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“Can agroecological farming feed the world?  
Farmers’ and academia’s views”

## Food for all, water for all, agriculture takes it all: Water management in African agriculture

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### Abstract

The world population is growing, and the nutritional requirements of this growing population must be met. The SDG 2 seeks sustainable solutions to end hunger by 2030. Whereas SDG 6 establishes global water management efficiency and water quality objectives. Sadly, while agricultural intensity is increasing to feed the world, it comes with substantial environmental collateral damage such as excessive groundwater withdrawal, greenhouse gas emissions, and pollution of water bodies. The role of agriculture as a villain and victim cannot be neglected. Agriculture is responsible for more than 70 % of global water consumption. Similarly, it is the third major source of water pollution. Therefore, the achievement of these SDGs is strongly influenced by the way water is managed in agriculture. Thus, this study emphasises the impacts of several agricultural activities on water resources, specifically the quantity and quality of water. Agricultural activities with a high-level water footprint and greenhouse gas emissions are also highlighted. Although developed countries have intensified research and development in battling these crises, developing countries, especially in Africa, are still laggards. Therefore, a commentary is presented on the life cycle assessment of agricultural activities in Africa. Similarly, to offset the underlying environmental impacts of these water-related processes, which cannot be eradicated, expansion of the wastewater treatment value chain is proposed. The recoverable resources along the wastewater and sludge lines are enumerated, as well as their potential market values. However, stakeholders must be involved in creating robust models to promote and implement recovery practices. In addition, there is a need to intensify research to deal with the economic, environmental, social, and technical aspects of the wastewater treatment value chain valorisation. Thus, initiating a paradigm for the conversion of wastewater treatment facilities into water resources recovery facilities. Other motivations in addition to mitigation of environmental impacts include additional revenue generation and cost reduction from a life-cycle perspective.

**Keywords:** Africa, life cycle assessment, SDGs, waste valorisation, wastewater treatment, water resource recovery, water reuse

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