Oxfam in Nepal's Watershed Approach:

INCLUSIVE AND PARTICIPATORY WATER GOVERNANCE IN NEPAL

OXFAM

Abstract

Oxfam in Nepal, in collaboration with the Water and Energy Commission Secretariat (WECS), piloted an integrated watershed management model in the Rangoon Watershed. The project aimed to bridge policy and practice by promoting inclusive and participatory water governance. Key components included community engagement, evidence-based planning, and conflict resolution mechanisms. Innovations introduced were inclusive governance structures, a conflict resolution framework, citizen science, and a Community of Practice. The approach integrated water, land, and biodiversity management through research, stakeholder collaboration, and practical tools such as water accounting and online data-sharing platforms.

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For further information on the issues raised in this paper please email advocacy@oxfaminternational.org

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1 INTRODUCTION

Nepal's Water Resource Act (1992) established the legal framework for managing Nepal's water resources, with many interventions and approaches tested over the past three decades. However, these efforts had been non-conclusive in identifying the best approach for managing water in a mountainous country like Nepal. Nepal's diverse topography and varying ecosystems require a comprehensive approach that addresses both smaller catchments and larger basins—a perspective that has been overlooked. Existing planning practices by municipalities and rural municipalities are based on administrative boundaries, which often do not align with natural topographic or watershed boundaries. This leads to fragmented water resource management, failing to consider how water flows from upstream to downstream regions, which results in unsustainable interventions that do not address the interconnectedness of water sources across the watershed. An additional challenge is the limited collaboration between municipalities and different sectors at the local level, which weakens the initiatives taken for water management interventions further reducing the ability to effectively secure funding from upper tier governments.

Nepal's transition to a federal system has brought both opportunities and challenges for water resource management. While decentralization offers more localized control, it has also resulted in fragmented authority and unclear responsibilities between the federal, provincial, and local governments. Political instability and frequent leadership changes hindered long-term planning. Additionally, financial disparities among different levels of government have led to unequal access to water services across the country. On the positive side, the shift to federalism provides opportunities to improve water management. Localized governance can enable solutions that are more tailored to specific regional needs, considering Nepal's diverse topography and climate. This decentralization can also encourage greater community participation, fostering a sense of ownership and promoting the sustainability of water projects.

Oxfam in Nepal has implemented its River Basin Programme since 1999[1], with initial focus on disaster risk management only in the Koshi basin in the Terai region[2]. Under this programme, Oxfam has supported local governments in enhancing their capacity in early warning systems[3], mainstreaming disaster risk reduction (DRR), and enhancing response capability in the Rangoon Watershed[4]. This River Basin Programme intervention was continued through the SAFER Nepal project (Strengthening Actions for Fostering Resilience through Early Warning and Risk Sensitive Planning in Nepal), which aimed to institutionalize DRR at the local level through community-based disaster risk management approach[5]. Moving back to River Basin Programme of Oxfam in Nepal, it launched Transboundary Rivers of South Asia (TROSA) project in 2017 and started working in Mahakali River Basin with riverine communities[6].

[1]https://nepal.oxfam.org/latest/blogs/nepals-water-resource-management-community-unites-under-community-practice-cop
[2] https://policy-practice.oxfam.org/resources/sink-or-swim-why-disaster-risk-reduction-is-central-to-surviving-floods-in-sout-114596/
[3] https://nepal.oxfam.org/latest/press-release/oxfam-launches-trans-boundary-water-governance-project-nepal
[4] https://policy-practice.oxfam.org/resources/resilience-in-nepal-evaluation-of-mainstreaming-disaster-risk-reduction-and-enh-336274/
[5] https://weadapt.org/wp-content/uploads/2023/05/52fb6d721bd8ddipecho-brochure-2013.pdf
[6] https://www.oxfamnovib.nl/donors-partners/about-oxfam/projects-and-programs/trosa

2 PEOPLE'S LANDSCAPE APPROACH

Building on its decade-long work in the Mahakali Basin, Oxfam and Wageningen Center for Development and Innovation co-designed a People's Landscape Approach (PLA)[7] and framework which aims to empower multiple stakeholders of a landscape by developing people's and institutions' adaptive capacities and resilience and supporting them in the management and governance of natural resources. To investigate the PLA framework's applicability, Oxfam and partners (NEEDS Nepal, LI-BIRD and CSRC) piloted a project from May 2022 in the Rangoon Watershed, and conducted detailed assessment of water, biodiversity, and land. The PLA assessment has three findings[8].

