CC-2-03 Unit II-Topic 9
DEVELOPMENT - ENVIRONMENT CONFLICTs

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INTRODUCTION

- **Environment** is a system which provides natural surroundings for the existence of organisms (including humans) and which is a prerequisite for their further evolution. Abiotic components of environment (atmosphere, water, minerals, energy etc.) and biotic components of environment (organisms – from the simplest to the most complex) are its main elements. To summarize, it is all which surrounds us. It is noteworthy that this is essentially an anthropocentric (non-biological) definition perceiving environment as one in which a man can live.
- **Development** came to be interpreted as multidimensional concept which should encompass material, social, environmental, political and cultural components (with all of them having a direct impact on the quality of human life). This way it was recognised that there is no single model of development appropriate and desirable for all countries. At the same time emerged the idea of "sustainable development", emphasising the questions related to demographic processes, considerate use of natural resources and mutual influences between a human and his living environment.

The relationship between development and the environmental condition

- This interaction is interdependent on each other .Just as development is impossible without a good condition of living environment, so quality environment cannot be maintained in inhabited or intensively exploited areas without their sustainable development.
- From the beginning human being were directly dependent on nature for their existence.
- The nature of the relationship was different between them.
- As time flies, humans became more powerful with the help of knowledge and technology.
- Then the nature of the relationship starts to change.
- As the development of the human being taken place the conflict between man and environment triggered.
- Different phases of development of human civilization e.g. practice of agriculture, the industrial revolution, etc. made the environment more toxic.

- Environmental problems do not endanger solely the global ecosystems vital to the people's survival. Environmental stress and its socioeconomic and political effects touch all world's regions and states. They influence local, regional and international security in a still more decisive manner.
- The condition or quality of living environment after/during implementation of development programmes The implementation of development programmes or projects can have negative or positive impacts on living environment.

  Negative impacts: **programmes**: construction of transport infrastructure, great water dams, cities; mining of natural resources of raw materials and energy etc. **effects**: fragmentation of natural habitats; loss of fertile soil; deforestation and soil degradation; pollution of environment; local climate change etc.

  Positive impacts: **programmes:** construction of smaller water dams; application of environment - friendly technologies etc. **effects:** increase in biodiversity; enrichment of landscape by cultural features; sustainable exploitation of environment for present as well as future generations.
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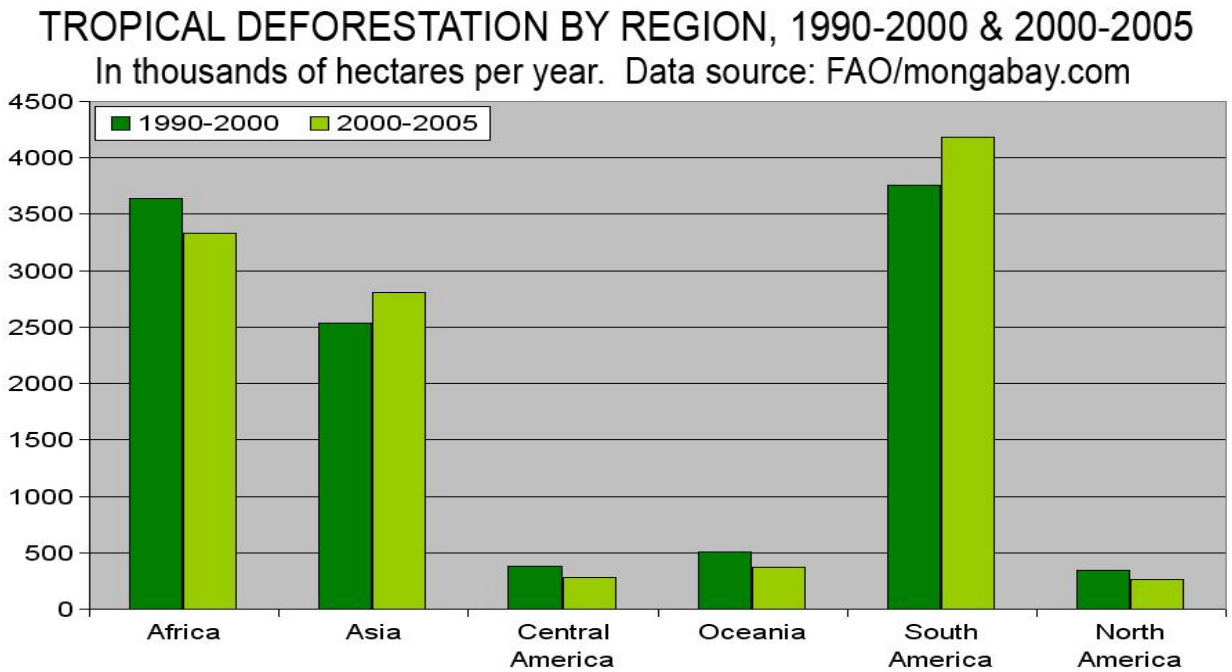
SOME SELECTED ENVIRONMRNAL CONFLICT

