Abstract/Summary

With a view to address emerging challenges and issues with respect to water resources, such as source disputes due to mounting competition for water and improper planning and management, the Water Use Master Plan (WUMP) approach was developed.

WUMP is a process-oriented approach to holistic, participatory and inclusive planning for integrated water resources management at local level. The approach has been developed and continuously updated since 2001 based on the long-term field experience of HELVETAS Swiss Intercooperation in Nepal. It is expected that it can be adapted to different contexts. The WUMP specifies the total water budget in a village and indicates potential uses. It helps to foster effective, equitable and efficient use of water at local level and manages water conflicts. It provides a common platform to the local community including disadvantaged groups and empowers them to claim their right for equitable sharing of water within and between communities.

Introduction

Nepal is a small country but blessed with abundant water. There are more than 6000 rivers, numerous rivulets and spring sources in the country (Water and Energy Commission Secretariat, 2005). According to the latest census data the total population of the country is about 27 Million. About 88% and 31% of the population in Nepal have access to improved water source and improved sanitation, respectively (JMP, 2010). According to another source the coverage of improved water supply and sanitation services in Nepal is about 80% and 43%, respectively (DWSS, 2010). The water supply coverage does however not reflect on the actual functioning and service level of existing water supply schemes: about 43% of the water schemes are either non-functional, need rehabilitation, reconstruction, full replacement or major repair (NMIP, 2010). It can therefore be assumed that about half of the population lacks access to improved water supply. The situation is generally worse in rural and remote areas.

This is confirmed by the Water Resource Management Programme’s own findings: good and moderate service level of water supply in the rural areas of the Mid and Far Western Development Regions are only about 19% and 29%, respectively (WARM-P, 2010). The access to sanitation facilities in the same area is only 14% on average. The programme adopts criteria of defining service levels based upon the parameters of fetching time to collect water, quantity of water available, quality (based on observation), reliability during the year and continuity in a day (WARM, 2007). See box-1
Water Use Master Plan (WUMP) is an approach of the Water Resources Management Programme of HELVETAS Swiss Intercooperation. The programme has been working since 2001 and was evolved based upon HELVETAS Swiss Intercooperation’s experiences and lessons learnt from its preceding programmes in the sector. At present this programme is working in four districts, Dailekh, Jajarkot and Kalikot of the Mid Western and Achham of the Far Western Development Regions of Nepal. The programme has recently phased out from two more districts, Doti and Dadeldhura of the Far Western Development Region in 2010. It supports Village Development Committees and communities in rural areas for water resources management initiatives through the WUMP. It also supports communities to implement water supply and sanitation schemes prioritized in the WUMP.

By the end of the 1990s it was evident, that the success of water projects was often constrained by source disputes due to a mounting competition for water, inappropriate planning and improper use of water sources. Many of the problems in the drinking water supply and sanitation sector are related to improper management of water resources. The lack of participation of stakeholders, especially disadvantaged groups, in planning and implementation of drinking water and sanitation schemes reflects the lack of coordinated and inclusive planning at local level. A water source generally has to serve several communities for different purposes. Often, a community is reluctant to share water from their source with other communities. Or they may extract the maximum volume of water from the source leaving no or less water for others downstream. It often happens that communities propose distant sources for drinking water schemes even though suitable
sources close-by would exist. By doing so, communities try to get access to and control over additional water sources. The increasing cases of depletion of water sources are further complicating proper management of the available water sources.

Taking into account all the source disputes within the villages and between villages as mentioned above, it was necessary to identify and address potential disputes over the use of water sources early in the process of working with communities. It had also become clear that water related issues could not be considered in isolation but needed to be approached in a holistic manner.

In response to this situation and the lessons learnt, HELVETAS Swiss Intercooperation Nepal developed the WUMP approach, a promising way of dealing with the challenges and issues of proper management of water resources. Village Development Committees and communities are facilitated to prepare a WUMP by incorporating all possible uses of the existing water sources.

The Government of Nepal has prepared various policies and strategies to foster better coverage of water supply and sanitation. The Rural Water Supply and Sanitation National Policy 2004, targets to achieve universal (100%) coverage of water supply and sanitation in the country by 2017.

