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DESIGNATION : GUEST FACULTY

TOPIC : SOCIAL ISSUES AND ENVIRONMENT

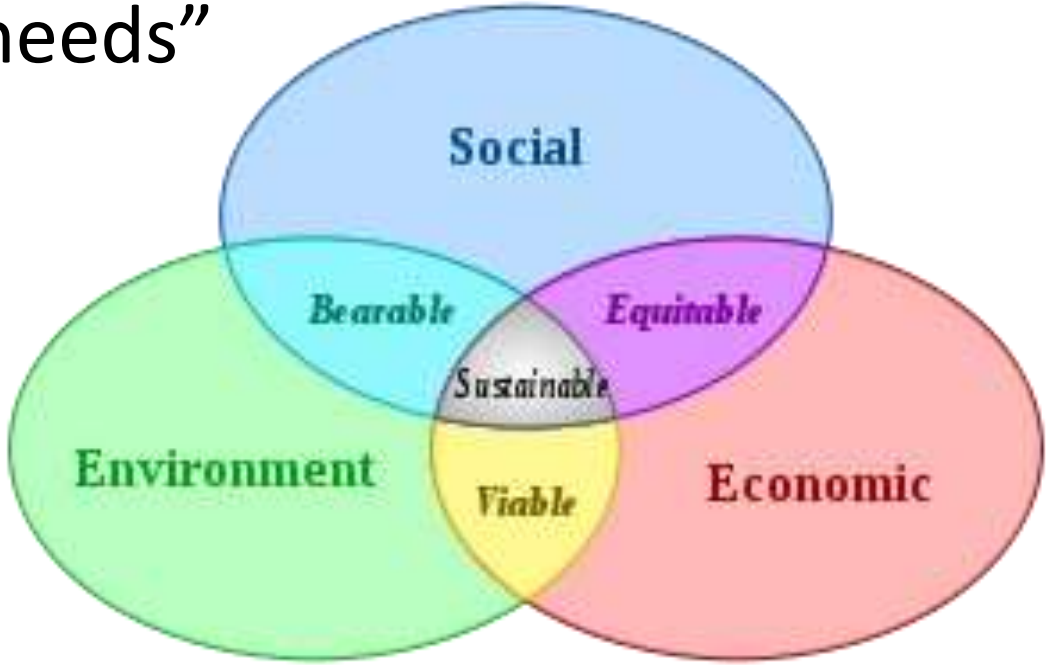
Social Issues and Environment

Introduction

- We live in a Natural as well as social world
- Development cannot be of only the rich nor it means only high living standards.
- Also not just ECONOMIC development
- It has to be a holistic approach.
- Social aspects, development and environment have a strong relation.

From Unsustainable to Sustainable

- G.H Bruntland, Director of World Health Organisation : “Meeting the needs of present without compromising the ability of future generations to meet their own needs”



Current status

- Earth Summit in Rio de Janerio in 1992 (UN Conference on Environment and Development - UNCED)
- Agenda- 21 proposed
- Everyone talks and walks sustainability
- Many programmes have been initiated.

Key aspects of Sustainable development

- Inter- generational equity
  - ϖ Stop overuse
  - ϖ Reduce Impacts
  - ϖ Maintain ecological balance
  - ϖ Hand over a safe, healthy and resourceful environment to our future generations
- Intra-generational equity
  - ϖ Minimize gap between and within nations
  - ϖ Support economic growth of poorer countries
  - ϖ Provide technological help

Measures for Sustainable development

- Using appropriate technology: concept of “Design with nature”
- 3-R approach: Minimization of resource use, use again and process to get new product from same material.
- Promoting environmental awareness and education
- Carrying capacity: Supporting and Assimilative

Indian Scenario

- Tremendous Population
- Tremendous natural diversity
- Hence makes planning sustainably all the more important but complex.
- National Council of Environmental Planning and Coordination set up in 1972.
- Ministry of Environment and Forests set up in 1985.

Social Issues

- Urban problems related to ENERGY
- WATER CONSERVATION
- Resettlement and Rehabilitation issues
- Environmental ethics
- Climate Change
- Global Warming
- Acid Rain and Ozone layer Depletion
- Nuclear Accidents and Holocaust
- Wasteland Reclamation
- Consumerism and waste products

1. Urban problems related to energy

- Cities are the main centers of Economic growth, trade, education, employment
- Now 50% population lives in Urban areas
- Urban sprawl
- Difficult to accommodate
- Uncontrollable and unplanned growth
- Densely populated, consume more resources, NEED MORE ENERGY

Energy demanding activities

- Residential and Commercial lighting
- Private and Public transport
- Modern life style: electronic gadgets
- Industries
- Waste disposal
- Prevention and Control of pollution

Effects

- Unequal distribution of energy
- Power cuts and load – shedding
- Demand energy from other states
- Overall society suffers
- Economic development hampered.

