

Water for Life, Life for Water

Preetha N & *K.P Laladhas, *Member Secretary, Kerala State Biodiversity board,
Pallimukku, Thiruvananthapuram.



All life forms depend on Water—the unique resource of planet Earth for food security, health, sanitation and for fostering both urban and rural livelihood. United Nations General Assembly in 2010 recognized safe and clean drinking water and sanitation as a human right which was reconfirmed at the Rio + 20 Summit held in 2012. In accordance with this theme, 2005-2015 was declared as the UN decade of Water for Life, 2013

as International Year of Water Cooperation and the theme for International Day of Biodiversity 2013 as 'Water & Biodiversity'. Globally we are facing a water crisis even though 70% of the Earth surface is covered by water. Of the world's total water resources, less than 3% is represented by freshwater and less than 1% of that occurs in the Earth's liquid surface as fresh water (the remainder is below the planet's surface, or locked in the ice caps). The overall water demand is projected to increase by 55% by 2050, due to growing demand from industries and service sector, energy generation and domestic use.

Out of the 783 million people worldwide without improved drinking water, India has the dubious distinction of having 97 million. It is a matter of shame to us that in this era of technological advancement globally, an estimated 2,000 children under the age of five die every day from diarrhoeal diseases and of these some 1,800 deaths are linked to water. Diseases transmitted through water or human excrement are the second leading cause of childhood mortality worldwide, after respiratory diseases. Our water management strategies has lost sight of the fact that the loss and degradation of biodiversity compromised ecosystems and all the services they deliver, especially the supply of clean drinking water.

Forests, grasslands, wetlands, rivers, lakes, swamps, floodplains and aquifers are all interlinked in the hydrological cycle. Biodiversity is critical to sustain the water cycle as wetlands replenish ground water, rivers transport it, forests sustain quality of water, mangroves and coral reefs provide coastal protection.

A new global Strategic Plan for Biodiversity now recognizes water as an important ecosystem service and water is widely regarded to be the primary global natural resource challenge and a key link between the Millennium Development Goals (MDGs) and Biodiversity.

Biodiversity and water resources management

Biodiversity augments the ability of nature to supply drinking water by sustaining the continuous recycling of water, and by purifying water. Sustainable water management promotes an integrated management of land, water, and living resources for conservation and sustainable use in an equitable way. Rain Water Harvesting, Sustainable Ground Water Recharge, Maintenance of Water Balance, Preventing Water Pollution and Economic use of water are all integral parts of this.

At least one-third of the world's largest cities obtain a significant portion of their drinking water directly from forested protected areas. The water-related ecosystem services provided by forests, include water provisioning, regulation of water flows, water purification and erosion prevention. Forests directly control hydrological cycles by its influence on rates of transpiration and evaporation and by influencing how water is stored in a watershed. The terrestrial ecosystems on the upstream of a river basin are important in the context of rainwater harvesting, groundwater recharge and for maintaining the stream flows.

The National Forest Commission report 2006 indicated that around 41 per cent of total forest in the country is already degraded, 70 per cent of the forests have no natural regeneration capacity. The forest cover under natural vegetation has decreased with adverse consequences on Biodiversity and the ecosystem services it provides. Deforestation, changes in land use, degradation of catchment areas of rivers and unplanned development are major causes of imbalance affecting the natural flow of rivers.

Wetlands help regulate the water cycle, providing a natural water source for direct human use and as wastewater treatment systems for many towns and cities. They act as carbon sinks, provide protection from floods, regulate sediment transport, and contribute to groundwater replenishment and nutrient retention. They help in retaining water during dry period, maintaining the water table stable and reduce flood levels. Wetlands are important feeding, breeding, and drinking areas for wildlife. Wetland plants remove toxic substances, such as heavy metals, from water. But deplorably India has lost more than 38% of its wetlands in just the last decade. Minor irrigation systems — tanks, ponds and other community-based water harvesting systems also play a critical role in the recharge of groundwater. Sadly these traditional aquifers are neglected and serve as just dumping grounds for waste.

It is high time that Water resources management of the country take into consideration Nature based sustainable solutions. Physical infrastructure (dams, water-treatment facilities) has contributed to improving drinking water supply needs but it has to be integrated with an ecosystem approach for sustainable growth. Ecosystem based water filtration and provision of water, including aquifer recharge, should be made a part of integrated management planning.

