SUSTAINABLE DEVELOPMENT

Natural resources

Natural resources are resources that exist without any actions of humankind. This includes all valued characteristics such as commercial and industrial use, aesthetic value, scientific interest and cultural value.

On Earth, it includes sunlight, atmosphere, water, land (includes all minerals) along with all vegetation, and animal life.

Classification of resources

basis of origin

` *Biotic*

Abiotic

stage of development

Potential resources

Actual resources

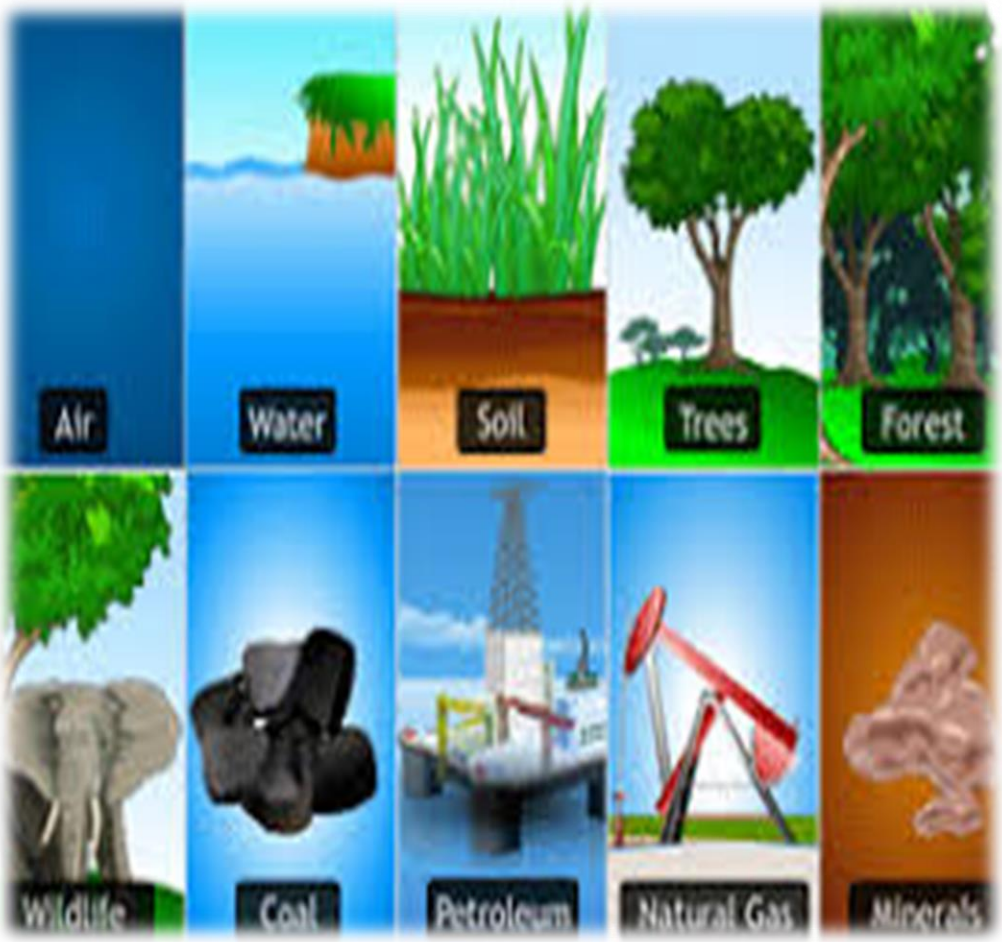
Reserve resources

