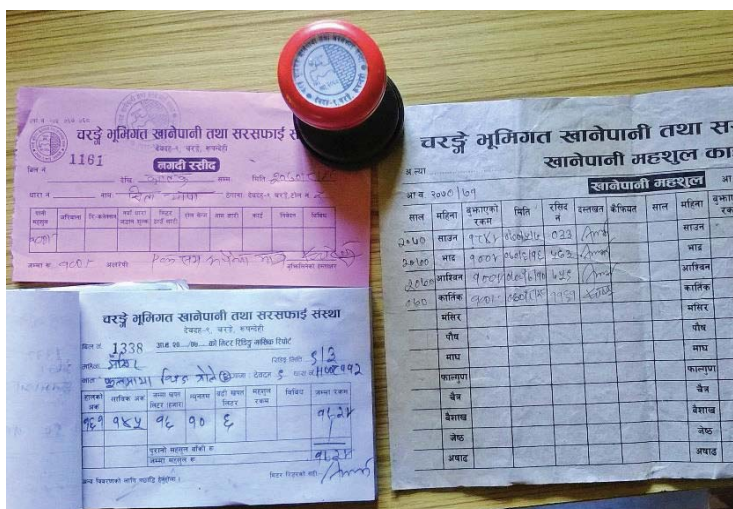




Rural Water Supply and Sanitation Project in Western Nepal Phase II

Towards Reliable Operation & Maintenance Fund Management of Drinking Water Supply Schemes



Sunita Sharma

Short Term Consultant

Feb. 2016

CONTENTS

CONTENTS	1
ANNEXES.....	2
LIST OF FIGURES	2
LIST OF TABLES	2
ABBREVIATIONS.....	3
EXECUTIVE SUMMARY	4
1 INTRODUCTION	6
1.1 STUDY BACKGROUND.....	6
1.2 PURPOSE, GOAL & OBJECTIVES	6
1.3 REPORT STRUCTURE.....	7
1.4 METHODOLOGY, STUDY AREA AND PARTICIPANTS.....	7
1.5 EVALUATION ACTIVITIES & TIMELINE.....	8
1.6 LIMITATIONS OF STUDY.....	9
2 ASSESSMENT OF OPERATION AND MAINTENANCE FUND	10
2.1 O&M FUND STATUS.....	10
2.2 REVENUE GENERATION	10
2.3 OPERATING COST	11
2.3.1 <i>Electric lift drinking water supply schemes</i>	12
2.3.2 <i>Solar lift drinking water system</i>	12
2.3.3 <i>Gravity flow drinking water system</i>	13
2.4 MAINTENANCE EXPENSES	13
2.4.1 <i>Overview to maintenance expenses</i>	13
2.4.2 <i>Repaired component of drinking water supply schemes</i>	14
2.4.3 <i>Maintenance skill availability</i>	15
2.4.4 <i>Maintenance finance availability</i>	15
2.5 MAJOR CHALLENGES OF OPERATION AND MAINTENANCE.....	16
2.6 WATER TARIFF	16
2.6.1 <i>Background to water tariff</i>	16
2.6.2 <i>Water tariff and cost recovery</i>	17
2.6.3 <i>Subsidized water tariff</i>	18
3 CAPACITY BUILDING AND GOVERNANCE	18
3.1 WATER USERS AND SANITATION COMMITTEES	18
3.2 PRIVATE SECTOR ROLES.....	19
3.3 FINANCIAL INSTITUTIONS.....	19
3.4 FEDWASUN.....	19

3.5	HARDWARE SUPPLIERS	20
4	CONCLUSIONS AND RECOMMENDATIONS.....	21
4.1	CONCLUSIONS	21
4.2	RECOMMENDATIONS.....	21

ANNEXES

ANNEX 1	DETAIL TERMS OF REFERENCE
ANNEX 2	CHECKLIST-WUSC
ANNEX 3	CHECKLIST-PRIVATE SECTORS
ANNEX 4	DETAIL ITENARY
ANNEX 5	O&M FUND STATUS & REVENUE GENERATION
ANNEX 6	MAINTENANCE EXPENSES
ANNEX 7	WATER TARIFF DETAIL

LIST OF FIGURES

Figure 1: O&M fund Status	10
Figure 2: Mobilization of O&M Fund	11
Figure 3: Operational Expenses Charts.....	11
Figure 4: Operational Self Sufficiency-Electric Lift System	12
Figure 5: Operational Self-Sufficiency-Solar Lift System.....	12
Figure 6: Operational Self Sufficiency-Gravity Flow	13
Figure 7: Maintenance Skill Availability	15
Figure 8: Maintenance Finance Availability.....	15
Figure 9: Water Tariff Rate-How is it decided?.....	17

LIST OF TABLES

Table 1 : Maintenance Expenditure	14
Table 2: Repaired Components of drinking water supply schemes	14
Table 3: Water Tariff/Operational Cost Recovery	17
Table 4: Capacity Building & Governance Status.....	18

ABBREVIATIONS

AGM	Annual General Meeting
DDC	District Development Committee
DHQ	District Head Quarter
DWS	Drinking Water Schemes
EL	Electric Lift water supply schemes
FEDWASUN	Federation of Drinking Water & Sanitation Users Nepal
FNCCI	Federation of Nepalese Chamber of Commerce and Industry
G	Gravity Flow water supply schemes
GoN	Government of Nepal
HH	Household
MIS	Management Information System
O&M	Operation and maintenance
PoCo	Post-Construction
RWSSP-WN	Rural Water Supply and Sanitation Project in Western Nepal
SL	Solar Lift Schemes
TOR	Terms of Reference
VDC	Village Development Committee
VMW	Village Maintenance Worker
WSP	Water Safety Plan
WUSC	Water Users and Sanitation Committee

EXECUTIVE SUMMARY

Rural Water Supply and Sanitation Project in Western Nepal, Phase II (RWSSP-WN) contributes in achieving the goal set by Government of Nepal, " Achieving universal coverage of basic water supply and sanitation services to its citizens by 2017". RWSSP-WN has been serving unserved pockets which are hard-to-reach, water scarce and beyond the usual gravity flow systems service, including challenges of sustainability and full functionality. The communities must be in a position to pay sufficient water tariff and to cover costs, especially where the lift schemes are concerned.

The purpose of the proposed short term consultancy is to take forward the recommendations made with regards to using Cooperatives as an option for Water Users and Sanitation Committees (WUSC) for managing its Operation and Maintenance (O&M) fund. The recommendations related to the mobilization of O&M fund in financially safe and sustainable manner with regards to:

- Setting realistic water tariff rates;
- Assessing the services (financial and non-financial) available at local level; and
- WUSCs capacity enhancement for financial management.

This links into the RWSSP-WN II Post-Construction Guidelines (2015) and the Operation & Maintenance (O&M) and water tariff issues as presented in the RWSSP-WN II Water Safety Planning Guideline (Water Safety Plan (WSP) ++ concept).

This study was made by Ms. Sunita Sharma, short term consultant for RWSSP-WN II. See **Annex 1** for the detailed Terms of Reference (TOR).

Eight districts (Tanahun, Parbat, Myagdi, Baglung, Syangja, Kapilvastu, Rupandehi and Nawalparasi) were selected for study area where 84 drinking water supply schemes mostly implemented in Phase I of the project were visited. The study adopted both quantitative and qualitative methods, wherein stakeholders' experience and perception on operation and maintenance were the main source of information. The information was collected from District Level Post Construction (PoCo) Workshop. Study was conducted in January and February 2016.

The key findings of 84 sample schemes were:

- O&M fund of 79% of the schemes is below NPR 100,000. This is low for any major maintenance of schemes.
- O&M fund is mobilized through banks, cooperative, Micro-Financing and by WUSC itself. Only 28% schemes are generating any interest from O&M fund. Other are operating either through 0% interest account and diminishing its value.
- 10% of O&M fund being mobilized by WUSC members without taking consensus from the users.
- 59% WUSC are able to generate revenue to meet its monthly operating expenses. Among them:
 - 59% of the Electric Lift Schemes (EL) generate revenue
 - 96% of the Solar Lift Schemes (SL) generate revenue
 - 61% of the Gravity Flow Schemes (G) generate revenue

Maintenance Cost seems to be significantly high for Electric Lift Schemes followed by Solar Lift. Study shows frequency of maintenance is notable in 2nd year of its operation. Water pumping motor and transformer are relatively expensive to repair.

For minor repair Village Maintenance Worker (VMW) or local technicians are mobilized.

19% Water Users & Sanitation Committee (WUSC) purchased the materials needed for the maintenance of their schemes from the District Head Quarter (DHQ) and 7% from nearby central market (Butwal, Pokhara and Kathmandu).

Maintenance cost is managed by O&M fund, support from DDC/VDC and User's Contribution.

Major challenges of operation and maintenance were:

- Lack of much needed technical knowledge
- Financial Constraint
- Lack of knowledge on available resources

Collected water tariff is used for O&M expenses. Very few WUSCs have surplus amount for the future maintenance or any major capital maintenance expenditure.

Generally water tariff is decided from mass meeting. Some WUSC are providing subsidized rate for the ultra-poor households and community institutions.

The study noticed that the capacity of WUSCs to maintain the book-keeping system and set adequate tariff rate for O&M are not sufficient.

The study recommended the following:

- **Increase Operation of Maintenance Fund:** To upkeep services of DWSS, O&M fund should be immediately increased.
- **Mobilization of O&M Fund:** WUSC should operate its O&M fund where they are able to generate revenue.
- **Repair and Maintenance:** There should be trained human resources (technical) to minimize the risk of system breakage. Also WUSC should be aware on the availability of technical and financial resources to maintain its schemes.
- **Water Tariff Rate:** WUSC needs to set its water tariff considering the cost recovery of schemes.
- **Linkage Development of WUSC:** WUSC needs to develop linkage with nearby financial institution (Development banks/Cooperatives) for financial support. For non-financial support Federation of Drinking Water & Sanitation Users Nepal (FEDWASUN) should be able to facilitate.
- **Capacity Enhancement of Cooperative and FEDWASUN:** Capacity of Cooperatives and FEDWASUN should be enhanced by national/district level federation to give proper service to WUSC.
- **Governance:** Among 84 studied MUSC most of the have never done public auditing, Annual General Meeting (AGM), no O&M regulation/plan, which is a serious issue. Therefore, WUSC should immediately perform all these to maintain transparency and good governance
- **Capacity Enhancement of WUSC:** WUSC should be able to set the rules and regulations, maintain transparency, mobilize VMW/Operator efficiently, collect regular water tariff and maintain book-keeping properly. Thus, capacity of WUSC should be enhanced to get the better results. Immediate public audit should be done in all WUSC to keep financial clarity.

1 INTRODUCTION

1.1 STUDY BACKGROUND

Government of Nepal (GoN) has envisioned for achieving universal coverage of basic water supply and sanitation services to its citizens by 2017. RWSSP-WN Phase II contributes to achieving the full coverage targets in its working regions. The remaining unserved pockets are expected to be hard-to-reach, water scarce and beyond the usual gravity flow systems service. At the same time, even if the coverage is already high, sustainability and full functionality remain challenges. The communities need to be in a position to pay sufficient water tariff and to cover costs, especially where the lift schemes are concerned.

RWSSP-WN Phase II purpose-level indicator 2 is “All water supply schemes supported by the project provide functional, improved and safe water supply services.” This indicator relates to Phase I and Phase II gravity flow and lift water supply schemes (piped water systems) that are operated and managed by WUSCs. Result 2 (Component 2) is “Access to safe, functional and inclusive water supply services for all achieved and sustained in the project working VDCs.” Sustainable service requires that financial systems are in place to pay for regular maintenance (i.e. compensate for a maintenance worker), fund timely repairs, extend and improve service as demand changes, respond to immediate damage occurring due to e.g. natural hazards or road construction, and eventually replace infrastructure at the end of its useful life.

Under Result 2, Indicator 2.2. takes a closer look at the institutional capacity of WUSCs. The composite indicator looks at whether an adequate water tariff has been defined, and whether it is collected i.e. in operation & maintenance fund. Other sub-indicators under 2.2. are WUSC registration status, whether O&M plan is made and applied, whether VMW has been trained and is working as needed, and whether WUSC has proportional representation of caste/ethnic/social groups and 50% women.

The RWSSP-WN Phase II baseline (2015) collected data on Operation and Maintenance (O&M) plan and implementation from 278 and 269 schemes out of total 367 Phase I gravity and lift schemes. Out of the WUSCs that were observed and interviewed, 49% confirmed that they have some type of O&M plan and 37% confirmed they are implementing it. According to the baseline survey, 51% of the Phase I scheme WUSCs were collecting a water tariff. In majority of the schemes (71%), the monthly water tariff per household is NPR 50 or less.

