

A step- by-step approach in Dhanusha Community and Water Supply Development Project (DCWDP).

Chapter 1

1. The project is designed to develop small scale community drinking water schemes (water wells each serving a few households) thereby enhancing people's sense of ownership, to involve women more adequately, to integrate sanitation and health education better. It gives special emphasis on the poor segment of the community.
2. Using drinking water and sanitation as the main intervention points, the project aims at a broader goal of community development. The time saved in fetching drinking water could be utilized in some income generating activities, thus helping uplift the economic well being of the community. Thus women's development and empowerment program is an important and integral part of this project.
3. It should be seen as a new vision in which the construction of drinking water and sanitary facilities is combined with the women's empowerment of an increasingly aware community moving towards greater self-reliance and development.

Chapter 2

Three phases of the DCWDP approach

Taking into consideration a set of principles such as empowerment, justice and equity, gender equality, and rolling planning, the objectives for DCWDP are formulated and divided into following main categories:

- Community management and empowerment (with special emphasis on women).
- Improved sanitation and health.
- Women's development and empowerment.
- Provision of safe drinking water.
- Sustainability (through well-functioning operation and maintenance (O&M) systems).
- Partnership and capacity development in partners.

To achieve these objectives, a strong community-oriented process approach is chosen. The community will be guided through a stepwise process that encourages its members to become self-reliant in solving drinking water and sanitation problems. Health and sanitation education and all technical tasks are fully integrated in the process. No specific targets are set; the program activities are planned flexibly. A process of rolling planning is adopted, based on experiences gained and lessons learned. No particular target groups are defined, but women and marginalized groups within the given community receive special emphasis. At several points along this process, the active participation of these groups is a pre-condition for further progress.

The stepwise process is a series of activities and benchmarks that safeguard the integrity of the project process and increase community ownership. A number of specific activities and/or criteria must each be fulfilled by the community. A new operation is started only once all previous required activities have been completed. For a project to reach completion, it needs to successfully run through three phases: Preparation, Construction, and Operation and Maintenance. The duration of each step and each phase depends entirely on the commitment, ability and willingness of the community.

1. Preparation Phase

During the preparation phase, preceding the construction of a drinking water scheme, numerous activities take place which lead to improved community management and better sanitation

practices among the people. Those activities include assessment and analysis of the community in the field of drinking water and environmental sanitation, community mobilization to form a Water and Sanitation Management Committee (WSMC) or Project Management Committee (PMC), Health and Sanitation Education (HSE) training of WSMC members, fund raising for operation and maintenance, participatory monitoring. Only after completion of these activities is a detailed technical survey and planning for drinking water system initiated. At the end of the preparation phase, when the design and material estimates are ready, the community plans for collection of locally available material, transportation of additional construction material to the village and all construction. This is the start of the construction phase.

Activities to be completed and criteria to be fulfilled by the community during the preparation phase are:

- ✓ The villagers inform the local authorities of the applications forwarded to WDSC.
- ✓ A Water and Sanitation Management Committee (WSMC) or PMC is formed, representing all groups in the community and reflecting in its actions their tasks and responsibilities.
- ✓ The whole community actively participates in the fulfilling of all the steps and is involved in the planning and decision-making process.
- ✓ An O&M fund is collected and deposited at a local bank.
- ✓ Willingness to change sanitary habits is demonstrated by the construction and use of the locally appropriate latrine.
- ✓ An agreement (written?) is signed on the use of the proposed water well and on place of the proposed location of the wellhead.
- ✓ Technical and feasibility studies are conducted.
- ✓ The community agrees to mobilize its own resources, including human resources, and to assume full responsibility for operation and maintenance.

2. Construction Phase

Introducing and disseminating a drilling technology that uses environmentally sound practices to produce safe drinking water is one of the important objectives of the project. At the same time assuring hygienic and safe drinking water is of utmost importance to the project.

The Project will mobilize expert drilling and well installation team. They will not only construct drinking water wells, but will also be used in providing training to the local drillers and the entrepreneurs at a later stage. The project will also educate the WSMC members about all the procedures followed in a well construction, so that they will be able to understand the well operation and maintenance requirements and the methods. During this phase, 2 or 3 Village Maintenance Workers (VMW) appointed by the community will be trained on the job and during an intensive two-week training program. After completion of the construction work and the subsequent final commissioning, the operation and maintenance phase begins.

Quality control of drinking water:

After the completion of well, water sample will be collected from each well and will be forwarded to a well recognized water quality laboratory in Kathmandu, in order to test suitability for drinking purposes. Special importance will be given in detecting any contents harmful to human and animal health, including arsenic.