Finding 1: The administrative boundaries in the watershed are drawn for governance purpose and divide the watershed. The assessment identified the need for more knowledge about mechanism for access and benefit-sharing, upstream-downstream linkage, and the relationship between different ecosystem component within watersheds.

Finding 2: Sectoral issues do not satisfactorily address the multifaceted and interrelated issues concerning water governance. The assessment identified a need to work through an integrated approach, making water an entry point in scenarios of changing climate.

Finding 3: The assessment identified the need to extend support towards the three tiers of the government to prepare evidence-based watershed management by helping them generate, manage, analyse, and decide based on climate data.

[7] https://edepot.wur.nl/572657
[8] https://nepal.oxfam.org/latest/publications/building-landscape-resilience-through-people-landscape-approach-rangoon

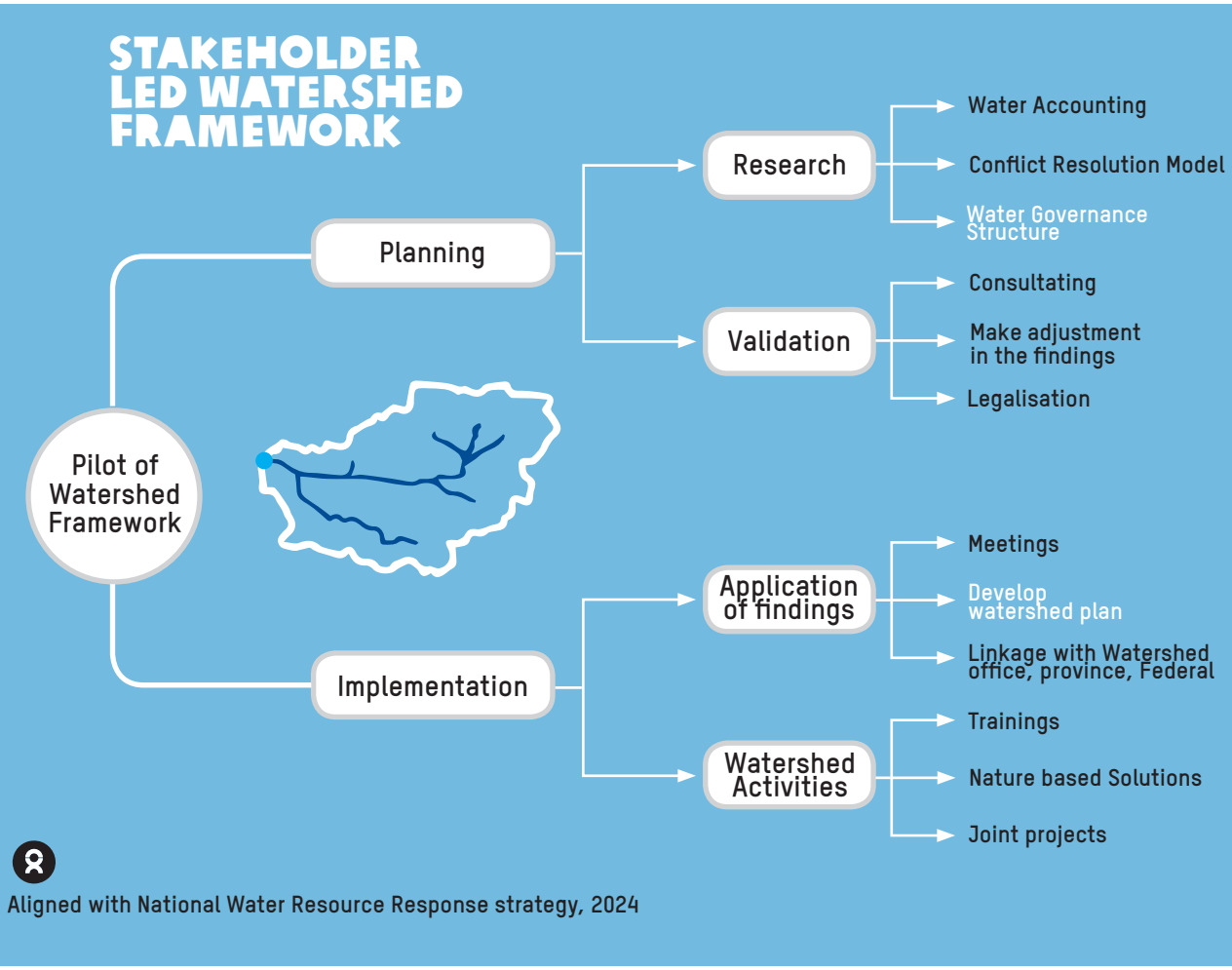
3 LINKING LOCAL TO FEDERAL GOVERNMENT

The results of this study became the foundation for a Memorandum of Understanding (MoU) between Oxfam and the Water Energy Commission Secretariat (WECS), an apex governmental body responsible for coordinating and overseeing the planning, development, and management of water resources and energy sectors. WECS provides policy direction and guidance to ensure that the country's water and energy resources are used efficiently and sustainably. Currently, WECS has the mandate to manage water resources and has developed river basin plans for the major basins of Nepal.