The RWSSP-WN Phase II has a defined method of calculating water tariff rate that is adequate for day-to-day operating cost of the scheme; this should be the minimum level of collected water tariff. There is also an option for more advanced WUSCs to calculate a water tariff that accumulates sufficient fund for the replacement of the scheme when it has surpassed its design period (project cost recovery) (Baseline Report 2015). WUSCs are likely to face challenges much earlier in terms of need to extend or increase the capacity of their water system, in addition to regular maintenance and repairs.

1.2 PURPOSE, GOAL & OBJECTIVES

The purpose of the proposed short term consultancy is to take forward the recommendations made with regards to using Cooperatives as an option for Water Users and Sanitation Committees (WUSC) for managing its Operation and Maintenance (O&M) fund. The recommendations related to

- Mobilization of O&M fund in financially safe and sustainable manner;
- Setting realistic water tariff rates;
- Assessing the services (financial and non-financial) available at local level;
- WUSCs capacity enhancement for financial management, and
- Defining in further detail how the O&M fund could operate through a cooperative.

This links into the RWSSP-WN II Post-Construction Guidelines (2015) and the O&M and water tariff issues as presented in the RWSSP-WN II Water Safety Planning Guideline (WSP ++ concept).

It was recommended such as district and VDC-level post-construction workshops to collect both quantitative and qualitative data with regards to the recommendations made in the FY02 report, ultimately aiming to facilitate WUSCs to operate their O&M fund accounts through reliable local financial institutions where the value is not lost. The following objectives build on the recommendations made in the FY02 study report.

Share the top-line findings from the FY02 study report that covered 32 schemes. What are the key positive findings? What are the alarming findings? Why are they alarming? Are the challenges and practices shared across the districts? How WUSCs should set realistic water tariff rates? To what extent cost recovery makes sense, considering the inflation and the available interest rates & possible charges?

Mobilization of O&M fund in financially safe and sustainable manner: introduce the concept of cooperatives and other local financial institutions as an option for O&M fund management. Define in further detail how the O&M fund could operate through a cooperative, and what kind of cooperatives or other local financial institutions are feasible? How to assess and identify suitable institutions for O&M fund? What kind financial or other services would be useful for WUSCs?

WUSCs and Support Persons capacity enhancement for financial management, WUSC capacity gaps and adequate tariff: The consultant will facilitate a session that will orient both the district stakeholders (District WASH Unit staff and Support Persons, others as identified relevant) and participating WUSCs themselves in identifying financial and managerial capacity gaps of WUSCs related to O&M fund management, and defining and collecting adequate tariff to cover expenses. The consultant will prepare pre-workshop questionnaire to WUSCs that covers also issues relating to present practices and capacity, and compile the findings with conclusions and recommendations in the final report.

Monitoring support: There should be regular follow up and corrective measures to ensure sound O&M fund practices and to minimize the risks related to the use of cooperatives. The consultant will discuss this during the workshop, raising such questions as what are some of the indicators that WUSCs could use themselves in public audits and public hearings. What are some of the indicators that should be included into post-construction (final) monitoring? What are some of the indicators that would be good to include into District MIS?

1.3 REPORT STRUCTURE

Chapter 2 sums up the assessment of Operation & Maintenance status of DWSS, how O&M fund is being mobilized. It also presents an analysis of Maintenance Status, Water Tariff Management & Revenue Generation. GESI considerations have been integrated in the findings and analysis wherever relevant and possible. Chapter 3 Key Conclusions and Chapter 4 conclude the study providing recommendations for the future.

1.4 METHODOLOGY, STUDY AREA AND PARTICIPANTS

The study utilized both qualitative and quantitative methods, wherein WUSC experience and perception are the sources of information. Post Construction Workshop was the prime event on collecting data with WUSC and interaction with private sectors for the sustainability of the project.

PoCo Workshop is an entry point of Post Construction Phase in the district. The overall objective of the post-construction phase is to ensure sustainable and quality water services provision through appropriate O&M system and WUSC management practices. At this time, all schemes supported by the project fund in Phase I and II should be fully functional and provide improved water supply services to all. Specific objectives of the District level workshops were to:

- Develop common understanding among all stakeholders on need and process of post-construction activities and services for improving functionality and sustainability of water supply services.

- Share what is already done related to post-construction in the district (pre-survey) by different stakeholders.
- Know what the main post-construction needs of WUSCs are and their priority concerns included in the district level process.
- The private service providers' directory initiative introduced and agreed.
- Receive commitments from all the stakeholders to support WUSCs.
- Prepare an action plan for further process including private sector involvement, service directory preparation, capacity building and monitoring; tentative dates fixed for the coming events.

All the selected districts have schemes with big investment and wide coverage that were implemented during the Phase I, including lift schemes (electric/solar) and gravity schemes. Out of the 84 sampled schemes, 27 were Electric Lift, 24 Solar Lift and 33 are Gravity Schemes. The Checklist of interactions with WUSC and other key stakeholders are attached in **Annex 2**. Total 84 WUSCs of 8 districts were selected for the study.

Tanahun	16 WUSC
Parbat	10 WUSC
Myagdi	10 WUSC
Baglung	09 WUSC
Syangja	12 WUSC
Kapilvastu	10 WUSC
Rupendehi	08 WUSC
Nawalparasi	09 WUSC

In addition, Service Providers, Commercial Banks, Cooperatives, Federation of Drinking Water and Sanitation Users Nepal (FEDWASUN), Federation of Nepal Chamber of Commerce and Industry (FNCCI), Hardware Suppliers also participated in discussion giving insights to WUSCs on available Post Construction services (**Annex 3**). The information collected for the study was primarily from: WUSCs, VMW/Operator, and Representatives from Commercial Banks, Cooperative Federation, FEDWASUN, FNCCI and Field level staff of DDC/RWSSP-WN II.

1.5 EVALUATION ACTIVITIES & TIMELINE

The following are the activities undertaken for the study:

- Study of project documents, MIS report of O&M status of schemes
- Preparations for data collection and field visit
- Selection of districts, VDC and schemes for study
- Design Workshop questionnaires
- Finalize the field visit schedule in close coordination with D-WASH-Advisor
- District level Post Construction Workshop started from Jan 13th – Fe. 5th 2016. Workshops were conducted in 8 districts with 84 WUSCs, Bank/FNCCI, FEDWASUN Representative and VDC Secretaries. **Annex 4** provides the detail itinerary.
- Reporting, Debriefing, Information compilation and analysis, report preparation and finalization.

1.6 LIMITATIONS OF STUDY

The study focuses on identifying the status of O&M fund, options of generating revenue, Water Tariff and capacity gap analysis of WUSC for operating O&M fund and sustainability aspect of each schemes. For this, 84 WUSCs from 8 districts were selected as sample. Limitations of this study include:

- WUSC selected as sample were mostly from the RWSSP-WN Phase I schemes. The reason for selecting these schemes were to study their operation and maintenance experience. Thus, scheme that has completed few (2-5 years) of operation were selected as sample. But these schemes did not follow the Step-By-Step Guideline of implementation, and as such do not represent typical schemes as in the RWSSP-WN Phase II.
- Even if the Sample size selected was significant and the data obtained provided valuable insight and are applicable to a similar context and district conditions, differences in geographical diversity and per capita income of the beneficiaries must be taken into account when drawing conclusions from the data.
- Although the information were given beforehand to bring all the related book-keeping and scheme documents (meeting minutes, book-keeping, bank statements, tariff collection book, etc.), most of the WUSCs lack to bring those in workshop. Thus, it was difficult to verify the data collected. Either WUSC doesn't have any books of account or the information given were not proper.
- In few discussions, WUSCs were not able to present all the required documents or the selections of participants were not appropriate. WUSC selected to send VMW or new member with very little knowledge about the schemes.

2 ASSESSMENT OF OPERATION AND MAINTENANCE FUND

2.1 O&M FUND STATUS

Operation and regular maintenance is vital for the sustainability of all drinking water schemes. Water Users Committee should be able to generate the sufficient revenue to maintain its regular operating cost and minor maintenance cost. In addition, WUSC should have sufficient O&M fund that can be helpful to retain the services in major damage as well. Studied WUSC do have amount in O&M fund but it varies from very minimal NPR 5,000 to NPR 650,000. Detail in **Annex 5**.

O&M Fund status of 84 Sample WUSC is depicted in Figure 1 below. Out of 84 schemes, only 21% have O&M Fund above NPR 100,000, whereas 57% of schemes do have less than NPR 50,000. Comparatively, Gravity flow schemes (G) have fewer amounts in O&M fund than Solar Lift (SL) or Electric lift (EL).

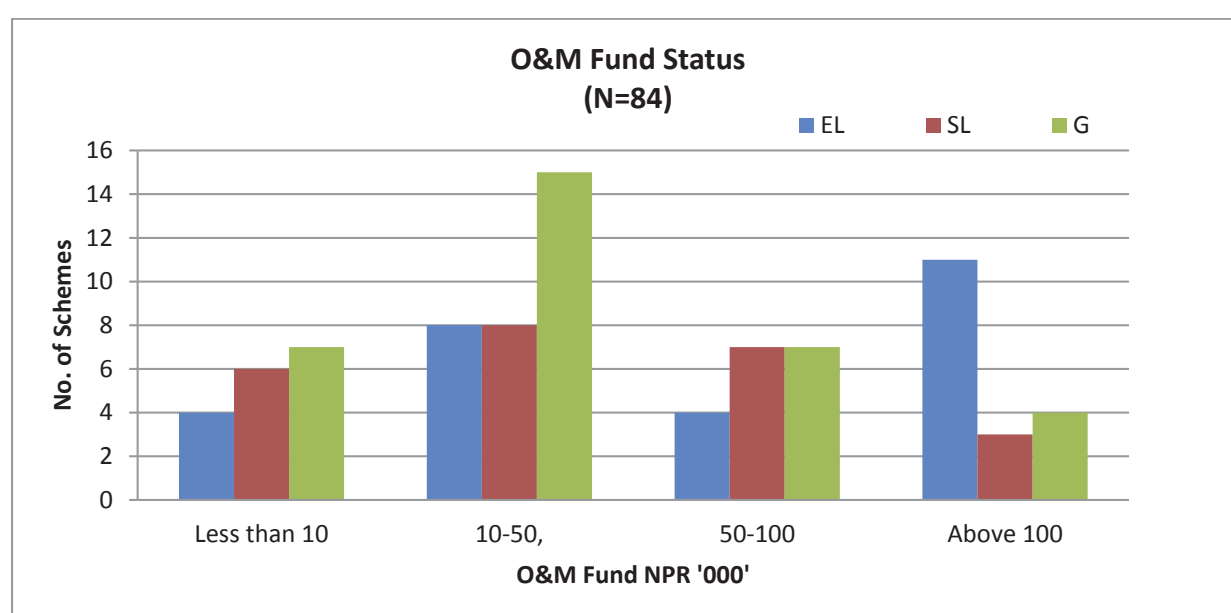


Figure 1: O&M fund Status

2.2 REVENUE GENERATION

The major sources of revenue generation with the studied DWSS are Monthly Water Tariff and Interest Earned from mobilization of O&M fund. At present, most of the WUSC are either at Break-Even point or below the par to generate its operating expenses.

Among 84 DWSS, 47% WUSC are mobilizing the O&M Fund through Bank/Cooperative and Micro-Financing and earning nominal interest. But 53% (NPR 3,781,684) of fund is staying idle in Banks with zero percent interest rate. 29% of O&M fund is being mobilized by the WUSC themselves, 19% as Micro-Finance and remaining 10% remain idle with WUSC. (Figure 2).

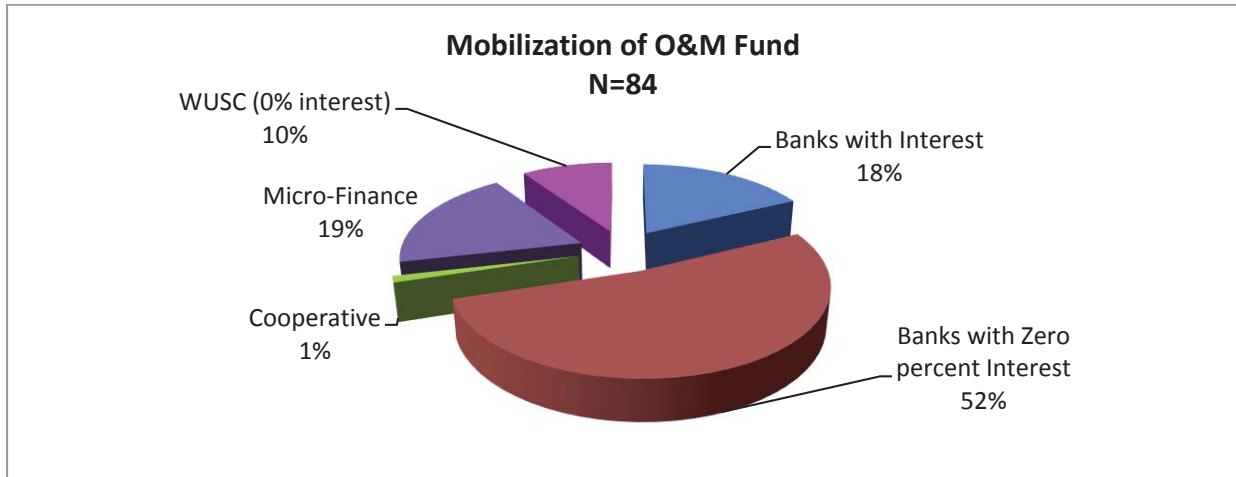


Figure 2: Mobilization of O&M Fund

2.3 OPERATING COST

Operating costs are the expenses which are related to the operation of a business, or to the operation of a device, component, and piece of equipment or facility. They are the cost of resources used by an organization just to maintain its existence. (Ref: Wikipedia). Operating Costs of Drinking Water Schemes are mainly of VMW's Salary, Electricity Expenses and administrative expenses.

