

EVALUATION OF CMP RESEARCH PROJECT 2012 – 2014

– FINDINGS AND RECOMMENDATIONS

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1 DESCRIPTION OF RECMP PROJECT

ReCMP stands for Research Project on Community Managed Project (CMP) approach in improving Water Supply, Sanitation and Hygiene (WaSH) services in rural areas in developing countries.

1.1 CONTENT AND PURPOSE OF RECMP

This three to four year research project is partly financed by Maa- ja Vesitekniikan Tuki ry (MVTT) (unofficial translation "Association for Soil and Water Technology"), the Finnish association supporting research and development in environmental engineering. The project is managed by Tampere University of Technology (TUT) in Finland and it is implemented in close collaboration with Community-Led Accelerated WaSH Development in Ethiopia (COWASH) project. The project plan can be found in www.cmpethiopia.org. Anyhow, the most important facts about of ReCMP are given hereunder.

On the date of this document, ReCMP has produced four M.Sc theses and one B.Sc thesis reports:

Master's theses

Meron Mebratu (Addis Ababa University):

"Assessment on Community Managed Projects Approach in Developing Rural Water Supply and Sanitation Schemes: A Case of Benishangul-Gumuz Regional State"

Nabin Sharma (Tampere University of Technology):

"Community Managed Project in implementing rural water supply in Amhara region of Ethiopia"

Yewondwossen Tesfaye (Indira Gandhi Open University):

"A Comparative Study on Woreda Managed and Community Managed Rural Water Supply Projects"

Mebit Mitiku (Addis Ababa University):

"Evaluation of the level of service rendered by functioning Rural Water Supply Schemes, case of Farta woreda, Amhara National Regional State"

Bachelor's thesis

Ahmed Muhumed (HAMK University of Applied Sciences):

"Sustainability of Water Services Implemented Using CMP Approach"

The above listed thesis reports are all to serve as a basis of one doctoral thesis, which should be completed within couple of years to come:

Beshah Mogesse:

"Solutions on Problems of Sustainability of Water Supply and Sanitation schemes in Ethiopia"

The mentioned M.Sc and B.Sc thesis reports can be studied in details in www.cmpethiopia.org.

The ReCMP research is serving following purposes:

- a) COWASH project is to accelerate rural WaSH development in Ethiopia and one important task in this work is to find more CMP financiers in the sector to secure the implementation of One WaSH Program in the country. To convince new financiers, the RWSEP and FinnWaSH-BG progress reports showing the success of the CMP approach are useful tools. But it is obvious that especially international financiers would also ask for scientific research results before decisions can be made.
- b) The WaSH sector in Ethiopia needs to learn about what works and doesn't work in relation to CMP to create better policies and practises.
- c) Implementation of CMP related research will increase human resources capacity in the WaSH sector especially in Ethiopia. This in turn will accelerate rural WaSH development and thus will help in reaching the MDG and GTP targets and later on work with the same mechanism.
- d) To learn of actions taken in the project, thus improving the implementation from year to year.

This document is to describe how these purposes are fulfilled and to recommend future actions on the basis of the research findings.

2 RECOMMENDATIONS GIVEN BY RESEARCHERS

The following chapters 2.1 – 2.4 are listing the most relevant conclusions and recommendations that are to improve the implementation of CMP approach in rural WaSH given by the researchers who have already completed their thesis projects. Thus, the author of this document has not modified nor changed the recommendations given. Some typing errors were fixed only. An analysis of the all is given in the chapters 3, 4 and 5.

The reader of this document is strongly advised to study the complete research reports in <http://www.cmpethiopia.org/page/500> to find out the background of the recommendations given.

2.1 CMP IMPLEMENTATION IN BENISHANGUL-GUMUZ

Meron Mebratu had the following **objectives** in her M.Sc. research:

- To assess how elements of the CMP approach have been put in place (its applicability and acceptance) to have an effect on its performance and to describe conditions in a particular community,

- Through literature review to define practical performance indicators of the approach,
- To measure the performance of the approach in two woredas and compare it with actual conditions with the targets established in a program design,
- To identify the challenges, gaps and opportunities of the approach under different situations and
- To recommend the way forward under both situations.

Performance indicators of the approach	Score	
	Sub indicators	Indicators
1. Efficiency in implementation		93.2%
2. Appropriateness of sites selected		100%
2.1. Technical	100%	
2.2. Social (acceptability)	100%	
3. Appropriateness of implemented technologies		56.25%
3.1. Technical adequacy for the required level of service	100%	
3.2. Spare part availability	0%	
3.3. Skill for maintenance	25%	
3.4. Cost	100%	
4. Quality of built facility		75.25%
4.1. Cracks	63%	
4.2. Washing slab proximity to well	87.5%	
5. Protection for water points after construction		33.3%
5.1. Guards	25%	
5.2. Fencing	0%	
5.3. Free of swampy surrounding	75%	
6. Efficiency of community financing for O & M		41%
6.1. Adequacy of tariff	25%	
6.2. Collecting tariff	16.7%	
6.3 Sustainability of willingness to pay	81.25%	
AVERAGE SCORE OF ALL INDICATORS		<u>66.50%</u>

These objectives were to be received using the following **methodology**:

Both secondary and primary data were collected. Secondary data was collected from reports, training manuals, designs and literatures. Primary data was also collected from selected households using semi-structured interviews, focus group discussions with WASHCos (separately with men and women) and formal and informal discussions with woreda experts. The fieldwork was carried out in the program woredas within eight

days, employing two enumerators and using two cars to do the survey around the kebeles.

Discussions were held with the CMP supervisors and senior technical experts (one from each woreda).

Schemes were selected by stratified random sampling to get good representative data. The stratification was based on scheme types (HDW, SPD, SW ...) and year of construction. Then household survey was done by randomly selecting two respondents at three different distances (500m, 1000m and 1500m) from the water point. Accordingly, six respondents have been surveyed from every sample water point.

