Water Use Master Plan: A Gateway to Integrated Water Resource Management in Small-scale Watershed Area

(An Experience from the Rural Village Water Resources Management Project - RVWRMP[1])

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Abstract

Community participation in water resources planning and management is important for promoting water governance and sustainable best uses. Disputes over uses of water sources, depletion/drying source yield, effective and efficient use of existing water sources are emerging challenges in rural areas of Nepal. To address such emerging issues, the Water Use Master Plan (WUMP) approach has been developed and practiced in more than 200 VDCs of Far and Mid-western Nepal. The WUMP is a process-oriented approach using holistic, participatory and inclusive planning based on the integrated water resources management concept at micro watershed level. It explores: water provision for both domestic and productive uses and provides the opportunity to address poverty and promote better livelihood using decentralized governance. The WUMP enables the community to prioritise potential best uses and conservation technologies of water resources and also identify the total water budget and potential resources organizations. Multiple use water systems (MUS) are promoted wherever feasible. The WUMP fosters effective, equitable and efficient use of water at local level and minimises water conflicts. The WUMP approach emphasizes the identification of all water sources at VDC level (micro watershed level) for individual and multiple water schemes implementation, and raises the awareness of communities of potential future demands. It provides a common platform for the local community, including disadvantaged groups, and empowers them to claim their right to equitable sharing of water within and between communities.

The benefits of productive water use are manifold. Increased domestic water facilitates better health and increased agricultural production, increases food security, creates new local employment opportunities and raises household incomes of smallholders. This article reflects the WUMP approach as an effective planning tool for sustainable water management at local level, its process and experiences of RVWRMP.

Key words: Water Use Master Plan; Multiple Use System; Integrated Water Resources Management, equity.

Background

Even in water abundant countries like Nepal, which as traditionally had plenty of water, it has been realized that climate change has been affecting the natural resources. Especially, fresh

water resources are facing threats worldwide due to depletion of sources. Water scarcity has reached or is likely to reach crisis proportions at globally. Multiple uses of water are rising, increasing the draft on the limited potential. (Shah, C.H., 2005). According to many studies, in the climate change perspective, Nepal is one of the high risk countries. Water is one of the principal natural resources supporting the economy of Nepal and fulfilling its basic needs (drinking, cooking and sanitation). The right to water and sanitation has been recognised as a basic human right due to its vital role for human life. Bilateral and multilateral aid agencies have been involved in Nepal's rural drinking water and sanitation sector since the 1970s. (Lutel, A., 2000). "Provision of safe drinking water to Nepal's population has received high levels of attention and been a major program by both governmental and nongovernmental agencies". (Bohara, R. C., 1998).

Given its multiple uses, the demand for utilization varies according to the needs and the availability of water, and optimization in its utilization is important. "As our needs for water increase, priorities must be established, and everyone must understand that we don't get "new" water; we constantly use and reuse those same H_2O molecules. Hence our need for ever more precise knowledge of the characteristics of high quality water and constant monitoring of all the systems that provide water for our No. 1 priority – drinking water." (Mary E. H., 1975).

Implementation of rural water schemes for the most vulnerable communities is always a challenge for the sector. While developing projects, in most of the communities, elites influence the planning through manipulating information and amplifying their voices, and unreached disadvantaged communities remain at the back with low voices which are not heard. To address these issues, the Rural Water Supply and Sanitation Project (RWSSP: jointly funded by Government of Nepal and Finland – or the so-called Lumbini project), was supported to develop District Development Plans of six districts of Lumbini zone, focusing to increase drinking water facilities of rural communities during 1990-1995. The project supported collection of information of water sources (surface/ground water) from all the villages (nearly 3,100 villages of 408 Village Development Committees in the Lumbini Zone) to determine the relative service level and hardships of different areas. Service level and hardship was the main criteria used in selection of areas for water supply projects in the RWSSP so as to prioritize the area in real need, which also helped to avoid any possible external influence in the selection of projects. Hardship was a function of service level which was determined on the basis of quality, quantity, accessibility, reliability of the source and continuity of the facility (Bohara, R.C. 1998).

