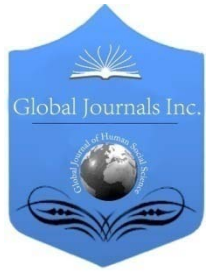
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Paradigmatic Views and Pragmatic Requirements for Sustainable Rural Water Supply in the Developing World: The Analytic-Review-Recommendary Study in Rural Water Suppy

By Moses M. M. Daemane
National University Of Lesotho, Lesotho

Abstract- This paradigmatic and pragmatic analytic-reviewing-recommendarystudy aims at entrenching the notion of participatory development/community participation and community capacity building for sustainability in rural water supply. The study's review covers introductory background in participatory development/community participation and community capacity building that lead towards sustainability in rural water supply. The study reviews Southern African Development Community (SADC) and Lesotho context, community participation in rural water supply, participatory development and capacity building for sustainability and community based management (CBM) for rural water supply systems.

Keywords: 1. participatory development/community participation, 2. community capacity building, 3. sustainability, 4. rural water supply/rws, 5. community based management/ (cbm), 6. operation and maintenance/o&m.

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I. Introductory Background

This analytic-review-recommendary study intends to entrench the notion of participatory development/community participation and community capacity building for sustainability in rural water supply. The study argues and reveals that participatory development/community participation and community capacity building are crucial for sustainability in rural water supply. Firstly, the study's review covers introductory background in participatory development/community participation and community capacity building that lead towards sustainability in rural water supply. The study also reviews Southern African Development Community (SADC) and Lesotho context. Secondly, the study's review encompasses community participation in rural water supply, participatory development and capacity building for sustainability and community based management (CBM) for rural water supply systems. Thirdly, furthermore, the participatory role of communities in rural water supply/RWS, prerequisites for community preparedness to take over full operation and maintenance/O& M responsibility, indicators for sustainability in rural water supply/RWS, capacity needs for local structures in community-based Rural Water Supply Systems/RWSSs management and lastly the summary.

The current wave of international movement towards sustainable rural water supply manifested itself in, among other ways, making it as one of the top priorities of the Millennium Development Goals (MDGs). The goal, it is indicated, is to reduce by 50 percent of the number of people without access to domestic water, whether the lack is due to technical or social causes. Lack of access to household water has been recognized as a violation of internationally upheld human rights (Bock,et al, 2008:2). Moreover, vision 21 of the World Water Council, developed in March 2000, recognizes the dire need for populations to clean, adequate and reliable water in the home, against the premise that people aspire to meet their human right to clean and healthy world (Sportel, 2002:3). Further, Sportel (2002:6) submits that while in the past there have been efforts to institutionalize sustainable access to water in rural India, the recent ongoing processes towards realizing sustainable rural water supply rests at the end of the 20th century when the Department of Drinking Water Supply was established. This department was set up as part of the objective to achieve goals outlined in their national plans on "human development through capacity building of local communities and operation and maintenance training, specifically for women (Sportel, 2002:6)."

In the African context, governments have taken bold strides towards sustainable rural water supply. This brings to light the ratification by most Southern African Development Community (SADC) countries to the SADC

Author: (Phd) Lecturer in the Department of Development Studies at the National University of Lesotho, Roma Campus, Lesotho.
e-mail: mosesdaemane@gmail.com

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Regional Water Policy of August 2005. This policy pays homage to some of the following principles pertaining to community participation and capacity building for sustainable management of water supply systems: (1) A participatory approach shall form the bone marrow of water resources' development and management. (2) Efforts shall be made across all levels (local, district and national) to build capacities of relevant stakeholders such that they are enabled to perform their tasks efficiently and effectively (SADC, 2005: xvi).

The Southern African Vision for Water, Life and Environment of 2009 also reiterates that in order to realize the vision of equitable access to water of acceptable quantity and quality for all, there are existing potentials. These relate to decentralization of water provision services to the most appropriate local level, as well as the empowerment of local communities by involving them in making strategic decisions that pertain to provision of these services. These prospects may also be achieved when ownership and management of water supply is at the local level and when policies that ensure sustainability in this sector are put in place (SADC, 2009:12).

