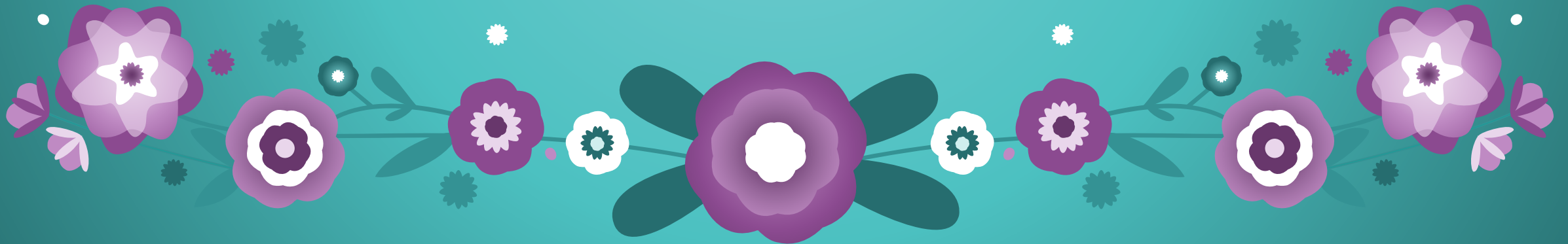


# Foundation Course

SYBCOM,SYBBI,SYBMS,SYBAF



# Syllabus

## Unit 1

**Significant, Contemporary Right of Citizen**

## Unit 2

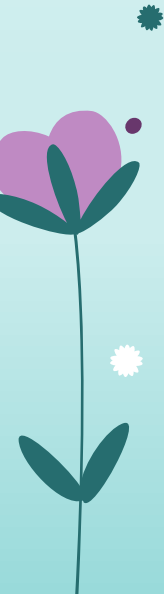
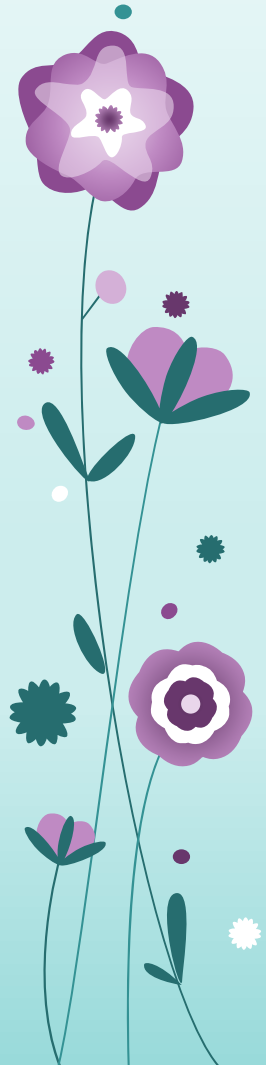
**Approaches to Understanding Ecology**

## Unit 3

**Science and Technology**

## Unit 4

**Introduction to Competitive Exam**



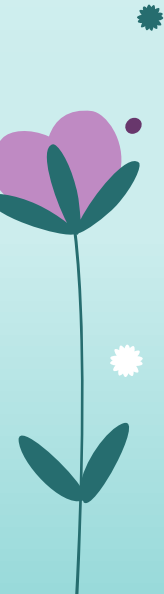
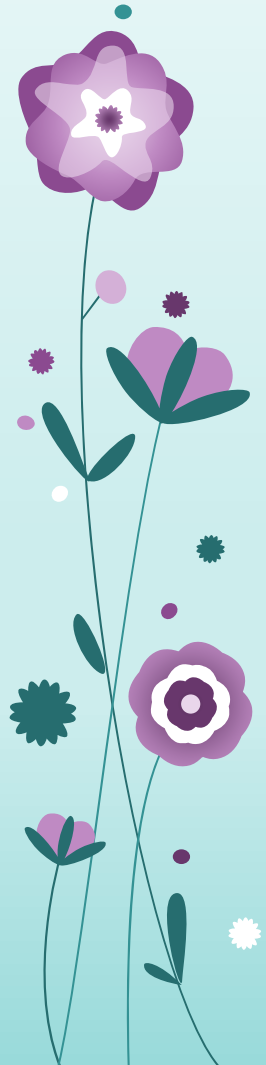
# Unit 2

## Approaches to Understanding Ecology

### Ecology

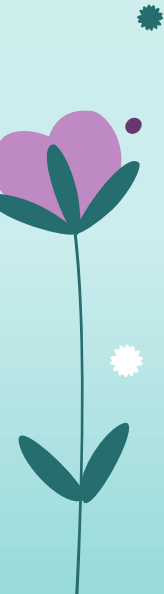
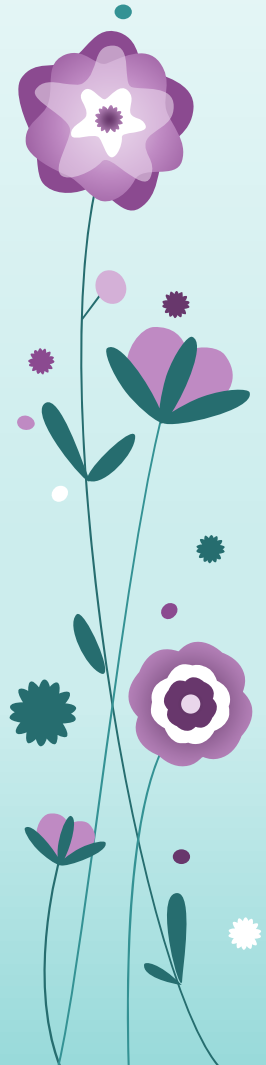
“the comprehensive science of the relationship of the organism with the environment”

The term ecology was coined by German



# Scope of Ecology

1. Eco- physiology
2. Behavioral ecology
3. Population ecology
4. Community ecology
5. Ecosystem ecology
6. Systems ecology
7. Landscape ecology
8. Evolutionary ecology
9. Political ecology

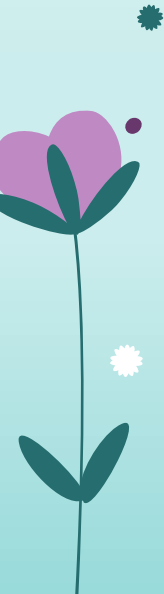
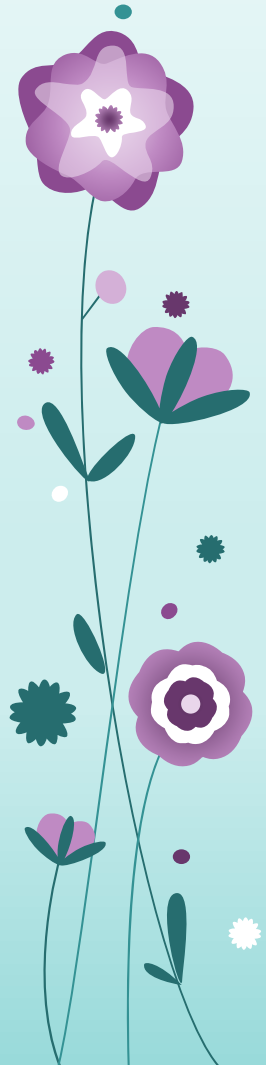


# Anthropocentrism

Anthropocentrism is a human centric approach. Ecologists, particularly in western world, adopting this approach, keep human race at the center. It is like of the humans, by the humans and for the humans' ideology of dealing with ecology. Here, ecological existence is considered in terms of its utility to humans.

Cont..

Important features of this approach are, Human beings are considered to be at center or most significant in the universe. Many western philosophers consider humans as the separate and superior entity in nature. Other resources (animals, plant, minerals etc) may be justifiably exploited by humans -not just as a chance, but as a right- for the benefit of mankind.

