Present-day Community Management of Rural Water Supply
Does it fulfill expectations in practice?

An assessment of the situation in Maswa District, Tanzania

MSc Thesis
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*"All human beings are born with equal and inalienable rights
and fundamental freedoms.
These rights belong to you.
They are your rights.
Familiarize yourself with them.
Help to promote and defend them for yourself
as well as for your fellow human beings"*

Universal Declaration of Human Rights, 1948

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Executive Summary

Community management of service delivery has been an innovative approach that emerged in the past two decades. At the moment it is implemented in many policies since there are high expectations that the approach can contribute to sustainable access to services for the population of developing countries. This paper reviews the situation of community management in rural water supply in Maswa District, Tanzania by indicating the characteristics of the Water User Group, clarifying the roles of relevant actors in the sector and presenting improvements that can be made to increase functionality of the system.

The increased emphasis on the subsidiarity principle in the United Nation's Agenda 21 in 2002 caused developing countries to introduce community management of service delivery. This also happened in Tanzania, where due to the implemented National Water Policy in 2002 rural communities got obliged to manage the maintenance and operation of their own water supply. The system in Maswa has been reviewed in this study. Maswa is a largely rural district located in Shinyanga region in the north of Tanzania. As is often the case, also in Maswa poverty and rurality go hand in hand, since the rurality in the area is largely above average and the poverty rates in Maswa are high, which is also visible in the fact that only 57% of the population in the district has access to improved water sources.

In Maswa the system of Water User Groups (WUGs) is implemented. The WUG is a group consisting out of household members who own one pump which they financed and built themselves. The WUG is the only owner of the pump and therefore fully responsible for the operation and maintenance of it. This community management system in Maswa has developed towards a clear and concrete system. It is known and implemented in the entire district and has clear characteristics that apply everywhere. However, there remain differences in functionality between groups, villages and wards, since the degree of development varies from place to place. The study highlights the main characteristics and three aspects are further examined because they are of considerable relevance for the functionality of the system. Those characteristics are gender, financing and relations with other actors.

The main problems preventing WUGs from proper and sustainable functionality is the lack of accessibility to required knowledge and equipment, the lack of long-term vision and lack of deeply rooted sense of ownership and responsibility. Furthermore, confusion among WUGs and unawareness of their rights and possibilities causes underutilization of the potential of the system. Furthermore, the accountability relationship between WUGs, Local Government Authorities (LGAs) and the District Council is weak. Informed consent is needed by which the informing duty of the government will increase and the WUGs get the possibility to enforce their rights.

The study presents five improvements that can contribute to functionality and sustainability of the community management in Maswa. Those improvements are: the long-term vision among WUGs needs to increase, WUGs need to be able to finance severe breakdowns, LGAs need to be closer involved in the operation of a WUG, the sense of urge among the population to the use of safe drinking water needs to increase and the accountability relation needs to be strengthened. The improvements are further clarified and the study also indicates how they can be implemented.

The study concludes by stating that the main obstacles getting in the way of proper functionality and sustainability all have to do with the training of-, educating of-, or communicating with WUGs. Overall, WUGs need to be informed about what is happening, what their rights are, how they can enforce those rights, where they can go for assistance and how they can ensure sustainability within the group. Also a main obstacle is found in the preference of the government to keep on building new water pumps

instead of focusing on improving the functionality and sustainability of the already existing pumps. Changing that attitude can make a considerable contribution towards improvement of the system.

In the end of the study the future of rural water supply in Maswa is reviewed. A new system of community management will soon be introduced: Community Owned Water Supply Organizations (COWSOs), in line with the national policy of Tanzania. COWSOs are still community based, but on a higher level, which brings benefits but also entails new challenges. The implementation of the new system can be considered as a new start to be able to learn from mistakes from the past and try to build up a good functioning, sustainable water supply sector which provides durable access to as many people as possible.

Content

Tables

Figures

Acronyms and Abbreviations

CDO	Community Development Officer
COWSO	Community Owned Water Supply Organization
CCM	Chama Cha Mapinduzi (*Party of Revolution*)
DC	District Council
DWE	District Water Engineer
DWD	District Water Department
GDP	Gross Domestic Product
LCB	Local Capacity Builder
LGA	Local Government Authority
MDG	Millennium Development Goal
MoU	Memorandum of Understanding
NAWAPO	National Water Policy
NGO	Non-Governmental Organization
NMB	National Microfinance Bank
PPP	Purchasing Power Parity
SACCO	Savings and Credit Co-Operative
Tsh.	Tanzanian Shilling
VCP	Village Chairperson
VEO	Village Executive Officer
WEO	Ward Executive Officer
WUG	Water User Group

Introduction

"When the well is dry, we know the worth of water."

Benjamin Franklin (1706-1790), Poor Richard's Almanac, 1746.

Water is essential in a human life; it is the foundation for all further development. As the quote of Benjamin Franklin described adequately, the worth of it might be highly underestimated by those who have unlimited access to it. However, for a large part of the population in developing countries, access to clean and safe drinking water is not that common. Even though it is such an important resource for a healthy life, many people suffer from lack of access to adequate water supply. Most of them are living in poverty.

This study can be placed in the bigger framework of attempting to achieve sustainable water supply for all. The study focuses on poor people living in rural areas in developing countries. Through the years many theories are developed on how to make sure that the entire population of a country gets access to safe drinking water. The focus of present-day service delivery is demand-driven. Therefore community participation is an important approach to current service delivery policies. In Tanzania, the community participation approach has resulted in a policy that obliged communities to manage their own water supply. That community managed way of service delivery is relatively new in the service delivery field and therefore reviewing it can give an understanding of how the approach works out and if the expected advantages really appear to succeed in practice.

This study reviews community based groups managing their own water supply in rural areas of Maswa District, Tanzania. Those groups are in charge of the maintenance and operation of their own water pump. The situation of groups and other relevant actors in rural water supply is reviewed, as a case towards finding out how the community participation in developing countries is functioning. The central question guiding the research is:

What are the characteristics of the various types of community owned rural water supply management systems in Maswa District and what can be done to improve the functionality of those systems?

By focusing on what the current situation looks like, there can be clarified what the positive and negative aspects are and if the expected benefits of this way of community participation are fulfilled in practice. The study is divided into two parts, each consisting out of three chapters. The first part is mainly theoretical. Chapter one discusses present-day service delivery in poverty context, indicates the importance of community management and explains the main theories relevant for this research. The second chapter provides the regional information in which the research can be placed. Information about the national situation regarding service delivery is indicated and background information of the studied district is given. The third chapter clarifies the methodology that is used during the primary data collection, explaining the research objective, questions and methods and indicating the main limitations and reliability. The second part of the research provides the empirical information and contains the analysis. Chapter four introduces the relevant actors in the study, explains their roles and responsibilities and gives a detailed description of the characteristics of the management system of rural water supply in Maswa. Thereafter, chapter five focuses on three aspects within the management group: gender, financing and relations with other actors. Those matters are of considerable importance in the system and are therefore given a closer look. The last chapter describes if the management system has worked out as planned and formulates improvements that can be made in the rural water supply system in Maswa.

1 Community Management in Public Service Delivery in Developing Countries

"Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services"

Article 25 of the Universal Declaration of Human Rights, 1948

Public service delivery is an essential aspect for a healthy human life. Although everyone has the right to services, as indicated in the Universal Declaration of Human Rights, many people, mainly in developing countries, still lack access to them. Lack of access to public services decreases the opportunities for poor people to fight against their poverty. This chapter places the study in an academic context, by explaining relevant theories. First, information on present-day public service delivery in poverty context is presented. Thereafter, present-day community participation in service delivery is explained. Subsequently more is explained about water supply in developing countries, which is the public service delivery this study is about. The last part of the chapter focuses on community participation in water supply and explains a theory for sustainable community management.

1.1 Public service delivery in relation to poverty

Service delivery starts with basic services that improve the health and education of people with access to it. Those services are health and education services as well as infrastructural services like water, sanitation, waste removal and energy. More concrete, public service delivery has to do with access to schools, health clinics, sanitation facilities and clean water. It is also about what teachers and health workers do. Furthermore, it includes logistics of drugs, safe water and electricity delivery to people and the improved outcome that information campaigns and cash transfers can have (World Bank 2004). Within developing countries, poor people are the first who get affected by poor service delivery. People can enter poverty because of the lack of access to services, or their lack of access to it can be a logical consequence of their poverty. For poor people, services can be inaccessible in many ways, which will be explained more extensively in section 1.2. Also statistics show that poor people are more often the victim of bad services. Rates of illness and deaths in developing countries are higher amongst poor people while rates of school enrollment, completion and learning are considerably lower (World Bank 2004).

The question when people should be defined as "poor" is debatable. There are different national and international measures that can estimate the amount of poor people living in a country. Often, people are defined as poor if their income is less than a set amount of money each day, which is called the poverty line. This is for example $1 or $2 dollar a day. Naturally, it is difficult to indicate poverty using the same amount of money in each country, since the purchasing power can vary between countries. However, therefore the purchasing power parities (PPP) poverty line is determined, which indicates how much money would be needed to purchase the same services and goods in different countries. In that way, a global poverty line can be set, which is done by the World Bank in 1993 ($1.08 a day) and revised in 2008 (using PPP-data from 2005) to $1.25 a day, which is at the moment a widely accepted standard for extreme poverty. Although relative poverty rates have declined over the past decades, still globally 25.2% of the people live under that poverty line. In Sub-Saharan Africa it is 50.8%, which are 388 million people. Africa is the country with the highest extreme poverty rate in the world (figure 1.1).

However, living on less than $1.25 a day is the standard for *extreme poverty*. Worldwide percentage of people living on less than $2 a day is 47% (World Bank 2008).