Water Conservation

- Water is a vital resource.
- Majority of water resources are polluted heavily
- Its amount is limited for use
- So conservation is Extremely important
- **Water conservation** refers to reducing the usage of water and recycling of waste water for different purposes such as cleaning, manufacturing, and agricultural irrigation.

Actions…

- Some researchers have suggested that water conservation efforts should be primarily directed at farmers, in light of the fact that crop irrigation accounts for 70% of the world's fresh water use.
- Drip irrigation instead of sprinkle irrigation.
- Common strategies include:
  public outreach campaigns, tiered water rates (charging progressively higher prices as water use increases), or restrictions on outdoor water use such as lawn watering and car washing.
- 100’s of ways to conserve water

Water your yard and outdoor plants early or late in the day to reduce evaporation.

Use a shut-off nozzle on your hose.

Use plants that require less water.

Mulch around plants to hold water in the soil.

Get an Energy Star labeled washing machine.

Wash only full loads.

Use a low flow showerhead.

Take shorter showers — five minutes or less is best.

Turn off the water while soaping hands and brushing teeth.

Turn off sink faucet while scrubbing dishes and pots.

Install new toilets that use less than 1.6 gallons per flush.

Put faucet aerators on sink faucets.

Us a broom, not a hose, to clean driveways and walkways.


The new way—
conservation
Harvest
rainwater
from roof
Water-efficient
appliances
and toilet
Drip
irrigation
Rain
barrel
Drought-resistant
native plants
Drought-resistant
garden
Water meter
to record use
Water from well
or system
Cistern stores
rain water
Septic field
Septic tank