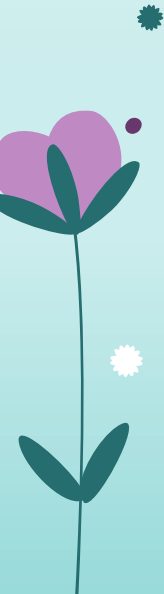
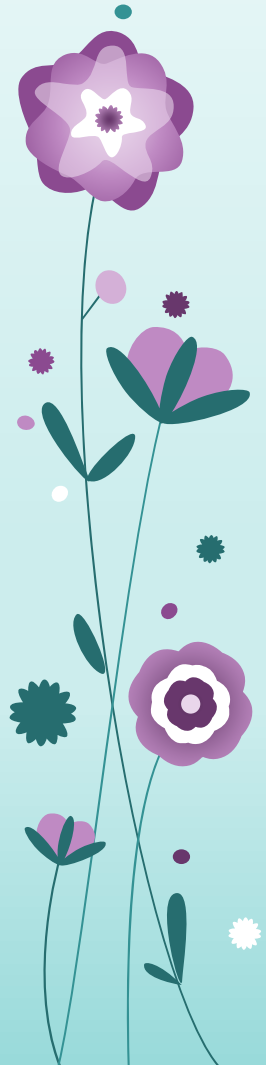


# BIOCENTRISM

Humans are a part of environment, and not apart from environment. This is a key view behind the term biocentrism. Biocentrism stands in contrast to anthropocentrism. The modern thinking now deviates from the human centric anthropocentrism. In fact, the affinity, awareness and better understanding of nature by man have led to new approach to study ecosystem as biocentrism. In biocentrism, the entire nature is respected and inherent worth of each and every species, including human, regardless of its uses and hierarchy is valued. Biocentrism does not believe in any order or hierarchy of organism and humans are considered as par with other species. Biocentrism denies the so called moral and ethical superiority of human. Biocentrism further states that each organism- small or big- has a purpose and a reason for its existence. Every organism plays some or other role which is good, valuable, essential and inevitable.

# Importance

- Important features of this approach are, It is nature/earth centered. It extends values to the plants and animal species, natural resources, ecosystem and process of the nature beyond their relevance or importance to mankind. Humans are members of a community of life on equal terms with all other species in ecology. There is interdependence between all members of species. Every organism has a purpose and a reason for being, which is inherently —good —or —valuable|| Humans are not superior to other species



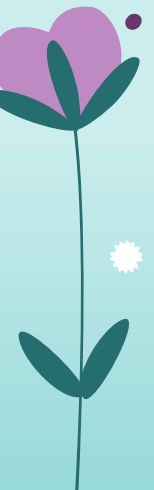
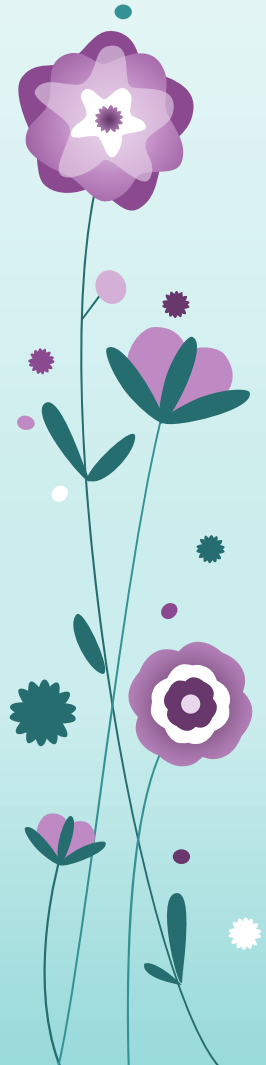


# ECO- CENTRISM

- This approach to understand ecology is also 'nature' centered. Ecocentrism believes that there is hardly any difference/ division between human and nonhuman. It further believes in equality among human and non human organism with their internal association. But it does not agree on equal value of all organisms. Ecocentrism argued that humans were important beyond doubts but more than that the ecosphere as a whole is more significant, inclusive and integrated. Ecocentrism express that overall ecosphere is vast beyond the imagination of human. Ecocentrism is also wider concept and goes beyond the biocentrism. It believes that human are part and partial of entire organic and inorganic i.e. biotic/abiotic nature. The concept ecocentrism states that all species on the earth are the part of the common and only process of evolution and there lifecycle are interrelated. Ecocentrism lacks the Faith in modern technology and red-tape attitude of managing ecology. Ecocentrism argues that nature has its own processes and products.

# Cont..

Important features of this approach are, Nature is of prime importance and it is a nature centered system of values. Entire ecosystem is very vast beyond the comprehension of human. There is equity among all organism and humans are part of it. It is described as fundamental shift in values of human beings to planet earth. It targets human for his contribution to environmental degradation. It states that all species including humans are the product of long evolutionary process and are interrelated in their life processes. Eco-centrism strives to maintain ecosystem composition and ecological processes.



# ECO-FEMINISM

This approach has a root in feminist movement. Feminism believes that the mentality, psychology and attitude towards both oppression of women and abuse of the environment are same. Therefore the principle philosophy behind eco-feminism states that male dominant culture make the assessment of nature, trees, animal and land only by its economic value and contribution to GDP. Further, eco-feminism believes that degradation of nature (in any region) leads to degradation of women. It is claimed that women have better knowledge of the ecological processes and hence have a deep connection with the environment due to regular interaction while fetching several resources including water. Eco-feminism also believes that consumption of the resources like the food, wood, minerals that has travelled thousands of kilometers is not tenable on any count. This is abuse of ability as well as robbery of ecology. Similarly, development of landscape gardens and eco-tourism lead to ecological destruction.

# Importance

- It is believed that caring nature and women are synonymous actions. The more you care and treat women equally, the more you protect nature. Women acquire the knowledge of land\soil conditions, water and other environmental features in much better way than male counterpart. Women are excluded from policy decisions of development despite their better understanding of the nature. 2. 3. 187 4. Eco-feminist insists on cooperation, mutual benefits, respect, love and care as the foundation of ecological just, fair and sustainable alternatives. Women are responsible for the production and reproduction of life and therefore needs to be directly concerned with preserving environmental integrity to ensure food security, water safety along with healthy environment for their children and family. Eco-feminist holds industrialization responsible for toxicities of land and water bodies that directly affect women health. As social movement they have involved in social struggle against mega dam projects (e.g. Narmada bachaoandolan), nuclear power plants (e.g. Jaitapur), agro business, deforestation (e.g. Chipko movement) and toxic waste dumps.

# DEEP ECOLOGY

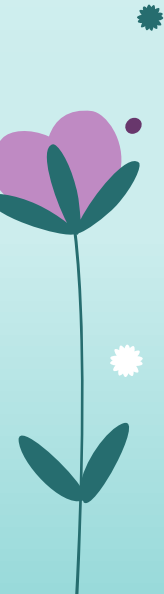
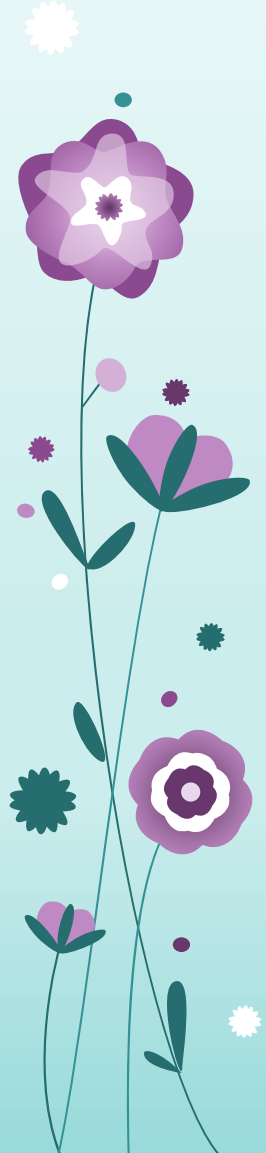
- Deep ecology states that every organism in the living environment has the same right to live and flourish. The very concept of deep ecology is related to answering deeper questions like, how should we live. Why is the environmental protections must? What is the level interdependence among biotic and abiotic factors of ecology? Where does human stand in the biotic community? etc. Deep ecology concept focuses on the deep commitment to the environment. Deep ecology provides guidelines for human activates.