Oxfam in Nepal and Rural Women's Development and Unity Center (RUWDUC), under the leadership of WECS, has piloted the river basin approach at a smaller scale in the Rangoon Watershed of Mahakali River Basin. The project "Watershed Management and Development Plan: Generating a Replicable Watershed Management Model," (henceforth 'Watershed project') was implemented from 2023 to 2025 and aimed to address water, land, and biodiversity management issues, including weak upstream-downstream connections and poor stakeholder coordination. The project sought to develop a watershed-level model for water resource management, promote collaboration across government levels, and ultimately contribute to WECS's River Basin Plans.

4 RESEARCH TO ACTION IN WATERSHED GOVERNANCE

The project's first year comprised in-depth research on water governance, watershed planning, and conflict management. The study was focused to identify integrated, climate-responsive, and evidence-based solutions for watershed governance that address administrative fragmentation, sectoral gaps, and strengthen government capacity for data-driven decision-making. The research has applied the following framework.



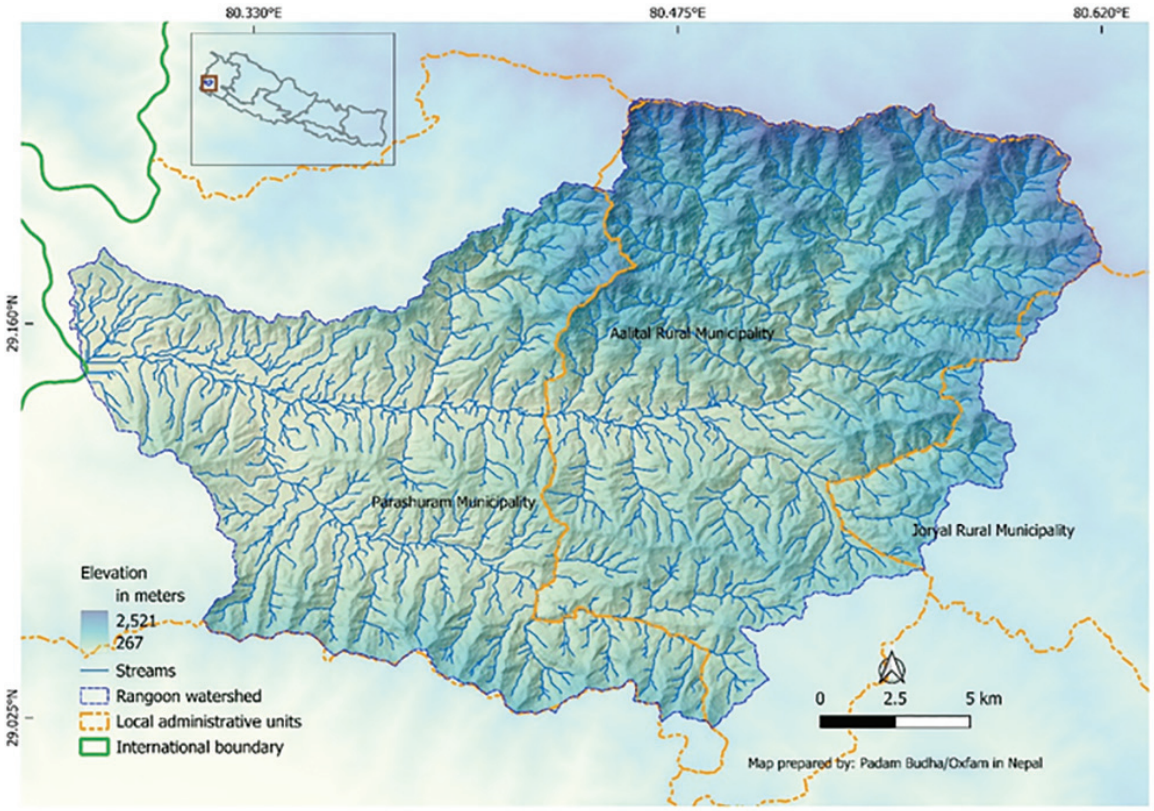


FIGURE 1: RANGOON WATERSHED (INSET: POSITION OF WATERSHED IN NEPAL)

