ENVIRONMENTAL STUDIES

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- Food Resources
- Energy Resources
- Land Resources

Food Resources

- World Food Problems
- Food Insecurities

World Food Problems

- Hunger
- Food wastage

Global Hunger Index

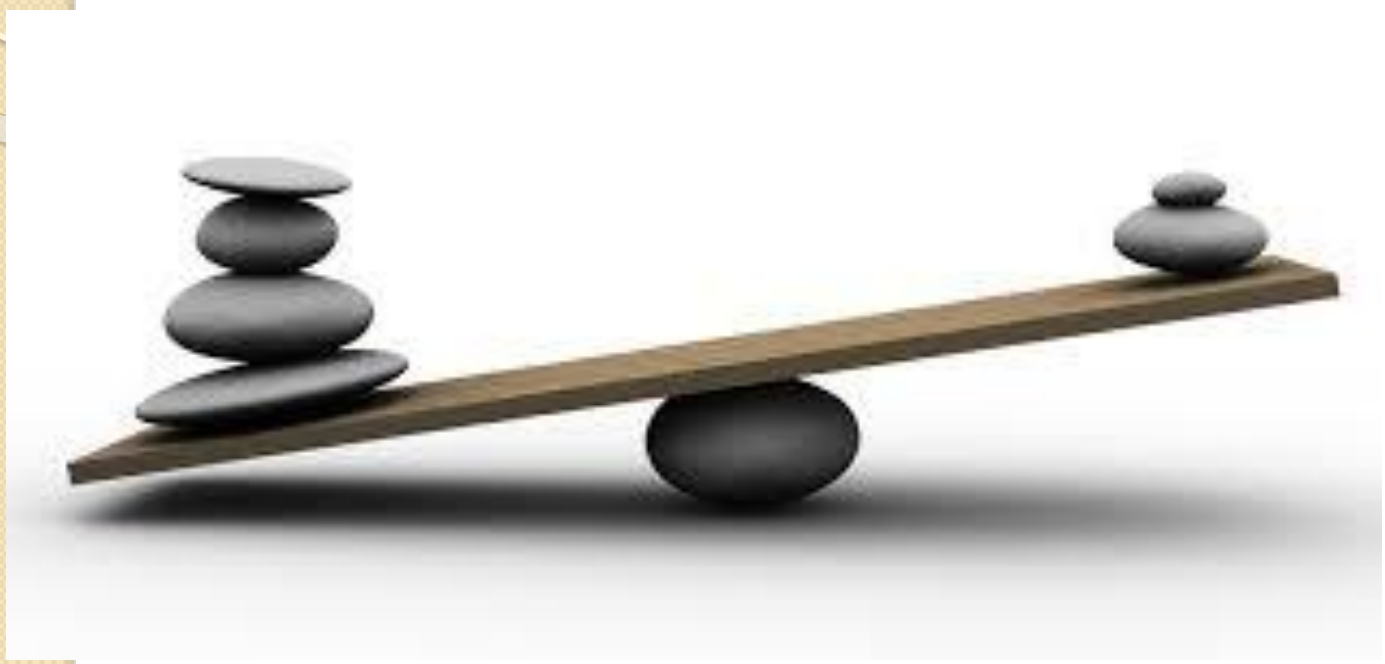
Where India stands

The Global Hunger Index score is computed using four indicators — undernourishment, child wasting, child stunting and child mortality. A country's GHI score is classified by severity — low (▬), moderate (▬) and serious (▬)

RANK	COUNTRY	2020 SCORE
1-17*	China	<5
64	Sri Lanka	16.3
73	Nepal	19.5
75	Bangladesh	20.4
78	Myanmar	20.9
88	Pakistan	24.6
94	**India**	**27.2**
99	Afghanistan	30.3

