



SUSTAINABLE DEVELOPMENT

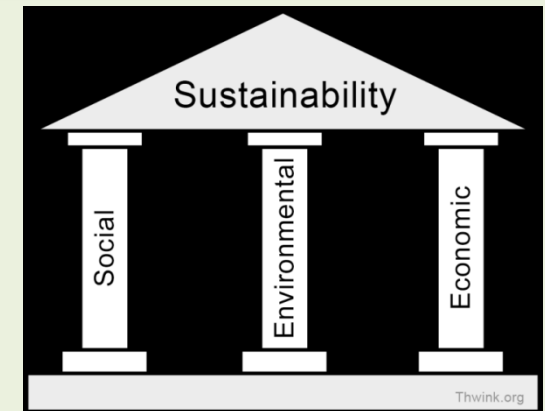
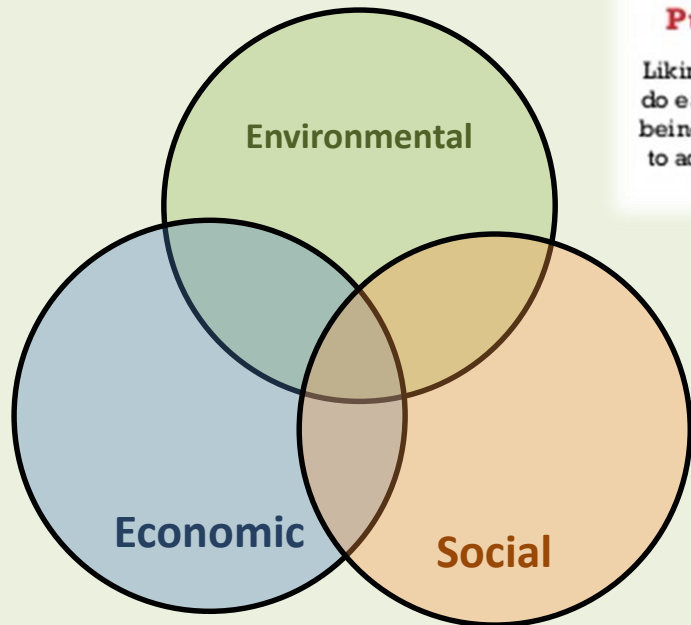
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What is Sustainability?

- Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs.



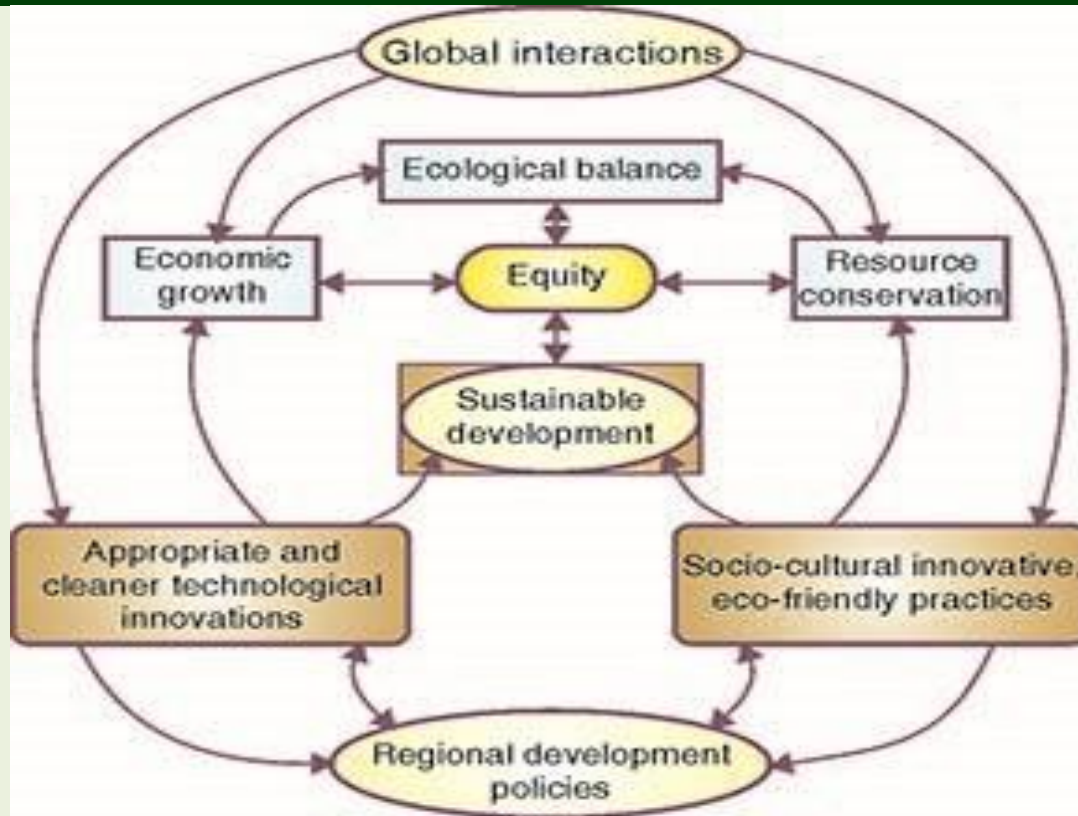
What is Sustainability?