Stock resources

basis of recovery rate

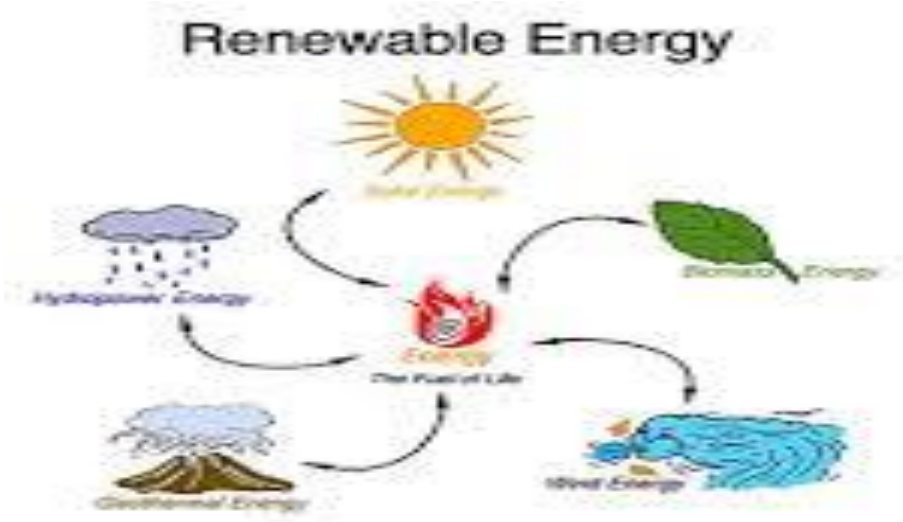
Renewable resources

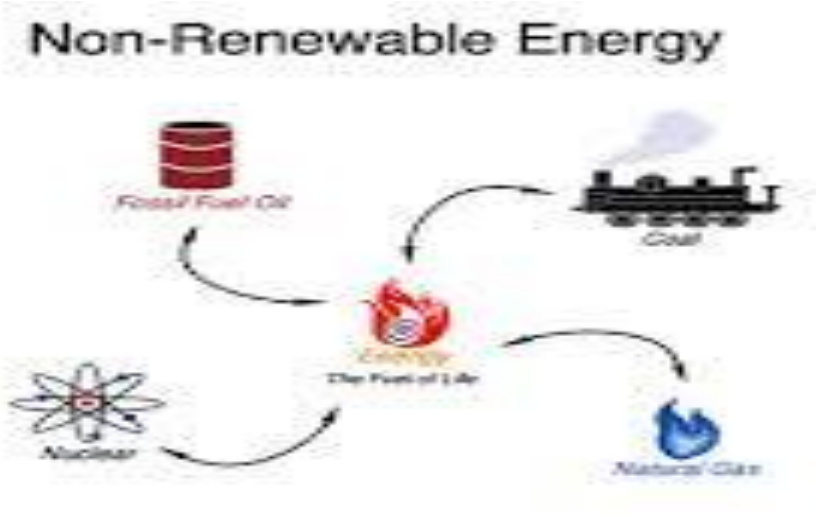
Non-renewable resources



Difference between Renewable and Non-Renewable Resources

Renewable resource	Non-renewable resource
It can be renewed as it is available in infinite quantity	Once completely consumed, it cannot be renewed due to limited stock
Sustainable in nature	Exhaustible in nature
Low cost and environment-friendly	High cost and less environment-friendly
Replenish quickly	Replenish slowly or do not replenish naturally at all