Figure 1.1 People living in extreme poverty, 2005
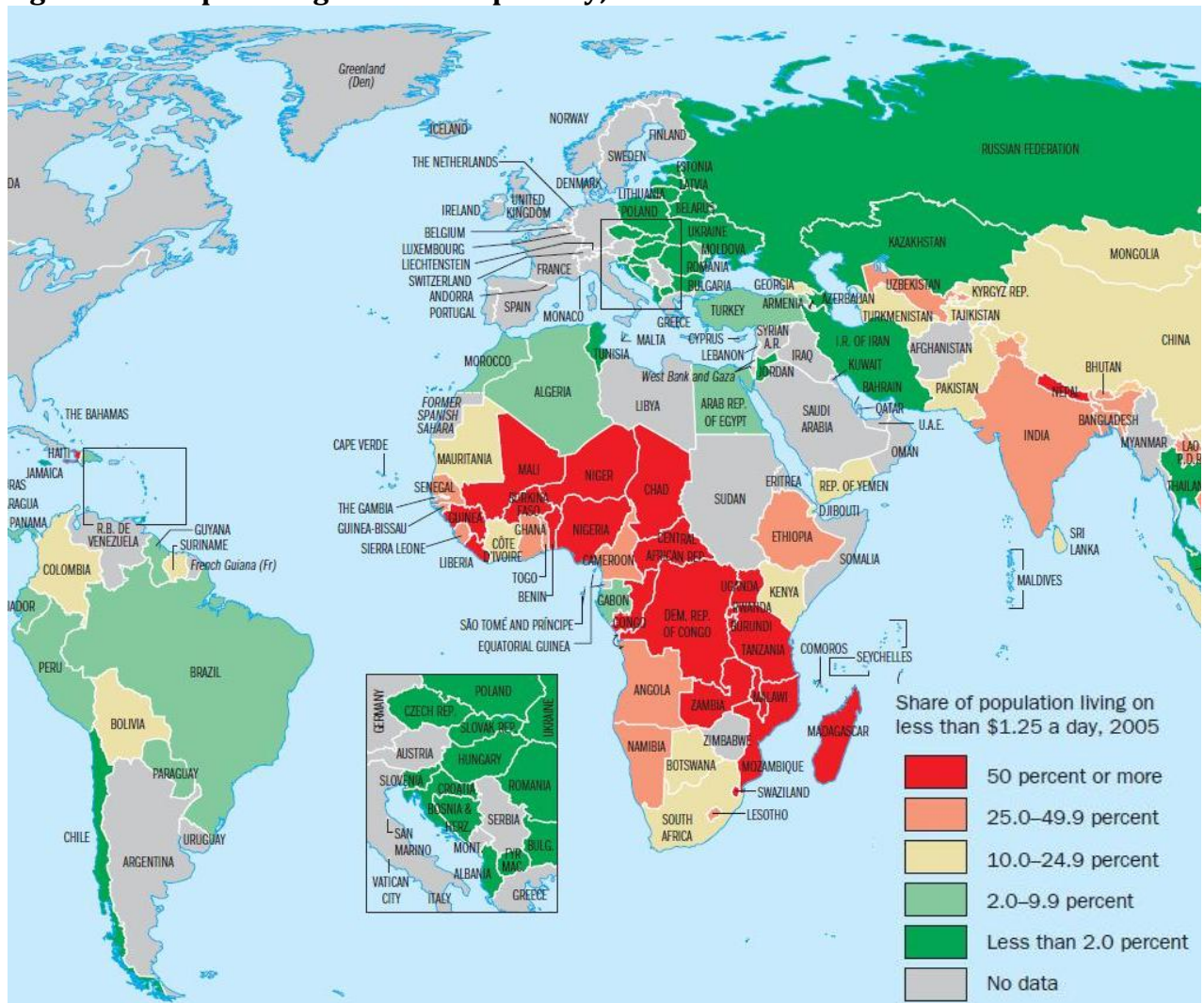
Source: World Bank 2008, pp. 12 -13, part of the image.

Freedom from illness and freedom from illiteracy are two of the most important ways for poor people to escape poverty, and the presence of public services provides access to those freedoms (World Bank 2004). Public services are needed to be able to create a sustainable livelihood. The acknowledgement of the importance of public service delivery can be found in global agreements and almost all development organizations aim for goals that are directly or indirectly related to public services (think of organizations striving for provision of safe water, hygiene or education for all). That is for example visible in the Millennium Development Goals (MDGs), in which universal primary education, improving health and combating diseases are mentioned, which are aims that are directly related to service delivery (United Nations 2012).

Providing services is a public responsibility, since basic health and basic education are in the Universal Declaration of Human Rights defined as basic human rights (United Nations 1948). Nevertheless, access to services in many of the poorest countries is limited. Services are especially failing poor people and there are four reasons that explain that failure. First, governments do spend much money on health and education: approximately one third of their budget. However, the problem is that they spend little of it on services for improvement of poor people's health and education. People who are not poor enjoy

most of the public spending on health and education. The second reason is that intending money to a specific sector does not guarantee that it really will be spend there because in practice it appears that it sometimes does not reach the intended sector. Third is the failure of employment, because if money is really spend in a certain sector, educated teachers must be present, who are effective at their jobs. Doctors and nurses must also be present and must know what to do and be able to provide the right treatment. This need of good employees is largely challenged by corruption, lack of wage payments, political patronage, little supervision and low penalties for not showing up at work. Furthermore, there can be tempting offers for highly trained doctors to leave the country or at least the unwillingness for them to work in remote rural areas. Besides that, poor people can be treated badly by service providers. Experience, professional ethics and motivation is needed among service providers who treat poor people. The last reason why services fail poor people is the lack of demand of those people. They often have to possibility to raise their voice and enforce their rights (World Bank 2004).

1.1.1 The many facets of accessibility

As mentioned above, freedom from illiteracy and illness can help people escape poverty, and access to services is the start in the process to achieving those freedoms. However, key services often fail poor people and social- and spatial exclusion are main issues thereof. If there is a lack of services in a country, logically people can have difficulties making use of the services. That is a problem regarding the availability of the services. However, not only availability plays a role in poor people's access to services. Accessibility is a concept that can explain a large part of poor people's non-ability to make use of services. Lack of accessibility is a crucial disadvantage that a lot of people suffer of and it can have several reasons. There is the *physical accessibility* of services; people need to be able to reach public services, communities, markets, cities and so on. Poor people often have to travel much longer distances to services such as health and education, than richer people, and they can also be hindered by lack of good infrastructure (World Bank 2004). Also, people living in remote areas can be disadvantaged because they do not have the possibility to reach important places. Living far from power centers can be a disadvantage as well, because people do not have the chance to enforce their rights and they can easily be overlooked (Huisman 2011).

Apart from physical accessibility, there is also *social accessibility*, which goes a step further then physical attendance to a place. It refers to having access to places or positions in society because of status, race, income, etc. Lack of social accessibility can happen to discriminated groups, an example is refusing poor people or women to be in decision-making positions. Furthermore, social accessibility includes underlying causes that can make it impossible for poor people to access certain services. Social accessibility can be divided into three key terms: acceptability, affordability and accountability.

Acceptability

Acceptability has to do with the cultural context in which people live. It has to do with deeply rooted cultures and traditions and aspects that belong to that culture (Huisman 2011). If people refuse to participate in certain cultural traditions (which for example are harmful or come with health risks) it might be seen as denying the culture and it can lead to social exclusion. On the other hand, doing things that are culturally forbidden can also lead to social exclusion. Being socially excluded can be terribly harmful, especially poor people, since particularly in poverty the opportunities that networks offer, cannot be underestimated.

Affordability

Affordability matters have to do with extent to which people can afford to visit services. Logically, people need to be able to finance the public services, for example health and education services, and the aspects that come with that, for example pharmaceutical supplies and text books. They also need to

have the financial possibility to travel to the service. Furthermore, there are also the opportunity costs of time. For example within water supply, it might cost more time to fetch water at an improved water source[1] when the river is much closer. Perhaps people can spend the time they win with not going all the way to the pump to a better purpose, or maybe they do not even have the time to go there. In this matter it becomes clear that since time can be spend only once and there are different opportunities people can spend their time on, poor people must be able to afford the time to visit services (Huisman 2011). An example is a female headed household in a rural area living with five young children. When one becomes sick and needs to be taken to a hospital, she cannot afford to travel there, wait for a long time for him to be treated and then travel back. It might take days while she has to take care of her other children, so she cannot afford the time it takes to make use of that service, even though she might be able to access the service financially.

Accountability

The third facet that determines the social access to public services is accountability. Accountability is a concept which can be found in structures of governments, organizations but also everywhere in society. The term accountability means "a relationship between a bearer of a right or a legitimate claim and the agents or agencies responsible for fulfilling or respecting that right" (OPM 2005, p. 9). It therefore is a two-way relationship of power. Accountability can be based around three criteria: Transparency, answerability and controllability. Transparency has to do with the openness and availability of the information around which decisions and actions are taken. It is about if that information is publically available or not. Answerability is about the way in which decision-makers justify their decisions, about if they are reasonable and rationale and if the right holder is entitled to get an answer. Controllability refers to the ability to sanction actions and decisions that are in contrast with given mandates and procedures (OPM 2005).