The main findings in this research were:

Scores attributed to the approach measuring its performance in Pawe woreda

Performance indicators of the approach	Score	
	Sub indicators	Indicators
1. Efficiency in implementation		100%
2. Appropriateness of sites selected		87.5%
2.1. Technical	75%	
2.2. Social (acceptability)	100%	
3. Appropriateness of implemented technologies		67.19%
3.1. Technical adequacy for the required level of service	93.75%	
3.2. Spare part availability	0%	
3.3. Skill for maintenance	75%	
3.4. Cost	100%	
4. Quality of built facility		81.50%
4.1. Cracks	88%	
4.2. Washing slab proximity to well	75%	
5. Protection for water points after construction		75.00%
5.1. Guards	87.50%	
5.2. Fencing	50%	
5.3. Free of swampy surrounding	87.50%	
6. Efficiency of community financing for O & M		49.0%
6.1. Adequacy of tariff	37.50%	
6.2. Collecting tariff	37.50%	
6.3 Sustainability of willingness to pay	72.92%	
AVERAGE SCORE OF ALL INDICATORS		<u>76.75%</u>

Note: The scores in the second column of the tables shown above are attributed to the sub indicators from data collected by interviews, field observations and reviewing documents. Then these values are averaged to assign the score to the main performance indicators. Finally, average value drawn from all scores of the indicators

shows the overall impression of indicators, which is supposed to measure performance of the approach.

Meron Mebratu **concludes:**

- Spare part supply should be improved to gain better sustainability of water points. Meanwhile, WASHCOs should get some spare parts to secure water availability.
- Communities should be trained in collecting water revenues to improve sustainability.
- Some development of Water Point Caretaker training is required to improve their skills.
- Water point protection measures should be confirmed in each case to avoid misuse of water facilities.
- Each woreda should have at least one professional hydrogeologist.
- 'Critical' equipments like dewatering pumps should be made available without delays.
- WASHCOs and Water Point Caretakers should get refresher training and support in water point management to keep them motivated.
- Water resource catchment area protection efforts should be promoted with agriculture sector to ensure water quality and quantity also in the future.

2.2 CMP IMPLEMENTATION IN AMHARA

Nabin Sharma had the following **objectives** in his M.Sc. thesis research:

- To examine the existing rural water service scenario in Amhara region of Ethiopia.
- To determine the nature and level of community participation in rural water supply development.
- To analyze whether community managed projects are more efficient to meet the demand of the community.
- To give conclusions and recommendations concerning the existing CMP approach and its possible development.

The **methodology** of this research was given as:

Desk study: The secondary data collection was based on data and information issued by various institutions managing the Rural Water Supply in Ethiopia and also on information from related projects. Furthermore, data was collected from reference books, journals, and other sources from sector offices and concerned water and other related bureaus.

Interview: For the collection of primary data, project and other local authorities' officials were interviewed. The format of the interview for the respondents was semi-structured interview. The interviews were conducted with Woreda experts and administrative officials concerning about water supply and sanitation assessment and their technical support and with community water communities about women participation, cross-cutting issues, training and water service management (Operation and Maintenance).

Questionnaire Survey: The questionnaires will be employed to water beneficiaries groups, local people and project officials. The questionnaire will cover the information on socio-economic

characteristics of respondents, demand responsive and sustainability factors of the services, issues of cost sharing and recovery, community training and awareness creation, gender equity, condition of the existing water points and operation and maintenance of the infrastructures.

The questionnaire was used to evaluate the degree and type of participation, and to evaluate the institutional support during design, construction and maintenance phases. The questionnaire included questions about community contribution (capital, labor and material), female participation, technical factors (design of construction), financial factors, environmental factors (the sustainability of the water source) and health factors.

Field Observation: The field observation was conducted in the selected four Woredas in South Gondar region which helped to identify the standard of the construction, the condition of the contributing watershed, the type of the water point and determine the degree of preventive measures taken to protect water points from natural disasters (landslides and erosion), livestock and children.

SWOT Analysis: The key tool for planning the sustainable water supply through Community Managed Project for sustainable development was considered to be Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. The two main components of SWOT are indicators of the internal situation described by existing Strengths and Weaknesses and the indicators of the external environment described by existing Opportunities and Threats.

The main findings in the form of SWOT analysis of CMP approach in this research were:

Strengths:

- ☐ Increased capacities of communities to manage water supply system, minor technical improvements to water supply systems.
- ☐ Improved community management of water systems, the development of mechanisms for negotiation and decision making including rules and regulation systems.
- ☐ Direct community level procurement reduced project costs.
- ☐ Gender equality status improved due to equally shared responsibilities and continuous gender sensitization.
- ☐ Provided strong capacity building for communities; user's capacity to implement and manage the project activities.
- ☐ Improvement in health status of the beneficiaries due to hygiene and sanitation awareness raising.
- ☐ Commitment for covering operation and management and cost recovery.
- ☐ High budget utilization.
- ☐ Emergency funding was available in microfinance for operation and maintenance in case of minor breakdown of water points.
- ☐ There was system for payment of fees for water supply systems in some communities.
- ☐ Donor's interests in providing support to the water supply in rural areas increased.
- ☐ Existing communities system of control for the use and protection of water systems was increased.

Weaknesses:

- ☐ Too much of paper works at Woreda water office.
- ☐ No local spare parts suppliers and construction materials (cement, reinforcement bars) in remote communities.
- ☐ Inadequate monitoring of water quality.
- ☐ Longer maintenance time. The deterioration of water infrastructure was ongoing due to lack of necessary support and maintenance and unavailability of workers.
- ☐ Weak WASHCOs in some community.
- ☐ Shortage of water in dry season in water points.
- ☐ Not efficient monitoring after construction of water points.
- ☐ Lack of effective coordination between WUGs and WWTs.
- ☐ Though funds were available in microfinance for operation and maintenance, it would not cover the cost if there was major breakdown of water points.
- ☐ Institutional capacity in woredas was also severely affected due to lack of office equipment, logistic constraints and budgetary constraints.
- ☐ Needed more knowledge for WUGs of funding sources and on how they worked.
- ☐ Lack of computerized mapping of water inventory data, their status and conditions and information.
- ☐ Reform efforts in water supply sector did not meet expectation at the high level of the government and of the water consumers in the field.
- ☐ Low levels of wages for artesian and pump attendants and lack of skilled professionals in Woreda office and lack of accurate water measurement (discharge of water in pump).

