

How WA+ can strengthen the water accounts that monitor water efficiency, water stress and the state of water-related ecosystems, key SDG indicators

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Abstract

SEEA-Water and WA+ approaches to water accounting can produce data that can inform decision making for water resources management. Importantly, these approaches can also generate data with which to monitor key targets 6.4 and 6.6 of the global Sustainable Development Goals (SDGs). This paper focuses on three key SDG indicators for water resources management, namely water efficiency (SDG 6.4.1), water stress (SDG 6.4.2) and the state of water-related ecosystems (SDG 6.6.1). We discuss what information the Water Accounting Plus (WA+) approach generates that can contribute salient information to monitor these three indicators, and in so doing can strengthen the existing and unfolding accounts approach as developed by the UN (SEEA-Water).

The WA+ approach uses open access remote sensing data products and hydrological models to estimate the quantities and distribution of water flows in a river basin, thereby distinguishing different land use classes. In this paper special emphasis will be placed on some specific capabilities of the WA+ approach that can strengthen SEEA-Water, namely (a) WA+ generates information on nett water consumption, and thus includes information on re-use of water within a river basin; (b) WA+ generates information not only on nett water consumption but also on biomass production, including carbon; (c) WA+ includes rainfall water use by crops and ecosystems (green water) that in many parts of the world, including Southern Africa, constitutes a large part of the water balance; (d) when combined with a hydrological model, WA+ can generate information on the state of groundwater resources, and finally (e) WA+ generates information that is spatially explicit, that can be aggregated not only to hydrological but also administrative spatial units as used by SEEA-Water.

With the above WA+ can make significant contributions to monitoring water efficiency and water stress in agriculture, as well as the state of water-related ecosystems. This will be illustrated by cases from Africa.