Good accountability can improve the performance of public service delivery like education, health, water and sanitation. However, lack of accountability results in failure of public service delivery. Accountability can be strengthened in many ways, for example by approaches that favor the empowerment of citizens, bring actors together, or address policy environments that enable or disable stronger accountability (Tod 2008, p.272). Five interventions that fit within the idea to strengthen accountability are delegation, financing, performing, informing and enforcing. Delegation for example is of great importance to have clear what is delegated from the government to service providers, for it can happen that they do not understand their role and responsibilities. About enforcing, citizens should be enabled to demand accountability through civil society organizations that conducted Public Expenditure Tracking Surveys (PETS) (Tod 2008). Enforceability is an important term within accountability since it is about the ability to enforce change when required. Accountability is an iterative phenomenon, it is continuous and circular and it combines a rights-based and an economic perspective. The process of accountability can be visualized trough three stages, explained by Tod (2008, p.273) (figure 1.2):

- "Stage 1: The principal/rights holder delegates to and finances the agent or duty bearer to carry out specific roles, responsibilities and tasks

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[1] An improved drinking water source is a definition for a water point where people can get safe and (relatively) clean water. Sources that belong in this category are piped water schemes, public taps/standpipes, boreholes, protected dug wells, protected springs and rainwater collection like harvesting tanks. Water sources defined as unimproved are unprotected dug wells and –springs and surface water like rivers, dams, lakes, streams, canals and irrigation channels (World Health Organization & UNICEF 2006).

- Stage 2: The agent/duty bearer performs these roles, responsibilities and tasks and informs the principal/rights holder of the progress made

- Stage 3: The principal/rights holder then enforces performance through control over sanctions or rewards, and through further delegation and financing"

Figure 1.2 The continuous process of accountability
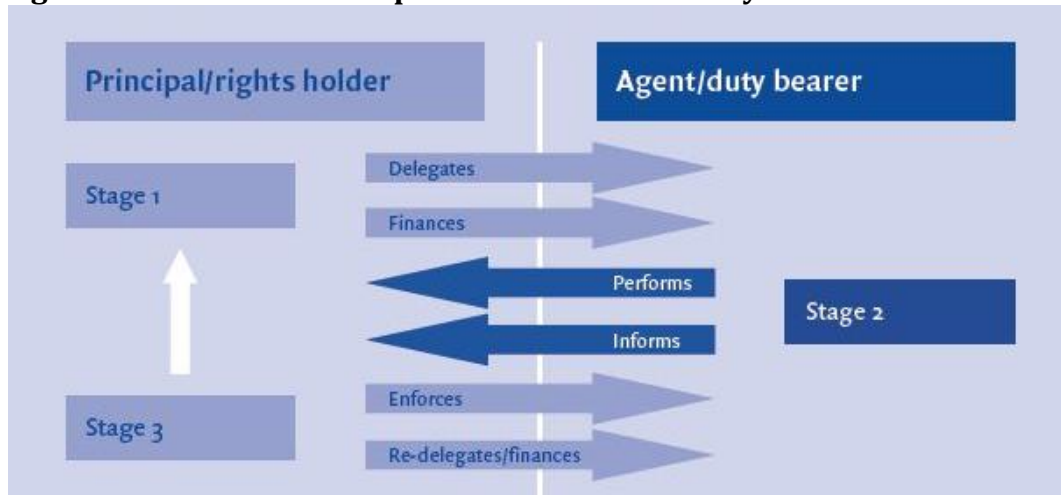
Source: Tod 2008, p. 273. Adapted from WDR 2004.

Three main actors that carry out the above mentioned roles are involved in civil society: citizens, service providers and the government. It is of importance to clarify which actors perform which actions. The multi-stakeholder approach can best be used to strengthen accountability, because in that approach all three actors (citizens, service providers and government) are included (Tod 2008).

To come back to the overall term explained here, accessibility; it can be a complicated aspect to deal with. Think of people who cannot read or write; they lack access to information like laws and regulations or are not able to fill in forms, even though they get the chance to do so. Therefore, limited access to production factors, employment, development and markets can, due to many reasons, lead poor people into a state of permanent vulnerability. Even in case those people have access, there is uncertainty of how long that will last, since they have no ability to influence that themselves and they can be faced with unforeseen conditions. They have limited access to the possibilities that can enable them to fight against poverty. Furthermore, their lack of access and powerlessness makes them very vulnerable for any types of changes that might happen. Poor people are more vulnerable than non poor people and they are more likely to be affected by bad things since they have few buffers that can help them being more flexible and deal with shocks, for example illness, death or natural hazards (Huisman 2011).

1.1.2 Rural poverty

Aspects mentioned above that are influencing people's access to services, are in most cases well applicable to rural areas, examples are large distances and long travel time to services. Within the development policy regarding service delivery therefore a rural focus is needed. That is because often there is poor delivery of public services in rural areas in developing countries. Furthermore, the rural areas are far away from power centers, which are the places decisions are taken. Because of the distance, rural living people have no influence on those decisions, they cannot let their voice be heard or enforce their rights at the decision makers. Also, for people living in rural areas, it is difficult to

access physical, financial, human and social capital. It is common for them to get spatially excluded. Those aspects contribute to the fact that poverty and rurality often go hand in hand (Huisman 2011). Of the population living in the developing world, 56% is rural. Statistics show that Sub-Saharan Africa lies largely above that average. In that region 497 million people are living in rural areas, which is 64% of the total population of Sub-Saharan Africa. Evidently, more people in the developing world live in rural areas than in urban areas. Looking at poverty, 70% of the very poor people on the world are rural and of the rural population in Sub-Saharan Africa, 87% lives of less than $2 a day and 62% lives in extreme poverty (IFAD 2011, mostly 2005 data). This large amount of people living in rural poverty proves that poverty and rurality often come together. The amount of people living in rural areas is still increasing. Estimated is that between 2020 and 2025 the growth will stop and decline will start. However, for Sub-Saharan Africa estimated decline will start only in 2045 (IFAD 2011).

When looking at service delivery in rural areas, it appears that that is often of poor quality or at large distances from many households. Since the majority of the population of Sub-Saharan Africa is rural, problems in rural service delivery can affect many people's lives. As stated before in this chapter, good public services can be a tool for people to increase their possibilities and lay a foundation for their own improvement and development. Since it influences so many people, large progressions in combating global poverty can be made by improving rural public service delivery.

1.1.3   Aiming for sustainability

Halfway the 1990s the approach towards service delivery has been changing from supply to demand-driven. For the first time a way of policy making came up in which people started thinking about the question what is needed at specific places; what the *demand* there actually is. The idea before this change was that a larger focus was on the supply-side of service delivery, with the assumption that if the supply was there, the demand would automatically follow. However, the new widespread opinion was opposite of that: service delivery needed to be looked at on a more local level and problem oriented, to make sure the needs are fulfilled. By looking at the demand-side, behaviors and patterns of utilization could be figured out after which services can be changed or improved. Also, investigating the demand-side might show which improvements can be made on the supply-side to be able to increase functionality of the service delivery (Standing 2004).

While focusing more on the demand-side of service delivery, also a more human centered way of looking at the situation arose. That became increasingly addressed in the late 1990s, when formerly ignored social issues were also included in the way of thinking. Issues like improving accountability, improving outcomes by behavior change and participatory approaches are addressed. Furthermore, the rights based approach regarding service delivery is focused on and users become more involved in the service delivery. Policy became also increasingly focused on participatory approaches in which also the user should be able to let his voice be heard and influence his own situation. Furthermore, the multiple stakeholder approach is included, to make sure all stakeholders are involved in decision-making and the best solution for all will be reached. There can be stated that the service user's position is better taken into account than before (Standing 2004). Also, since the change from supply- to demand-side of service delivery, more importance is given to the social factors that influence public service delivery, for example social accessibility. There is increased interest for the way that culture can influence services and the access to those services, and terms like social acceptance play a role in that changed way of thinking. Next to more attention for cultural aspects, also a "one size does not fit all" focus arose, which made clear that local aspects influence the way in which services are delivered and access to them is determined (Huisman 2011).

This human centered way of thinking from the late 1990s is currently still present. In international treaties this mentality can also be found, for example in the MDGs, which strongly rely on human rights. Furthermore, the changed way of thinking was also included in policy making. At national and international level there is tried to find ways to achieve economic growth and respond to the emerging globalization, without having to compromise socially and environmentally (Huisman 2011). The environment was increasingly addressed in international treaties and policy making in the last fifteen years. It became a focus of attention, since more and more became known about environmental degradation, climate change and the limited availability of natural resources on earth. At the moment policy makers still face the challenge of trying to fulfill all needs.

Apart from environmental sustainability, the term *sustainability* by itself is increasingly used in policy making, global treaties, development theories and organizations. The term is broad and sometimes vague. It is a term that indicates a system in which all elements are working and likely to continue to work well over time. Improving sustainability is important, since it seems the only way to make sure that achieved progression will stay over time and that indicates long-term improvement.

1.2   The potential of a strong civil society

Past two decades, increasing interest has been given to the importance of good governance. The idea is that increasing good governance can be used as potential to reduce poverty. Also, decentralization strategies came up and were adopted in the policies of many developing countries, as introduced in Agenda 21 of the United Nations Environment Meeting that was held in Rio de Janeiro in 2002. Emphasis was put on the *subsidiarity principle* which states that management should be at the lowest possible political and administrative level en decisions should be taken there as well. In that way the decisions are taken as close to the citizens as possible. Decentralization efforts are in many developing countries used as a method for improvement of service delivery. Decentralization strategies are also implemented to be able to increase community participation (Egli & Zürcher 2007).

At the same time that decentralization got increased relevance at global level, also the importance of civil society got recognized. Civil society is the total of non-governmental and non-profit organizations in a certain country, which are *"expressing the interest and values of their members or others, based on ethnical, cultural, political, scientific, religious or philanthropic considerations"* (Egli & Zürcher 2007, p. 2). The civil society got acknowledged as an important stakeholder in the improvement of the effectiveness of a state, also regarding aspects like public service delivery. Civil society can play an important role in government's decision making, for example regarding citizen's rights. Forming a strong, citizen based group of organizations, it is possible for the civil society to demand transparency and enforce accountability rights. Civil society can act in many different sectors, like education, health and water. The new way of thinking sees a civil society and the participation of citizens therein as essential for enforcing and demanding rights from the government and making sure there is responded to the needs of the population. Civil society can help assuring needs-based policy making and can make sure the activities are implemented at the local level. Also civil society can make sure the government at the local level is accountable to the communities (Egli & Zürcher 2007).

