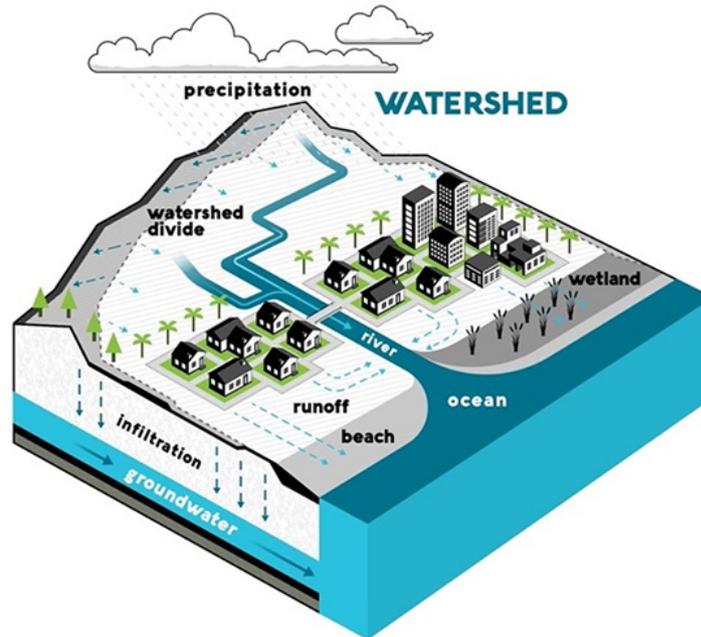




# Watershed Management

## Overview

- **Watershed:** [//](#)



- **About:** A watershed (also called [drainage basin](#)/**catchment area**) is an area of land that drains or “sheds” water into a specific waterbody.
  - It is an **independent drainage unit** for surface water runoff.
  - One watershed is separated from another by a natural boundary known as the **water divide** or the **ridge line**.
- **Types of Watershed:** They are classified depending upon the size, drainage, shape and land use pattern.
  - **Macro** watershed (> 50,000 Ha)
  - **Sub**-watershed (10,000 to 50,000 Ha)
  - **Milli**-watershed (100 to 10,000 Ha)
  - **Micro** watershed (100 to 1000 Ha)
  - **Mini** watershed (1-100 Ha)
- **Watershed Management:**
  - **About:** It is the process of **implementing land use practices and water management practices** to protect and improve the quality of the water and other natural resources within a watershed.
  - **Objectives of Watershed Management:**
    - Pollution control

- Minimising over-exploitation of resources
- Water storage, flood control, checking sedimentation
- Wildlife preservation
- Erosion control and prevention of soil
- Recharging groundwater to provide regular water supply
- **Components of Watershed Management Programmes:**
  - Soil and water conservation
  - Plantation
  - Agronomical practices
  - Livestock management
  - Renewable energy
  - Institutional developments

### **Integrated Watershed Development Programme (IWMP)**

- The **Department of Land Resources**, Ministry of Rural Development is implementing the [\*\*Integrated Watershed Development Programme \(IWMP\)\*\*](#) from 2009-10 with an objective to cover 55 million hectares of rain fed land by 2027.
  - The IWMP is the **second largest watershed programme in the world** after China's.
- It envisages **restoring the ecological balance** by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover & water through watershed management initiatives.
- The program is being implemented in all the states of the country and is **financed by the central and state governments** in the ratio of **90:10**.
- The **outcomes** of IWMP are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table.
  - This **enables multi-cropping** and the **introduction of diverse agro-based activities**, which help to provide sustainable livelihoods to the people residing in the watershed area.
- In 2015, the IWMP along with On-Farm Water Management (OFWM) scheme and Accelerated Irrigation Benefit Programme (AIBP) was **subsumed into Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)**.
- **Other Initiatives Taken:**
  - **Haryali** is a watershed development project **sponsored by the Central Government** which aims at enabling the rural population to conserve water for drinking, irrigation, fisheries and afforestation.
    - The Project is being **executed by Gram Panchayats** with people's participation.
  - **Neeru-Meeru** (Water and You) programme (in Andhra Pradesh) and **Arvary Pani Sansad** (in Alwar, Rajasthan) have taken up constructions of various water-harvesting structures such as percolation tanks, dug out ponds (Jihad), check dams, etc., through people's participation.
  - **Tamil Nadu** has made water harvesting structures in the houses compulsory.
    - No building can be constructed without making structures for water harvesting.

### **Significance of Watershed Management**

- **Controls Pollution:** Runoff from rainwater or snowmelt can contribute significant amounts of pollution into the lake or river.
  - Watershed management helps to control pollution of the water and other natural resources in the watershed.

