WATER SHED MANAGEMENT AND WATER CONSERVATION (BT-307)

1 . Watershed management:

Watershed management is the study of the relevant characteristics of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programs and projects to sustain and enhance watershed functions that affect theplant, animal, and human communities within the watershed boundary. Features of watershed that agencies seek to manage include water supply, water quality, drainage,stormwater runoff, water rights and the overall planning and utilization of watersheds.Landowners, land use agencies, stormwater management experts,

environmental specialists, water use surveyors and communities all play an integral part in watershed management.

2. Controlling pollution:

In agricultural systems, common practices include the use of buffer strips, grassed waterways, the re-establishment of wetlands, and forms of sustainable agriculture practices such as conservation tillage, crop rotation andinter-cropping. After certain practices are installed, it is important to continuously monitor these systems to ensure that they are working properly in terms of improving environmental quality.

In urban settings, managing areas to prevent soil loss and control stormwater

flow are a few of the areas that receive attention. A few practices that are used to manage stormwater before it reaches a channel areretention ponds, filtering systems and wetlands. It is important that storm-water is given an opportunity to infiltrate so that the soil and vegetation can act as a "filter" before the water reaches nearby streams or lakes. In the case of soil erosion prevention, a few common practices include the use of silt fences, landscape fabric with grass seed andhydroseeding. The main objective in all cases is to slow water movement to prevent soil transport.

3. Governance:

The 2nd World Water Forum held in TheHague in March 2000 raised some

controversies that exposed the multilateralnature and imbalance the demand and supply management of freshwater. While donor organizations, private and governmentinstitutions backed by the World Bank, believe that freshwater should be governed as an economic good by appropriate pricing, NGOshowever, held that freshwater resources should be seen as a social good.The concept of network governance where all stakeholders form partnerships and voluntarily share ideas towards forging a common vision can be used to resolve this clash of opinion in freshwater management. Also, the implementation of any common vision presents a new role for NGOs because of their unique capabilities in local community

coordination, thus making them a valuable partner in network governance. Moreover, the need to create partnerships between donor organizations, private and government institutions and community representatives like NGOs in watersheds is to enhance an "organizational society" among stakeholders.This posits a type of public-private partnership, commonly referred to as Type II partnership,which essentially brings together stakeholders that share a common watershed under a voluntary, idea sharing and collectively agreed vision aimed at granting mutual benefits to all stakeholders. Also, it explicates the concept of network governance, which is "the only alternative for collective action", requiring government

to rescale its role in decision making and collaborate with other stakeholders on a level playing field rather than in an administrativeor hierarch

Environmentalnd actions that agencies take to manage watersheds. Some laws require that planning be done, others can be used to make a plan legally enforceable and others set out the ground rules for what can and cannot be done in development and planning. Most countries and states have their own laws regarding watershed management.

Those concerned about aquatic habitatprotection have a right to participate in the laws and planning processes that affect aquatic habitats. By having a clear

understanding of whom to speak to and how to present the case for keeping our waterways clean a member of the public can become an effective watershed protection advocate.

4 . Water conservation:

Water conservation day is celebrated on 22nd of March. Water conservation includes all the policies, strategies and activities tosustainably manage the natural resource offresh water, to protect the hydrosphere, and to meet the current and future human demand. Population, household size and growth and affluence all affect how much water is used. Factors such as climate change have increased pressures on natural water resources especially in

manufacturing and agricultural irrigation.Many countries have already implemented policies aimed at water conservation, with much success.

*The goals of water conservation efforts include:

*Ensuring the availability of water for future generations where the withdrawal offreshwater from an ecosystem does not exceed its natural replacement rate.
*Energy conservation as water pumping, delivery and wastewater treatment facilities consume a significant amount of energy. In some regions of the world over 15% of totalelectricity consumption is devoted to water management.

*Habitat conservation where minimizing human water use helps to preservefreshwater habitats for local wildlife and migrating waterfowl, but also water quality.The water that leaks from aquagaurd should be collected and could be used for household works.

5 . Strategies:

The key activities to conserve water are as follows: *Any beneficial reduction in water loss, use and waste of resources.
*Avoiding any damage to water quality.
*Improving water management practices that reduce the use or enhance the beneficial use of water.
*One of the strategies in water conservation israin water harvesting.Digging ponds, lakes, canals,

expanding the water reservoir, and installing rain water catching ducts and filtration systems on homes are different methods of harvesting rain water. Many people in many countries keep clean containers so they can boil it and drink it, which is useful to supply water to the needy.Harvested and filtered rain water can be used for toilets, home gardening, lawn irrigation, and small scale agriculture.
*Another strategy in water conservation is protecting groundwater resources. When precipitation occurs, some infiltrates the soil and goes underground. Water in this saturation zone is called groundwater.Contamination of groundwater causes the groundwater water supply to not be able to be used as a

resource of fresh drinking water and the natural regeneration of contaminated groundwater can take years to replenish.Some examples of potential sources of groundwater contamination include storage tanks, septic systems, uncontrolledhazardous waste, landfills, atmospheric contaminants, chemicals, and road salts.Contamination of groundwater decreases the replenishment of available freshwater so taking preventative measures by protecting groundwater resources from contamination is an important aspect of water conservation. *A fundamental component to water conservation strategy is communication and education outreach of different water programs.Developing communication that

educates science to land managers, policy makers, farmers, and the general public is another important strategy utilized in water conservation.Communication of the science of how water systems work is an important aspect when creating a management plan to conserve that system and is often used for ensuring the right management plan to be put into action.