MODELLING CURRENT AND FUTURE SUPPLY AND WATER DEMAND IN THE NORTHERN REGION OF THE SEYBOUSE VALLEY

Abstract

Water in the Seybouse River basin is getting scarce, yet it is the key to its economic development. A fast growing population, expanding agricultural and industrial sectors and the impacts of climate variability, create demands for new water sources and innovative management of water resources and services. The object of this study is the water resources management in the lower Seybouse basin characterized by a steady increase of water demand to meet different uses. This study takes into account changes in water demand of different urban, agricultural and industrial supply process. Our approach is to integrate data in WEAP modelling software to simulate current and future water balance and then to analyse the situation of water in different scenarios, socio-economic development and climate change to 2050. This software is based on the representation of the feeding system in a form of the network of water demand and supply. Our findings reveal the vulnerability of the region in its ability to the pressures resulting from the increase of needs of different sectors at the horizon of the forecasted period. They also indicate the need for larger mobilization of new resources into the system and lay the foundations for a sustainable water policy in the northern region of the Seybouse valley.

Key words: climate change, resources, Seybouse River basin, supply, water demand, WEAP model