**17 countries have scores of less than 5 and are collectively ranked 1-17*

Causes>Imbalance



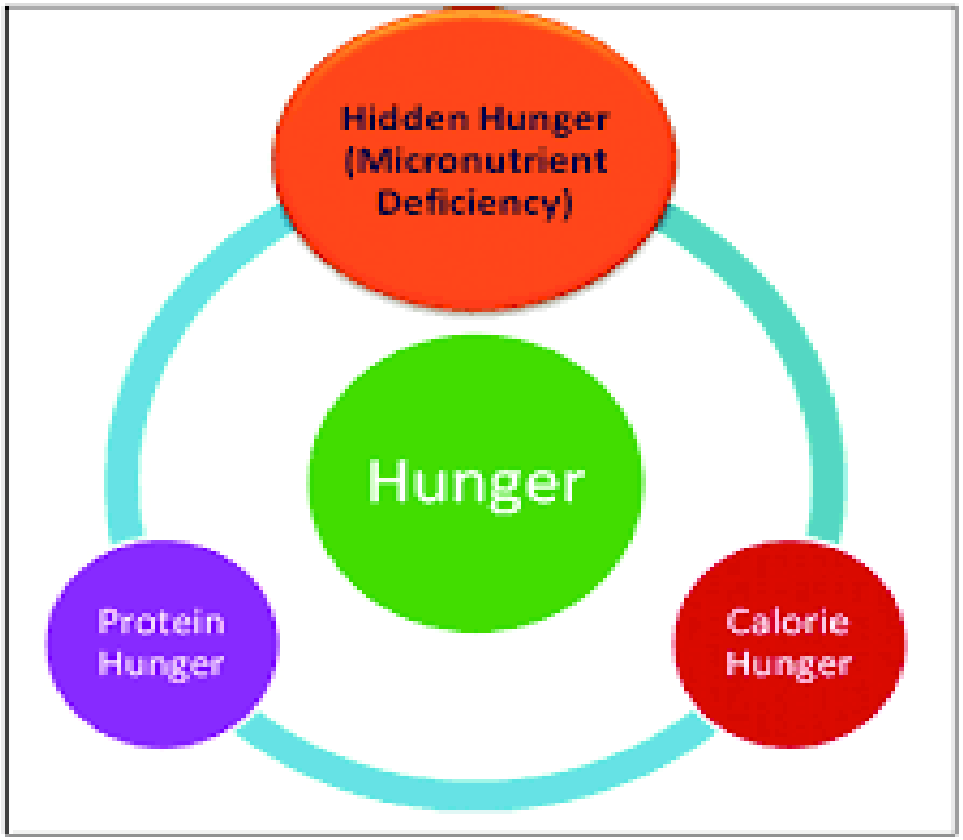
Parameters of Imbalance

- Population
- Man made & Natural Disaster
- Poverty & Price rise
- Corruption

Hunger form

Food hunger comprises of

- Basic hunger
- & Hidden Hunger

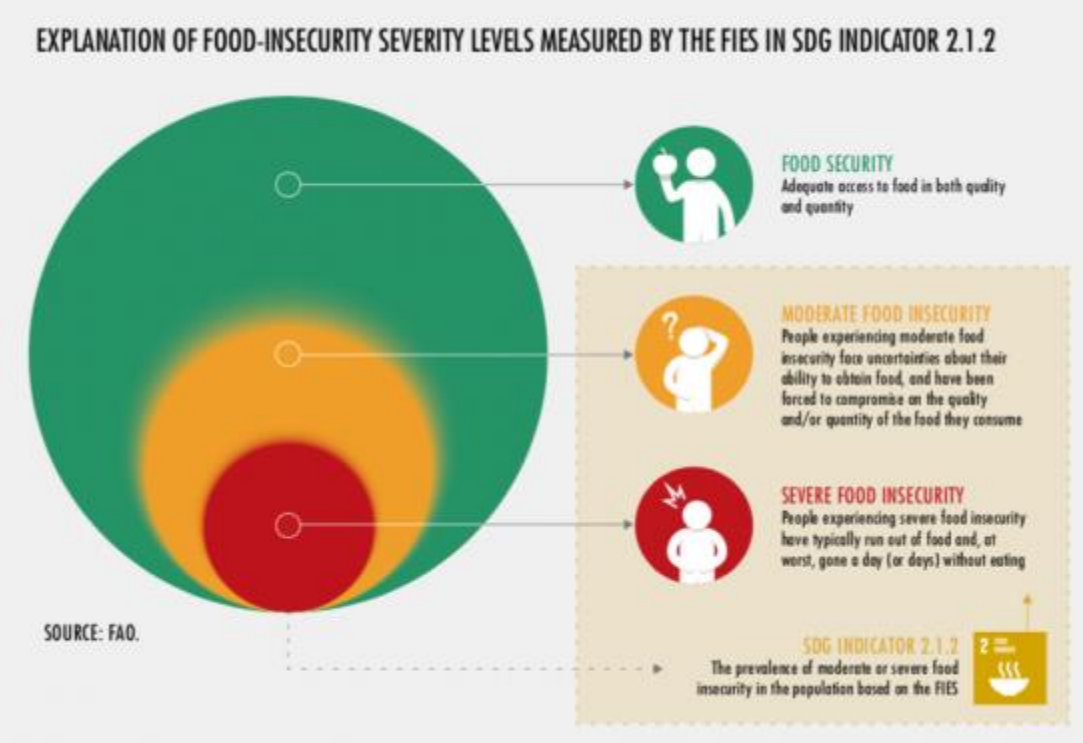

Hidden Hunger
(Micronutrient
Deficiency)
Hunger
Protein
Hunger
Calorie
Hunger

Some important Vitamin & Mineral deficiencies causes followings:

- Anaemia,
- VAD,
- Scurvy,
- IDD
- & many more

Food Insecurities

- Lack of Physical, Social & Economical access to foods.
- Hunger is possible outcome of Food Insecurity


EXPLANATION OF FOOD-INSECURITY SEVERITY LEVELS MEASURED BY THE FIES IN SDG INDICATOR 2.1.2
FOOD SECURITY
Adequate access to food in both quality and quantity
MODERATE FOOD INSECURITY
People experiencing moderate food insecurity face uncertainties about their ability to obtain food, and have been forced to compromise on the quality and/or quantity of the food they consume
SEVERE FOOD INSECURITY
People experiencing severe food insecurity have typically run out of food and, at worst, gone a day (or days) without eating
SDG INDICATOR 2.1.2
The prevalence of moderate or severe food insecurity in the population based on the FIES
SOURCE: FAO.

Reason & Classification

Some important reasons:

- Income,
- Employment
- Race/ethnicity
- Disability