WUSC should be able to generate sufficient revenue to meet its operating cost. Operating cost status of 84 sample WUSCs is depicted in Figure 3 below. Among 84 schemes, 59% of WUSC are able to meet its operating expenses. Remaining 41% WUSC are not able to meet its operating expenses. 59% schemes which are able to meet its operating expenses are also near to break-even point.

Comparatively, Solar Lift Schemes seems to be able to meet its operating expenses. Electric lift tends to in greater risk with regards to maintaining operating cost. Very few schemes were able to generate maintenance cost. This gives an early warning alarm for the sustainability of the schemes. Details of each type of schemes regarding its O&M Fund status are described further.

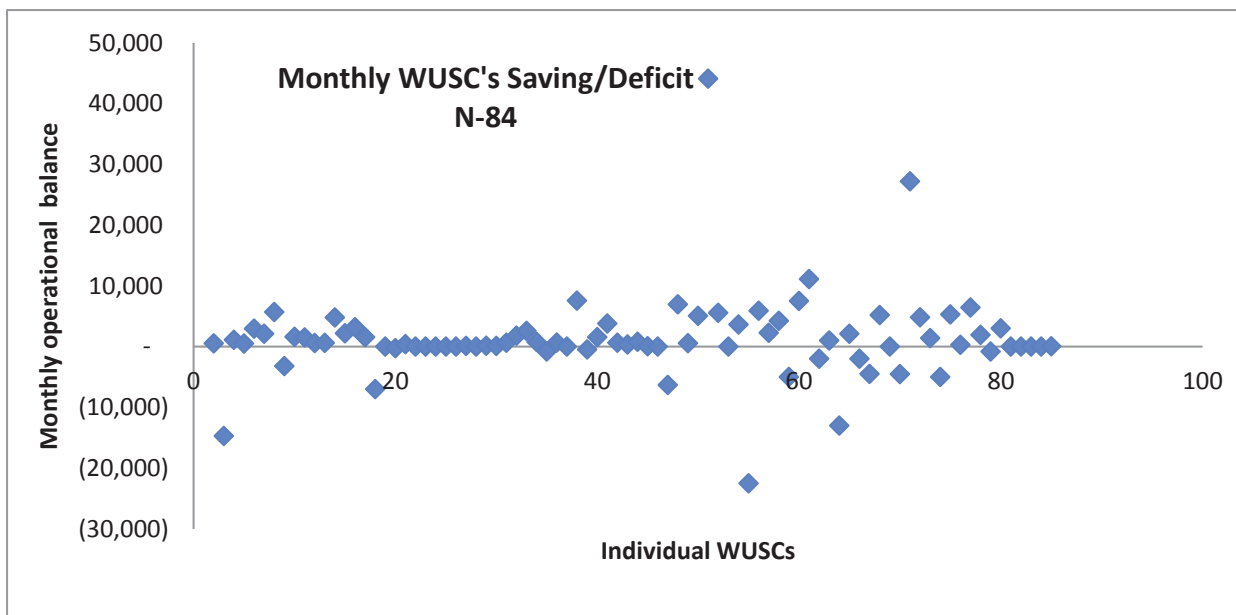


Figure 3: Operational Expenses Charts

2.3.1 Electric lift drinking water supply schemes

Electric lift drinking water supply tends to be most expensive in terms of operation expenses due to electricity cost in comparison with solar lift and gravity flow. In addition, the maintenance expenditure of electrical goods, fixing charges and lack of knowledge on available services are the constraints for regular water supply. Thus, the need of strong O&M fund is highly essential.

Revenue Generation & Expenses: WUSCs need to generate revenue for the smooth operation and maintenance of schemes. At present, out of 27 electric lift schemes only 59% of schemes are able to meet their operating expenses whereas 41% schemes are running short of funds (Figure 4). Tariff rate varies in different schemes and also the parameter to charge the tariff rate (per unit cost; per tap cost; per HH cost).

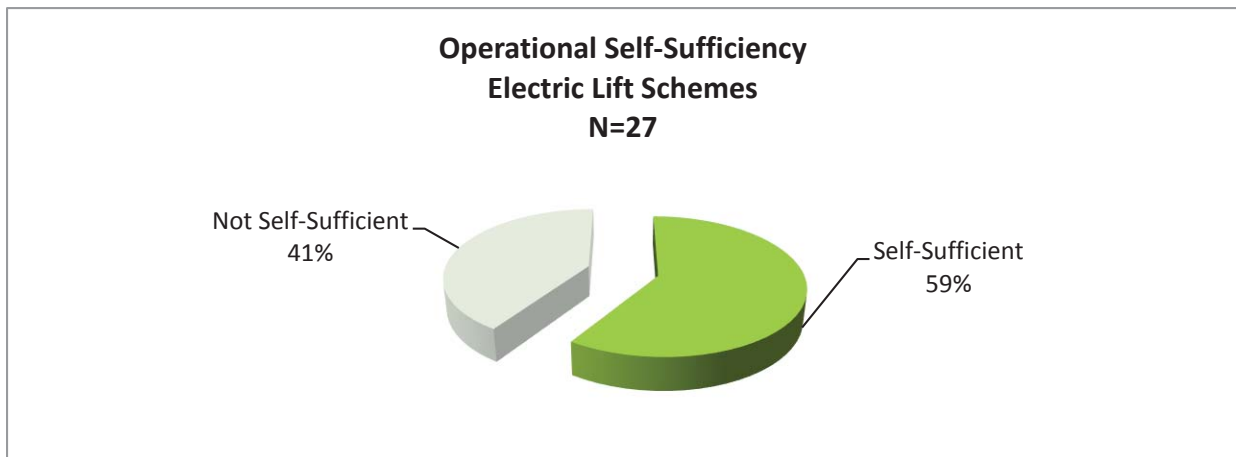


Figure 4: Operational Self Sufficiency-Electric Lift System

2.3.2 Solar lift drinking water system

Solar lift systems are less expensive in terms of operating expenses in comparison to electric lift, but the maintenance cost of these schemes tends to be high. During the study it was found that solar schemes were affected with the thunder lightening and the maintenance cost was beyond the capacity of WUSCs. Yet, solar lift schemes appear to be more self-sufficient than the other (Figure 5).

Revenue Generation & Expenses: Among 24 solar lift schemes Jababhairab drinking water supply scheme of Kapilvastu is only one scheme which was not able to meet its operating cost.

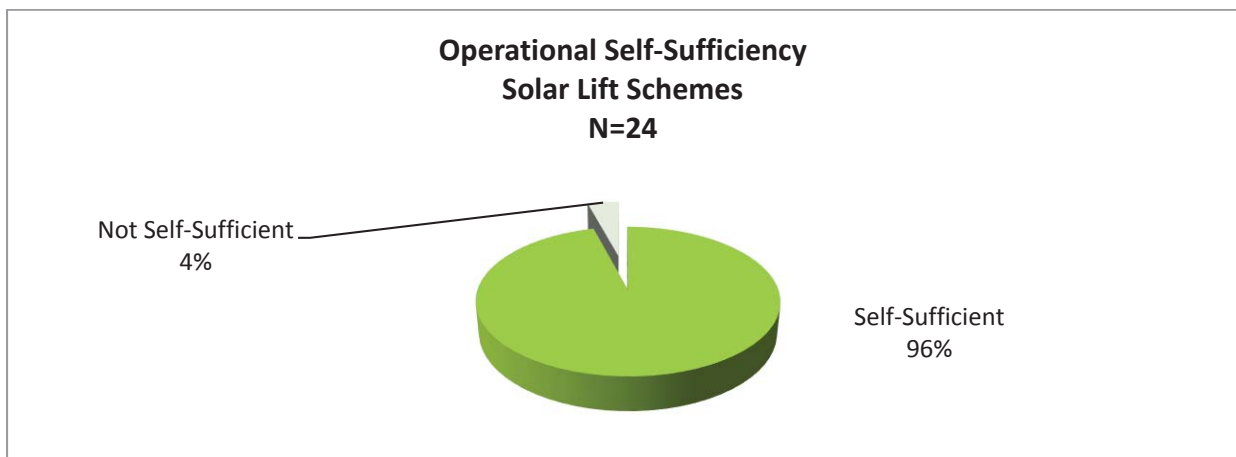


Figure 5: Operational Self-Sufficiency-Solar Lift System

2.3.3 Gravity flow drinking water system

Gravity flow schemes tend to be less expensive and easily manageable for community people. Out of the sampled 84 schemes, 33 were gravity flow drinking water schemes. In comparison to lift system, the operating cost of gravity flow is less for the following reasons:

- Gravity flow schemes do not demand high skilled human resources for operation as compared to electric lift and solar lift schemes, thus the salary paid to operator is nominal.
- No electricity charges.
- User's friendly technology, resulting in less expense in maintenance of spare parts reducing the operating cost as well.
- It is also observed that Water tariff rate and O&M fund of gravity flow scheme is quite low for following reasons:
 - Gravity schemes need less technical knowhow for operation and less expensive. Thus users are reluctant to pay the water tariff.
 - Less Water tariff rate

Yet, only 61% were self-sufficient (Figure 6). The drawback is that these schemes are not able to serve water scarce areas i.e. hill tops and other areas that lack easily accessible water resources.

Revenue Generation & Expenses: Although operating cost of Gravity Schemes are quite low still 39% of Schemes are not able to meet its operating expenses. This shows lack of proper management and coordination among WUSC and Users.

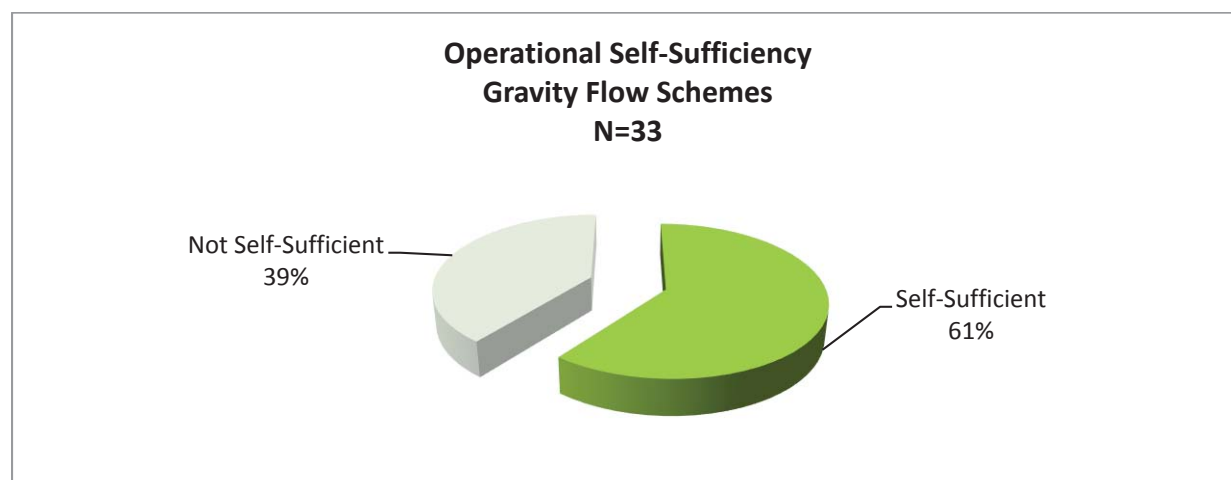


Figure 6: Operational Self Sufficiency-Gravity Flow

2.4 MAINTENANCE EXPENSES

2.4.1 Overview to maintenance expenses

Maintenance costs incurred to keep an item in good condition and/or good working order. When purchasing an item that requires upkeep, consumers should consider not just the initial price tag, but also the item's ongoing maintenance expenses. In this regard, the challenges in rural water supply in low-income countries include:¹

- A majority of tariffs are insufficient to cover capital maintenance costs, with many barely covering operational and minor maintenance costs;

¹ http://www.ircwash.org/sites/default/files/201303_9_wp_capmanex_web.pdf

- Tariff levels in a small proportion of cases are sufficient to cover operational and minor maintenance costs and also allow the service provider to establish a financial reserve. However, the financial reserve is not equivalent to the full depreciation of the asset base. This means that the service provider can operate effectively in the short and medium term, but over time will find it increasingly difficult to maintain specific service delivery standards, and eventually a third-party will need to co-finance capital maintenance; and
- In exceptional cases the service provider is able to raise funds that are adequate to cover operations and capital maintenance costs.