To achieve the above goal, the Government of Nepal has the leading role in coordinating the water and sanitation sector. The investments have been made through the Department of Water Supply and Sewerage under the Ministry of Physical Planning and Works and the District Development Committees under the Ministry of Local Development throughout the country. The Government of Nepal has formed a separate national water board called Rural Water Supply and Sanitation Fund Board to support the sector. The board has been working since long time through the support of the World Bank. Other major programmes, other than these national ones, working in the Mid and Far Western region in rural water supply and sanitation are the following:

- Rural Village Water Resources Management Project has been working in nine districts of the Mid and Far Western Development Region since 2006. The project is being implemented through the support of Nepal-Finland Cooperation.
- Unicef is supporting the Government agencies in the regions to promote hygiene and sanitation.

**Description of the Approach**

**Purpose:** The WUMP is an approach to holistic, participatory and inclusive planning that focuses on water resources and its potential uses. The planning unit is the Village Development Committee, the lowest administrative unit in Nepal. The Village Development Committee owns the plan and takes the responsibility of its implementation.

The purpose of a WUMP is to achieve an effective, equitable and efficient use of water at the local level by delegating water resources planning and management to the local community. This should ensure the rational use and equitable sharing of water resources among and within communities in a sustainable way considering all different needs and requirements.

The specific objectives of a WUMP are:

- Water resources and related infrastructures/facilities are identified;
- Potential activities in the water sector are prioritized;
• Sound and long-term investments in the water sector are achieved; and
• Conservation of water resources and natural resources linked to water is promoted.

**Principles:** The WUMP approach also responds to the international discussion on Integrated Water Resources Management, specifically to the Guiding Principles from the Dublin Statement. A WUMP is developed through a participatory, bottom-up planning process. It stresses consensus building among the community members and between communities. The WUMP process emphasizes inclusion and responsibility of all stakeholders in the planning, negotiation and in decision making, and therefore improves local governance. Thus it empowers the marginalized members of a community. The WUMP approach adheres to the following principles:

- The process is community managed;
- The process is bottom-up;
- The process is inclusive;
- Local capacities are strengthened;
- Awareness on key issues, such as sustainability, efficient use of water, climate change etc., is enhanced;
- A balance of water supply and demand is maintained.

**Process:** WUMP preparation is a 17-step process as illustrated in Figure 1. The step-wise WUMP preparation process comprises three main phases; pre-planning phase (steps 1 to 5), planning phase (steps 6 to 13), and post-planning phase (steps 14 to 17). These are described in **box-3**.

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<th>Box-3: WUMP phases and steps</th>
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**Pre-planning phase:** Pre planning phase includes steps 1 to 5. It starts with the selection of the Village Development Committee followed by memorandum of understanding between the Village Development Committee, District Development Committee and Resource Organization (Water Resources Management Programme in this case). The next steps are social mobilization, formation of inclusive water resources management committees. This phase requires about 3 month time.

**Planning phase:** Planning phase includes steps 6 to 13. In this phase capacity building training to water resource management committees is organized followed by coordination a workshop to inform sector agencies about the preparation of the WUMP and to get information about their programme by the Village Development Committee. Socioeconomic data are collected through social assessment by using various Participatory Rural Appraisal tools. Simultaneously a technical assessment is carried out to determine discharge of water sources, their potential use and pre feasibility of water projects. It also assesses the inventory of existing water schemes. (See picture-1, Social Assessment and picture-2, Technical Assessment). In a workshop facilitated by local service providers, generally staff of non-governmental organizations, the communities discuss on the outcome of the two participatory assessments and prioritize possible projects and finally formulate the WUMP. The Village Development Committee representatives then decide on the actions that can be implemented from the
Village Development Committees’ own resources and which ones need to search for external support. This phase requires about 6 month gross time. The preparation of the WUMP is completed by this phase.

