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## Definition and Categorization of Small Water Infrastructures (SWIs) in the Limpopo Basin: Issues and Challenges for Water Availability and Sustainability

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### Key Message

Access to water for small-scale agricultural production is low due to unavailability of adequate water infrastructure resulting in low yields, food insecurity and high poverty levels in the rural population in the basin. Efforts and investments in water infrastructure have not been overly successful in the basin. The paper has attempted to categorize these small water infrastructures and compares them with those in the Volta and Nile basins.

### Summary

SWI for multiple purposes holds great promise for the rural population in the basin by offering viable ways and means to access and manage scarce water resources. The definition for water infrastructure can be approached from two related perspectives which are scale or size and use. In the context of this project, by definition, water infrastructure means any physical (or technical) hardware that is available and used by rural farmers or communities in capturing, collecting, controlling, using, managing and disposing of water. SWIs form a base upon which farmers rely in handling or managing water in rural areas.

SWI has therefore been defined as any technical hardware that is used by farmers in the Limpopo basin in managing water resources for both domestic and agricultural use, and is operated on a small-scale as well as by smallholder farmers. Typical examples of SWI found in the basin include small reservoirs, small weirs, sand dams, boreholes, shallow wells, small scale irrigation schemes, food security gardens, family drip kits, treadle pumps and rainwater harvesting practices. Proper design, operation and management of SWI for multiple uses offer a pathway to improve the livelihoods of the bulk of the smallholder farmers and rural population in the Limpopo basin.

The adoption rates of RWH technologies are low and many people do not have the knowledge of different RWH systems, their implementation, maintenance and management. Therefore, the central problem is to seek options that will enhance productivity, adoption and environmental compatibility.

The paper has attempted to categorize these SWI and compare them with those in the Volta and Nile to determine their usage and technical aspects. Maintenance and operations aspects have also been highlighted as important factors for sustainability of these SWIs.