Three pillars of Sustainability

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What is Sustainability?



Multidimensional model for sustainable development

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From unsustainable to sustainable development

- Does it protect our biodiversity?
- Does it prevent soil erosion?
- Does it slow down population growth?
- Does it increase forest cover?
- Does it cut off the emissions of CFC, SO_x, NO_x and CO₂ ?
- Does it reduce waste generation and does it bring benefits to all?

Was Thanos Right?



This universe is finite, its resources, finite. If life is left unchecked, life will cease to exist.

the key aspects for sustainable development

- **Inter-generational equity**
 - minimize any adverse impacts on resources and environment
 - stop over-exploitation of resources, reduce waste discharge and emissions and maintain ecological balance
- **Intra-generational equity**
 - minimize the wealth gaps within and between nations
 - The technology should address to the problems of the developing countries
 - producing drought tolerant varieties for uncertain climates
 - vaccines for infectious diseases
 - clean fuels for domestic and industrial use

Measures for Sustainable Development

- Using appropriate technology
- Reduce, Reuse, Recycle approach
- Prompting environmental education and awareness
- Resource utilization as per carrying capacity
- Implementing effective planning for Population Control
- Less dependence on non-renewable natural resources

Carrying capacity

- The carrying capacity of a biological species in an environment is the **maximum population size** of the species that the environment can sustain indefinitely, given the food, habitat, water, and other necessities available in the environment.
- Carrying capacity has two basic components
 - Supporting capacity (the capacity to regenerate)
 - Assimilative capacity (the capacity to tolerate different stresses)

Sustainable Development Goals

- 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.
- An intergovernmental agreement formulated to act as post-2015 Development agenda in Rio+20 conference in 2015.
rio+20 conference
- 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.

The political process



1992: Agenda 21 (Rio)

2002: World Summit on Sustainable Development

2012: The Future we Want (Rio+20)

2015: Sustainable Development Goals

SDG Indicators



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17 goals under the Sustainable Development Goals

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
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

17 goals under the Sustainable Development Goals

- 8.** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- 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

17 goals under the Sustainable Development Goals

- 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

Problems of Sustainable Development

- Disagreements between stakeholders
 - Problem between different communities(Development, economic growth)
- Uncertainty
 - Global environmental issue
- Consumption and life style
 - Comparison between developed and undeveloped countries.
- Arguments over cause and responsibility
 - Pollution, Global warming etc.

