SYSTEM EFFICIENCY IN MADURU OYA IRRIGATION SYSTEM – CASE STUDY

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Increasing water scarcity in Mahaweli system B, Maduru oya irrigation system needs to work with higher efficiency to cultivate more paddy lands and sustain production with existing water resources. System efficiency can be enhanced with an identification of existing status of the system.

A study was conducted to evaluate the system efficiency, at head end, middle and tail end paddy fields of a field canal in *Weerana* area during 2009/ 2010 *Maha* Season. In this study, efficiency of Maduru oya irrigation system was evaluated considering the conveyance and application efficiencies of the system.

Results revealed that the conveyance efficiencies from main to distributory canal, distributory to sub-distributory canal and sub-distributory to field canal were 88.2%, 73.9% and 59.3% respectively. Conveyance efficiencies from the field canal to head, middle and tail end fields were 38.6%, 29.4% and 24.4%. Average application efficiencies in head, middle and tail end fields are 62.7%, 78.9% and 25.2% respectively. In middle field showed relatively higher application efficiency due to poor drainage. The overall system efficiency of the Maduru oya system is 29.1%.

Cracks in lined canal surfaces lead to reduce the conveyance efficiency in main, sub-main and distributory canals. After the sub-distributories, conveyance efficiency is much lower with higher seepage losses by unlined surfaces. Higher conveyance and application losses, especially at field level, reduces the system efficiency of the Maduru oya irrigation system.

Key words: Mahaweli System B, Maduru oya irrigation system, Efficiency evaluation, Application efficiency, Conveyance efficiency