Photo: Silvia Voser

WATER USE MASTER PLAN (WUMP)

A concept to equitably share water resources within and amongst rural communities

SUMMARY

WUMP is a planning tool and process similar to a Participatory Rural Appraisal (PRA) using some of its instruments. It focuses on water, its sources and uses, and it applies an Integrated Water Resources Management (IWRM) approach. WUMP is not just a new and attractive theoretical concept. It is a tool that has been developed based on a series of experiences and it can be adapted to different contextual situations. It is a response to the widely felt need for an instrument for local actors to address water management issues properly. WUMP is not developed around a particular project or for a specific water sector (e.g. irrigation or sanitation project) but looks at water resources, water demands and potential uses in a broad and integrating way, hence the term "Master Plan". The planning unit is the local community which through the planning process acquires and obtains ownership over the plan and responsibility for its implementation. As a participatory and transparent planning process, WUMP empowers marginalized groups to accessing water pursuing equitable sharing of water within and between communities.

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1. PURPOSE

The purpose of a Water Use Master Plan (WUMP) is to achieve an effective, equitable and efficient use of water on a local level. The goal of developing a WUMP is to delegate water planning and management to the community level, and by doing so to ensure that water resources are used rationally and shared equitably and fairly among and within communities in a sustainable way considering all different needs.

Specific objectives are (a) to identify water resources and related infrastructures/facilities, (b) establish priorities of potential activities in the water sector, (c) achieve sound and long-term investment in the water sector, and (d) promote conservation of water resources and natural resources linked to water.

Furthermore, there are two important additional purposes: (a) to establish synergies with decentralization processes and (b) to use water as a common resource as catalyst for capacity development in a stepwise learning by doing process.

2. PRINCIPLES

Based on an Integrated Water Resources Management (IWRM) approach, a WUMP is developed through a participatory, mainly bottom up planning process. It stresses consensus building among community members and between communities that water resources need to be shared equitably and fairly in a sustainable manner for different uses.

The WUMP process emphasizes the inclusion and responsibility of all stakeholders in the planning, negotiation and in decision making, and therefore it improves local governance. Thus it empowers the marginalized members of a community and restrains the powerful ones. WUMP adheres to the following principles:

Photo: Silvia Voser

- **The WUMP process is community managed.** The needs and interests of the community are the starting-point for launching a WUMP process. The main partner for developing a WUMP is the (elected) local government body of the community. All stakeholders must agree to develop a WUMP and must be willing to cooperate. If considered necessary, a water resources management committee may be formed at the local level, in which all different groups of the community are legitimately represented.

- **The WUMP process is bottom-up.** Through this process sub-committees can be formed to develop specific topics (e.g. to conduct social mapping or prepare water source inventories).

- **The WUMP process is inclusive.** The WUMP process is built upon the principle of creating socially inclusive community forums that develop the plan. Membership in committees is not simply tokenistic or symbolic. The active participation of women and marginalized groups is required and promoted accordingly. External facilitation may provide coaching and support to ensure that all stakeholders can raise their voice and articulate their concerns.

- **Local capacities are strengthened.** External facilitation may also support committees headed by local leaders. Empowerment and capacity building of disadvantaged groups through various trainings will enhance broad ownership and improve inclusiveness and sustainability.

- **Awareness on key issues is enhanced.** Key issues such as ensuring sustainability of water supply through source protection and good management, minimizing water wastage and setting priorities (water savings, water for crops, water for livestock, increase availability, control etc.) require room for dialogue of different perceptions and negotiation of conflicting interests.

- **Balancing water supply and demand.** Managing water sustainably is essentially balancing demand with the available supply. Trade-offs are often necessary between different uses and users, and priorities have to be jointly decided.

3. PROCESS

A WUMP has to be practical, adapted to the local and national institutional framework, sensitive to cultural and social conditions and technologically appropriate. Therefore, guidelines are formulated here in rather general terms. They should be seen as basic elements which need appropriate and careful interpretation and adaptation to the local context. Communities may need support to acquire the institutional and technical capacity to plan water use and manage water projects responsibly. The central element of a WUMP process is to ensure inclusive participation and ownership, particularly of women and members of marginalized and disadvantaged groups (e.g. ethnic or religious minorities, tribes).

