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Organic Farming for Sustainable Agriculture

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Abstract

Organic agriculture can contribute to meaningful socio-economic and ecologically sustainable development, especially in poorer countries. This is due on the one hand to the application of organic principles, which means efficient management of local resources (e.g. local seed varieties, manure, etc.) and therefore cost-effectiveness. Sustainable agriculture and development has caught the imagination and action all over the world for more than a decade. Sustainable agriculture is necessary to attain the goal of sustainable development. According to the Food and Agriculture Organization (FAO), sustainable agriculture "is the successful management of resources for agriculture to satisfy changing human needs while maintaining or enhancing the quality of environment and conserving natural resources". All definitions of sustainable agriculture lay great emphasis on maintaining an agriculture growth rate, which can meet the demand for food of all living things without draining the basic resources.

Key Words: - *Sustainable Development, Sustainable Agriculture, Chemical Farming, Soil biodiversity, Peak Management.*

"I know only one culture and that is Agriculture"

-Sardar Valla Bhai Pattel

Introduction: Agriculture has always remained the backbone of the Indian Economy and despite concentrated industrialization in the last six decades; agriculture still occupies a place of pride. Indian agriculture is reaching the stage of development and maturity with the advanced countries of the world has embarked on the path of progress. It contributes sizeable share to National Income from domestic as well as exports sources. It provides employment to around 60 percent of the total workforce in the country.

The significance of agriculture in the national economy can be explained by considering the role of agriculture under different heads. No doubt with faster development of the non-agriculture sectors in recent years, the share of agriculture in National Income has fallen. Yet, it continues to be significant at about 18 percent at present. In 1950-51, agriculture and allied occupations contributed 59 percent of the National Income. In 1980-81, its contribution in national income was 40 percent of the GDP. As the progress of

industrialization and economic growth gathered momentum under the five year plans with manufacturing and service sectors growing rapidly and agricultural sector limping along, the percent share of agriculture in GDP declined and reached at the level of 20 percent at present. Its share in GDP is falling, but its role in the economy continuous to be quite significant.

Agriculture is not just a food producing machine, but it is the backbone of the country and it is the main source of our livelihood. Agriculture is the science also art of cultivating the soil, growing and harvesting crops and raising live stocks. Agriculture is a soul of any country to raise its economic condition for supply of food, supply of raw materials, for industries, agriculture is the important foundation of the country like India, where agriculture is the main occupation and therefore, it is necessary to adopt advanced scientific method of cultivation in order to improve the agriculture. Agriculture dominates the economy to such an extent that a very large proportion of working population in India is engaged in agriculture. Data provided by the Census of India reveals that in absolute terms, agriculture has provided employment to 98 million people in 1951. In 1961, 68.9 percent of working population was engaged in agriculture. Whereas, 64.2 percent in 1981 and 59.9 percent working population in 1999-2000, out of total working population was engaged in agriculture sector. The employment generation accelerates the economic activities towards prosperity condition.



Agriculture is the life line of humanity. Any change in agriculture will result in a corresponding change in the life of people and of nature and vice - versa. There has been a very rapid change in the way we farm in the past few decades. It is characterized mainly by the dominance of machinery, and chemical technology in agriculture, replacing the traditional wisdom, which has altered our society considerably.

Over the years agriculture has undergone several changes, thus drifting away from nature. The changes in agriculture have taken a quantum jump during Green Revolution. Such changes have resulted in environmental pollution, degradation of soil health, loss of bio - diversity and others. Because of these, new agricultural technology is needed which will protect the soil, enable it to absorb precipitation, allow for perennial surface run off, also provide the food, fibre, fuel and other materials needed to sustain the population, save energy, increase production and productivity and it will also be economically viable at the small farm's level, environmentally friendly and socially acceptable, in so doing the technology should not fail to take full advantage of the knowledge of the traditional farmers. This is possible only by switching over to Organic Farming from Conventional Farming.

Economic development has reached a new dimension and the present paradigm is 'Sustainable Development'. The new generation of economic theorists concentrates on ecologically friendly and environment -supporting models of development. Theoretical issues relating to the environmentally friendly economic development are discussed in environmental economics which is a fast growing branch of general economics. The growing relevance of this subject can be seen from the fact that the scarcity of environmental goods increases over time. The Present pattern of economic growth has ended up in the deterioration of the quality of our environment. In recent economic literature, environmental quality is described as a non-marketed public good. Hence immediate action needs to be launched for ensuring the benefit of environmental services for all.