As per USDA, there are two basic type of Food Security:

- **Low food security**: "Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake."
- **Very low food security**: "Reports of multiple indications of disrupted eating patterns and reduced food intake."

Food wastage

- As per CSR Journal, "INDIANS waste as much food as the whole of United Kingdom consumes"
- Up to 40 per cent of the food produced in India is wasted, according to the United Nations Development Programme, and about 21 million tons of wheat is wasted annually.

Food wastage (contd.)

- Every year in India, about 67 million tonnes of food is wasted, which has been estimated to be around of Rs 92,000 crores. In other words, this amount is adequate to feed all of Bihar for a year.
- Nearly 21 million metric tons of wheat is found to rot in India per year. This number is equivalent to the gross annual production of Australia.
- Mumbai produces almost 9,400 metric tonnes of solid waste per day, 73 percent of which is dairy, vegetable, and fruit waste, while just 3 percent is plastic, according to old BMC data from 2018.
- National Delhi also produces about 9,000 metric tonnes of waste per day, with East Delhi being the largest landfill in the region.

Food waste has multiple loss aspects

- Energy loss
- Water loss (ground & fresh water)
- Loss of Oil
- Loss of other food ingredients
- Land loss
- Increment of GHG(green house gas)
- Adverse effect on Bio diversity