Using the above framework, the research emphasized the need for a water governance structure specifically at the watershed level, alongside structures at municipal, provincial, and national governments, to provide a collab-orative platform for developing shared and sustainable water management plans. A watershed-level water governance structure empowers municipalities to unite across boundaries, harmonize water management practices, and safeguard vital water resources, ensuring equitable access, resilience, and long-term environmental health for all communities within the watershed.

The WECS is advancing the Basin Approach at the national level by preparing river basin plans, and local governments are encouraged to align their water management efforts with watershed boundaries. The water governance structure at the watershed level is vital for linking local interventions with the broader WECS plans, ensuring coordinated and integrated water management across all levels. This research findings were shared with stakeholders of Rangoon Watershed in February 2024 in the presence of representatives from WECS. The participants discussed the need to consider watershed boundary in the local level plans and align it with national level. Besides, they showed the will to form watershed level water governance structure and support the initiatives of development partners.

In the second year, the study's findings were applied through a project on community strengthening, local government engagement, database development, designing an online map-based data-sharing platform, evidence-based planning, and water accounting to address water issues in the Rangoon Watershed.

These activities of Watershedproject can be broadly grouped into three categories as scope/objective of the project, which can be implemented independently or simultaneously.

a. Formation of inclusive water governance structure:
The first step in the process of formation of water governance structure is sensitization of community and local governments on the watershed approach. Community engagement activities included citizen science training, establishment of Women Economic Empowerment (WEE) centre, and creation of Multi-Stakeholder Platform (MSP) of local government and stakeholders for regular meetings. This was complemented by infrastructure support to communities and local government under the leadership of WECS. The sensitization led to formation of water-governance structure at watershed level that is led by local governments and is inclusive of women and people from community.

b. Development of participatory evidence-based watershed plan:
Smaller watersheds are deficient of finer resolution data that hinders the formulation of evidence-based planning. Thus, first task here should be development of database of watershed which should also incorporate municipal plans. Once the database appears complete for the watershed then with the involvement of MSP and support from technical experts an evidence-based watershed plan can be formed.

c. Water resource management interventions:
The communities, local governments, and the water-ecosystems all will be expecting the solutions of their water problems in this changing climate. This stage of watershed approach should identify the functional and sustainable watershed management interventions that can fulfil the needs of people. Activities like infrastructure support, water-source protection, and other nature-based solutions can be part of the interventions.