From the learnings of the past, it was realized that the issues of non-coordination, source dispute and investment decisions could be better addressed if integrated water resources management were followed. At the same time, it was agreed that community consensus was key to the success of the development and management of water resources and coordination with various stakeholders was essential. The Water Resources Management Programme (WARM-P/Helvetas) initiated the Water Use Master Plan (WUMP) concept in Bajung VDC of Parbat district as the "Water Resources Management Study" in 1998. RVWRMP started to develop WUMPs from 2007 in the Mid and Far-western development region. Under RVWRMP facilitation, to date 109 VDC WUMPs have been developed in its 10 working districts, and WARM-P Helvetas has been continuing to facilitate WUMPs in its working districts.

While utilizing and planning the water resources, in many communities, we can observe disputes among users on their utilization priorities and ownership over the sources. To minimize the disputes and maximize the productive water use, RVWRMP has been facilitating VDCs to carry out a water resource inventory, studying its current utilization and best potential future utilization considering the climate change and disaster risks; analysing the present water facilities including the

functionality of existing systems; and also enhancing the institutional capacity of VDC level stakeholders to establish hardship concepts to prioritize the water schemes under the WUMP.

Introduction of Water Use Master Plan

A WUMP is a participatory, bottom up planning approach. It stresses consensus building among the community members and between communities. The WUMP approach emphasizes inclusion and responsibility of all stakeholders in the planning, negotiation and in decision making, and therefore improves local governance. The WUMP approach follows the Integrated Water Resources Management concept, specifically to the Guiding Principles from the Dublin Statement, mainly the following:

- community-managed;
- bottom-up;
- inclusive;
- strengthening local capacities;
- enhancing awareness on key issues, such as sustainability, efficient use of water, climate change etc.;

VDCs have realized the importance of WUMP and hence they have owned it. All VDCs have been contributing around half of the WUMP cost in RVWRMP working area.

Water Use Master Plan as a planning approach

The WUMP is a participatory and inclusive approach for integrated planning and management of water resources. This process heavily uses the tools of Participatory Rural Appraisal (PRA) and focuses on water, its sources and uses and it applies an Integrated Resources Management (IWRM) approach on a unit area (WARMP/Helvetas). The WUMP encompasses capacity development of local communities and local institutions to improve the planning for equitable and efficient use of water to improve water supply and livelihoods. This is particularly important within a smaller unit of a watershed like a Village Development Committee (VDC) or one or two wards, for management at community level. VWASHCC is leading the whole process of WUMP at VDC level and ward citizen forum are responsible in ward level process with technical inputs from local experts.

The WUMP approach gives more emphasis to the participatory process of data collection, analysis, debate, prioritization and agreement, and recording the results for public display. It incorporates many issues such as the inclusion of all stakeholders (especially women and disadvantaged or vulnerable groups); and an integrated and coordinated planning for synergy with other sectors associated with water, health and livelihoods. (www.wumpdata.com)

Water Use Master Plan as a product

The Water Use Master Plan (WUMP) is a plan for optimal use & protection of water resources considering hygiene & sanitation promotion, livelihood opportunities, sustainability measures of existing & future water schemes and human resources demands for sustainable development.

WARM Chair

The WUMP follows the Water Resource Management (WARM) Chair model, and incorporates the following components, as explained in the figure 1 (source: National WUMP Guideline):

Water uses (four legs)

1. Drinking water, sanitation and hygiene
2. Irrigation and drainage
3. Environment and ecology
4. Energy and other purposes.

