



IIT KHARAGPUR



NPTEL ONLINE
CERTIFICATION COURSES

Organic Farming for Sustainable Agricultural Production

Dr. Dillip Kumar Swain, Associate Professor
Agricultural and Food Engineering Department

Lecture 04 : Organic Farming Concepts and Principles

Why Organic Farming?

- Organic farming provides long-term benefits to people and the environment.
- Involves the steps of using the factor of going 'green' by using the fertilizers that are bio based to develop the crops
- Organic farming aims to:

Increase long-term soil fertility

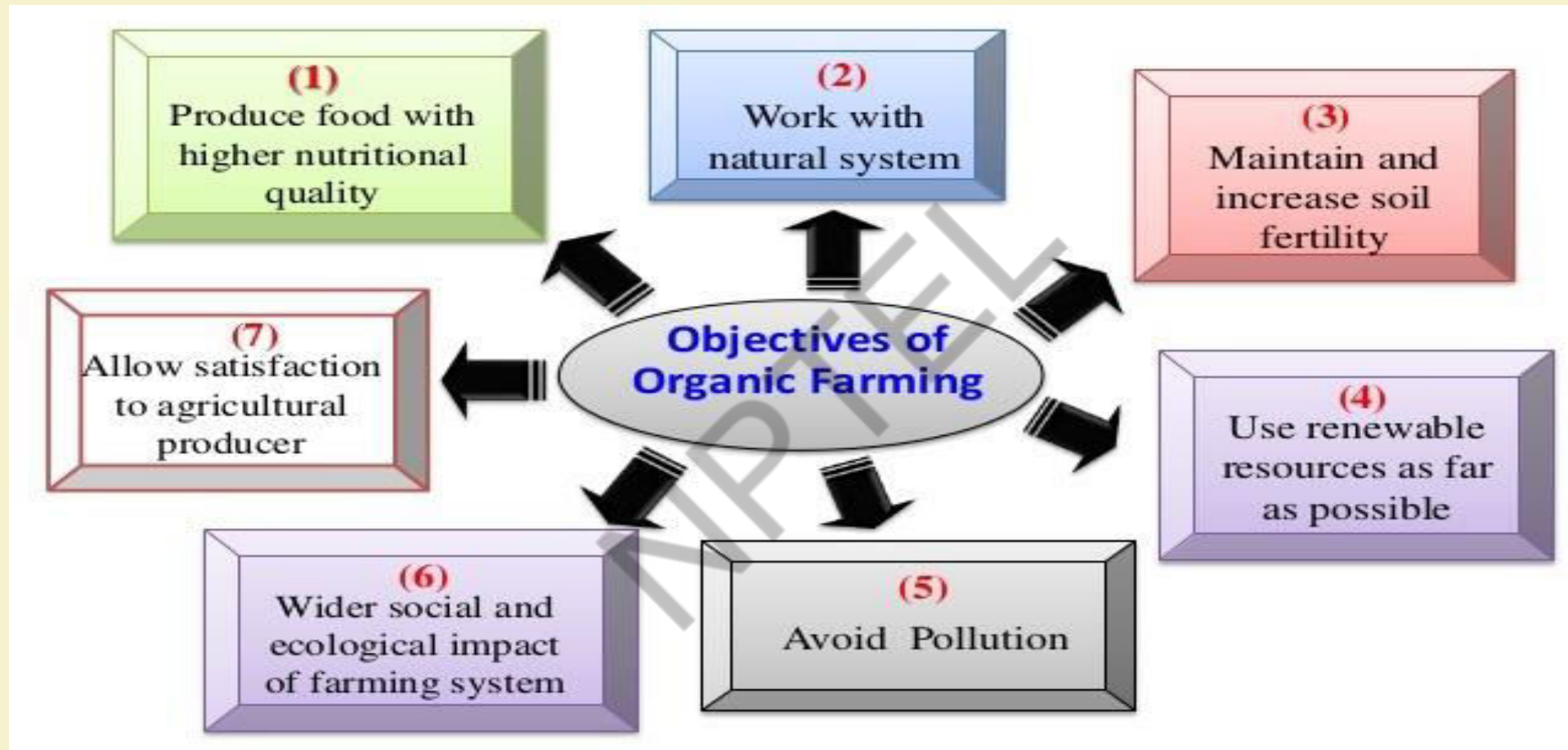
Control pests and diseases without harming the environment

Ensure that water stays clean and safe

Use of existing resources, so the farmer needs less money to buy farm inputs

Produce nutritious food, feed for animals and high quality crops to sell at a good price

Objectives of Organic Farming



Concepts

- Work as closely as possible in closed cycles and use local resources
- Preserve the natural fertility of the soil
- Avoid all forms of pollution that arise from farming practices
- Promote tillage practices that show most concern for the environment and Nature
- Produce foods of optimal nutritional value

Concepts

- Reduce the use of non-renewable resources in agriculture, including fossil fuels
- Work to ensure that the waste products from towns and food industries achieve a quality that allows their re-use as fertilisers in agriculture
- Provide all animals with living conditions that satisfy their natural behaviour patterns and needs
- Do everything possible to ensure that all living organisms that the farmer works with are allies, (be they micro-organisms, plants or animals).

Low External Input Technology (LEIT):

The technology that concerns collection of crop management inputs and techniques for soil conservation, soil fertility enhancement, crop establishment, and pest control. The delineation of the technology may serve either a restrictive or integrative purpose.

The restrictive interpretation promotes LEIT as a way of insulating framers from use of external inputs in the service of socio-economic and environmental ends. This promotes environmental sustainable small scale farming that emphasizes Low External Input Sustainable Agriculture (LEISA) or it promote active participation in the market by offering a distinctive, environmentally friendly brand such as Organic Agriculture.

The integrative interpretation sees LEIT as an essential element in broad strategies of agricultural development. It incorporates LEIT along with appropriate external input in strategies such as integrated nutrient management and integrated pest management.

Social Criteria for LEISA

- Wide-spread and equitable adoption potential, especially among small farmers
- Reduced dependency on external institutions
- Enhanced food security at the family and national level
- Respecting and building on indigenous knowledge, beliefs and value systems
- Contribution to employment generation

Different Concepts of Organic Farming

USDA Concept

Organic farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection

FAO concept

Organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs.

Philosophical concept

Organic farming in spirits of organic relationship. In this system everything is connected with everything else.