



Best Practices in Sustainable Water Supply,
Sanitation and Hygiene Education

Community Based Maintenance System



A three-phased model of community involvement Planning

The planning process is designed to ensure maximum involvement, including male and female users. Following the completion of a district survey carried out by the DACAAR survey team where the suitable form of water point technology is identified by the field team, DACAAR signs an agreement with provincial and district government authorities. The DACAAR field engineer then explains the principles for site selection to community elders of the local shura, who then decide jointly on the site location.

DACAAR has identified its community based maintenance system of water points as a best practice. By ensuring maximum community involvement in the planning, implementation and maintenance of water points a number of benefits are achieved. In addition to the water point's sustainability, the practice is cost reducing and provides income generating opportunities for technically skilled community members.

The community based maintenance system is made up of three main components: community contributions from the entire user group, community skills from skilled community members, and spare parts purchased by the community and used by a hand pump mechanic or valve man, who receives 28kg wheat from each user group on a yearly basis to maintain the water points.

During project implementation, hand pump mechanics and valve men get support and training from the field engineers. Following project completion, supervision and technical support is provided by DACAAR's Hand pump Inspection Teams (HIT), which carry out regular monitoring and inspection visits and solve any occurring technical and social problems.

The success of the practice has led to its replication by the Ministry of Rural Rehabilitation and Development in 2004, followed by other organisations.

DACAAR principles for site selection

- A: Community ownership of the water point.
- B: A minimum of 25 families should be users of each hand pump and stand post.
- C: The site should be secure and easily accessible especially for women and children at all times. Social norms of purdah should not prevent women from using it - otherwise a privacy wall must be built to screen the well from onlookers.
- D: The land of the site should be public property. An owner of private land can donate it for public use as waqf through a written agreement including the denouncement of all property rights.
- E: The well and the access to it cannot be privatised.
- F: The distance from any source of contamination such as latrines, stables, canals or ponds must be at least 10 metres.
- G: The site should be at a walking distance not exceeding an average of 200 meters from every household of the user group.
- H: The site must be selected through a consensus within the user group.

Since 2004, it has been an integral requirement that at least 30 percent of sites should be selected jointly by men and women. If the elders accept DACAAR's principles, the DACAAR field team including the male hygiene education supervisor discusses options for the location with male community members, while a female hygiene education supervisor convenes with female members of the community.

Once both groups have come to an agreement, the supervisor couple, along with the field engineer, evaluates the proposed locations in view of DACAAR's principles and it is shared with the wider user group for final approval. Upon reaching a final decision, elders within the user group sign an agreement with DACAAR specifying the site location and required community contribution along with the user community's commitment to paying for regular maintenance of the water point. At this time, a caretaker and a valve man (for pipe schemes) are selected. Along with DACAAR and the user group a tripartite agreement is signed, specifying the respective responsibilities.

Ensuring women's input

In order to allow for women's voices to be heard unfiltered in site selection, field engineers have introduced unannounced visits in a number of provinces. They also schedule meetings for men and women to be carried out at the same time to prevent influential men from influencing the views of their wives/daughters.

Note: DACAAR's high degree of community involvement has been jeopardised by the practices of other agencies in the WASH sector, not requiring community input and ownership.

In response to this challenge, DACAAR initiated the National Operation and Maintenance System in 2005, hereby raising awareness about the superior cost-effectiveness of repair schemes compared to the construction of new water points.

Implementation

As part of the agreement between DACAAR and the user group, a community contribution of unskilled labour and locally available materials is specified. The contribution varies according to the type of water point.

Water point type	Nature of community contribution	Rate of community contribution
Dug well	Provision of unskilled labour to dig the well, transportation of all construction material to the site and gravel and sand for construction of the apron.	30 %
Tube well	Provision of unskilled labour to drill the well, transportation of all construction material along with gravel and sand for construction of the apron, drainage and backfilling.	10 %
Pipe scheme	Provision of unskilled labour for the excavation of trenches, laying of pipes and backfilling, as well as for the transportation of all construction materials to the site, including sand and gravel for the construction of stand posts.	30 %

Maintenance

Following the completion of each water point, its sustainability is ensured through the collective efforts of a team of community members to serve as caretaker, hand pump mechanic (for wells), valve man (for pipe schemes) and spare part shopkeeper.

Caretaker

During implementation	Assists the field engineer
Following completion	<p>Holds the daily responsibility for the cleanliness of the immediate surroundings of the water point as well as its proper functioning – ensuring the proper use of the water point, carrying out repair of the apron in case of damage, and taking care of the payment of wages to the mechanic/valve man as well as the procurement of spare parts for repair.</p> <p>Serves as liaison between the community and the mechanic/valve man.</p> <p>Informs the mechanic/valve man of needed repairs and assists in the repair work.</p> <p>Collects monthly fees from each family covering running cost (for pipe schemes).</p>

When selecting the caretaker, he/she is evaluated in terms of honesty and community influence, allowing him/her to succeed in the mobilisation of the user group