The development of a civil society generally goes through three stages: the mushrooming phase, the consolidation phase and the influential phase. First, in the mushrooming phase organizations are popping up. Then in the consolidation phase the organizations develop their organizational and managerial capacities to be able to achieve their goals. In the next stage, the influential phase, the

organizations need to be accepted by the government where mutual trust needs to be built (Lange et al. 2000). In that third stage, civil society has achieved a status in which they are strong and can stand up for their own rights and empower themselves (figure 1.3). In the current global development debate therefore the idea is that strong civil society is a great potential for development, especially for matters like public service delivery. On the other hand, countries with a weak civil society miss that potential. If citizens are not able to form a strong civil society by grouping together and enforcing their rights at policy makers, it can be difficult for citizens to let their voice be heard. Weak civil society in a country can have several reasons, which often have to do with the fact that the population cannot group together, does not know how to do that or does not have the direct need to do it. The history of the country can be a main influence in the way the civil society is and emerges later in time.

Figure 1.3 Civil society influencing policy makers

Source: PACT Tanzania, p. i, through Egli & Zürcher 2007.

1.2.1   Community participation in service delivery

In line with the subsidiarity principle, management had to be outsourced to the lowest possible level. In many sectors local level decision-making was introduced and communities became more and more involved. In some cases the management of public services became a responsibility of the communities themselves, while it was formerly owned by the government. An example of this change from government to community management is the rural water supply in Tanzania: the subject of this study (further explained in the next chapter).

When a community participates in its own service delivery, it can be difficult for them, especially if the community has no experience or information and might not be highly educated. Of course it is not only up to the community to manage its own services well, there always needs to be constant support and a two-way accountability relationship with the (local) government. However, ideally communities have a certain bonding towards their management duty. Participation and ownership are important terms when talking about a communities' bonding to their management. Both terms are explained here.

Ownership

The sense of ownership among the local population is a crucial factor for the success of a community-based organization. The responsibility among the population must be really acknowledged, which can sometimes be a difficult aspect. An example from the water sector is the problem that in areas where there is the belief that water is a gift from God, those who are collecting money for its use can be socially excluded (Haysom 2006). So, ownership of the community should have a grounded basis,

communities should have the information and experience to manage and make free and informed choices.

Participation

Different forms of participation play a role within the subject of community based organizations. The first matter is the participation of the community within the organization. The theory behind this kind of participation is that it is more likely that people will accept new projects and take part in the operations, when they are involved in it. It is also seen as a right to be able to have a say in interventions that concern their lives. Communities should have a sense of ownership to be willing to operate and maintain public services. Community participation in water supply consists out of expressing the demand for water, selecting the technology and the siting thereof, providing labor and materials, contribute financially to the costs and selecting the management type and the water tariff. Participation can include people into important positions or include the community in decision making, but people can also be excluded from it, which can be extra harmful for them. Examples of those excluded people are marginalized groups, like poor people or women (Harvey & Reed 2006).

Both ownership and participation within a community should not be seen as a final goal. They function as a tool, a prerequisite to accomplish a sustainable system of service delivery.

1.3   Water supply in developing countries

More than a billion people worldwide lack access to safe water (World Bank 2004). This second part of this chapter specifies on those number about worldwide water supply, especially in developing countries. Also theories regarding community management of water supply are reviewed.

Access to safe water is unequally distributed on earth. Unpredictable drivers like climate change, the global economy, technical innovation and financial markets are influencing important decisions affecting water management. The situation can be seen against a background of continuous poverty in which a large part of the world lives (UN WWAP 2009). Still over 1 billion people on this planet do not have access to improved drinking water sources (figure 1.4). 30% of those people live in Sub Saharan Africa (figure 1.5). In the period from 1990 to 2004, 1.2 billion people worldwide gained access to improved drinking water sources. However, since the global population has largely grown, the absolute number of people without

Figure 1.4 World population with access to an improved drinking water source in 1990, 2004 and 2015
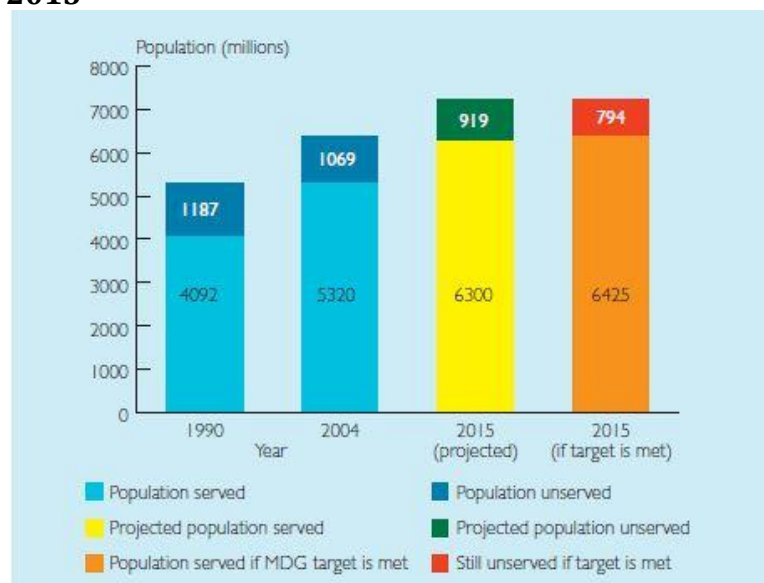
Source: WHO & UNICEF 2006, p. 6.

access to an improved drinking water source decreased by only 118 million. Sub-Saharan Africa did not contribute to this progress since over the same period, the number of people without access to safe drinking water increased with 23%. Therefore Sub-Saharan Africa is the region of greatest concern. Estimated numbers for 2015 show still 900 million people without access to improved water sources, of which three quarters will be living in rural areas. It is also estimated that the number of people without access to improved sources in Sub-Saharan Africa will increase with 47 million from 2004 – 2015 (WHO & UNICEF 2006).

Figure 1.5 Population (millions) without improved drinking water sources by region, 2004
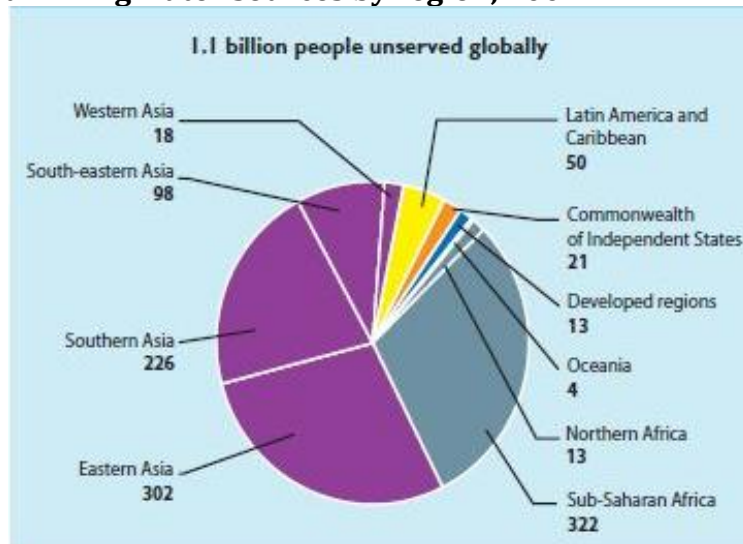
Source: WHO & UNICEF 2006, p. 9.

At the moment in many developing countries, components of water management change because of a broader reform of governance, introduced in Agenda 21 as explained above (UN WWAP 2009). This is a trend towards the idea that water management should be at the lowest appropriate level (Doering 2005). Therefore, many governments of developing countries (examples are Ghana, Ethiopia and Tanzania) reformed the water sector and transferred responsibility of operation and maintenance to local municipal governments and communities. The subsidiarity principle is seen as a benefit to the water supply, because the decision-makers are closer to the water sector managers and to the water using communities, which is beneficial for exchanging information (UN WWAP 2009).

1.3.1   *The Millennium Development Goals and water*

Water is a needed for every person on earth. People strongly rely on water for activities like cooking and cleaning, but it is probably even more important for hygiene and consumption: people need water to be able to wash themselves and they need safe drinking water to live since unsafe or no water and bad hygiene can lead to dehydration, the spread of infections and diseases. This urgent need for safe water for every person on earth is acknowledged in the MDGs, goals created by world leaders in the Millennium Summit of 2000. The United National Millennium Declaration that was adopted there committed nations to a global partnership with the goal to reduce extreme poverty. Eight time-bound goals were set, which have to be achieved in 2015. For each goal different measurable targets were stated and indicators were given. The seventh goal is to *"Ensure environmental sustainability"*, and among the four targets in that goal, one is to *"reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation"* (United Nations 2012).

Although water is only mentioned in the target of one goal, it influences the possibility of success for all the goals, since water is such a primary need, all further development is influenced by it. For example safe health can only be accomplished after having access to safe water.

1.3.2   *Gender as influencing factor*

The gender aspect in this study is important to have attention to. Gender is often not a visible measurable aspect in a society; it is however involved in everything and influences many aspects. Gender is a complicated concept, but there can be made some theoretical assumptions towards water supply, that are likely to be faced in this research. For instance, women and girls do most of the work of water collection, which can mean spending hours of walking to the well and back. It is possible that the water collecting duties affect schooling of girls, sometimes they even need to stop going to school. A woman's spending time and energy collecting water does not only cost her time and therefore money, but it also has economic costs on society (IOB 2007). Men are the ones that are often included in decision-making roles and management. Difficulties can arise because of this gender inequality. An example is that it happens that men in water management meetings say that there are no problems with the water supply, even though there are, because they never go to the well so they do not know if anything is wrong.