Key element of the planning process is a comprehensive inventory of resources, infrastructure facilities, institutions and power relations through the communities themselves. This inventory must be objective, broad, participatory and creating local ownership. The WUMP process will include the following activities or steps, which reflect the overall “inventory character” mentioned above:

- initiate the process by facilitating community meetings, providing support in capacity development and confidence building;

- carry out an inventory of all existing water sources, including an assessment of the in situ conservation and rain water harvesting potential;

- assess water availability and quality of each source throughout the seasons, and determine whether the source is protected or whether it can be further developed;

- determine who has access to water sources and how water is allocated and point out if there are differences of access based on different groups or gender;

- highlight existing or potential conflicts over water within the community but also with neighbouring communities; if inter-communal conflicts exist, include the communities in the negotiations;

- visualize upstream and downstream user rights and conflicts;

- analyse the potential for the development of different water sources and for water harvesting;

- assess existing capacities for water development, operations and management, and possible needs for capacity building and training.

- create awareness for hygiene and sanitation through role plays, street theatre etc.

- analyse water needs for the different water uses/sectors

- discuss, negotiate and set priorities for water use considering water allocation for people, sanitation, livestock, food production, fisheries and other uses

- discuss and determine what kind of infrastructure would be needed and make a rough estimate of its cost

- assess who would benefit and / or contribute; who would loose, and how they can be compensated

- discuss possible funding sources, create awareness for community contribution, operating cost and cost recovery

Having concluded this process, a feasibility study needs to be done for the infrastructure required (survey, plan and cost estimate). For this a consultant / engineer or NGO has to be contracted by the community. The feasibility study needs to be discussed in the community with special emphasis on available resources and funding options. Funds need to be mobilised and secured from different sources before a decision is taken. Funding via the local government needs to consider legal implications.

4. PEOPLE

Main stakeholders of the process are:

- **Communities** plan water use and manage water projects in a participatory, responsible and socially inclusive way.

- **Local authorities** are closely involved in the WUMP process to assure commitment, ownership and endorsement.

- **Local service providers** support communities and committees in the social and technical work.

Photo: Sandra Kuenzle

Inhabitants of Balama, Mozambique get excited about the drinking water well

The role of NGOs or development projects is to facilitate the planning process and, once a plan is established, to support communities to access funds from Governments or donors for implementation. It is important that local authorities are closely involved in the WUMP process and that linkages with relevant partners and line agencies are reinforced. WUMP has the potential to enhancing local capacities in participatory and socially inclusive planning. It can become a ”marketing tool” for acquiring financial and human resources for implementing the schemes which have been planned.

5. PRODUCTS

The main product of the panning process is a master plan owned by local stakeholders who are committed to put it properly into practice. The plan contains a water budget (supply/demand) and includes agreements on the allocation and the use of the available water. It specifies how to minimise water losses and how to increase productive water use without negative effects on the environment and downstream communities.

The plan provides also guidelines for annual and periodic planning and prioritization of activities by local bodies / authorities. It enables stakeholders to easily and regularly update the inventories of water resources and water related infrastructure/facilities. It is also a tool to approach donors and Government agencies to cooperate and to contribute or invest. On the social level a local platform for water planning is set up to ensure equal access to water resources for legitimate and basic needs. Besides the plan itself, there are important outcomes of a WUMP process, both on technical as well as on social level:

Outcome 1: Disadvantaged groups participate on equal terms in the planning, negotiation and decision making of water resources of a community. The basic needs of all members of a community, including the poor and disadvantaged groups are considered.

Outcome 2: People are aware of the social as well as the economic value of water, realizing that supplying water and maintaining the system creates costs. But, water also provides opportunities for generating income, e.g. through irrigation, or small scale economic activities.

Outcome 3: The need for environmental sustainability and source protection is recognized. Communities act accordingly and take care of the conservation of water sources and catchment areas by protecting sources and taking restoration measures where required.

Outcome 4: Women’s role as “water managers” is properly taken into account, since in many cases women take traditionally care of water issues and carry corresponding responsibilities. As the WUMP process encourages and enables women to participate in meetings/workshop and be represented in committees where they take actively part in decisions, it empowers them and contributes to improving their position within the community.

A TYPICAL WUMP

The components of a typical WUMP would be:

- Inventory of available water resources and their current use:
  - a) Available water resources (rivers, lakes, ground-water etc) with water rights for each source)
  - b) Existing situation of water use, quality, allocation and existing / potential conflicts
  - c) Service level of facilities / systems and their functional status
- Socio-economic baseline information (disaggrega-ted by gender, cast or other relevant group criteria) to provide information for projected water needs:
  - a) Demographic data
  - b) Number of domestic animals
  - c) Access to / needs for water, sanitation, health, education, etc.
  - d) Land holdings
  - e) Health, hygiene and sanitation situation
  - f) Income activities
  - g) Small rural enterprises
  - h) Capacities, resources, opportunities, services
  - i) Planned and ongoing community projects
- 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 invest-ments or other activities such as capacity building
- Assignment of responsibilities for the implementa-tion of the plan and eventually the establishment of new institutions

Outcome 5: Water losses are identified and possible measures are proposed to improve efficiency and productive use (as often large volumes of valuable water are lost due to improper use, illegal connections from the main line, leakages in pipes and by not using excess and run-off water). Improper use of water is not only a technical issue. Often it is caused by lack of awareness, inappropriate behaviour and lack of ownership.