Objectives:

This study is designed to serve the following specific objectives.

- To study the method and management of organic farming and to examine the economic and environmental benefits of organic farming.
- To see how organic farming contributes to sustainable agriculture
- To understand the challenges of organic farming.

Methodology: The present study has been interpreted with the help of both primary and secondary data. The study mainly focuses on how organic farming contributes to sustainable agriculture on the basis of field survey reports published by FAO, USDA and recognized national and international institutions.

What is Organic Farming?

Organic farming is one of the widely used methods, which is thought as the best alternative to avoid the ill effects of chemical farming. There are several definitions of organic farming and the one given by the US Department of Agriculture (USDA) is considered the most coherent and stringent. It is defined as 'a system that is designed and maintained to produce agricultural products by the use of methods and substances that maintain the integrity of organic agricultural products until they reach the consumer. This

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is accomplished by using substances, to fulfill any specific fluctuation within the system so as to maintain long term.

On the other hand, the market for organic products at local and international level has tremendous growth prospects and offers creative producers and exporters in the South excellent opportunities to improve their income and living conditions. Establishing whether organic agriculture is a viable alternative for a particular holding needs to be carried out on a case-by-case basis. What potential does organic agriculture have for solving the problems of hunger and poverty? What can organic agriculture contribute to achieving socially and ecologically sustainable development in poor countries? Central to organic agriculture are promotion of soil fertility, biodiversity conservation (e.g. native flora and fauna), production methods adapted to the locality and avoidance of chemical inputs. These methods, together with cultivation of a diverse range of crops, stabilize the delicate ecosystems in the tropics and reduce drought sensitivity and pest infestation. Organic agriculture reduces the risk of yield failure, stabilizes returns and improves the quality of life of small farmers' families.



Organic farming is one of the several approaches found to meet the objectives of sustainable agriculture and sustainable development. Many techniques used in organic farming like inter-cropping, mulching and integration of crops and livestock are not alien to various agriculture systems including the traditional agriculture practiced in old countries like India. However, organic farming is based on various laws and certification programmes, which prohibit the use of almost all synthetic inputs, and health of the soil is recognized as the central theme of the method.

Adverse effects of modern agricultural practices not only on the farm but also on the health of all living things and thus on the environment have been well documented all over the world. Application of technology, particularly in terms of the use of chemical fertilizers and pesticides all around us has persuaded people to think aloud. Their negative effects on the environment are manifested through soil erosion, water shortages, salination, soil contamination, genetic erosion, etc. Soil biological activity, ensure effective peak management, recycle wastes to return nutrients to the land, provide attentive care for farm animals and handle the agricultural products without the use of extraneous synthetic additives or processing in accordance with the act and the regulations in this part'.

The origin of organic farming goes back, in its recent history, to 1940s. During this period, the path breaking literature on the subject published by J.I. Rodale in the United States, Lady Balfour in England and Sir Albert Howard in India contributed to the cause of organic farming. The farming being practiced for the last three decades in India has increasingly been found non-sustainable. The system is oriented towards high production without much concern for ecology and the very existence of man himself.

Background of Organic Farming

Over years Agriculture has undergone several changes, thus drifting away from nature. Increase in population make compulsion to stabilize agricultural production, but to, increase it further, in sustainable manner is a matter of concern. Drawbacks of Conventional farming techniques often threaten the food security and this realization led the farmers to shift from traditional chemical farming to organic farming methods which is ecologically sustainable .Higher percentage of medium conventional farmers had knowledge and adoption in organic farming practices with reference to land preparation, manure management and plant protection as compared to the small and large conventional farmers. The reason for the better adoption of organic farming practices by the medium conventional farmers could be due to the fact that they are fully devoted to farming in general and Organic Farming in particular. From the correlation studies it could be seen that there existed high correlation between knowledge of Organic Farming practices and their adoption among all categories of farmers.

Why Organic Farming?

Why do we need organic farming is often a question, there is a greater need to adopt organic farming on a large scale primarily because of the beneficial effects of organic farming.

The following are the major benefits of organic farming:

- Increase long-term fertility of the soil and Control pest and diseases without harming the environment.
- Ensure that water stays clean and safe and Food produced are nutritious and are of a high quality which can be sold for a good price
- It is a type of farming in which farmers can save money and the results are more beneficial as compared to other type of farming. Moreover It helps to increase the fertility of soil and also help in reducing soil erosion.