# Importance

- The wellbeing and flourishing of human and nonhuman life of earth is interrelated. Further the infinite value of both human and nonhuman is independent of their usefulness to each other. Planet earth has a rich diversity of plants and animals living in different habitats and they depend on each other for their survival. Richness and diversity of the life forms contribute to the recognition of these values. Deep ecology concentrates on causes of the environmental problems rather than simply responding to the symptoms of the problems. Humans have no right to reduce this richness and diversity except to satisfy vital human needs. The flourishing of the human life and cultures is well matched with the substantial decrease of the human population. The flourishing of nonhuman life also requires such population control. Present human interference with the non human world is excessive and the situation is rapidly worsening. Policies affecting the basic economic, technological and ideological structures must be changed. The resulting state of affairs will be deeply different from the present.

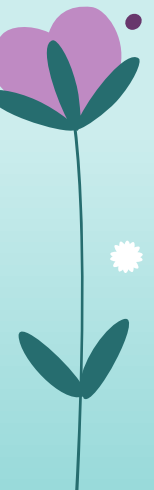
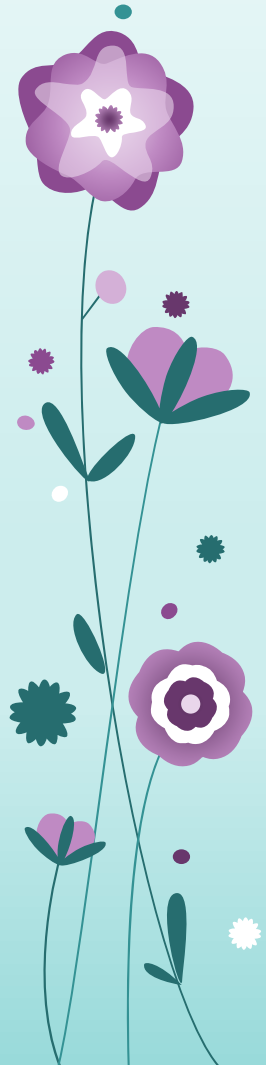
# Principles of Deep Ecology

1. **Inter-relationship of Organisms**
2. **Respect for living things**
3. **Principles of Diversity and symbiosis**
4. **Anti-class posture**
5. **Decrease of Human population**
6. **Changes in policies**
7. **Appreciation of Quality of Life**
8. **Obligation to Participate**



# Deep ecology movement

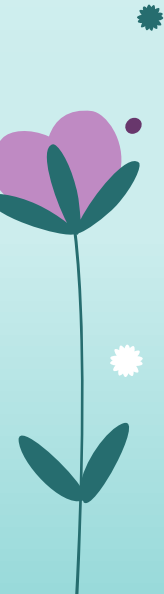
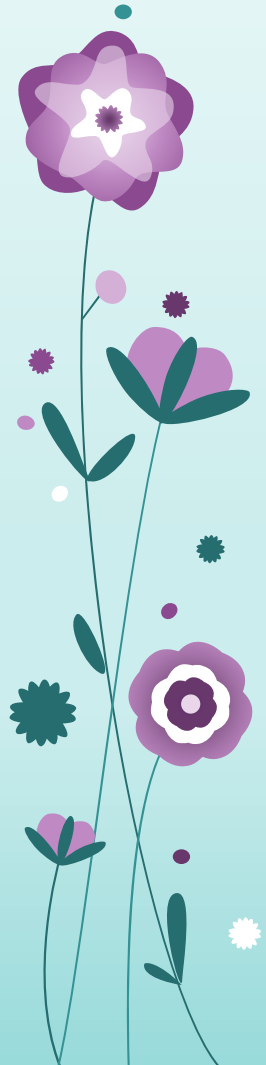
- **Deep ecology**, environmental philosophy and social **movement** based in the belief that humans must radically change their relationship to nature from one that values nature solely for its usefulness to human beings to one that recognizes that nature has an inherent value.





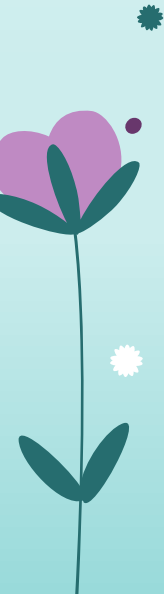
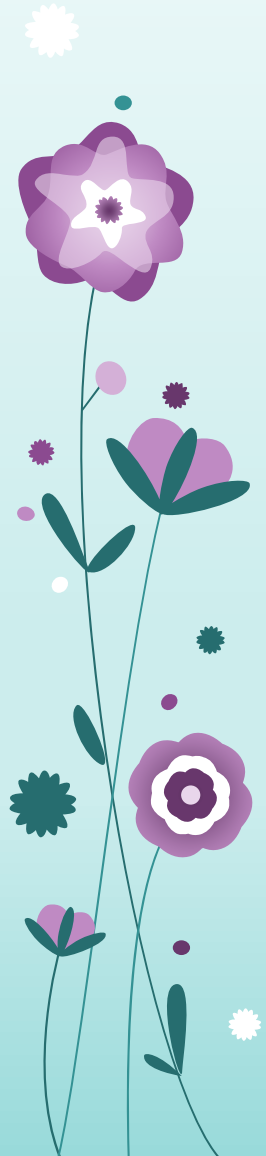
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8. **Obligation to participate**



# Criticisms

1. **Interests in nature**
2. **Deepness**
3. **Misunderstanding scientific information**
4. **Shallow (Anthropocentric) view superior**
5. **Deep ecology as not deep enough**

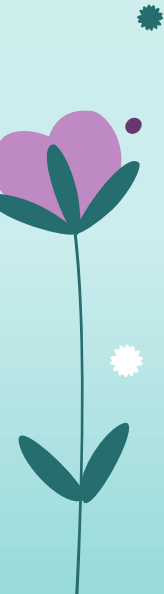
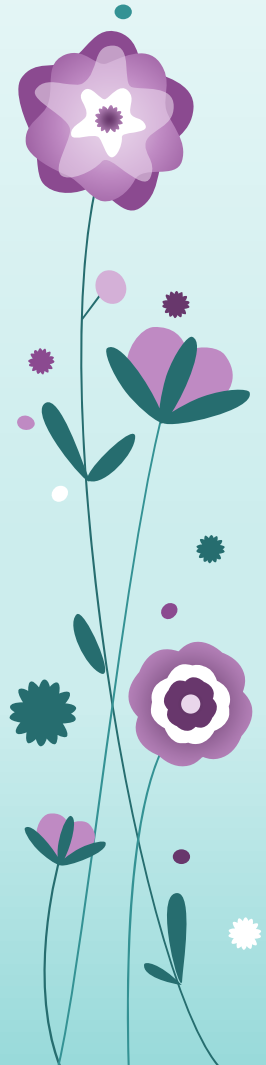


# Sustainability Principles

- Sustainable development is the idea that human societies must live and meet their needs without compromising the ability of future generations to meet their own needs. The “official” definition of sustainable development was developed for the first time in the Brundtland Report in 1987.
- The goal of sustainable development is to meet the needs of today, without compromising the needs of tomorrow. This means we cannot continue using current levels of resources as this will not leave enough for future generations. Stabilising and reducing carbon emissions is key to living within environmental limits.
- There are four dimensions to sustainable development – society, environment, culture and economy – which are intertwined, not separate. Sustainability is a paradigm for thinking about the future in which environmental, societal and economic considerations are balanced in the pursuit of improved quality of life.