Hand pump mechanic

During implementation	<p>Trained by DACAAR in all aspects of well improvement, hand pump installation and production of concrete components for wells and latrines, as well as in hygiene education, water point maintenance and repair.</p> <p>Receives his first annual wage (28 kg wheat) from the user group – until he is paid, DACAAR will not install the pump handle.</p>
Following completion	<p>Is provided with a bicycle and essential maintenance tools by DACAAR.</p> <p>Is responsible for the timely repair of damaged hand pumps – he either maintains a stock of spare parts and charges the user group following repair, or he charges the user group for the spare parts to be purchased prior to repair.</p> <p>Inspects pumps regularly and informs the user group of proper usage.</p>

Each mechanic services 50-120 hand pumps. He is selected by a district level shura and serves the core function of the maintenance system. DACAAR recommends that the person selected is literate and has previous experience as a mechanic or blacksmith, and that he ideally is a younger poor man from the area. In signing the tripartite agreement with DACAAR, the user group members commit themselves to pay the mechanic 28kg wheat following harvest, as annual wage. DACAAR supports the livelihood of its mechanics by selling them moulds at a subsidised rate for the production of concrete elements such as aprons and well rings as well as concrete elements for the construction of additional latrines.



Lesson learnt

By training another member of the user group in pump maintenance, the sustainability of water points is further enhanced.

Valve man

Following completion Is responsible for daily monitoring of the pipe scheme to ensure proper functioning

Repairs taps and couplings and coordinates the cleaning and chlorination of the reservoir in summer

The valve man serves as the daily operator of the pipe scheme. He is selected by the user community and has similar responsibilities to those of the mechanic with regards to the operation and maintenance of water points. Depending on the size of the pipe scheme, up to two valve men may be assigned to servicing a single scheme.



Spare parts shopkeeper

DACAAR identifies shopkeepers in the main bazaar of the district or the community to procure the necessary parts for the operation and maintenance of hand pumps and pipe schemes, in accordance with DACAAR standards. DACAAR supplies selected shopkeepers with an initial stock of spare parts and provides them with the contact details for provincial suppliers. With the successful standardisation of hand pump (Afridev) and pipe technology, a commercial network of spare parts shopkeepers has emerged, leading DACAAR to phase out its initial material support of shopkeepers.

Lesson learnt

In areas where no spare parts shopkeeper can be identified, the local blacksmith or bicycle repair shop may serve as an alternative provider.



Technical supervision and monitoring

DACAAR's Technical Monitoring Unit (TMU) (est. 1992) is responsible for ensuring efficient usage and high quality of construction materials through regular monitoring of the construction process and providing advice to field engineers. Their monitoring results are submitted in monthly progress reports submitted to the sponsoring donor, thus ensuring transparent use of donor funds.

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Responsibilities of the TMU

Monitor the quality of construction materials, especially concrete.

Monitor the progress of the construction process and its compliance with DACAAR procedures, standards and norms.

Ensure that the site selected is on public land as selected by the user group.

Monitor the progress of hygiene education programmes (together with the hygiene education supervisor couple) and the construction of sanitary facilities (latrines).



Hand pump Inspection Teams (HIT)

DACAAR employs mobile hand pump inspection teams to monitor the water points regularly and to ensure that all technical and social components of the maintenance system are functioning. Each team consists of a supervisor, a technician and a driver and conducts inspection visits to each water point at least twice a year, security permitting. The team meets with the caretaker, the mechanic/valve man, the shopkeeper as well as the user group. It provides the mechanic with chlorine and conducts water quality tests, which are subsequently analysed in DACAAR's water quality testing laboratory in Kabul.

Lesson learnt

The supervision by DACAAR's TMU throughout the construction process has proven crucial to ensuring compliance with DACAAR principles for site selection and quality standards, and further serves as an effective mechanism for accountability to donors.

Lessons learnt

External monitoring of water points has proved to increase the functionality of hand pumps by around 20 percent (HIT reports) and to improve the sustainability of the maintenance system.

It further prevents potential privatization of the site by influential community members or former landowners and HIT members play a crucial role in solving potential disagreements between field staff and the user group.



Operation and Maintenance (O&M) Teams

Realising that the repair and reactivation of non- or low-functionality wells is less costly than the construction of new ones, DACAAR employs Operation and Maintenance (O&M) teams to rehabilitate wells constructed by other agencies. With the rehabilitation of a water point, the team also introduces the community based maintenance system.

Highlights of DACAAR Community Based Maintenance System

Extensive involvement of the user group in planning, implementation and maintenance.

Tripartite agreement signed before implementation starts, outlining roles and responsibilities for DACAAR, the mechanic/valve man and the user group.

Women's involvement in site selection for at least 30% of all constructed water points.

Regular external monitoring for technical and social problem solving.

Shifting from construction to maintenance.

Challenges

Lack of interagency coordination – with other agencies following less demanding requirements regarding community contribution. Need to support GoA in promoting sector-wide compliance with the National Standard established in 2004.

Reduced willingness or ability of communities to pay the mechanic/valve man in times of crisis such as drought. Alternate income generating possibilities to be identified for the mechanic/valve man.

Need for prior assessment of social power dynamics, to ensure that the water point does not become an object of power.



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DACAAR's main donors



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