

CHE 110: Environmental Studies

Unit - 1

INTRODUCTION TO ENVIRONMENTAL STUDIES

Unit: 1_Lecture: 2_CHE110_VK



Vijaykant Khorwal
Ph.D. Chemistry
(IIT Bombay, Mumbai)

- ❑ The term *sustainable development* refers to the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs.
- ✓ The concept of sustainable development can be interpreted in many different ways,
- ✓ But at its core is an approach to development that looks to balance different, and often competing, needs against an awareness of the environmental, social and economic limitations we face as a society.
- ✓ All too often, development is driven by one particular need, without fully considering the wider or future impacts.



- ✓ Effective planning for population control
- ✓ Reducing per capita demand of natural resources
- ✓ Using efficient technological devices
- ✓ Following the 3Rs (reduce, reuse, and recycling) approach
- ✓ Promoting environmental awareness through education
- ✓ Effective planning for regeneration of natural resources



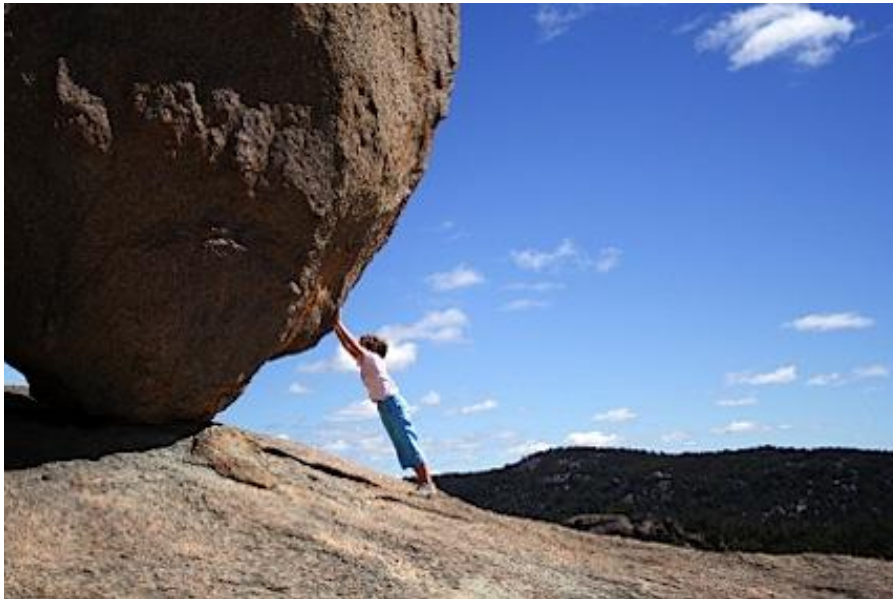
❑ The following four rules can be defined as the key mantras of sustainability. These four rules are

- Reduce our dependency on heavy metals and fossil fuels such as coal, oil and natural gas.
- Reduce our dependency on synthetic chemicals.
- Reduce our destruction of nature - includes clearing of forest and natural habitats for human needs.
- Ensure that we don't stop people from meeting their needs in order to achieve environmental sustainability. We must maintain a balance between environmental and economic sustainability.

- Place more emphasis on pollution prevention and waste reduction.
- Recycle and reuse as many waste products and resources possible.
- Make more goods that last longer and easy to use, recycle and repair.
- Depend on renewable source of energy, sun wind, biomass, flowing water, geo thermal and tidal.
- Sustain Earths Biodiversity with emphasis on protecting vital habitats of the wild species.
- Use potentially renewable resources such as wastes, soil, plants, animals no faster than they are renewed.
- Increase the usage of non renewable resources to minimize the resource depletion at a faster rate.
- Earth Degrading activities should be discouraged
- Reduce poverty and rate of population growth

Problems In The Path of Sustainable Development

- Disagreement between stakeholders
- Uncertainty about the outcome of policies which is made today.
- Consumption and lifestyle
- Arguments over cause and responsibility
- Instability, such as conflict between nations.
- Implementation, such as ensuring programmes fit the local context.



Sustainable Development :
<https://www.youtube.com/watch?v=7V8oFI4GYMY&t=49s>

NATURAL RESOURCES AND THEIR CONSERVATION



Natural resources are the substances which are inherent to earth and obtained from nature and utilized to create products and services which are useful for human beings. Forests, water, air, soil, etc. are natural resources.



☐ Renewable Natural Resources

- The resources that can be harvested continuously with proper planning and management are called renewable resources. Example: plants, animals, solar energy , wind energy, etc.

☐ Non Renewable resources

- The natural resources which are limited in supply and cannot be replenished by natural means. Once exhausted, they have very little chance of recovery or resynthesis. Coal, minerals, petroleum, etc. are Non Renewable resources.
- ☐ As of 2007 our planet has been using natural capital 1.5 times as fast as nature can renew it.
- ☐ Humanity has already overshoot global biocapacity by 30% and now lives unsustainably by depleting stocks of "natural capital"

☐ List of renewable natural resources:

- (i) Land resources
- (ii) Water resources
- (iii) Mineral resources
- (iv) Food resources
- (v) Energy resources
- (vi) Forest resources

https://www.youtube.com/watch?v=eEFwaQej_0E

<https://www.youtube.com/watch?v=GnYHFRq7-5s>

<https://www.youtube.com/watch?v=wvP7474y8Jw>

<https://www.youtube.com/watch?v=Sk5ELLPsD80>