Project title : water management

Phase II : Innovation.

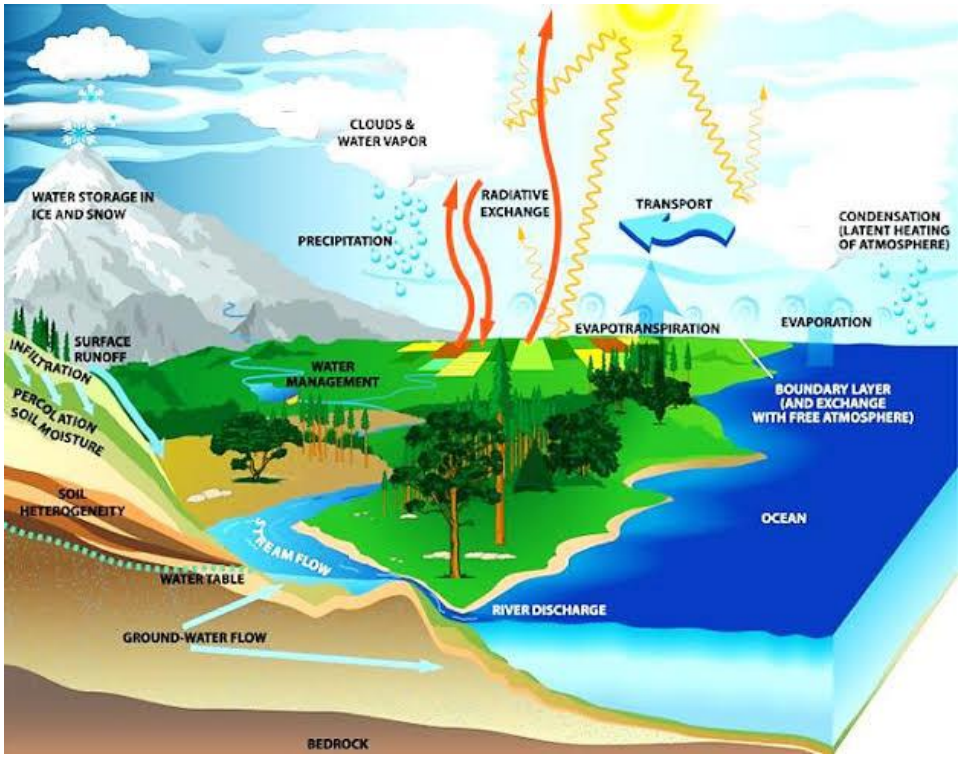
Water resource management

Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources. It is an aspect of water cycle management. The field of water resources management will have to continue to adapt to the current and future issues facing the allocation of water. With the growing uncertainties of global climate change and the long-term impacts of past management actions, this decisionmaking will be even more difficult. It is likely that ongoing climate change will lead to

situations that have not been encountered. As a result, alternative management strategies, including participatory approaches and adaptive capacity are increasingly being used to strengthen water decision-making.

Ideally, water resource management planning has regard to all the competing demands for water and seeks to allocate water on an equitable basis to satisfy all uses and demands. As with other resource management, this is rarely possible in practice so decision-makers must prioritise issues of sustainability, equity

and factor optimisation (in that order!) to achieve acceptable outcomes. One of the biggest concerns for water-based resources in the future is the sustainability of the current and future water resource allocation

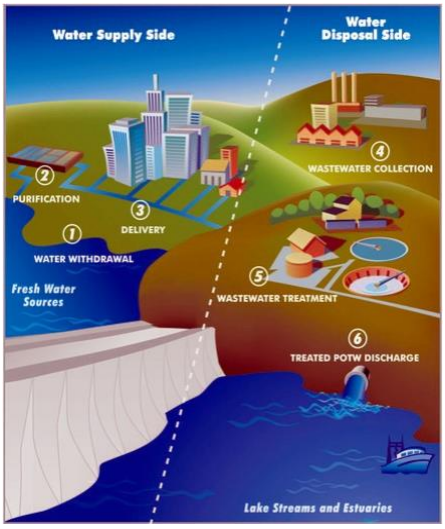


Sustainable water management

At present, only about 0.08 percent of all the world's fresh water is accessible. And there is ever-increasing demand for drinking, manufacturing, leisure and agriculture. Due to the small percentage of water available, optimizing the fresh water we have left from natural resources has been a growing challenge around the world.

conferences. The four Dublin Principles, promulgated in the Dublin Statement

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment;
2. Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels;
3. Women play a central part in the provision, management and safeguarding of water;
4. Water has an economic value in all its competing uses and should be recognized as an economic good.



Integrated urban water management (IUWM) is the practice of managing freshwater, wastewater, and storm water as components of a basin-wide management plan. It builds on existing water supply and sanitation considerations within an urban settlement by incorporating urban water management within the scope of the entire river

basin.[59] IUWM is commonly seen as a strategy for achieving the goals of Water Sensitive Urban Design. IUWM seeks to change the impact of urban development on the natural water cycle, based on the premise that by managing the urban water cycle as a whole; a more efficient use of resources can be achieved providing not only economic benefits but also improved social and environmental outcomes. One approach is to establish an inner, urban, water cycle loop through the sustainability type ones in which integration of water system components including water supply, waste water and

storm water subsystems would be advantageous.[61] Simulation of metabolism type flows in urban water system can also be useful for analysing processes in urban water cycle of IUWM.