



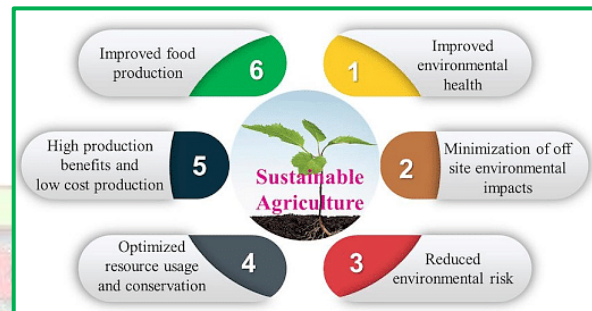
## Sustainable Agriculture and Food

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The research you are looking for will primarily determine issues related to sustainable agriculture, in order to preserve the present for the future. It also explains the history and benefits of sustainable agriculture. Sustainable agriculture is the best way to feed our population. Soil, land, climate, temperature, NPK, etc. are some of the factors that influence the growth of sustainable agriculture. This includes practices such as composting, intercropping, multiple cropping, crop rotation and organic fertilizers. The study found that farmers responded positively to sustainable agriculture.



### Introduction

First, what is “sustainable agriculture”? The word sustainability is Latin and the word agriculture is also Latin. Sustainable basically means using natural products and energy that do not harm the environment and can be used for a long time. The term 'sustainable agriculture' was coined by Australian agronomist 'Gordon McClement'. The term became popular in the 1980s. It is an agricultural cultivation practice that meets society's current food and fiber needs without compromising its ability to meet the needs of current or future generations. Environmentally friendly agricultural methods are practiced to grow crops and produce livestock without harming the environment, humans or natural systems. Agroforestry, mixed crops, mixed farming and organic farming are some of the elements of sustainable agriculture.

### History of Sustainable Agriculture

A History of Sustainable Agriculture In the 1960s and 1970s, agricultural sustainability was not a major issue. In the 1960s, naysayers predicted that preventing mass extinctions during this era would be a major concern (Harwood and Richard 2020).

Knowledge of the greenhouse effect makes people aware that deforestation through slash-and-burn agriculture is a major contributor to carbon dioxide emissions. Early pioneers of the sustainable movement were motivated by a desire to reverse agricultural problems such as soil depletion, erosion, fodder and rural poverty. Had a holistic view that depends on agriculture, which depends on the long-term lifespan of the soil. (Kuepper George 2010). In order to cultivate the soil, it is necessary to practice traditional humus cultivation, which not only protects the soil, but also regenerates it. These practices are primarily for crop residue management, livestock manure application, cover manure, composting, etc. This sustainable farming began in his late 20th century and early 21st century amid growing concern over the

rapid growth of the world's population. This became a serious problem and was subsequently widely discussed in agriculture in the United States, the world's largest industry requiring critical inputs such as land, water and labor. At the turn of the 21st century, experts questioned how the industry can keep pace with the growing global population. This discussion is about global food insecurity. A consensus has been reached that sustainable agriculture is the most practical and best way to feed a growing population. Many obstacles have been encountered during the introduction of sustainable agriculture, as the benefits of this agriculture are not immediately visible. So it saves water as it will only become visible when water shortages occur in the future. Benefits such as reduced soil and nutrient loss, improved soil structure, and increased levels of beneficial microorganisms take time.

### **Sustainable agriculture generally includes**

1. This reduces the problem of weeds, diseases, insects and other pests. It provides an alternative source of soil nitrogen reduces soil erosion and also reduces the risk of water pollution from pesticides.
2. Pest control strategies that do not harm natural systems, farmers, neighbours, or consumers. This primarily includes integrated pest management techniques that reduce the need for pesticides through practices such as reconnaissance, use of resistant cultivars, timing of planting, and biological pest control.
3. Improved mechanical and biological weed control. Other soil and water protection techniques are practiced. And strategic use of animal and green manures (legumes are used to add nutrients and organic matter to the soil) (O'Connell Paul F., 1991)



### **Factors influencing sustainability**

1. Nutrients: NPK is a vital nutrient.
2. Soil: Soil erosion and land degradation are the major problem in today's life.
3. Land: Finite resource on Earth Island.
4. Energy: Modern agriculture uses energy for agricultural machinery, storage, food processing and transportation.
5. Water: Water is the most important element required for agriculture. Sustainable agriculture includes many practices such as agroforestry, biofuels, conservation farming, dairy waste management, food waste management, organic farming, precision agriculture, soil nutrient management and water use efficiency. . All of these practices are practiced today to conserve agricultural resources and produce good, healthy food. In this agriculture, very few fertilizers and pesticides are used. This method helps protect our environment, soil fertility and the expansion of natural mineral resources.

### **Sustainable Agricultural Practices**

1. Organic farming should be practiced. Practices in this field) Composting: Properly decomposing livestock manure, crop residues and vegetable manure over a period of 1-6

months to form compost. b) Vermicompost: This method uses earthworms to consume agricultural waste and turn it into high quality compost.

2. Organic Fertilizers: Improves soil nutrient availability by improving nitrogen fixation. Microorganisms are added to the rhizosphere of plants to increase their activity by selecting effective varieties
3. Crop rotation: The sowing of different crops should be done in crop rotation. Legumes and grains can be grown in mixed crops such as rice and mustard.
4. Multicropping: This includes growing two or more crops on the same field. Tomatoes and onions for example.
5. Cover Crop Cultivation: Growing two or more crops simultaneously in the same field. It mainly grows two or more crops in close proximity, such as soybeans and corn.

### Benefits of Sustainable Agriculture

- Fewer pollinators are killed due to reduced use of chemical fertilizers and pesticides. The impact on marine life is also reduced.
- Adds space to reduce disease transmission instead of needlessly administering antibiotics to livestock.
- The use of chemical fertilizers is restricted. The amount of fertilizer applied is small, so there is little burden on the environment.
- It also improves the working environment. Animals get a better environment for their welfare.
- It also supports the local economy. Farmers don't use fertilizers, so they save money.
- The use of organic farming also improves health.



**Sustainable Agriculture in India** In India, agriculture is predominantly rain-fed, with 60% from net seed and 40% from gross food production. Rain-fed agriculture is practiced in India, hence the continued development of the rain-fed agricultural economy. Due to the growing demand for food in the country, food preservation is also practiced. This National Mission for Sustainable Agriculture (NMSA) aims to increase agricultural production, especially in areas with high rainfall, including integrated agriculture, soil health management, water efficiency and resource conservation. Sustainable agriculture in India improves food security by diversifying its sources and incomes. It also improves food security for farmers. Today, 3.1 million hectares of farmland are organically grown. Over 6 million farmers work under it. 6.2 million hectares of land are also certified.

## Conclusion

Sustainable agriculture is environmentally friendly and environmentally responsible practices aimed at improving the quality and quantity of food through efficient use of available resources. Therefore, it is essential for the development of a healthy environment. This improves soil fertility and soil health. Sustainable agriculture is therefore a better scope for agricultural development.

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