ZERO
WASTE

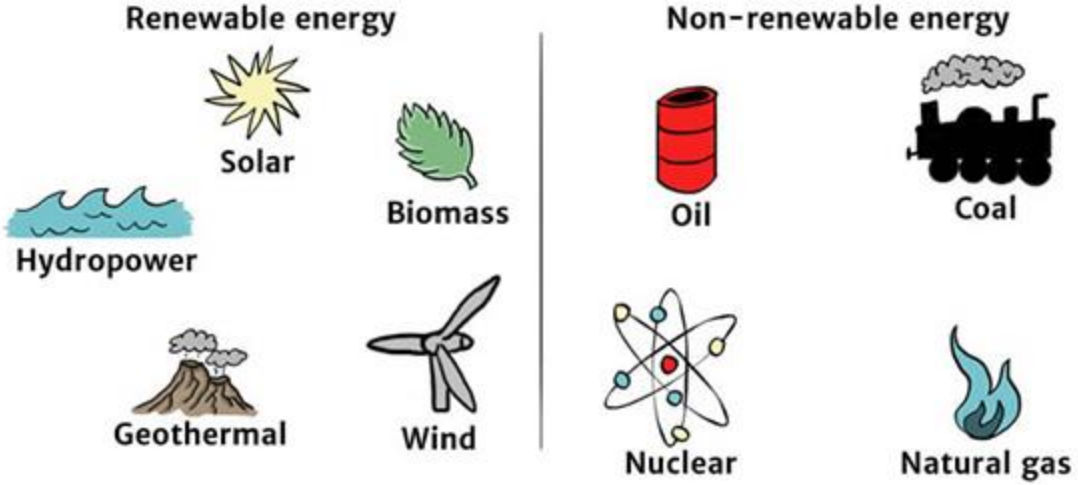
Energy Resources

- Energy resources form
- Use of alternate energy sources

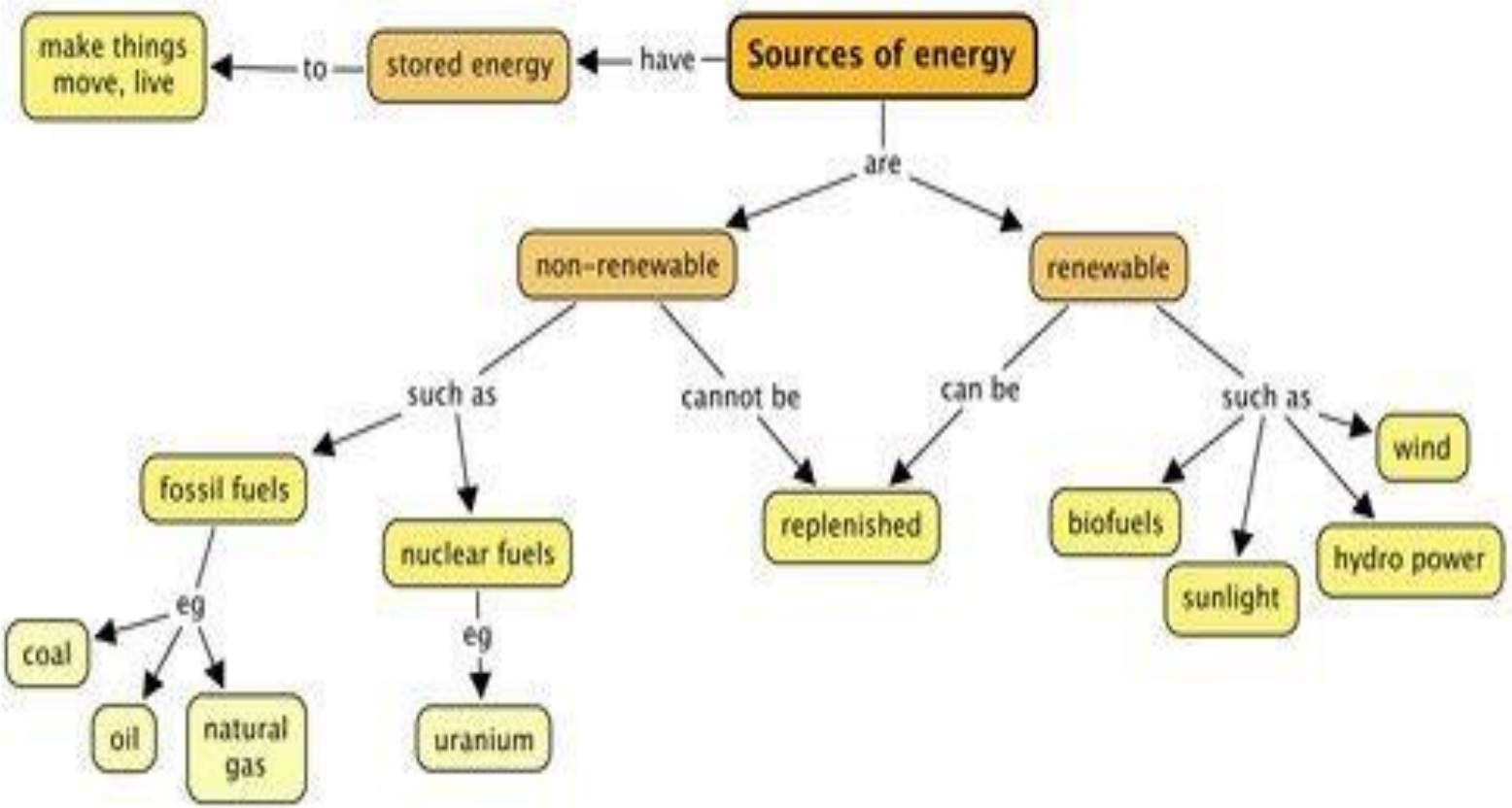
Energy resources form

- Energy is important for all of us and without which nothing is possible
- No existence of life without energy

Renewable and Non-Renewable Energy Sources



Sources of Energy in different form



Non Renewable Energy

- Limited
- Hamper nature
- Exhaustible

Renewable Energy

- Can be recycled
- Nature friendly
- Non Exhaustible

Take Home message

Land Resources

- Land as resource is significantly important.
- "Land is not regarded simply in terms of soils and surface topography, but encompasses such features as underlying superficial deposits, climate and water resources, and also the plant and animal communities which have developed as a result of the interaction of these physical conditions."

Land as resource

A fundamental unit of ecosystem

Function of land:

- "It act as a store of wealth for individuals, groups, or a community
- It's a base of production of food, fibre, fuel or other biotic materials for human use
- Land provides provision of biological habitats for plants, animals and micro-organisms
- This is a co-determinant in the global energy balance and the global hydrological cycle, which provides both a source and a sink for greenhouse gases
- Helps in regulation of the storage and flow of surface water and groundwater

Function of land (contd.)

- Act as reserve of minerals and raw materials for human use
- Act as a buffer, filter or modifier for chemical pollutants
- It provides a provision of physical space for settlements, industry and recreation
- Aids in storage and protection of evidence from the historical or pre-historical record (fossils, evidence of past climates, archaeological remains, etc.)
- Land perform enabling or hampering movement of animals, plants and people between one area and another".