Opportunities:

- ☐ Employment opportunities for the youth and private sectors.
- ☐ Opportunities for women to take part in development activities.
- ☐ CMP approach can be used in other development activities like micro-irrigation, road construction, watershed management, community forestry and so on.
- ☐ Opportunities for other donor mainstreaming the CMP approach for One WASH program to achieve UAP.
- ☐ Strengthen relation with surrounding Woreda and regional systems.
- ☐ Look for additional water sources.
- ☐ Community's economic development.
- ☐ Donor will to fund projects focused on rural water supply system and poverty reduction.
- ☐ Pro-active civil society that is aware of the importance of an efficient water resources management.
- ☐ Decentralization of political powers.

Threats:

- ☐ High turnover of staffs in Woreda water offices which might create lack of continuity and leadership.
- ☐ Private sector spare parts are not growing as was anticipated.
- ☐ Increased price of the spare parts.
- ☐ Over exploitation of groundwater.

- Existing infrastructure was not adequate for major or fast growing development.
- Experts or specialists retirement of key personnel would create void and brain drain if not handled properly.
- Inability of donor agencies to cover expenses on water supply, corruption in relations between water management organization, insufficient involvement of the civil societies, private sector and international organizations.

Nabin Sharma's conclusions and recommendations:

- Too much CMP related paperwork in woreda offices.
- No spare part stores and/or construction materials in remote communities.
- Inadequate control of water quality.
- In some cases delay in maintenance and in repairs due to lack of support or missing care taker.
- In some communities WASHCOs are weak.
- Shortage of water in dry season in water points.
- Not efficient monitoring after construction of water points.
- Lack of effective coordination between WUGs (Water User Groups) and WWTs (Woreda WaSH Teams).
- Though funds were available in microfinance for operation and maintenance, it would not cover the cost of major breakdown of water points.
- Physical capacity in woredas was also severely affected due to lack of office equipment, logistic constraints and budgetary constraints.
- WUGs are in need of more information about various funding sources and their utilization.
- Lack of computerized mapping of water inventory data, their status and conditions and information.
- Low levels of wages for artisans and Pump Attendants, lack of skilled professionals in Woreda Water Office and lack of accurate water measurement (discharge of water in pump).
- High turnover of the staff in woreda offices, which might lead in losing valuable skills and knowledge.
- There has to be good integration between health and water sectors for development of Rural WASH program. The number of Health extension workers and community facilitators has to be increased in some quantity for effective outcome.
- Women affairs sector should be more actively involved for gender equality and empowering women.
- There has to be a detailed feasibility study on the groundwater implemented in the areas where water points are planned to be constructed.
- The responsible organizations/agencies should select alternative water sources besides HDWs and SWs if practicable.
- A comprehensive mechanism or strategy has to be made for collecting, compiling and analyzing communities' water supply data.
- There is necessity of additional training and education on cross-cutting issues so that benefits reach also to the poor and vulnerable groups in a community.
- In rural areas where socio-economic abilities of communities are poor, the project has to promote productive uses of water to improve lives and reduce operation and management costs (or creating funds for O&M) by creating awareness of wise use of water points and protecting them from external damage and misuse.

- Private sector should be involved to reduce the work load of Woreda Water Office.
- It is essential to carry out further research to investigate proper ways of implementing the partnership approach with other international donors/agencies, local government, NGOs, CBOs and private sectors to integrate and find out the logical steps to execute most effective approach in the management of rural water supply.
- The rehabilitation of damaged water points has to be given emphasis along with the construction of new water points. People complain that the damaged water points are rehabilitated very late after the message is conveyed to Woreda Water Office.

2.3 COMPARISON OF WMP AND CMP APPROACHES

Yewondwossen Tesfaye's research had the following **objectives**:

- To critically investigate what works and doesn't work in relation to WMP and CMP.
- To provide rural WaSH projects' financiers with a precise scientific view as to which implementation modality best serves their requirements in effective fund allocation on one hand, and the needs of the rural community on the other.
- To oversee the impact of community participation in the implementation of rural water and sanitation projects.

The **methodology** of this research was described as below:

Site Visits

Site visits will be made to some selected WMP and CMP water schemes in the Amhara and BenishangulGumuzregions to assess the operational status of the water supply schemes.

Interviews and focus group discussions

Interviews will be conducted with water scheme operators, local elders and water scheme users, as well as with government rural water, sanitation and health officials at different levels (federal, regional, zonal and Woreda), CMP and WMP program staff, and local micro-finance institutions, so as to gain ample information on the patterns of planning and implementation and utilization of the water schemes.

In addition, a focus group discussion will also be held with WaSH committees and COWaSH committees to further investigate the difference in the patterns of implementation and management.

Documents Review

To supplement the findings from the field visit, secondary data will be gathered from the federal, regional, and woreda level WMP and CMP offices. Furthermore, a number of documents focusing on rural water supply problems, and with CMP and WMP in Ethiopia will be reviewed. List of documents reviewed will be stated in the bibliography.

The main findings by this research were as follows:

Strengths of CMP

- There is a progressive approach towards capacity building at the Regional, Woreda, and Community level
- Ensures community participation at the grass root level

- involves all the possible development agents (from region, to woreda, and community), and makes them responsible for the undertakings carried out with the fund
- The cash flow mechanism adopted is very efficient and ensures the timely delivery of resources
- Fast and efficient procurement procedure
- Empower community members in terms of organization, management, control and supervision
- High implementation and fund utilization, ensuring the accessibility of large number of communities with clean water supply sources and introduce and promote the use of sanitation facilities
- Effective construction supervision and control by the beneficiary communities
- Increased sense of ownership among the beneficiary groups³
- Higher functionality rates of constructed schemes
- Optimum utilization of constructed schemes
- Indications for promising asset valuation and financial management abilities.