3. Operation and maintenance phase.

The operation and maintenance phase is open-ended for the community, while for the Project, it will be limited to two years. The objectives of the O&M phase are:

To enhance sustainability of the sanitation and drinking water facilities by providing support to the, WUGs, WSMC, VMW and Woman Water Well Caretakers (WWC).

To allow time to detect any technical shortcoming and need for improvements and modifications,

To monitor the program's effect and overall impact.

In order to achieve these objectives, the project area is visited at least five times, training is made available to build local capacity, and follow-up is provided.

Chapter 3

The Community-Oriented Stepwise Process: Action and Reflection

Step	Activity
1. Information Dissemination	WDSC carries out an extensive information dissemination to the communities about the Project and also consults with the local authorities (VDC officials).
9. Entry-point activities	Local NGO initiates: <ol style="list-style-type: none"> a. Women literacy b. Women's Income Generating (skills development) Training
2. Application	Community submits applications to WDSC for water wells, at a rate of one well for an average of 5 households (Water User Group, WUG) and individual latrines.
3. Project Information	The Community is asked to fill out a Project Information Form. This requires the villagers to come together and provide basic information regarding their drinking water and sanitation situation.
4. Social feasibility?	The community is then visited for a Social Feasibility Study. Depending on the outcome, a decision is made to proceed.
5. Social Mapping	Help the community assess and analyze the village's drinking water and sanitation problems and help them identify their needs (including training needs) to address them. Social Mapping is prepared by using PRA tools.
6. Field verification	The information on the social map is physically verified during a village environment walk. Special attention is given to the sanitary situation in and around the houses, and defecation and hand washing practices. Other issues such as economic condition, labor division between men and women, population etc.
7. WUG trainings	<ol style="list-style-type: none"> a. Gender sensitization b. Health and Sanitation Education (HSE)
7. WSMC (or PMC) Formation	A WSMC (PMC) is formed with representation from all the WUGs. Ward level PMC are also formed. This WSMC having the responsibilities for all the management tasks relating to the preparation, construction, operation and maintenance, delegates these tasks among its members. At least a third of WSMC should be women, holding posts of general member, treasurer, and chairperson.

8. WSMC Training I	The WSMC members receive training, to develop the management capacity of WSMC members for the preparatory activities and the construction of their drinking water wells.
10. Latrine demonstration	Depending upon the settlement layout and the people's preference, decision to construct community and/or private latrine is made. A written agreement is reached with the WDSC to provide labor and locally available material as their contribution. In answer to people's interest, one latrine is built as a demonstration, (if required).
11. O&M fund collection	Motivate each group for collecting an O&M fund and deposit it in a nearby bank. The fund raising scheme should be a continuous process, not a one-time activity. The WSMC (PMC) will be responsible for fund collection, and WDSC will assure the completion of this step.
12. Preparatory Technical Works	The NGO staff will facilitate each group in reaching into a decision on the location of water well. They will also help the community decide on the type of latrine and their locations.
13. Survey, design and estimate	Water well expert and Sanitation Engineer will visit each group, and discuss with the community about the well location, well design, latrine design, their locations and assures the technical, environmental and social viability of the group decisions. Prepares technical designs and estimates. Discusses with the community for their understanding and approval.
14. Collection of local material	Community and the groups collect locally available construction material.
15. Transportation of material	Non-local material is transported to the community. Only when all the construction material is in place can the actual construction work begin, with the support and guidance of technical professionals.
16. Latrine construction	Latrine construction will start, with the active participation of the community. Once the latrine is completed, its proper use and maintenance are explained and a maintenance flash-card is provided.
17. VMW training	A two week "on the job" training to the Village Maintenance Workers, to coincide with drilling and tube well construction.
18. Tube well construction	Drilling crew is mobilized, followed by tube well installation crew. To monitor the construction standards the work is supervised regularly.
19. Completion report and commissioning	Upon completion, the WSMC and the WUG inform the WDSC, after which the final commissioning of the construction takes place.
20. WSMC training II	After completion, additional management training is given to the WSMC members.
21. WWC training	Women water well caretakers are trained to ensure proper maintenance of the system.
22. Women development program	Income generating and other women development programs are continued.
23. Monitoring and follow-up	Proper use, maintenance and sustainability of the water wells and latrines, and the impact of women empowerment programs are monitored regularly.