THREAT TO LAND RESOURCES

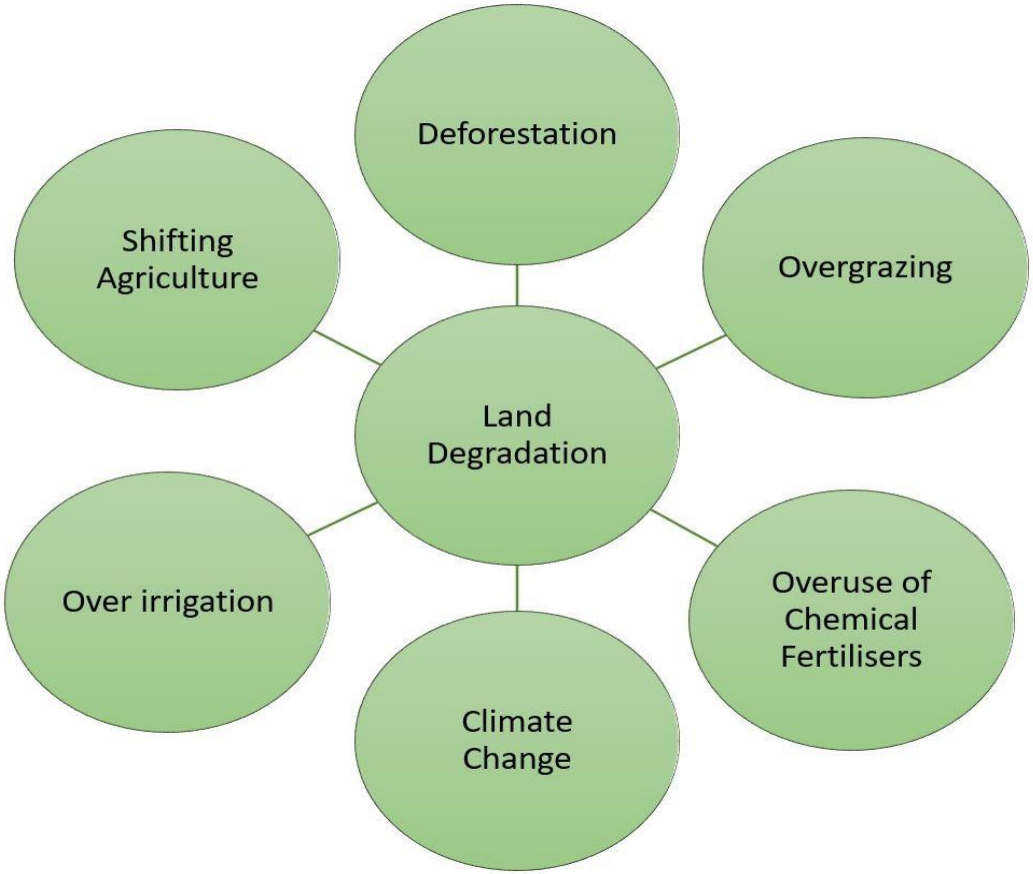

increased degradation
declining crop production
increased competiton for land
SYMPTOMS
.....
PROBLEM
land resources are under stress
CAUSE
humanity cannot manage resources efficiently and sustainably in the face of a rapidly changing global situation.

Land Degradation