Cont...

- The Sustainable Development Goals agenda was accepted by all members of the United Nations in 2012 at the Rio De Janeiro Council Meet with an aim to promote a healthy and developed future of the planet and its people. It was in 2015 when the Sustainable Development Goals were implemented after a successful fifteen-year plan of development called the Millennium Development Goals.



# Rio Declaration on Environment and Development

- The United Nations Conference on Environment and Development,
- Having met at **Rio de Janeiro from 3 to 14 June 1992**,
- Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972, a/ and seeking to build upon it,
- With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people,
- Working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system,
- Recognizing the integral and interdependent nature of the Earth, our home,
- Proclaims that:

# Principle – Write only in RED

## Principle 1

- **Human beings are at the centre** of concerns for sustainable development. They are entitled to a **healthy and productive life in harmony with nature**.

## Principle 2

- States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant **to their own environmental and developmental policies,** **and the responsibility to ensure that activities** within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

## Principle 3

- The **right to development** must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

# Cont...

## Principle 4

- In order to achieve sustainable development, **environmental protection shall constitute an integral part of the development process** and cannot be considered in isolation from it.

## Principle 5

- **All States and all people shall cooperate in the essential task of eradicating poverty** as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

## Principle 6

- **The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable**, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

# Cont....

## Principle 7

- **States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem.** In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

## Principle 8

- To achieve sustainable development and **a higher quality of life for all people,** States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.



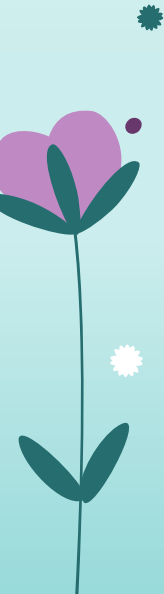
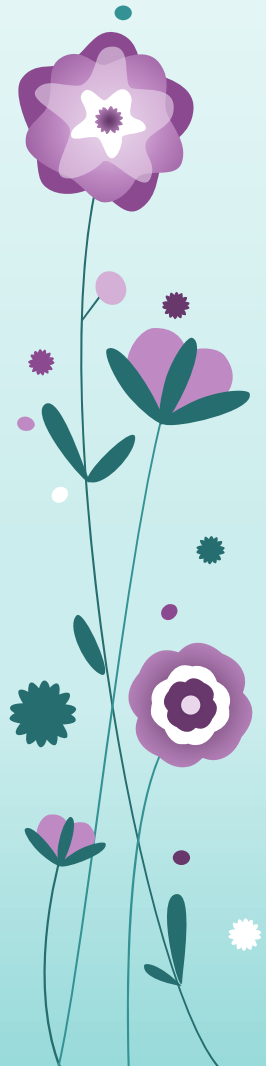
# Cont...

## Principle 9

- States should **cooperate to strengthen endogenous capacity-building for sustainable development** by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

## Principle 10

- Environmental issues **are best handled with the participation of all concerned citizens**, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.



# Cont...

## Principle 11

- **States shall enact effective environmental legislation.** Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

## Principle 12

- **States should cooperate to promote a supportive and open international economic** system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

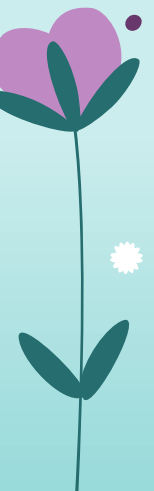
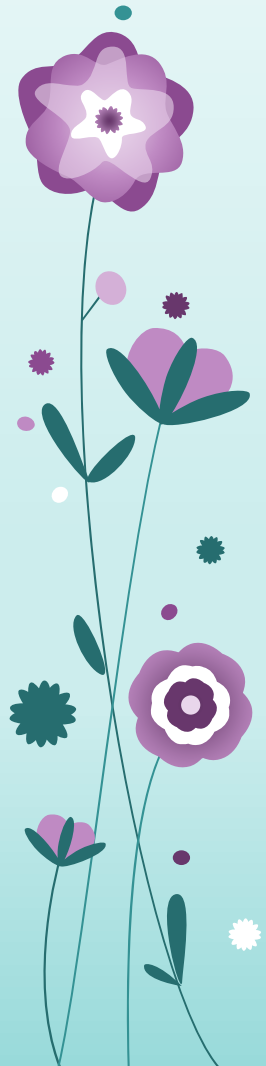
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## Principle 13

- States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

## Principle 14

- States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.



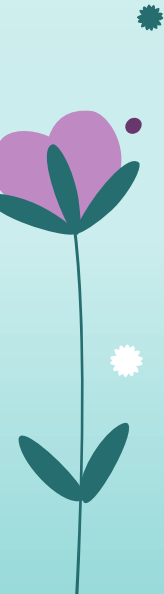
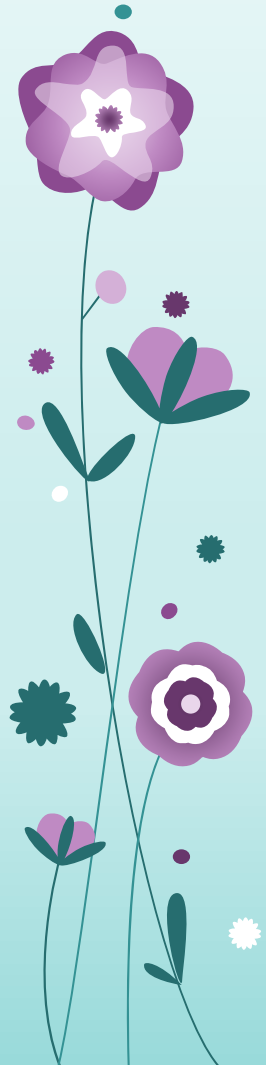
# Cont...

## Principle 15

- In order to protect the environment, **the precautionary approach shall be widely applied by States according to their capabilities**. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

## Principle 16

- **National authorities should Endeavour to promote the internalization of environmental costs and the use of economic instruments**, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.



# Cont...

## Principle 17

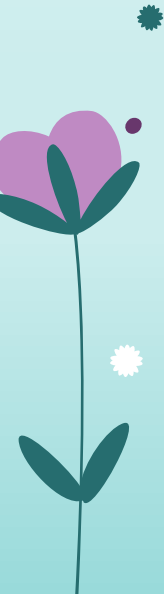
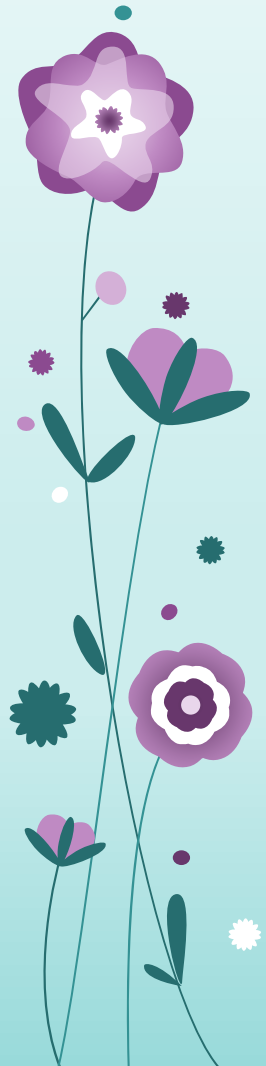
- Environmental impact assessment, as a **national instrument, shall be undertaken for proposed activities** that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

## Principle 18

- **States shall immediately notify other States of any natural disasters or other emergencies** that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

## Principle 19

- **States shall provide prior and timely notification and relevant information to potentially affected States on activities** that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.