1. Forestry and environmental conflict
2. Agriculture and environmental conflict
3. Interference in wetlands and environmental conflict
4. Interference in the river flow and environmental conflict
5. Mining and environmental conflict
6. Urbanisation and environmental conflicts
7. Industrialization and environmental conflicts

FORESTRY AND ENVIRONMENTAL CONFLICT

- From the primitive stage of human civilization forest provided the basic elements of livelihood of human being.
- As the civilization progresses they started to destroy the forest for agricultural land, settlement, industry etc. and the following problems became severe.



I. **Loss of Biodiversity**: The removal of forest cover during logging has in some instances resulted in the scarcity or out-right extinction of many important plant and animal species. Some wild animals have also been observed to migrate from areas where tree cover was removed to undisturbed vegetation.

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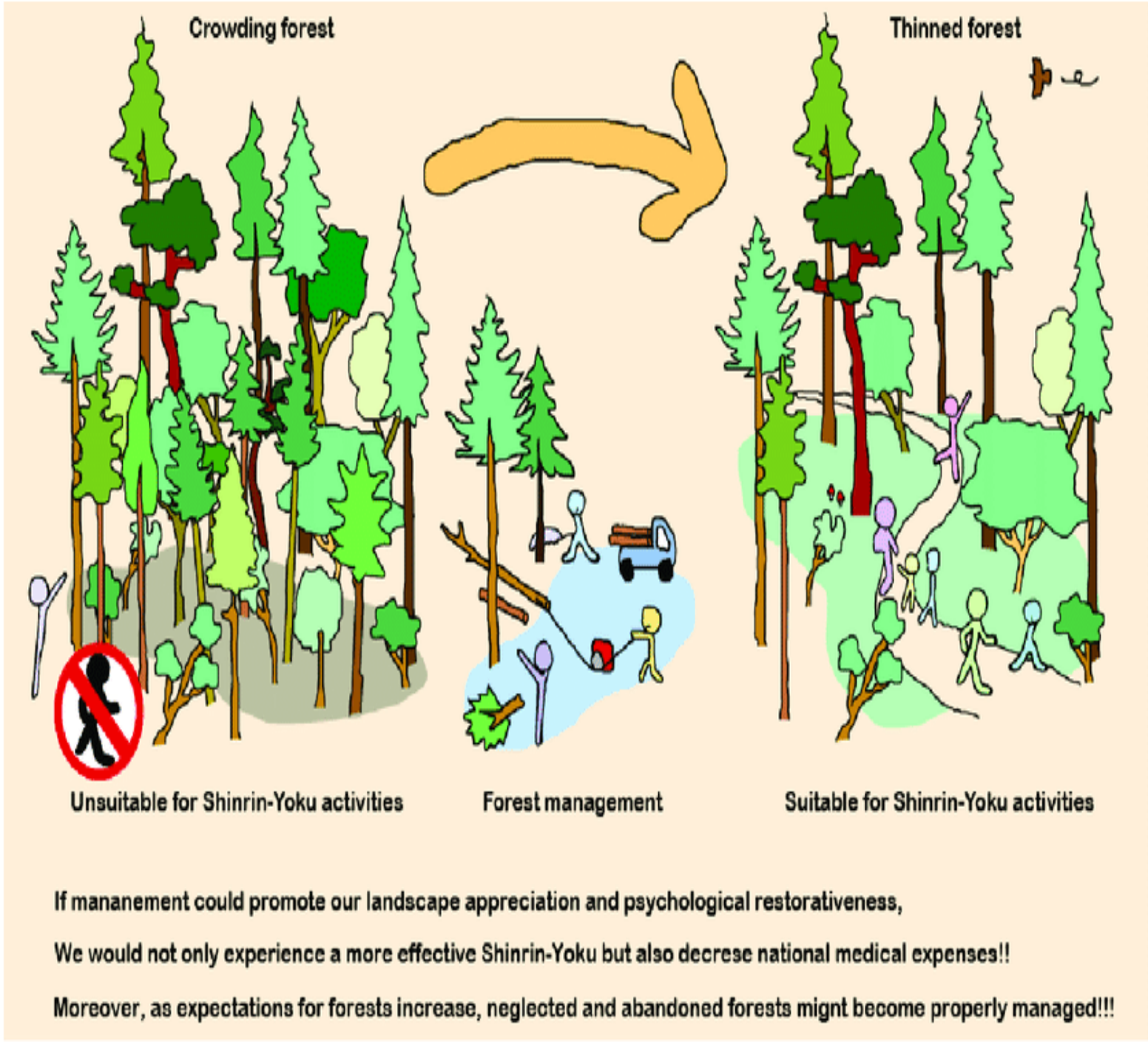
II. **Soil Erosion**: Destruction of forest covers during tree harvesting results in the loss of the protection, which the plant cover gives to the soil (Hamilton and Pearse, 1985). It is also interrupts the normal nutrient cycle of the forest, promotes nitrification and increases nutrient leaching thereby leaving the topsoil impoverished and susceptible to erosion.

