



Project Duration:
January 2021 to December 2023

Integrated Water Management in Urban Areas as a Core Task of Municipal Services of General Interest

Environment and Public Health Organization (ENPHO) partnered with BORDA to implement "Integrated Water Management in Urban Areas as a Core Task of Municipal Services of General Interest" Project in Godawari and Kirtipur Municipalities, aiming to improve water and sanitation

services for underserved residents. The project supports municipalities in planning, implementing, and maintaining water and sanitation initiatives while enhancing professionals and stakeholders' capacity, and promoting accountability and governance.

Project Goals

The project contributes to improve the living conditions of people in small towns and reduces the health and environmental risks associated with inadequate water supply and sanitation



Project Outputs

Integrated and decentralized solutions for improved water and sanitation services for disadvantaged citizens are demonstrated.

1

Municipalities have improved personnel and institutional capacities for effective provision of integrated and decentralized water and sanitation solutions and used those effectively.

2

The enabling environment at municipal level for the adoption of integrated and decentralized water and sanitation solutions has improved.

3

Integrated and decentralized solutions for improved water and sanitation services are embedded into a wider state and national discourse with an emphasis on small towns.

4

Outcomes



6 Hiti rejuvenated

1 Public Toilet
refurbished



1 Water Supply
System constructed

Beneficiaries



12,572 number of people have
access to improved water
and sanitation services

257 people trained for
providing sustained
services on WASH



Project Area

Kirtipur Municipality is one of the oldest and typical Newar settlements of the Kathmandu Valley and spreads over an area of 14.76 sq. km. The name Kirtipur comes from “Kriti” (Glory) and “pur” (City). In its native language, it is called as “Kipu” or “Kyapu” carrying a meaning of “famed town”.

Godawari Municipality spreads over an area of 96.11 sq. km. and is famous for its botanical garden and Godawari Temple (Saraswati Kunda and Navadhara). The municipality is rich in water resources and home to the Godawari River, a tributary of the Bagmati River.



Implementation Modality



Detailed Project Reports

The project supported to prepare the Detailed Project Reports (DPRs) for various WASH interventions to serve as a comprehensive roadmap to improve WASH services in the partner municipalities. Altogether 22 DPRs were prepared as outlined below.

Hiti -14

DPRs prepared for a total of 14 Hiti, with 5 from Kirtipur Municipality & 9 from Godawari Municipality

Public Toilet -2

DPRs prepared for 2 public toilets: one located at Chapagaun Buspark, and the other situated within the premises of Tika Bhairab Temple in Godawari Municipality

Urban Sanitation Facility -2

DPRs developed for 2 urban sanitation services, which encompassed a DPR for the Faecal Sludge Co-Treatment Plant at *Paa:Gaa:Ban* in Ward 11 of Godawari Municipality & a DPR for the Decentralized Wastewater Treatment System in Ward 2 of Kirtipur Municipality

Water Supply System -4

DPRs prepared for 4 Water Supply Systems, which included:

- Lapse Kotdanda Water Supply System in Ward 6 of Godawari Municipality
- Chandraloka Water Reservoir in Ward 7 of Kirtipur Municipality
- Source protection work for 4 water supply schemes within Godawari Municipality
- Various components of 7 water supply systems within Godawari Municipality

DEMONSTRATION: Rejuvenating Traditional Hiti

In Kathmandu Valley stand *Hiti* (stone spouts), ancient hydraulic structures intertwined with history and culture, serving as vital sources of drinking water. In the pressing need for its restoration, ENPHO developed fourteen DPRs of *Hiti* and embarked on a journey to rejuvenate *Sima ko Dhara*. This *Hiti*, in Patalechhap, Bishankhunaryan, witnessed a transformation in 2021. Serving as a demonstration, the project sought to set a model for the revival of such structures.

In response to the encouraging outcomes and with the active involvement of the community and the dedicated efforts of Godawari Municipality, three additional *Hiti* were restored including

Majha ko Dhara and *Bhujure ko Dhara* in 2022, and *Bishankhu Narayan* in 2023. In addition, Kirtipur Municipality also undertook restoration of two *Hiti*, namely *Nakhi Gaa: Hiti* and *Chi Gaa: Hiti*, highlighting their cultural and water-related significance.



Bishankhunaryan



Majha Ko Dhara

The rejuvenation of 6 Hiti served a combined population of 11,650 individuals.

