SUSTAINABLE DEVELOPMENT

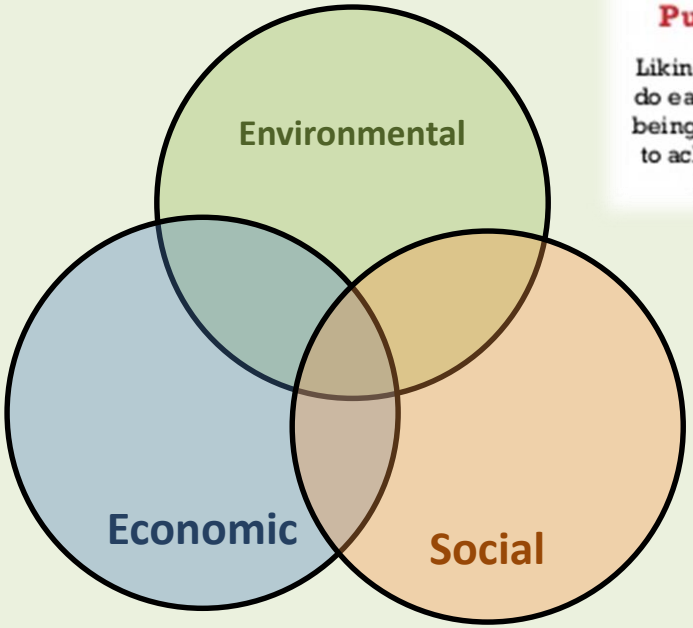
Dr. Sandip Singh

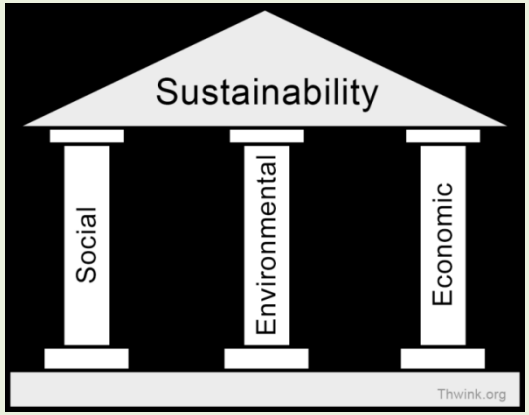
What is Sustainability?

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

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

What is Sustainability?