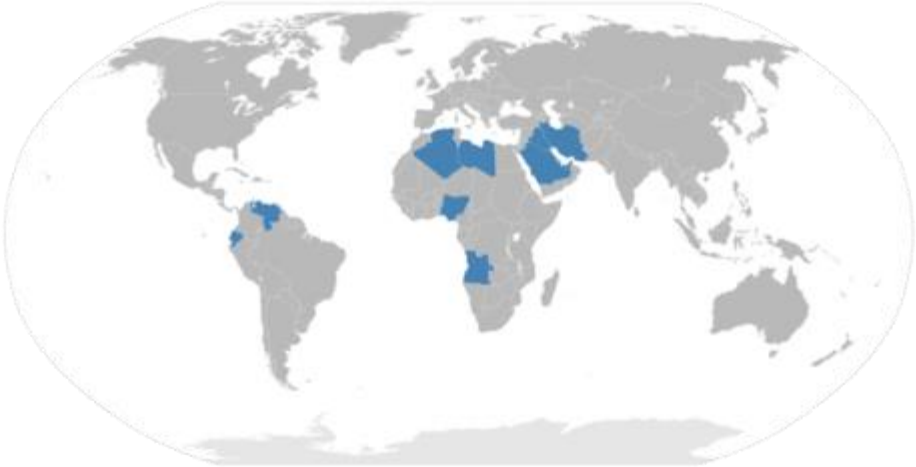




Common Materials We Use from the Earth

Common Object	Natural Resources Used	Are These Resources Renewable or Non-renewable?
Cars	15 different metals, such as iron, lead, and chromium to make the body.	Non-renewable
Jewelry	Precious metals like gold, silver, and platinum. Gems like diamonds, rubies, emeralds, turquoise.	Non-renewable
Electronic Appliances (TV's, computers, DVD players, cell phones, etc.)	Many different metals, like copper, mercury, gold.	Non-renewable
Clothing	Soil to grow fibers such as cotton. Sunlight for the plants to grow. Animals for fur and leather.	Renewable
Food	Soil to grow plants. Wildlife and agricultural animals.	Renewable
Bottled Water	Water from streams or springs. Petroleum products to make plastic bottles.	Non-renewable and Renewable
Gasoline	Petroleum drilled from wells.	Non-renewable
Household Electricity	Coal, natural gas, solar power, wind power, hydroelectric power.	Non-renewable and Renewable
Paper	Trees; Sunlight Soil.	Renewable
Houses	Trees for timber. Rocks and minerals for construction materials, for example, granite, gravel, sand.	Non-renewable and Renewable
Common Object		

The nations in blue are the 12 biggest producers of oil; they are Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

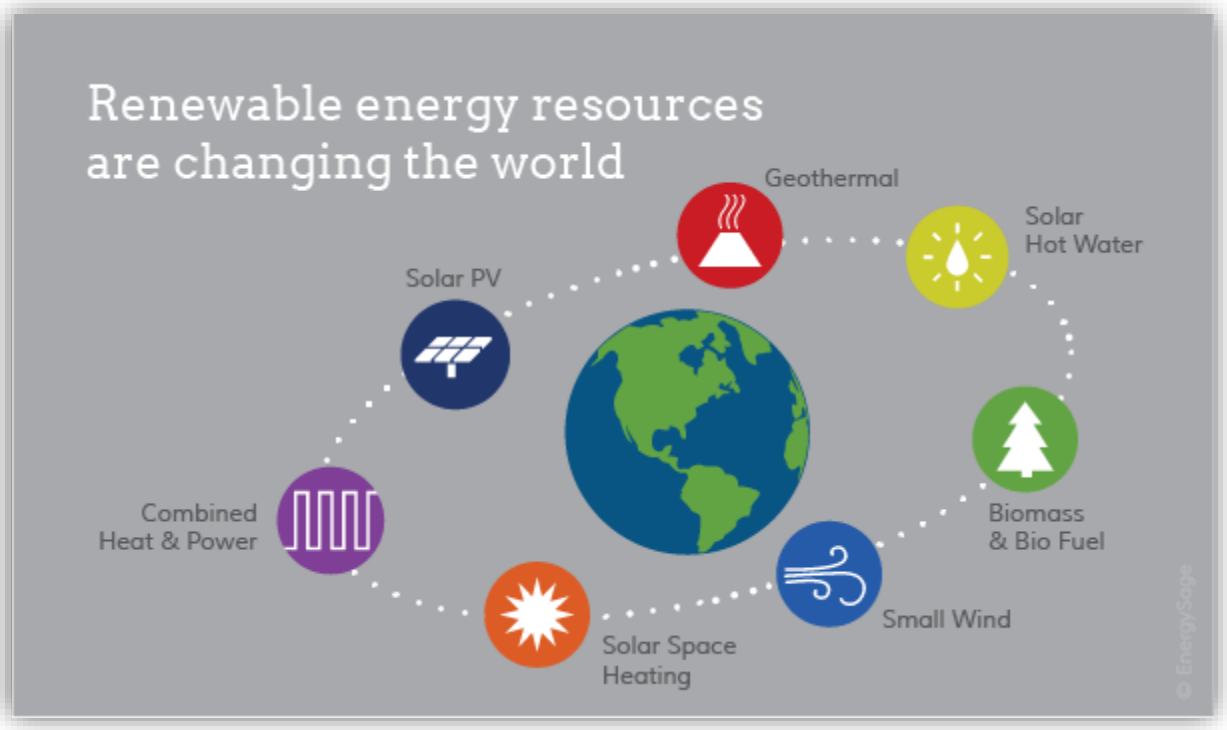


1.Environmental consequences across the entire supply chain
2.Resource use has social consequences too
3.Raw material production
4.End-of-life product disposal

Renewable energy

The most popular renewable energy sources currently are:

- Solar energy
- Wind energy
- Hydro energy
- Tidal energy
- Geothermal energy
- Biomass energy



renewable energy work

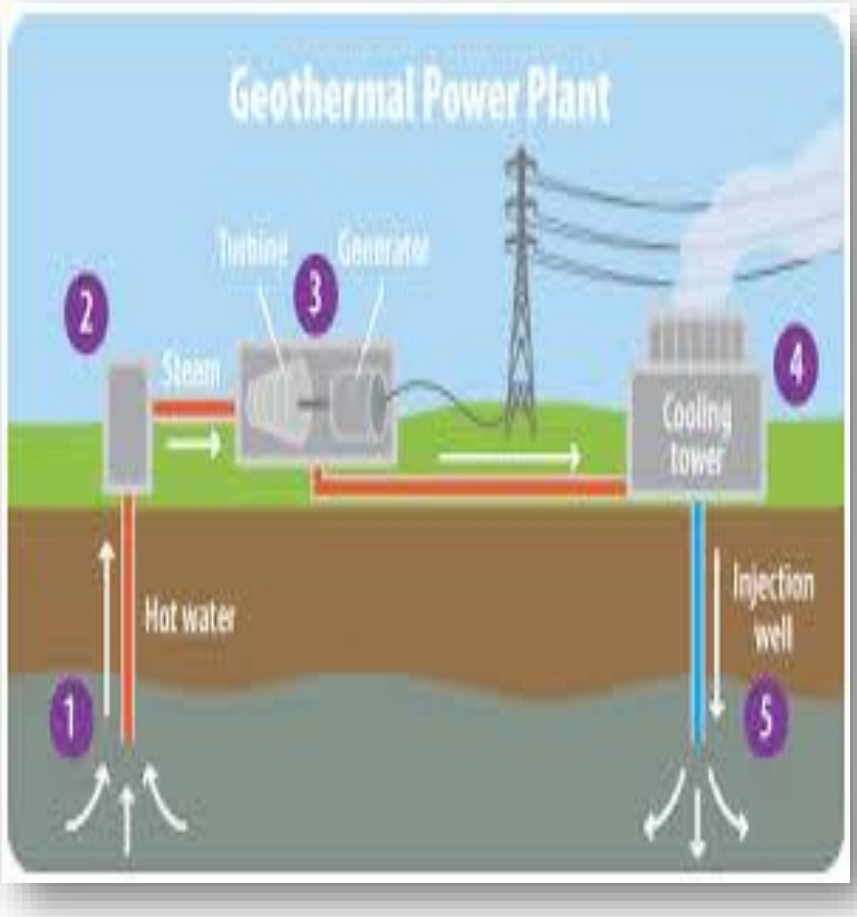
Solar energy

Wind energy

Hydro energy

Tidal energy

Geothermal energy



Biomass Energy

In the future, it's expected that the number of renewable energy sources will continue to increase as we see an increase in demand for power.

Advantages of using renewable energy

Cut your electricity bills
Get paid for the electricity you generate
Sell electricity back to the grid
Reduce your carbon footprint

Sustainability

1) The ability to be maintained at a certain rate or level.
2) 2) Avoidance of the depletion of natural resources in order to maintain an ecological balance

Sustainable development of resources is a resource management model that considers the impact that economic activity has on our environment and the well being of Society.It strives to balance the needs of the environment, economy and society.

Pillars of Sustainability:

- Human
- Economic
- Environme
- Social

The ‘Sustainable management of natural resources project (GESOREN)’ is part of the German development cooperation programme to protect the environment and conserve natural resources.

It has four components:

Developing institutions and strategies for the conservation of natural resources

Valorisation of natural resources and environmental services

Local governance of nature conservation and eco-corridors

National framework for Reducing Emissions from Deforestation and Degradation (REDD) and adaption strategies

Result

As a result of cooperation between private companies and small producers' organisations, ecologically and sustainably grown products have been successfully marketed and it has been possible to break into the niche markets for Fairtrade and organic products. Small producers' have seen their incomes increase thanks to direct marketing and the higher prices paid for these products. They now no longer rely on the illegal use of protected natural resources.

Conservation

Natural resources are something that is occurring naturally on Earth. It forms an indispensable part of our lives. It comprises of air, water, sunlight, coal, petroleum, natural gas, fossil fuels, oil, etc.