Rain Water Harvesting

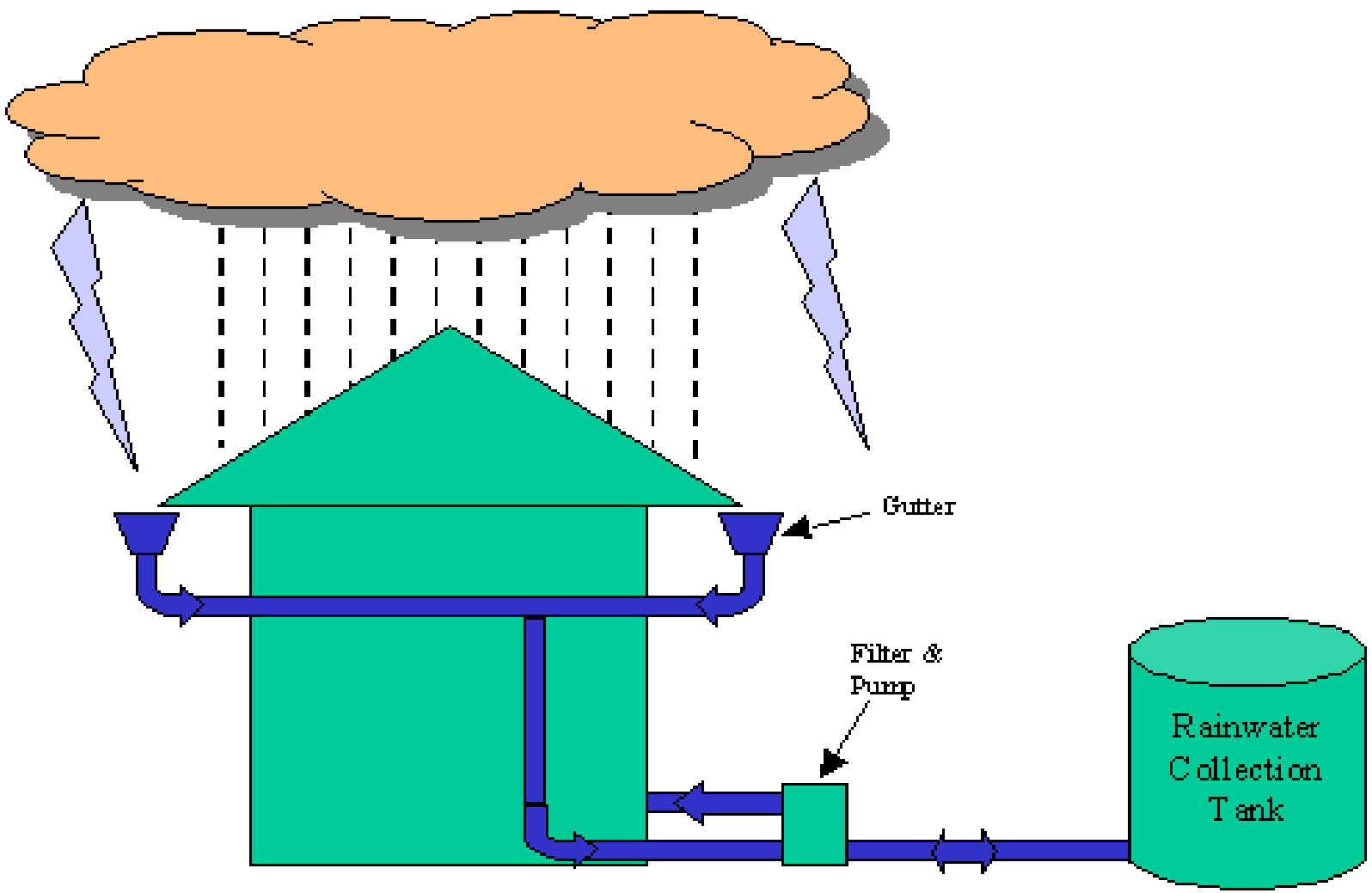
Introduction

- In urban areas, the construction of houses, footpaths and roads has left little exposed earth for water to soak in.
- In parts of the rural areas of India, floodwater quickly flows to the rivers, which then dry up soon after the rains stop. If this water can be held back, it can seep into the ground and recharge the groundwater supply.
- This has become a very popular method of conserving water especially in the urban areas.
- Rainwater harvesting essentially means collecting rainwater on the roofs of building and storing it underground for later use. Not only does this recharging arrest groundwater depletion, it also raises the declining water table and can help augment water supply.

Status

- Town planners and civic authority in many cities in India are making rainwater harvesting compulsory in all new structures.
- No water or sewage connection would be given if a new building did not have provisions for rainwater harvesting
- A number of government buildings have been asked to go in for water harvesting in Delhi and other cities of India.

Process



Rainwater Collection Overview

Case study

- The area surrounding the River Ruparel in Rajasthan, is an example of proper water conservation. The site does not receive even half the rainfall received by Cherrapunji, but proper management and conservation have meant that more water is available than in Cherrapunji.
- The water level in the river began declining due to extensive deforestation and agricultural activities along the banks and, by the 1980s, a drought-like situation began to spread.
- Under the guidance of some NGOs (non-government organizations), the women living in the area were encouraged to take the initiative in building johads (round ponds) and dams to hold back rainwater.

- Gradually, water began coming back as proper methods of conserving and harvesting rainwater were followed.
- The revival of the river has transformed the ecology of the place and the lives of the people living along its banks. Their relationship with their natural environment has been strengthened.

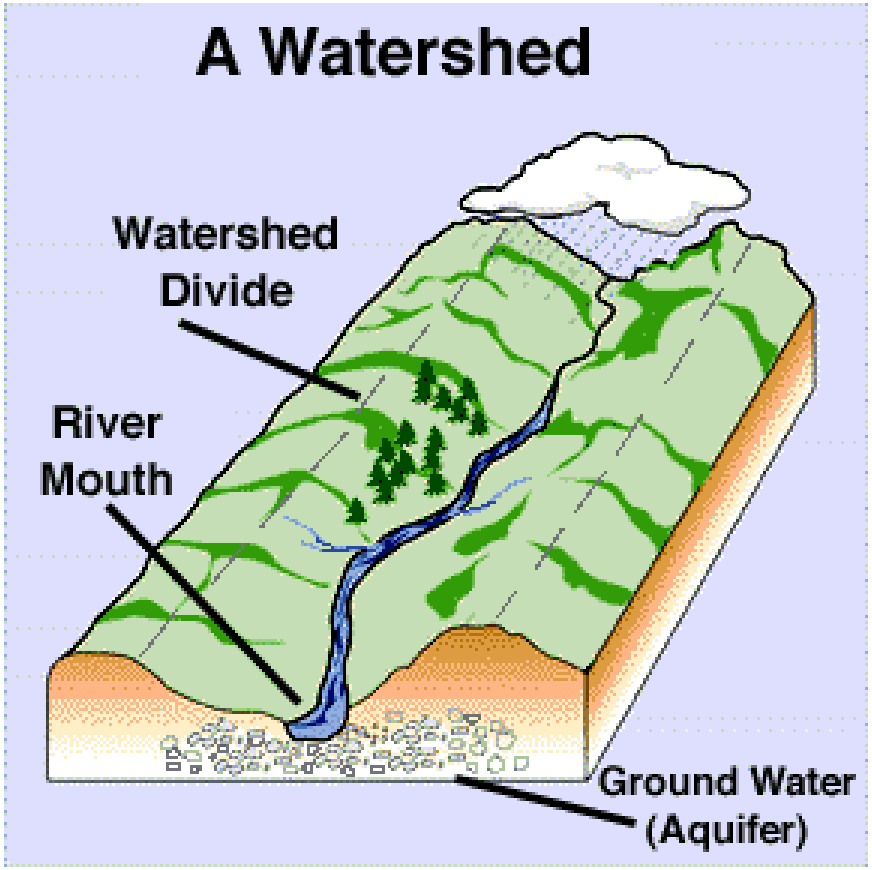
Water Harvesting: A Great Success At Kalakhoont, (Jhabua, MP), 2001