Weakness of CMP

- Community mobilization is usually conducted by Woreda Water Officials. And the message transmitted tends to be more water and sanitation oriented, than WaSH oriented as in the case of WMPs
- The working procedures involve administration of a number of application and recording forms, which are difficult to be computed by the local community
- The fund ceiling for individual projects affect Woredas implementing spring development with rural pipe scheme.
- In some cases, material suppliers take advantage of the local communities in matters associated with price and quality of materials.
- Promising but unsatisfactory arrangements for O&M
- No emphasis is given on water quality

Yewondwossen Tesfaye recommends as follows:

- Management trainings should consider the concept of asset management rather than scheme management. Woredas should integrate asset valuation and costing in their training curricula so as to capacitate WASHCOs in estimating the minimum monthly contributions required for O&M.
- O&M trainings should be more practical and participatory. For such matters, equipping woredas with the right capacity is one aspect, but since it means additional task for the woredas, its reliability is questionable. However, the observed maintenance challenges could be addressed, if training of maintenance professionals is practical, and if it is conducted by local consultants and small scale enterprises with a well-designed curriculum and extended period.
- The Woreda Water Office should conduct frequent situation analysis, and should identify areas requiring training and support. This is to support WASHCOs after the implementation phase. - Once such areas of weaknesses are identified, the Woreda Water Office should make sure that both WMP and CMP WASHCOs get the necessary extended support. It should be made sure that post implementation support from Woreda Water Office is part of both CMP and WMP package.

- The findings have indicated a high (62%) seasonal unreliability among both CMP and WMP water supply schemes. This problem would be avoided if the design criterion is adjusted on matter of standard scheme depth, and number of users per scheme. Therefore, implementing authorities under both modalities should consider increased depth of wells and integration of environmental management in the programs so as to ensure seasonal reliability.
- The fund ceiling set under the CMP modality makes sure that the projects are simple and manageable by the local community. However, woredas with high spring capacity and inconvenient topography tend to construct springs with pipe schemes. Often they find the per scheme available finance inadequate to finalize implementation. One way to embrace this fact could be making the financial ceilings woreda specific based on the topography and type of scheme constructed.
- Both CMP and WMP are not 100% exclusive modalities because they have a number of similar approaches. It would be more effective and beneficial to both modalities if government entities engaged in rural water supply and sanitation create appropriate forums to exchange best experiences of the different modalities.
- Both modalities, WMP and CMP, should more extensively use existing government structures in order to sustain results. The role of external assistance in form of Community Facilitation Team (CFT) and CMP officers should be limited to building the capacity of government structures and support the facilitation of the project implementation process.
- It would be more effective if each modality adopted the other's good aspects and finally evolve into a single sector financing approach. This would create an active and harmonized fund transfer and capacity building mechanism for the implementing agencies at all level.
- Community management is a new concept with a progressive trend. Successful management practices are observed among some WASHCOs in the CMP woredas. These practices would best be disseminated among other WASHCOs if a continuous experience sharing forum is established.
- The key concept in the CMP modality (empowering the community with the full responsibility of planning, implementation and management of their own projects) with the right support, could evolve to such community based development programs like village and community road constructions, communal health posts and in school classroom constructions, agriculture, etc.... Thus a special attention should be given to this specific quality of the program by the Federal Government, and further research on the matter is compulsory.

2.4 SUSTAINABILITY OF WATER SERVICES IMPLEMENTED WITH CMP APPROACH

Ahmed Muhumed's research **objectives** were listed as:

- Is sustainability of CMP approach of water service system really above 90%? If yes what is the reason? If not what went wrong in previous findings?
- What kind of effects sustainability causes on water services implemented using CMP approach?

- What are the mechanisms and strategies needed to improve the sustainability of CMP's water service system?

The **methodology** of this research included:

Five districts (woredas) were chosen intentionally from the two zones of South Gondar and Awi. The five woredas selected were Fogera, Farta, East Estie and Libo kemkem from South Gondar zone, where as Guangua Woreda was selected from Awi zone. Those woredas were chosen on the basis of their being CMP and non-CMP woredas.

Qualitative, quantitative, data collection and data analysis methodologies were utilized. A set of questionnaires was prepared for the different respondents. Then the data obtained was categorized and analyzed.

Total of 33 water schemes containing 16 CMP (4 non-functional) and 17 non-CMP (4 non-functional) were chosen randomly and 98 respondents were selected from roughly 1650 households comprising all community parts including beneficiaries, Water Users Committee (WUC) or WaSHCO, local contractors (artisans), local spare part suppliers, Woreda WaSH Team (WWT) and Woreda Water Office (WVO) were interviewed.

One could argue that all the non-CMP not functioning water points are relatively older than those in CMP and that is why CMP water points have a higher functionality than their non-CMP older counterparts. That could be good reasoning but if the period of failure is observed it is understandable that the average period of failure of CMP schemes in this case is only about six months, whereas the average of non-CMPs is about eight years. In this case, it is highly understandable that those non-CMP water points are abandoned ones whereas CMP failed schemes have still good and logic opportunity to be maintained.

Roughly 58% of the total respondents were male; the remaining 42% were female. Fiftynine percent of the respondents were between 21-40 years and 57% have 6-10 persons in each household.

Data Collection: In this research primarily two methods of data collection were used. Firstly, primary data collection method. This is collecting data needed through a prepared set of questionnaires, interviews with focus groups and personal observations. Secondly, secondary data collection. This method is collecting all other data which could not be found through interviews, such as old data and inventory data of the area.

Data Analysis: Data analysis means the process of data cleaning; refining and transformation were used to analyze the collected data and graphs and charts were used to present the information visually.