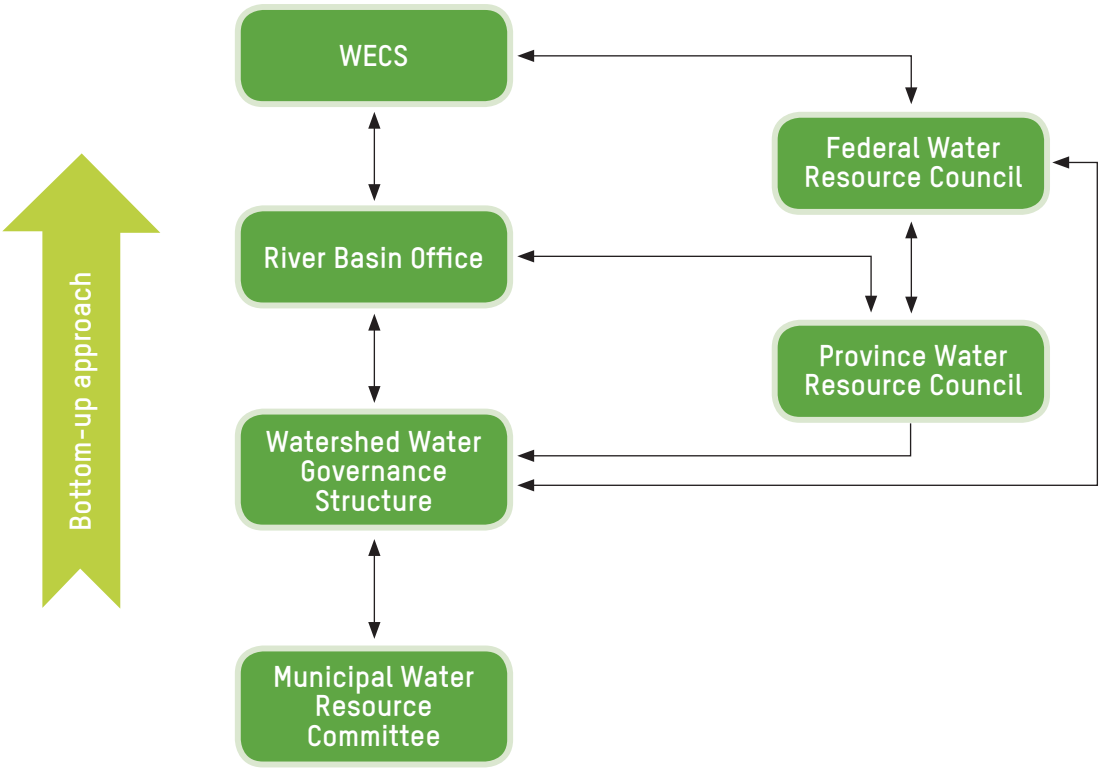


FIGURE 2: PROPOSED BOTTOM-UP NATIONAL WATER GOVERNANCE STRUCTURE

The municipal water governance structure that comprises of eight members contributes to the watershed-level structure: Mayor, Deputy Mayor, Civil Society Organization (CSO) Representative, Private Sector Representative, Women's Group Representa-tive, Irrigation Users Association, Water Users Committee, Forest User Groups etc. These members are identified in close consultation among upstream and downstream stakeholders of Rangoon Watershed.

4.1 ROLES AND RESPONSIBILITIES OF WATER GOVERNANCE STRUCTURE

The goal of watershed water governance structure is to address water-related challenges in each municipality by developing a strategic action plan that includes exploring the impact of water initiatives and fostering collaboration among watershed stakeholders. This involves creating a watershed-level policy and plan that covers water priorities, demand, allocation, and conservation, while strengthening data collection for informed decision-making. Additionally, efforts will focus on mediating disputes between municipalities, raising awareness about watershed health, and promoting knowledge exchange with technical support.

FIGURE 3: ROLES AND RESPONSIBILITIES OF WATER GOVERNANCE STRUCTURE OF WATERSHEDS

FIGURE 4: FIVE SCENARIOS THAT CAN INFLICT CONFLICTS IN SHARED WATER RESOURCES

4.2 CONFLICT RESOLUTION MODEL FOR WATER RESOURCE MANAGEMENT

Water-related conflicts generally stem from five main areas: Quantity, Quality, Pollution, Environment, and Rights. Within the Quantity domain, conflicts can be divided into two types: (i) scarcity and (ii) abundance. Conflicts arising from scarcity are more prevalent than those caused by abundance, such as water-related disasters or crop damage due to over-irrigation. The 5 boxes (Figure 4) above, present different scenarios which may lead to rise of conflicts.

The 2023-24 research conducted by Oxfam in Nepal through Green Graduates that introduces a conflict resolution mechanism for managing water resource use, addressing disputes at multiple levels. The mechanism envisions the formation of committee at distribution level for shared watersheds, with committees at each level work to resolve water-related issues. Under the leadership of Water and Energy Commission Secretariat (WECS), Oxfam in Nepal with its partner RUWDUC began the formation of committee, under this conflict resolution model, at municipal level in three different local governments within Rangoon Watershed.

4.3 CONFLICT RESOLUTION FRAMEWORK

Conflicts related to water distribution would be managed by a sub-committee within the water users' committee or the water management board. At the municipal level, water-related conflicts can be addressed through local government's interventions. Disputes between municipalities over shared water sources will be handled by a watershed-level committee within the broader water governance framework. This committee may also request technical support from provincial or federal governments to assist in resolving conflicts. If the committee is unable to resolve the issue promptly and effectively, the matter can be escalated to a higher-level committee.

This initiative is neither a parallel work to the jurisdiction of the local government nor a separate project supported by other organizations; instead, it is to address the existing or potential water-related conflicts properly. Therefore, all the responsibility to ensure the implementation of the proposed model shall remain with the concerned local government.