a) Forwarding and Screening of Applications

The WDSC launches an intensive and extensive information dissemination campaign in the VDC (Step 1). The interested groups of households (generally one group per well) submit applications to the WDSC (step 2). Those groups are asked collectively to fill out a Project Information Form (Step 3). This requires the villagers to come together and provide basic information regarding their drinking water and sanitary situation.

b) Community Assessment and Analysis

PMU and WDSC visits the area and helps the community assess and analyze the village's drinking water and sanitation problems (step 5). *The people draw a map of the village and its surroundings indicating the location of houses, main paths, streams, ponds, rest places, temples, existing drinking water wells, health posts, schools, and other important information like latrines, protected forest areas and agricultural lands.* Sometimes these maps are drawn in a mixed male/female group, but frequently men and women prefer to make their own maps and later compare them. This exercise helps the villagers look at their community holistically. Later the information contained in the map is used for participatory monitoring.

The information on the map is physically verified during a village environmental walk (step 6). Representatives of the men's and women's groups and key members of the community, accompanied by the facilitator, check the information and at the same time assess the environment in and around the community. Existing water sources, as well as the proposed well locations are visited, as are alternative locations. Special attention is given to the sanitary situation in and around the houses, and defecation and hand washing practices.

At the same time other issues of importance may be assessed as well. These may include the villagers' economic condition, skilled human resources, labor division between men and women, accurate population figures, and migration patterns. Those figures can be used in assessing the training needs, contribution of cash or planning for labor contributions. The community is assisted with the analysis of the information they have gathered and with drawing up a plan for future activities.

c) Formation and Training of the Water and Sanitation Management Committee

A WSMC is formed from all the WUGs. This WSMC having the responsibilities for all the management tasks relating to the preparation, construction, operation and maintenance, delegates these tasks among its members. They include providing motivation and leadership to the community on an ongoing basis. The formation of a community should, therefore, be thought through carefully and the final selection of its members should be approved by the majority of the participating groups. This process is facilitated in step 7. Pictures of various animals are shown, like a monkey, a bee, a tiger, and their respective characteristics are discussed. A linkage with people's personalities helps the community understand what types of people are needed in the committee. The community proposes candidates and final selections are made. Issues such as the number of female members and representatives of minority groups, and who should hold which post are also decided by the community. Here the facilitation process and the understanding of the principle of gender equality and justice are more important than the actual numbers voted in. At least a third of WSMC should be women, holding posts of general member, treasurer, and chairperson.

Some time after the formation of the committee, members receive a Water and Sanitation Management Committee Training (WSMCT) in the village (Step 8). Its objective is to develop the management capacity of the WSMC members for the project programs, including the construction phase. Issues covered include participation, resource mobilization, management skills (regarding transportation, storing of materials, selection of local materials), selection of Village Maintenance

Workers (VMW) and Women Water Well Caretakers (WWC), selection of participants for various training programs, and operation and maintenance fund collection.

d) Literacy Program

Women's literacy program is initiated as the first entry-point activity. This will help initiate a relationship of the Project (and WDSC) with the community. Depending on the number of participants, convenience, more than one such women literacy classes may be required. Such classes should be conducted at a time convenient to the participants.

e) Gender Training

Gender awareness training sessions are conducted in the community with an aim to encourage gender equality throughout the course of the project activities. The two-day training session is conducted in the community itself and an equal number of men and women participate. The concept of gender in general with direct reference to the community environment is analyzed, as are gender roles in the drinking water and sanitation field.

f) Health and Sanitation Education

Health and Sanitation Education (HSE) activities are also initiated. The HSE will include:

- Explanation of transmission routes of diseases.
- Hand washing practices.
- Storing of water.
- Use of waste pit.
- Cleaning of water well surroundings and local water points.
- Awareness of defecation practices and motivation for latrine use.

The tools used for these activities include: posters, flash-cards, comics and practical classes. Some special activities may also be used like a cleaning-up campaign, school education program or observation visits to a nearby community.