# Cont...

## Principle 20

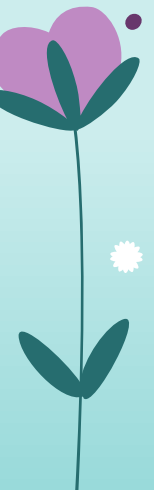
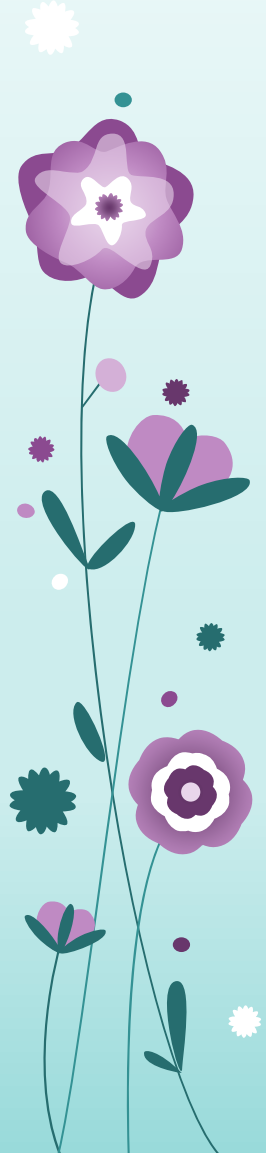
- **Women have a vital role in environmental management and development.** Their full participation is therefore essential to achieve sustainable development.

## Principle 21

- **The creativity, ideals and courage of the youth of the world should** be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

## Principle 22

- Indigenous people and their **communities and other local communities have a vital role in environmental management and development** because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.



# Cont...

## Principle 23

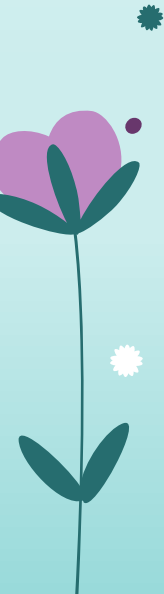
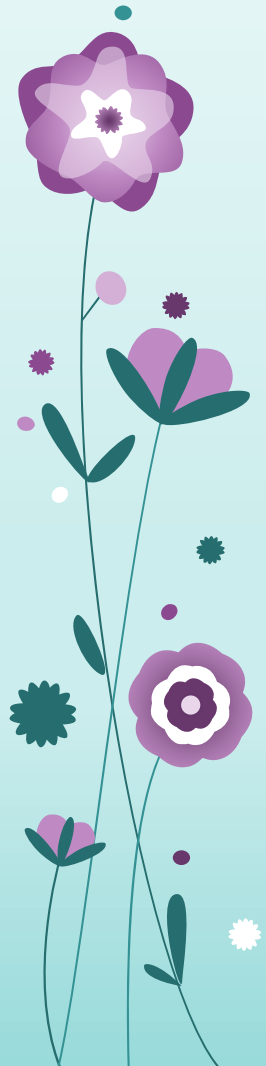
- The environment and natural resources of people under oppression, domination and occupation shall be protected.

## Principle 24

- Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

## Principle 25

- Peace, development and environmental protection are interdependent and indivisible.



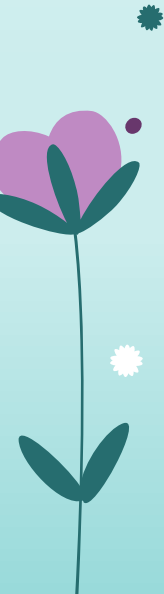
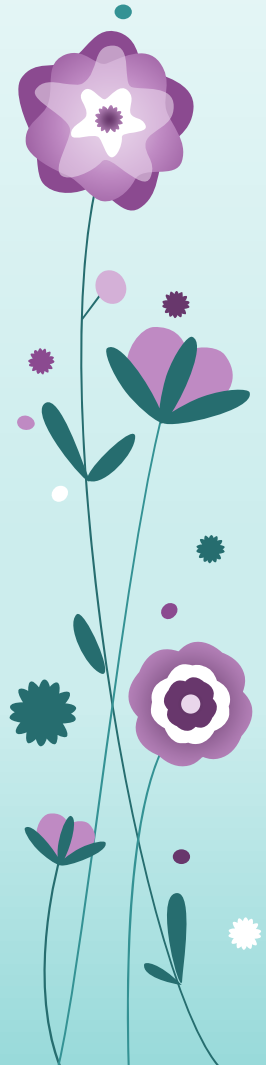
# Cont...

## Principle 26

- **States shall resolve all their environmental disputes peacefully** and by appropriate means in accordance with the Charter of the United Nations.

## Principle 27

- **States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles** embodied in this Declaration and in the further development of international law in the field of sustainable development.





# What are the 17 Sustainable Development Goals?

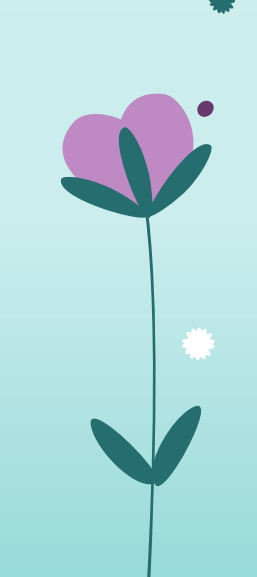
- The Sustainable Development Goals are a set of seventeen pointer targets that all the countries which are members of the UN agreed to work upon for the better future of the country. It is an important topic for candidates preparing for the [UPSC 2021](#) exam.
- The documentary screened at the Rio+20 conference – “**Future We Want**” presented the idea of a post-**2015** development agenda. Sustainable Development Goals (SDGs) is an intergovernmental agreement formulated to act as post-2015 Development agenda, its predecessor being Millennium Development Goals.
- It is a group of 17 goals with 169 targets and 304 indicators, as proposed by the [United Nation General Assembly’s](#) Open Working Group on Sustainable Development Goals to be achieved by **2030**. Post negotiations, agenda titled “**Transforming Our World**: the 2030 agenda for Sustainable Development” was adopted at the United Nations Sustainable Development Summit. SDGs is the outcome of the Rio+20 conference (2012) held in Rio De Janerio and is a non-binding document.

# The **17 goals** under the Sustainable Development Goals are as mentioned below:

1. **End poverty** in all its forms everywhere
2. **End hunger**, achieve food security and improved nutrition and promote sustainable agriculture
3. **Ensure healthy lives** and promote well being for all at all stages
4. Ensure inclusive and equitable **quality education** and **promote lifelong learning opportunities for all**

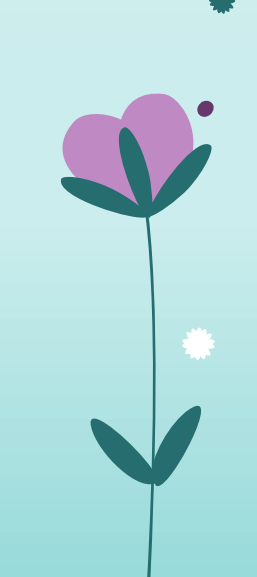


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5. **Achieve gender equality** and empower all women and girls
  6. Ensure availability and **sustainable management of water and sanitation for all**
  7. Ensure access to **affordable, reliable, sustainable and modern energy for all**
  8. Promote sustained, inclusive and **sustainable economic growth, full and productive employment and decent work for all**
- 



Cont..

9. Built resilient **infrastructure**, promote inclusive and **sustainable industrialization and foster innovation**
  10. **Reduce inequalities within and among countries**
  11. **Make cities and human settlements inclusive, safe, resilient and sustainable**
  12. **Ensure sustainable consumption and production pattern**
  13. Take **urgent actions to combat climate change and its impact**
- 

Cont..