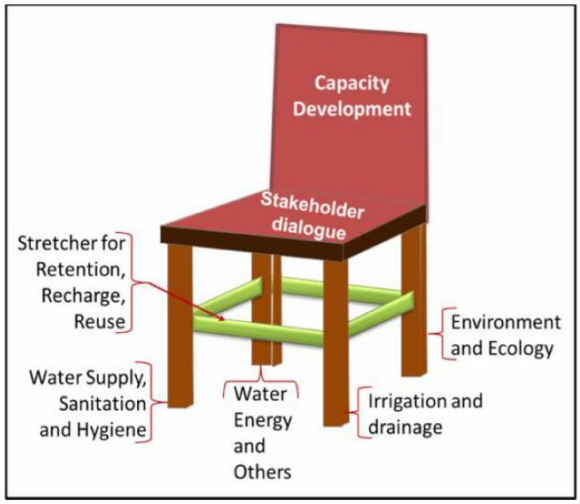

Figure 1: WARM Chair Model

WUMP preparation process/Steps

WUMP preparation is a 17-step process as illustrated in Figure below.

Implementation Phase	17 WUMP Updates
	16 Marketing and implementation
Planning Phase	15 Dissemination at district level and endorsement by DDC
	14 Approval of WUMP by VDC council
	13 Final WUMP report preparation
	12 VDC level planning workshop
	11 Preparation of preliminary WUMP report
	10 Ward level planning workshop
Assessment Phase	9 Technical assessment
	8 Socio-economic assessment and needs identification
Capacity Building Phase	7 Capacity building for VDC and V-WASH-CC members
	6 Activation of V-WASH-CC
	5 Ward level orientation and activation of ward citizen forum
	4 Preliminary WUMP orientation at VDC level
Preparatory Phase	3 Selection and training of service providers
	2 Establishment of memorandum of understanding
	1 VDC Decision to prepare WUMP

Note: for details ref: http://rvwrmp.org.np/rvwrmp-documents.html

The Water Use Master Plan includes:

- Inventory of available water sources; their current use, condition/status and analysis of the best potential use for future.
- Inventory of existing water schemes (water supply, irrigation, micro hydro etc.) and their functional status and service level;
- Socio-economic baseline information (disaggregated by gender, caste or other relevant group criteria) to provide information for projected water needs and conflicts (if any);
- A balanced water resources development plan with due consideration of sanitation, hygiene and water rights and social, environmental and economic sustainability criteria; sector/activities priority.
- Gender sensitive, inclusive, pro-poor and socially accepted water development priorities of the communities;
- Analysis of the best technological option (Gravity, RWH, lifting, PSI, Canal, MIT, HR, P/MH, Livelihood…...) for the communities
- Analysis of the upstream-downstream relationships of available water resources.
- Preliminary design and costing of potential investments and other support activities such as capacity building;
- Assignment of responsibilities for the implementation of the plan.

Scope and Opportunities

Policy aspects

The Government of Nepal approved the Water Resources Strategy (WRS) in January 2002 with an objective to improve the living standard of Nepalese people in a sustainable manner. In order to implement the activities defined by the Water Resource Strategy, the Water and Energy Commission Secretariat (WECS) developed the National Water Plan (2005) of Nepal, which emphasizes the integrated water management concept. According to the plan, "the IWRM is defined as a process that promotes the coordinated development and management of water, land and related resources to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems".

Nepal has enforced the legal provisions for utilization of water resources in different purposes through Section 7 of the Water Resource Act 1992 (2049 BS). The act has segregated the priorities of different uses of water in the following way:

1. Drinking water and domestic use
2. Irrigation
3. Agricultural use such as animal husbandry, fisheries
4. Hydroelectricity
5. Cottage industry (e.g. water mill or grinder), industrial enterprises and mining
6. Navigation
7. Recreational use
8. Other uses

The draft of the "Guideline on the application of Water Use Master Plan (WUMP)", (the National WUMP Guideline), (SEIU, 2015) explains that the WUMP process is governed by the key aspects of the following acts and policies:

Local Self Governance Act, 1999

- Delegates authorities to local government institutions for formulating plans, implementation and monitoring
- Makes provision for periodic planning in local governments
- Anticipates the participation of citizens in the planning process at ward and village development committee level

Water Resource Strategy, 2002

- Emphasizes the role of local communities and stakeholders at basin level to manage watersheds effectively with participatory mechanism.
- No provisions by which local institutions are established at basin level.