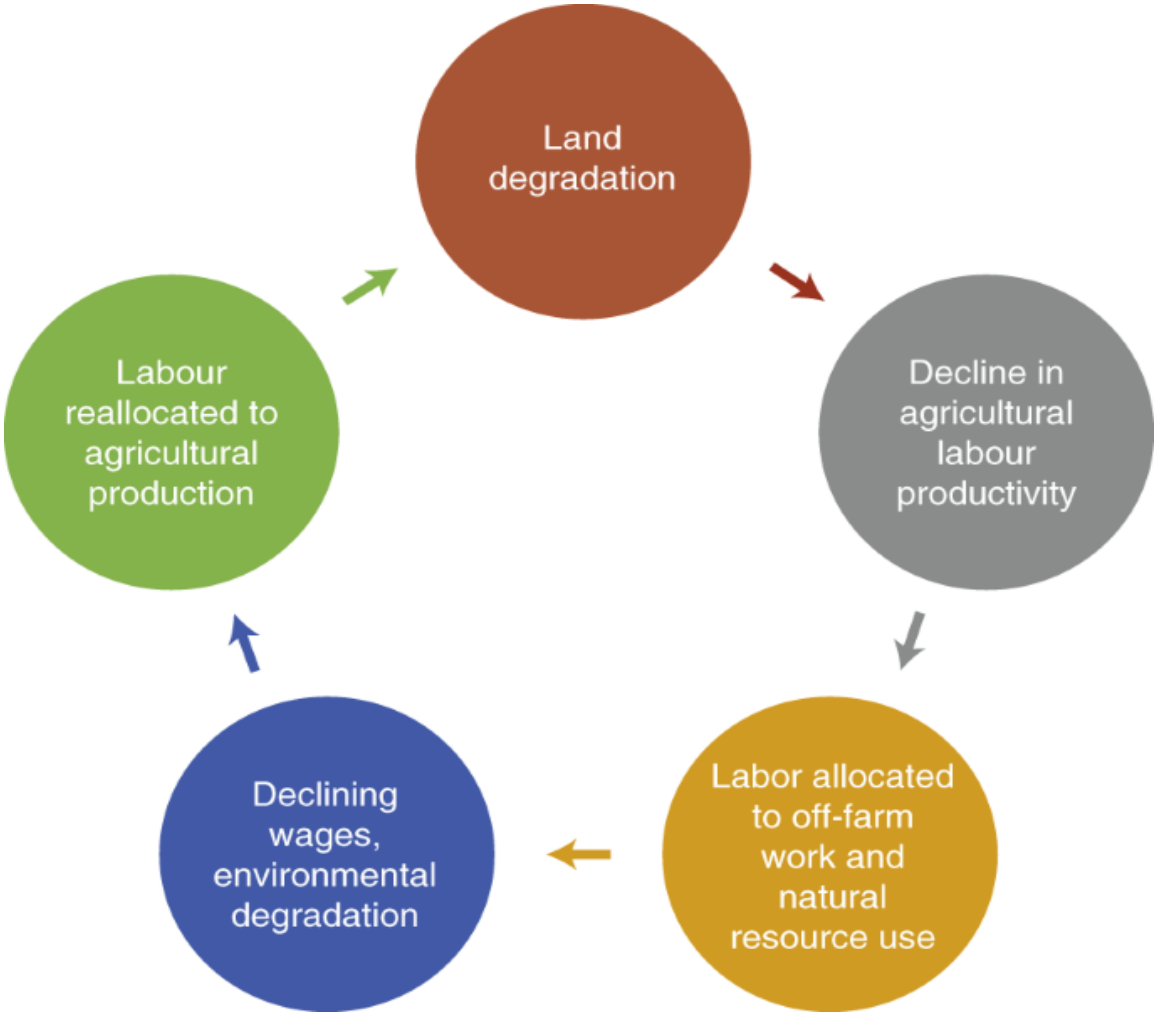
- Land degradation is the result of certain natural and/man made actions which exploit land, causing its utility, biodiversity, soil fertility, and overall health to decline.
- **Land degradation:** It is damage to land that reduces its resilience, productivity and biodiversity.