14. Conserve and **sustainably use the oceans, seas and marine resources**
15. Protect, restore and promote **sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification and halt and reverse land degradation and halt biodiversity loss**
16. **Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels**
17. Strengthen the means of implementation and revitalize the **global partnership for sustainable development**

# Sustainability in 2000

**Kyoto Protocol**, in full Kyoto Protocol to the United Nations Framework Convention on Climate Change, international treaty, named for the Japanese city in which it was adopted in December 1997, that aimed **to reduce the emission of gases that contribute to global warming**. In force since 2005, the protocol called for reducing the emission of six greenhouse gases in 41 countries plus the European Union to 5.2 percent below 1990 levels during the “commitment period” 2008–12. It was widely hailed as the most significant environmental treaty ever negotiated, though some critics questioned its effectiveness

Cont....

## Greenhouse gases

1. **Carbon dioxide (CO<sub>2</sub>)**
2. **Methane (CH<sub>4</sub>)**
3. **Nitrous oxide (N<sub>2</sub>O)**
4. **Hydrofluorocarbons (HFCs)**
5. **Perfluorocarbons (PFCs)**
6. **Sulphur hexafluoride (SF<sub>6</sub>)**

# Paris Agreement 2015

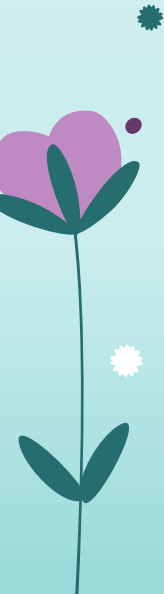
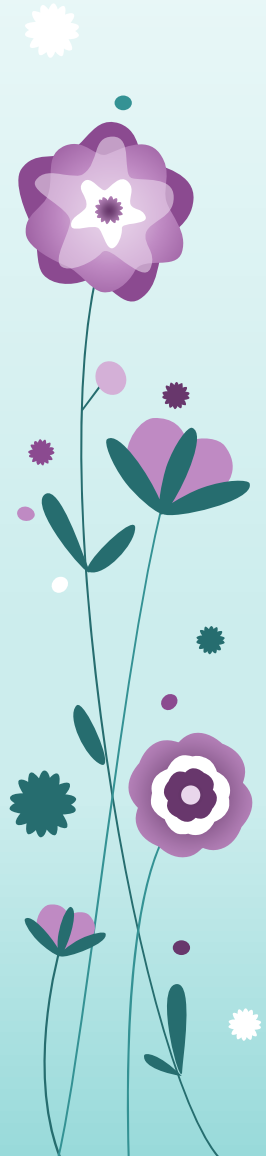
- The Paris Agreement is a **legally binding international treaty on climate change**. It was adopted by 196 Parties at **COP 21 in Paris, on 12 December 2015** and entered into force on **4 November 2016**.
- Its goal is to **limit global warming to well below 2, preferably to 1.5 degrees Celsius**, compared to pre-industrial levels.
- To achieve this long-term temperature goal, countries aim to **reach global peaking of greenhouse gas emissions as soon as possible** to achieve a climate neutral world by mid-century.
- The Paris Agreement is **a landmark** in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.



# Millennium Development Goals(MDGs)2000

- In 2000, the Millennium Declaration identified fundamental values essential to international relations . **The Millennium Development Goals set targets for realizing these values around the world by 2015 and served as the focus for UN work throughout the period:**

- 1. Eradicate extreme poverty and hunger**
- 2. Achieve universal primary education**
- 3. Promote gender equality and empower women**



Cont...----need to do

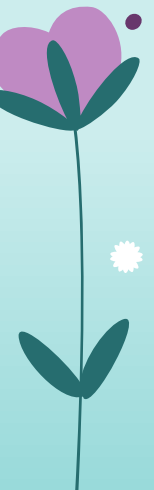
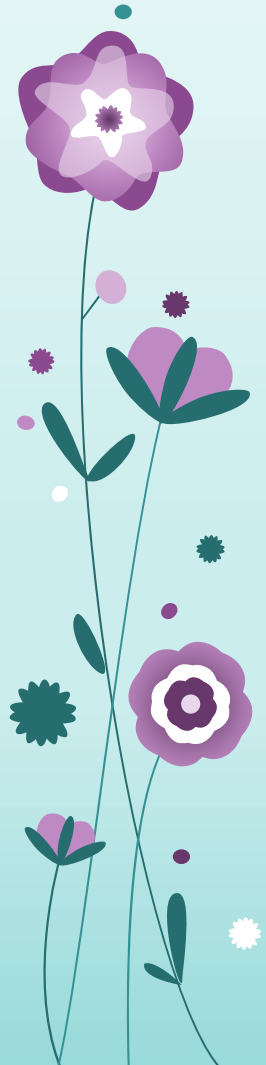
**4. Reduce child mortality**

**5. Improve maternal health**

**6. Combat HIV/AIDS, malaria and other diseases**

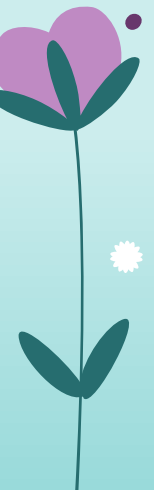
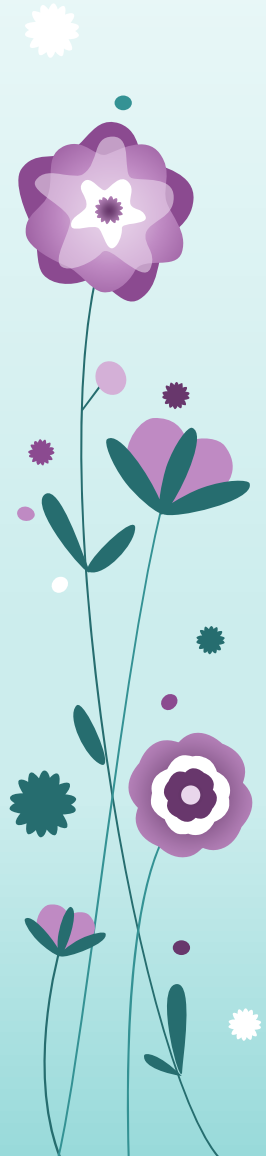
**7. Ensure environmental sustainability**

**8. Global partnership for development**



# What is the polluter pays principle?

- The 'polluter pays' principle is **the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment**. For instance, a factory that produces a potentially poisonous substance as a by-product of its activities is usually held responsible for its safe disposal. The polluter pays principle is part of a set of broader principles to guide sustainable development worldwide (formally known as the 1992 Rio Declaration).
- This principle underpins most of the regulation of pollution affecting land, water and air. Pollution is defined in UK law as contamination of the land, water or air by harmful or potentially harmful substances.



# Objectives of PPP( polluter pays principle)

1. To provide compensation and reparation
2. To prevent pollution
3. To ensure fairness in international trade
4. To achieve economic integration-internalising cost
5. To provide more equitable redistribution of costs

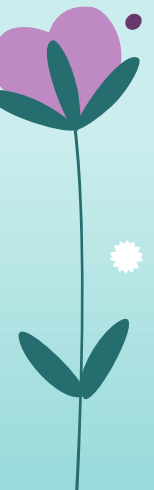
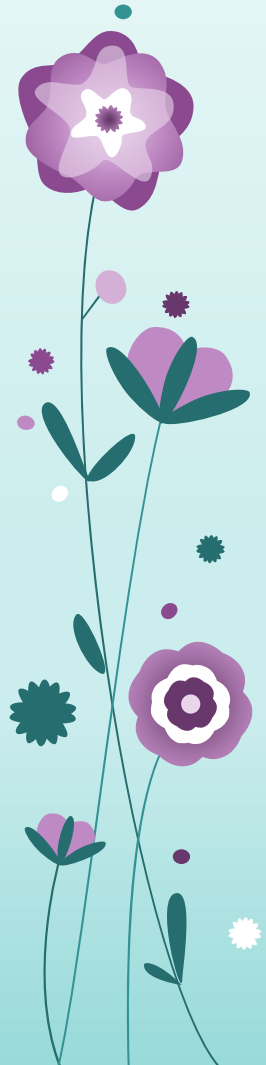
# The polluter pays principle need to answer 4 questions

## 1. What constitutes pollutions?

**Pollution as any by product of a production or consumption process that harm or otherwise violates the property rights of others**

## 2. Who are the polluters?

**It can be the person, company or other organization whose activities are generating that by- product e.g oil leak/ gas leak**





Cont...