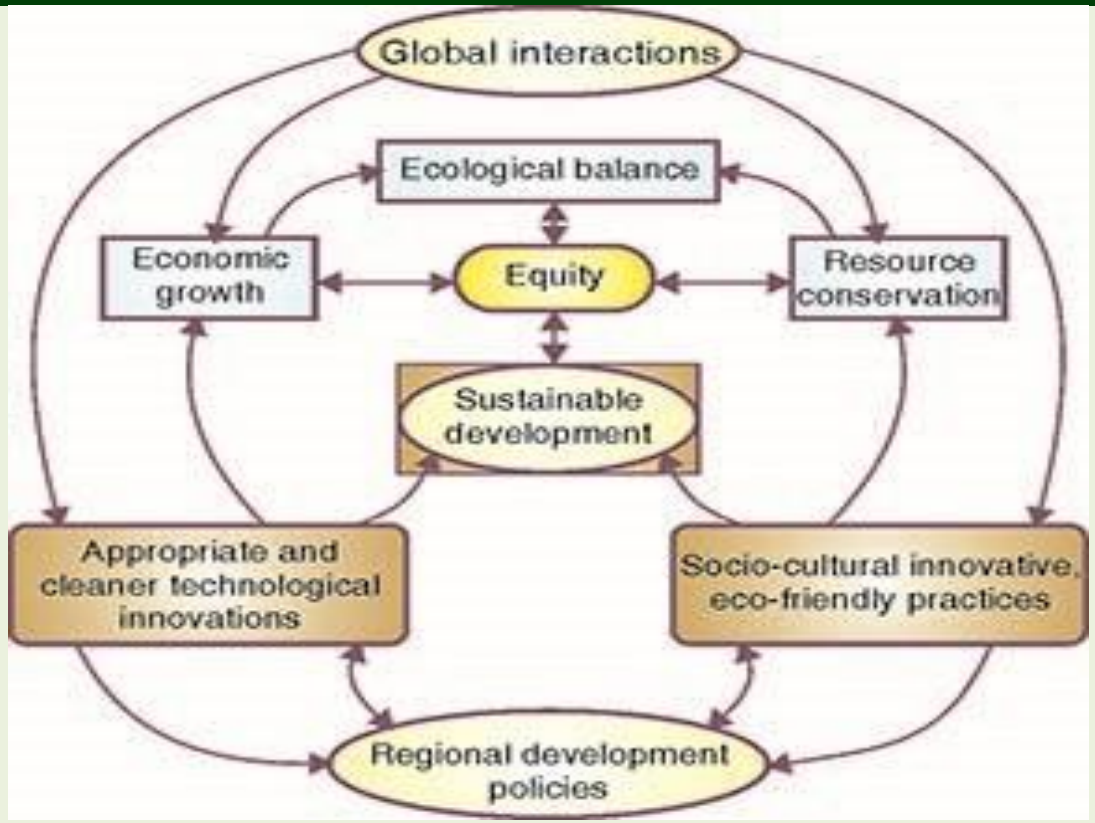




Three pillars of Sustainability

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

What is Sustainability?



Multidimensional model for sustainable development

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

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 CO_2 ?
- Does it reduce waste generation and does it bring benefits to all?

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

Was Thanos Right?

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

– Thanos (Infinity War)

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

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 2012.
- 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

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

SDG Indicators

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

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

Rankings

The overall performance of all 193 UN Member States

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country

Filter by region: All regions

Rank	Country	Score	Performance by SDG
1	Finland	86.76	
2	Sweden	85.98	
3	Denmark	85.68	
4	Germany	83.36	
5	Austria	82.28	
6	France	82.05	
7	Norway	82.00	
8	Czechia	81.87	
9	Poland	81.80	
10	Estonia	81.68	

dashboards.sdgindex.org/rankings

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

Rankings

The overall performance of all 193 UN Member States

OVERALL | SPILLOVERS

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country: India

Filter by region: All regions

Rank	Country	Score	Performance by SDG
112	India	63.45	

dashboards.sdgindex.org/rankings

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

Rankings

The overall performance of all 193 UN Member States

OVERALL | SPILLOVERS

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country: Pakistan

Filter by region: All regions

Rank	Country	Score	Performance by SDG
128	Pakistan	58.97	

dashboards.sdgindex.org/rankings

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

Rankings

The overall performance of all 193 UN Member States

OVERALL | SPILLOVERS

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country: Bangladesh

Filter by region: All regions

Rank	Country	Score	Performance by SDG
101	Bangladesh	65.91	

dashboards.sdgindex.org/rankings

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

Rankings

The overall performance of all 193 UN Member States

OVERALL | SPILLOVERS

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country: Nepal

Filter by region: All regions

Rank	Country	Score	Performance by SDG
99	Nepal	66.47	

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

dashboards.sdgindex.org/rankings

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

Rankings

The overall performance of all 193 UN Member States

OVERALL | SPILLOVERS

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country: sri

Filter by region: All regions

Rank	Country	Score	Performance by SDG
83	Sri Lanka	69.40	

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

dashboards.sdgindex.org/rankings

SUSTAINABLE DEVELOPMENT REPORT

Chapters | Rankings | Interactive Map | Country Profiles | Data Explorer | Downloads & Materials

Rankings

The overall performance of all 193 UN Member States

OVERALL | SPILLOVERS

Countries are ranked by their overall score. The overall score measures the total progress towards achieving all 17 SDGs. The score can be interpreted as a percentage of SDG achievement. A score of 100 indicates that all SDGs have been achieved.

Click on a country for details.

Search country: Bhutan

Filter by region: All regions

Rank	Country	Score	Performance by SDG
61	Bhutan	72.34	

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

SDG Index Rank	SDG Index Score	Spillover Score
112/166	63.5	99.4

SDG Dashboards and Trends

Click on a goal to view more information.

Dashboards: SDG achieved · Challenges remain · Significant challenges remain · Major challenges remain · Information unavailable

Trends: On track or maintaining SDG achievement · Moderately improving · Stagnating · Decreasing · Trend information unavailable

Status of SDG targets for India (% trend indicators)

Summary

SDG Index Rank	SDG Index Score	Population	GDP 2021 (PPP)	GDP per capita 2021 (PPP)
112/166	63.5	1,412,319,817	$ 10.2 Trillion	$ 7,242

Headline Indicators

SDG 1: Poverty headcount ratio at $2.15/day

SDG 2: Prevalence of undernourishment

SDG 3: Maternal mortality rate

SDG 4: Participation rate in pre-primary organized learning

SDG 5: Demand for family planning satisfied by modern methods

SDG 6: Population using at least basic drinking water services

SDG 7: Population with access to electricity

SDG 8: Adjusted GDP growth

SDG 9: Rural population with access to all-season roads

SDG 10: Gini coefficient

SDG 11: Proportion of urban population living in slums

SDG 12: Municipal solid waste

SDG 13: CO_2 emissions from fossil fuel combustion and cement production

SDG 14: Mean area that is protected in marine sites important to biodiversity

SDG 15: Mean area that is protected in terrestrial sites important to biodiversity

SDG 16: Homicides

SDG 17: Government spending on health and education

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.