FIGURE 5: CONFLICT RESOLUTION COMMITTEES FOR EACH LAYER OF ADMINISTRATION AND WATERSHED

4.4 Formalization of the Proposed Model

To ensure thorough discussion, decision-making by the authorized body, and strong ownership, the following steps should be followed by the watershed stakeholders to resolve conflict:

Step 1: Share the proposed model at the appropriate levels.
Step 2: Conduct a comprehensive discussion on the background, need, and details of the proposed model. (It is highly recommended to involve an independent external facilitator for the initial discussion.)
Step 3: Make decisions at the authorized decision-making body.

- For water users' committees/boards: The Executive Committee's decision should be followed by the General Assembly.
- At the ward level: The Ward Committee should decide.
- At the municipal level: The Municipal Executive Committee's decision should be followed by the Municipal Council.
- At the watershed level: A joint meeting of all relevant local governments' Executive Committees should make the decision.

These local government meetings will discuss and decide on the proposed framework, making necessary amendments to existing legal provisions to provide legal support for the process.

Step 4: Communicate the decisions to provincial and federal governments via established communication channels, both for informational purposes and to request any necessary legal amendments to provincial and federal acts.

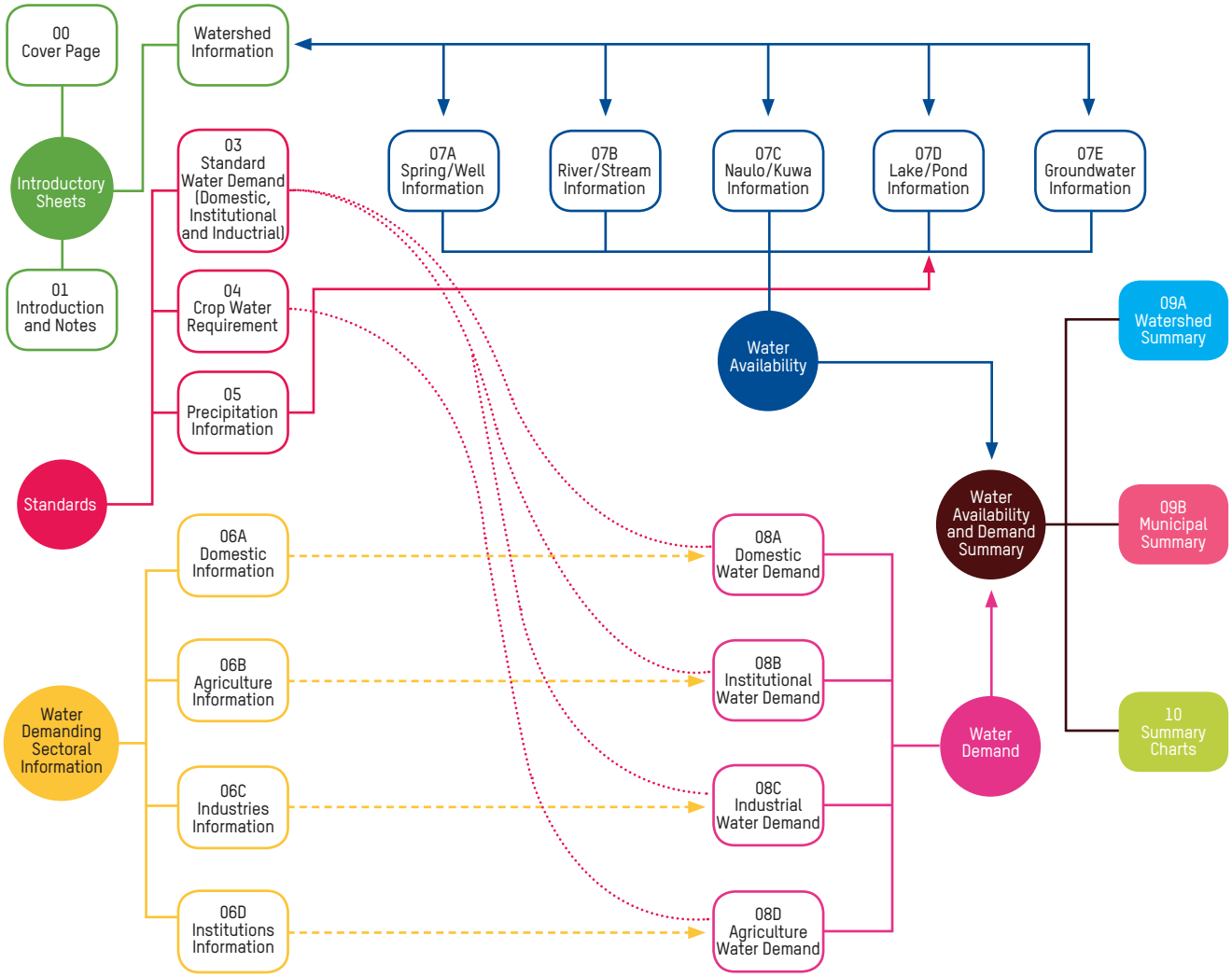
4.5 Water accounting tool in Rangoon Watershed

