

Water Management Problems and their Solution

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(1) Floods:

Deforestation, overgrazing, mining, industrialization, global warming, etc. have contributed largely in the incidence of floods. Floods refer to the inundation of large parts of land by water, which otherwise remain dry for some duration of time. Flood causes heavy loss to agriculture, livestock and property. These hazard may be in the form of increase in water logging, soil sedimentation in reservoirs, damage to forest areas, large scale growth of aquatic weed of nuisance value, displacing wildlife and degradation of valuable landscape etc.

Solution:

The best solution to overcome such damage is large irrigation projects, which will also protect from other environmental hazards. Plantations can reduce the impact of water to cause soil erosion.

(2) Water-Logging

A soil is said to be water logged when it is completely saturated with water, which is caused by water stagnation on flat land and low lying areas. It occurs due to excess rainfall, floods, seepage high water table, obstruction to natural drainage and over irrigation etc.

Results:

- (1) In most of the low lying areas, wet conditions persist longer that results in delayed sowing or less crop production.
- (2) Another impact is that when water dries, salts accumulate on the soil surface resulting in salinity due to the water logging.

Solution:

It is necessary to study water table fluctuations, ground water recharge, assessment of seepage from canals, tanks, selection of crop & variety etc.

(3) Salty Groundwater:

Arid and semiarid regions contain high percentage of sodium salts. Such water is dangerous for agriculture on long run. Continuous use of such water results in accumulation of sodium salts to produce alkali or usar soil.

Solution:

- (1) Use of Gypsum
- (2) Use of molasses, ash and cane sugar extracts
- (3) Cultivation of salt resistant varieties.

(4) Drought:

The moisture deficit condition which results when the amount of water available in the soil is not sufficient to meet the demands of potential evapo-transpiration. It occurs due to the abnormal weather condition.

Solution:

- (1) Proper regulation of water use.
- (2) Increase utilization of ground water resources.
- (3) Development of additional surface water resources.
- (4) Direct pumping from streams, rivers and water bodies
- (5) Efficient distribution of canal water.
- (6) Irrigation according to requirement of crops.

(5) Soil Erosion:

The wearing away of the soil of land surface by water, wind or other forces is called soil erosion.

Solution:

- (1) Construction of many long trenches and mounds along the contours of the hill to hold rainwater and allow it to percolate into the ground.
- (2) To form nala plugs in the streams, so that water is held in a stream and does not rush down the hillside.
- (3) **Engineering Measures:** It includes land leveling, shaping, contour bunding, terracing, land grading, bank protection, check dams etc.
- (4) **Agronomic Measures:** It includes protection by vegetation, such as grass cover, pasture development, contour farming, strip-cropping, crop rotation etc.
- (5) **Afforestation:** It means artificial establishment of a forest on land which had not previously grown tree crops or on deforested land.
- (6) **Rainwater Harvesting:** Rainwater harvesting is the method of storing rainwater for the use of water in future and increasing the recharge of groundwater.
- (7) **Watershed Management:** The planned use of watershed lands in accordance with predetermined objectives, such as the control of erosion, stream flow, sedimentation and improvement of vegetative cover and other related resources.

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