**Post planning phase**: Post planning phase includes steps 14 to 17. This phase has activities of implementation of water projects. The Village Development Committee approaches and markets their WUMP to various resource organizations in order to get their commitment for the implementation of water projects. This phase is a continuous process for the implementation of water projects. In general the Village Development Committee formulates a short term (5 year) and a long term plan. After 5 years it updates the WUMP, which includes the re-prioritization of the activities. A typical tap stand after construction of a water scheme is shown in picture-3. Awareness raising and consensus building is inbuilt in every relevant step and throughout social mobilization.

![Picture -3: A typical tap stand](image)

**STEP-WISE WUMP PROCESS**

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<tr>
<th>Step</th>
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<td>1</td>
<td>Village Development Committee selection</td>
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<td>2</td>
<td>Memorandum of understanding with Village Development Committee</td>
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<td>3</td>
<td>Rapport building and social mobilization</td>
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<td>Water resources management sub-committees formation</td>
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<td>5</td>
<td>Water resources management main-committee formation</td>
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<td>6</td>
<td>Capacity building training to main committee</td>
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<td>Capacity building training to sub-committees</td>
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<td>8</td>
<td>Pre-WUMP workshop at district level</td>
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<td>9</td>
<td>Social assessment &amp; need identification</td>
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<td>10</td>
<td>Technical assessment</td>
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<td>11</td>
<td>WUMP planning workshop (sub committee level)</td>
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<td>WUMP planning workshop (main committee level)</td>
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<td>13</td>
<td>WUMP final report preparation</td>
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<td>14</td>
<td>Post WUMP workshop at district level</td>
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<td>15</td>
<td>Implementation of different projects</td>
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<td>16</td>
<td>WUMP realization and marketing</td>
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<td>17</td>
<td>WUMP follow-up</td>
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**Fig-1: The 17 Steps of WUMP Approach**
**Stakeholders:** The main Stakeholders of the WUMP approach are:

- **Communities** participate in the WUMP process, plan water use and manages water projects;
- **Local Authorities** take a lead role in the WUMP process, assure endorsement and ownership over the plan and responsibility for its implementation;
- **Local Service Providers** support communities to facilitate the planning process, social, technical assessments and capacity building;
- **Resource Organizations** support the Village Development Committee for the preparation and implementation of WUMP. These organizations include the projects, donors or sector agencies.

**Content of WUMP:** The final report of a typical WUMP consists of the following components:

- Inventory of available water resources, their current and potential use and conflicts;
- 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, cast or other relevant group criteria) to provide information for projected water needs;
- A balanced water resources development plan with due consideration of sanitation and water rights and social, environmental and economic sustainability criteria;
- Gender sensitive, inclusive, pro-poor and socially accepted water development priorities of the communities;
- Preliminary design and costing of potential investments or other activities such as capacity building;
- Assignment of responsibilities for the implementation of the plan.

The approach is also described in more detail in WUMP issue sheet. (HELVETAS, 2009).

**Main results and lessons learnt**

The main product of the planning process is a master plan owned by the local stakeholders. A total of 82 Village Development Committees have prepared their WUMPs so far through the facilitation of the Water Resources Management Programme (WARM-P, 2011). More than 300 rural drinking water supply and sanitation schemes have been implemented to serve about 100,000 people through the programme’s support and based on the priorities as set in the WUMPs. About 100,000 additional people have benefitted through 228 drinking water schemes that have been implemented according to the priorities of WUMPs by other resource organizations such as the Rural Village Water Resources Management Project (RVWRMP, 2010). On average community and local authorities have contributed about 20% and 5% respectively of the total construction cost for construction of the schemes. The operation and maintenance fund collected by users have been found about 2% of the construction cost by the time of follow up monitoring after two years of construction.

The plan also provides guidelines for annual and periodic planning and prioritization of activities by local bodies and authorities. It is further a helpful tool to approach donors and government
agencies to find resources for investment in the water sector. On the social aspects a local platform for water planning is set up to ensure equal access to water resources. Besides the plan itself, there are important outcomes of a WUMP process, both on technical as well as on social aspects:

- Disadvantaged groups participate on equal terms in the planning, negotiation and decision making of water resources in a community;
- Equitable access to water sources;
- People are aware of the social as well as the economic value of water;
- The need for environmental sustainability and source protection is recognized;
- Women’s role as “water managers” is properly taken into account and recognized;
- Village Development Committees are able to acquire funds for water projects;
- Water losses are reduced and excess water is used productively;
- A knowledge base for water resources information is created.

