
Organic Farming in Sikkim - A Sustainable Nexus between Crop Yield and Crop Productivity

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ABSTRACT

Since it can help with food demand, improved health, a better environment, and a better ecosystem, organic farming is seen as the way of farming in the future. It has been successful in drawing customers, and there is now a need for it both on the home market and the global market. Through increased soil fertility, better crop output, decreased pollution, and a better agricultural environment than conventional farming, organic farming can aid in sustainable development. It may lessen farmer suicide rates and enhance the well-being of Indian farmers. Sikkim recently proclaimed itself an organic state (2015), which improved the ecology, increased ecotourism, and decreased cancer rates. By examining the productivity, area, and production of the eight key Sikkim crops—rice, wheat, maize, finger millet, barley, pulses, buckwheat, and oilseeds—productivity growth change was estimated for the study's goal of determining the benefits of organic farming based on crop productivity. The information was gathered from secondary sources on Sikkim's official website. According to the research, organic farming benefits India's key crops.

Keywords: Organic farming, Sikkim, Crop yield, Crop Productivity.

INTRODUCTION

Organic farming in India has been at the forefront for millennia traditional forms of agriculture. Indian civilization flourished on the basis of tradition. Farmers up to British rule in India. During the period of traditional agriculture, the whole agricultural method was Use conventional/organic technological practices where products such as pesticides where fertilizers are obtained from plants and animals Does not contain any harmful substances that was when cows didn't Only milk is provided, but there are many other useful products provided by cows, such as manure fertilizer.

Anwar, S (2018) 1950-60 due to population increase and various natural disasters that have caused food shortages in India. The government decided and was somehow forced to import food from other countries to increase food production in India. The green revolution has taken place produced under the direction of Mr. S Swaminathan, whose main objectives are ensuring food security. Hybrid seeds have been introduced and most of the country are planted, fertilizers and pesticides. The natural has been replaced by fertilizers and pesticides meet the growing demand for chemical fertilizers and pesticides. Factory established in the mid-1970s, it was feared that millions of people would die India's food shortages and green revolution resolved its impact within a few years as India relies on Imports are now ahead of the food supply and we are showing impressive declines. It matters, and in the late 1990s India became an exporter of surplus food.

Chemical farming shows its impact, but also its dark side. On the one hand, the soil loses its fertility due to the massive use of fertilizers, rising cost of agricultural pesticides and

fertilizers traps farmers. Loan sharks also forced them to commit suicide now after so many years. Consumers are slowly learning the harmful effects of chemical fertilizers and pesticides. They are slowly and gradually moving from conventional to organic farming products because they are healthier Some consumers are even prepared to pay more prices for organic producers and strong demand from farmers. Switch to organic farming due to international demand.

Around 2.5 million hectares of land in India is farmed organically According to a 2004 report by the International Foundation for Agriculture and Agriculture Peace for Development Treaty. 15,000 certified organic farms India is now a The largest exporter of organic food, so there is no doubt that organic food Agriculture started its phase in India (Anwar, S (2018). Organic farming is an integrated system designed for farmers transform and increase productivity. Existing communities within agroecosystems, including micro and macro micro- and macro-organisms, plants, livestock and people. The main objective of organic production is to promote farmers and businesses. It is sustainable and supports the protection of ecosystems and the environment (Miller, S.)

The Benefits of Organic Farming

- 1) Organic farming is often used to increase crop utilization
- 2) Crop rotation and cover crops organic residue and nutrients are produced on the farm and recycled back into the soil,
- 3) Composted manure and cover crops are used to maintain soil fertility wash
- 4) Crop rotation, improved genetics and disease-resistant varieties are among them.
- 5) Preventive measures used to protect crops from pests and diseases use pesticides, but they are natural or organic

The whole concept of organic farming revolves around health and appropriate cultivation schemes for high productivity, loss of fertility. Organic systems also respect the natural ecology of the environment including weather, flora, fauna, native animals that live there. Organic standards for crops often include prohibitions on genetic engineering and animal cloning, pesticides, synthetic fertilizers, Synthetic agents, synthetic food processing aids and ingredients main Reasons why a farmer or a city, state or country practices organic farming Concern for the environment, use of agricultural chemicals Traditional agricultural standards and better quality food products consumer. Consumers generally buy organic food for better quality crops because they are free of chemicals Pesticides and grown without the use of conventional fertilizers, product taste, care about the environment The desire to protect and avoid GMOs modified organisms. Organic farming is not a new concept as it is in practice in India since ancient times. Population growth while declining To provide healthy food crops, it is necessary to increase produce high quality food crops. Excessive use of chemical fertilizers and pesticides. Artificial growth regulators cause a problem known as contamination as Fossil fuels are dying out and not renewable Organic/green farming, nature-friendly farming methods are becoming increasingly important Organic farming is now the necessity of the times.