Reference may be made to the Namibian context as an example of SADC countries that have undergone the decentralized rural water supply reform. Under the auspices of the Water Supply and Sanitation Sector Policy of 1993, it was acknowledged that improved service delivery in rural water supply principally entails community participation and involvement. This rests on principles of utmost involvement of users as well as decentralization of responsibilities to lower tiers of governance (Bock, et al, 2008:6).

a) Lesotho Context

According to Feachem (1978:27), since the 1930s Lesotho has been engaged in forms of village water supply (mainly protection of springs), which however proved detrimental to communities due to the health hazard reputation that they carried. Rural villages' water supply construction commenced between the 1960s and 1970s under the auspices of post-colonial District Councils, which supported communities with technical assistance (Feachem, 1978:27 and Department of Rural Water Supply, 2005:1). With time, rural village water supply became the responsibility of the Department of Community Development, which progressed to being the Department of Community Rural Development (Feachem, 1978:28).

The current road to decentralized rural water supply, by virtue of community-based management and maintenance is reinforced by the stipulation contained in the Local Government Act of 1997. Here, the second schedule of local government responsibilities points to community councils. It states that maintenance of rural water supply systems is the custodian of community councils. The Department of Rural Water Supply (DRWS) to this effect developed a policy paper to set a stage for the implementation of community-based rural water supply by defining communities as drivers of this development. These lower tiers of governance shall then carry out the mandate of facilitating the process of establishing the democratically elected village water committees/VWCs to assist in managing and maintaining the water supply systems in respective localities (Aftercare Strategy, 2005:3).

II. Community Participation/Participatory Development and Community Capacity Building for Sustainability in Rural Water Supply

Community Participation in Rural Water Supply: This is a notion that gained popularity in the early 1990s as a consensus reached to engage a Demand-Responsive Approach (DRA) in water supply (Schweitzer, 2009:27). Katz and Sara (1998:3-4), contribute to this idea as they maintain that DRA subscribes to the conception on community empowerment in enabling people to contribute meaningfully towards decisions pertaining to sustainable management and maintenance of rural water supply systems in their localities. For this reason, Koryang (2011:9) submits that community participation is "aimed at inculcating a sense of self-reliance and ownership..." In thisreview study, the idea of community participation in rural water supply is hinged on active participation of communities in sustainable management and maintenance of water supply systems as well as capacities they possess, enabling them to perform tasks related to minor and major repairs.

The call for clean and safe water has increasingly been a priority within national policies around the world. The issue of coverage has also been deeply rooted in the water sector such that governments (in other cases with the assistance of development agencies) have undertaken the responsibility to harness the water resource through RWS projects in order to improve equity in access to water.

Just as the above RWS traits pronounce, community participation is crucial in the water sector. It essentially constitutes the bone marrow for sustenance of water structures. Popularity for this notion gained more ground in the early 1990s with a conclusion to engage Demand-Responsive Approach/DRA in water supply, after research results and conclusions pertaining to the rural water sector development in the 1980s (Schweitzer, 2009:27). Katz and Sara (1998:3-4) report that this DRA to service delivery subscribes to the conception on community empowerment. In the empowerment realm, people are enabled to contribute meaningfully in decisions pertaining to rural water

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supply structures management. In addition to adding to the guiding policy and preferences on technology for their water supply system, they also add value to the location of the structure, by virtue of their convenient location to resources. They are in a much better position to relate their needs to solutions. Peltz (2008:22), says that

"the idea that community should be actively involved in the provision of water supply has become widely recognized as critical to the long-term sustainability of any water supply system...Participation by community members in the identification, design, implementation and especially management stages can be understood in terms of the need and motivation of the community..."

On the basis of these perspectives on community participation and RWS, some expected levels to which communities may contribute towards sustainable water supply systems can be adopted as depicted in the work of Koryang (2011:12-14) that there is need for the communities to put the following measures in place.