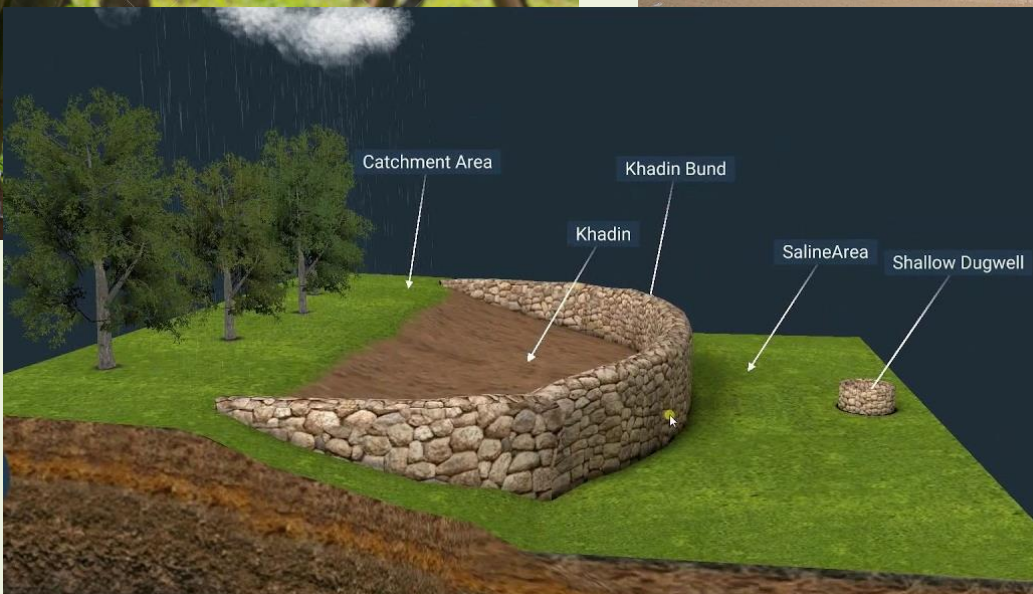
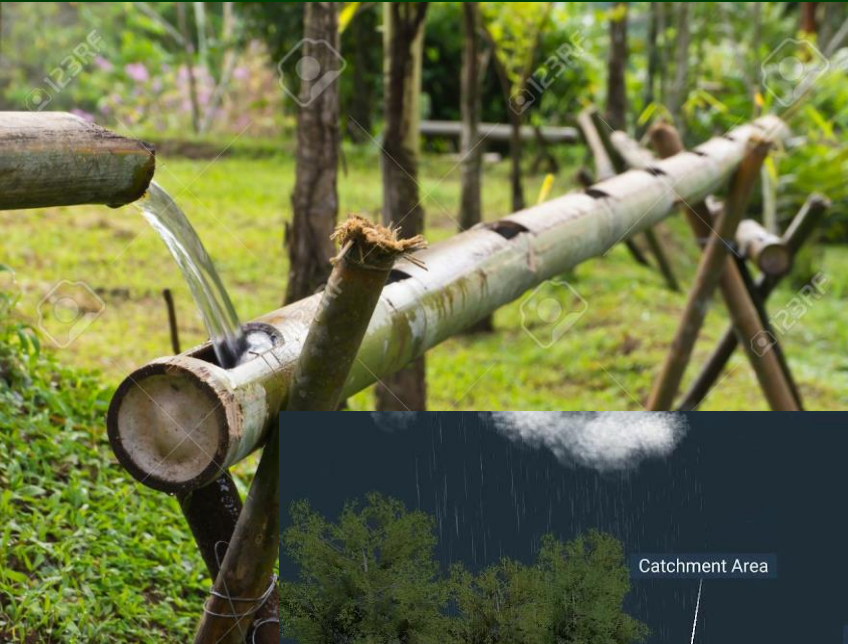
Urban Problems Related To Energy

- Residential and commercial lighting
- Transportation means including automobiles and public transport for moving from residence to workplace
- Modern life-style using a large number of electrical gadgets in everyday life
- Industrial plants using a big proportion of energy.
- A large amount of waste generation which has to be disposed off properly using energy based techniques
- Control and prevention of air and water pollution which need energy dependent technologies

