

# **Cost and Benefits Analysis for the Expansion of Water Supply Scheme in Bibile**

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The existing Bibile water supply schemes are insufficient to serve entire public living in Bibile. Therefore, it is essential to expand the existing scheme to serve about 40,000 public lives in Bibile. This study area consists of 31 out of 40 Grama Niladari Divisions of Bibile Divisional Secretariat Division (DSD). The main objective of this study is to analysis cost and benefits form the expansion of water supply scheme in Bibile to find the financial source for implementation. The primary data for this study were collected by the Interviews, questionnaire and provided information by National Water Supply and Drainage Board (NWSDB), Divisional Medical officer of Health, DSD office and GN's of relevant GND's. Initially the detailed design was done and the total cost estimate (TCE) for the expansion of existing scheme was estimated according to the year 2017 rates of NWSDB. The construction period was decided as three years. Operation and Maintenance (O&M) cost of project was estimated for the period of design life of scheme. Finally, Net Present Value (NPV) and Internal Rate of Return (IRR) were calculated separately for the discounting rate from 5% to 10%. The TCE amount was estimated as 2, 749.8 million Sri Lankan Rupees for expansions. During the design life of the scheme, the annual O&M cost is in year 2020 is 28.8 million and in year 2040 is 133.8 million and Annual revenue and benefits due to the expansion of scheme in year 2020 is 207.9 million and in year 2040 is 697.6 million respectively. As per the cost benefit analysis for loan payback period of 20 years with the Grace period of 3 years, the project is operationally viable financial to obtain a loan or any other financial assistance to implement the proposed scheme since the NPV is positive up to 8% of discounting rate. It is proposed to obtain 2,750 million of financial assistance within the 8 % of discounting rate from suitable donor agency to implement the project. The coverage of water supply will be increased due to the expansion of existing scheme from 22.5 % to 84 % in this study area.

*Keywords:* Water Supply, Cost estimate, Net present value, Internal rate of return.