



The application of the FAO Water Productivity Open-Access Portal (WaPOR) for the assessment of the Water-Energy-Food Nexus in the Eastern Nile River Basin

Iman Tantawy, Jos Timmermans, Yasir Mohamed, and Nick van de Giesen
Conference assistant, Netherlands (imantantawy@gmail.com)

Water scarcity has been a growing problem for many places around the world. Due to a growing population and increased global economic wealth, water use has increased with double the rate of population growth in the twentieth century. With the increasing demand for food, energy and water, the interdependence between the sectors becomes stronger. A clear understanding of these connections, referred to as the Water-Energy-Food (WEF) nexus, is required to ensure security in each of the sectors. As of March 2017, FAO launched the so-called FAO WaPOR portal, containing open source remote sensing data to monitor water productivity throughout Africa and the Middle East in near real time. Water productivity is an indicator that links agricultural yield with the amount of water that has been used for its production (kg/m³), making it a powerful term to use for a practical assessment of the water-food nexus. The objective of this research is to investigate the usability of the FAO WaPOR data portal, by making an optimization of the Eastern Nile River Basin (Egypt, Sudan, Ethiopia) in a WEF nexus context. Rather than focusing on the (equal) allocation of water for each riparian country, its objective is to identify trade-offs and impacts across the water, energy and food sectors. This results in a benefit-sharing approach with different forms of compensations for water allocation, such as agricultural yield and/or energy provision. With this approach, the study eventually aims to provide a new and innovative perspective to enhance resource efficiency and good water governance in the Eastern Nile River Basin.