- Capacitation of Water Users for Sustainability: Koryang (2011:12) subscribes to the idea that RWS systems management lies in the hands of communities. This is why it is crucial to invest in building their capacity to better perform O&M functions in order to attain sustainability. Capacity building, for instance, may involve technical training for village water committees (VWCs) to fix broken pipes or hand pumps. This will result in moving maintenance that for a long time has perpetuated non-functioning away from the top-down approach of the central government arms. These tend to be too short to address problems of multiple villages at once.
- Financial Resource Mobilization and Contribution by Beneficiaries: The ability of communities to pay for management costs is important to establish. Communities ought to contribute towards O&M and capital costs at the inception phase of the project. These play a significant role in promoting ownership and sustainability. Their significance is attested to by DRWS (2011:2), where their roles in RWS projects include contributing towards capital and maintenance fund as well as payment for water services and O&M related costs. Koryang (2011:14) posits that although the noble aim of promoting ownership is upheld, hurdles of poverty and very low income-earning circumstances persist and therefore, inhibit participation.
- Beneficiaries' Participation in the Project Cycle: For water supply projects to be sustainable, it is imperative for communities to become involved in post-construction phases of the project and other early stages of contracting and construction. They should be involved in the decision-making process pertaining to such issues as the final selection of a contractor to build the system. DRWS (2011:2) intensifies this view by proposing that communities should be involved in decisions such as the identification of the needs of women, the elderly and the disabled groups in relation to the water supply system structure.

It is, therefore, crucial to have all groups of the community participating in the RWS collectively or through a cross-section of the whole community such as water committees, representing the needs of the whole.

Further, we can conclude that in order to have sustainability in the provision of water supply service, communities ought to be consulted on their need for a water supply system as well as the type of technology that they see fitting to their context and O&M muscle. Demand should come from the people, as opposed to local authorities (only) taking decisions that might be subjective on issues such as the location of water taps; capacity building on O&M for water committees and protection measures by communities should all be clarified (Katz and Sara, 1998:4 and Peltz, 2008:22).

The focus on popular participation in rural water supply in this study review hinges on models of human development conceiving that popular participation and capacity building are essential to the success of development programmes aimed at the betterment of the livelihoods of rural dwellers.

a) Participatory Development:

Participation emancipates people not only from passiveness but also from dependency. A genuine effort to engage people in development that directly affects them, calls for a sense of ownership of development programmes in place. Kumar (2002:23) also suggests that one of the advantages entailed in popular participation pertains to the idea that it triggers a community's self-esteem and enables for control over the process. This will then make it possible for an ownership sense to surface together with many other positive notions such as effective use of available local resources and indigenous knowledge in the implementation of such programmes.

In the Participatory Development model (PD), Daemane (2012:111), maintains that it is highly important that within the process of decentralization that in essence embeds aspects of promoting popular participation in development, citizens are made well aware of opportunities for participation. These poor grass roots ought to be given understanding on the role of local government structures and responsibilities. Nevertheless, this is not demonstrated by Lesotho's current decentralization; there are significantly few people who participated in the local government elections because of inadequate sensitization

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mechanisms for people to fully absorb the idea of decentralization. This poor turnout did not only characterize the first 2005 elections, but the second round in 2010 as well (Common Wealth, 2005:15 and Lesotho Council of NGOs, 2011:6). This is most probably, why Lesotho's decentralization is moving slowly. The beneficiaries are not actively participating to improve their growth and self-reliance (Kumar, 2002:27). Another issue relates to the appalling numbers of rural water supply systems that do not function due to, among other reasons, lack of management since beneficiaries lack ownership of these resources (Department of Rural Water Supply, 2007:1).

These examples are clear indications that, overall, people still do not embrace the concept of decentralization. They do not own it and they are not aware that it is within their rights to actively participate in strategic decisions that affect them directly in their respective localities, just as the concept of decentralization intends.

b) Capacity Building

Organizations regularly point to challenges of capacity within institutional, organizational or individual settings as barriers to the achievement of performance targets. For this reason, this study hinges on a definition given at the FIG XXII International Conference of Washington (2002) as "the development of knowledge, skills and attitudes in individuals and groups of people relevant in the design, development and maintenance of institutional and operational infrastructures and processes that are locally meaningful."

c) Sustainability

Camagni, Capello and Nijkamp (1998:105), posit that efforts to define sustainability have really triggered a lot of debate. Different scholars have made efforts to define sustainability variously. For instance, Hope and Lekorwe (1999:838) coined it as the ability for current generations to efficiently utilize resources available to them, mainstreaming within their efforts the view that future generations ought to similarly meet their needs from those very resources. Camagni, et al (1998:105), further claim that the middle ground reached by different scholars in unpacking the concept of sustainability sheds light to the fact that it is a whole encompassing notion that covers aspects of the environment, economy and society. For this reason, on the social plane (especially looking at rural water supply) Peltz (2008:22) maintains that "the idea that communities should be actively involved in the provision of water supply has become widely recognized as critical to the long-term sustainability of any water supply system". Against these, this research review study aligns itself with Musonda (2004:11), corroborating that sustainability in rural water supply pertains to the maintenance of water supply systems such that reliable and adequate domestic water supply is served for a prolonged period of time. Peltz (2008:20) submits pointers that ought to be visible in order for a water supply to be deemed sustainable. The table below reflects on indicators for sustainable rural water supply systems/RWSSs management.