Apart from the fact that gender needs to be taken into consideration when investigating a certain issue for the more practical reasons mentioned above, there is also the global idea that gender equality needs to be promoted. In that opinion there is more looked at gender from a human rights based perspective. This can be found in for example the third MDG that says *"Promote gender equality and empower women"*. The goal mentions that there should be equality between men and women, and focuses mainly on making education equally accessible for boys and girls. However, also attention is paid to the representation of women in decision-making positions and then especially if there are equal opportunities and chances for both men and women to get in those positions (United Nations 2012). This strive to gender equality can also be investigated in the water supply sector, by looking at the gender balance in community based organizations and other functions in the society. However, gender remains a difficult issue to investigate, since cultural roots play a major role in the way people think about gender. That makes it also difficult to research people's opinion about their situation, since they might have no idea about how the gender division is in other regions in the world. Furthermore, gender inequality can be so culturally deeply rooted that people might not even think that they live in an unequal situation. That is because they are used to it and do not know that it can be any other way.

1.4   Communities managing rural water supply

This study is about the community based organizations that manage the operation and maintenance of the rural water supply. The functionality of those organizations and thus of the water supply, depends on a lot of factors. A study to the impact and sustainability of community water supply in developing countries was carried out by Carter et al. (1999). In that study, immediate problems of water supply in developing countries are mentioned, together with the consequences that they have. The first problem that is mentioned are distant sources, which leads to much expenditure of time and energy to get water (especially by women) and to low levels of water consumption, which then again results in water-washed disease.[2] The second problem is that of unreliable sources because they are drought-prone or

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[2] Diseases caused by water scarcity because people are unable to wash themselves or their clothes. Trachoma and scabies are diseases whereof many suffer because of a lack of water (WaterAid 2012).

poorly managed, which results in time spent searching alternative sources. The third problem is poor quality (faecally contaminated) sources which results into water-borne disease (Carter et al. 1999). From these problems desirable aims for water supply in developing countries can be derived, namely saving of time and improvement of health. However, setting goals for the rural water supply needs to result in sustainable improvements. Sustainability is a comprehensive concept explained at the end of section 1.1. Sustainability in this study is whether or not the rural water supply, and specifically the management organizations thereof, continues to work over time.

1.4.1   Water User Groups

The Water User Group (WUG) is a form of community management for rural water supply. It is one of the many forms in which community participation in service delivery can be implemented. The literal meaning is:

> *"A Water User Group is a group of individuals usually households who voluntarily join together to participate in improving and maintaining their water point source and/or sanitary facility on a sustainable basis"* (SKAT 2001, p. 5).

The WUG is implemented in Shinyanga Region, a region in the Eastern African country Tanzania. A study has been made about the functioning of the WUG over time, since it aims to be a model for sustainable community management of rural water facilities (in this specific case hand pump wells) (SKAT 2001). The study mentions that the WUG concept implemented in Shinyanga is one of the few cases in which a community-based legal ownership of small-scale water utilities has been successfully introduced. However, there is mentioned that the WUG concept needs to be further nurtured, strengthened and supported, to make sure that it will be firmly institutionalized in the communities. What makes the WUG concept of Shinyanga unique is the way in which the government recognized the small community-based water organizations. They have the right to own legally water supplies including the assets, and that is a rare system in East Africa.

The WUG system is made to be sure that certain governmental requirements stated in national policies can be met. For example rural areas households must have safe and clean water within at least 400 meter and one water point must serve 250 people at maximum. The system of WUGs is an appropriate strategy to be able to accomplish that and make sure the water users do their own operation and maintenance. In this way, it is tried to create a sense of ownership and responsibility among the WUG members, so they will be motivated to take care of their property. Other advantages are social cohesion among the WUG members, which will ensure long-term sustainability (on the other hand, arguments and disagreements can do harm for the group atmosphere). Furthermore, in the ideal situation, the members are assured of easy access to clean and safe water (SKAT 2001).

There are certain conditions mentioned in the study, which a WUG has to meet to ensure sustainability over a longer term. A selection of some those requirements are: WUG-membership must be voluntary, A WUG should have its own name, the size should be 25 to 50 households, members must feel they want an improved water source, they should be living not more than 400 meters from the pump, the members should be able to make joint decisions and actions, there should be democratic elected members of the WUG in which there is gender equality, the WUG should register at the District Council as legal entity and WUG members should have main principles written down in a Memorandum of Understanding which is about their obligations and rights (gender rules are also stated therein) (SKAT 2001).

There are different actors active in rural waters supply. They all have their own roles and responsibilities. WUG members have roles and responsibilities which include: electing a WUG committee, creating their own identity, active participation in WUG meetings, helping in the construction of the water point, deciding on the financial contributions for construction and operation and maintenance and keep the water point and surroundings clean. Every WUG should have a WUG committee, which consists out of the chair, secretary and treasurer and three other WUG members. The committee has the practical functions in the group, which include registering the members, applying for support if it is needed, make sure the WUG is registered, managing the water point on daily basis, meet regularly and report to the other members and Local Government Authorities and open a bank account for the WUG. The roles of the village government include: promoting the improvement of water services in their village, motivating and mobilizing the community to establish groups and make sure the WUGs are able to and will open a bank account. The District Government has the responsibilities to implement the national water policies, mobilize communities and facilitate WUG registration and implementation, promote the participation of the private sector in water supply, develop policies and do the monitoring and evaluation of the water activities. The advice on gender is to address at least one of the three leading functions to a woman and make sure there is fifty-fifty representation of males and females (SKAT 2001, p 13 & 14).

The importance of WUG registration and recognition at district level is the fact that they will own a legal status, which enables them to own physical assets and control them and carry out the operation and maintenance of the water point. Furthermore, they know they have official support from government authorities at besides the district level also ward and village level, they can collect money in a legal way and put it on their bank accounts, furthermore they the legal status can make them aware of the consequences of failure and it makes a true commitment to the obligation of managing their facilities (SKAT 2001).

Although the study mentions that the WUG concept of Shinyanga shows that it might be possible to create sustainable community management at small-scale water supplies in rural Tanzania, there is also mentioned that the groups need to be officially recognized, committed at all levels and support needs to be continuingly given, because otherwise the improvements this concept might make will be limited (SKAT 2001).

1.4.2   Sustainable Management
The definition of sustainability that is used in this study is focused on the subject of the research, which is the functionality of the management of water pumps. Important is to be aware of the fact that systems that work at a certain moment are not guaranteed to work over time, since they can be vulnerable for shocks and changes, as explained above. Therefore, sustainability is very relevant within this study and a water point can be called sustainable:

> *"If all the necessary components that keep a waterpoint functional are in place – i.e. if the technology, management, finances, technical expertise, availability of spare parts, dependable water source, etc. are all in place. A broken down waterpoint can be considered sustainable (though not functional) if the finances, expertise and spare parts are available and work in progress to repair the problem. And a functioning waterpoint can be considered unsustainable if there are no funds available (or parts or expertise) to undertake repairs if it is ever to break down"* (WaterAid 2009, p. 1).

Within the water supply sector, sustainability is closely related to the term functionality, also mentioned in the definition above. A water point is functional if it is used by the community at a

certain moment. It is possible that a water point is technically functional but not in use by the community, for example because of travel distance, then it is indicated as non-functional (WaterAid 2009).

There are a considerable amount of theories developed about how to measure the sustainability of management. This study highlights the theory of Carter et al. (1999), which uses the management and sustainability chain (figure 1.6) to indicate the different links that are important within the management. The theory is applied to describe the functionality of water supply in rural areas. However, as Carter et al. only apply it to sustainability, it can as well be used to explain the direct functionality of the rural water supply community based organizations. There are numerous causes why it can happen that the water supply does not work, for example the community does not support the supply, the financial costs are not acceptable or not affordable, the communities may feel no ownership of the water supply, no benefits have yet been proved, committees or caretakers have lost interest or important people moved away. These are all risks that community based management organization entails. However, to make sure community based organizations in developing countries work well, one of the most essential aspects is community participation. Therefore it is important to give great attention to the implementation of the idea that participation is more worthwhile than non-participation, at all stages of people involved (Carter et al. 1999). That factor is also represented in the management and sustainability chain (figure 1.6). The successful management and sustainability of community based rural water supply systems contains of four essential links. The failure of one of these links endangers the success of the entire system.

Figure 1.6 Management and sustainability chain
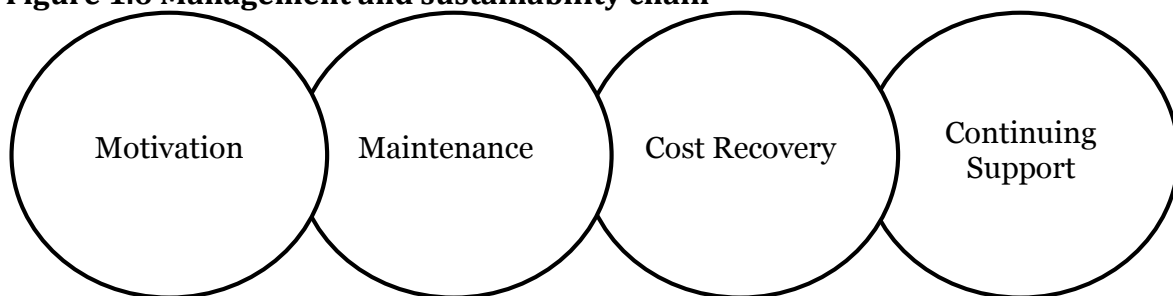
Source: Carter et al. 1999 p 8, edited.