- **Identifies and Regulates Ecologically Hazardous Activities:** All activities that occur within a watershed somehow affect its natural resources and water quality.
  - Watershed management planning **comprehensively identifies such activities** and **makes recommendations to properly address them** so that their adverse impacts can be reduced.
- **Enhances Partnership Among the Stakeholders:** Watershed management planning results in enhanced partnership among all the stakeholders in the watershed which is **essential for the successful management** of the land and water resources.
  - It is also an efficient way to **prioritize the implementation of watershed management plans** in times when resources may be limited.
- **Inclusive Growth:** Inclusive growth refers to **economic growth that is distributed fairly across society** and creates opportunities for all. Watershed management is **key for sustainable and inclusive growth**.
  - For instance, in drought-prone rainfed areas watershed management has shown the **potential of doubling the agricultural productivity** and assisting the rural families through **increased water availability** and diversifying the cropping and farming systems **resulting in diversified sources of income**.

## Issues Faced by Watershed Management Programmes

- **Project Related Issues:** Factors such as **outdated approaches, poor project design, inadequate and/or unsustainable financial resources, very short time frames for project interventions** and a **lack of adequate understanding** of the linkages between upland and lowland areas have contributed to under-achievement of watershed management programmes.
- **Lack of Support from Legislations:** Although broad environmental policies are in place in many countries, generally **no attention is given to the development of watershed management policies**.
  - The lack or inadequate national policies, strategies and action plans are recognised as principal constraints to implementing sustainable watershed management programmes.
- **Weak Institutional Base:** Near-collapse of watershed-based institutions once these programmes are completed has been observed, as **the inputs they received are often inadequate** to sustain the institutional base.
  - Similarly, **Self Help Groups are not properly integrated** into the watershed programmes.
  - The nature of the institutional base influences the sustainability of the natural resources, ability of the communities to diversify and access support from different programmes.
- **Programmes Non-Inclusive of Reserved Forestlands: Inclusion of reserve forestlands** into watershed development plans and **creation of entitlements over the forest produce** is not yet a part of watershed development programmes.
  - **Absence of an agreement** between forest department and rural development department on operational aspects is a critical bottleneck.

## Way Forward

- **Build Local Partnerships:** Development of local partnerships leads to greater awareness and support from the general public.
  - Aware individuals often become **more involved in decision-making, protection and restoration efforts**.
  - Such involvement builds a sense of community, **helps reduce conflicts and increases commitment** to the actions necessary to meet environmental goals.
- **Determine Priorities for Action:** Watershed management planning should also **determine what the opportunities are to reduce pollution** or address other pressing environmental

issues, prioritize those opportunities, and **identify a time frame for accomplishing** pollution reduction and resource and habitat improvements.

- Those issues that pose the greatest risk to human health or particular resources might be given the highest priority for control and reduction.

▪ **Conduct Educational Programs:** The degree of public education and participation in the planning process can greatly influence the success of watershed management.

- There are many ways to involve and educate the public in watershed management; **formation of citizen review groups and advisory committees** can gain public support from the watershed.

▪ **Effective Implementation and Follow-Up:** The watershed planning process should be **implemented in a dynamic and adaptive manner.**

- **Long-term monitoring of watershed resources** and their response to implementation actions identified in the plan is vital.

# UNCOVER YOUR CREEKS WATERSHED WISE

## THE PROBLEM

1| When it rains or snows, urban stormwater run-off collects pollutants such as pesticides, heavy metals, animal waste and cigarettes from our driveways and city streets.

2| Roads, parking lots and other impermeable surfaces prevent contaminated stormwater from naturally infiltrating into the soil where particles are removed.

3| Stormwater then travels through city storm sewers where it enters local waterways and degrades water quality for humans, plants and animals.

! Washing your car in the driveway or street leaves behind dirt, oil grease and soap.

## WHAT YOU CAN DO

**Build a Rain Garden** | Built sunken into the ground using soft, loamy soils and gravel, rain gardens collect and clean rain water.

**Install a Rain Barrel** | Harvest rain water falling from your roof instead of letting it flow into storm sewers.

★ Use this water for your lawn and garden!

**Plant Native Species** | Native plants absorb more rain water than grassy lawns and require less maintenance. Plus, native plants attract pollinators like butterflies and bees to your garden!

★ For a list of plants native to your area, visit Evergreen's Native Plants Database online.

**Go Green** | Green roofs retain and purify rain water before it drains off the roof and into storm sewers.

**Install Permeable Surfaces** | Rain water filters through permeable surfaces, slowly soaking into the soil underneath and reducing stormwater run-off and water pollution.

★ For a quick fix, replace a section of your driveway with grass, gravel or pavers.