III. **Disruption of Hydrological cycle**: Changes in forest cover alter catchment water balances and stream flows. The effect of destruction of forest cover on catchment water balance and runoff dynamics depends on the climate, topography, soils and the type of forest (Vertessy and Dye 200).

IV. Desertification: Clear felling of trees for firewood has been recognised as one of the factors responsible for environmental degradation in arid and semi-arid parts of Africa.

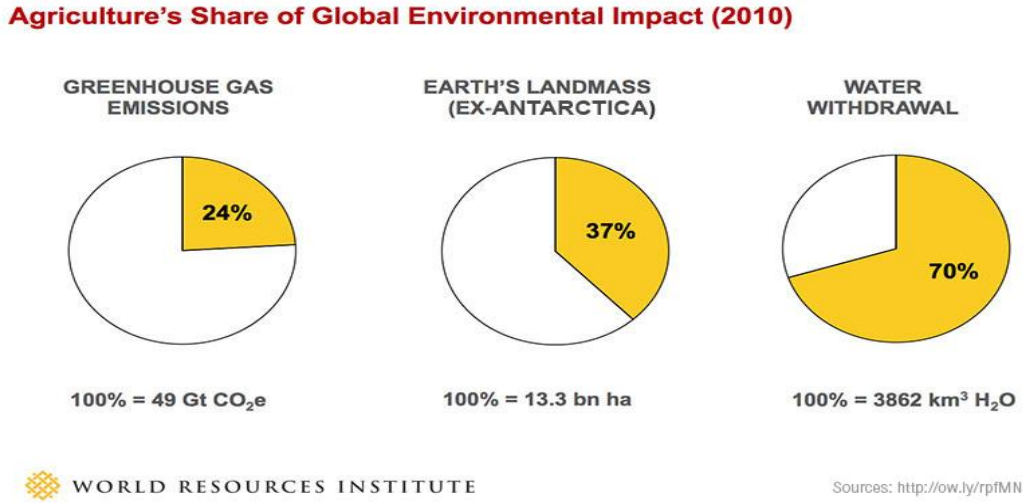
Management:

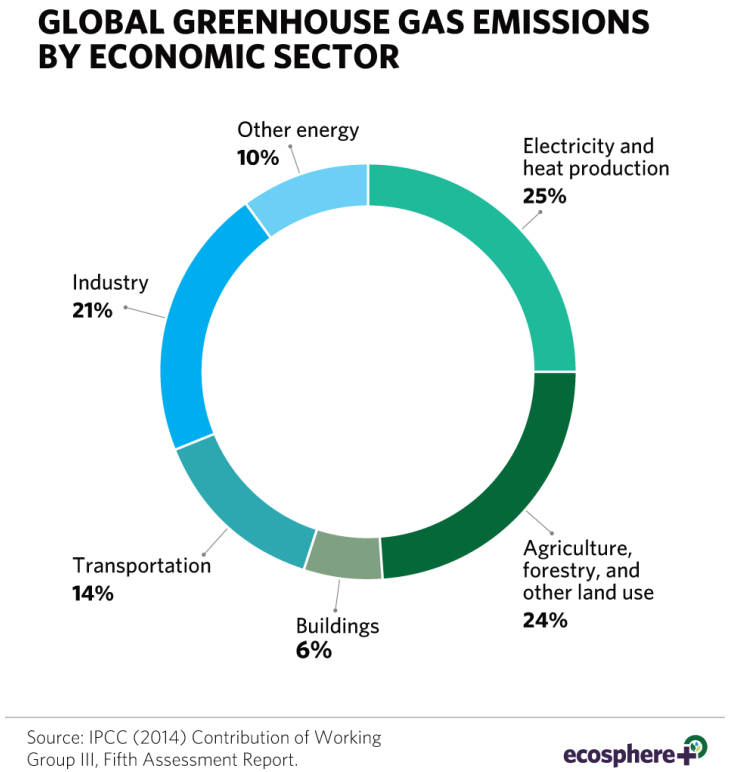
- Adaptation of rapid afforestation strategy.
- Strongly implementation of forest policies.
- Implementation of Joint Forest Management.
- Implementation of Social forestry.
- Scientific use of forest resource.
- Minimal use of forest resource for industrial purpose.



AGRICULTURE AND ENVIRONMENTAL CONFLICT

Agriculture refers to the practice of rearing domestic animals and crops with the goal of food production. It have certain impact on environment.





I. Climate Change: Agriculture and climate change have a reciprocal relationship. Climate change affects agricultural production through precipitation levels and temperature variations. In return, poor agricultural practices increase climate change. Agricultural fields are source of different GHGs like methane, nitrous oxide and carbon dioxide

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II. **Deforestation:** Across the globe, cases of forests being cleared for agricultural reasons are on the rise with people seeking to increase their scales of agricultural production. Destruction of habitat amongst species also leads to fragmentation and depletion. Extensive deforestation affects the water cycle, which results in interferences with precipitation.

III. **Degradation of Land:**

The degradation of land in one form or the other is matter of serious concern endangering sustainability of agriculture. Landslides caused by rains and flowing water in hilly areas and deforestation, overgrazing and faulty cultural practices in the forest and other plain areas expose the soil to water and wind erosions.

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IV. **Soil Degradation:** Healthy soils are vital to creating ample food production. Although agriculture is not the sole cause of soil degradation, poor farming practices are known to cause a considerable decline in in the quality of soil. This mainly results from pesticide contamination, water logging and salting. Soil erosion leads to loss of soil fertility and structure.

V. **Irrigation:** Irrigation can lead to a number of problems. Soil can be over-irrigated because of poor distribution uniformity or management wastes water, chemicals, and may lead to water pollution. Ground water irrigation can deplete ground water table which can cause severe drought.

