

Loughborough University Institutional Repository

Village level operation and maintenance

This item was submitted to Loughborough University's Institutional Repository by the/an author.

Citation: JESPERSEN, C., 1995. Village level operation and maintenance. IN: Pickford, J. et al. (eds). Sustainability of water and sanitation systems: Proceedings of the 21st WEDC International Conference, Kampala, Uganda, 4-8 September 1995, pp.173-175.

Additional Information:

- This is a conference paper.

Metadata Record: <https://dspace.lboro.ac.uk/2134/31630>

Version: Published

Publisher: © WEDC, Loughborough University

Rights: This work is made available according to the conditions of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) licence. Full details of this licence are available at: <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Please cite the published version.



Village level operation and maintenance

C.B. Jespersen, Uganda



IN APRIL 1984, the Government of Malawi requested the Danish International Development Agency (DANIDA) to finance a groundwater project in the northern district of Karonga. An important aspect of the project was the introduction of a community based (village level) operation and maintenance (VLOM) system for the water points.

The Karonga Lakeshore Integrated Rural Groundwater Supply Project (KIP) completed its construction phase on March 31, 1991, with the installation of 300 water points, 295 of which were fitted with Afridev Deep Well Hand-pumps and concrete structures i.e. a pedestal for the pump, apron, washing slab and a spillway.

In the last month of the construction phase, all water points were handed over to the recipient communities. This marked the actual commencement of the Operation and Maintenance (O and M) Phase, of which the first four years (1991-1994) were financed by DANIDA on a declining scale.

The concept of VLOM varies depending on who is using the phrase. The hand pump producers utilize the acronym as an addition to their trade mark to indicate that their product is fit for the most remote communities, for which it will ensure water for years on end as only a few parts need to be changed and this can be done by the users themselves. Planners see VLOM as a way to privatization, thereby reducing the burden on government expenditures; government institutions directly responsible for rural water supply regard VLOM as a means of reducing pressure on already overburdened public maintenance teams.

All of these viewpoints are true, but none of them take into consideration the full range of structures needed to ensure that VLOM creates a sustainable water supply. Further, none recognise that VLOM is not only a technical concept but more, a socioeconomic concept that has a large amount of community development attached to its introduction and function.

Once introduced, VLOM is a dynamic process, needing constant development and refinement to cater for the increased skills obtained by the communities, thus increasing the possibility of having the users take further responsibilities within the system and, ideally, takes ultimate charge of it all, through private business structures.

The main conclusions of four years of introduction of O+M are:

- It seems possible to establish a sustainable rural groundwater supply based on users own organisation

and manpower (VLOM) with spare parts supplied through private outlets (a 1-tier system as an addition to the 2- and 3 tier systems generally in operation).

- A basic requirement for the function of the system is user confidence in their own abilities to manage VLOM in respect to organisation, finance and technical aspects.
- Creation of confidence can only be reached through training and support for a minimum of three to four years, longer if possible.
- Support can only be given through knowledge of users demand of, and reactions to, the structures and function of the VLOM system introduced.
- Knowledge can only be obtained through social and technical monitoring. By far the greatest amount of attention should be paid to socioeconomic factors. Intensity of monitoring will be highest in the first 2-3 years after which it can be reduced and finally cease.
- Ownership of water points, community participation and self determination will reduce possibilities of funding agency preferences in relation to system capacity, distance requirements and selection of technology.
- Utilisation of monitoring as a management tool requires funding agency flexibility and acceptance of immediate project shifts from one budget line to the other. In some cases monitoring will reveal the need for additional budget lines and related funding above the original budget. This could be covered by a certain percentage of the original budget set aside and only utilised if a definite need is identified by monitoring.

The sections below discuss specific issues:

Community institutions should to be developed early and before sites for the water points are identified. In this way, the institutions can be incorporated into the planning process from the very beginning and thus avoid resistance towards full community responsibility.

Linkages between the community institutions must be maintained; this will serve to strengthen those at the bottom, who need it most and render them more capable of responding to unexpected or unusual events.

It is important to take the cultural context into account when designing or developing training needs. For example, the contradictions inherent in trying to make women active in all phases and aspects of VLOM in a society where women are not known for their community management roles need to be explicitly addressed. In KIP,

instructions as to the proportion of women in institutions went some way to ensuring their participation, but the project needed to go further to ensure that women were able to participate in all aspects of VLOM, including the technical, and to counter the natural conservative tendency within communities to confine women to their usual roles.

Similarly, the attempt to be participatory also needed to address the tendency for i.e. village headmen to dominate discussion and activities.