Why Conserve Natural Resources?

Human beings depend upon the natural resources
Water is a renewable natural resource
Plants and animals provide a wide range of industrial and biological materials
takes millions of years for the formation
economic development
Land resources

Ways to Conserve Natural Resources

Environment education
National Parks
Reducing, reusing and recycling
Non-human species
Planting of trees
Seeking alternatives
Use of bio-gas and bio-fuels
Industrial wastes river
Overgrazing must be prevented
Practicing crop rotation techniques
Burning of fossil fuels must be controlled

Environmental Clearance

The process consists of following steps:

Project proponent identifies the location of proposed plant after ensuring compliance with existing siting guidelines.

The project proponent then assesses if the proposed activity/project falls under the purview of environmental clearance.

After the EIA report is ready, the investor approaches the concerned State Pollution Control Board (SPCB) and the State Forest Department

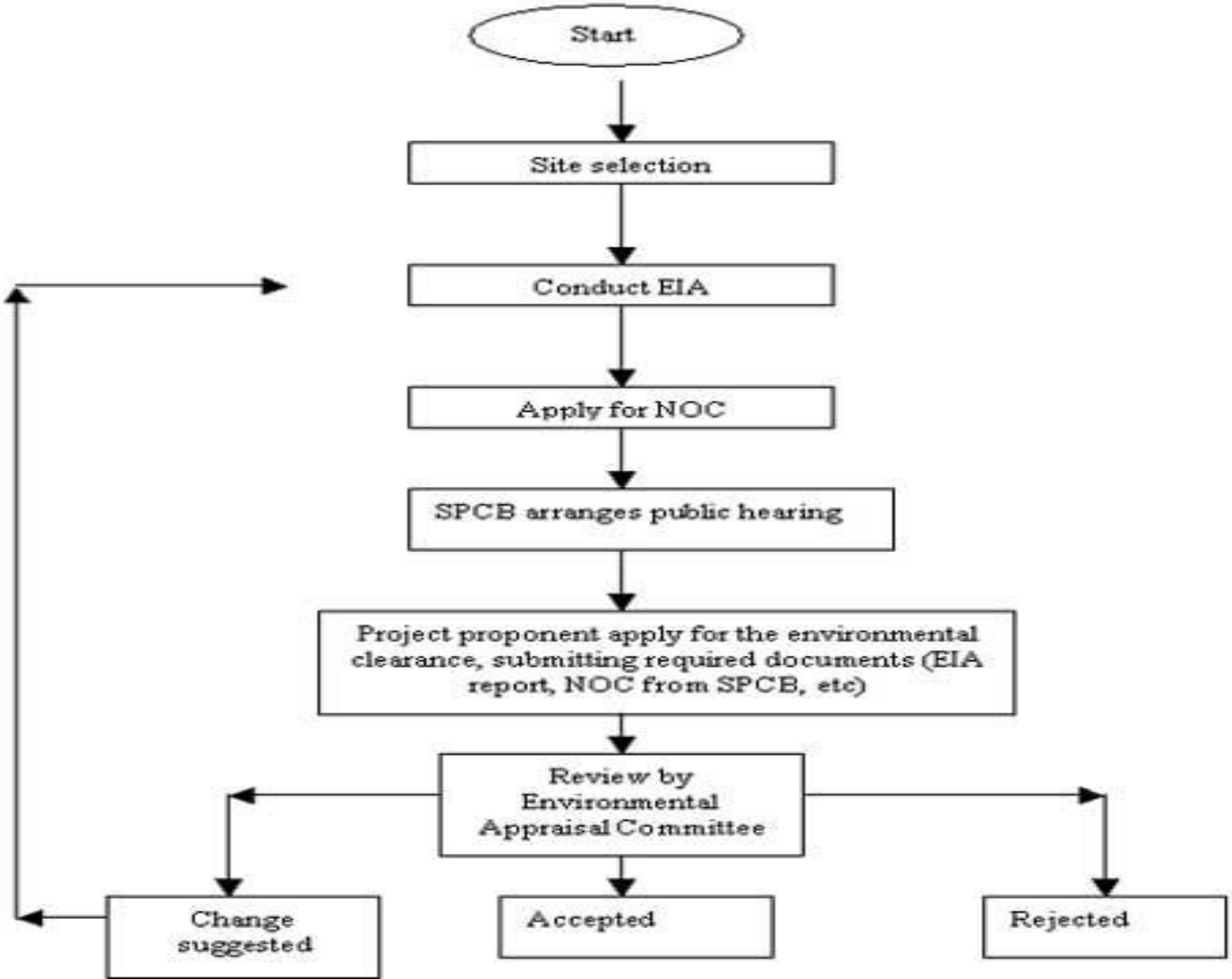
The public hearing is a mandatory step in the process of environmental clearance for certain developmental projects.