Ghanteshwor Village Development Committee has been the first Open Defecation Free Village Development Committee in the district. The Village Development Committee achieved 97% of coverage of piped water supply by December 2010. (See Box-3)

Box-3, Ghanteshwor, a First Open Defecation Free Village in Doti District:

Ghanteshwor Village Development Committee is located in Doti District of the Far Western Development Region. The Village Development Committee prepared their WUMP in 2003 through the support of the Water Resources Management Programme of HELVETAS Swiss Intercooperation.

Before the preparation of the WUMP there was about 35% coverage of the population by piped water supply and 4% of sanitation coverage, respectively. The socioeconomic data of the Village Development Committee is as follows (status 2003):

- Total Households: 541
- Total Population: 2559, Female: 1259, Male: 1300

The social and technical assessment identified 173 water sources (50 springs, 31 streams and 66 spouts/wells). The Village Development Committee planned a total of 18 drinking water schemes (13 new schemes and 5 for maintenance and extension) under the WUMP. The water supply service level was found 0% good, 38% moderate, 57% poor and 5% very poor.

By the end of December 2010, the Village Development Committee had 100% coverage of sanitation. A total of 11 schemes (7 new and 4 maintenance and extension schemes) were implemented to benefit 2,480 population. If this population is compared with the base year population of 2003, about 97% population have access to piped water supply. All of them have either good or moderate service level of water supply. After construction of 568 toilets (548 household level, including new households that were not present in the base year, and 20 institutional) the Village Development Committee declared Open Defecation Free (restricted area for open defecation) on 28 December, 2010. The Open Defecation Free initiative was financed jointly by the District Development Committee of Doti district, Rural Village Water Resources Management Programme and the Village Development Committee. In a declaration ceremony, the Committee awarded a letter of appreciation to the Water Resources Management Programme for its contribution to promote water and sanitation (see pictures-4).
In addition to the outcomes mentioned above, the WUMP approach has been a matter of interest for many donors, government and non-government organizations in Nepal. The Rural Village Water Resources Management Programme (Nepal-Finland cooperation) and the Livelihood Improvement of Vulnerable and Excluded (EU support) have replicated the approach. A leading national non-governmental organisation Nepal Water for Health (NEWAH) has also replicated the approach. Moreover, the Department of Local Infrastructure Development and Agriculture Roads under the Ministry of Local Development has expressed its interest in developing national guidelines for the preparation of WUMPs in all about 4000 Village Development Committees of Nepal.

Although the WUMP approach is promising for the planning and management of water resources, its implementation and success depends on the capacity and ownership of the Village Development Committee. For this reason capacity building at local level and awareness raising are prerequisite.

**Conclusions and Recommendations**

The WUMP approach is a practical tool for local actors to address water management issues in a proper and integrated way. It is a process oriented approach and does not only focus on the product. Through the participatory and inclusive process, preparing a WUMP will not only improve the management of water resources but will also have an impact on good governance. The increasing demands on water for different uses, the growing population in rural areas require a planning and management tool such as the WUMP to cope with these challenges at local level and to foster sustainability of water projects.

While the WUMP has been developed in Nepal, it is assumed to be applicable to the conditions in other countries with minor modification. In Nepal there is currently the thrust to make a cost efficient WUMP by using local resources and simple technology which would enable the Government to upscale the approach to all Village Development Committees of the country.

Another issue is the planning unit for the WUMP. For the ownership and implementation of the plan, it has been developed on the basis of the Village Development Committee boundary or clusters of these committees. From a water resources perspective and herewith conflict mitigation between administrative units, following the division of watersheds would be more appropriate. Thus WUMP is a successful approach to catalogue and harness water resources socially and technically, distribute equitably and use optimally.

**References**

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