Table 1 : Indicators for sustainable Rural Water Supply systems.

Indicator	Link to sustainability in rural water supply
Reliability	Accessibility of spare parts and local capacity for conducting minor repairs.
Human Capacity	National and district staff of the Department of Rural Water Supply is competent in giving technical support for building capacity of local structures on operation, maintenance and management of water systems.
Local Institutional Capacity	Need for autonomous institutions, at local level, to flexibly put in place preventive solutions while implementing development programmes that promote popular participation.
Operation, Maintenance and Management	Whatever resources served communities contribute, ought to be within their capacities of operation, maintenance and management.
Inter-sectoral collaboration for cross-fertilization of skills, ideas and resources	Exchange of information with other sectors such as NGOs, is needed to build a broad and thick knowledge base for sustainable water supply management at local level.

Peltz, 2008:20.

In a study conducted in India by Sportel (2002:18), it is revealed that active involvement and empowerment of communities, especially in rural water supply, promotes sustainability. Koryang (2011:12), in a similar Ugandan study submits that,

"Participation enhances community ownership, control and involvement in decision-making process and other operation and maintenance (O&M) activities for improved water provision among others. Accordingly, shot of these may not lead to attainment of sustainability of rural water provision and maintenance."

Musonda (2004:32), in a study based in Zambia, concurs by pointing out that involving communities in the management of water supply systems in their areas,

"is aimed at strengthening the capacities and willingness of the community to take ownership and responsibility of managing their water supply systems,

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after the implementing agency has left the community." A similar study conducted by Odaro (2012:37-38), in Nigeria, evidences the effects against lack of community participation in the provision of rural water and sanitation. Further, Odaro (2012:37-38) observes that such lack of popular participation results in, "The lack of accountability and community ownership in the planning and implementation of infrastructure projects, poor management and sustainability, low quality and limited options. A major challenge for provision of water and sanitation is capacity constraints with respect to planning, management and implementation, especially at local level."

Lockwood (2004:7) submits that primary standards in community-managed rural water supply pertain to community strategic decision-making, not only on issues such as the desired level of service but also on the preferred mode of payment for such services as well. Further, the principles relate to the daily involvement of the people in operation and maintenance of the system, especially focusing on collection of subscriptions from water users, purchase of spare parts for carrying out minor repairs themselves. While this is the case, communities require the capacity to source out professionals to do major repairs on their behalf. Musonda (2004:37) supports this opinion by referring to sustainability that comes with community management of RWSS by maintaining that

"Sustainability of rural water supply facilities is dependent on many factors. These factors include, policy, legal and institutional framework, social factors such as demand for water, community participation and community organisations; economic factors such as ability to meet the cost of maintenance and ability to pay for services; technological factors such as technology choice, availability of spare parts and operations and maintenance; and lastly management factors".

Against this background, this study puts that evidence of imperative pillars of community participation in managing rural water supply systems (ability by communities to make strategic decisions in relation to the sustainable functioning of their system, high levels of ownership and capacities as well as the ability and willingness to contribute towards operation and maintenance costs) is lacking.

The lacking is backed by a conversational interview with the Principal Sociologist of the Department of Rural Water Supply (DRWS) on the 6th February 2014 in Maseru, Lesotho. She maintained that there is a high number of non-functioning RWSSs in Lesotho caused by, among other reasons, lack of ownership of the systems by communities since they perceive these resources as the property of the government. There are also unclear roles of community-based maintenance between DRWS and the communities, hence long periods between reporting on the need for repair and the actual repair taking place. She further reported that although efforts are being made to sensitize and promote community-based management of the systems, financial constraints delay the process of covering the whole country. This is why the problems of lack of community participation and lack of ownership towards the systems by communities persist.

