

Book Description

Seasonal rivers in arid and semi arid lands (ASALs) of Africa are important sources of water to communities and their livestock. These rivers are sources of water for various uses such as livestock watering, domestic uses and irrigation. Therefore the variations of water quality of seasonal rivers in ASALs have the potential of impacting the various uses of water in regions that are otherwise characterized by scarcity of water. However, despite the important role played by seasonal rivers in such lands, few studies have been undertaken to unravel their hydrologic and water quality characteristics (Kitheka, 2013 & 2014). There is thus scanty of data and information on river discharges and material fluxes particularly the fluxes of nutrient, sediment and dissolved salt in seasonal rivers of Sahelian Africa. The contribution of African seasonal rivers in terms of global nutrient and material fluxes is therefore little understood, since most of the hydrological studies have focused on large perennial river systems (Ohowa et al., 1997; Busulwa and Bailey, 2004; Waziri and Ogugbuaja, 2010; Waziri and Ogugbuaja, 2012; Elmoustafa, 2013; Kitheka, 2013 & 2014). Seasonal rivers in semi arid lands are unique in that they usually flow for relatively short period during rainy season. Their water quality features can therefore change rapidly. Data and information on their hydrology are required to advice on the water resources and agricultural development programmes. This is becoming critical as a result of climate change and also due to current programmes that are aimed at opening up arid and semi arid lands for development. Seasonal rivers could be the only reliable source of water that can be used to develop ASALs. This is because in these regions, other potential sources of water such as groundwater aquifers are also characterized by poor water quality conditions.