



Operation and Maintenance Funds – what are the realities? RWSSP-WN BRIEF 3-2016

WHAT DID WE STUDY?

Sustainable water services call for Water and Sanitation Users Committees (WUSCs) that are financially able to cover regular maintenance, timely repairs, reinvestment to damaged structures, extensions for improved services as demand changes, and eventually replace infrastructure at the end of its useful life. These are WUSCs that can cover both running costs related to regular operation and maintenance (O&M), and timely re-investment in terms of capital maintenance expenditure.

The study was based on 32 schemes in Western Nepal. These were large gravity-fed systems (7) and those that operated lift schemes, both electric (19) and solar (4) lift, and combinations of these (2):

- *Kapilvastu district*: Mahendrakot VDC (Electric Schemes)
- *Tanahun district*: Barbhanjyang VDC, Ghasikuwa VDC, Sabung Deurali VDC, Ramjakot VDC, Bhirkot VDC and Thaprek VDC
- *Rupandehi district*: Devdaha VDC and Parroha VDC

What to recommend to the Water Users and Sanitation Committees (WUSCs) with regards to their Operation and Maintenance (O&M) Fund?

Questions asked:

- Is water tariff collected?
- How the water tariff was calculated?
- Is the water tariff adequate for O&M?
- To what extent is it adequate for cost recovery?
- How to keep the O&M fund safe & functional while keeping its value?



Photo: Keeping financial records properly counts for transparency. And transparency counts for consumers.

This study was made by Ms. Sunita Sharma, short term consultant for RWSSP-WN II, in June-July 2015. Available at: www.rwsspwn.org.np

Rautanen, S.-L. & Sharma, S. 2015. Institutionalizing Operation and Maintenance Fund – Cooperatives as an option in financing post-construction support. *Journal on Rural Infrastructure*, 6(6), (7072), Society of Engineers for Rural Development, Nepal (SERDeN), pp.93-97

WHAT DID WE KNOW BEFORE?

The RWSSP-WN Phase II Baseline (2015) showed that out of total 367 water schemes, 51% collected water tariff. Out of those, 71% collected less than NPR 50 per month or less, and 13% more than NPR 200. Out of total sample of 278 WUSCs, 49% confirmed that they have some type of operation and maintenance (O&M) plan and 39% confirmed they were implementing it. In altogether 113 schemes there was trained Village Maintenance Worker (VMW) working regularly. According to the survey findings, in 161 schemes (46%) at least one maintenance worker has been trained and in 156 schemes (78%) at least one VMW is working regularly. There are several schemes where no VMW was reported to be trained but that did have a regularly working maintenance worker, and vice versa. (RWSSP-WN II Baseline Report, 2015).

RWSSP-WN II introduced the Water Safety Plan ++ concept in 2015. WSP ++ integrates water safety, O&M, climate change and disaster risk related issues, and water tariff into one package. The assumption is that the both regular and one-off works identified in the plan, need to be also funded, and that this fund does not always come from external sources. WSP++ provides simplified method for calculating water tariff.

The question remains to what extent cost recovery is possible and to be even promoted, considering the inflation and other rapid changes? What is the ultimate aim as it is unlikely that after the end of design period (20 years) exactly similar structure would be even constructed: expectations and population is changing, and water scarcity is a reality. WUSCs are likely to face these challenges much earlier in terms of need to extend or increase the capacity of their water system, in addition to regular maintenance and repairs.

WHAT DID WE FIND OUT WITH REGARDS TO WATER TARIFF?

The questions for the study in 2015 were whether any tariff was collected, and if it was, was it based on the true cost figures, or whether it was more based on what people are willing to pay. We acknowledge that “willingness to pay” is not the same as “ability to pay”, and either of these may not correspond with what should be paid to keep the services running even on monthly basis. The questions and related findings were:

- **Is water tariff collected?** Yes, water tariff is collected regularly in all water supply schemes. However, the tariff rate may not be what it should be.
- **How the water tariff was calculated?** Water tariff rate differs widely, ranging from NPR 2 to NPR 200 per household. This is mostly based on what people ‘feel like’ paying. Overall, the tariff rate and total O&M fund of the gravity flow schemes were low. The users who were reluctant to pay water tariff considered operation of gravity schemes as something simple that required no skills, not need much technical knowhow for operation. All observed seven schemes had less than NPR 50,000 in O&M fund. Their water tariff rate was only NPR 50 per household, except one scheme with NPR 100 per household.
- **Is the water tariff adequate for O&M?** In too many cases it is not.
 - ➔ Out of 32 schemes, 40% are not able to meet their operating cost. More specifically, out of 19 electric lift schemes, only 42% of schemes were able to meet their operating expenses whereas 58% schemes were running short of funds.
 - ➔ Although 60% of the schemes were able to cover their operating cost, most of them operated close to the break-even point. Very few schemes were able to generate any surplus amount for future maintenance cost.
 - ➔ Among four solar lift schemes, one was not able to bear its operating cost through the revenue generated, while the other three solar schemes covered their operation cost. All gravity flow water supply schemes observed had less than NPR 50,000 in O&M fund.

