

Agricultural Water Use and Water Productivity in the Large Scale Irrigation (LSI) Schemes of the Nile Basin

Location	Nile Basin
Contractor	Nile Basin Initiative (NBI)
Period	2009

Scope of the project

The efficient Water Use for Agricultural Production (EWUAP) is one of the eight projects of the Nile Basin Initiative's (NBI) Shared Vision Program (SVP). The EWUAP project is the first step in bringing together regional and national stakeholder to develop a common shared vision on increased availability and efficient use of water for agricultural production. Wim Bastiaanssen was hired as a consultant on the Large Scale Irrigation (LSI) schemes in the Nile Basin. The objective was to make an inventory of the LSI schemes and their main problems and issues, such as best practices, misconceptions, opportunities, weaknesses and needs. The irrigation conditions were compared to global and/or regional best practices.

Study approach

Benchmarking of the LSI schemes in the Nile Basin can only be accomplished by the inclusion of standardized data. This study utilizes satellite data on irrigated areas, biomass production and consumptive use to derive a minimum set of indicators of performance. The performance indicators were separated into results, processes and sustainability. Areas with excellent productivities of land (kg/ha) and water (kg/m3) resources were identified. The major physical processes leading to satisfactory productivity were described for each climatic zone.

Results

The good and poor irrigation practices have been presented for each country, and this facilitates the national scale benchmarking process. Sudan, Rwanda and Burundi should focus on crop production. Kenya and Uganda should conserve irrigation water use. Ethiopia should increase their water supply to irrigated areas and Egypt has a significant non-uniformity between Upper Egypt, the Nile Delta and the Western Desert. When combining all 10 indicators with equal weight, Kenya turned out to have the best irrigation practices.

LSIs with good practices have been identified for each country and for each climatic zone. The reasons for good performance have been estimated from the Process Indicators. Visits to these spots are recommended to get feedback from the local irrigation managers.

Conclusions

Especially in basins where national scale irrigation information is scarce, satellite data is very suitable for benchmarking Large Scale Irrigation systems based on to performance indicators.

The overall conclusion is that the Nile Basin has excellent irrigation systems. The yields are in pace with the world wide values, and so is the water productivity. There are also areas with very weak irrigation performance. It is recommended that NBI develops guidelines for these systems, and this study is a first step in that direction.



Administrative districts and their overall performance

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