

**Ln-15 IMPROVEMENT IN FOOD RESOURCES** OCT/NOV

Improvement in crop fields:

Kharif crops : These are grown in rainy season (from the month of June to October).

Eg: Paddy, Soyabean, Pigeon pea, maize, cotton, etc.

Rabi Crops: These are grown in winter season. (from November to April).

Eg: Wheat, Gram, Peas, Mustard, linseed, etc.

Groups of activities for improving crop yields can be classified as

- \* Crop Variety improvement.
- \* Crop production improvement.
- \* Crop protection management

Crop Variety improvement:

- \* Hybridisation (crossing between genetically dissimilar plants).
- \* Crossing may be intervarietal and interspecific or intergeneric .

Some of the factors for which crop variety improvement is done are:

- \* Higher yield
- \* Improved quality
- \* Biotic and Abiotic resistance
- \* Change in maturity duration
- \* Wider adaptability
- \* Desirable agronomic characteristics

Crop Production Management

i) Nutrient Management

- \* Macro nutrients (Required in large quantities)
- \* Micro nutrients (Required in small quantities)

ii) Manure:

- \* It is prepared by the decomposition of animal excreta and

Plant waste.

Manure can be classified as

- \* Compost and vermi - compost
- \* Green Manure

iii) Fertilizers:

Fertilizers supply nitrogen, phosphorous and Potassium to the plants.

Organic farming:

It is a farming system with minimal or no use of chemicals such as fertilizers, herbicides, pesticides, etc and with a minimum input of organic manures, recycled farm-wastes use of bio-agents such as culture of blue green algae in preparation of bio fertilizers neem leaves or turmeric specifically in grain storage as bio-pesticides, with healthy cropping system.

Irrigation:

Kinds of irrigation systems are adopted to supply water to agricultural lands are Wells, Canals, Rivers and tanks.

Cropping Patterns:

- \* Mixed Cropping
- \* Inter - Cropping
- \* Crop Rotation

Crop Protection Management

\* Removal of weeds like Xanthium, Parthenium, Cyperinus rotundus.

\* Weeds, insects and diseases can be controlled by using pesticides, herbicides, insecticides and fungicides.

Storage of grains:

\* Factors responsible for storage losses are biotic - insects, rodents) fungi, mites and bacteria.

\* Abiotic - inappropriate moisture & temperatures in the place of storage.

Animal Husbandry:

Animal husbandry is the scientific management of animal livestock.

Cattle farming:

\* It is done for purposes milk and draught labour for agricultural work.

\* Indian breeds - Bos indicus - Cows, Bos bubalis - Buffaloes

\* Milk producing females - milch animals

\* Labour - draught animals.

\* Exotic or foreign breeds - Eg. Jersey

\* Local breeds - Red Sindhi, Sahiwal

Poultry farming:

\* Indigenous - Eg: Aseel

\* Exotic Breed - Eg: Leghorn

Breeds for variety improvement to develop new varieties for the following desirable traits.

- \* number and quality of chicks.
- \* dwarf broiler parent for commercial chick production.
- \* Summer adaptation capacity.
- \* Low maintenance requirements.
- \* Reduction in the size of the egg-laying bird with ability to utilise more fibrous cheaper diets formulated using agricultural by-products.

Egg and Broiler Production:

- \* Broilers for meat purposes.
- \* Egg layers for eggs purposes.

Fish Production:

- \* Natural Resources - Capture fishing
- \* Fish farming - Culture fishery

Marine fisheries:

- \* Eg: Pomphret, mackerel, tuna, Sardines and Bombay duct.
- \* Mullet, bhetki and pearls spots, shellfish such as prawns, mussel and oysters as well as seaweed.

Inland Fisheries:

- \* Capture fishing is done in inland water bodies.
- \* Intensive fish farming can be done in composite fish culture systems.
- \* Catla - Surface feeders.
- \* Rohu - feed in the middle zone of the pond.
- \* Mrigals & Common carps - Bottom feeders.
- \* Composite fish culture is that many of these fish breed only during monsoon.

Bee - Keeping:

- \* Local varieties of Bees → Apis cerana.
- \* Apis indica
- \* Apis dorsata
- \* Apis florea
- \* Apis mellifera

## Ch-13 WHY DO WE FALL ILL?

DECEMBER

→ Health & its Failure:

Health → idea of 'being well'

Personal and Community issues Both matter for

Health:

Social equality and harmony are therefore necessary for individual health.