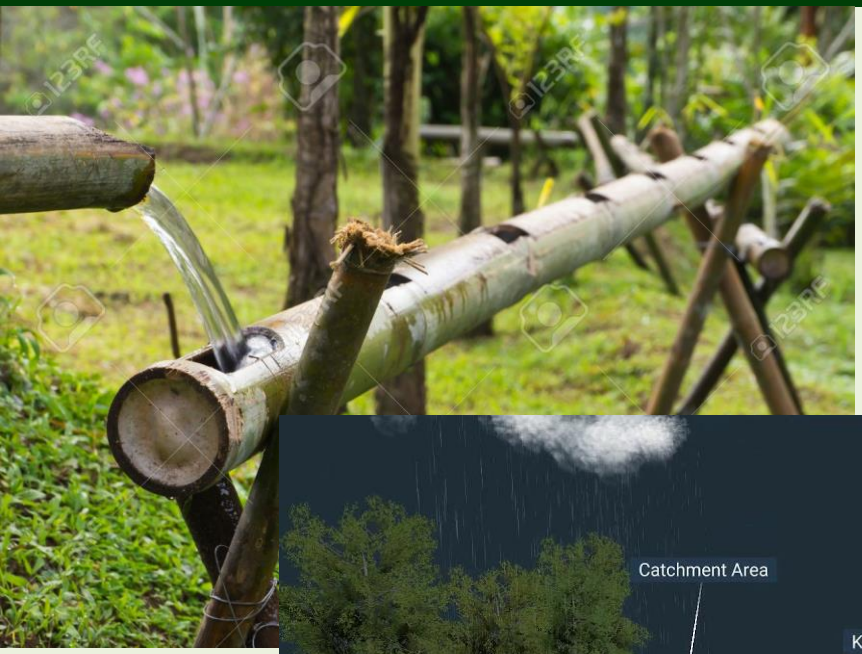
Urban Problems Related To Energy

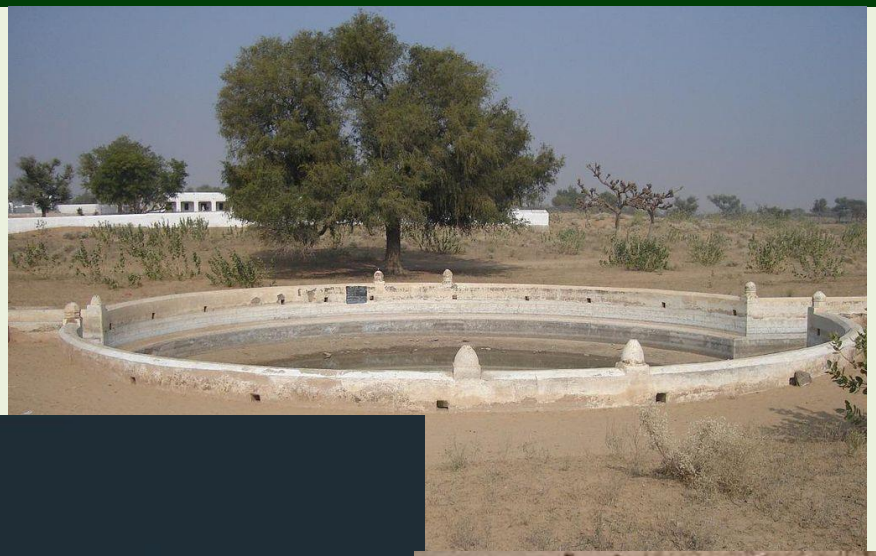
- Residential and commercial lighting
- Transportation means including automobiles and public transport for moving from residence to workplace
- Modern life-style using a large number of electrical gadgets in everyday life
- Industrial plants using a big proportion of energy.
- A large amount of waste 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