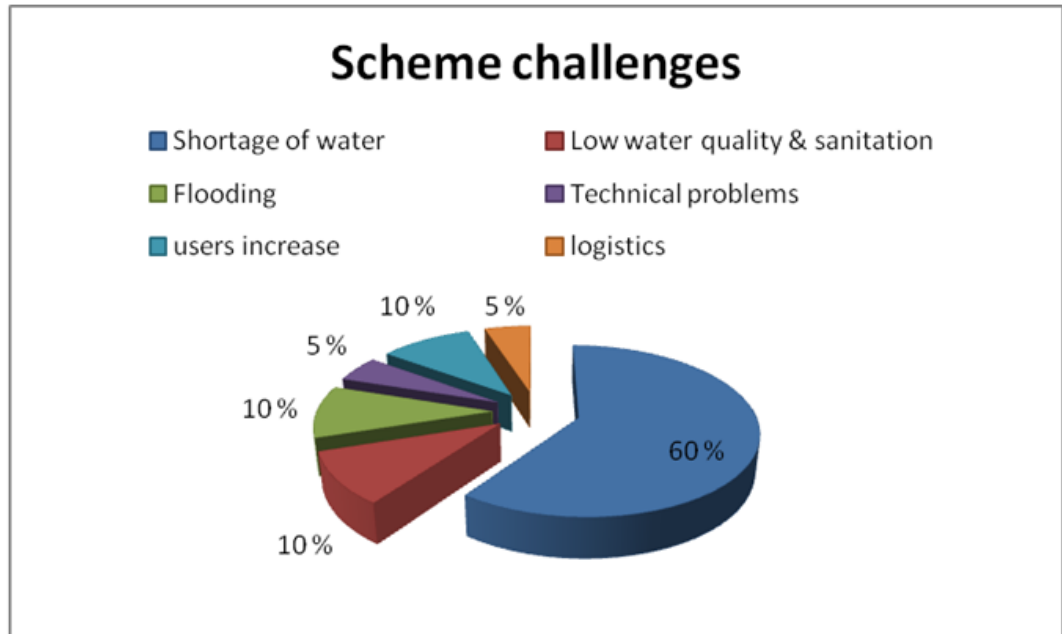
The main findings of this B.Sc. thesis research were:

With a sample of 33 WPs, the following evidence could suggest a sustainability of over 90%:

- Having an average functionality rate of over 98.6%.
- Having ownership feeling of 95%.
- Having a community contribution of 92%.
- Willingness to pay of 91%.
- Participation in the planning (site selection & technology type) of 87%
- Having saved money for O & M for schemes under the control of beneficiaries of 100%.

- Having gender balance in scheme management of 59% of females in WaSHCO committee and 16 % of females in local contractors (artisans).

Challenges:



Ahmed Muhumed's recommendations are as follows:

- There should be well organized and systematic data saving in all levels: starting from kebele and woreda. Majority of Woreda Offices have no reliable inventory data.
- Encouraging foreign spare part factories to open local branches in order to cope with growing needs and costs of spare parts.
- To upgrade and enhance technical and capacity building trainings of WASHCOs and local contractors (artisans). Some artisans lack sufficient knowledge in construction and maintenance and ask other artisans for assistance. WaSHCOs should be trained to preserve environmental sustainability, like to prevent flooding and its negative effects.
- Dynamic water tariff rate should be taken in use to cope with the dynamic price of spare parts to prevent devaluation of money saved for O&M.
- Improve co-operation and experience sharing between schemes. There is no idea or experience sharing between WASHCOs and beneficiaries of different schemes.
- Encourage cost recovery strategies among scheme beneficiaries to lower their dependence on foreign assistance, if major scheme failures happen.
- Encourage water tariffs payment for all scheme beneficiaries in order to prevent other beneficiaries discourage. Some communities already stopped paying service fee and are relying on the money saved so far. This could be a problem if service fees are needed to be collected once again. This also could discourage beneficiaries of other schemes as well.

2.5 EVALUATION OF THE LEVEL OF SERVICE RENDERED BY FUNCTIONING RURAL WATER SCHEMES – CASE OF FARTA WOREDA, AMHARA NATIONAL REGIONAL STATE

Mebit Mitiku listed his **research objectives** as follows:

General objective

The main aim of the study was to evaluate the level of service delivered by functioning water points developed through CMP and other project approaches implemented in Farta Woreda of Amhara Region.

Specific objectives

The following specific objectives were assessed to attain the overall objective of the study:

- ✓ Examine the level of services that user communities gain from functioning water supply schemes;
- ✓ Investigate the determinant factors that can determine functionality and the level of services provided by those functional schemes; and
- ✓ Compare the level of service provided by CMP water supply schemes against other project approaches

The summary of the major findings of this research are given as:

In this study, the water supply service quality rendered by functioning rural water supply schemes in Farta woreda has been evaluated using water quantity, quality, and accessibility and reliability indicators. Further comparisons were made on water supply service quality provided by rural water supply schemes in different implementation approaches. Determinant factors affecting the functionality and level of service were identified.

Generally, community managed project approach achieved substantial results in community participation, in creating sense of ownership and in women empowerment. Communities contribute up front contribution. All communities using water points implemented by CMP approach saved more than 530ETB in ACSI WASHCOs account. At least 2 of 5 WASHCO members in CMP approach are females. In CMP approach funds are channeled directly to the community through ACSI. Though it is tried to build more capacity among WASHCOs, strength sense of ownership and facilitate implementation rate of rural water supply schemes the overall result targeted to be achieved through community procurement is negative. Due to beneficiary communities' loose trust on WASHCO members, greater responsibility to construct water supply scheme lies on WASHCO members. As a result WASHCOs complete the construction before sufficient yield is gained, and communities are experiencing water shortage problem during the driest season (mid March to mid May).

On the other hand CARE using NGO managed project approach also achieved good results in community participation, women empowerment and sense of ownership as communities contribute all necessary local material. On average 3 of 7 WASHCOs are women. WASHCO members are composed of 2 pump attendants or care takers, secretary, chair person, hygiene and sanitation promoter, supervisor and store keeper. In accordance with the interview with technical manager of CARE, the project reached 40% in kind community contribution. Though upfront contribution is not must in this approach; communities start to save upfront

contribution by their willingness. Moreover, WASHCOs collect flat rate water tariff once and change it in to small business (sheep breeding, women association's sale sugar and other fabricated goods to beneficiary households and giving the income for loan with interest rate). CARE also trained two local artisans from each kebele and support pump attendants/or care takers in operation and maintenance. Close supervision of the communities and woreda water staffs by CARE staffs enable beneficiaries to access sufficient water relatively.