WHAT DOES O&M FUND COVER?

O&M funds should be collected for both short term and long-term use, see also *Definitions*:

1. **Operating and minor maintenance expenditure:** WUSC needs to have cash available for labour (VMW's salary), spare parts and other materials for routine maintenance, and fuel or electricity if this is needed for the lift schemes; and
2. **Capital maintenance expenditure:** WUSC needs to have a system generating revenue for future, beyond regular costs for such as major repair and replacement of structures and assets, as well as possible needed to keep the system running.

The study found that:

- Electric lift water supply schemes were more expensive to operate due to electricity cost in comparison to the solar lift and gravity flow schemes. According to the study, the average monthly operation cost of an electric lift scheme was approximately NPR 13,000.
- Solar lift systems are less expensive in terms of operating but the maintenance cost tends to be high. Solar schemes seem to be more affected by the thunder lightning and these replacement costs were beyond the capacity of WUSCs.
- Gravity flow systems are more simple to operate, and consequently water tariff rate and immediate O&M fund needs are low. Some reasons are that 1) gravity flow schemes do not demand high skilled VMWs as compared to lift schemes, thus VMW salary is nominal; 2) no electricity charges; and 3) user friendly technology, resulting in less expenses in maintenance of spare parts reducing the operating cost as well.
- 12% of sampled WUSCs mobilize their O&M fund as a micro-credit loan within the users with high interest rate up to 24%. However, these WUSCs were not able to maintain their account books transparently. No records found in most of the WUSCs during study visit. Repayment rate is very low. For example, in one case WUSC gave loan to users two years ago amounting NPR 59,378 but no repayment or even updated records on any follow up till date.
- WUSCs' O&M funds are at present being operated mostly through commercial banks with zero percent interest rates. Instead, banks are charging operational cost resulting in the reduction of the fund. 19 schemes (59%) get 0 interest for their O&M funds, one scheme each receives 3% and 4% interest rate, and 11 schemes receive 6% interest rate.
- 40% of sampled WUSCs operate their account in Development Banks (mostly in Terai Region) with minimal interest rate. Even though the banks are located at the district headquarters they are not very accessible from the community.



Photo: Examples of WUSCs book keeping – there is a lot of room for improvement!

WHAT DID WE CONCLUDE ABOUT COOPERATIVES?

The study concluded that O&M funds should be mobilized through existing and reliable cooperatives where WUSCs can gain extra revenue for their funds, and minimize the risk of losing their funds due to inflation alone. Possible risks of such mobilization should be assessed and mitigated case by case, i.e. through careful selection of cooperative and ensuring WUSC members have sound financial and managerial skills (e.g. practice of public audits)

With regards to local cooperatives, the study found that:

- WUSCs are responsible for the proper management of O&M fund. But, WUSC itself is not meant to be working as a micro-credit institution. In most of the cases, WUSCs found reluctant to manage the funds and book-keeping....
- Existing cooperatives in the VDCs are providing wide range of services with focus on saving and credit activities. At the same time, there appears to be mistrust of these institutions.
- There are promising cooperatives that can provide services to WUSCs.
- Most of the cooperative members are also WUSC members.
- WUSCs have huge potential to get immediately affiliated with cooperatives and utilize their service. With further technical backstopping to WUSC on Cooperative and its service, it can instantly generate additional revenue for its O&M fund.

Table: How WUSC can identify a reliable cooperative that has the right kind of services

Categories	Checklists	Indicators
General Information	Registered as per Government of Nepal rules & regulations	Registration Number
	Address	Should serve the wards of WUSC
	Type of cooperative	Able to provide service to WUSC
	No. of shareholders	WUSC members should be included as members of the cooperative
	No. of WUSC member as shareholders	Should cover substantial number
	Services (financial/non-financial)	Saving and Credit; Other services e.g. linkage development, counselling etc.
Governance	Executive committee composition	Inclusive executive committee (at least some members from WUSC)
	Statute & guidelines (account, loan & administrative)	Cooperative should have all these guidelines
	Annual general meeting	Regular Annual General Meeting organized
	Regular monthly meeting	Regular meeting organized
Financial Status	Share capital	Shows good volume as per SH number
	Types of savings	Should be able to operate O&M saving account with regular interest rate
	Sector of investment	Investment in income generation activities
	Repayment rate	Above 90%
	Rate of interest in saving	Above 9% (preferable)
	Reserve fund	Reserve fund of cooperative compatible with the size of its operation
Management Status	Office/no. of staff	Presence of trained regular office staff
	Capacity building of Executive Committee, sub-committee, staff members	Trained Executive Committee, sub-committee, staff members
	Affiliation with bank/federation	Affiliated with bank/federation

WHAT ARE WE RECOMMENDING?