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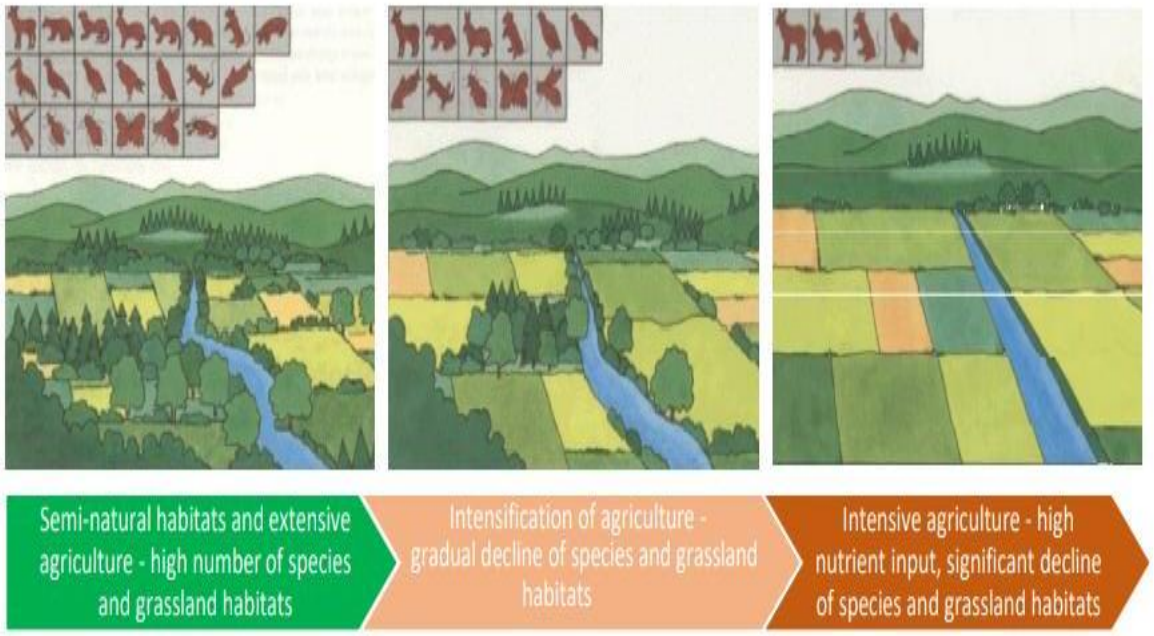
VI. **Pollution:** The widely used are pesticides and fertilizers, which end up as pollutants in water run-off from the soil. Burning of agricultural waste can cause severe air pollution This run-off can adversely affect more people and animal wildlife.



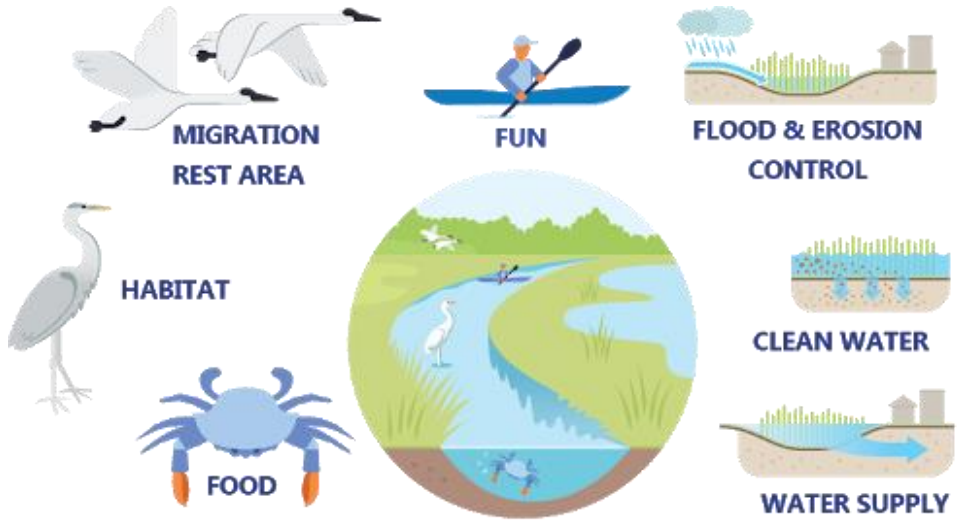
VII. **Biodiversity**: The most pressing issues facing the protection and restoration of native biodiversity on productive land are invasive weeds and pest animals accelerating land use change, and the high level of agro-chemical inputs. All of these are driving farmland towards a low diversity environment.

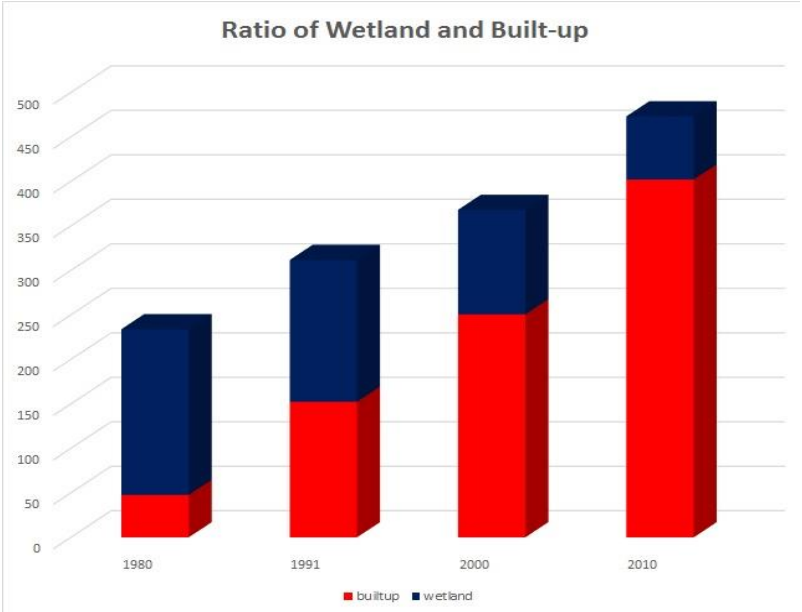
Management:

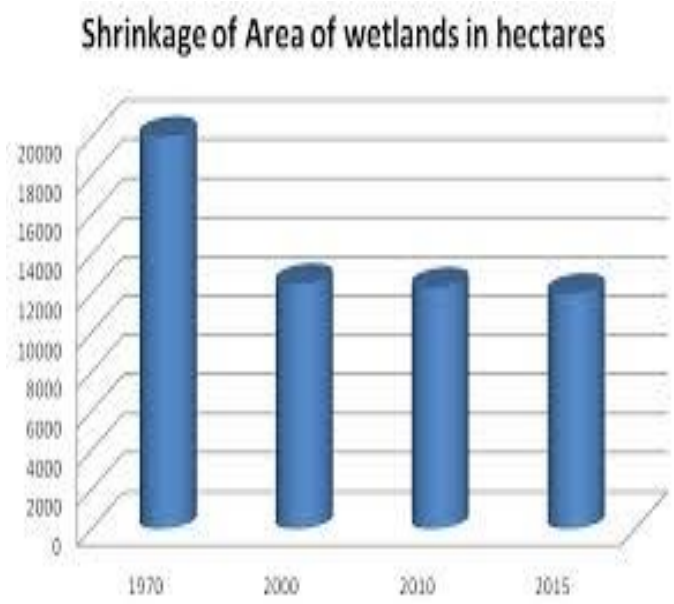
- Sustainable Agriculture: Sustainable agriculture is farming in sustainable ways, which means meeting society's present food and textile needs, without compromising the ability of future generations to meet their needs.[1] It can be based on an understanding of ecosystem services. A farm that is able to "produce perpetually", yet has negative effects on environmental quality elsewhere is not sustainable agriculture
- Reduce the use of fertilizer and pesticides.
- Avoid soil erosion by planting all over the year.
- Plant trees or grasses along the edges of fields.
- Adjust the intensity of tillage of a field.
- Improve manure management.
- Raise the awareness of farmers on the topic of agricultural pollution.

3. INTERFERENCE IN WETLANDS AND ENVIRONMENTAL CONFLICT

A wet land plays very important role to the nature. Encroachment and modification of natural wetlands can causes severe damage of the environment. Which may increase some serious problems.







I. **Increased flooding events**: A wetland temporarily stores floodwater by trapping it and slowing the water down as it passes through the wetland. If a wetland is modified or degraded, then the water that would usually utilize may result of occurrence of floods, as well as soil erosion