REVIVING HITI: A Tale of Preservation and Transformation

Sima ko Dhara, used by generations spanning more than 250 households and neighboring's, now coexists with a modern pipeline. Surprisingly, despite the pipeline's convenience, people continue to prefer the *Hiti's* water due to concerns about tap water quality. Beyond enhancing safety and convenience, the restoration bestowed aesthetic value upon the water collection process. Enrichments like seating areas, raised platforms, and improved pathways elevate both functionality and appearance, while a nearby park offers a haven for relaxation.

Ms. Gauri Silwal explains, *"Despite piped water, worries about insects and frogs lead us to choose the Hiti for drinking. Slippery paths previously caused falls during water collection, but the renovation made it safe and easy"*.

Initiated by the community, the enhancements extended to the introduction of captivating lighting, casting a mesmerizing view during the night. The success of *Sima ko Dhara's* restoration rippled across the neighborhood, inviting requests for similar renovations. Responding to this call, three more *Hiti* were restored by the municipality's investment.

Mr. Santa Bahadur Deshar from Godawari Municipality envisions the impact, stating, *"These renovations will serve as a legacy, guiding our path"*. The triumphant revival of *Sima ko Dhara* paved the way for ongoing preservation endeavors. Through relentless efforts, these *Hiti* metamorphose into vibrant, functional community assets, bridging history and present-day necessities.



DEMONSTRATION: Refurbishment of Public Toilet at Chapagaun

Public toilets provide an essential public sanitation facility but are often underutilized due to design deficiencies, unpleasant odors, and discomfort. While the fixtures may appear functional, issues like the availability of soap and water, poor aesthetics and subpar sanitation conditions deter both local people and transient visitors from using them. A comprehensive study of 14 public toilets at Godawari tells similar challenges, including a lack of aesthetics, sanitation, soap availability and regular cleaning. Recognizing the need to showcase public toilets as effective and smart public amenities, extensive consultations with the municipality led to the successful renovation of the Chapagaun Bus Park public toilet, serving as a promising example for learning and replication.



The renovation of Chapagaun Public Toilet enhanced public toilet services for about 100 daily users

Enhanced Hygiene & Functionality of a Public Toilet Located at Bus Park

The public toilet of Chapagaun Bus Park was renovated with separate male and female sections, handwashing stations, sanitary pad vending machine, dustbins, automated urinals, and soap dispensers. Mr. Ramesh BK, a local user, appreciated the convenience and cleanliness with modern surroundings provided positive feedback which made it no longer resembled as a public toilet. Similarly, Ms. Punisha Deshar remembered a struggles with menstrual pad disposal and praised the provision of pad vending and disposal machine, which made the public toilet facility more valuable during her period.

The project upgraded this public toilet not only for better functionality but with incorporation of business model for

sustainability. This facility also has a coffee shop, which operated effectively to draw the attention of visitors as well as researchers. The transformation of this facility from unpleasant condition to clean, convenient and modernization demonstrates the potential for enhancing public toilet services across urban areas. The success of this transformation has led to demands to replicate the model, prompting for budget allocation to renovate other existing public toilets in the municipality. Mr. Santa Bdr. Deshar, Godawari Municipality, acknowledged the positive results along with plans to expand the successful model to other area.

DEMONSTRATION: Community Managed Self Sustained Water Supply System

Residing in Lapse Kotdanda, ward 11 of Godawari Municipality, the local population lacks access to government water utilities and relies on a small-scale water supply system overseen by water user’s committee. The existing water supply system, constructed approximately 45 years ago, had dilapidated significantly, with issues like insufficient infrastructures for equitable water distribution, pipe network leakages, and a lack of management skills within water user’s committee. Additionally, there were challenges related to revenue generation and resources for system repair, maintenance, & upgrades. This water supply system was reconstructed as a part of demonstration work on community managed self-sustained water supply system through coordinate efforts and financial contribution from the project, municipality, and community people.

Initially, the DPR for reconstruction of water supply system was prepared. The demonstration work encompassed more than just the physical construction aspects. It also included offering of technical assistance, conducting capacity-building activities to ensure effective management and operation of the water supply system, enhancing the sense of ownership



The Lapse Kotdanda Water Supply System served approximately 722 individuals living in 160 households

and accountability among water users' committees, establishing efficient management and tariff mechanisms to ensure access to clean water, promoting regular maintenance, ensuring equitable access, and building resilience to climate- related shocks and disasters.