Outcome 6: Capacity requirements and training needs are assessed and measures are taken to develop necessary capacities. Preparing a WUMP may involve local NGOs; individuals may be involved in facilitating and implementing water and sanitation or irrigation projects together with community members, and training them for operation, repair and maintenance at the same time.

Outcome 7: A knowledge base is created where information is stored in an appropriate form for further development of the plan and for other development activities.

6. POTENTIAL & CHALLENGES

Experiences with preparing a WUMP, particularly in Nepal, have shown a series of potentials as outlined above. Yet there are also challenges to overcome:

- Lessons learnt from WUMP exercises are promising but need still to be refined. The strong interest for the WUMP planning process will hopefully lead to a better understanding of its value and its impacts. Cost-efficiency considerations shall help decision-makers to consider this tool for development of water-related investments.

- Quality issues need to be addressed, in order to make the preparation of WUMP a reliable process. Criteria and standards need to be developed, which assure that the process and its particular steps are followed properly and in accordance with the WUMP concept and philosophy.

Photo: Stefan Stolle

Farmer checking water flow in an irrigation channel in Kyrgyzstan, Central Asia

- The development and use of WUMPs has been tested so far mainly in Nepal. Therefore, the concept needs to be piloted elsewhere too. in various countries outside Nepal. The In order to provide sufficient information to decision makers about detailed requirements, conditions, costs and impacts of WUMP, more experiences are needed. These experiences will improve knowledge on how the promising concept and methodology of WUMP can be adapted and implemented most properly in different contextual situations.

- WUMP can and should be used to address water productivity in agriculture. Agriculture can use water more efficiently than present practices indicate. And local communities and local governments can play a vital role in water use and agriculture. Technology for efficient transport of water from the site of abstraction to the field, and for delivering it to the crop plants with a minimum of losses, is available - at a cost - and is being progressively applied where water is scarce (and financial resources are made available). Irrigation-water-use efficiency increases when the right policy plans and market incentives are in place.

7. PERSPECTIVES

Promoting WUMP is a response to a widely felt ne instrument for local actors to address water managemer a proper and integrated way. As a highly participator method around water, a crucial and common good, p WUMP will not only improve the management of water but also the mechanisms of good local governance.

The increasing demands on water for different uses, the growing population in many rural areas, and the challenges of climate change (changes in rainfall patterns and hydrological regimes), require a planning and management tool such as WUMP to cope with these challenges on local level.

It is hoped that in the future, experiences from different regions will help to develop WUMP further. Helvetas, Intercooperation and the water-for-food exchange platform will support this process of exchange and improvement further.

CREDITS

Water Resources Management Programme (WARM-P), Nepal

The WUMP concept and tool was originally developed in Nepal by the Water Resources Management Programme (WARM-P) which capitalizes on the 30 years' experiences of Helvetas in the water sector in Nepal. WARM-P has moved from supporting communities for drinking water and sanitation towards facilitating the preparation of Water Use Master Plans at village level, which has been an important step towards Integrated Water Resources Management. Most water systems in the hilly areas are gravity flow systems using natural spring water. The sources may be used or claimed by several hamlets for different purposes. Thus, water resources planning at local level, using WUMP, is an essential step towards sustainable and equitable resource management.

Community of Practice "Water-for Food"

The Community of Practice "Water-for Food" is a network and discussion platform of interested people who wish to capitalize experience, share and create new knowledge and innovations. The Community of Practice works, facilitates and fosters exchange of experiences through an electronic platform (www.water-for-food.ch) and face-to-face meetings. The overall topic is "Sustainable use of water resources for food production within the concept of Integrated Water Resource Management in developing and transition countries". Within this context, the Water Use Master Plan (WUMP), as presented here, has been further discussed and developed as a concept which should be adaptable and applicable under different geographic, biophysical, socio-economic and institutional conditions.

Individual professionals from several countries

The process of developing this document included a series of special exchanges between experts from several countries and professional backgrounds. Finally, a special write-shop was organized in Mali to bring them together for developing a first draft of the document. In this regard, special thanks go to Madan Bhatta, Ramesh Bohara and Rhade Bhistra (all from Nepal), Shailendra Twari and Devanshu Chakravarti (from India), Albert Grela (from Belgium) and Martin Fischler, Chris Morger, Gian Nicolay and Thomas Stadtmüller (all from Switzerland).

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