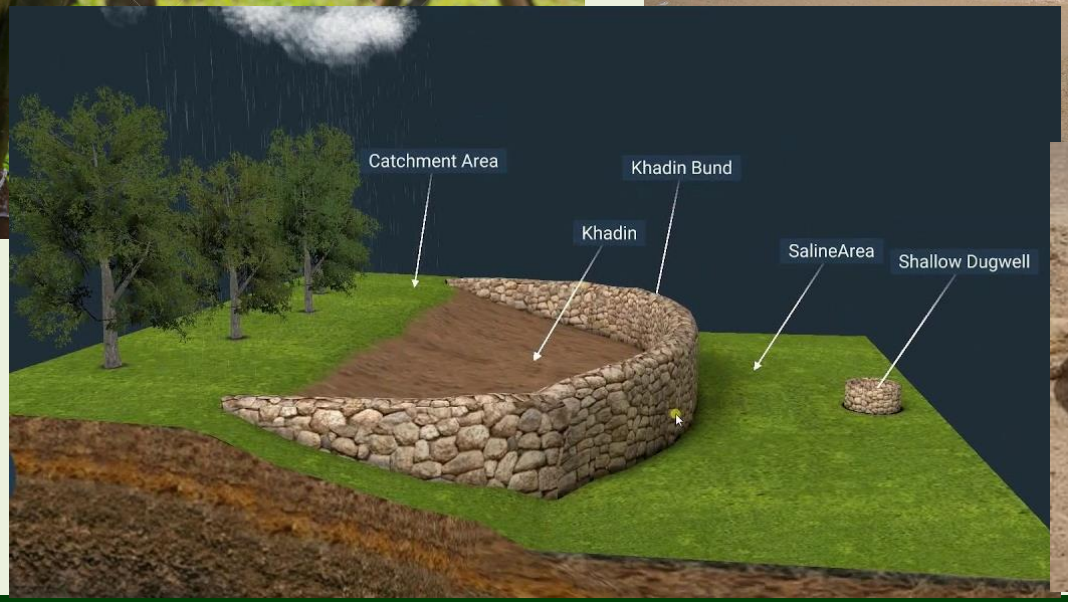
Water Conservation

- 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

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

Rainwater Harvesting

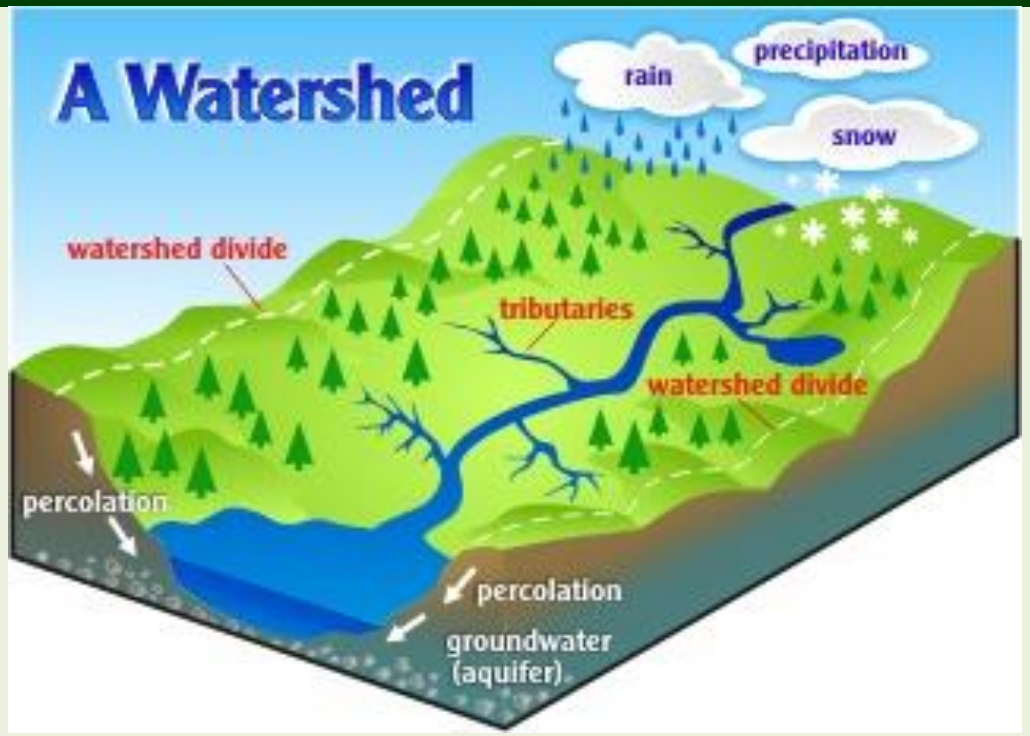
Modern Rainwater Harvesting

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.

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

This PPT should be used as reference only. Reading books (mentioned in syllabus) is mandatory for the preparation of the examinations.