Most of the sample WUSCs has gone through maintenance expenditure since its operation at some point of time as is evident in Table 1. Relatively, electric lift schemes are the expensive one to be maintained. Detail in **Annex 6**.

Table 1 : Maintenance Expenditure

Type of Schemes	Maintenance Expenditure (NPR)						Total Expenses
	Year 1	Year 2	Year 3	Year 4	Year 5	> 5 year	
Electric Lift Schemes (Total N=27)	6,800 N=2	351,033 N=7	297,813 N=5	34,500 N=3	-	11,000 N=1	701,146 N=18
Solar Lift Schemes (Total N=24)	88,506 N=4	151,650 N=6	75,000 N=3	-	-	-	315,156 N=13
Gravity Flow Schemes (Total N=33)	-	75,000 N=1	1,500 N=1	70,000 N=1	-	-	146,500 N=3
Total Expenses	95,306 N=6	577,683 N=14	374,313 N=9	104,500 N=4	-	11,000 N=1	1,162,802 N=34

2.4.2 Repaired component of drinking water supply schemes

List of frequently repaired component of drinking water supply schemes is given in table 2.

Table 2: Repaired Components of drinking water supply schemes

Type of Scheme	Component Repaired
Electric Lift Schemes (N=27)	Panel Board
	TOD Meter
	Transformer
	Voltage Protection Guard
	MCB
	Meter
	Electric Motor
	Gate Valve
Solar Lift Schemes (N=24)	Water Pump
	Brass Union
	Meter
Gravity Flow Schemes (N=33)	Source Protection
	Wiring for Water Tank

2.4.3 Maintenance skill availability

To maintain the water service level in regular basis various technical skills are needed at different interval. Easy access of such skills profoundly contributes in sustainability of water supply schemes. Most of the studied schemes have undergone through maintenance at least once in every 3 year. 61% of WUSC used VMW or locally available resources for the maintenance purpose. Similarly, 19% WUSC approached district headquarters for the needed skills. Whereas 7% WUSC visited nearby big markets (Butwal, Pokhara or Kathmandu) and 13% WUSC got the maintenance services from the supplier (Figure 7).

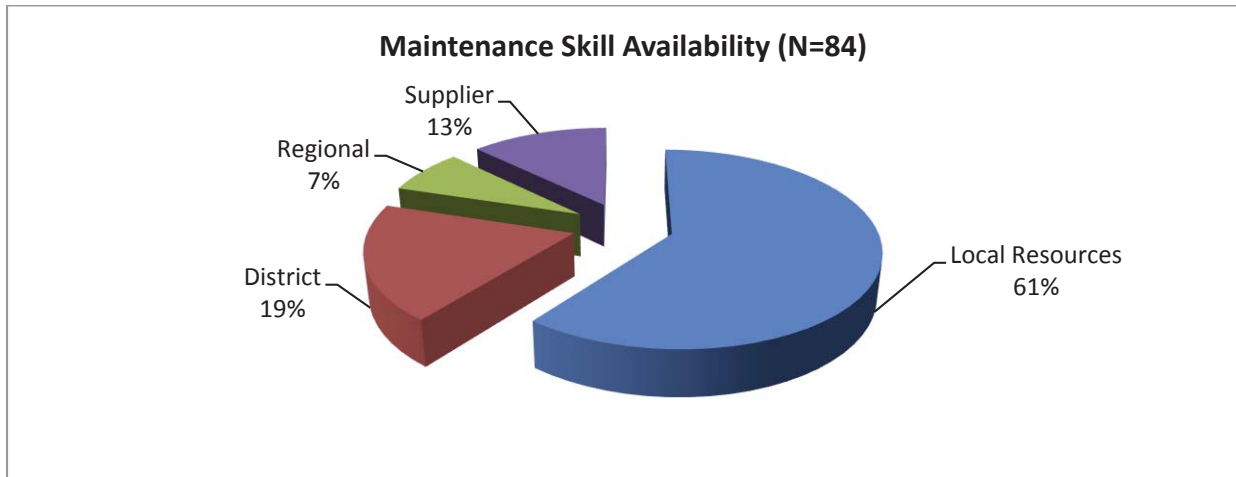


Figure 7: Maintenance Skill Availability

2.4.4 Maintenance finance availability

The most important aspect for sustainability of drinking water schemes is availability of financial resources. WUSC are quiet unaware on need of capital investment to run and upkeep the facilities. At present, the most common funds used for the maintenance are O&M fund, User's Contribution and support from external agencies (DDC/VDC) (Figure 8).

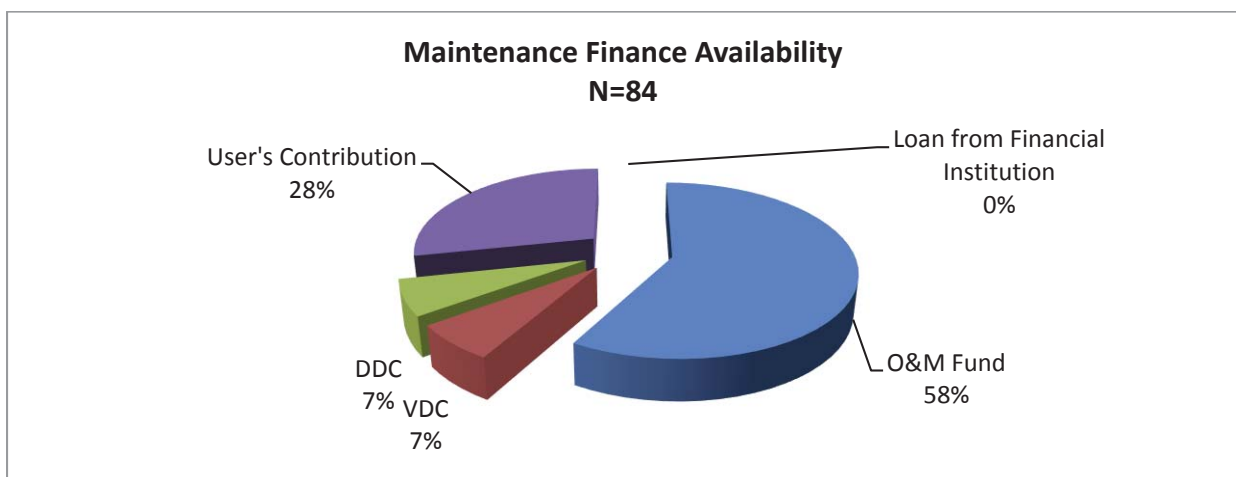


Figure 8: Maintenance Finance Availability

The most common way of financing maintenance at present is using the O&M Fund, 58% WUSC used O&M fund for their maintenance need, whereas, 28% maintenance is financed by User's Contribution. None of the WUSC has taken any form of loan from any financial institution for the maintenance purpose.

2.5 MAJOR CHALLENGES OF OPERATION AND MAINTENANCE

After completion and operation of drinking water supply schemes, WUSC have undergone with various challenges of operation and maintenance. The major challenges are:

- Natural Calamities
- Lack of technical skills
- Schemes not completed yet
- Technical Issue/Electro-Mechanical part broken
- Financial problems amongst the users
- Lack of awareness on need of water tariff
- Public Tap (Lack of Ownership)
- Technical skill locally not available
- Frequently breakdown of motor pump
- Lack of skill in Fund Management
- Excess electricity charges
- No VMW
- Lack of Capacity Building

2.6 WATER TARIFF

2.6.1 Background to water tariff

Water is an economic good and the Users/Beneficiaries should pay the cost of using it. The amount collected should be able to bear its operating cost, at least.

Water tariff collection is the only regular revenue WUSC generate for its operating expenses. The way of collecting water tariff varies from scheme to scheme. The flat-rate monthly payment system is the most popular. Most common way used by 84 schemes are:

- NPR .../month/HH
- NPR/Tap
- Per unit cost

Water tariff is largely collected on ad hoc basis which is generally equivalent to VMW's salary. Salary for VMW is also very nominal.

Out of 84 studies schemes, 95% decides water tariff rate either in AGM or in WUSC meeting (Figure 9). 5% of WUSCs set water tariff rate following the neighbouring schemes. None of the WUSC has set the Water Tariff rate considering cost recovery.

The Four Dublin Principles

1. Water is a finite, vulnerable and essential resource which should be managed in an integrated manner.
2. Water resources development and management should be based on a participatory approach, involving all relevant stakeholders.
3. Women play a central role in the provision, management and safe guarding of water.
4. Water has an economic value and should be recognized as an economic good, taking into account affordability and equity criteria.

Ref: ICWE, 1992

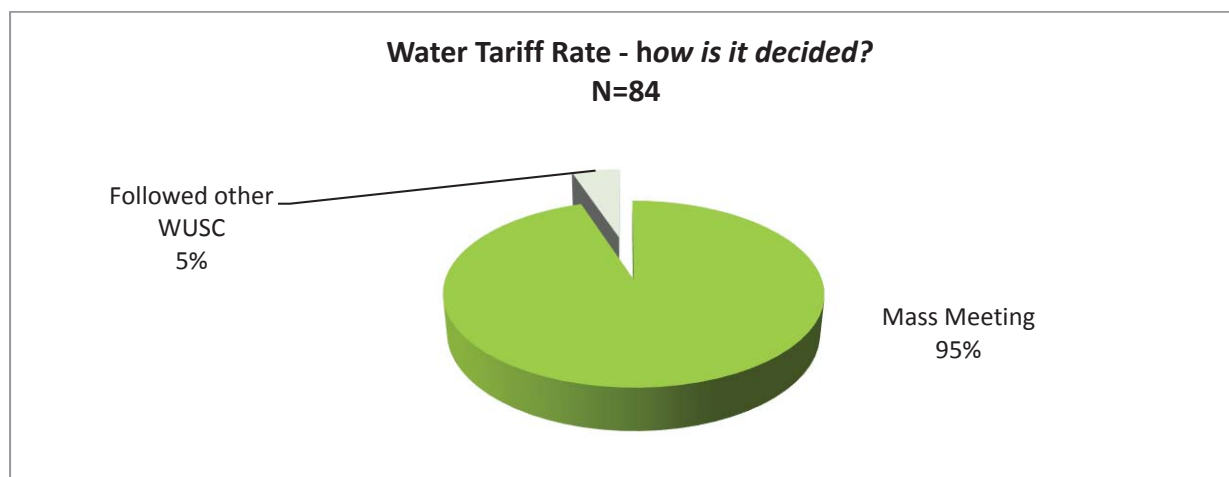


Figure 9: Water Tariff Rate-How is it decided?

2.6.2 Water tariff and cost recovery

The concept of water tariff has been introduced to raise sufficient funds for regular operation and maintenance activities, repair of damaged structures and replacement of components, for implementation of improvement or upgrading works, and pay for the VMW or other labour work etc. The O&M fund is vital for smooth operation of water supply schemes. In addition, the community should also prepare for the 'cost recovery' of the scheme. Since the scheme needs to be rehabilitated or reconstructed at the end of its life cycle, a specific fund should be generated through water tariff collection thorough out its life cycle. The purpose of 'cost recovery' of a water supply scheme is to prepare the community to fully rehabilitate or replace the scheme once it comes to the end of its life cycle. Two main objectives of Introducing Water Tariff are:²

- To collect fund for daily operating costs and repair and maintenance investment;
- To collect sufficient fund for the replacement of the scheme after the design period is over

Table 3: Water Tariff/Operational Cost Recovery

Type of Schemes	Able to meet Operating Exp. From Water Tariff	No. of Schemes	Percentage (%)
Electric Lift Schemes (N=27)	Yes	15	56
	No	12	44
Solar Lift Schemes (N=24)	Yes	23	96
	No	1	4
Gravity Flow Schemes (N=33)	Yes	16	48
	No	17	52

At present, the collected water tariff revenue is able to meet its operating expenses that too in few schemes only. 56% of Electric Lift Schemes, 96% of Solar Lift Schemes and 48% of Gravity Flow Schemes

² Gravity Water Supply Scheme Water Safety, Operation and Maintenance Plan Preparation Guideline: WSP++, RWSSP-WN II

are able to meet its operating expenses. Solar lift Schemes seems to be Self-Sufficient in comparison to Electric lift and Gravity Glow Schemes.