Water Resources Act, 1992 and its regulation, 1993

- Sets priority of water use in allocation: 1st priority drinking water, 2nd priority irrigation, 3rd priority livestock and fishery, 4th priority hydropower

National Water Plan, 2005

- Aims for efficient delivery of water services through decentralized management (local government unit or locally constituted institutions) to avoid unnecessary overlaps
- States that empowerment and capacity building of local institutions are the key to decentralization.
- Emphasizes the need to resolve governance problems due to lack of transparency and accountability

National Sanitation and Hygiene Master Plan, 2011

- Provision of multi stakeholders coordination committee at VDC/Municipality level
- Encourages total sanitation and hygiene promotion to meet the national goal and the Millennium Development Goals

Local Adaptation Programme of Action (LAPA) to climate change, 2011

- Fosters the development of local adaptation plans, which reflect location or region specific climate change hazards and impacts.
- Supports adaptation options that are available locally and that are accessible to the most vulnerable communities and households, including women.
- Seeks integration of local adaptation priorities into village, municipality, district and sectoral level planning processes in accordance with the Local Self Governance Act.
- Emphasises iterative adaptation planning through constant monitoring, evaluation and feedback.

The LAPA Framework ensures that the process of integrating climate change resilience into local-to-national planning is bottom-up, inclusive, responsive and flexible.

Political context

Constitutions and laws are highly influenced by the major political parties who rule the country. Since, the integrated water management approach has been accepted by the major political parties in Nepal, it is an opportunity to take the direction of water resource management in integrated way. For instance, the political programme of Communist party of Nepal (United Marxist and Leninist) is "People's Multiparty Democracy". This programme also emphasizes the multiple uses of water resources. However, it has visualized at the higher level with the megaprojects. "High priority will be given to the multi-sectoral utilization of water resources, energy development and infrastructure development" (Election Manifesto of CPN-UML, 2013). The concept of Nepali Congress for the holistic development of Nepal, in its Election Manifesto also emphasized the multi-use of water resources approach (Election Manifesto of Nepali Congress, 2013).
The political commitments have been reflected under point of "G (2)" of article 51 of the new Constitution of Nepal with a statement "the state shall pursue a policy of prioritizing national investment in water resources based on people's participation and making a multi-utility development of water resource" (Constitution of Nepal, 2015). However, there are many laws and related acts are yet to be developed to unfold the statements of the Constitution into practices.

Learnings of RVWRMP

- A careful inventory of water sources forms an important basis
- Implementation must be based upon community priority and hardship (without pressure from any elites or political parties) to select the water scheme
- Support should be given to build up community harmony; the WUMP is an effective tool for resolving water conflicts.
- Holistic planning of water resources, including multiple uses for livelihood improvement, is important to build up ownership.
- Disadvantaged groups should participate on equal terms in planning and management of water resources → Increased equality in access to water services;
- The WUMP can make a contribution to the sanitation/hygiene social movement → ODF campaign;
- The WUMP process encourages more resources mobilization in VDCs & increased effectiveness.
- VDCs adjoining the WUMP VDC are highly impressed with the WUMP process - requests for new WUMPs are increasing.
- Inclusion of CCA and DRR perspectives in planning supports sustainable use of water resources;
- The WUMP can be prepared by local capacities.
- The WUMP is a living document for water sector planning and implementation for rural communities.

Conclusion:

The WUMP approach is an effective method to assess the existing water facilities, and to inventory the water sources - their present use and best potential future uses. It is a process that emphasizes the participation, inclusion and shared the responsibility of all stakeholders in planning, negotiation and decision making; thus, enhancing the water governance and harmony among the communities. It is a tool that helps evaluation of competing demands and management of any potential source dispute/conflict. It supports enhancement of the community capacity on effective water management, including potential climate change impacts, and helps local bodies with annual planning.

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