In the Rangoon Watershed, water accounting tools are being applied to systematically assess the availability and use of water resources across households, agriculture, irrigation, and industry. These tools combine detailed mapping of all water sources with measurements of volume, discharge, and seasonal variations, providing an accurate picture of both supply and demand. By integrating data on water infrastructure, usage patterns, and sectoral needs, the water accounting process supports evidence-based decision-making and equitable resource allocation. The approach not only identifies current gaps and potential conflicts but also strengthens local capacity for sustainable water governance, ensuring that future watershed management strategies are rooted in comprehensive, reliable, and community-validated information.

4.6 Water Accounting Framework and Tools

Water Accounting Framework presents a structured approach to assessing water availability and demand across different sectors, integrating various sources of watershed information and sectoral water demand data. It categorizes data into key sections, starting with introductory sheets and standards, followed by watershed information, sectoral water demand, and summarization components. The water availability section aggregates data from multiple sources, including springs, rivers, groundwater, and reservoirs, providing a comprehensive view of existing water resources. Simultaneously, the water demand section classifies demand across domestic, agricultural, industrial, and institutional sectors, ensuring a holistic evaluation of water needs.

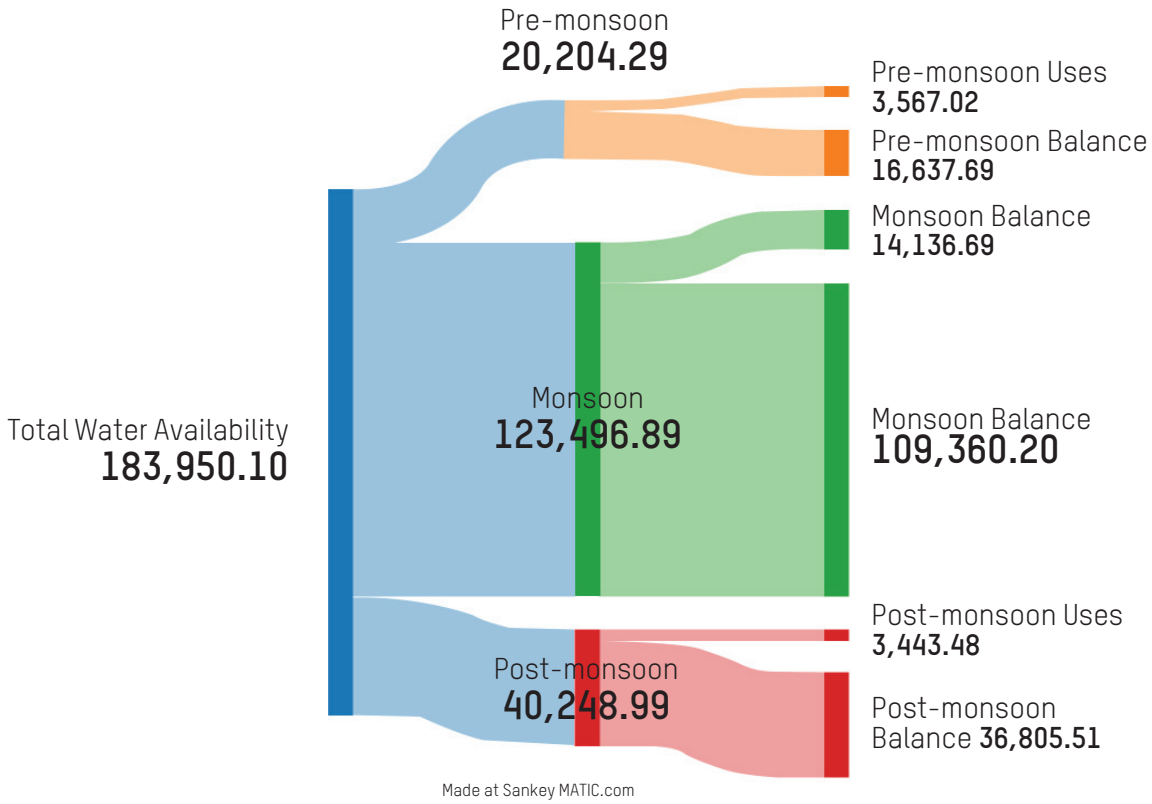
The integration of water availability and demand leads to a summary analysis, which includes watershed and municipal summaries for decision-making. This structured approach enables stakeholders to identify gaps, assess sustainability, and make informed water resource management decisions. By incorporating precipitation data and standardized water demand values, the framework supports evidence-based planning, ensuring a balanced approach between water supply and consumption. The inclusion of summary charts further enhances data visualization, making it easier to interpret trends and patterns for effective water governance.