Salient Features of Lapse Kotdanda Water Supply System

1

Gravity Fed and Eco-Friendly System
The system is gravity fed, requiring no external energy source or mechanized components for its operation, making it cost-effective and environment friendly.

2

Community Led-Self Reliant System
The system is managed by water user’s committee inclusive of women and marginalized groups and well equipped for managing system, monitoring, revenue generation & maintenance.

3

Climate and Disaster Resilient Structures
The system has enhanced climate resilience with modernized & well-maintained infrastructures that safeguards against potential disasters such as landslides and floods, protecting critical components like intake, reservoir tanks, pipe networks.

4

Water Quality and Safety
Water quality and safety assured by empowering the water user’s committee to implement water safety plan and conduct field tests of water quality.

5

Trained Human Resources
The system has trained personnel, including a water user’s committee for system management, a WSP team for water safety plan implementation, operators for routine maintenance, and staff for monitoring water usage and maintaining accounts.

6

Controlling Non-Revenue Water
A system to control non-revenue water and minimize loss is implemented through installation of 16 bulk meters in key distribution networks.

7

Regulatory Mechanism
Under the water user’s committee leadership, a regulatory mechanism is in place, including rules on water usage, installation of meters for each tap connection, a structured tariff system, fines and penalties, and meticulous record-keeping.

8

Accountability and Transparency
Water user’s committee ensures accountable system management, maintaining equitable and safe water distribution, and financial transparency through public audits.



“Previously, we faced inconvenience in collecting water from distant sources or neighboring houses, often waiting for hours. The installation of household tap stands has significantly improved our lives, making household chores more convenient and efficient. The introduction of a metering system has also encouraged responsible water usage and positively transformed our community's water management practices,” remarked Ms. Sabina Tamang, a resident of Lapse Kotdada, Ward 6 in Godawari Municipality.

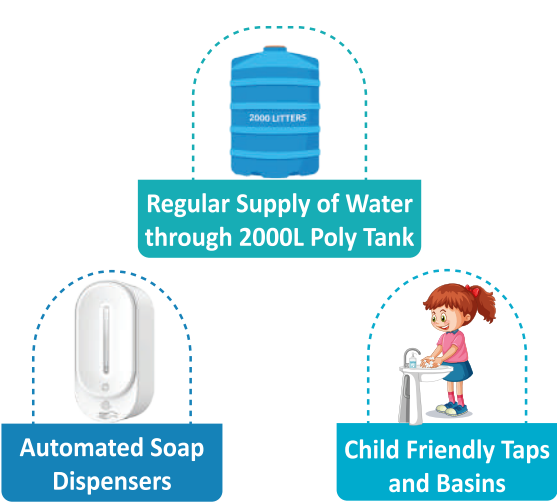
Rehabilitation of handwashing facility at Shree Gorakhnath Secondary School promotes hand hygiene practices



Among ten education institutions, Shree Gorakhnath Secondary School, Kirtipur was thoughtfully chosen, and the handwashing facility was rehabilitated after extensive consultations with local government and school management committee. The objective was to ensure the continuous operation of the existing handwashing facility, providing a

secure and hygienic space for all students, regardless of their age, to actively engage in proper hand hygiene practices. The rehabilitation work has resulted in a well-maintained and functional hand washing facility that demonstrate safety and hygiene standards and provided unhindered access to essential hand hygiene facility within the school environment.

Key Features of Handwashing Station



Strengthening Institutional Capacity



Strategically designed technical support and capacity-building initiatives were effectively implemented to empower a wide range of stakeholders, including government institutions and communities. Both municipalities and communities have enhanced their personnel and institutional capabilities, enabling them to provide integrated and decentralized water and sanitation solutions and effectively manage them.

A total of 257 personnels were trained through various capacity building programs for providing sustainable WASH services



11 **Engineers** from both the municipalities were trained on “Design of Gravity Fed Water Supply System using SW WSP -V3”

10 **Technical staff** from both the municipalities were trained on operation and maintenance of decentralized wastewater treatment system

25 **Members** from six different water user’s committees of Godawari Municipality were trained on water quality testing and mass chlorination of water in the water supply system

145 **Sanitation workers** from both the municipalities were trained on occupational health and safety to ensure safety measures are taken by them

8 **Operators and water user’s committee members** of Lapse Kotdanda Water Supply System were trained on effective operation and maintenance of the scheme