III. Community based Management (CBM) of Rural Water Supply Systems

The notion of Community Based Management (CBM) came with the International Decade for Drinking Water and Sanitation. It is an approach that favours community participation in RWS affairs by promoting placement of responsibilities related to O&M upon the local people (Lockwood, 2011:75). The root to the development of this approach is the inability of central governments to maintain water supply infrastructure, hence unsustainability. The approach's mandate was to use participatory methods in providing guidance and information on its strategies. This participatory approach to community sensitization and education on issues of RWS ensures active community involvement that culminates in sustainable development (RSU, 2000:3 and Sportel, 2002:20).

For RSU (2000:4), the concept of CBM in RWS is a process aimed at developing "a true sense of ownership and continued development for community gain and benefit". Community participation discussed herein is a series of activities that entail community engagement. These activities may be in the form of contribution of labour, collection of river sand, collecting contributions towards maintenance of water supply systems as well as attending public gatherings that seek to promote participatory decision-making.

In essence, therefore, basic components of community management are (i) community responsibility which refers to the act of the community assuming ownership, not only for the water supply system, but its minor operation and maintenance as well. (ii) The aspect of community authority relating to the fact that communities have the right to take decisions on interventions for adequate access to water. (iii) Community accountability in which local people uphold the idea of being bearers of all consequences for decisions that they took towards the development interventions. (iv) and Community control that bestows power upon the people to implement their decisions (RSU, 2000:4).

In a similar light, Lockwood (2004:8) attests to these when submitting common principles of community management, in the context of RWS tabulated below in table 2.

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Table 2 : Common Principles of Community Management

Participation	Indefinite community involvement that entails supporting the implementation of community management process.
Control	Communities being directly/indirectly in control of O&M of their water supply systems. This control, however being understood as the ability to take strategic decisions within the project cycle from designing phase through to the long-term O&M.
Ownership	A sense of or perception of ownership of the water supply system by the general population of water users.
Cost-sharing	Any form of contribution in the direction of recurrent cost for O&M. The form of contribution may be determined by individual circumstances.

Adopted from Lockwood, 2004:8.

Lockwood (2004:8) further maintains that CBM aims to accomplish three objectives. Firstly, it empowers communities and promotes self-improvement since water supply projects are often seen as entry points to the general community capacity building. Secondly, it promotes efficiency in service delivery through employment of human capacity, volunteer time and local material inputs. Lastly, it sustains RWS services by charging communities with control; they acquire indefinite interest in prospective benefits out of the project.

Against these, it can be concluded that Lesotho's DRWS upholds CBM within its project cycle, based on the current implementation of the Aftercare strategy paper as a document supporting the said approach. A community management handbook is used to this effect. Here the concept of community management is upheld as an, "…approach that influences the community to make the best of the resources available within their jurisdiction... For any effective community management system, community participation forms an integral part. This is not only a moral and political issue, but is also an important development principle. Experience throughout the world has shown that where local people are not participating and responsible for local services, sustainability of such services is not achievable (DRWS, 2011:2)."

IV. The Participatory Role of Communities in RWS

Community level ownership and control over RWSSs has a profound impact on active participation by water users. For this reason, here we shall consider the role that communities should play towards sustainable RWS.

- Participation in Needs Assessment Public Gathering: This a gathering; out of which a priority list of needs is developed by the community. This is done in the presence of local government authorities, as drivers for local developments and link between the people and service providers. Assuming that a need for construction of a water supply system arises, this will be expressed to the relevant agency for consideration (DRWS, 2011:10).
- Participation in Informative Awareness Raising and Sensitization Assemblies: RWS agency or department raises awareness to local citizens on prerequisites, procedures and requirements for submission of an application for construction of a water supply system. Moreover, the community is sensitized on different types of systems (such as the gravity system, diesel engine pumped system, solar energy pumped system, etc.) for water supply available for consideration. After deliberations, it is expected that the community will give feedback on its preferred water supply system (DRWS, 2011:11). Through the support of the technocrats, communities make an informed selection of a water supply technology that matches water use patterns in their context. However, there may be occasions where geographic aspects hinder feasibility of certain types of technology, leaving limited or one option(s) to choose for construction (IRC, 1989:8).
- Partake in Community Capacity Building Workshops: Based on the agreed technology of the water supply system, the community is to immerse itself in discussions of the O&M plan of the particular water supply system. Implications and benefits are tabled. It is here, again, that willingness and ability to pay for sustainability of the RWSS is established. Community members, ideally voice out issues such as contribution to recurrent costs (DRWS, 2011:14).