The project proponent submits an application for environmental clearance with the MoEF

Environmental appraisal

Issues of clearance or rejection letter

Environmental clearance process in India.



Industrial projects located in any of the following notified ecologically sensitive areas would require environmental clearance irrespective of the type of project:

- Religious and historic places
- Archaeological monuments
- Scenic areas
- Hill resorts
- Beach resorts

In India, the role of the public in the entire environment clearance process is quite limited. Public consultation happens at a very late stage when the EIA report is already prepared and the proponent is about to present it to the review committee for clearance. This means that the EIA study is unable to take into account the concerns and issues important to public. Even if the members of the community raise certain issues in the public hearing process, they have no means of knowing if it actually gets addressed in the final EIA report as they have no access to it. There are several weaknesses in the public hearing process as it exists now. Instead of becoming a participatory forum it has become a mere procedure.

THE WILD PROTECTION ACT

- This is an act to provide protection for wild animals, birds and plants.
- This act was passed in the year 1972.

Constitutional Provisions for the Wildlife Act

Article 48A of the Constitution of India directs the State to protect and improve the environment and safeguard wildlife and forests. This article was added to the Constitution by the 42nd Amendment in 1976.

Article 51A imposes certain fundamental duties for the people of India. One of them is to protect and improve the natural environment including forests, lakes, rivers, and wildlife and to have compassion for living creatures.

Need for the Wildlife Protection Act

India is a treasure-trove of varied flora and fauna.

For ecological imbalance

There were only five national parks in India prior to the enactment of this Act

Salient Features of Wildlife Protection Act

The Act provides for the formation of wildlife advisory boards, wildlife wardens, specifies their powers and duties, etc.

Prohibited the hunting of endangered species
Provides for licenses
Central Zoo Authority
Act created six schedules
National Board for Wildlife
Establishment of the National Tiger Conservation Authority.

Protected Areas under the Wildlife Protection Act

1. Sanctuaries: "Sanctuary is a place of refuge where injured, abandoned, and abused wildlife is allowed to live in peace in their natural environment without any human intervention."

2. National Parks: "National Parks are the areas that are set by the government to conserve the natural environment."

3. Conservation Reserves: The State government may declare an area (particularly those adjacent to sanctuaries or parks) as conservation reserves after consulting with local communities.

4. Community Reserves: The State government may declare any private or community land as a community reserve after consultation with the local community or

Schedule I

- This Schedule covers **endangered species**.
- These species need rigorous protection and therefore, the harshest penalties for violation of the law are under this Schedule.
- Species under this Schedule are prohibited to be hunted throughout India, except under threat to human life.
- Absolute protection is accorded to species on this list.
- The Trade of these animals is prohibited.
- Examples: tiger, blackbuck, Himalayan Brown Bear, Brow-Antlered Deer, Blue whale, Common Dolphin, Cheetah, Clouded Leopard, hornbills, Indian Gazelle, etc.

Schedule II

- Animals under this list are also accorded high protection.
- Their trade is prohibited.
- They cannot be hunted except under threat to human life.
- Examples: Kohinoor (insect), Assamese Macaque, Bengal Hanuman langur, Large Indian Civet, Indian Fox, Larger Kashmir Flying Squirrel, Kashmir Fox, etc.

Schedule III & IV

- This list is for species that are not endangered.
- This includes protected species but the penalty for any violation is less compared to the first two schedules.
- Examples: hyena, Himalayan rat, porcupine, flying fox, Malabar tree toad, etc.

Schedule V

- This schedule contains animals that can be hunted.
- Examples: mice, rat, common crow, fruit bats, etc.

Schedule VI

- This list contains plants that are forbidden from cultivation.
- Examples: pitcher plant, blue vanda, red vanda, kuth, etc.


Thank You!