Motivation
Successful management and sustainability is not possible without the motivation of the community to utilize the source. The community should be convinced that the way of management really works and is an important contribution to the way of water supply that existed before. There might be obstacles that prevent people from believing in the new organization, for example the believe that the government should regulate the rural water supply, which can either be because the community is not familiar with the new policy or important governmental people keep saying the water will be free. The system of payment is a significant obstacle for motivation of the community as well. Aspects that might create motivation among the community are health education to learn people how important improved water sources are, or vesting ownership in the community. When the benefits that the organization brings to the community (which are operation and maintenance, so sustainable access to improved water sources) become clearer, the motivation often increases as well.

Maintenance

The maintenance of the rural water supply should be done by a clearly structured and trained organization. The members of those organizations should be trained and need backstopping by some district, regional, or national level organization. Furthermore, spare parts and tools which are needed to maintain the water points must be available, as well as appropriate forms of transport (Carter et al. 1999).

Cost recovery

The maintenance of the water points costs money. Not only spare parts, material, tools and replacement units need to be bought when the point has been broken, the staffing, training and transport needs cost recovery as well. This financial burden is placed on the community who should be able to afford it. Advanced and expensive materials can therefore most often not be implemented. Appropriate technologies need to be used, which are relatively low cost, easy to maintain, simple to use and available (Haysom 2006). The way in which the community will charge for water and how the financial management system should look like are all responsibilities for the community to decide. Decisions on that level concern the amount of payment, the frequency, the relative payment per household, if the financial status of a household has any influences on that and how the finance is administered and saved.

Financial management systems can differ per organization at many aspects, they can for example be formally registered and have a bank account, or they can have a more informal system of saving the money elsewhere. The times on which the money can be collected differs as well (collecting only when there is a breakdown, or at a certain frequency). In a previous research carried out in central Tanzania, four main categories of collecting finances which are present in the field indicated (Haysom 2006, pp. 22):

1. No revenue collection at all
2. Money collected when there is a breakdown
3. Revenue collection taking place, but either money is not collected from all users or money is disappearing post-collection
4. Revenue collection good

These categories can be used when trying to get insight in the different financial management systems of the organizations. Since the community itself has the responsibility to finance the water supply, it is important that community members are not priced out of the opportunity to access improved drinking water sources. There should be equity in access, demand management and cost recovery.

Continuing support

As is seen more than once in the field, community enthusiasm can fade away within two or three years after implementation, which is fatal for the sustainability of the system. It is essential to be able to count upon institutional support from either the government or NGOs, who are actually responsible to enable long term functionality. Furthermore, water projects in developing countries can only work when long term service is managed jointly by the community and external institutional support. Short term projects fail (Carter et al. 1999).

The above mentioned theory can be used to put the visible situation in the field into perspective and there can be seen if there is any link of the management chain missing and why.

1.5 Conclusion

Large parts of the developing world still have no access to improved drinking water sources. Through the years, different theories have been developed which are all focused on the attempt to improve public service delivery. At the moment the subsidiarity principle is broadly applied which in several developing countries resulted in implementation of community management of service delivery. Community managed rural water supply is one of those policy implementations. Community based organizations taking care of their own water supply can be present in many different forms. Some organizations are more successful than others, which can be caused by many different aspects, since maintenance and operation of a water point contains many responsibilities. The next chapter provides a closer look at the situation regarding community management of public service delivery in Tanzania.

2 Regional Framework

This chapter gives an overview of important demographic, economic and institutional characteristics of Tanzania. There is focused on the service delivery sector in Tanzania and thereafter the water supply statistics are indicated to provide an image of the situation in the country. Furthermore, policies and regulations regarding water supply in Tanzania are explained. After that, important characteristics of Maswa, the district where primary data has been collected, are clarified and the development of Maswa is compared to national average.

2.1 Country-profile Tanzania

Located centrally in the East of Africa, Tanzania is a geographically diversified country, having both the lowest and highest place of Africa within its borders (figure 2.1). The bottom of Lake Tanganyika, located at the South-Western border, is with its -1436 meter the lowest point and the top of Mount Kilimanjaro, in the North, located at +5.895 meter, is with its snowy tops the highest point in Africa. Tanzania, officially named United Republic of Tanzania, is 947.300 square kilometers large (almost 23 times The Netherlands) and shares borders with Burundi, the Democratic Republic of Congo, Kenya, Malawi, Mozambique, Zambia, Rwanda and Uganda. Tanzania is divided into 26 regions. Not only the physical-geographical characteristics differ largely within the country, the climate is diverse as well, with a variance from temperate in highlands to tropical along the coast and rainy seasons that per location differ in heaviness and duration (CIA World Factbook 2012).

The history of Tanzania goes far back, with one of the earliest signs of presence of forefathers of the human race on earth found in Tanzania. In 1978 an archeologist found the 3.6 million years old footprints in a blanket of volcanic ash in northern Tanzania (Fitzpatrick et al. 2008). Focusing on more recent history, Tanzania has been colonized by Germany from the late 19th century until the First World War and by Britain until its independence early 1960s. At that time the current country of Tanzania still consisted out of the two separate countries Tanganyika and Zanzibar, which merged into one nation on April 26th 1964 (CIA World Factbook 2012). Tanganyika consisted out of the entire

Figure 2.1 Location of Tanzania in Africa

Source: Lake Victoria Mining Company 2012, edited.

mainland of current Tanzania, and Zanzibar is a relatively small island along the coast of Tanzania, near Dar es Salaam. Tanzania was lead by a one-party rule until 1995, when the first elections since the 1970s were held. Currently, every five year a popular vote is held. Since 21 December 2005, the president of the state is President Jakaya Kikwete.

2.1.1 Demography

The total population of Tanzania is 43.6 million (July 2012). Besides local spoken languages, Tanzania has two main languages, which are English and Swahili. About 35% of the population is Muslim, 30%

is Christian and 35% have indigenous beliefs. On Zanzibar 99% of the population is Muslim. 26% of the total population of Tanzania lives in urban regions (2010) and the major city of Tanzania is the coastal city Dar es Salaam, with an estimated 3.2 million inhabitants (2009). However, the capital of the country is Dodoma, located in the centrally in the country (CIA World Factbook 2012).

The life expectancy at birth in Tanzania is 53 years old. HIV/AIDS is a large issue in Tanzania. 5.6% of the adults in the country (aged 15 – 49) live with HIV/AIDS. An estimated amount of people living with HIV/AIDS in the country is 1.4 million, which makes Tanzania ranked sixth worldwide. Furthermore, after South Africa, Nigeria and India, Tanzania ranks fourth on the list of countries with the most HIV/AIDS deaths. In 2009, 86.000 people in Tanzania died from that disease (CIA World Factbook 2012). There are more major infectious diseases many people in Tanzania suffer of. They are very high risk diseases, that originate due to contact with water (schistosomiases) or animals (rabies), or they are food- or waterborne (bacterial diarrhea, hepatitis A and typhoid fever). Furthermore, there are malaria and plague. Another statistical fact shows that 69.4% of the population can read and write[3], however considerably more men than women, since of the women 62.2% can read and write, against 77.5% of the men (CIA World Factbook 2012).

Of the Tanzanian population 26% of the total population lives in urban areas (2010). Furthermore, Tanzania is the country hosting the largest amount of refugees in Africa: more than a half-million refugees, mainly from Burundi and the Democratic Republic of Congo (Fitzpatrick et al. 2008 & CIA World Factbook 2012).

2.1.2   Economy

When looking at the capita per income, Tanzania is one of the poorest economies in the world. The per capita GDP at PPP exchange rates is $1500 (2011) (PPP is explained in section 1.1). This ranks Tanzania 198th out of 226 countries worldwide. The Gini index is 37.6 (2007), this indicates the degree of inequality in the family income in a country[4]. The sector employing most of the Tanzanian population is the agricultural sector, in which about 80% of the working population is employed and which accounts for 27.8% of the GDP. Furthermore, tourism is an upcoming industry in Tanzania and is becoming increasingly important for the GDP growth per year. The GDP is further composed for 24.2% by industry and 48% by services (CIA World Factbook 2012). Mining is an important sector as well, contributing to export of the country. Tanzania has many minerals in its ground, which in the past have not been an advantage for the country, since Tanzania was too poor to afford the materials to win the minerals (Kussendrager 2007). However, at the moment the country has access to the required equipment and many resources are being exported. Tanzania is at the moment Africa's fourth largest gold producer (behind South Africa, Ghana and Mali) (Fitzpatrick et al. 2008). Other main export products are coffee, cashew nuts, manufactures and cotton. The most important export partners are China (15.6%), India (11%) and Japan (6.1%). The national currency of Tanzania is the Tanzanian shilling (Tsh.), of which in 2011 one US dollar was 1571 Shilling. The inflation rate is 11.1% (2011). Tanzania had between 2000 and 2008 an average GDP growth of 7% per year, which is due to the gold production and tourism. An important link for Tanzanian trade is the fact that the country has a large coastal area, which benefits the economic infrastructure because of ports (CIA World Factbook 2012).

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[3] The literacy rate in Tanzania is the percentage of people above age 15 that can read and write Kiswahili, English or Arabic.

[4] The Gini index is calculated using the Lorenz curve. When the income distribution in a country is nearly equal, the Lorenz curve of the country would closely approach the 45 degree line and the Gini index would be low. Zero is absolute equality while a Gini index of 100 indicates perfect inequality.

