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ASSESSMENTS OF THE IMPACT OF DEDURU OYA LEFT BANK CANAL ON THE CROPPING INTENSITY OF THE EXISTING IRRIGATION SYSTEMS

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Deduru Oya region in Sri Lanka experiences highly variable flow patterns which pose a challenge to water resource availability and distribution. The rainfall in the basin has a significant temporal variation and thus the flow in the Deduru Oya carry flash floods during rainy season and very low flow during dry season. There is need to store flood water carried by Deduru Oya for use during lean season especially for irrigation. The multi-purpose proposed Deduru Oya reservoir constructed across the Deduru Oya will have 75 MCM and the proposed irrigable area under Left Bank (LB) canal is about 3000 Ha. This study aims to assess the cropping intensity of LB canal area considering current and future water supply, demand status and water allocation with focus on irrigation water requirements.

This study develops a model for water management in Deduru Oya LB canal development area to study the possible water allocations of Deduru Oya LB canal irrigation system. Hydrological Engineering Center-Hydrological Modeling System (HEC-HMS) is used for hydrological simulations and CROPWAT model is used to estimate crop water requirements. Water Evaluation and Planning (WEAP) model is used for water balance simulations in Deduru Oya LB canal development area. Lump model results reveal that the cropping intensity in the proposed irrigable area at LB canal will increase from 30% at present to 100% with the proposed Deduru Oya reservoir.

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