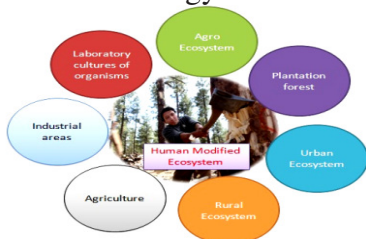


7. HUMAN MODIFIED ECOSYSTEM

- Altered in natural ecosystem due to increasing human population, human needs and changing life style.



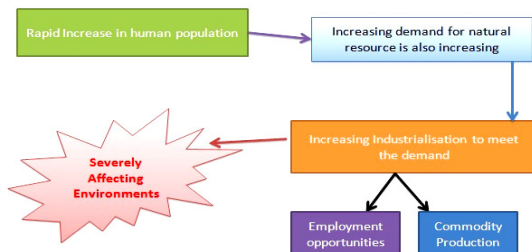
- Human modified ecosystem may or may not depend on solar energy.



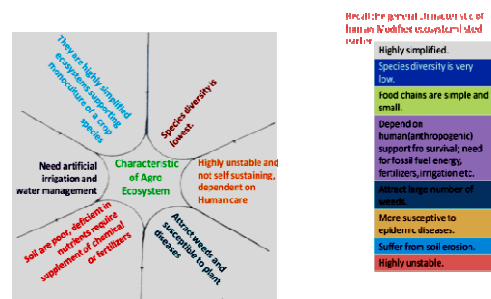
- Characteristics of human modified ecosystem as follows:

Highly simplified.
Species diversity is very low.
Food chains are simple and small.
Depends on human (anthropogenic) supports for survival; need for fossil fuel energy, fertilizers, irrigation etc.
Attract large number of weeds.
More susceptible to epidemic diseases.
Suffer from soil erosion.
Highly unstable.

- Impact of increasing human population and industrialization on environment in India.



- Agro ecosystem is large areas where commercial crops are cultivated.



- Fulfill basic requirement of food, with good quality grains and also give livelihood to large number of people are advantages of Agro ecosystem.
- Trees planted on barren land, private land, village panchayat land, roadsides, canal banks, along with railway line and on land not suitable for agriculture is plantation forest.



- Characteristics of plantation forest are as:

Plantation forests are generally monoculture, like oil palm plantation, rubber plantation, coffee plantation.
Plantation forests have trees of approximately same age.
Plantation forests are highly susceptible to pathogens and pests
Poor in species diversity.
Requires constant human care and management.
Recently plantation of Jatropha curcare have become very popular for obtaining biodiesel.

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- Tree plantation are raised for fruits, oil, rubber, coffee, timber, fire wood, pulp wood for making rayon and paper industries.
- Also for controlling soil erosion, increasing soil fertility and provides job opportunities and generate income.
- Urban life is the life in a city where many people live close together.
- Characteristics of urban ecosystem:



- High population density, congestion, shortage of housing and growth of slum areas, and pollutions, more employment opportunities, better education and medical facilities etc.
- 75% of the earth's resources consumption and generation of waste, pollutions, high crime rate, unrest and unemployment are the disadvantages of urban ecosystem.
- Rural ecosystems are midway between natural and urban ecosystems.

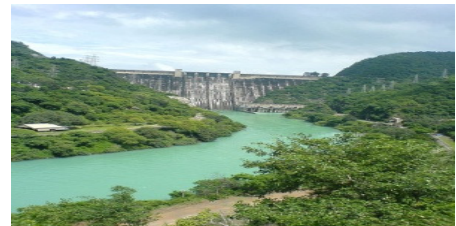


- Many villages belong to a single family; lived in houses, lacking of education, healthcare, drainage, sanitation, hygiene, and transport etc. are characteristics of rural ecosystem.

- Aquaculture is the artificial cultivation of aquatic plants or animals.
- Fisheries include the extraction of food from the sea and the fresh water.
- Fish farming is cultivation of fish in a controlled environment often a coastal or inland pond, lake, reservoir or rice field (paddy) and harvesting when they reach the desired size.
- Fish ranching is a practice of keeping which fishes in captivity for the first few years in floating cages in coastal lagoons and releasing them from captivity into water bodies.
- India has a very long coast line and marine resources include Bay of Bengal, Arabian Sea, Indian Ocean, numerous gulfs, coral reefs, mangroves and brackish waters like lagoons and Chilka lake in Odisha.

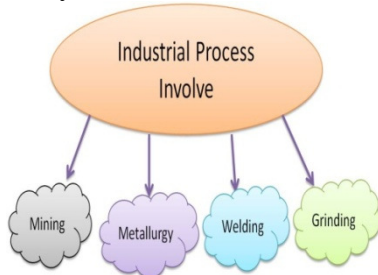


- Ecological efficiency is high. High profit reduces over harvesting of fisheries are main features of aquaculture.
- Dams, Reservoir and Diversions captures and store runoff water and release it as needed
- These structures used for controlling or moderating floods, producing hydroelectric power.



- Supply irrigation water, reduce use of coal and help in reducing CO₂ emission are the advantages of a dam.
- Displace people, increase water pollution, disrupt spawning and migration of some fish species are disadvantages of a dam.

- Industries used primary raw materials and produced wastes cause environmental degradation in the form of pollution, adverse effect on human health, stress on harvesting and nutrient cycles etc.



- We should change our habits, curtail our needs and try to conserve our natural resources.
- Ecoindustrial system should be encouraged to protect the environment.



Check Yourself

- An ecosystem which are not depend on solar energy is known as:
 - Natural ecosystem
 - Artificial ecosystem
 - Incredible ecosystem
 - Human modified ecosystem
- Tree planted ion barren land, railway track, roadside is called:
 - Village ecosystem
 - Urban ecosystem
 - Plantation forest
 - Agro-ecosystem
- Highly simplified, low species diversity and unstable are the characteristics of :
 - Plantation forest
 - Agro-ecosystem
 - Rural ecosystem
 - Laboratory culture
- is cultivation of fish in controlled environment:
 - Aquaculture
 - Fisheries
 - Fish farming
 - Fish ranching
- Which toxic matter is released after burning plastic?
 - CO₂
 - CO
 - Particulate matter
 - Nitrogen

Ans: 1. a 2. c 3. b 4. c 5. d



Stretch Yourself

1. Give any two examples of human modified ecosystem.
2. Define the term eco industrial revolution.
3. What is the situation of fisheries and aquaculture in India?
4. How does industrialization responsible for natural environmental conditions?



Test Yourself

1. Discuss the impact of increasing human population and industrialization.
2. How does natural forest differ from plantation forest?
3. Describe demerits of an urban ecosystem?
4. Mention the advantages of rural ecosystem.