Based on the above framework, Oxfam, in collaboration with the Water Energy Commission Secretariat (WECS), piloted a water accounting tool in the Rangoon Watershed to assess water availability and sectoral demand. Covering 476.64 square kilometers across three local units, the project involved mapping springs, rivers, ponds, and other sources, as well as measuring seasonal flows and estimating domestic, agricultural, industrial, and institutional water demands. Using KoboCollect and trained enumerators, data was gathered across multiple seasons, integrated into a digital database, and visualized through the tool. This initiative provided local governments with an evidence for sustainable water resource management and improved decision-making in the watershed.

5 COP-WATER RESOURCE MANAGEMENT

At federal level, Oxfam is now the secretariat of the Water and Energy Commission Secretariat (WECS) to support the Community of Practice (CoP) on water resources, which serves as a collaborative platform bringing together government agencies, donor agencies, local communities, academia, civil society, and private sector actors for collective action. The CoP facilitates the sharing of knowledge, best practices, and innovative solutions for sustainable water management. It fosters dialogue on critical issues such as water governance, quality monitoring, conflict resolution, and climate resilience, while promoting participatory approaches like citizen science and watershed-based planning. By strengthening networks and enhancing collective learning, the CoP builds local capacity, improves policy coherence, and ensures inclusive, evidence-based decision-making for resilient and equitable water resource management in Nepal.



Total water availability in Rangoon Watershed

6 WAY FORWARD

The implementation of Watershed project has provided way forward that emphasizes scaling the watershed-level governance model to strengthen upstream-downstream collaboration and align local plans with national river basin strategies. It calls for enhanced multi-stakeholder coordination, improved data systems, and sustained community engagement to ensure equitable and resilient water management. Integrating this approach into government policies and institutional frameworks will be crucial for long-term sustainability and replication across 690 Watersheds[9] in Nepal. Oxfam in Nepal in coordination with WECS will contribute in the following ways.

- Contribute to the Community of Practice on water resource management through tracking the Response strategy on water resources.
- Implement water governance structure with local government endorsement and WECS basin office coordination in other basins.
- Implement a conflict resolution model for water-related disputes in other basins.
- Develop water quality data using citizen science and integrate it into a central data portal and support for citizen science data collection manual.
- Develop citizen-led River Health Report for Mahakali River basin.
- Apply water accounting tool to assess water availability, use and demand.
- Support the development of a watershed-level management plan for the Rangoon Watershed using available data.
- Identify required hydrology and meteorology stations and contribute to their establishment.
- Promote livelihood opportunities for vulnerable and marginalized communities.
- Assess and enhance community flood early warning systems and support anticipatory disaster actions.
- Develop operational guidelines for basin offices to improve multi-stakeholder coordination.

Through these efforts, Oxfam in close coordination with WECS and other stakeholders aims to strengthen climate-resilient water governance by bridging policy, practice, and community action. By fostering inclusive multi-stakeholder collaboration, promoting evidence-based decision-making, and supporting sustainable livelihoods, Oxfam will contribute to building resilient landscapes and communities. These collective actions will not only enhance local adaptation capacities but also provide valuable insights and scalable models to inform global dialogues and commitments at Community of Practice-Water Resource Management.

[9] https://www.researchgate.net/publication/325542111_Forests_and_Watershed_Profile_of_Local_Level_744_Structure_of_Nepal_Government_of_Nepal_Ministry_of_Forests_and_Soil_Conservation

ABOUT OXFAM

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