

MODULE III

NATURAL RESOURCES

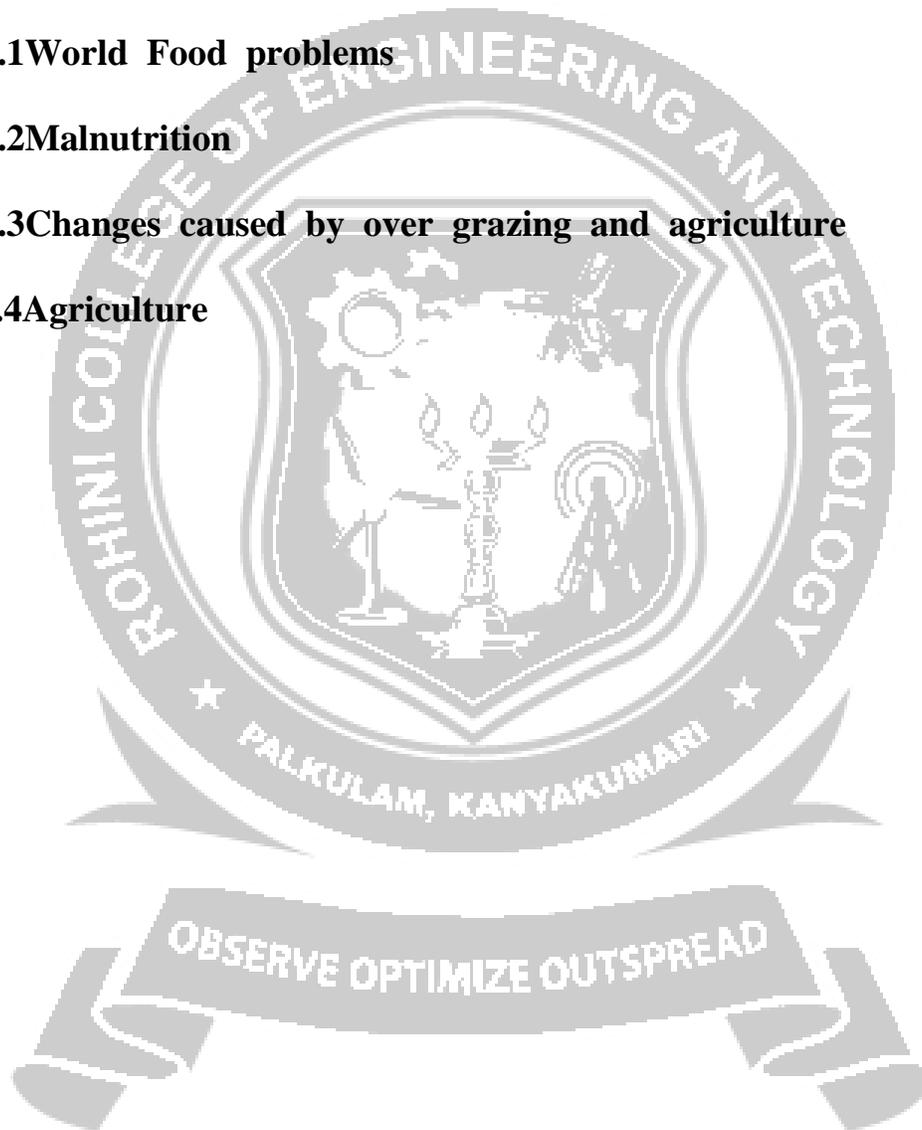
3.4 FOOD RESOURCES

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3.4.4 Agriculture



MODULE III

3.4 FOOD RESOURCES

Food resources

- ❖ Food is an essential requirement for the human survival.
- ❖ It is a natural resource.
- ❖ It's components are carbohydrates, fats, proteins, minerals and vitamins.

3.4.1 World Food problems

1. Due to the rapid growth of population, the cultivable land area gets reduced. So the world food problem arises.
2. Environmental degradation like soil erosion, water logging, water pollution, salinity affect the agricultural land.
3. Urbanization, modernization, industrialization destroys the agricultural land. It leads to low food production.
4. The food grains like rice, wheat, corn, vegetable like potato are the major food for all over the people. So, the food problem rises.

3.4.2 Malnutrition

The deficiency (or) excess of one (or) more nutrients causing diseases is known as malnutrition.

It is caused by under nutrition (or) imbalance.

(EX) 'Night Blindness' caused by vitamin 'A' deficiency.

Rickets caused by Vitamin 'D' deficiency.

3.4.3 Changes caused by over grazing and agriculture

Over grazing : It is a process of eating away the forest vegetation without giving a chance to regenerate.

Effects of over grazing:

i. **Land degradation**

Over grazing removes the top layer soil and gets compacted. So plant roots cannot enter into deep soil and the adequate soil moisture is not available. It leads to organically poor, dry, compacted soil, which is not used for further cultivation.

ii. **Soil erosion :**

The plants roots are very good binders of the soil. When the plants are removed, the soil becomes loose, and gets eroded by the action of wind and rainfall.

iii. **Loss of useful species:**

Over grazing also affects the composition of plant population and their regeneration capacity. So the useful species may lost.

3.4.4 Agriculture

Agriculture is an art, science & industry of managing the growth of plants & animals for human use.

i. **Deforestation**

Cutting & burning of trees in forest area reduces the cultivate land area.

ii. **Soil erosion**

Due to heavy wind, rainfall, the tap layer soil fertility gets reduced.

iii. **Loss of nutrients**

Due to deforestation and natural disaster organic matters in the top soil gets destroyed. So the plant growth gets affected.

Effect of modern agriculture

1. Problems in using fertilizer

i. Micro nutrient imbalance:

When the excessive usage of fertilizers containing (nitrogen, phosphorous & potassium called macro nutrients are used in the fields, it causes micro nutrient imbalance.

ii. Blue baby Syndrome

Due to excessive usage of nitrogenous fertilizers, it penetrates into the soil and contaminates ground water. So the nitrate concentration level increases. It exceeds 45 mg/lit, causes Blue baby syndrome. This disease affects infants and leads to even death.

iii. Eutrophication

A large proportion of N & P fertilizers used in crop fields is washed off by the runoff water and reaches the water bodies causing over-nourishment of the lakes. This process is known as Eutrophication. It also enhances the growth of algae and pollutes the water.

2. Problems in using pesticides

i. Death of non – target organisms:

Many pesticides not only kill the target species. But also kill the several non – target species which are useful to us.

ii. Producing new pests

Some pest species usually survive even after the pesticide spray, which generates highly resistant generations. They are immune to all types of pesticides and are called super pests.

iii. Bio magnification

Many of the pesticides are non – bio degradable and keep on concentration in the food chain. This process is called bio – magnification, which is harmful to the human beings.

iv. **Risk of cancer**

Pesticides enhance the risk of cancer in two ways.

- i. Directly act as carcinogens
- ii. Indirectly suppress the immune system.

3. **Problems in water logging**

Water logging is the land, where water stand for most of the year.

Due to water logging provides in the soil get filled with H₂O & soil air gets depleted. So the plant roots not get enough air for respiration. Hence it affects soil strength and crop yield fails.

4. **Problems in salinity**

The water not absorbed by the soil undergo evaporation, leaving behind a thin layer of dissolved salts in the top soil. The process of accumulation of salts is called salinity of soil.

Due to salinity, the soil becomes alkaline and crop yield decreases.