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- It consumes less water as compared to other farming and gives more productivity of crops. Without any kind of chemical fertilizations it helps farmers to reduce the effect of weeds by using garlic, clove oil etc.

Organic Farming and Agricultural Sustainability: Sustainable Agriculture is an agricultural system which sustains agriculture without either reduction or any break in future, while ensuring to meet the needs of the present, without compromising the ability of future generations to meet their own needs. The goal of sustainable agriculture is to minimize adverse impacts to the immediate and off-farm environments while providing a sustained level of production and profit. Inherent to this goal is the understanding that sustainability must be extended not only globally, but indefinitely in time, and to all living organisms including humans. Simply stated, sustainable agriculture refers to the ability of a farm to produce food indefinitely, without causing irreversible damage to ecosystem health. But in the way of following organic farming, there are several obstacles and these are the challenges of organic farming:

Dependency on fertilizers. Greater amount are needed every year to produce the same yields of crops. Pests and diseases may turn more difficult to control as they become resistant to artificial pesticides. Organic farming gives low productivity of vegetables such as potatoes in the same areas where the conventional farming produces more. It enhances the emission of carbon dioxide and this may produce bad effect in the climate. As carbon dioxide is stored in these crops so it is harmful for the human life and can be dangerous for us. It is also known that the food which is derived from organic resources is very harmful because it produces E.coli bacterial infection. Farming with organic methods gives smaller crops as compared to artificial.



Problems of Organic Farming: Unlike conventional Farming, personal presence and a thorough knowledge of Organic Farming practices are necessary. Production of traditional varieties of seeds, generation of organic manure, bio-fertilizers, bio-pesticides and botanical pesticides are some of the major challenges. Organic Farming has to face. These problems can be overcome by sustained efforts of the farmers and with the help of the Organic Farmers' co-operatives, Government as well as the Non-Governmental Organizations. As Organic Farming practices are location specific. Decentralized research should be carried out in the farmers' fields.

In the first two to three years after the introduction of Organic Farming, there will be a decline in the yield. Farmers Co-operatives could offer a helping hand in this regard for the first two to three years. In order to get better prices for Organic Farming products, special markets should be established in appropriate places. All the state Agricultural Universities should be encouraged to take up experiments on the performance of Organic Farming. The State Agricultural Universities could recommend the Government Extension Agencies to promote Organic Farming, wherever possible. As Organic Farming is highly location specific the roles of Non-Governmental Organizations and other Farmer's Association are very much important.

Findings:

The following are the major findings of the study:

- Organic farming is a farming technique that aims to work in harmony with nature.
- Organic farming is a farming method which is sustainable as it uses only bio-inputs which does not harm the environment
- There are some challenges when pursue organic farming.

Suggestions to promote Organic Farming: It is seen that only Organic Farming can bring sustainable Development in the long-run. Hence efforts must be taken to promote Organic Farming and the following are the suggestions to promote Organic Farming.

1. Farmers should be trained to produce bio-fertilizers, bio-pesticides. Botanical pesticides and vermicomposts.
2. Green manure seeds, bio- fertilizers and bio-pesticides should be made available to the farmers at an affordable price.
3. Urban wastes should be properly collected, composted and made available to the farmers.
4. Social forestry and Agroforestry should be promoted.
5. Suitable research should be taken to improve local breeds which could be affordable by the farmers.
6. Agricultural research and development should be nature oriented.
7. Holistic planning for agriculture at grass-roots level should be encouraged.
8. Separate markets should be established for Organic Farming products.
9. Consumers should be educated about the advantages of Organic Farming products.

10. Absentee landlordism should be discouraged.
11. State Agricultural Universities and other Research Institutes should be encouraged to take up Research in Organic Farming.
12. Organic Farmers, cooperatives and Organic Farming societies should be promoted.
13. Voluntary Agencies should be encouraged to include Organic Farming as one of their important components in Rural Development.
14. Government should withdraw the subsidies given to chemical fertilizers and pesticides.
15. Steps should be taken to increase the number of farm animal units on farms.

Conclusion: Agriculture has always remained the backbone of the Indian economy and despite concentrated underutilization in the last six decades, agriculture still occupies a place of pride. Organic farming is a system which avoids or largely excludes the use of synthetic/chemical inputs for production and is sustainable which does not harm the physical environment.

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