

CONJUNCTIVE USE OF SURFACE AND GROUNDWATER

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ABSTRACT

The world's fresh water resources are unequally distributed both in time and in space. Until recently water resource management focused on reallocating water to when and where it was required, a supply-side or fragmented approach. Nowadays there are signs that water resource availability is dwindling – due to both population growth and increased per capita water use – and ecosystems are being damaged. To face this challenge a new holistic approach is needed. This approach includes the integrated or conjunctive use of surface and groundwater resources and takes account of social, economic and environmental factors. Moreover, it recognizes the importance of water quality issues.

In this context, the paper examines the main aspects and problems concerned with the planning, design, construction and management of conjunctive use of surface and subsurface water resources, along with its environmental impacts and constraints to sustainable development. The importance and role of research thrust, technology transfer, institutional strengthening, effective partnerships between governments and stakeholders, and sound financial frameworks are also examined. Finally, the challenges and benchmarks for future actions that the scientific community and planners have to face and deal with, are briefly outlined.