGO workers keep coming for regular check that the farmer is taking proper care of the plants or not. If there is any problem in

the field related to soil, plants, organic manure *etc*. NGO arranged the visit of experts and subject matter specialist to guide the farmer.

Support system

Farmer D's family received financial support from an NGO to develop a fruit orchard on their farm. As a beneficiary of the Indo-German Watershed Development Programme, the NGO provided funds to farmers in the village growing crops organically. The NGO also assisted in covering the orchard with nets to protect the fruits from birds and in fencing the field to prevent damage from stray animals. Additionally, marketing support was provided by a selected shopkeeper for selling their organic produce.

Plate 12: Guava orchard of Farmer D

Manure used

They used both *AmritMitti* and *Amrit Jal* (Plate 13)as organic manure in their field.

Plate 13: *Amrit Jal* in farm of Farmer D

Advantages

After adopting organic farming, by the farmer the land quality was improved, production and quality of crop grown was increased. She further expressed that now her family members have gained a lot of knowledge regarding various agricultural practices which are environmentally sound and sustainable. She feels that now she is one of the most satisfied farmer and wants to grow more and more organically. The shopkeeper to whom she sells her organic produces gives her good profit and promised to purchase more and more from her at premium price.

Constraints

The farmer did not mention much of the problems regarding organic farming system. It was just reported that prior to support received from NGO they use to face financial and technical problems. Previously the fruit orchard was destroyed by the attack of birds but now NGO has helped in covering the whole fruit orchard through net. Further, no stray animal can enter in the field as they have also covered the sides of farm with iron poles and wires. It was also mentioned that whenever any problem arises the officials of NGO immediately takes action to solve them.

Plate 14: Researcher and Farmer D in the farm

Conclusion:

A case study was conducted on four farmers near Udaipur city who grow organic food products and sell them to selected shopkeepers for market surveys. The study aimed to identify the problems faced by shopkeepers and consumers to improve the production and sale of organic food in the Udaipur market. All four farmers

received strong financial, technical, and marketing support from NGOs or shopkeepers. They were motivated by the NGOs working in their villages, which focus on uplifting farmers and promoting organic farming practices.

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