

PRACTICAL NO. 1

TITLE : GENERAL STATUS OF SOIL CONSERVATION IN INDIA

Soil degradation in India is estimated to be occurring on **147 million** hectares of land which includes;

- **94 Mha** from water erosion, **16 Mha** from acidification,
- **14 Mha** from flooding,
- **9 Mha** from wind erosion,
- **6 Mha** from salinity, and
- **7 Mha** from a combination of factors.

The causes of soil degradation are both natural and human-induced. Natural causes include earthquakes, tsunamis, droughts, avalanches, landslides, volcanic eruptions, floods, tornadoes, and wildfires. Human-induced soil degradation results from land clearing and deforestation, inappropriate agricultural practices, improper management of industrial effluents and wastes, over-grazing, careless management of forests, surface mining, urban sprawl, and commercial/industrial development. Inappropriate agricultural practices include excessive tillage and use of heavy machinery, excessive and unbalanced use of inorganic fertilizers, poor irrigation and water management techniques, pesticide overuse, inadequate crop residue and/or organic carbon inputs, and poor crop cycle planning. Some underlying social causes of soil degradation in India are land shortage, decline in per capita land availability, economic pressure on land, land tenancy, poverty, and population increase.

Effects of Soil Erosion in India

- Soil erosion results in huge loss of nutrients in suspension or solution, which are washed away from one place to another, thus causing depletion or enrichment of nutrients.
- Besides the loss of nutrients from the topsoil,
- There is also degradation through the creation of gullies and ravines.
- Water causes sheet-wash, surface gullies, tunnels and scours banks in rivers.
- In hot and dry climate of India, wind blowing is the main cause of soil erosion.

Indian government is adopting adequate measures to reduce the unpleasant effects of soil erosion in India particularly in the states like Punjab, Maharashtra, Karnataka.

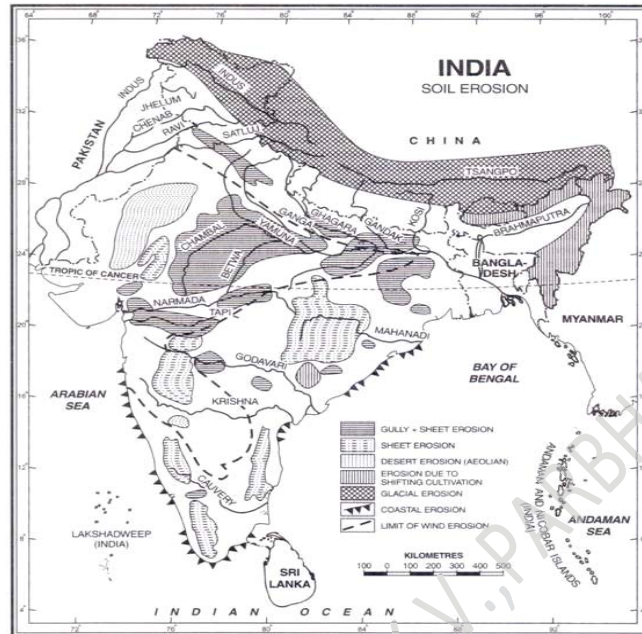


FIG. 7.2. India : Soil Erosion

Introduction to Soil Conservation:

Soil and water conservation is essential to protect the productive lands of the world. In our country, where droughts, famines and floods cause crop damage almost every year, soil conservation will not only increase crop yields but also prevent floods and further deterioration of land.

Prior to the days of independence, while general problems of soil erosion were known, answers to them backed by scientific investigations were not known. Consequently, during the framing of the first year plan and early in the second five year plan, a chain of 9 Soil Conservation Research Demonstration and Training Centres were established

Table 12.1
Central Soil and Water Conservation Research Demonstration and Training Centres
in India (Tejwani, 1980)

Location	Region/major problems	Date of start
(1)	(2)	(3)
Dehradun	North-western Himalayan region. Erosion control in Himalayas; training of torrents; stabilisation of landslides; development of techniques for crop production; establishment of pastures and forestry.	28.9.1954
Chandigarh	Sub-montane tracts in the north-western region of India with special reference to Shiwalik hills. Erosion control in Shiwaliks; training of chos.	28.9.1954
Ootacamund	Southern hill high rainfall region/soil and water conservation in the Nilgiris hills; development of techniques for crop production; establishment of pastures and forestry.	10.10.1954
(1)	(2)	(3)
Bellary	Semi-arid black soil region. Soil and water conservation in the black soil region.	20.10.1954
Kota	Along the Chambal river in Rajasthan. Ravine problem on the banks of Chambal river and its tributaries; survey, classification and reclamation of ravines for forage production and forestry.	19.10.1954
Vasad	Along the rivers of Gujarat State. Ravine problem specifically along the banks of Mahi river system; survey, classification and reclamation of ravines forage production and forestry.	11.5.1955
Agra	Along the Yamuna river and its tributaries. Ravine problems specifically on the banks of Yamuna river; survey, classification and reclamation of ravines for forage production and forestry.	22.7.1955
Hyderabad	Red soil, semi-arid region. Soil and water conservation in the red soils under low to medium rainfall regions.	10.1.1962
Chattra	North-eastern Himalayan region. Erosion control in the Kosi river catchment.	19.12.1956

Broad objectives of these Centre's are:

- (i) To identify erosion problems and conservation of land and water resources under different land use systems,