All HSE activities tend to reinforce the interest in building latrines. Explanations are given to the community about the different technical options and the costs involved. Those options depend on the availability of local materials. In answer to people's interest, one latrine is built as a demonstration (step 10). Various aspects such as the most suitable location for the latrine, its proper use and maintenance are explained.

g) Operation and Maintenance Fund Collection

The community is encouraged to think about the timing for the completion of their new drinking water wells. They will also be informed about the best period of well drilling, and their reasons. Motivation for the collection of an O&M Fund (step 11) is started. It is important for the community to realize that the collection of a fund is for their own future benefit. Therefore, no rigid criteria are set to determine the percentage, relative to total cost, of the O&M fund. The decision on how to collect and the size of the target fund is up to the community. However, the program motivates the people to collect an amount that corresponds to their ability to pay and takes into account the size of the scheme, and which at the same time is sensitive to the economic situation of individuals. This maintains equity. The fund raising scheme is seen as a continuous process, not one-time activity. It starts early in the overall process and ideally continues during the operation and maintenance phase. *On average the O&M fund is equal to 3% of the total construction cost, which is comparable to other counterpart organizations active in Nepal.*

h) Preparatory Technical Works

All technical work is integrated into the process. The program offers support to the community in all technical aspects related to the implementation of a drinking water scheme. During the environmental walk, suitability of the proposed well location and the drainage is checked and explained. It is explained how to measure the static water table. The technical possibilities and limitations are explained to the villagers. This knowledge will help in the final decision on the number of water wells.

i) Village Maintenance Worker Training

A village Maintenance Worker plays a significant role in maintaining the drinking water well system. To be able to take care of the system, he should have technical knowledge about, and skills relating to the operation and maintenance of a well. Two weeks of “on the job” training is provided for VMWs who have been selected from the various project communities (step 17). This training takes place during the construction phase. Ideally, the VMW should practice and enhance his newly acquired skills during the construction of the system in his own community. Issues like principles of water wells, purposes of different steps involved in well construction, functions and uses of different tools and fittings, types of pipes and techniques to join pipes, masonry and plaster works for the well head protection structures, routine maintenance of well and hand pump, and environmental sanitation are covered in this training. Men are selected to become VMWs, but in the spirit of equality women (WWC) receive a separate technical training on maintenance of hand pumps, wellhead protection and environmental sanitation. The VMW and WWC undergo refresher training during the O&M phase.

j) Activities during the Construction Phase

There are two types of construction work involved, (i) latrine and (ii) water well. First, the latrine construction work is started. Since water well drilling operation has to be carried out during a specific season, preferably during the dry season (December to June), all the necessary construction material will be arranged to match with this timing. The villagers will mobilize labor contribution and collect locally available material such as gravel for filter packing. Other non-local material is transported to the community (step 15). The drilling and well installation crews are fielded. These operations are managed by the project. The WSMC, VMW and WWCs are involved as supervisors and “on the job” trainees in all the operations. To monitor the construction standards the work is supervised regularly (step 16). Upon completion, the well is commissioned to the WUGs and the WSMC.

k) Follow-up during the O&M Phase

Soon after completion, additional management training is offered to the WSMC members (step 20). The objective of this training is to strengthen managerial skills to guarantee smooth operation and maintenance of the wells. Issues like fundraising and use of the funds, community meetings & recording of decisions made, maintenance of the water wells, well-head protection are covered in this training. Cleanliness of the well-head area and its surroundings, maintenance, use and repair of the latrines are also important aspects. The different roles and responsibilities of the WSMC, VMW and WWC are once more discussed and reinforced. VMWs receive refresher training. Some issues, which were covered in the first training phase, are revisited. As a motivational push, the other women development programs such as skills development trainings are offered.

The first monitoring and follow-up visit occurs six months after completion of the construction work (step 21). A multi-disciplinary team visits the project area and together with the WSMC, the users and the VMWs, monitors the functioning of the water wells and the latrines along with the sanitary

conditions in the village in general and latrines and wellheads area cleanliness in particular. At the same time the activities of the WSMC and the maintenance work done by the VMW are looked at. Depending on the findings, suggestions for improvements are made and on-the-spot HSE sessions are organized, which are mostly on latrine maintenance and repair and waste-water management.

To ensure proper maintenance of the systems, technical skills are transmitted during a four-day training course (step 21) for Women Water well Caretakers each of whom represent a well. Subjects covered are:

- Understanding the functioning of the various parts of a water well system.
- Use of different tools.
- Changing the pump washers
- Small masonry work.
- Cleaning of well head areas.

Two years after the start of the O&M phase a final follow-up and participatory monitoring takes place (step 22). WSMC members, the VMW and the WWC, together with a project team, monitor the functioning of the drinking water systems and sanitation facilities. At the same time, the functioning of the WSMC, the VMW and the WWCs is monitored. In a mass meeting the impact of the program is analyzed. Finally, feedback is provided to the project on where improvements can still be made, and the community is encouraged to make suggestions on how to improve the program as a whole. Final motivational activities are combined with the monitoring.