

**REMOTE SENSING TECHNOLOGY ON MANAGING
AGRICULTURE BASED SETTLEMENTS IN SRI
LANKA**

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DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Abstract

The history of the Uda Walawe Irrigation scheme in Sri Lanka goes back to 1967 as a part of the country's new postcolonial vision for economic development and modernization. It was a success story over the past five decades. Today, it is capable of supplying water to another 5000 hectares of land which were recently added to the current irrigation area (i.e. command area). The agriculture-related management practices behind these achievements have been made through field level observations and measurements while mass scale irrigation schemes especially in developed countries use the state of the art technology of Remote Sensing. These traditional methods pose a risk of not being able to retrieve critical information in time with the required level of accuracy. Also it was revealed that the scheme is experiencing water management problems due to the lack of information on agricultural areas.

Conversely, the remote sensing technologies have been improving further beyond producing ground readings and allows access to information such as ground water mapping, evapotranspiration, water quality, vegetation indices and population estimation.

This research was initiated to investigate how application of remote sensing technology would affect the agricultural development in Sri Lanka. The research was carried out within a limited scope due to resource limitations. Uda Walawe command area was selected as the study area and the Block Manager was identified as the agent who is most capable of utilizing relevant information and showing positive impact on management over a carefully identified agriculture-related activity (i.e. water release plan). A significant outcome of the project was to produce a quantifiable measure to the impact through descriptive analysis. The other outcome of this research was a list of agriculture related managerial issues that could be addressed using Remote Sensing technology. The study mainly focuses on the necessity of deploying Remote Sensing technology for managing irrigation schemes in Sri Lanka.



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LIST OF ABBREVIATIONS

Abbreviation	Description
ADB	Asian Development Bank
AO	Agriculture Officer
BM	Block Manager
DRPM	Deputy Residential Project Manager
FAO	Food and Agriculture Organization
GIS	Geographical Information System
HR & D	Human Resource and Development
IIMI	International Irrigation Management Institute
IWMI	International Water Management Institute (<i>previously</i> IIMI)
JCWM	Joint Committee on Water Management
LBMC	Left Bank Main Canal
MASL	Mahaweli Authority of Sri Lanka
MEA	Mahaweli Economic Agency
O&M	Operation and Maintenance
OFC	Other Field Crops
RBMC	Right Bank Main Canal
RPM	Residential Project Manager
RS	Remote Sensing
SEBAL	Surface Energy Balance Algorithm for Land
SEBS	Surface Energy Balance System
UWIRP	Uda Walawe Irrigation and Resettlement Project



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