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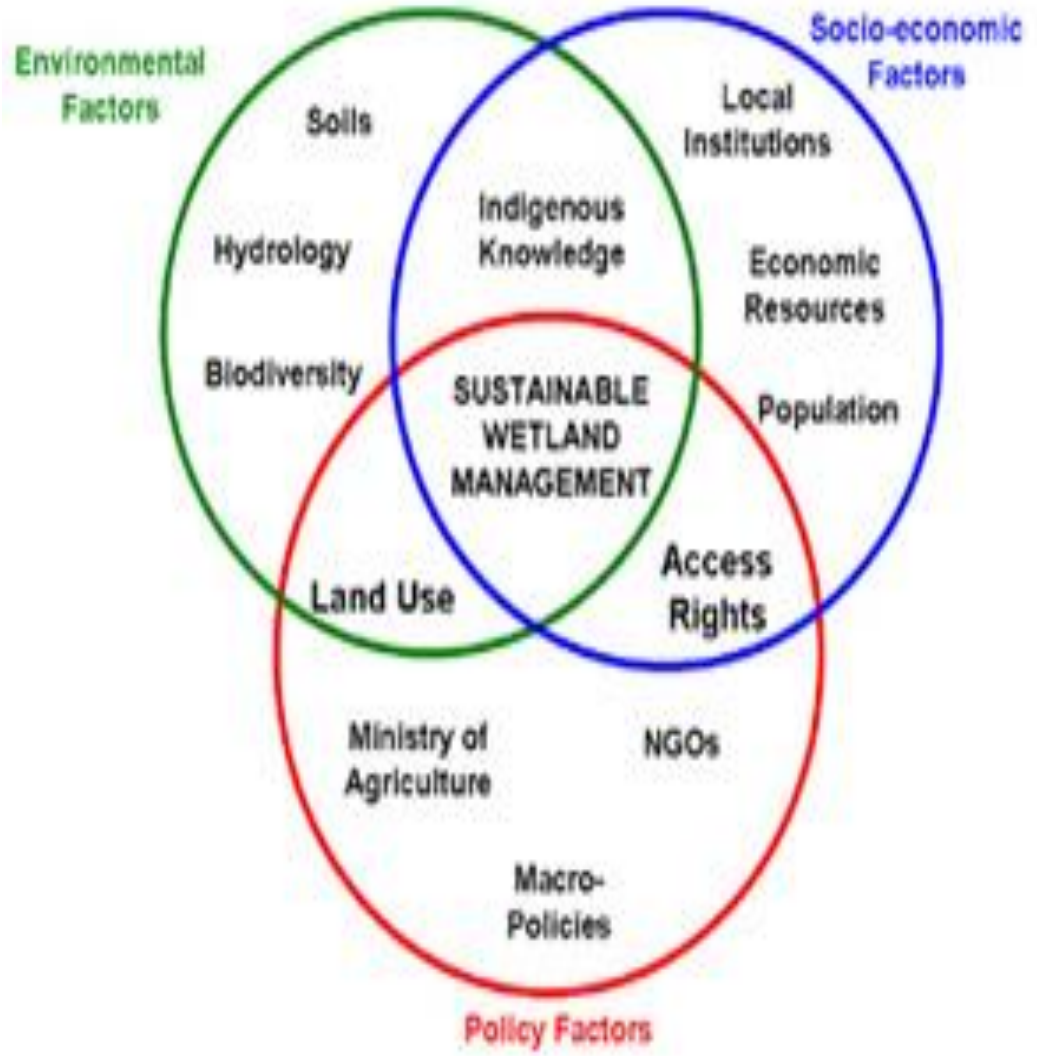
II. **Loss of wildlife habitat** : Removing the wetland directly removes the plants or animals that once existed in the wetland ecosystem. This shifts the food chain out of balance and may actually result in the extinction of those species with close associations with the environment. For this reason, protecting wetland habitats is essential for maintaining biodiversity.

III. **Decline in water quality:** Removing a wetland can cause a change in the chemistry of major water systems that those wetlands would otherwise filter out. With increasing use of cars, fertilizers and pesticides, there are an increasing number of pollutants entering our waterways.

Management:

- Implementation of policies: making and implementation of polices to protect and conservation of wetlands are very much needed.
- **Ramsar Convention :** The Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat is an international treaty for the conservation and sustainable use of wetlands. It is also known as the Convention on Wetlands. It is named after the city of Ramsar in Iran, where the Convention was signed in 1971.
- Creation of monitory teem to keep observation on wetlands.



4. INTERFERENCE IN THE RIVER FLOW AND ENVIRONMENTAL CONFLICT

Construction of dam embankment on the river actually interrupt the natural system which may lead certain vital problems.

I. **Flow modifications**: Dams alter the flow, temperature and sediment in river systems. Reduced flow also decreases tributary stream flow, water table in the stream aquifer. Disrupted and altered water flows can be as severe as completely de-watering river reaches and the life they contain.

II. **Impact on Flora & Fauna**: River contamination threatens biospheres and nature conservation areas. Migratory birds shun these rivers, and hence, they can face extinction. Other species of flora and fauna are threatened by loss of habitat caused by rising of water level in the reserver.

Management:

- Large dams and reservoir need proper environmental assessment before the construction.
- Small dams has less environmental impact then large dams.
- The location of the multipurpose river valley projects should avoid the highly biodiversity zones.
- People of the Upper catchment area of the river need proper rehabilitation.