2.6.3 Subsidized water tariff

Most of the WUSC have decided water tariff rate without considering cost recovery. Few WUSC have been providing subsidized rate to ultra-poor household.

- 8% WUSC are providing subsidized rate for ultra-poor household
- Community Institutions like Temple, School and Police Station are getting water free of cost in 5% Schemes
- Similarly, 8% WUSC is providing water to DAG household at free of cost.

3 CAPACITY BUILDING AND GOVERNANCE

3.1 WATER USERS AND SANITATION COMMITTEES

Sustainability of any developed infrastructure needs an effort from WUSC and concerned stakeholders. WUSC should be able to maintain transparency through regular meeting, AGM, Public Auditing and maintaining good book-keeping system. Similarly, it should be able to deliver the expected service level for which O&M Regulation/Plan implemented, trained VMW, WSP is needed. 84 WUSC were studied with these aspects of Capacity Building and Governance with the following results.

Table 4: Capacity Building & Governance Status

Particulars	Findings	Remarks
Districts	8	Tanahu, Parbat, Myagdi, Baglung, Syangja, Kapilvastu, Rupandehi & Nawalparasi
Number of Schemes	84	
UC Registration		Percentage (%)
Yes	59	70.2
No	25	29.8
Functional Status		
Good	53	63.1
Average	18	21.4
Poor	13	15.5
O&M Regulation		
Yes	16	19.0
No	68	81.0
VMW		
Yes	79	94.0
No	5	6.0
Annual General Assembly		
Yes	36	42.9
No	48	57.1
WUSC Regular Meeting		
Yes	26	31.0
No	58	69.0
O&M Plan		
Yes	19	22.6

No	65	77.4
Water Safety Plan		
Yes	40	47.6
No	44	52.4
Regular Public Auditing		
Yes	34	40.5
No	50	59.5
Capable of maintaining Book Keeping/Record Keeping		
Yes	56	66.7
No	28	33.3

3.2 PRIVATE SECTOR ROLES

Sustainability of drinking water system largely depends on availability of various services for smooth operation and maintenance. It includes financial and non-financial services. WUSC needs financial options to generate revenue for its O&M fund and capital cost (loan) for its maintenance. Similarly, it needs spare parts and skills to timely repair its schemes. Thus, various development banks, Cooperative Federations, Hardware Suppliers and Maintenance Service Provider participated in the Workshop.

3.3 FINANCIAL INSTITUTIONS

At present, WUSC are able to get financial services from Commercial Banks, VDC level Cooperatives and Development Banks.

- Garima Bikash Bank is operating its services at Parbat and Myagdi Districts. They are providing 5% interest rate in deposit. Similarly, Muktinath Bikash Bank in Syangja district and SEWA Bikash Bank in Terai Districts are providing service to WUSCs.
- However these banks have not provided any loans to WUSCs. An option was discussed during workshop: Banks are providing loan without collateral to Micro-Finance Groups (MFG), WUSCs can be considered as a MFG and considered loan taking water tariff as regular revenue.
- VDC level cooperatives are one option for WUSC for its financial service. Thus, district level federation advised WUSC to approach them to identify the reliable cooperatives.
- Nepal Bank Ltd. And Agriculture Development Banks at present are not able to give any interest in the O&M fund as Nepal Government rules doesn't allow them to do so.

3.4 FEDWASUN

The Federation of Drinking Water and Sanitation Users Nepal (FEDWASUN) is a people based umbrella organization of drinking water and sanitation user's groups in Nepal. It facilitates the provision of drinking water, sanitation and hygiene (WASH) services to communities, advocates for water and sanitation rights (drinking water and sanitation for all and forever), brings people's issues to the attention of policy makers and service providers, and promotes good governance in relation to user's committee/ groups and service providers.³

Vision: Civilized society will be formed with healthy people by universal access of safe drinking water, good sanitation and hygiene.

Mission: Provision of safe drinking water, good sanitation and hygiene will be guaranteed by effective participation of users in policy formation and implementation by common understanding for self-reliance and sustainability.

³ See more at: <http://www.fedwasun.org/Introduction.html#sthash.43MJD6gl.dpuf>

Goal: To enhance the self-reliance capacity of Water and Sanitation User's group to influence policy making, planning and decision are making process through meaningful participation and to ensure sustainable Water and Sanitation capacity throughout Nepal.

Objectives: To empower and unify the users committee to protect, promote and fulfill the rights of water and sanitation for the sustainability and access of all people in WASH services by the means of advocacy.

District FEDWASUN representatives were invited in workshop to create a linkage between WUSC and FEDWASUN. The findings based on the district-level post-construction workshops held during this study were the following:

- Most of the districts FEDWASUN seem to be very passive on delivering its services to WUSCs.
- Among 8 districts in this study, Syangja is the only one district without having FEDWASUN.
- In Myagdi, the chairperson was quite new without knowing much of FEDWASUN roles and responsibilities.
- Whereas in Baglung and Parbat the participation of FEDWASUN was very passive. They were not available until the discussion session.
- In Tanahun, FEDWASUN did not consider that it should have any role in post-construction.
- In Rupandehi, chairperson of FEDWASUN gave full time and orients WUSC about the benefit of getting affiliated.
- In Nawalparasi, FEDWASUN was not invited.

3.5 HARDWARE SUPPLIERS

Availability of right material at right time with right skills is very vital for sustainability of drinking water schemes. Therefore, hardware suppliers along with FNCCI representative and Maintenance Companies (Solar & Electric) participated in the workshop.

- District suppliers assure the quality of material along with warranty and guarantee unless the material are purchased from the district.
- District suppliers complained that the WUSC purchase material from other district and ask them to make fake bills. Thus, they won't be able to get the advantage of warranty or guarantee service.
- Maintenance service provided advertised their service where WUSC were able to get the knowhow about the available services.
- FNCCI ensures the support to be provided needed for the WUSC.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

- O&M fund of 79% are below NPR 100,000 which is substantially low for any major maintenance of schemes.
- O&M fund is mobilized through banks, cooperative, Micro-Financing and WUSC mobilizing by themselves. Only 28% schemes are generating interest from O&M fund. Other are operating either through 0% interest account and diminishing its value.
- 10% of O&M fund being mobilized by WUSC members without taking consensus from the users.
- 59% WUSC are able to generate revenue to meet its monthly operating expenses. Among them:
 - 59% are Electric Lift Schemes
 - 96% are Solar Lift Schemes
 - 61% are Gravity Flow Schemes
- Maintenance Cost seems to be significantly high for Electric Lift Schemes followed by Solar Lift. Study shows frequency of maintenance is notable in 2nd year of its operation. Water pumping motor and Transformer are relatively expensive to be repaired.
- For minor repair VMW or local technicians are mobilized, 19% WUSC maintained their schemes from DHQ and 7% from nearby central market (Butwal, Pokhara and Kathmandu).
- Maintenance cost is managed by OM fund, support from DDC/VDC and User's Contribution.
- Major challenges of operation and maintenance were
 - Lack of much needed technical knowledge
 - Financial Constraint
 - Lack of knowledge on available resources
- Collected water tariff is used for operation and maintenance expenses. Very few WUSC have surplus amount form future maintenance. Generally water tariff is decided from mass meeting.
- Some WUSC are providing subsidized rate for the Ultrapoor household and Community Institutions.
- The study noticed that the capacity of WUSCs to maintain the book-keeping system and set adequate tariff rate for operating and maintaining the water supply scheme are not sufficient.

4.2 RECOMMENDATIONS

Increase Operation of Maintenance Fund: Only 21% WUSC has O&M fund above NPR 100,000 which is substantially low for major repair or capital maintenance of the schemes. O&M fund needs to be raised.

Mobilization of O&M Fund: 64% O&M fund is not generating any revenue. They are either operating through banks with zero percent interest rates or remained idle with WUSC. Many development banks like Muktinath Dev. Bank, Garima Dev. Bank, Sewa Dev. Banks are providing its services with atleast 5% annual interest rates. Also, VDC level cooperatives are providing its services. Thus, WUSC should operate its O&M fund where they are able to generate revenue.

Repair and Maintenance: Repair and Maintenance Cost for seems to be relatively high with lift schemes. Minor repair is done by local resources whereas for major maintenance WUSC should either approach DHQ or nearby central market. Thus, there should be trained human resources (technical) to minimize the risk of system breakage. Also WUSC should be aware on the availability of technical and financial resources to maintain its schemes.

Water Tariff Rate: Almost 100% of WUSCs pay water tariff, however, the rate differs in size. WUSC should be able to set adequate tariff rate so that they are able to operate the schemes properly. More

than 40% of schemes are not able to cover the operation cost. Serious consideration needs to be given to such schemes. Triggering exercise on need and importance of drinking safe water and paying water tariff is felt needed in all WUSCs.

Linkage Development of WUSC: WUSC should know about the financial and non-financial services that are available for strengthening of their capacity. For financial support, WUSC should be facilitated to approach to nearby financial institution (Development banks/Cooperatives). For non-financial support FEDWASUN can facilitate.

Capacity Enhancement of Cooperative and FEDWASUN: Although Cooperative can provide the much needed financial support to WUSC, the capacity of Cooperative should be assessed and enhanced if needed. Similarly, FEDWASUN's capacity to support WUSC seems quite poor. Thus, capacity of FEDWASUN seems much needed.

Governance: Among 84 studied MUSC most of the have never done public auditing, AGM, no O&M regulation/plan, which is a serious issue. Therefore, WUSC should immediately perform all these to maintain transparency and good governance

Capacity Enhancement of WUSC: WUSC should be able to set the rules and regulations, maintain transparency, mobilize VMW/Operator efficiently, collect regular water tariff and maintain book-keeping properly. Thus, capacity of WUSC should be enhanced to get the better results. Immediate public audit should be done in all WUSC to keep financial clarity. The contents to be incorporated in training are:

- Regular technical backstopping for WUSCs on maintaining the account books.
- Refresher training on book-keeping and record-keeping (in every 6 months depending on the monitoring report).
- Risks associated with mismanagement of fund.
- Knowledge on revenue generations of O&M fund.
- Techniques on identifying the most suitable financial institution for operating its account
- Bank interest rate
- Service charge/administrative costs
- Loan availability for maintenance
- Other services available for WUSCs
- Understanding water as economic good, how to trigger the users willingness to pay for good water service (water tariff)
- Concept on Capital Maintenance Expenditure of drinking water supply scheme

The last item in the above list, **concept on Capital Maintenance Expenditure of drinking water supply scheme**, needs to be included into the training programmes of all stakeholders, including the project staff itself. This aspect has received very little attention in the WASH sector discussions. By far the attention is in regular (minor) maintenance (VMW salary, tools and spare parts), and even that appears to be a challenge as is evident in this report. Occasionally major disasters such as landslides and floods that damage the structures, force WUSCs to consider major capital maintenance. This is often emergency reinvestment for lost structures, and WUSCs may collect extra funds for the specific cause amongst the users, or approach a project or DDC/VDC for such funds. However, very rarely capital maintenance expenditure is used for actual major capital maintenance, such as renewing structures that have crossed their design period or otherwise should be renewed to maintain the service levels.

ANNEX 1
TERMS OF REFERENCE

TERMS OF REFERENCE

Towards reliable financial O&M fund management in large drinking water schemes: The next step

National Short Term Expert

PURPOSE

The purpose of the proposed short term consultancy is to take forward the recommendations made with regards to using Cooperatives as an option for Water Users and Sanitation Committees (WUSC) for managing its Operation and Maintenance (O&M) fund. The recommendations related to 1) mobilization of O&M fund in financially safe and sustainable manner; 2) setting realistic water tariff rates; 3) assessing the capacity of existing cooperatives; 4) WUSCs capacity enhancement for financial management, and 5) defining in further detail how the O&M fund could operate through a cooperative. Additional recommendation was made with regards to electric lift schemes. This links into the RWSSP-WN II Post-Construction Guidelines (2015) and the O&M and water tariff issues as presented in the RWSSP-WN II Water Safety Planning Guideline (WSP ++ concept).

