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TECHNICAL SUPPORT FRAMEWORK FOR SUSTAINABLE MANAGEMENT OF TRANSBOUNDARY WATER RESOURCES

Furat Al-Faraj[1], Miklas Scholz[1,2]*

[1]Civil Engineering Research Group, School of Computing, Science and Engineering, The University of Salford, Salford, Greater Manchester M5 4WT, United Kingdom
[2]Division of Water Resources Engineering, Faculty of Engineering, Lund University, P.O. Box 118, 22100 Lund, Sweden

Abstract

Sustainable management of transboundary rivers, especially in water-scarce regions, is increasingly becoming more challenging due to the collective adverse impact of upstream development and climate change on transboundary scale. Two major tributaries of the Tigris River, the Diyala (Sīrvān) and the Lesser Zab River basins, are shared between Iraq and Iran. They were adopted as representative basins for a large number of transboundary rivers, where short-sighted perspectives are currently ruling their management policies. Climate change is anticipated to lead to greater frequency and intensity of droughts, and higher tension is likely to emerge. The authors developed a technical support framework (TSF) that helps decision-making to alleviate the combined negative impact of climate change at basin scale and upstream human-induced impairments. The TSF encompasses six key measures: (1) cross-sectoral trade-offs; (2) improved water-use efficiency and reduction of losses; (3) development of a sound groundwater planning policy; (4) cutbacks in demand while maintaining environmental flow in the river; (5) inter- and intra-basin water transfer systems; and (6) quantification of current supply-demand gaps and sizing a future gaps. The framework supports the sustainable management of water resources in both Diyala and Lesser Zab basins as well as other in common river catchments. The recommendation is that a lower riparian country should put in place measures such as increasing water-use efficiency, rehabilitation of damaged and deteriorated irrigation facilities, and inter- and intra-basin water transfer arrangements to reduce the gap between growing water demands and corresponding supplies.

Key words: anthropogenic intervention, climate change, riparian country, shared river basin, water governance

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*Author to whom all correspondence should be addressed: e-mail: miklas.scholz@tvrl.lth.se; Phone.: +44 161 2955921; Fax: +44 161 2955575