2.1.3 *Institutional context*

To get a complete overview and to place this study in perspective, it is good to know how a country is institutionally divided. Tanzania has a system in which there are five levels of governance of which the lowest is village level. Going upwards there are the wards, districts, regions and the highest is the central level. Most decisions are taken and implementations are done at the village and district level, while the ward and regions have a more coordinative function, to make sure the national strategies are implemented. The central level makes and spreads the policies and strategies. The president is the leader of the central government. Regionally, there is a Regional Commissioner, appointed by the president. At district level, there is a District Commissioner and a District Executive Director, both also appointed by the central government. At district level, the District Councils are elected by a popular voting. At ward level there is a Development Committee which is, together with all village chairpersons, responsible for the legislative governance. In Tanzania there are 10200 villages, with Village Executive Directors as governance and a Village Council as legislative governance (Egli & Zürcher 2007).

Studies have been carried out about the accountability structures in Tanzania. Some characteristics regarding the top-down and bottom-up perspective of accountability can be described. Main issues regarding the top-down perspective are weak structure of checks and balances and that the president, executives and political party CCM are dominating the power structure. Also, NGOs, media or other interest groups have limited possibilities to play a corrective role in the accountability system. Furthermore, there is inadequate transparency, the information given is not user friendly and controlling reports delay. That causes insufficient transparency concerning the national budget. Bottum-up perspectives regarding accountability structures concern the governance levels that are closer to the population. Conclusions regarding this perspective are that answerability and controllability at local levels are limited, because of the strong oral tradition that is culturally rooted. In practice there exists a complexity of cooperation and overlapping between social institutions and governmental institutions. Furthermore, in rural areas the dominating way of decision making is the patriarchal mode. A last conclusion is that significant improvement may be expected when accountability issues are addressed and improved, since not the leakage of the resources is the problem in Tanzania, but the shortage of them (Egli & Zürcher 2007, p.5).

2.2 Poverty

As explained earlier in this chapter, Tanzania is a developing country with large poverty rates; 36% of the population lives below the national poverty line. Of the rural population (which is 74% of the entire Tanzanian population) 39% lives below that line and of the urban population 29.5%. Because of the large rural population, those rates determine the high average of poor people in the country (figure 2.2). The national poverty line is an indicator that takes into account the country's economic and social situation. The line is reflecting the local perceptions of the income that is needed not to be poor. The national poverty line therefore cannot be used as a comparison to other countries. However, as explained in the previous chapter, the international poverty line using purchasing power parity makes it possible to compare one country to the rest of the world. In the internationally stated line for extreme poverty of $1.25 a day, in 2000, 88.5% of the Tanzanian population lived below that line. 96.6% lived below de international poverty line of $2 a day (World Bank 2008). These rates are extremely high, which is emphasized when comparing Tanzania to the average numbers of Sub-Saharan Africa. 51% of the population of Sub-Saharan Africa lives in extreme poverty. Tanzania ranks more than twenty percent higher than that average of Sub-Saharan Africa: the region with already the highest percentage

of extreme poverty worldwide. What became clear is that Tanzania is among the highest rates of extreme poverty compared to the entire developing world. Comparing Tanzania for the second time to Sub-Saharan Africa, but now using the international poverty line of $2, it is not surprising that the country again ranks considerably high. 73% of the Sub-Saharan African population lives below $2 a day. Again, Tanzania ranks more than twenty percent above average (World Bank 2008).

Figure 2.2 Changes in poverty in Tanzania, using national growth rates, 1992-2002
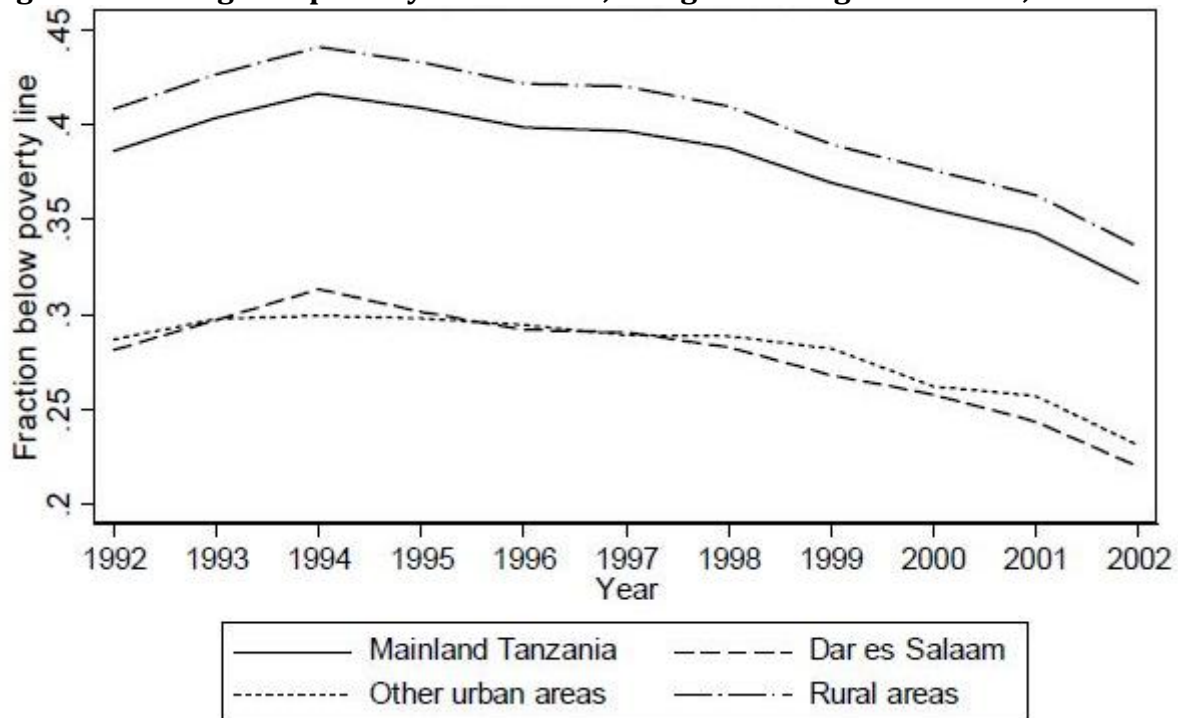
Source: Demombres & Hoogeveen 2002, p.15.

2.2.1   *Rural poverty*

Just as the worldwide numbers mentioned in the previous chapter about rural poverty, also in Tanzania the development of the rural population lacks behind after that of the urban population. Only one quarter lives in cities but the poverty rate there is ten percent lower than in the rural areas. That is not surprising, since urban areas offer access to many goods and services that can be tools and opportunities for people to escape poverty. It is a large challenge to decrease poverty in rural areas of Tanzania. Since many people in rural areas are agricultural smallholders, mainly producing for themselves, poverty reduction can only be achieved by the sustainable improvement of their agricultural development perspectives. A main aim to achieve that goal is the cooperation between Local Government Authorities and Civil Society Organizations. The government of Tanzania can offer support and guidance on how to improve that cooperation and communication (Egli & Zürcher 2007).

2.3   Civil society

Since civil society can play an essential role in observing rules and regulations and enforcing rights, it is crucial to know the state of civil society in Tanzania. Community organizations are also a form of civil society, and the extent to which people are able to formulate groups themselves can be influenced by historical and current civil society activities in the country (e.g. when the government of a country

prohibited the formulation of citizen organizations, the population does not learn how to do that and naturally, even years thereafter, it will be hard for the population to establish a strong civil society). Here is explained in what stage the civil society of Tanzania is situated.

2.3.1 Influences of Ujamaa

Nyerere, president of Tanzania from 1962 to 1985, introduced the philosophy of Ujamaa in the Arusha Declaration in 1967. *Ujamaa* is Kiswahili for "pulling together", and the strategy called for egalitarianism, socialism and self-reliance. The philosophy was rooted in traditional African values and stated that development was based on the three essentials freedom, equality and unity. The Ujamaa concept forced resettlement of several million people, which can be described as a process of villagization that was implemented and of which in the end of the 1960s 800 of these "villages" existed. In the 1970s the regime became more oppressing and at the end of that decade over 2500 villages existed. The challenge for Nyerere was how to implement his essential values into the modern postcolonial setting and he chose the path towards a socialistic state and said that Ujamaa was the opposite of capitalism, which was disgraced by the Africans after colonialism. Ujamaa was seen as the philosophy that should achieve a self-reliant socialist nation. Tanzania focused so much on becoming self-reliant, which undermined their participation in the international economy. The way of reaching self-reliance according to Nyerere was focusing on agriculture, for which the earlier named villagization was launched. Overall, the Ujamaa strategy caused cooperative farm villages were created and regions became the primary drivers of development planning. By the 1980s, the state and the economy were almost entirely controlled by one team of party officials. Because of that, the local government systems were increasingly centralized. And although the idea of Ujamaa was that productivity would increase, it fell to less than 50% of what it was before. Ujamaa came to an end in 1985 when Nyerere stepped down as president of Tanzania. The country had become one of African's poorest countries and highly dependent on international aid (Ibhawoh & Dibua 2003).