BACKGROUND

Government of Nepal (GoN) has envisioned for achieving universal coverage of basic water supply and sanitation services to its citizens by 2017. RWSSP-WN Phase II contributes to achieving the full coverage targets in its working regions. At the same time, even if the coverage is already high, sustainability and full functionality remain challenges. The communities need to be in a position to pay sufficient water tariff and to cover costs. RWSSP-WN Phase II purpose-level indicator 2 is “All water supply schemes supported by the project provide functional, improved and safe water supply services.” Result 2 (Component 2) is “Access to safe, functional and inclusive water supply services for all achieved and sustained in the project working VDCs.” Sustainable service requires that financial systems be able to carry out regular maintenance (i.e. compensate for a maintenance worker), fund timely repairs, extend and improve service as demand changes, respond to immediate damage occurring due to e.g. natural hazards or road construction, and eventually replace infrastructure at the end of its useful life. Under Result 2 Indicator 2.2. takes a closer look at the institutional capacity of WUSCs. This is a composite indicator as described below:

of WUSCs supported by the Project fund in the Phase I and Phase II are 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 working as needed*
 - e) WUSC has proportional representation of caste/ethnic/social groups and 50% women.*
-

The RWSSP-WN Phase II Baseline (2015) collected data on Operation and Maintenance (O&M) plan and implementation from 278 and 269 schemes out of total 367 gravity and lift schemes. Out of the WUSCs that were observed and interviewed, 49% confirmed that they have some type of O&M plan and 37% confirmed they are implementing it. According to the baseline survey, 51% of the Phase I scheme WUSCs were collecting a water tariff. In majority of the schemes (71%), the monthly water tariff per household is NPR 50 or less. The RWSSP-WN Phase II has a defined method of calculating water tariff rate that is adequate for day-to-day operating cost of the scheme; this should be the minimum level of collected water tariff. There is also an option for more advanced WUSCs to calculate a water tariff that accumulates sufficient fund for the replacement of the scheme when it has surpassed its design period

(project cost recovery) (Baseline Report, 2015). 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.

UTILIZING COOPERATIVES TO MAXIMIZE O&M FUND REVENUE

This assignment responds to the recommendations made by a study '*Cooperatives as an Option for Operation & Maintenance Fund*' conducted in June and July 2015. The study assessed the financial revenue and expenditure of 32 sampled WUSCs in Kapilvastu, Rupandehi and Tanahun districts. All sampled schemes were constructed during the Phase I of RWSSP-WN and represent relatively large schemes in terms of population coverage and capital investment. The sample included 25 electric and/or solar lift schemes and 7 gravity schemes.

The point of departure for the Cooperative study was that WUSCs need to be able to collect *some* cash and this cash needs to keep its value, stay safe and be available when it is needed. It now appears that the "normal" banks where WUSCs have opened their accounts for the investment funds may not be the long term solution. Some of the reasons being that these banks are often located in the district headquarters, possibly several days away from the WUSCs VDC. Consequently these accounts tend to remain idle, eventually losing the interest that may have been minimal in the first place, and eventually the value due to inflation. Some WUSCs mobilize their O&M fund as an informal saving-and-credit fund in the community, but this is not necessarily safe and sustainable option either, a formal cooperative would appear as more safe and having better financial discipline.

The purpose of WUSCs' O&M funds is to collect funds for operations and minor maintenance expenditure (i.e. labour, fuel, chemicals, materials and routine maintenance needed to keep systems running), and for capital maintenance expenditure (i.e. maintenance that goes beyond routine maintenance to repair and replacement of equipment to keep systems running). According to the Cooperative study, the average monthly operation cost of an electric lift schemes is approximately NPR 13,000. On top of this comes the maintenance and reinvestment costs, which in lift schemes are remarkable. Without adequate O&M fund to cover these expenses, the sustainability of drinking water supply schemes becomes questionable. The main, and often only source of revenue for WUSCs' O&M funds is the collection of regular water tariffs from user households.

OBJECTIVES, SCOPE OF WORK ANSD METHODOLOGY

The following steps and responsibilities are recommended, subject to finalization by the selected consultant when preparing the detailed work plan with time schedule, with more details in the following "Expected Outputs & Deliverables" chapter. We recommend to use such as district and VDC-level post-construction workshops to collect both quantitative and qualitative data with regards to the recommendations made in the FY02 report, ultimately aiming to facilitate WUSCs to operate their O&M fund accounts through reliable local financial institutions where the value is not lost. The following objectives build on the recommendations made in the FY02 study report. Additional recommendation was made with regards to electric lift schemes.

1. **Share the top-line findings from the FY02 study report that covered 32 schemes.** What are the key positive findings? What are the alarming findings? Why are they alarming? Are the challenges and practices shared across the districts? How WUSCs should set realistic water tariff rates? To what extent cost recovery makes sense, considering the inflation and the available interest rates & possible charges?
2. **Mobilization of O&M fund in financially safe and sustainable manner:** introduce the concept of cooperatives and other local financial institutions as an option for O&M fund management. Define in further detail how the O&M fund could operate through a cooperatives, and what kind of cooperatives or other local financial institutions are feasible?

How to assess and identify suitable institutions for O&M fund? What kind financial or other services would be useful for WUSCs? The consultant will raise these questions to financial institutions presenting in the post-construction workshops, and draw conclusions and recommendations across the districts for how the D-WASH Units and WUSCs themselves could screen suitable financial institutions. Consultant will ensure that potential cooperatives and other local financial institutions with the right kind of services will participate in the district (and/or VDC-level) workshops as their services, terms and conditions could be debated in public to get WUSCs reflections on what is available.

3. **WUSCs and Support Persons capacity enhancement for financial management, WUSC capacity gaps and adequate tariff:** The consultant will facilitate a session that will orient both the district stakeholders (District WASH Unit staff and Support Persons, others as identified relevant) and participating WUSCs themselves in identifying financial and managerial capacity gaps of WUSCs related to O&M fund management, and defining and collecting adequate tariff to cover expenses. The consultant will prepare pre-workshop questionnaire to WUSCs that covers also issues relating to present practices and capacity, and compile the findings with conclusions and recommendations in the final report.
4. **Monitoring support:** There should be regular follow up and corrective measures to ensure sound O&M fund practices and to minimize the risks related to the use of cooperatives. The consultant will discuss this during the workshop, raising such questions as what are some of the indicators that WUSCs could use themselves in public audits and public hearings? What are some of the indicators that should be included into post-construction (final) monitoring? What are some of the indicators that would be good to include into District MIS?

All the above link to district-wide post-construction services and at the scheme level, to WSP++ concept. It is recommended to use the district and to some extent, also VDC-level, post-construction workshops as the main methodology for collecting both quantitative and qualitative data, and to trigger post-construction phase relevant financing thinking amongst the key stakeholders. Also the District WASH Unit Support Persons training events can be used for the same (see RWSSP-WN II Post-Construction Guidelines 2015, and WSP++ related materials).

EXPECTED OUTPUTS AND DELIVERABLES

All deliverables submitted to RWSSP-WN shall be in English in electronic form where feasible, or in hardcopy as necessary or required. Deliverables will be considered drafts upon initial receipt. Drafts will be reviewed and comments provided within 2 weeks of receipt, unless otherwise specified.

Deliverables include:

- I. **Inception report** that includes the detailed work plan, schedule, research methodology, agenda of the training session/s, data collection tables to be sent to the districts and WUSCs.
- II. **Field/Event/Training report/s** that document the post-construction workshops and possible surveys & interviews, and other interactions, with raw data submitted in excel (such as data collected on costing or WSP++)
- III. **Final report** that summarizes the key outcome and recommendations. The final report should clearly recommend on what kind of advice to give to all WUSCs with regards to their O&M fund management.

All reports and datasets will be shared with relevant stakeholders.

EXPECTED QUALIFICATIONS

The consultant will be a professional working with rural development with experience in WASH sector and livelihoods, as well as proven background and field experience with multiple-use water systems and thinking. The short term consultant will have:

- Relevant University degree in social sciences, economics/financial management, or equivalent;

- Excellent interpersonal and communications skills;
- Analytical and evaluation skills, experience with participatory research tools and assessments;
- Experience with both rural water supply and their Water Users Committees, and with rural cooperatives and micro-financing.

Given that this assignment build on the data collected as part of the cooperatives assignment, it is recommended to have the same consultant to continue with this.

LEVEL OF EFFORT, TIMING OF ASSIGNMENT AND BASIS OF PAYMENT

The estimated level of effort is 42 days (2 person month) including preparatory work, field visits, training event and presentations, review meetings, report writing and dissemination session. The allocation of time between field and home base (desk study) is determined largely by logistic considerations, but it is expected that at least 75% of the time is allocated for the field. The assignment should be completed within the Fiscal Year 2072/073. The consultant fee will be paid on a daily basis, with time sheets and invoices expected with submission of the deliverables. Expenses will be paid in accordance with the standard practice where by the original bills and boarding passes will be submitted together with the invoice.

COORDINATION

The consultant shall report to: Sanna-Leena Rautanen, Chief Technical Adviser, and Narayan Wagle, Planning & Capacity Development Specialist. Also other Project Support Unit experts and the relevant District WASH advisers will be supporting this assignment. RWSSP-WN II Project Support Unit in Pokhara will coordinate the field work and is the first contact point to assist in making the logistic arrangements.

Box 1 PROPOSED AGENDA FOR THE POST-CONSTRUCTION WORKSHOP

10:00 – 10:30 Opening - welcome & introductions & agenda of the day (all participants)
10:30 – 11:00 Brief introduction to PoCo thinking - broadening the scope from scheme-specific PoCo into VDC & District-wide PoCo - by DWASHA (or somebody from PSU if you wish not to do this bit)
11:00 – 11:30 Top-line findings from FY02 study ("what to do with O&M fund?") <i>Presentation by Consultant</i>
11:30 – 12:30 Present situation in Tanahun, presentations by WUSCs. Including brief scheme introduction, a few points about how long they have been operating & what kind of operational problems they have had, how they got support for solving their problems, how much did it cost, how much they collect water tariff, what is their saving, where they keep it etc. + what would be their expectation for services that should be available at the district level? <i>Question by Consultant</i>
Lunch
13:30 – 14:00 What kind of services are available in the district? Brief presentations by the invited private sector representatives. At least some of these should represent the local banks/development banks/cooperatives, and some hardware (pump/solar/electrical)
14:00 – 15:00 Discussion - does private sector have what WUSCs need? Sunita or DWASHA could facilitate this discussion, and the other PSU/DWASH Unit participating should carefully document what is being said. What are the options for WUSCs? Where is the best place for O&M fund? (We should frame the discussion topics with Sunita)
Break
15:30 -16:30 Highlights & Concluding remarks (this could be also done at the end of the day with D-WASH-CC or other bigger audience, those that do not need to be there all day but who could benefit from some district-level PoCo thinking) Closing by 17:00

ANNEX 2
CHECKLIST-WUSC

Situation Analysis of Schemes

Name of Scheme:
 Scheme Operation Date:
 No. of Beneficiary Household:

S.N.	Particulars	Main Issue	Present Status
1	Operation & Maintenance Fund	How much of Operation and Maintenance Fund do your WUSC have at present?	
		Where is the money at the moment?	
		O&M has been used for micro-financing or not? If yes how is it operating?	
		Are you earning any interest from your O&M Fund?	
		O&M Expenditure	
		Operation Cost	
		Maintenance Cost	
		Capital Maintenance Expenditure	
		Maintenance Mobility Situation	
		Where do you get the skill for maintenance? (VMW/PO; After sales service from company; From DHQ/Ktm)	
How did you manage financial need of maintenance? (O&M fund; Support from DDC/VDC/RWSSP...; Loan from any financial institution)			
If any, what was the procedure of getting it?			
Major Issues with O&M management			

2	Water Tariff	<p>Do you pay regular water tariff?</p> <p>How much do you pay?</p> <p>On what basis have you decided to pay NRS..... as water tariff?</p> <p>Do you have meter at your scheme?</p> <p>Do you have any subsidized rate for ultra poor household?</p> <p>Do you think the collected rate of water tariff is enough to maintain the service level of your schemes? Y/N?</p> <p>How can we improve?</p> <p>How have you been utilizing the collected water tariff?</p>	
		<p>WUSC registered?</p> <p>Functional Status</p> <p>O&M regulation formulated?</p> <p>VMW/Pump Operator??</p> <p>Regular meeting of WUSC?</p> <p>WSP implemented?</p>	

3	<p data-bbox="406 1736 470 2004">Capacity Building and Good Governance</p> <p data-bbox="223 1086 255 1736">Are you able to utilize the money collected effectively?</p> <p data-bbox="263 1198 295 1736">Who is responsible for keeping the accounts?</p> <p data-bbox="311 1064 343 1736">How do you train new member in WUSCs after reshuffle?</p> <p data-bbox="359 1120 391 1736">Have you received these trainings? Was it effective?</p> <p data-bbox="406 1545 438 1736">Pump Operator</p> <p data-bbox="446 1556 478 1736">Meter Reading</p> <p data-bbox="494 1512 526 1736">Water Safety Plan</p> <p data-bbox="542 1556 574 1736">Book-Keeping</p> <p data-bbox="590 1646 622 1736">Others</p> <p data-bbox="638 1176 670 1736">Public hearing/auditing is being practiced? Y/N</p> <p data-bbox="686 1288 718 1736">Annual General Assembly regularity?</p> <p data-bbox="734 1164 766 1736">Are you members in FEDWASUN/Cooperatives?</p> <p data-bbox="782 1590 813 1736">FEDWASUN</p> <p data-bbox="829 1556 861 1736">COOPERATIVE</p> <p data-bbox="877 1209 909 1736">What kind of services you received till now?</p> <p data-bbox="917 1366 949 1736">What do you expect in future?</p>
---	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ANNEX 3
CHECKLIST-PRIVATE SECTORS

