Geography

ENVIRONMENTAL IMPACT OF WATER EXPLOITATION

Water exploitation is calculated by using Water Exploitation Index (WEI). The Water Exploitation Index was introduced by the European Environment Agency (EEA), which means, 'the annual total fresh water abstraction in a country as a percentage of its long-term average of available water'. The major environmental impact of exploitation of water is disruption of natural water cycle. Human beings have disturbed the natural water cycle in the following ways:

by removing water from the groundwater and surface water to be released Water Resources in a different location. b) by terminating infiltration by building impervious surfaces and ceasing the natural infiltration and drainage patterns. The water use cycle disturbs the natural water cycle by withdrawing water for various activities of human consumption. A piped system will be used to withdraw the water from a source of groundwater or surface water. Frequently the water is released into another location that is not connected to the source of water. The water use cycle relocates water quantity from the source to the collecting water site without exploiting the natural clean up and recharge. This process has adverse impacts on the natural water resource. At the point of water removal, there is insufficient water to assist various other functions, and, regarding groundwater, the adverse effects can be significant if water is withdrawn more rapidly than it is replaced by recharge. The hindered water cycle additionally alters the natural water cycle by avoiding precipitation on the pavement and other water-resistant surfaces, where it is directed to the site of a piped stormwater collection to a river, that leads in further ceasing of the groundwater recharge aggravating the environmental impact on the natural ecosystems. These changes tend to reduce depth of water, rise in water temperature, enhance the adverse impact of sediment oxygen demand, and finally deteriorate the water quality. Urbanization causes impermeable regions which also carry exorbitant and frequently warm water in a very swift way. The extra rainstorm produces streams to erode, widen, that leads to flat, wide, & warm streams. Along with this, physical degradation, the ecosystem damage can also occur because of the warmer water. We all know that warmer water unable to hold more dissolved oxygen, which is dangerous to cold-water species.

GROUNDWATER MANAGEMENT

Groundwater management plays a significant role in water resources management for sustainable development with regard to the livelihood of rural populations, urbanization, industrial process

and industrial activities. The following are the three main deliberations for environmentally robust management: (i) Groundwater development is a long-term sustainable plan. It indicates that the rate of withdrawal should be equal to or less than the rate of replenish. If the rate of withdrawal is greater than the rate of replenish, groundwater mining will occur. Once mining occurs, the level of groundwater will diminish, resulting in increased pumping price. (ii) Anthropogenic activities, which could decrease the groundwater quality for prospective forth coming use should be managed. These include activities like chemical leaching such as nitrates and phosphates from substantial and rigorous pastoral activities, adulteration by chemical toxins and undesirable chemicals from landfills and environmentally insane waste management practices, bacterial and viral contamination due to the lack of sewage treatment and effluent emission practices, and increasing water salinity because of ineffective or inappropriate irrigation practices, and 44 Natural Resources in coastal regions ground water salinization due to over withdrawal by pumping. (iii) Inappropriate and unsustainable groundwater management resulted in adverse environmental impacts like desiccation of wetlands and reduction in baseflow.

Through this unit, we have discussed the distribution of water resources and conflicts over water. Further, we have discussed the environmental impact of water exploitation.

Biological Oxygen Demand (BOD) BOD is the amount of dissolved oxygen needed (i.e., demanded) by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period. Potential impacts of wastes are commonly measured in terms of the BOD. Evapotranspiration The combination of evaporation and transpiration that restores water to the atmosphere. Green Water Green water is the water held in soil and available to plants. Water Cycle The movement of water from points of evaporation, through the atmosphere, through precipitation, and through or over the ground, returning to points of evaporation. Water table The water table is the boundary between the unsaturated zone and the saturated zone underground. The upper surface of ground water, rising and falling with the amount of ground water. Wetlands Areas that are constantly wet and are flooded at more or less regular intervals. Especially marshy areas along coasts that are regularly flooded by tide.