Water Conservation

- Decreasing run-off losses
- Reducing evaporation losses
- Storing water in soil
- Reducing irrigation losses
- Re-use of water
- Preventing wastage of water
- Increasing block pricing

Rainwater Harvesting



Khadin
Johad
Tanka

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Rainwater Harvesting



Modern Rainwater Harvesting



Rainwater Harvesting

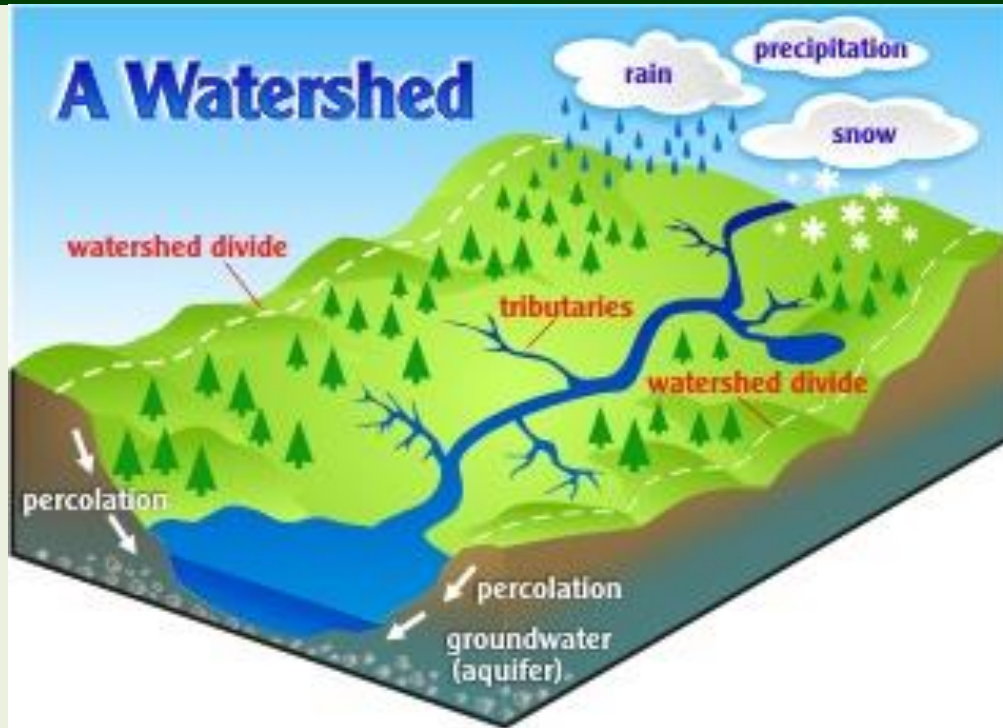
■ Objectives of Rain Water Harvesting:

- Rain water harvesting fulfill the demand of water in domestic, industrial, and agricultural sectors.
- It helps to raise the water table by recharging ground water.
- It helps in minimizing ground water pollution.
- The proper harvesting of rain water reduces soil erosion, flooding
 - and run off. It reduces the incidence of floods.

■ Techniques of Rainwater Harvesting

- This can be done by constructing special structures like dug wells,
- percolation pits, lagoons, check dams, tanks, etc.
- Broadly there are two ways of harvesting rainwater:
 - Surface runoff harvesting
 - Roof top rainwater harvesting

Watershed Management



- A watershed is an area of land that drains to a common location. A watershed can vary in size, they can represent the area draining to a small stream to the entire area draining to an ocean

Watershed Management

Benefits of Watershed Management

- Ensure ecological balance
- Stabilize income even under unfavorable weather conditions.
- Minimize the risks of drought, landslides floods, and help to reduce erosion and sediment production.
- Proper utilization of marginal or waste lands through alternate land use systems
- Maximize productivity per unit area, per unit time and per unit of water.
- Scope for beneficial developmental activities like domestic water supply, irrigation, hydropower generation, etc.
- Develop rural areas in the region with clear plans for improving the economy of the region

Thank You