### 3. How much must the polluters pay?

**e.g. in November 2012, British petroleum agreed to pay US \$ 4.5 billion (1 billion = 1000 Million) to the US government as compensation for the 2010 Deepwater Horizon oil spill.**

### 4. To whom they must make the payment?

**The payment for the damage is to be made to the person or person being harmed .e.g the payment of damage could be made to the Govt. since it is the responsibility of the Govt. to take care of affected persons and to repair the damage**



# Extended Producer Responsibility (EPR)

It was first described by Thomas Lindhqvist for Swedish Govt. 1990

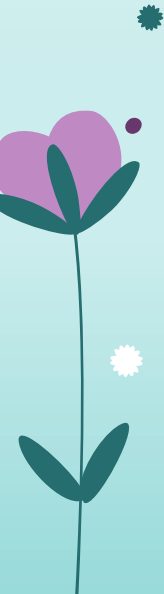
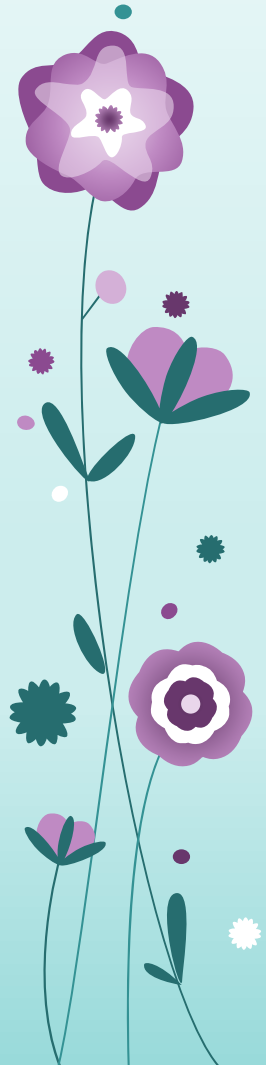
EPR internalizes the cost of waste disposal into the cost of the product. This would force the producers to decrease waste and increase the possibilities for reuse and recycling.

The Main objective of EPR includes

1. Integration of environmental costs
2. Improved waste management
3. Reduction of disposal
4. Reduction of the burden on municipalities
5. Design of environmentally sound products

# Elements of EPR

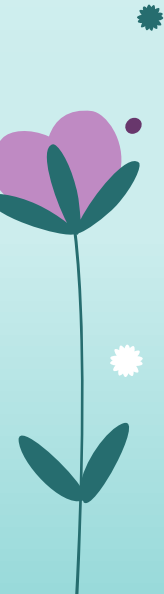
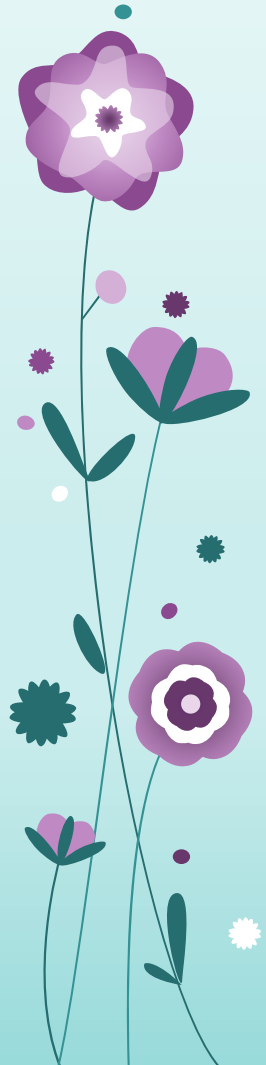
- Liability
- Economic Responsibility
- Physical Responsibility
- Informative Responsibility





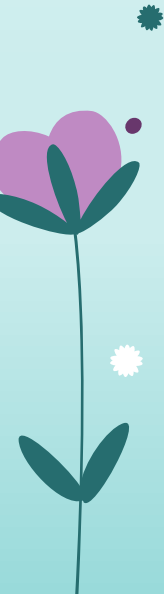
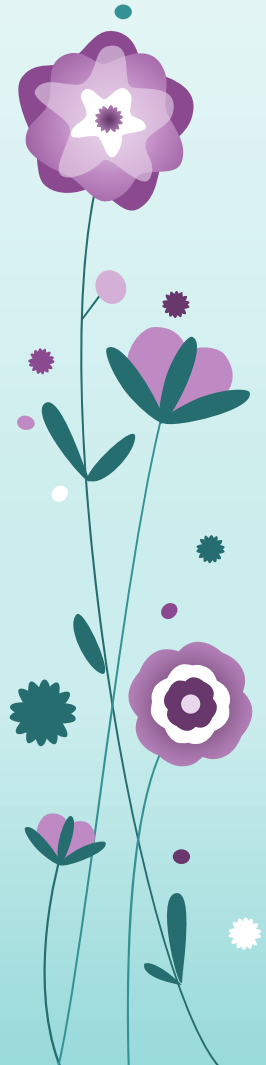
# Precautionary principle PP

- The Precautionary Principle is a tool for making better health and environmental decisions. It aims to prevent harm from the outset rather than manage it after the fact. In common language, this means “better safe than sorry.” The Precautionary Principle denotes a duty to prevent harm, when it is within our power to do so, even when all the evidence is not in. **In short, the “precautionary principle” is a notion which supports taking protective action before there is complete scientific proof of a risk; that is, action should not be delayed simply because full scientific information is lacking. In simple terms, the Precautionary Principle conveys the common-sense based advice to err on the side of caution.** The principle intends to prevent harm to humans, environment, and eco-system at large. Before looking at some of the widely used definitions of the Precautionary Principle, it would be helpful to understand the context and rationale. When the impacts of a particular activity – such as emission of hazardous substances – are not completely clear, the general presumption is to let the activities go ahead until the uncertainty is resolved completely.



# Definition

This definition is based on 1998 Wingspread Statement on the Precautionary Principle and it states: “...When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically. The process of applying the precautionary principle must be open, informed and democratic and must include potentially affected parties. It must also involve an examination of the full range of alternatives, including no action. In this context the proponent of an activity, rather than the public, should bear the burden of proof.”



# BASIC FEATURES OF PRECAUTIONARY PRINCIPLE:

1. **Anticipatory Action:** There is a duty to take anticipatory action to prevent harm. Government, business, and community groups, as well as the general public, share this responsibility.
2. **Right to Know:** The community has a right to know complete and accurate information on potential human health and environmental impacts associated with the selection of products, services, operations, or plans. The burden to supply this information lies with the proponent, not with the general public.
3. **Alternatives Assessment:** An obligation exists to examine a full range of alternatives and select the alternative with the least potential impact on human health and the environment, including the alternative of doing nothing.

Cont...

4. **Full Cost Accounting:** When evaluating potential alternatives, there is a duty to consider all the reasonably foreseeable costs, including raw materials, manufacturing, transportation, use, cleanup, eventual disposal, and health costs even if such costs are not reflected in the initial price. Short and long-term benefits and time thresholds should be considered when making decisions.
5. **Participatory Decision Process:** Decisions applying the Precautionary Principle must be transparent, participatory, and informed by the best available science and other relevant information.

## Need for PP

Sometimes if we wait for certainty it is too late. Scientific standards for demonstrating cause and effect are very **high e.g. smoking was strongly suspected of causing lung cancer long before the link was demonstrated conclusively. By then, many smokers had died of lung cancer.** But many other people had already quit smoking because of the growing evidence that smoking was linked to lung cancer. These people were wisely exercising precaution despite some scientific uncertainty.