Checklist for FGD with Cooperative/Banks:

Available services

- Financial Services
 - How can UC become member of Cooperative/Bank?
 - How can UC be benefitted from cooperative/bank in terms of
 - Operating O&M account,
 - Loan Provision,
 - Revenue Generation,
 - Profit Sharing

- Non-Financial Services
 - Cooperative education training
 - Skilled Service (Plumber/Technician), if any
 - Linkage Development with service provider

Checklist for FGD with Entrepreneurs/Suppliers:

- How can UC be aware of the services available?
- Getting the right price quotation
- Credit service
- Quality of products
- After sales services
- Repair and Maintenance services
- Warranty and Guarantee of Product

ANNEX 4
DETAIL ITINERARY

S.N.	Activities	District	Date
1	District Level Post Construction Workshop	Tanahu	13.01.2016
2		Parbat	18.01.2016
3		Myagdi	20.01.2016
4		Baglung	27.01.2016
5		Syangja	01.02.2016
6		Kapilbastu	03.02.2016
7		Rupendehi	04.02.2016
8		Nawalparasi	05.02.2016

ANNEX 5
O&M FUND STATUS & REVENUE GENERATION

Revenue Generation

S.N.	District	VDC	Scheme Name	Type	O&M Fund (NRs.)	Interest Rate (%)	Annual Interest (NPR)	Mobilized Through
1	Tanahu	Thaprek	Bilaune khola DWSS Elect Lift	EL	95,882	0	0	WUSC
2		Thaprek	Makaimro DWSS	EL	500,000	6	30,000	Gandaki Bikash Bank
3		Virkot	Sisara Khola DWSS	SL	325,445	0	0	WUSC
4		Ghansikuwa	Deurali Afrepani DWSS	SL	56,540	0	0	WUSC
5		Virkot	Ridi DWSS	SL	62,395	24	14,975	Micro-Finance
6		Ghansikuwa	Dudepani Aasigaira DWSS	SL	30,000	24	7,200	Micro-Finance
7		Samung	Chandrakot DWSS	SL	40,170	24	9,641	Micro-Finance
8		Barbhangiyang	Nawarungdevi DWSS Elk Lift	EL	5,000	0	0	
9		Thaprek	Dharapani Padhre Khola DWSS	SL	7,000	0	0	Nepal Bank Ltd.
10		Ghansikuwa	Kushmuse DWSS	SL	82,504	0	0	Nepal Bank Ltd.
11		Ghansikuwa	Dhamilikuwa DWSS	SL	30,000	5	1,500	Muktinath Bikas Bank
12		Barbhangiyang	Dharapani DWSS	EL	55,000	0	0	Lumbini Bank
13		Barbhangiyang	Lasunbote DWSS	SL	51,000	0	0	Nepal Bank Ltd.
14		Barbhangiyang	Dharapani khanevani Maiban DWSS Elect Lift	EL	10,000	0	0	Nepal Bank Ltd.
15		Virkot	Baskhola DWSS	SL	5,000	0	0	Sunrise Bank
16		Barbhangiyang	Kafaleswara DWSS Elect Lift	EL	42,000	0	0	Nepal Bank Ltd.
17		Limithana	Limithada Kalidaha DWSS	G	51,386	2.5	1,285	Rastriya Baniya Bank
18	Parbat	Limithana	Sindure Dhunga Jukepani Salla Bot DWSS	G	4,000	0	0	Nepal Bank Ltd.
19		Barrachaur	Paharepani DWSS	G	8,000	0	0	Nepal Bank Ltd.
20		Barrachaur	Patal Aambari DWSS	G	3,000	0	0	Nepal Bank Ltd.
21		Ranipani	Emichaur DWSS (Electric Lift)	EL	-	0	0	
22		Ranipani	Tuni Gahira DWSS	G	3,000	0	0	Nepal Bank Ltd.
23		Khanigaun	Khanigaun Chitepani DWSS	G	90,413	0	0	Nepal Bank Ltd.
24		Khanigaun	Gahate Jhaklak DWSS	G	214,000	0	0	Nepal Bank Ltd.
25		Dhairing	Purja Khola DWSS	G	12,000	0	0	Nepal Bank Ltd.
26		Thulipokhari	Bihichaur DWSS	G	-	0	0	Nepal Bank Ltd.
27		Ruma	Simkhola DWSS	G	22,000	0	-	Nepal Bank Ltd.
28		Ruma	Rukungpani DWSS	G	73,000	9	6,570	Darbang Cooperative

29	Ruma	Aunthekhola DWSS	G	58,000	0	-	Nepal Bank Ltd., Machhapuchhre Bank
30	Bhakimili	Dole DWSS	G	49,650	24	5,676	Nepal Bank, Micro-Finance
31	Bhakimili	Sammeni (Ratopahara) DWSS	G	67,458	24	14,868	Nepal Bank, Micro-Finance
32	Dagnam	Dagnam DWSS	G	30,000	24	7,200	Micro-Finance
33	Darwang	Khalakharka DWSS	G	17,710	12	1,165	Nepal Bank, Micro-Finance
34	Dana	Nepane Mahbir DWSS	G	43,945	0	-	Nepal Bank Ltd.
35	Arman	Bhukkhola Dobinla DWSS	G	150,000	8	8,000	Nepal Bank, Micro-Finance
36	Dana	Matichaur DWSS	G				
37	Bihu	Saharshadhara Amar Pokhara DWSS	G	111,000	15	15,000	Nepal Bank, Micro-Finance
38	Bihu	Jukepani DWSS	G	13,500	0	-	Nepal Bank Ltd.
39	Chisti	Phurkesalla DWSS	G	100,000	18	18,000	Micro-Finance
40	Chisti	Chisti DWSS	G	5,000	0	-	Nepal Bank Ltd.
41	Damek	Ritip DWSS	G	40,000	18	7,200	Micro-Finance
42	Damek	Shivapuri DWSS	G	14,000	0	-	Nepal Bank Ltd.
43	Damek	Caurase Lamkhorria DWSS	G	15,000	15	2,250	Micro-Finance
44	Nisi	Knalas DWSS	G	12,000	0	-	Nepal Bank Ltd.,
45	Nisi	Chaitekharka DWSS	G	22,000	0	-	Nepal Bank
46	Kewarebhanyang	Bankatta DWSS	EL	110,000	2	2,140	Garima Bikash Bank, Nepal Bank
47	Chitrebhanyang	Dhaukhani Grihakot DWSS	EL	124,000	5,8	9,200	Muktinath Bikash Bank (5%) Deurali Saving Cooperative (8%)
48	Aalam Devi	Dhuskhola (Dumahi) Lift DWSS	EL	50,000	0	-	Nepal Bank, WUSC (25000)
49	Sakhar	Giddedanda Gramin Solar Lift DWSS	SL	58,000	24	13,920	Micro-Finance
50	Karikot	Jaruwa Khola Lift DWSS	EL	50,000	0	-	Nepal Bank (5000) WUSC (45000)
51	Kewarebhanyang	Khalluk Gaira Deurali DWSS (Electric Lift)	EL	82,470	24	19,793	Nepal Bank (3000) Micro-Finance
52	Sakhar	Padhera Gramin Solar Lift DWSS	SL	50,000	0	-	Chairperson
53	Kyakmi	Purkot Gramin Samudayik Solar Lift DWSS	SL	32,000	24	7,680	Micro-Finance
54	Kewarebhanyang	Sapaude DWSS	EL	-	0	-	0
55	Sekham	Satdobatte Hatiya Lifting DWSS	EL	47,000	0	-	Garima Bikash Bank
56	Sakhar	Shreee Bhulke Gramin Solar Lift DWSS	SL	62,000	5	3,100	Muktinath Bikash Bank

57		Kewarebhanyang	Tapke Electric Lift DWSS	EL	59,700	5	2,985	Garima Bikash Bank(49700),Nepal Bank (5000), WUSC (10000)
58	Kapilvastu	Buddha Batika M./Mahendrakot	Basanta DWSS	EL	140,000	6	8,400.00	Sewa Bikash Bank
59		Buddha Batika M./Mahendrakot	Birpur DWSS	EL	400,000	6	24,000.00	Sewa Bikash Bank
60		Badganga M	Durgadevi DWSS	EL	264,000	8	21,120.00	Bhrikuti Development Bank
61		Gugauli	Jawabairath DWSS	SL	78,881	0	0	Rastriya Baniya Bank
62		Buddha Batika M./Mahendrakot	Kapase Phaskaiya DWSS	EL	303,000	6	18,180.00	Rastriya Baniya Bank, Sewa Bikash Bank
63		Khurhuriya	Manakamana DWSS	EL	10,000	0	0	Bhrikuti Development Bank
64		Shivgadi	Narayandih10 No. DWSS	SL	242,914	6	14,574.84	NMB
65		Gugauli	Saibaba DWSS	EL	-	0	0	0
66		Buddha Batika M./Mahendrakot	Tarkeshwor DWSS	EL	300,000	0	0	Rastriya Baniya Bank
67		Shivgadi	Turantapur DWSS	SL	600,000	6	36,000.00	NMB
68	Lumbini Sanskriti Municipality	AAMA DWSS	SL	-	0	0	0	
69	Parohha	Brahmababa DWSS	EL	646,473	6	38,788.38	Agriculture Development Bank(12015), NMB (634458)	
70	Devdaha	Charanke Bhumigat DWSS	EL	200,000	0	0	Rastriya Baniya Bank	
71	Parohha	Hariyali DWSS	EL	245,000	7	17,150.00	Agriculture Development Bank(41000), Triveni Development Bank(204000)	
72	Devdaha	Keuli DWSS	G	11,000	0	0	Treasure	
73	Sainamaina	Kotiyamai DWSS	EL	25,000	0	0	Agriculture Development Bank	
74	Parohha	Manakamana DWSS	EL	40,000	0	0	Bhrikuti Development Bank	
75	Devdaha	Mudabas DWSS	G	15,000	24	3,600.00	Agriculture Development Bank	
76	Dhaubadi	Aagachi DWSS	G	54,316	24	13,035.84	Rastriya Baniya Bank	
77		Dhaura Baseni DWSS	G	94,000	24	19,200.00	Paschimanchal Bank	
78	Dhaubadi	Chappaira DWSS	G	18,500	0	0	Rastriya Baniya Bank(3500), Treasure(15000)	
79	Dhaubadi	Dhaubadi Harde Solar Lift DWSS	SL	17,000	0	0	Secretary(14000), Rastriya Baniya Bank (3000)	

ANNEX 6
MAINTENANCE EXPENSES

Maintenance Status

S.N.	District	VDC	Scheme Name	Type	Maintenance Expenditure (NRs.)						Source of Fund	Support Agency	Remarks
					Year 1	Year 2	Year 3	Year 4	Year 5	Above 5 years			
1		Thaprek	Bilaune khola DWSS Elect Lift	EL	-	-	38,000	-	-	-		Panel Board	
2		Thaprek	Makaimro DWSS	EL	-	2,000	81,000	7,500	-	-	VDC, O&M Fund	TOD Meter, Transformer, VPR, GI Welding	
3		Virkot	Sisara Khola DWSS		6,900	9,100	-	-	-	-		GateValve, Tap & Servicing Charge	
4		Ghansikuwa	Deurali Afrepani DWSS	SL	-	-	4,550	-	-	-		Supply pipe	
5		Virkot	Ridi DWSS		-	-	-	-	-	-			
6		Ghansikuwa	Dudepani Aasisgaira DWSS		-	-	4,300	-	-	-		Coloring, Wire	
7		Sabung	Chandrakot DWSS	SL	75,406	-	-	-	-	-	Each HH@Rs-500	Compound Wall, Gatevalve, Tap, Regulator	
8	Tanahu	Barbhangingyang	Nawarungdevi DWSS Elk Lift	EL	-	-	65,000	19,800	-	-	30,000	Transformer, YCG, MCB, Main Connector, Wage	
9		Thaprek	Dharapani Padhre Khola DWSS	SL	-	115,000	-	-	-	-	O&M fund	Pump Repair	
10		Ghansikuwa	Kushmuse DWSS		4,000	-	-	-	-	-			
11		Ghansikuwa	Dhamilikwa DWSS	SL	3,000	-	-	-	-	-		40000 FROM SOLAR CO. WARRANTY	
12		Barbhangingyang	Dharapani DWSS	EL	5,000	67,000	-	-	-	-		Panel Board, Trasformer repair	
13		Barbhangingyang	Lasunbote DWSS		-	-	-	-	-	-			
14		Barbhangingyang	Dharapani khanepani Maiban DWSS Elect Lift		-	-	-	-	-	-			
15		Virkot	Baskhola DWSS		-	-	91,000	-	-	-		Motor purchased, Panel Board Intake repair, Pipeline repair	
16		Barbhangingyang	Kafaleswara DWSS Elect Lift	EL	-	-	-	-	-	11,000	O&M fund	Transformer, wire repair (Thunderstrom)	
17		Limithana	Limithada kalidaha DWSS		-	-	31,706	-	-	-		DDC, VDC, Users	
18		Limithana	Sindure Dhunga Jukepani Salla Bot DWSS		-	-	-	-	-	-		Pipeline Repair	
19		Barrachaur	Paharapani DWSS		-	-	-	-	-	-		Non-Functional	
20		Barrachaur	Patal Aambari DWSS		-	-	3,500	6,000	-	-	O & M fund	Pipeline repair, Gatevalve, Tap	
21	Parbat	Ranipani	Emichaur DWSS (Electric Lift)	EL	-	-	-	7,200	-	-	Users	Meter purchased	
22		Ranipani	Tuni Gahira DWSS		-	-	-	-	-	-			
23		Khanigaun	Khanigaun Chitepani DWSS		2,070	-	-	-	-	-		Pipeline repair	
24		Khanigaun	Gahate Jhakiak DWSS		11,000	-	-	-	-	-	Users	RVT Gatevalve	
25		Dhairing	Purja Khola DWSS		32,000	-	-	-	-	-	O&M fund	Main Pipeline, Intake Repair, Tap	
26		Thulipokhari	Bihichaur DWSS		5,700	-	-	-	-	-	Users	Gatevalve, Tap, Intake Repair	