The evaluation of water supply service quality showed that though the improved water supply access coverage increases, the level of service obtained did not meet the national target. Based on the weighted average score of four indicators water service quality was found 63.33%. Water usage in litres per person per day was found the worst to meet the national target (only 25.6% of beneficiaries met the standard). Although, water supply schemes are completed during the driest season owning the national target (access 15lpcd of potable water within 1.5km collection distance) there is water shortage time to time and WASHCOs are forced to restrict the quantity of water collected by households. Shortage of water during the spring season occurs due to:

- Poor monitoring and supervision of woreda staffs during construction
- Design problem (water depth, population forecast and picking factor for water loss during stroke)
- Lack of community cohesion during construction (well digging)
- No consideration of other uses of water beyond domestic purpose
- Lack of training about ongoing running costs and
- Environmental degradation and climate change

Besides the above listed factors, absence of clear guide lines and regulation on operation and maintenance management affect communities' willingness to take operation and maintenance activities by themselves. External support has been given for communities during scheme failure. However, there is no clear guideline that distinguishes to what extent of scheme failure that external support has been offered or should be covered by the community, beyond rough assumption of community responsible for minor maintenance. Though communities collect money for O&M in CARE implementation kebele, they used the saved money for other social celebrities as there water points do not encounter failure problem so far. As per discussions with WASHCOs they perceive that there is no reason to collect water tariff and enforce communities to pay if water systems are not fail. Further WASHCOs feel that saving more money before system failure encounter will loosen their social relationship.

Mebit Mitiku recommendations are:

Based on the research findings the following recommendations are drawn to achieve rural water supply service quality set by the Universal Access Plan:

- At the designing stage of rural water supply schemes there should be appropriate population forecasting, consideration of water usage beyond domestic purpose and appropriate picking factor should be established for water losses during stroke in case of hand dug wells.
- During designing the probable number of youth in the beneficiary communities who will got marriage and establish house should be considered
- For community management model to be effective, clear guide lines and regulations must be established on the extent of operation and maintenance activities covered by beneficiary communities

- Based on the experience from payment system in rural Ethiopian Orthodox Church followers for spiritual service and interview with beneficiaries, rural communities are more willing to contribute in kind than in cash. This is also reflected on the household survey result of community contribution during construction. Therefore considerations must be given to in kind payment system as alternative for water tariff collection. For example, WASHCOs can collect cash cereals from beneficiaries on annual basis.
- Though procurement of construction materials by WASHCOs improve sense of ownership and facilitate implementation rate, WASHCOs still need external support in the artesian contracting and procurement process from woreda water resources development office. Further it affects the sense of ownership and participation of beneficiary communities during construction. Therefore, appropriate measure should be taken on direct channeling of funds for the community.
- The intervention done by CARE of training of two local artisans in each kebele to support pump attendants or care takers in operation and maintenance management should be strengthen.
- To avoid domestic water supply shortage during the driest season CARE has been trying to provide a shallow well equal distance from number of hand dug wells. This should be adopted by other implementers in the woreda.
- Activities done by communities in CARE implementation kebeles to cover the operation and maintenance cost should be strengthened and scaled up.
- In CARE implementation kebele local communities are required to supply all construction materials (sand, gravel, paddle etc) except fabricated. Based on the interview with Farta woreda water supply director communities collect poor quality construction materials which in turn affect the quality of construction. Therefore, appropriate supervision should be strengthened during construction.
- COWASH have annual budget for rehabilitation rural water supply schemes. Such ongoing external supports beyond capacity building should be adopted by other implementers in the woreda.
- In case of CMP implementation kebeles, beneficiary households are required to open an account and save upfront contribution in ACSI for future operation and maintenance before water point construction. In most cases WASHCOs are not drawing from this account for minor maintenance, but communities feel that they were betrayed by WASHCOs and are not willing to pay for water tariff. To avoid these there should be annual reporting and auditing on the status of WASHCOs account for the user households.
- Private sector involvement looks still poor; though there are local artisans participated during construction. Artisans were complaining on the fee they received and there are problems with construction quality if they are building water points for the community where they are not belonging. Therefore considerations must be given on the artesian payment and controlling of construction quality.
- Spare part supply chain is one of the factors that determine the water point functionality. In the woreda there is no well stoked private or government spare part supplier. There are private owned construction material shops but they have not spare parts for water supply schemes due to the fact that the spare parts are not available alone on the market. Therefore government should work giving special attention on either option for spare part importing or means to fabricating by local metal industries like defence engineering.
- To be beneficiaries of researches and other monitoring programmes agreed definitions of functionality and possible indicators for the assessment of rate of functionality should be developed at national level.

- As the per dime rate was found as motivating factor for woreda water resources development staffs in fulfilling their duties, All the projects and /or approaches in WASH improvement should use similar and reasonable per dime rate.
- There is shortage of human resources working on water supply in the woreda. Only 5 of total 13 staffs have educational background on water. Therefore considering this issue concerning body should recruit adequate staff members and answer questions with frequent staff turnover.
- WASHCO members, pump attendants and care takers need refreshment training as they have been forgetting technical skills and to keep them active. In addition WASHCOs of visited water points recommend a sort of training should be given for the general community to convince the concept of paying for water
- Focusing only on the accelerated implementation of the ambitious UAP through construction of new water supply schemes will put all efforts naught. Therefore due consideration should be given for monitoring of the service provision by water supply schemes already implemented
- Number of water points implemented in a given area cannot tell about the level of water supply service being achieved. Water supply service needs to be measurable beyond plans and reports on its achievement. Therefore, further studies possibly done using team approach which could; evaluate communities economic characteristics and appropriate financing mechanisms for ongoing O&M with in a specific community, track possible factors that affect rural water supply schemes sustainability and functionality for a set of technology options and set basic and measurable indicators of sustainability-functionality and evaluate water supply service quality across various areas, approaches, technology options, and socio-cultural settings are recommended.

