



Mahadev Khola

Impounding Reservoir Water Supply Project



Government of Nepal
Ministry of Water Supply



Background

Impounding reservoir like the proposed Mahadev Khola Water Impounding Reservoir project are one of the remedies for the mounting impacts of climate change. This initiative aims to construct a dam for seasonal storage serving the settlements of Mahadev khola watershed, spanning suburban towns of Changunarayan Municipality and neighboring Bhaktapur Municipality that can help to ensure a regulated availability of water primarily for drinking and other domestic purposes throughout the year. Alongside facilitating irrigation activities within the watershed, it integrates infrastructure for recreation (Nagarkot Falls) around the impounded reservoir, utilizing surplus water flows beyond drinking water requirements.



Sector

Water Supply



Location

Changunarayan Municipality
Bhaktapur District



Land Type

Public Forest Land

Salient Feature

- **Concrete Faced Rockfill Dam**
 - Height: 48 meters (with 3 meters free board)
 - Crest Length: 230.8 meters
 - Crest Width: 8 meters
 - Crest Elevation: 1570 masl
 - Base Width: 155 meters
 - Full Supply Level (FSL): 1567 masl
 - Minimum Drawdown Level (MDDL): 1540 masl
 - Upstream Slope Inclination (V:H): 1:1.5
 - Downstream Slope (V:H): 1:1.5
- **Reservoir**
 - Impounded Area: 13.12 ha
 - Gross Storage Volume: 1.842 million m³
- **Dead Storage Volume:**
0.152 million m³
- **Live Storage Volume:**
1.690 million m³
- **Free Overflow Stepped Spillway**
 - Crest level of spillway: 1567.00 masl
 - Width of spillway: 20.00 m
 - Number of steps: 5
 - Maximum passing flood discharge: 177.71 m³/s
- **Emergency Free Overflow Spillway**

Rationale:

- Provide water for drinking and other domestic purposes throughout the year
- Augments existing water supply systems
- Crucial for mitigating climate change impacts and enhancing water security
- Complements current initiatives like the Melamchi Water Supply Project
- Strategic location in Bhaktapur serves a significant population

Project Components



Dam



Intake



Spillway

Project Outcomes



Directly serves 3,295 households



Improved drinking water service



Support to irrigation facilities



Flood control

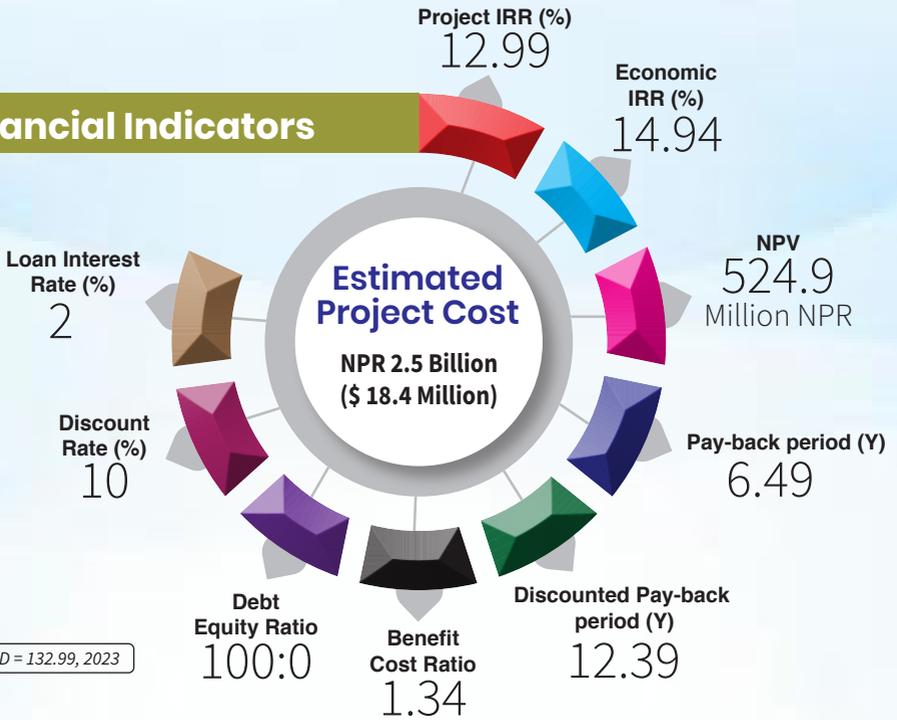


Service Population (Assuming a 100 LPCD):
40,000 Round the Year



Recreation in and around the impounded reservoir

Financial Indicators



(Information is based on Detail Project Report prepared in 2024)

Project Implementation Modality



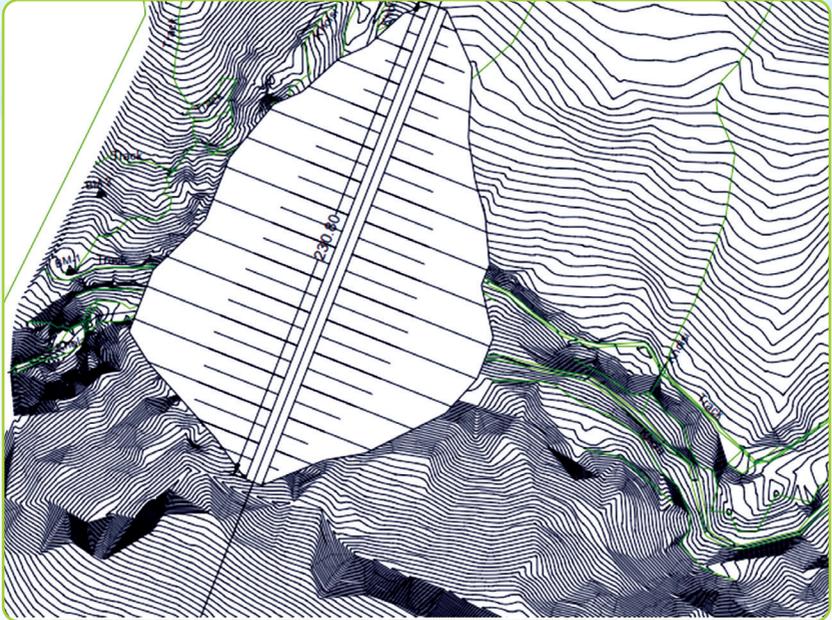
**Public Private Partnership
(PPP model)**

Project Implementation Timeline



Proposed plan for coming years: **Provided Budget is Available**

Additional Information



Relevant Agencies

- Ministry of Water Supply
- Department of Water Supply and Sewerage Management (DWSSM)
- Investment Board Nepal

About the Agency

The Ministry of Water Supply is the leading executive agency in the sector that formulates federal-level policy, carrying a vision of assuring safe and accessible water and sanitation services and hygiene. The ministry is committed to putting efforts to achieve many national and international goals and targets in water, sanitation, and hygiene, intended for the betterment of people's living standards. Among its key objectives is the implementation of national-level large water supply projects and inter-provincial water supply projects. By spearheading these initiatives, the ministry aims to address critical water supply challenges and improve the overall water infrastructure across the country, thereby contributing to the well-being and prosperity of its citizens.

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