58	Buddha Batika M./Mahendrakot	Basanta DWSS	EL	1,800	5,200					O&M fund	Schedule, Gatevalve, Pipeline, Labour charge
59	Buddha Batika M./Mahendrakot	Birpur DWSS	EL		199,833	108,133				O&M fund	Store room construction, Motor Repair, Pipe, Gatevalve
60	Badganga M	Durgadevi DWSS	EL		7,000	5,680				O&M fund	Tanky welding, Painting
61	Gugauli	Jawabairath DWSS	SL		23,500					O&M fund	Gatevalve, Tap, Meter
62	Buddha Batika M./Mahendrakot	Kepase Phaskaiya DWSS			13,680					O&M fund	Gatevalve, Motor Boaring, Electricity repair
63	Khurhuriya	Manakamana DWSS		51,500	132,500					O&M fund	Panel Board, MCB, Transformer, Motor Repair, Motor purchased, Wire purchased, labor charge
64	Shivgadi	Narayandihio No. DWSS			675					Users	Gatevalve, Tap
65	Gugauli	Saibaba DWSS				240,000				O&M fund, User's Contribution	Motor repaired
66	Buddha Batika M./Mahendrakot	Tarkeshwor DWSS		22,000	82,500	40,000				O&M fund	Gatevalve, Motor Repair, Wiring, Pipeline repair, Panel Board
67	Shivgadi	Turantapur DWSS									
68	Lumbini Sanskriti Municipality	AAMA DWSS									
69	Parohha	Brahmababa DWSS		41,000	42,000					Water Tariff + New Tap Installation	Panel Board, Pipeline
70	Devdaha	Charanke Bhumigat DWSS				294,500				O&M fund	New Motor Purchased, Motor Repair, Panel Board repair
71	Parohha	Hariyali DWSS		10,000	8,000	127,000				O&M fund	Main line repair, motor purchased
72	Devdaha	Keuli DWSS		4,900						Water Tariff	Gatevalve, Pipe
73	Sainamaina	Kotiyamai DWSS		13,200							Meter repair, Fence purchased, pipe purchased
74	Parohha	Manakamana DWSS			299,200					Water Tariff, User's Contribution	Pipeline repair, motor purchased, transformer purchased
75	Devdaha	Mudabas DWSS									
76	Dhaubadi	Aapgachi DWSS	Gravity		75,000						Compound in intake and source protection
77		Dhaura Baseni DWSS	Gravity								
78	Dhaubadi	Chappaira DWSS	Gravity			1,500	70,000			O&M fund	Pipe Pruchased, Source protection, Wiring for Water Tank
79	Dhaubadi	Dhaubadi Herde Solar Lift DWSS	SL		2,850					Solar Company Warranty	Pump repair, Tap
80		Paratikkar Shivnagar DWSS									
81	Rangram	Kasiya Pachgawa OH DWSS									
82	Rangram	Kunwar DWSS									
83	Pratapur	Kharahani DWSS	SL		4,500	10,000				O&M fund, user's contribution	Pipeline repair, Tap
84		Ramche Solar Lift DWSS	SL		400					O&M fund	Tap

ANNEX 7
WATER TARIFF DETAIL

Monthly Operation Expenses

S.N.	District	VDC	Scheme Name	Type	Monthly Tariff Collection (NPR)	Interest Earned (NPR)	Total monthly Revenue (NPR)	Monthly Operation Exp. (NPR)	Saving/ Deficit
1	Tanahun	Thaprek	Bilaune khola DWSS Elect Lift	EL	11,520	0	11,520	11,000	520
2		Thaprek	Makaimro DWSS	EL	30,800	2,500	33,300	48,000	(14,700)
3		Virkot	Sisara khola DWSS	SL	5,300	0	5,300	4,200	1,100
4		Ghansikuwa	Deurali Afrepani DWSS	SL	2,000	0	2,000	1,500	500
5		Virkot	Ridi DWSS	SL	2,900	1,248	4,148	1,200	2,948
6		Ghansikuwa	Dudepani Aasisgaira DWSS	SL	3,500	600	4,100	2,000	2,100
7		Samung	Chandrakot DWSS	SL	7,000	803	7,803	2,100	5,703
8		Barbhangiyang	Nawarungdevi DWSS Eix Lift	EL	19,800	0	19,800	23,000	(3,200)
9		Thaprek	Dharapani Padhre Khola DWSS	SL	2,200	0	2,200	600	1,600
10		Ghansikuwa	Kushmuse DWSS	SL	4,500	0	4,500	3,000	1,500
11		Ghansikuwa	Dhamilikawa DWSS	SL	3,450	125	3,575	3,000	575
12		Barbhangiyang	Dharapani DWSS	EL	6,600	0	6,600	6,000	600
13		Barbhangiyang	Lasunbote DWSS	SL	5,400	0	5,400	600	4,800
14		Barbhangiyang	Dharapani Khanepani Maiban DWSS Elect Lift	EL	7,200	0	7,200	5,000	2,200
15		Virkot	Baskhola DWSS	SL	9,400	0	9,400	6,200	3,200
16		Barbhangiyang	Kafaleswara DWSS Elect Lift	EL	9,750	0	9,750	8,200	1,550
17		Limithana	Limithada Kalidaha DWSS	G		107	107	7,100	(6,993)
18	Limithana	Sindure Dhunga Jukepani Salla Bot DWSS	G	0	0	0	0	0	
19	Barrachaur	Paharepani DWSS	G	450	0	450	700	(250)	
20	Barrachaur	Patal Aambari DWSS	G	1,890	0	1,890	1,500	390	
21	Ranipani	Emichaur DWSS (Electric Lift)	EL	0	0	0	0	0	
22	Ranipani	Tuni Gahira DWSS	G	760	0	760	760	0	
23	Khanigaun	Khanigaun Chitepani DWSS	G	Rs.200/Tap	0		4,200		
24	Khanigaun	Gahate Jhaklak DWSS	G	Rs.75/Tap	0		1,800		
25	Dhairing	Purja Khola DWSS	G	Rs.1500/Tap	0		5,000		
26	Thulipokhari	Bhichaur DWSS	G	600	0	600	500	100	
27	Ruma	Simkhola DWSS	G	0	0	0	0	0	
28	Ruma	Rukungpani DWSS	G	2,580	548	3,128	3,000	128	
29	Ruma	Aunthekhola DWSS	G	2,100	0	2,100	2,000	100	
30	Bhakimli	Dole DWSS	G	1,155	473	1,628	1,000	628	
31	Bhakimli	Sammeni (Ratopahara) DWSS	G	1,750	1,239	2,989	1,200	1,789	
32	Dagnam	Dagnam DWSS	G	2,980	600	3,580	1,000	2,580	
33	Darwang	Khalakharka DWSS	G	1,660	97	1,757	1,000	757	
34	Dana	Nepane Mahbir DWSS	G	0	0	0	808	(808)	
35	Arman	Bhukhola Dobinla DWSS	G	900	667	1,567	900	667	
36	Dana	Matichaur DWSS	G		0	0		0	
37	Bihu	Saharshadhara Amar Pokhara DWSS	G	7,500	1,250	8,750	1,200	7,550	

38		Bihu	Jukepani DWSS	G	1,540	0	1,540	2,000	(460)
39		Chisti	Phurkesalla DWSS	G	667	1,500	2,167	600	1,567
40		Chisti	Chisti DWSS	G	36,300	0	36,300	32,500	3,800
41		Damek	Ritip DWSS	G	360	600	960	333	627
42		Damek	Shivapuri DWSS	G	600	0	600	260	340
43		Damek	Caurase Lamkhorria DWSS	G	1,600	188	1,788	1,000	788
44		Nisi	Knalas DWSS	G	250	0	250	200	50
45		Nisi	Chaitekharka DWSS	G	220	0	220	220	0
46		Kewarebhanjyang	Bankatta DWSS	EL	14,500	178	14,678	21,000	(6,322)
47		Chitrebhanjyang	Dhaikhani Grihakot DWSS	EL	47,200	767	47,967	41,000	6,967
48		Aalam Devi	Dhushkola (Dumahi) Lift DWSS	EL	45,570	0	45,570	45,000	570
49		Sakhar	Giddedanda Gramin Solar Lift DWSS	SL	4,900	1,160	6,060	1,000	5,060
50		Karikot	Jaruwa Khola Lift DWSS	EL	96,100	0	96,100	52,000	44,100
51		Kewarebhanjyang	Khalluk Gaira Deurali DWSS (Electric Lift)	EL	10,400	1,649	12,049	6,500	5,549
52		Sakhar	Padhera Gramin Solar Lift DWSS	SL	950	0	950	950	0
53		Kyakmi	Purkot Gramin Samudayik Solar Lift DWSS	SL	4,500	640	5,140	1,500	3,640
54		Kewarebhanjyang	Sapaude DWSS	EL	0	0	0	22,500	(22,500)
55		Sekham	Satdobatte Hatiya Lifting DWSS	EL	18,400	0	18,400	12,500	5,900
56		Sakhar	Shreee Bhulke Gramin Solar Lift DWSS	SL	3,000	258	3,258	1,000	2,258
57		Kewarebhanjyang	Tapke Electric Lift DWSS	EL	27,000	249	27,249	23,000	4,249
58		Buddha Batika M./Mahendrakot	Basanta DWSS	EL	4,800	700	5,500	10,500	(5,000)
59		Buddha Batika M./Mahendrakot	Birpur DWSS	EL	25,000	2,000	27,000	19,500	7,500
60		Badganga M	Durgadevi DWSS	EL	18,600	1,760	20,360	9,240	11,120
61		Gugauli	Jawabairath DWSS	SL	3,000	0	3,000	5,000	(2,000)
62		Buddha Batika M./Mahendrakot	Kapase Phaskaiya DWSS	EL	7,000	1,515	8,515	7,500	1,015
63		Khurhuriya	Manakamana DWSS	EL	0	0	0	13,000	(13,000)
64		Shivgadi	Narayandihii10 No. DWSS	SL	8,000	1,215	9,215	7,100	2,115
65		Gugauli	Saibaba DWSS	EL	10,000	0	10,000	12,000	(2,000)
66		Buddha Batika M./Mahendrakot	Tarkeshwor DWSS	EL	18,000	0	18,000	22,500	(4,500)
67		Shivgadi	Turantapur DWSS	SL	17,000	3,000	20,000	14,800	5,200
68		Lumbini Sanskriti Municipality	AAMA DWSS	SL	0	0	0	0	0
69		Parohha	Brahmababa DWSS	EL	20,750	3,232	23,982	28,500	(4,518)
70		Devdaha	Charanke Bhumigat DWSS	EL	70,000	0	70,000	42,800	27,200
71		Parohha	Hariyali DWSS	EL	11,400	1,429	12,829	8,000	4,829
72		Devdaha	Keuli DWSS	G	3,250	0	3,250	1,840	1,410
73		Sainamaina	Kotiyamai DWSS	EL	7,500	0	7,500	12,500	(5,000)
74		Parohha	Manakamana DWSS	EL	13,000	0	13,000	7,700	5,300
75		Devdaha	Mudabas DWSS	G	500	300	800	500	300
76		Dhaubadi	Aagpachi DWSS	G	8,340	1,086	9,426	3,000	6,426