In connection with HESP, training of trainers, where the trainers are village leaders, has failed. A direct approach to water point users, through training and drama and sanplat casting done by village contractors, connected to Health Centres, showed better results. Further, by having sanplat customers delivering basic materials, i.e. sand, stones and gravel to the site of casting, demand driven production and high percentage of installation is ensured. As for the sanplat technology the project has had success with pit latrines with a sanplat (with a lid) and WITHOUT a vent pipe.

Water Maintenance Funds (WMF) were part of the established procedures for maintenance. However the project has questioned this and changed to instill into the communities that responsibility for collection of funds is theirs. How and when funds are collected and kept is up to them.

There must be a mechanism whereby individuals who embezzle funds from committees can be dealt with by users. The safeguards seemed to be in place and were generally followed but some thefts will occur, therefore sanctions must exist.

The importance of the project personnel, particularly those responsible for the transfer of technical skills and community development, should not be underestimated. The messages they convey to communities, either explicitly or implicitly have a powerful impact on the eventual success of the project. Their training and orientation should be given emphasis and re-training and re-orientation should be built into the project plans to ensure they continue to give out the appropriate messages.

The community development assistants (CDA) have a special role to play. They are the first to get in contact with project communities. As such they form the foundation of trust on which future interaction between recipients and project is based. Therefore CDAs must identify themselves with their communities and speak the local languages. Also important is the continued service of the same individuals throughout project period, and that they represent both genders.

In relation to large rehabilitation programmes being implemented all over a country, the KIP experience suggests that concentrated programmes covering a district or part of a district are preferable as they:

- reduce transport costs.
- increase efficiency of supervision.

- increase efficiency of training programmes.
- increase the possibility of inter community support.
- increase the possibility of privatisation of spare part distribution and sales.
- avoid social tension in villages as all water points are covered and not only one or a few.

The traditional model for the design and implementation of rural water supply schemes has the following sequence of activities:

- Preparation
- Mobilisation
- Construction
- Handover to users
- Operation and Maintenance.

In this sequence, users are not involved in the construction of the water points but simply taught to maintain them after they have been constructed. This sequence does not allow communities to develop a strong sense of ownership of and responsibility for the water points. The sequence should be changed to:

- Preparation
- Technical and social mobilisation
- Establishment of operation and maintenance (VLOM) system
- Construction and simultaneous handover to users.

This will slow down construction activities but ensure community participation throughout and in this way prepare for sustainability.

Choice of technology must be related to the society in which it is being introduced. In areas where various technologies can be maintained and spare parts obtained through already established mechanical enterprises and shops, the users should be given a choice. However, this requires educating the users on the pros and cons of various choices in regard to spare parts, repairs and price. In areas where there is no tradition for mechanical repairs it is a long process to establish a privatised O and M. In such areas only one specific pump should be introduced. And only one type regardless of depth. The advantages of a unified O and M system, stock of spares, tools and training programmes does far outweigh the economics of different pumps for different depths. With the acquisition of user confidence in handling one technology and the establishment of general mechanical repair skills, additional types of pumps can be introduced. By then communities do possess practical experience and are then in a position to make an informed choice among alternatives.

In the introduction of a spare part distribution system, distinction should be made between fast and slow moving spares. In societies with no tradition for mechanical repairs, introduction of sale of fast running spares should be done into already existing village shops, but in consultation with the local communities. Preference of shop and

location is important. Shop owners' local standing and social engagement and their own dependence on the water supply are deciding factors in ensuring the continued stock of spares. Project support in supply of the initial stock should be considered with funds for shop owner replenishment of stock to come from his sales of the initial supply.

With regard to wholesale supply of both fast and slow moving spares, large shops who cater for the general supply to village shops should be selected. Initially, they might require spares on commission from project or government with later resumption of full responsibility for both purchase and sales.

Ownership of the water points must be clearly defined. Not only ownership of the installations and their downhole components and the land upon which they rests, but also a piece of the surrounding land for possible use for irrigated gardening.

The question of vegetable or other production around the water point must be very carefully planned. For remote areas this production has no market and can therefore not be suggested as a possible means of income generation.

Livestock is another question of concern. In areas of high density their demand on water will influence choice of technology. Also access to water point, share of livestock owner contribution to water point maintenance and provision of a watering trough should be decided by each community in the preparation phase. The possibility of increase of livestock due to water now being available should not be forgotten.

References

- Gaynor, C., C.B. Jespersen & G. Banda. 1992. Village Level Operation and Maintenance: First Sociological and Technical Monitoring Report. Centre for Social Research, Zomba.
- Gaynor, C. & C. B. Jespersen. 1992. Village Level Operation and Maintenance: Second Sociological and Technical Monitoring Report. Centre for Social Research, Zomba.
- Hyde, K.A.L & C.B. Jespersen. 1994. Village Level Operation and Maintenance: Third Sociological and Technical Monitoring Report. Centre for Social Research, Zomba.