

## **SUSTAINABLE WATER RESOURCES MANAGEMENT IN PAKISTAN: ISSUES AND OPTIONS**

Muhammad Ashraf

*Pakistan Council of Research in Water Resources, Islamabad (PCRWR), Pakistan*  
muhammad\_ashraf63@yahoo.com

### **Abstract**

Pakistan has on the largest irrigation system in the world. However, it is subject to a number of issues. Some of the major issues are: (i) increased population, urbanization and industrialization (ii) inadequate storage (iii) sediments in the existing reservoirs (iv) Low overall system efficiency and (v) unutilized potential of hill torrents. These issues can be overcome by: (i) construction of small and large dams where possible (ii) improving the surface water governance with proper pricing (iii) restricting indiscriminate groundwater abstraction (iv) controlling increase in population (iv) improving conveyance and application efficiencies (v) developing proper crop zoning (vi) adopting proper irrigation scheduling and (vii) educating the water users through mass awareness campaign. However, these options require political will, commitment and continuous efforts by all the stakeholders right starting from the end users to the policy makers.