3 RECOMMENDATIONS ALREADY TAKEN INTO ACCOUNT

Spare parts

Most of the researchers are recommending improvements in spare part supply to improve sustainability of implemented water schemes. COWASH is assisting MoWIE in the development of supply chain by introducing the idea of Women and Youth –Led WaSH Supply Chain Outlet development. That process is still its initial stage. It can also be assumed that increasing number of wells and protected springs by using Community-Led implementation initiatives will create more demand for spare parts and thus encouraging local dealers to be more active in this field if the woredas will let the private sector to engage in the business by stepping aside as spare part distributors.

For One WaSH National Program, it is worth noticing that there are, and have been some activities on supply chains ongoing. FinnWaSH-BG implemented the supply chain study in Benishangul-Gumuz in 2012. Also World Bank completed a supply chain study in 2010 and SNV is just about to start its own effort on the same. In addition to the mentioned studies, JICA is working on this matter in SNNPR and Linda Annala, the former COWASH Junior Professional Officer, is implementing a doctoral research project on this subject. Thus, a lot of information about matters related to supply chains exists and is still to be published.

The development of not only spare part delivery but the supply chains as whole requires special attention in One WaSH National Program. The already published studies and the up-coming research results will give guidelines how to progress in this matter. One interesting

alternative would be to encourage Local Capacity Development Facility (LCDF) consultants to start not only consultancy business but WaSH marketing business as well. This would help them in securing their economy in the beginning when the consultancy business is still to grow. Also artisan associations could be utilized in spare part or WaSH products delivery. The associations could sell WaSH products at the same connection when providing their knowhow. And there is also a project proposal of Women and Youth -Led WaSH Supply Chain Outlet Development waiting for implementation. That might be implemented in large scale if it gets enough funding. That could create one interesting path for WaSH products as well when WaSH marketing and commercialization components are strongly interlinked into it.

One option supporting private sector in developing its services and to be studied more carefully in the future also in developing supply chains for Ethiopian WaSH sector is a recently awarded innovative financing mechanism called African Guarantee Fund (AGF). AGF is to help small scale entrepreneurs to get funding when intending to develop and/or expand their services. Anyhow, this organization has not programmed Ethiopia as its target country in the coming few years time. Thus, this possibility might take some time to realize.

Anyhow, the practise of delivering spares free of charge from Woreda Water Office as existing in some areas is not recommendable because it will cause problems in private hardware stores or other stakeholders in this field. Finally, the whole supply chain will suffer in the long run.

WASHCO training

There is a continuous training manual development on-going by COWASH project. All the aspects given by the researchers are to be taken into account in this development work. The special attention in the near future should be given to asset management and the post construction activities WASHCO should be taking to secure O&M of the water facilities.

Also training of trainers (ToT) must be in continuous development process. The idea of cascading skills and knowledge is the only reasonable way to accelerate human resources development in WaSH sector while the aim is to accelerate implementation of services also but not only the implementation of water schemes. This is done by conducting training impact assessments which are producing guidance for the development work.

ToT trainings are also to be developed to be more participatory and the problem based training approach will be utilized more often.

Pump Attendant and Caretaker training

It is proposed that the Pump Attendant and Caretaker trainings should be more practical. This is also under continuous development. The actual implementation of each training session is dependent on the actual situation on the date and in the venue and situation at the grassroots level.

Also refresher trainings for Pump Attendants and Caretakers should be arranged in the future.

Water safety questions

In some of the recommendations the researchers are referring to questions related to water safety. The COWASH project is working to include these matters in the existing training and management manuals to influence One WaSH National Program in Ethiopia within the EFY 2006. Water safety was also included first time into the Sector Undertakings in the 5th MSF in November 2012. Furthermore COWASH has developed "Kebele Water Safety Plan (WSP)

Guideline and training materials” and piloted the WSP in one Kebele of Yilmana Densa Woreda in Amhara Region. All regions are also in a process to purchase water quality testing kits for each COWASH woreda. It has been also agreed at the national level workshop organized by COWASH to develop National WSP Strategy and Guidelines. WHO has already required consultant to the strategy and guideline development.

Monitoring and evaluation activities

The researchers recommend improvements in M&E activities among WaSH services. This is a matter one can never do 100 % complete. But anyhow, improvements in M&E have been taken and are under development. COWASH has produced various forms for all stakeholders to collect reliable and up-to-date information about water points (communal and institutional) and institutional latrines.

Anyhow, a lot remains to be done. There is no proper systematic M&E process in Ethiopian WaSH sector to keep National WaSH Inventory (NWI) data updated and to improve its reliability. Thus, M&E procedures starting from grassroots level and for example utilization of the GIS technology must be taken in active development process in One WaSH National Program. The planned Water Safety Planning process and Social Audit processes could be essential instruments in the development of community-led monitoring and WaSH data updating.

4 RECOMMENDATIONS TO BE NOTICED IN FUTURE ACTIONS

Number of professionals in the WaSH sector

In several recommendations the researchers are referring to water points drying up in dry seasons or inadequate amount of water compared to number of users. This all worry is related not only to climate change but also to inadequate number of professionals especially in the Woreda Water Offices. As Meron recommended: “There should be at least one hydrogeologist in each woreda”. But currently, they are not only hydrogeologists who are missing but other professionals as well. The researchers are also calling for more involvement of professionals from social and other sectors: cross cutting issues, financial matters, etc. Even if the MoU is signed by the four sector ministries a lot remains to do to activate the cooperation among them.

The lack of professionals of various fields in WaSH sector is recognised in other evaluations as well. For example in the recent capacity assessment undertaken by UNESCO, this was noticed in all visited woredas. This matter is to be taken seriously and should be solved as soon as possible. The undersigned MoU should guarantee this to happen. When the National WaSH Coordination Office will work in its full power, it should prepare a strategy to fill up the human resources caps not only in woredas but also in all offices working in WaSH sector.

