



COST EFFECTIVENESS OF NON REVENUE WATER REDUCTION IN GREATER KANDY AREA

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Abstract

Proportion of Non-Revenue Water (NRW) measured as a percentage of the total water distributed to consumers varies from 10% to 55% in most of the existing piped water supply schemes. Loss of revenue due to NRW is enormous. Analyses of losses to the utility in the above aspect and comparative studies on the cost of improving existing systems verses cost of construction of new systems may be useful for planners as well as for network system designers. It will also be helpful in reducing the substantial investment to build new water supply project to cater to the increasing demand. However, the time has come for planning, design and construction of systems with minimum operation and maintenance burden using the world's best available practices and also to have programmers for controlling water losses in existing systems. This enable to save the limited water resource, to have the maximum benefit from the money spent mostly out of foreign loans and to expand the pipe borne water supply facility to more than 50% of the population who are deprived of the facility. To analyze the financial viability of Construct ion of new water supply system Vs rehabilitation/augmentation of existing system, this research was conducted.

This study is focused to select the most cost effective option in meeting increasing demand for drinking water by cost saving of reduction of NRW compared to investment in development of new scheme in Kandy Area. To attain this purpose, Harispaththuwa ,Akurana,and Ampitiya Schemes were considered to calculate the Cost of Rehabilitation . Construction cost of Ulapane scheme was taken as the construction of new water supply scheme.

Internal rate of return was calculated for both projects and compared each other. According to, the comparison Rehabilitation/augmentation of existing system was financially viable but NRW saving from rehabilitation is not sufficient to cater to the projected current and future demand.

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Abbreviation

AGA	-Assistant Government Agent
CARL	-Current Annual Real Losses
FINIDA	-Finished Development Assistance
GKWSSP	-Greater Kandy Water Supply Project
GOSL	- Government of Sri Lanka
HWSSP	- Harispaththuwa Water Supply & Sanitation Project
IDP	-Internally Displaced People
ILI	-Infrastructure Leakage Index
IRR	- Internal Rate of Return
IWA	-International Water Association
KDWSDP	-Kandy Water Supply Development Project
KMC	-Kandy Municipal Council
NPV	-Net Present Value
NRW	- Non Revenue Water
NWS&D	-National Water Supply And Drainage Board
O&M	-Operation and Maintenance
OECD	-Organization for Economic Co-operation and Development
PV®	- Present Value of Revenue
PV©	- Present Value of Cost
RD	-Road Development Authority
RSC©	- Regional Support Centre (Central)
UARL	-Unavoidable Real Losses
UFW	-Unaccounted-for Water
UN	-United Nation
USD	-United State Dollars
WTP	-Water Treatment Plant
AWDR	-Average Weighted Deposit Rate
RSC©	-Regional Support Centre (Central)