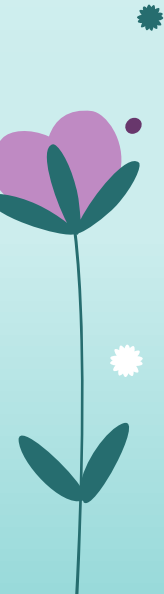
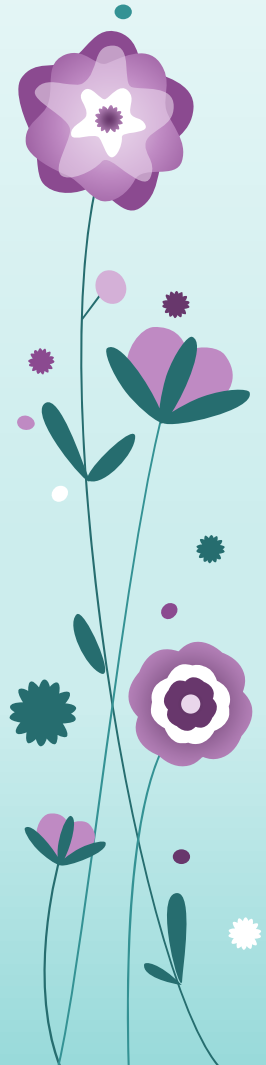
# Implementation of the PP

Any action that contributes to preventing harm to humans and the environment learning more about the consequences of actions, and acting appropriately is precautionary.

- 1. Alternatives**
- 2. Burden of proof**
- 3. Goals**
- 4. Democracy and transparency**

## Present need of PP

**The effects of careless and harmful activities have accumulated over the years. Humans and the rest of the natural world have a limited capacity to absorb and overcome this harm. There are plenty of warning signs chronic diseases etc.....**



# Environmental legislations

**In the Constitution of India it is clearly stated that it is the duty of the state to ‘protect and improve the environment and to safeguard the forests and wildlife of the country’. It imposes a duty on every citizen ‘to protect and improve the natural environment including forests, lakes rivers and wildlife’.** Reference to the environment has also been made in the Directive Principles of State Policy as well as the Fundamental Rights. The Department of Environment was established in India in 1980 to ensure a healthy environment for the country. This later became the Ministry of Environment and Forests in 1985.

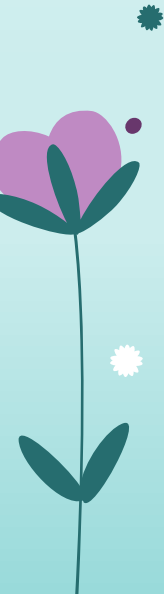
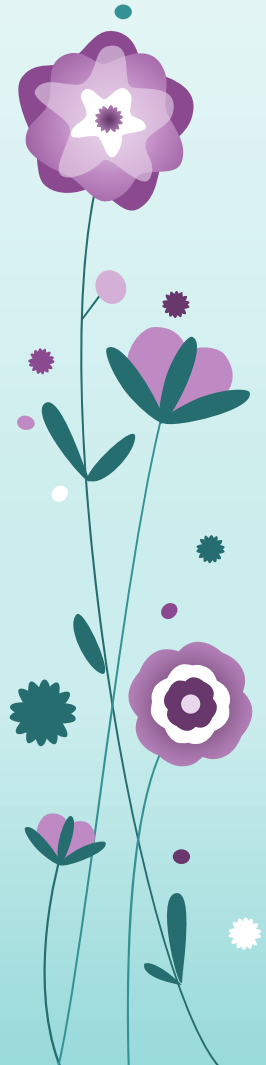


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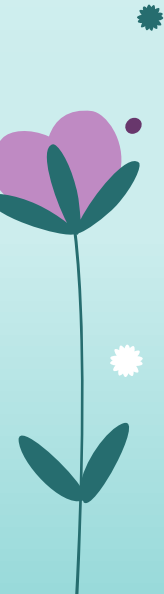
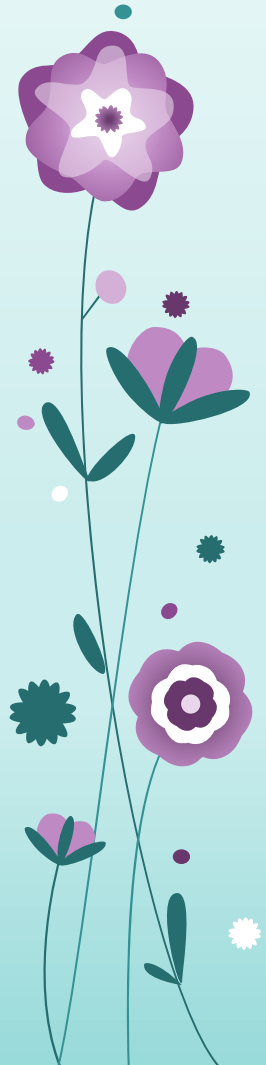
- **1986 – The Environment (Protection) Act**
- **1995 – National environmental Tribunal**
- **1997 – The National Environment Appellate Authority Act**
- **1998 – Biomedical waste (Management and Handling) Rules**
- **1927 – Indian Forest Act and Amendment 1984**
- **1972 – Wildlife Protection Act, Rules 1973 and Amendment 1991**
- **1980 – The Forest (Conservation) Act and Rules 1981**

# Reasons for failure of Environmental legislations

The laws are based on the assumption that humans and ecosystems can absorb a certain amount of contamination without being harmed. We are now learning how difficult it is to know what levels of contamination, if any, are safe. But the greatest weakness in most conservation and toxics policies is that they are based on the expectation that science can and must provide definitive proof of harm before protective action is taken



# Equity Principle





1970

Arybhata: It was India's first satellite named after the famous Indian astronomer Aryabhata. Later on we have launched Bhaskara I and Bhaskara II, Rohini





1980

India had three continuous successful satellite launches for its first generation rocket SLV, ASLV, PSLV

APPLE-The Ariane Passenger Payload Experiment it was launched on June 19, 1981  
After we launched many more..

INSAT -1A

INSAT-1B

SROSS

IRS-1A

INSAT-1C



1990

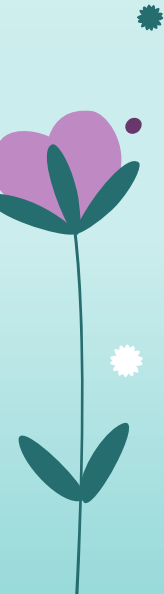
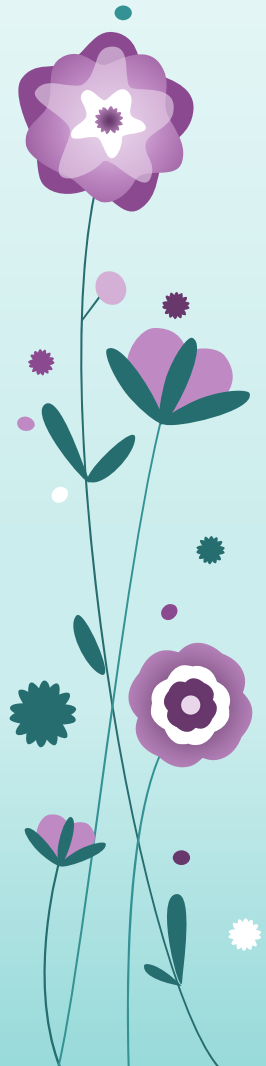
INSAT-1D

IRS-1B

IRS-1C

NSAT-2E

OceanSat-1





2000

INSAT-3B

GSAT-1

TES

NSAT-3C

Kalpana-1

RESOURCESAT-1

Cartosat-1

SRE-1

IMS-1

Chandrayaan-1

RISAT-2

Oceansat-2



2010