Organic Farming in Sikkim

Sikkim is part of the Himalayas and is located in the northeast India, this beautiful state is full of forests, meadows and mountain slopes. This makes the state a fragile ecosystem. Only 10% of his land is in Sikkim used for agriculture, 10% means about 75,000 hectares (Organic

additive-free Border; 2018) Sikkim with organic farming policy in place (2004) and its organic mission (2010) became the first organic state, 100% organic worldwide. All of its farmland is certified organic. More than 66,000 farmers have benefited. Farming methods in Sikkim Traditional approach closest to organic farming from low external input, it's rain power. Also, consumption, health, market expansion, sustainable tourism, education, rural development. In parallel with organic production first Sikkim vision Organic State of India announced in 2003 by Sikkim Prime Minister-Pawan Chamling and in 2010 by Organic. A mission has been launched consisting of an action plan with all measures necessary to achieve the goal organic state in late 2015, it became the first such country in the world. Be organic like state government, Demonstrated strong political will in policy coherence and implementation target strategy. The policy also had mandatory requirements such as banning pesticides. A chemical-based fertilizer, this was the first important step, a transition, a holistic transformation was also part of the Sikkim meal plan system.

To make sure that the certification stage is completed 80% of the budget allotted for this transformation was used to support farmers, rural service providers between 2010-2014 so that certification can be acquired and farmers were supported with quality organic seeds for the development and production of organic seeds which are local. (Heindorf, I.; 2019; Sikkim Organic Mission) The policy of Organic state had some major goals such as enhancement of soil fertility, increasing biodiversity with water quality preservation and for soil management government provided support to farmers for performing approx 40,000 soil tests in a year for improving soil health and the results were delivered which included nutrient status and alternative recommendations and this was done in the form of Soil health cards. Subsidies were provided for synthetic inputs with a conversion strategy which included the information on production of organic inputs such as vermicompost, pesticides with organic base and compost with local plants.

Over 100 communities with 10,000 farmers benefited from these training programmes between 2003 and 2009; this time frame was regarded as the initial phase of this endeavour. With the assistance of its farmers and inhabitants, a gradual prohibition on chemical fertilisers was being enacted, as was a phase-out of their use. The Sikkim organic brand was developed with the intention of pursuing both domestic and foreign markets, and its marketing strategy focuses on a few particular products, such as ginger, passionfruit, oranges, cardamom, tea, mountain veggies, and kiwi fruit. Between 2012 and 2016, Sikkim's ecotourism increased tourism by 40%, and the number of foreign visitors doubled, creating a new and advantageous organic image. Sikkim is viewed as an outstanding example for the other Indian states.

OBJECTIVES

This study focuses on the effects of organic farming after it was introduced in Sikkim because it is the area of research that has been found to be lacking, according to the literature review that has already been conducted.

The study's aims are as follows:

- 1) To research the effects of Sikkim's adoption of organic farming on overall agricultural productivity.
- 2) To investigate whether organic farming has enhanced or decreased the area's crop productivity and production.

The primary goal of the study was to determine whether organic farming in Sikkim increased agricultural yields because all pesticides were banned there, therefore whether or not these organic farming inputs are better for the crops.

Type of research – Quantitative Type of data- Quantitative data
Data Source - Secondary data

Data Collection

To examine the objectives the data is collected through various secondary sources namely:

- 1) Sikkim ENVIS Hub – On Status of Environment, Forest and Environment Department, Government of Sikkim. (sikenvis.nic.in)
- 2) Directorate of Economics & Statistics(agricoop.gov.in)

Government of India Ministry of Agriculture & Farmers Welfare Department of Agriculture, Cooperation & Farmers Welfare Directorate of Economics and Statistics.

CONCLUSIONS AND SUGGESTIONS

Organic farming is the way of the future since it can meet the growing need for food, both in terms of quantity and quality. If properly implemented, it may contribute to lower cancer rates, a better environment, and an enhanced ecology. Additionally, it might aid in boosting a nation's exports and improving demand on the global market. Costs for producing organic food are anticipated to be high in industrialized nations, but a nation like India, which has an excess of labour, might be seen as a good, cost-effective solution to the majority of our concerns. With the government's assistance and farmers' initiative, organic farming has the potential to expand India's agro-industry.

The main conclusions of this study are as follows:

- 1) Organic farming has shown to be good for the majority of crops, boosting productivity with less space and production.
- 2) Crops like rice, buckwheat, finger millet, and oilseeds are advantageous since they have increased productivity while using little land and yielding little. Increasing productivity while using the same or less land for output is the best-case scenario for farmers.
- 3) Organic farming for maize is advantageous, however in this instance, the area and production have also increased due to greater productivity.
- 4) Although the area and output of crops like pulses and barley are declining, productivity is rising extremely slowly and gradually, indicating that it will take some time for these plants to adjust and resume their previous levels of productivity growth.
- 5) In the case of wheat, organic farming is not regarded as advantageous because after 2013, there was either no production or very little production, although there may be numerous other causes for this low production.
- 6) The rate of change in productivity for all crops began to rise in the years 2011–2012 and was low or occasionally close to zero in the subsequent years (2016-18).

According to the report, Sikkim's organic farming has a beneficial impact on yields, big crop productivity, good returns in agriculture and tourism, better health, a better environment, and a better ecosystem.

Here are a few ways to improve Sikkim's crop productivity:

- 1) Teach farmers how to manage organic pesticides and compost.

- 2) Better government marketing initiatives.
- 3) Simpler certification procedures
- 4) The removal of middlemen
- 5) Teaching young farmers improved farming methods and how to create their own organic inputs.
- 6) Better government regulations to prevent inorganic goods from entering Sikkim

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