Distinctions between 'Healthy' and 'Disease - free'.

'Disease' - Disturbed ease (or) Being Uncomfortable.

'Healthy' - To have the opportunity to realize the Unique potential in all of us is necessary for real health.

Disease and its causes:

What does disease look like?

\* When there is a disease, either the functioning of one or more systems of the body will change for the worse.

\* Symptoms are being 'Wrong', like headache, cough, loose motions, wound with pus.

Acute and chronic Diseases:

\* Some diseases last for only very short periods of time and these are called acute diseases.

\* Diseases which last for a long time are called chronic diseases.

Causes of Diseases:

- \* Unhygienic water
- \* malnutrition
- \* Genetic difference
- \* Poverty

Infections & Non-Infectious Causes.

\* Diseases where microbes are the immediate causes are called

Infectious diseases.

\* Diseases that are not caused by infectious agents are called non-infectious diseases.

Infectious diseases:

- SARS
- Leishmania Causes Kala - azar
- Staphylococci - acne
- Trypanosoma - Sleeping sickness.
- Ascaris lumbricoides - In the small intestine.

Examples of viral diseases: Common Cold, influenza, dengue fever and AIDS

Examples of Bacterial diseases: Typhoid, fever, Cholera, tuberculosis and anthrax.

Examples of fungal diseases: Infections in Skin.

Examples of Protozoan diseases: Malaria, Kala-azar.

Examples of diseases caused by worms: Elephantiasis

Means of Spread:

Microbial agents can commonly move from an affected person to someone else is called 'communicable diseases'.

Eg. Common Cold, Pneumonia & tuberculosis.

Organ - Specific and Tissue - Specific Manifestations.

Eg. Malaria - causing microbes, entering through a mosquito bite, will go to the liver and then to the red blood cells.

→ The signs & Symptoms of a disease will thus depend on the tissue or organ which the microbe targets.

→ An active immune system recruits many cells to the affected tissue to kill off the disease - causing microbes. This recruitment process is called inflammation.

Principles of Treatment:

\* 'Prevention is better than cure'

\* For airborne microbes, we can prevent exposure by providing living conditions that are not over crowded.

\* For water - borne microbes, we can provide safe drinking water.

\* For Vector - borne infections, we can provide clean environments.

Immunization:

The Vaccines against tetanus, diphtheria, whooping cough, measles, polio of childhood immunization for preventing infectious disease.

## Ln-14 NATURAL RESOURCES **JANUARY**

The Breath of Life: Air

CO<sub>2</sub> is fixed in 2 ways:

i) Green plants convert carbon dioxide into glucose in the presence of sunlight and many marine animals use carbonates dissolved in sea water to make their shells.

The movement of Air: Winds

Activity 14.2

Rain: Activity: 14.3

Air Pollution:

Presence of high levels of the pollutants cause air pollution.

Effects of air pollution:

→ Allergies, cancer and heart diseases.

Water: A wonder Liquid.

Water on Earth's surface is found in seas and oceans and is saline.

Water Pollution:

→ fertilisers and pesticides on farms.

→ Sewage from our towns and cities and the waste from factories causes water pollution.

Mineral Riches in the soil:

→ Soil is an important resource that decides the diversity of life in an area.

→ Over long periods of time, thousands and millions of years, the rocks at or near the surface of the earth are broken down by various physical, chemical and some biological processes.

The factors or processes that make soil are:

1) The sun 2) Water 3) Wind 4) Living organisms

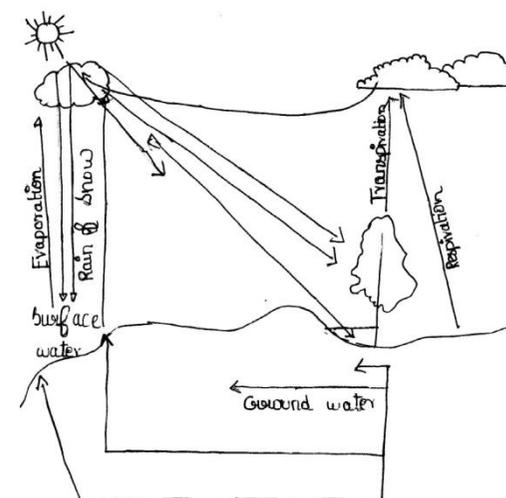
Soil Erosion:

→ The large -Scale deforestation that is happening all over the world not only destroys biodiversity, it also leads to soil erosion.

