Environmental Flows Allocation in River Basins: Exploring Allocation Challenges and Options in the Great Ruaha River Basin in Tanzania

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Abstract

Provision for environmental flows is currently becoming a central issue in the debate of integrated water resources management in river basins. However, the theories, concepts and practical applications are still new in most developing countries with challenging situations arising in complex basins with multiple water uses and users and increasing water demands and conflicts exemplified by the Great Ruaha River Basin in Tanzania. The research has shown that a flow of 0.5-1 m³/s for Great Ruaha River through the Ruaha National Park is required to sustain the environment in the park during the dry season. But a question is how can this be achieved? This paper reviews the challenges and suggests some options for achieving environmental water allocation in river basins. The following challenges are identified: a) the concept of environmental flows is still new and not well known; b) there is limited data and understanding of the hydrologic and ecological linkages, c) there is insufficient specialist knowledge and legislative support, d) there are no storage reservoirs for controlled environmental water releases, and e) there are contradicting policies and institutions on environmental issues. Notwithstanding these challenges, this paper identifies the options towards meeting environmental water allocation and management: a) conducting purposive training and awareness creation to communities, politicians, government officials and decision makers on environmental flows, b) capacity building in environmental flows and setting-up a multidisciplinary environmental flows team with stakeholders involvement, c) facilitating the development of effective local institutions and legislation, d) water harvesting and storage and proportional flow structures design and redesign to allow water for the environment, and e) harmonizing policies and reform in water utilization and water rights to accommodate and ensure water for the environment.

Key words: Environmental Flows; integrated water resources management; stakeholder involvement

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