IRC (1989:11), adds that

> "…the attitude of the agency staff is very important in this process. The temptation is sometimes strong for external technicians to behave as superior experts who are going to build an improved system for ignorant villagers. However, the community will determine the ultimate success of this technical expertise, by maintaining and managing the community water supply largely with local funds and human resources. Community members should therefore from the beginning be treated as partners, not simply as beneficiaries".

It is at this same stage that awareness for electing a community based management committee is made. This is a democratically elected cross-section of

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the community to act voluntarily in the management of the water supply system. The community has a duty to develop terms of reference for the committee. The technocrats chip in to assist the community in thinking critically about the qualities and attributes that make a good candidate for election (RSU, 2000:27).

V. Prerequisites for Community Preparedness to take Over full O&M Responsibility

The widely acknowledged conception of CBM of rural water systems is consistent with the notion that decentralization is an acceptable organizational approach for locally managed RWSSs (Schweitzer, 2009:32). For this reason, it is fitting that in preparing communities for the ultimate handing over of maintenance responsibilities, institutionalization of local administration be in the fore.

In order to widen channels for technical assistance at local level, RWS agencies find it convenient to work through existing local administrative structures. For this reason, strong and autonomous local structures have to be readily available as an indication for preparedness by the community to take over the management responsibility. The IRC (1989:5) contributes by stating that, community councils are often custodians for local maintenance of infrastructure, administrators and bearers of recurrent costs. This statement is in line with the Lesotho's Local Government Act of 1997, as it bestows the function of maintaining water supply resources upon community councils. The DRWS community management handbook submits more intensity to this statement for village water committees, as it identifies local government structures within RWS stakeholders. The handbook goes further to bequeath responsibilities of such structures as, "overseeing the planning, implementation and management of water supplies in rural areas, approve applications for developments in the village, sign agreements of proposed (water supply) systems on behalf of the community, sign rural water supply hand-over certificates (DRWS, 2011:3)."

Nonetheless, local councils have been entrusted with various tasks delegated from different government ministries. These tasks are likely to compete with those of water supply through time-consumption and their financial requisites. Hence, preference is to have local organizations directly involved in the day-to-day management of the water supply system (IRC, 1989:54-55).

The said preference is however, not meant to rob community councils of their mandated role of facilitating planning for developments. The rural water supply agency through its community development advisors supports organization of such committees for management of water supply systems on behalf of the community council. The committee becomes responsible for such tasks as the upkeep of hygiene around the tap, preventive maintenance and basic repairs, collection of water rates and purchase of spare parts for minor repairs. Moreover, since they are closest to the people, they are well versed on issues such as family size and composition, payment capacity of people as well as information important for equitable rate payment (IRC, 1989:60 and Training Network Centre, n.d:23).

Evidently, there are handful actors in RWS. It is highly important that these actors understand their role in order to avoid conflict of interest. Table 3 below demarcates such stakeholders and matches them with their various responsibilities.

Table 3 : Responsibilities Between Various Levels of Administration in Rural Water Supply/RWS.

Level	Type of administration	Responsibilities
Village	Water users, village water committees	Management of communal water points, minor operation and maintenance of water supply system, collection of water rates, communication with high-level stakeholders such as community councils.
Constituency	Community council	Management of community water supply system, rate/tariff setting, organization and financing of maintenance, employment of the private sector for major repairs, communication with all relevant stakeholders.
District	Government department of rural water supply	Support to organizing community committees, technical training for village water committees on maintenance, monitoring and evaluation.
National	Government department of rural water supply	Legislation, programme and policy development, delegation of maintenance funds for major repairs, evaluation.

Adopted from IRC, 1989:56.

In order to effectively carry out their mandate, village water committees/VWCs need a legal status. This is drawn from the community council under whose authority the committee operates. This status makes the committee reputable, regulates its functioning and guards against defaulters. This setting is also a medium through which training reaches the committee, since the community council channels requests to relevant agencies (Training Network Centre, n.d:25).

One example of an aspect that gives VWCs majesty is the by-laws. The development of which has included opinions of all relevant stakeholders (community, local authorities and RWS agency), and ultimately ratified by community council. Below is a

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reflection of some common issues covered in these by-laws.

