



Water resources and freshwater ecosystems in Sudan

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Abstract

Sudan is a large country with varying standards of living, culture and climate. When this is superimposed on the multi-sectoral nature of water, coordination of activities in water resources planning, management and development becomes essential. The spirit of cooperation and close cooperation with countries sharing the same water resources should continue, preferably through an institutional cooperative framework for each shared basin. The guiding spirit should be equitable, legitimated, integrated, sustainable and environmentally sound utilisation of the common water resources, without significant harm from one country to another. Some of the issues and problems faced are referred in this article. Sudan has recently taken some major steps to organise the water sector. The article also shows some of the joint efforts to establish and advance cooperation with the Nile basin countries for integrated development of the shared watercourse. It concluded with a future policy look to address the emerging issues. A water policy is bound to be dynamic as it addressed issues with many variables. It is expected that, as time goes on, some new issues will surface while earlier issues will fade out. When this happens, another review of the water sector policy would be appropriate.

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1. Introduction

The water cycle is an integrated and dynamic component of the earth's geophysical system and both affects and is affected by climate conditions. Changes in the earth's radiation balance affect winds, temperatures, atmospheric energy and water transport, cloud dynamics and more. Changes in temperature affect evaporation and transpiration rates, cloud characteristics and extent, soil moisture, and snowfall and snowmelt regimes. Changes in precipitation affect the timing and magnitude of floods and droughts, and shift runoff regimes. Synergistic effects will alter cloud formation, soil and water conditions, vegetation patterns and growth rates [1].

Several authors, politicians, leaders of international organisations and journalists have cautioned the world community that the increasing scarcity of freshwater resources might lead to national and international conflicts. When relating this to climate change forecasts—most of which indicate that climate change will have a significant impact on the availability of freshwater resources, on water quality, and on the demand for water—this is alarming news for humankind as it threatens human security [2].

A water policy is a dynamic process which needs to be reviewed from time to time, taking into consideration the outcome of previous policies, changes in supply and demand parameters, advancement in knowledge and alterations in the surrounding environment. Water policies are complex, as water goes beyond its sector to involve many other sectors and may be beyond the international boundaries. Water is an essential factor for the

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