  Land is hampered by both natural processes such as weather and human causes such as pollution. The following are common examples of land degradation.

Causes


Deforestation
Shifting Agriculture
Overgrazing
Land Degradation
Over irrigation
Overuse of Chemical Fertilisers
Climate Change

How land degradation affect



Land Slides

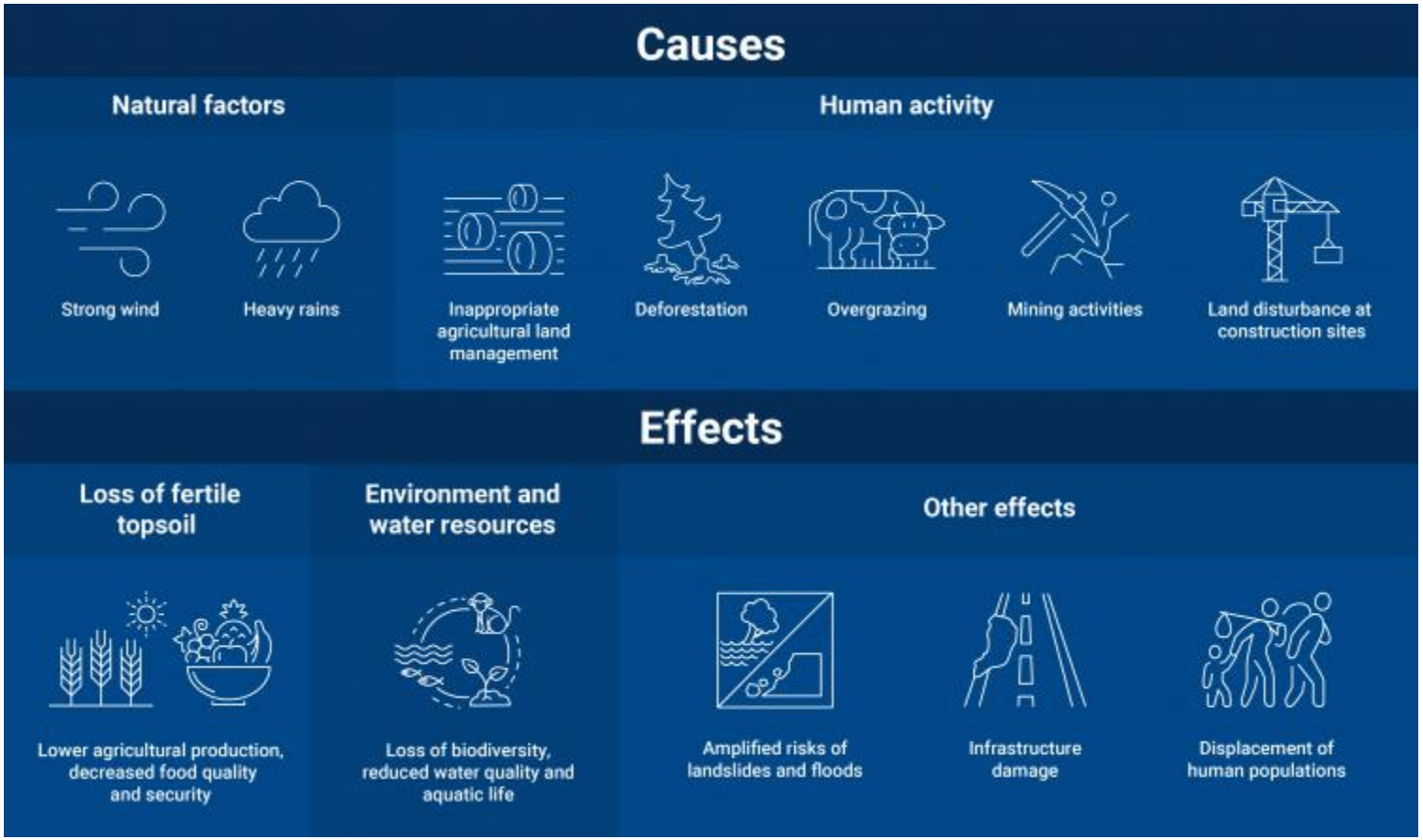
- “A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. Landslides are a type of "mass wasting," which denotes any down-slope movement of soil and rock under the direct influence of gravity.
- The term ‘landslide’ encompasses five modes of slope movement: falls, topples, slides, spreads, and flows. ”

- Landslides can be initiated in slopes already on the verge of movement in term of rainfall, snowmelt, changes in water level, stream erosion, changes in ground water, earthquakes, volcanic activity, disturbance by human activities, or any combination of these factors.
- Earthquake shivering and other related factors can also induce landslides underwater. These landslides are called **Submarine landslides**.

Soil Erosion

- This is Common and alarming problem.
- It is affecting approximately 1.5 billion people, particularly in developing countries.
- "A process that removes the upper layer of soil, from which plants get most of their nutrients and water. When this fertile layer, called the topsoil, slides away, the productivity of land decreases and farmers lose a vital resource for growing food."


Soil erosion is a process that removes the upper layer of soil, from which plants get most of their nutrients and water.


Causes
Natural factors
Human activity
Strong wind
Heavy rains
Inappropriate agricultural land management
Deforestation
Overgrazing
Mining activities
Land disturbance at construction sites
Effects
Loss of fertile topsoil
Environment and water resources
Other effects
Lower agricultural production, decreased food quality and security
Loss of biodiversity, reduced water quality and aquatic life
Amplified risks of landslides and floods
Infrastructure damage
Displacement of human populations

- Solution: Evidence based soil conservation measures

Desertification

- Land that becomes desert due to factors such as climate change, loss of vegetation and agricultural mismanagement.
- The United Nations' official definition says desertification is **land degradation in typically dry areas resulting from various factors, including climatic variations and human activities**.
- Damage to land that reduces its resilience, productivity and biodiversity.
- Recent example :The **Ningxia Hui Autonomous Region** is located in northern China.


Buzzle.com
DESERTIFICATION
CAUSES
EFFECTS
Overgrazing
Deforestation
Soil Erosion
Loss of Soil Nutrients

References:

- BMC Journal
- USDA
- FAO

Take Home message

- Be aware of the facts related to YOUR ENVIRONMENT & SAVE it!!
- Thank You!