Some of the zones and woredas are having Human Resources Development (HRD) plans but no budget for the purpose and some of them are having HRD budget but no plan how to use the budgeted funds. This is a clear matter to be tackled in the first years of One WaSH National Program. Anyhow, the assessment of the situation still ongoing for each zone and woreda

In order to manage the water access improvement in the absence of hydrogeologists the COWASH together with ODI by using DFID funding has started the improvement of water point

siting guidelines and climate risk screening in site selection stage. This guideline will in short term help the existing WaSH practitioners in the woredas to take into consideration the environmental requirements in appropriate water point siting in order to avoid temporary drying up of the water points. In long term the training of Water Technicians by the TVETCs should also include the climate risk screening guideline and site selection guideline into the curriculum as the availability of adequate number of hydro geologists will still take some years to come. Training should follow the approach of problem based education to make it as practical as possible.

Post construction support

It is noticed that the post construction support to WASHCOs/WUGs is inadequate. Water points might be out of use for long periods just because of a minor failure, woredas are reported to have no critical tools like dewatering pumps in their use, beneficiaries have stopped to pay their contributions because there has been no need for O&M for some time, etc.

It is vital that the post construction activities are given more attention in the future. The tools for continuous WaSH development work and proper O&M are given to stakeholders during the CMP implementation phase. But anyhow, supervisory work, advices, control, refresh training, etc. support among the woredas, kebeles and communities once benefitted should be included in One WaSH National Program. Woreda Water Offices should get some funds to renew their physical capacity in their annual budgets and operational budget for fuel for supervision activities. WASHCOs should be trained in asset management so that they understand that all equipment and constructions have to be replaced and/or rehabilitated after a certain period of time. Thus, they should not stop collecting water revenues even if money seems to be enough for O&M. In the future, there should not appear the comment written by Nabin: "People complain that the damaged water points are rehabilitated very late after the message is conveyed to Woreda Water Office." WASHCOs should be able to act themselves in the cases of damaged WaSH facilities and not to wait woredas to act.

The CMP approach should be developed in a way it allows rehabilitation works also to improve water safety in an area. If the area concerned has already once been supported by CMP approach, that should not prohibit renewed project. Only the conditions might have to be different in 'the second round' taking into account that the beneficiaries should now have better possibilities in investing in their project. Naturally, careful field appraisal must be implemented before this type of renewed projects.

Multipurpose use of water resources

All researchers are recommending a bit wider use of CMP approach than only WaSH. Certainly, it would be beneficial to include different kinds of MUS (Multipurpose Use of water resources) activities around implemented water schemes. That would increase the interest in keeping the scheme in good and productive condition and thus improve sustainability.

It seems that poverty reduction and sanitation improvements are the MDGs not to be achieved not only in Ethiopia but also in all other African countries. Various MUS activities would help in this remarkably. For example, a combination of ecological sanitation and improved water service is creating possibilities of increased food production, which would then lead towards higher income of the family/society concerned.

Although this is a topic discussed long time and in number of meetings and seminars, it seems MUS activities have been difficult to start. This has at least partly been because of the sector

ministries have not been coordinating efficiently enough. The recently signed MoU will hopefully bring some development in this. Health Extension Workers, Development Agents and schools should be working together with WASHCOs in developing MUS activities. This is a challenge also to human resources development in the near future: How to bring MoU into practice on all levels but not only on the federal level? A special training program on this would be required. That could be one of the first HRD activities for One WaSH National Program?

It is also recommended that COWASH should support the short term consultancy assessment of MFIs in WaSH sector development: opportunities and challenges. It is strongly believed that the MUS development should be linked with the Micro-Financing.

Practitioners' groups

Even if so called 'Practitioners' Groups' are mentioned in the recently signed WIF, only time will show us what are the various ways by which these groups can benefit the WaSH development. In accordance with the completed researches, this type of stakeholder meetings or similar would benefit not only on the higher levels (federal and regional) of WaSH sector but also on the woreda and community levels. This is something to be taken into consideration in future work plans of One WaSH National Program.

RIPPLE has been implementing so called 'FLOWS information sharing forums' and this work should continue. Anyhow, in addition of this kind of one day experience sharing meetings also Practitioners' Groups introduced in WIF should be developed. Practitioners' Groups are dealing various subjects more deeply and using a workshop approach.

There could be several benefits of Practitioners' Groups: A) It is noticed that especially the government organizations on all the levels are suffering of high turnover of personnel and thus losing skills and knowledge. Practitioners' Groups would be one solution to this problem. When sharing experiences between persons who have a long working history in an organization and newcomers at least the most important knowledge is transferred. B) When people struggling with similar matters in WaSH development are sharing information also the transparency will improve. There are for example fewer possibilities for private sector to 'cheat' WASHCOs by raising prices of equipment and spare parts too high when members of various WASHCOs are sharing information in meetings. C) If properly recorded, the Practitioners' Groups can provide WaSH sector with number of ideas to improve various processes in WaSH development.

5 REMARKS

The completed ReCMP researches have proven that the research project has been successful. Ethiopian WaSH sector has benefitted of the thesis papers published and there is no doubt more useful results will appear in the near future in the form of Beshah Mogesse's doctoral dissertation. All the recommendations given will be considered carefully when preparing work plans for One WaSH National Program in Ethiopia.

It is worth noticing that we are still expecting some other research projects to be finalized. Matthew Hurst is working with his doctoral dissertation on water quality aspects, Linda Annala has started her doctoral research on supply chains and Yewondwossen Tesfaye is planning to continue his studies (The main purpose is to research the concept of the community more deeply. Is the community much different in donors' plans and ideas than it is in the practise

from beneficiaries' point of view?). COWASH is funding the research on training impacts of various CMP trainings implemented in EFY 2004-05. There is a plan to research also procurement process on the community level, etc.

It is evident that Ethiopian WaSH sector is having so many topics to be researched that a special research component in One WaSH National Program in Ethiopia can be recommended. The coordination of this component should be given to an organization with long experience on research, wide networks among the 'WaSH world' and among the research financiers and good knowledge of Ethiopian WaSH sector.

The research results show that even if the CMP approach is really efficient tool in developing the rural WaSH services in Ethiopia a lot of improvements are to be done. All the recommendations by the researchers should be taken into account when implementing OWNP.