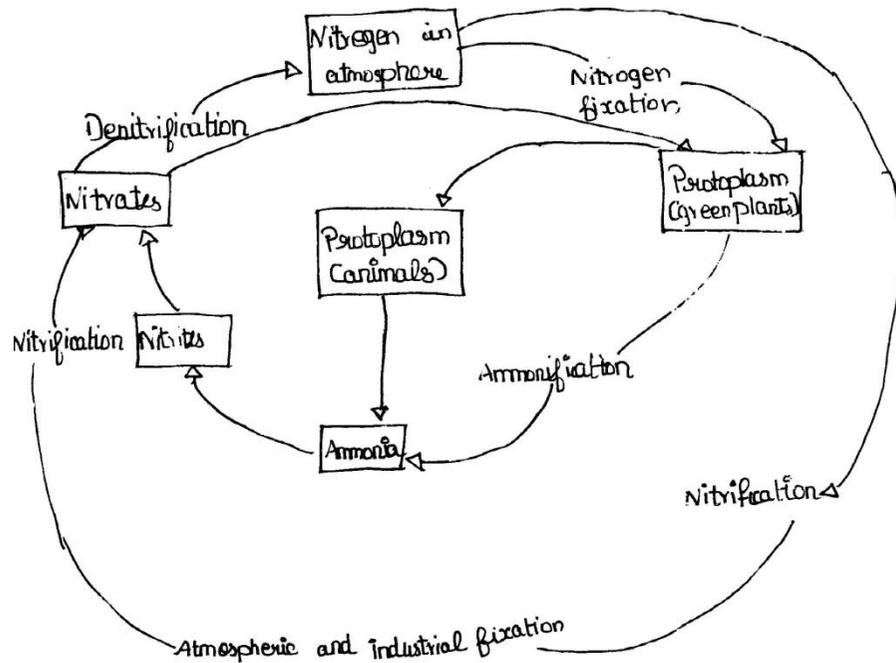
Biogeochemical cycle:

→ A constant interaction between the biotic and abiotic components of the biosphere is called Biogeochemical cycle.

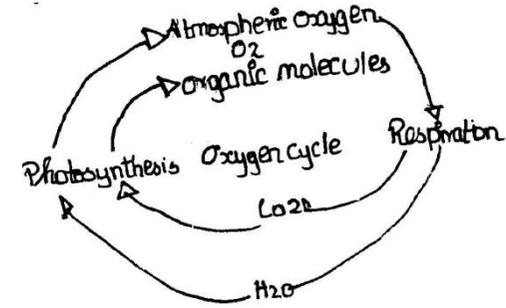
The Water - Cycle



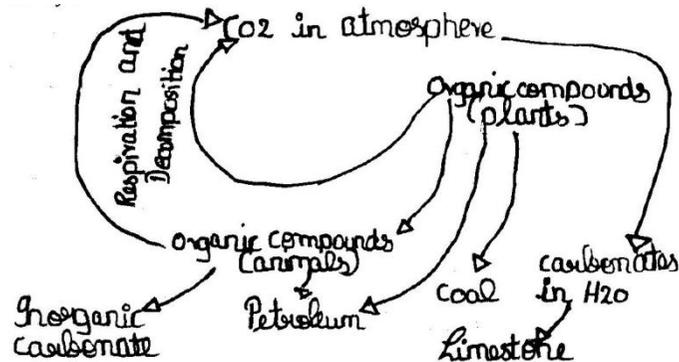
## Nitrogen Cycle:



## The Oxygen - Cycle:



## The Carbon Cycle:



## The Green House Effect:

→ An increase in the percentage of  $CO_2$   $CH_4$  gases in the atmosphere would cause the average temperature to increase world-wide and this is called the green house effect.

→  $CO_2$  is one of the green house gases.

## Ozone layer:

→ Ozone -  $O_3$

→ Ozone absorbs harmful radiations from the sun.

→ CFCs reach the ozone & getting depleted.