- For the first time in India drought proofing, rather than drought management, was the focus of the state Governments (Madhya Pradesh & Gujarat).
- For two years these state governments took up water conservation activities in the hope that monsoon this year would not be wasted even if it rained below the normal level.
- Kalakhoont village of Jhabua district in Madhya Pradesh (MP) spin out of the poverty cycle with the beginning of rainy season this year. Four days of the rain filled up to the brim the long- forgotten tank. Now almost the entire village is enriched by water overflowing from the tank.

Way to Success

- Crippled by two consecutive droughts, when an NGO, Action for Social Advancement (ASA), offered to renovate the tank, it was hard for the residents to decide to contribute 25 percent of the tank's renovation cost of Rs. 3 lakh.
- Three meters of silt, which had erroded from the surrounding hills, was removed from the tank. This was used as manure in farmlands and the tank was soon renovated. The decision paid rich dividends and to changed the lives of the villagers forever.
- According to Nana Basna, President of the Lift-irrigation Society formed to regulate water use in the village "there is enough water for the next three years". The stored water is enough to irrigate more than 61 hectares (ha) of land. The recharged wells will be an additional source. Now water is overflowing from the dam and residents are planning to revive a defunct lift irrigation point as a result of which three villages will be irrigated.

WATER SHED MANAGEMENT



Concept of Watershed

- Watershed is a geo hydrological unit or piece of land that drain at a common point.
- A watershed is defined as any spatial area from which rain or irrigation water is collected and drained through a common point.
- The watershed and drainage basin are synonymous term indicating an area surrounded by a ridge line that is drained through a single outlet.

- A watershed is simply the land that water flows across or through on its way to a common stream, river, or lake.
- A watershed can be very large (e.g. draining thousands of square miles to a major river or lake or the ocean), or very small, such as a 20-acre watershed that drains to a pond.

Objectives of watershed management

1.To control damaging runoff and degradation and thereby conservation of soil and water.
2.To manage and utilize the runoff water for useful purpose.
3.To protect, conserve and improve the land of watershed for more efficient and sustained production.
4.To protect and enhance the water resource originating in the watershed.
5.To check soil erosion and to reduce the effect of sediment yield on the watershed.
6. To rehabilitate the deteriorating lands.
7. To moderate the floods peaks at down stream areas.
8. To increase infiltration of rainwater.
9.To improve and increase the production of timbers, fodder and wild life resource.
10.To enhance the ground water recharge, wherever applicable.

Watershed management practices

- Watershed management involves many techniques
- The techniques can be summarized as : Grassland development, Gully Plugs, Tree plantation and contour trenching on hill tops and slopes, Contour bunding, Water conservation structures, Lift irrigation schemes, Land leveling etc.
- Public participation and awareness

INTEGRATED WATERSHED DEVELOPMENT PROJECT

- The Integrated Watershed Development Project (Hills-II) started in April 1999.
- It has a budget of US$24.4 million and is being run by experts from different line departments.
- It is World Bank-funded and operated in Haryana, Jammu and Kashmir, Punjab, Himachal Pradesh and Uttaranchal.
- One of its working areas lies in northeast Haryana in the most degraded watersheds of the Siwalik hills and their adjoining piedmont plains. The project area has been identified as one of India's eight most degraded rainfed agro-ecosystems.