Table 4 : Issues Commonly Covered in the VWC By-laws

General characteristics	Name, place of residence and purpose of the organization, date of establishment, legal status.
Membership	Eligibility for membership, acceptance and cancellation as member of the organization.
Sources of income	Contributions, rates, subsidies, loans and other rightful revenues.
Committee	Composition: number and function of individual committee members, composition of executive committee, sub-committees where relevant. Election: occasion, procedure, length of term of office, possibility of re-election in case of resignation. Representation: interest of all user groups including women and low-income households. Functions: responsibilities and authority of each function, nature of the work (voluntary or paid; type of remuneration).
Meetings	Committee: frequency, purpose and authority of meetings. General public gatherings/assemblies: frequency, period between announcement and occasion of such an assembly, user information on time, place, purpose. Purposes of the meeting: rendering an account of the preceding period, recruitment and appointment of committee candidates, any other relevant business. Validity of meetings: representation of various water user groups, voting rights, quorum for important decisions, conditions for a general meeting on the request of the users.
Changes	Procedures for changing statuses and procedures for winding up the committee.

Adopted from IRC, 1989:62.

VI. Indicators for Sustainability in Ruralr Water Supply/rws

In an effort to contribute to defining sustainability, Narayan (1993:27) submits that it is an "ability to maintain services and benefits both at community and agency levels, without detrimental effects on the environment, even after 'special assistance' has phased out". Achievement of sustainability rests on developing problem-solving capacities at community level. Such capacities delve into solutions to problems as they arise. To this effect, it is essential to employ participatory approaches that acknowledge the people as the heart of decision-making.

In order to realize sustainability, people's capacity and confidence have to be built. Such capacities should be in the direction of administration, knowledge generation and management, as well as technical skills. Linkages between local structures that manage water supply systems and other relevant agencies are needed in order to usher in an airtight process (Narayan, 1993:27 and UNDP, 1990:9). Awoke (2012:15), concurs that the

"World Bank evaluation report states that sustainability can only be ensured if tariffs generate enough resources to operate the system, finance the expansion of the service to new customers and ultimately replace the infrastructure after its useful life".

The importance of the notion of sustainability in RWS projects is intensified by SDS (1991:13-16) when they advise that, within the community beneficiaries ought to weave in project activities into their broader social life, a capable local organization has to be available and that, social compatibility of water supply system to community needs is mandatory.

- Reliability of Water Supply System: A water supply system is deemed reliable when it has a high probability of yielding the results of expected quality, in the right quantity, at the required time. This indicator has three sub-indicators: (i) quality of water at the source, the target of which is to increase the number of water supply systems that give out water of acceptable quality at all times. This can be done through site visits and technical water quality tests. (ii) The number of functioning facilities has to be established in order to map out the total coverage on water supply. (iii) Operation and maintenance of water supply systems have to be determined by community capacity, availability of spare parts and government support systems. The target here is to establish the management of systems in order to have as few cases of breakdowns as possible (Narayan, 1993:4 and UNDP, 1991:10).

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- Human Capacity Development: Human development follows self-reliance. Therefore, communities ought to acquire self-confidence and competence to perform tasks within CBM of RWSSs. Competence emanate from experience in management and exposure to knowledge and new skills (Narayan, 1993:43). Katz and Sara (1998:5) concur that training local stakeholders ensures sustainability of water supply systems. This is also supported by the notion that training informs people about expectations from the system, identification of minor problems and solutions to such.
- This indicator upholds optimum involvement of the general population in decision-making, empowerment for all relevant social groups in problem-solving and broad management issues. Improving self-esteem and confidence among men and women in planning and implementation of water supply projects is also contained in this indicator. These can be evident when, for instance, there are visible changes in improved capacities and new leadership with the community (Narayan, 1991:48-50 and UNDP, 1991:10).
- Local Institutional Capacity: Strong and autonomous local structures are necessary for sustenance of efforts and results of participatory projects. Autonomy pertains to formation of community organizations that have control over resources and that manage goals and procedures for sustainable RWS. These organized groups do not only function autonomously but accountably as well. Since part of their mandate is to keep financial records and to undertake O&M, it is expected that clear horizontal and vertical, reporting lines should be established locally (Narayan, 1991:56 and Katz and Sara, 1998:5).

In addition, at community level, it is imperative to have visionary, facilitative and strong leadership that supports human capacity development coupled with self-reliance. There also needs to be institutionalization of learning systems through information flow and, self-monitoring as well as evaluation for learning experiences (Narayan, 1991:58-59).