- **Triggering changes in attitudes:** Behaviour change triggering tools are now widely used in sanitation and hygiene context. We should consider similar approach in the context of water services. How to trigger attitude change within those beneficiary communities where there is a reluctance to pay water tariff for water services, where WUSCs are struggling to collect water tariff to deliver the expected services?
- **Assessment of Cooperatives:** Cooperatives provide both financial and non-financial services to its members. Financial services include saving and credit, whereas non-financial services cover a range of services such as training to its members and linkage to relevant stakeholders. These link to livelihoods development. This Brief recommends to explore the local cooperatives in more detail to confirm whether they would indeed have the kind of services and financial reliability WUSCs need.
- **Water tariff rate:** Sustainability of any scheme heavily relies on the amount of water tariff collected. Thus, WUSCs should be collecting ADEQUATE water tariff which may not be what people are *willing* to pay. Awareness among the users is needed.
- **WUSCs should not mobilize their O&M as saving and credit themselves if the rules are not clear:** WUSC as an institution is not meant to be a micro-financing institution. The WUSC members are typically not trained to run a saving-and-credit system, either. Nevertheless, this option has been promoted by several WASH projects, and is considered an option especially in absence of accessible financial institution or when banks are providing zero percent interest only. This study found that in those cases where this was done, it failed. WUSCs should be well trained on saving-and-credit fund management, book-keeping and good governance. Without financial discipline, clear system for repayment and committed qualified people there is a high risk of mismanagement of funds.
- **WUSCs capacity enhancement counts:** Before implementation of any scheme and when selecting WUSC members, WUSCs must know what will be expected from them in terms of financial and managerial responsibilities in days to come. WUSCS should be able to set the rules and regulations, maintain transparency, mobilize VMW/Operator efficiently, collect regular water tariff, and maintain their book-keeping properly.

WUSC should be facilitated to operate its account in cooperative or other local financial institution, if:

- O&M fund account is operated in a commercial bank with zero percent interest rate.
- Bank charges an annual operation cost.
- Banks do not provide any services to WUSCs, such as loans for capital maintenance expenditure.
- Banks are too far to reach for WUSCs and hence, the account is likely to remain idle.
- Accessible and financially sound options (cooperatives) are available in community.

Photo: Counting counts – there could be more applications for the mobile phones also in the context of water tariff collection and O&M fund management



DEFINITIONS Fonseca et.al (2011), p. 8

Operating and minor maintenance expenditure: There is a requirement for recurrent (regular, ongoing) expenditure on labour, fuel, chemicals, materials, and purchases of any bulk water. Most cost estimates assume this runs at between 5% and 20% of capital investments. Minor maintenance is routine. It is maintenance needed to keep systems running at design performance, but does not include major repairs or renewals which are recognised as not recurrent. Sometimes the distinction between these categories is less than clear. It also includes 'household coping costs' by which households spend money to achieve a satisfactory level of service; i.e. cleaning products for sanitary facilities, energy costs, etc.

Capital maintenance expenditure: Expenditure on asset renewal, replacement and rehabilitation covers the work that goes beyond routine maintenance to repair and replace equipment, in order to keep systems running. The costs may be estimated based upon serviceability and risk criteria related to service degradation and failure. Accounting rules may guide or govern what is included under capital maintenance and the extent to which 'broad equivalence' is achieved between accounting charges for depreciation (designed to build up a reserve for renewal) and actual expenditure on capital maintenance. Capital maintenance expenditures and potential revenue streams to pay those costs are critical to avoid the failures represented by haphazard, and almost always late, system rehabilitation.

REFERENCES & SUPPORTING DOCUMENTS

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RESULTS INDICATORS FOR RWSSP-WN II

This study relates to the RWSSP-WN II Result indicator 2.2 Institutional capacity:

of WUSCs supported by the Project fund in the Phase I and Phase II inclusive and capacitated to provide sustainable services. WUSC defined as functional fulfils the following criteria:

- a) WUSC is registered and has statute
- b) O&M plan made and applied*
- c) Adequate water tariff defined and collected*
- d) VMW trained and regularly working as needed
- e) WUSC has proportional representation of caste/ethnic/social groups, and 50% women

* O&M Plan and water tariff calculation are now merged with WSP. This links to result indicator 2.1 Safe water: # of water supply schemes supported by the Project fund in the Phase I and Phase II apply a Water Safety Plan (WSP) with CCA/DRR component.

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