5. MINING AND ENVIRONMENTAL CONFLICT

Environmental impacts of mining can occur at local, regional, and global scales through direct and indirect mining practices.

I. **Air Pollution**: Unrefined materials are released when mineral deposits are exposed on the surface through mining. Wind erosion and nearby vehicular traffic cause such materials to become airborne. Lead, arsenic, cadmium, and other toxic elements are often present in such particles.

II. **Water Pollution**: Mining also causes water pollution which includes metal contamination, increased sediment levels in streams, and acid mine drainage. High concentrations of toxic chemicals in water bodies pose a survival threat to aquatic flora and fauna and terrestrial species dependent on them for food.

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III. **Damage To Land**: The creation of landscape blots like open pits and piles of waste rocks due to mining operations can lead to the physical destruction of the land at the mining site. The removal of soil layers and deep underground digging can destabilize the ground which threatens the future of roads and buildings in the area.

IV. **Loss Of Biodiversity**: The destruction or drastic modification of the pre-mined landscape can have a catastrophic impact on the biodiversity of that area. Mining leads to a massive habitat loss for a diversity of flora and fauna ranging from soil microorganisms to large mammals. Toxins released through mining can wipe out entire populations of sensitive species.

Management:

- Policies should introduce for limited mining.
- Proper guideline of mining.
- Restriction of illegal mining.
- Initiative for pollution free mining.
- Proper management of mining waste.
- Preference of underground mining rather then open mining.
- Properly filling up of under ground vacuums after mining.
- Use of modern technologies rather than traditional one for mining.

6. URBANISATION AND ENVIRONMENTAL CONFLICTS

Urbanization (or urbanisation) refers to the population shift from rural areas to urban areas, the decrease in the proportion of people living in rural areas, and the ways in which each society adapts to this change. Urban people change their environment through their consumption of food, energy, water, and land.

I. **Pollution:** urbanization causes each and every types of pollution such as air, water, soil, noise. It is also causes elevated emissions of air pollutants and green house gases.
II. **Unusual Rise in Temperature:** The unplanned construction of large buildings in urban areas absorbs solar radiation and in the afternoon, these emit heat radiations increasing the climatic pressure.

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III. **Over Exploitation of Natural Resources:** Due to high population density and expensive life style, the rate of consumption of natural resources (e.g. water, energy, fossil fuel, forest products etc.) is very high in urban areas.

IV. **Biodiversity:** urban expansion that takes place in forests, wetlands and agricultural systems leads to habitat clearing; degradation and fragmentation of the landscapes. Which lead to loss of biodiversity.

Management:

- Restriction of rapid and unplanned urbanization.
- Introduction of sustainable urbanization.
- Introduction of smart cities.
- Pollution control.
- Population control.
- Use f green technologies.

7. INDUSTRIALIZATION AND ENVIRONMENTAL CONFLICTS

Since ages, industrial growth has started to affect environment with severe downside problems. It causes tremendous stress on the entire bionetwork and natural system components like water, air, soil, bio-diversity including surrounding eco-system.

I. Pollution:

- Air pollution caused by the presence of poisonous gases such as carbon monoxide and sulphur dioxide. Factories producing paper, bricks, metals and other factories which burn fossils fuels pollute the air.
- The untreated industrial waste effluents dumped into nearby water bodies by the factories lead to water pollution.
- Soil pollution caused by the presence of man –made chemicals or other alteration in the natural soil.
- The noise pollution caused by the industrial and constructional activities, machinery, factory equipment generators, etc.

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II. Global Warming: Emission of GHGs are increasing the global temperature rapidly. Industrialization is the major cause of global warming.

III. **Habitat Loss**: Industrialization has led to dramatic habitat destruction. Forests are cut down for their lumber, and ecosystems are destroyed to create roads, strip mines and gravel pits. Destroying these habitats upsets local ecosystems and leads to plant and animal extinction if the species are unable to relocate or adapt to their new surroundings.

Management:

- **Reduction of carbon emission.**
- **Reduction of use of fossil fuel.**
- **Use of green energy for industry.**
- **Installation of air and water treatment plants.**
- **Balance between industrial growth and environmental degradation.**
- **Proper guideline for different categories of industries.**