

PRIORITY CRITERIA FOR SELECTING RURAL WATER SUPPLY SCHEMES FOR IMPLEMENTATION

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Master of Science in Environmental Engineering and Management

Department of Civil Engineering

University of Moratuwa

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**Thesis submitted in partial fulfillment of the requirement for the Master of
Science in Environmental Engineering and Management**

Department of Civil Engineering

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DECLARATION OF THE CANDIDATE & SUPERVISOR

I declare that this is my own work and this thesis 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 any other person except where the acknowledgement is made in the text.

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.....
R A D Sriyani Mangalika

The above candidate has carried out research for the Masters under my supervision.



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ABSTRACT

Water is a basic need for all living beings, and providing access to safe drinking water to all communities is the responsibility of the government. In the above context particularly due to constraints of funding especially capital cost, adopting priority criteria for implementation of water supply projects after the prefeasibility study is a timely need. It will enable the NWSDB officials to justify their decisions to select the priority order of implementation of water supply projects on a rational basis. Prioritization is being done at present in NWSDB for urban water supply schemes and resettlements. However, there is no such priority criteria developed for selection of RWS schemes for funding at the NWSDB at present. Consequently this study was undertaken to prepare a priority criteria for the selection of RWS schemes which are carried out under RWS Section of NWSDB.

The main parameters included in the priority criteria to select whether a proposed project is appropriate for implementation are source adequacy, acceptability of technical option, source extraction and service level to the community, willingness and capacity of the community to perform O&M function, to contribute to capital cost sharing, Tariff / O&M expenses and supply labour and material and justified unit capital cost per house hold.

Parameters used for prioritizing the project are water quality and impact of water borne diseases before the project, whether children below 14 years are engaged in water hauling, whether the water hauling distance is above 200 m whether the community pays unjustifiably on drinking water, existing sanitary practices, availability of alternative sources and percentage of vulnerable people in the community.

A set of conditions coming under each parameter were determined by formulating ranges to measure the effect of that parameter. Then scores were assigned to parameters and subsequently to conditions. The project that gets the highest score is at the highest priority.

Prepared criteria were checked with 10 hypothetical cases. It was found that the resulting priority order is directly relevant to the expected outcome. Then real data related to four projects were applied and tested to ascertain practical problems with the developed Priority Criteria. The Priority Criteria could be applied after making the respective officers preparing pre-feasibility reports aware of how to include the required information. The Officers should be vigilant for special circumstances where some flexibility is needed.

Key words priority criteria, demand responsive, participatory approach, rural water supply

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LIST OF ABBREVIATIONS

Abbreviation	Description
NWSDB	National Water Supply and Drainage Board
RWS	Rural Water Supply
RWSS	Rural Water Supply Scheme
RWSP	Rural Water Supply Project
O&M	operation and maintenance
CBO	Community Based Organization