20 **Water user’s committee members and operators** of Lapse Kotdanda Water Supply System were trained on effective and sustainable management of the water supply system

45 **Water user’s committee members and Water Safety Plan Team** from two different water supply system were capacitated on implementation of Water Safety Plan in their water supply system

The WASH Plan for Kirtipur Municipality enabled efficient planning and development

ENPHO provided technical support in crafting a WASH Plan for Kirtipur Municipality, tailored with specific information, issues and gaps on WASH sector of the municipality. Developing a WASH Plan proved fundamental for coordinated planning and designing WASH programs at municipal level as it served municipality as a resource planning tool to ensure sustainable changes in the WASH sector. Notably, the municipal assembly endorsed the plan on June 25, 2023 and aligned it for annual planning and budgeting process thereafter.

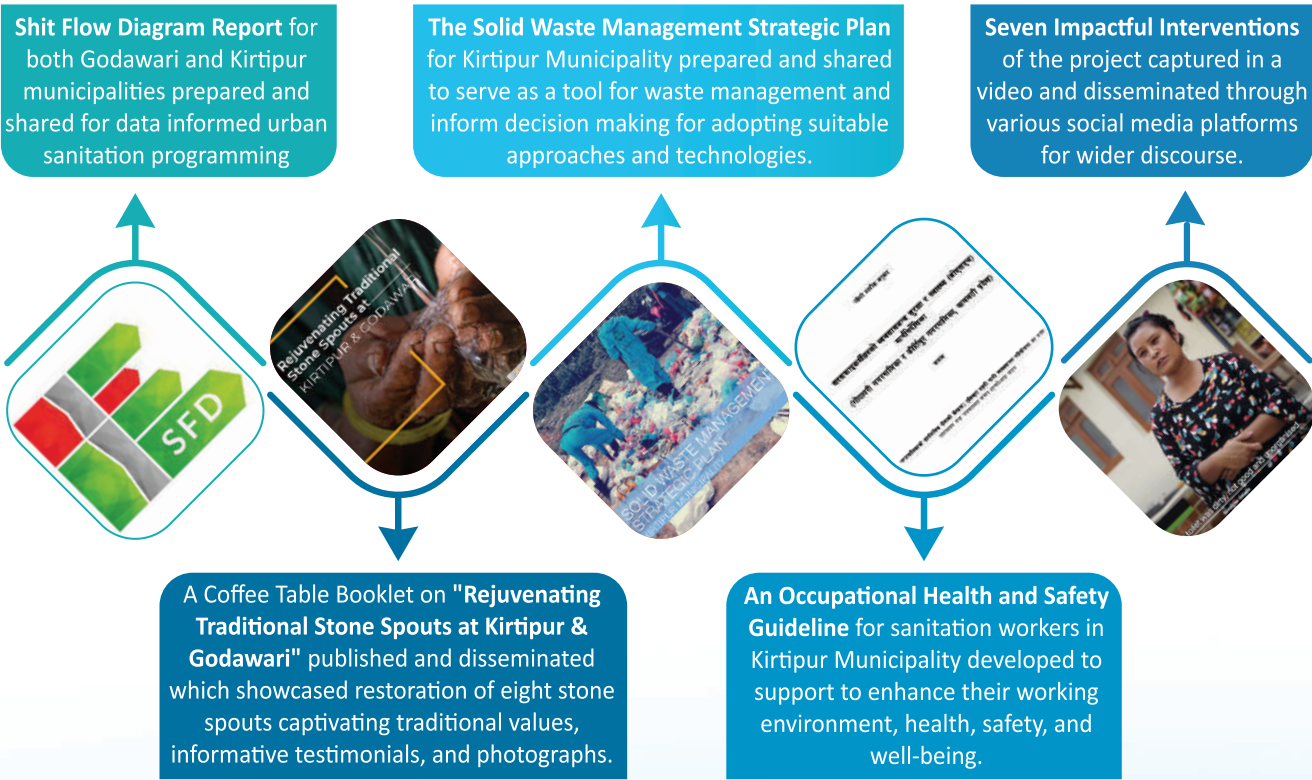


Expert Committee Meeting

Regular Expert Committee meetings were held to ensure effective planning, seamless execution of interventions and sustainability. The committee comprised experts on water resource management, urban sanitation, environment sustainability who offered guidance, informed recommendations for project's alignment with water management, sanitation, and urban development standards.



Increased Discourse and Dissemination



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