- Cost Sharing and Recovery for Capital and Recurrent Costs: This impression draws popularity from DRA. It posits that water users are not only expected to express their needs but must also exhibit commitment to sharing capital and recurrent costs towards construction and the following maintenance of the water supply system (Narayan, 1991:63). Koryang (2011:13-14) is of the same mind when upholding that,

> "…community contribution to initial capital costs and O&M plays a major role in ownership and sustainability of water projects... It is widely believed that, inability by communities to contribute towards project sustainability through co-funding hampers the crucial objective of participation".

Contribution from the users is necessary for establishment of commitment from the water users, with the long-term vision of increasing the intended level of sustainability for existing infrastructure. In addition, costs for capital investment in RWS ought to be recovered if sustainability is to be achieved. The recovered costs comprise operation costs, repair and maintenance costs and replacement and/or rehabilitation costs (Awoke, 2012:14-15).

IRC (1989:19) takes the baton further to advice on options for community fund-raising. Such mechanisms are exemplified by voluntary contribution by community members and general community revenue owing to cash crops from communal fields and flour mills. However, the above can only be a reality if efforts are influenced by the level of support given to local structures through re-training and guidance in tariff structures and financial management. The absence of such guidance puts a frown on the yearned sustainability (Awoke, 2012:15).

- Inter-Sectoral Collaboration: Information sharing between the water sector and other agencies is vital if sustainability is to be realized. It is to this effect that national, district or community plans become mutually supportive (Narayan, 1991:65). An example may be drawn from the necessary collaboration between RWS and rural roads sectors. In road construction, it is inevitable that these two sectors conduct joint planning lest construction by the latter agency destructs water supply infrastructure.

VII. Capacity needs for Local Structures in Community-based RWSSs Management

- Rate/Tariff Setting: A national rural water tariff system may be put in place to guide communities on tariff setting for household contributions to O&M. However, other programmes let out this task to legal local structures such as community councils and VWCs. Although these can perform the said task autonomously, some direction from the RWS agency to this effect is indispensable. Local administration structures are to be able to determine the most practical time and frequency for rate payments in their respective communities (Davis and Brikke, 1995:67 and IRC, 1989:63).
- Accounting and Financial Control: There needs to be a simple, yet watertight system for financial management for a community operated and maintained water supply (IRC, 1989:70). Davis and Brikke (1995:68) add that "a simple but reliable system of financial records can greatly improve

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communities of piped water supplies". It is necessary, therefore, to build the capacity of local structures on administration of O&M funds. Good record keeping promotes transparency, facilitates corrective action and justifies actions of bookkeepers to water users to whom they are responsible. IRC (1989:72) further intensifies this aspect by stating that "a training course in simple bookkeeping and financial management is one of the crucial elements for successfully implementing community based water supplies".

- O&M Technical Training: DRWS (2011:26) in its Community Management Handbook for VWC bestows the functions of occasional inspection of water supply systems, preventive maintenance and undertaking of minor repairs (such as tap fixing and tank washing) upon VWCs. To this effect, therefore, local capacity building has to be in the fore. Davis and Brikké (1995:29) agree that these tasks must be capable of undertaking, using tools that are commonly available and that can be handled by men and women equally.
- Selection and Remuneration of External Contractors for Major Repairs: To carry out major repairs, one needs to have high-level technical expertise. These mechanical candidates need to not only master the technical task but also possess standard spare parts. There also must be the ability to report to community councils and committees to whom they are responsible (IRC, 1989:73).

VIII. Summary

In order to combat unsustainability the CBM model for RWSSs management has been identified as a credible solution. This is because it advocates for meaningful and active participation of water users at grassroots. The basis of this is the belief that it is possible to transcend lack of access to safe domestic water, caused by non-functioning of water supply systems, by adopting decisions taken indigenously. Such decisions tend to be compatible with the environment and problems at hand.

In addition, participation by communities is conceived in decision-making and in many other respects. Communities are entrusted with the responsibility of electing local structures that will be responsible for administrative and technical management of the water supply system. Such responsibility ought to be coupled with capacities to execute them. This is where national and sub-national level agencies give technical support for training and developing guidelines for sustainable management of RWSSs when handing over takes place.

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37. About the author: Moses M. M. Daemane (PhD) is a lecturer in the department of Development

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38. Studies at the National University of Lesotho, Roma Campus, Lesotho.

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