2.3.2 Emerging civil society

Before the implementation of the Arusha Declaration in 1967, there was a strong cooperative movement in Tanzania. However, the central government interference caused weakening of that early stage of civil society movement. Ujamaa resulted in absorption of civil society organizations into the single party structure of Tanzania, introduced in 1965. In 1972 local governments are abolished because of poor performances. Also in that year, the central power is extended to village level, after which in 1978 the urban councils are instated again, to try to improve the dropped living standards. During the 70s, the civil society was limited to party structures. Due to the Ujamaa influences and implementation of Nyerere's strategies, the population of Tanzania had only limited chance to develop a civil society during those two decades. Also, there was no need for it at that moment, since the government ensured they would take care of services. That caused no motivation among the population to formulate groups and made them somewhat dependent (Egli & Zürcher 2007). During the 80s local government is re-introduced (at district, ward and village level) after there was realized that the top-down centralization strategy had failed. De-concentration of central authorities took place and the government stopped controlling everything down to the village level. Also in that decade more and more organizations were tolerated that were no member of the party. In 1985 Ujamaa came to an end which was directly visible in the 90s, when the economy was liberalized, structural adjustment programmes were introduced, public sector was reformed and the multi-party democracy was reintroduced. When looking at civil society in the 90s, it appeared that many schools and hospitals were run by faith based organizations. In the 90s also and NGO Act was drafted, which was passed in 2005 (Egli & Zürcher 2007). In 1996 decentralization in Tanzania got major attention again, due to promotion of the Decentralisation by Devolution principle (D-by-D principle). The aim of the approach was the devolution of real power and

authority to governments that were sub-national and elected. According to the principle, the central government gets the role of supporting and monitoring (along the slogan "hands off, eyes on") while the local government gets the role of implementation. Besides this approach, there was the Mkukuta strategy in which three other reform agendas were (and are still being) implemented in which decentralization and good governance are focused on (Egli & Zürcher 2007).

2.3.3 Current situation

The civil society of Tanzania had for several decades no fair opportunity to develop. Looking at the current situation through that history explains why the civil society of Tanzania is internationally still described as weak. However, last two decades, the amount of non-governmental organizations in Tanzania has increased significantly. Civil society is expected to play an important role in public service delivery as well as in the development of democracy. Central actors in public service delivery are district development trusts and religious organizations. Currently there are about 4000 NGOs in Tanzania, they are both national as international and they provide in services like health and education, savings and rights and services (Egli & Zürcher 2007).

When going to back to the different stages a civil society can be in, as explained in section 1.2, the current civil society of Tanzania can be categorized in the mushrooming phase and is by international organizations characterized as weak. It is of great importance to realize that civil society cannot be implemented or forced from outside. Citizens themselves must be motivated to form groups (Lange et al. 2000). Besides weak, the Tanzanian civil society is considered fragmented. Strengths of the present civil society that are mentioned are the pro-poor orientation and essential service providence of most NGOs, furthermore there are about ten NGOs able to influence the process of formulation of politics, advocacy of rights has improved through campaigning and stakeholder forum. Furthermore there is often motivated and dedicated young staff. Weaknesses that are mentioned are high dependency of donor funds and therefore commitment to donor priorities, lack of commercial thinking, poor market linkages, fragmency of NGOs and small memberships of civil society organizations who cannot claim representativity (Egli & Zürcher 2007). Fortunately, a country does not stay in one stage, since through time the civil society organizations can strengthen due to many reasons and in that way the civil society can become stronger.

2.4 Public service delivery

The above explained history of Tanzania explains the close involvement of the government in all levels of governance, also in Local Government Authorities. Service delivery was during those years coordinated by the government. However, last two decades together with a focus on decentralization, community participation gained increased attention. In the *Tanzania Development Vision 2025*, which was brought out in 2000, local participation was mentioned as a political strategy. That strategy was not only focused on the idea that the people's needs must be taken into account in local managed development, but it also indicated that an aim was to increase the democratic participation in politics and the empowerment of the population. A quote from the development vision indicates that empowering aim:

> *"Efforts must be made to empower the people and catalyze their democratic and popular participation. The strategy should entail empowering local governments and communities and promoting broad-based grassroots in the mobilization of resources, knowledge and experience with a view to stimulating initiatives at all levels of society."* (United Republic of Tanzania 2000, p. 15)

The earlier explained Decentralization by Devolution strategy implied that that would also be implemented in the public service delivery sector. However, it has only been partially implemented. Nevertheless decentralization has taken place in public service delivery over the past few decades, because the decision-making and service delivery duties are outsourced to lower levels of government authorities or private companies. A study of JICA (2008) towards the influence of decentralization on public service delivery in three sectors in Tanzania[5] concluded that overall, the influence of decentralization on governance has had a positive effect on enhancing participation of citizens in service delivery in specific sectors, but it had a negative effect on enhancing the participation of citizens in cross sector planning and budgeting in their overall districts and village councils.

Looking at the overall picture in Tanzania, the geographical inequalities between regions has generally stayed the same; no clear changes have taken place through the implementation of the changed public service delivery policy. However, equal division and transparency of finance might in the future help to decrease these disparities (JICA 2008).

The participation of citizens has increased due to the new policies. Before, there were no opportunities for public participation, while currently there are; through elected councils and community user groups. However, there is still room for improvement, because citizen participation happens mostly at community and village level, while the budget planning in most cases still happens at district level (JICA 2008). Overall, it is difficult to indicate a direct relation between increased decentralization and impact thereof on service delivery. However, decentralization could have had a significant impact on some governance issues and that then can have influence on the service delivery (JICA 2008).

Figure 2.3 Access to clean and safe water supply by district, 2002
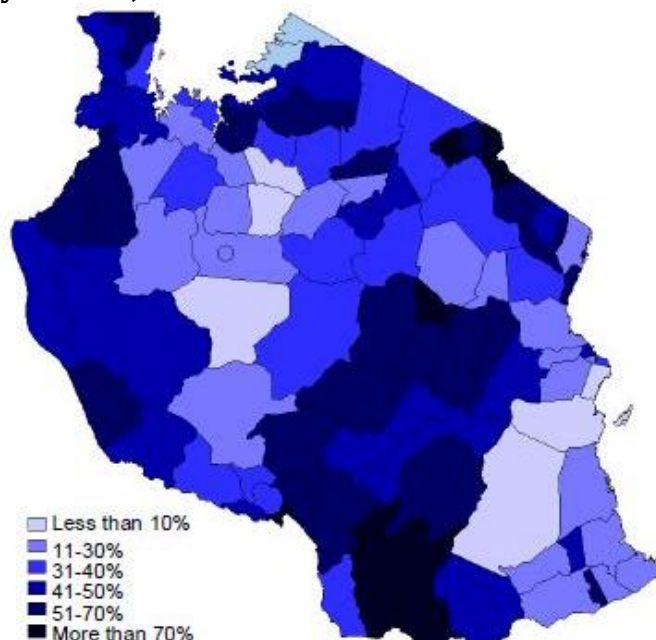
Source: TAWASANET 2008, p.12.

2.5   The water supply sector

Water is a necessity in the day-to-day life of people. It is a primary need in life, not only as drinking water, but for many more aspects like cooking, washing and sanitation. Due to fluctuating rainy seasons and dry areas in Tanzania, in many regions water is a scarce resource. In 2008, 54% of the population used improved drinking water sources, which means 46% of the population used unimproved sources, which is 20% of the urban population against 55% of the rural population (CIAWorld Factbook 2012). In most districts in Tanzania less than 50% of the population has access to clean and safe water, with many districts scoring worse. There even are seven districts more than 90% of the population lacks access to clean and safe water (figure 2.3).

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[5] Education, health and agriculture.

In line with the rather centralized state that Tanzania was under Nyerere, during the late 60s and 70s, the implementation, construction, operation and maintenance of water supply in the country was a governmental responsibility. This included the financing thereof, so people were provided with water by the government, as basic social good. During the 80s community participation got renewed attention. The idea was to make sure the water supply would be sustainable users had to pay user fees for operation and maintenance of the water schemes. Donors working in different regions of Tanzania each developed their own way of community participation. However, although it was assumed at that time, it was not sure that the above mentioned measures of user payments ensured sustainability.

In 1991 the first National Water Policy (NAWAPO) was implemented. The policy included a focus on community participation, cost sharing and community management for the operation and maintenance of water supply. The policy recommended the implementation of groups to take care of the water management, for example village water committees. However in the late 90s it appeared that those management groups often collapsed and fund collecting should only be allowed if the groups were registered and have permission.

At the moment in Tanzania the water supply in rural areas is still poor. That is in line with the high poverty rates of rural Tanzania. 2002 data shows that in large parts of Tanzanian rural areas, not more than 30% of the people use improved water sources as

Figure 2.4 Rural households using improved sources as main drinking water sources, 2002

Source: WaterAid 2005, p. 5.

main drinking water source. Only in very few districts more than half of the rural citizens drink water from improved sources[6] (figure 2.4).
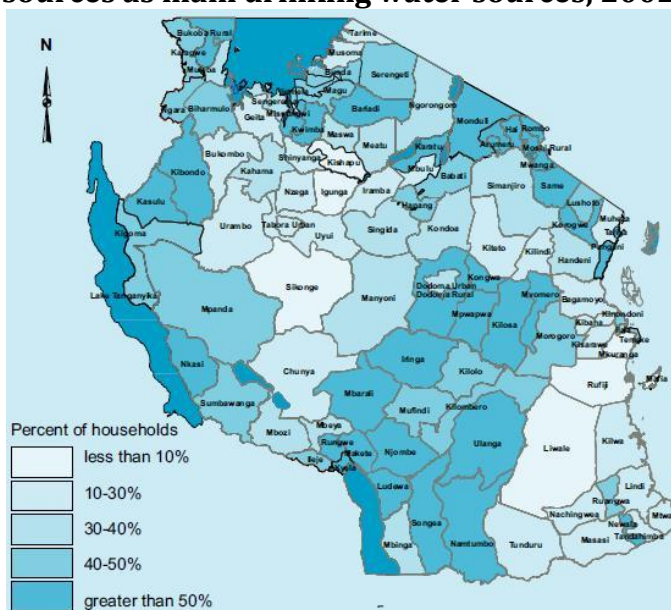
2.5.1 Progress towards Millennium Development Goal

As explained in the previous chapter, a global MDG is made to ensure environmental sustainability. A target in that goal includes reducing the proportion of people without sustainable access to safe drinking water by half. Currently, there is three years to go for countries to try to achieve the MDGs. However, because of lack of recent data, information from 2008 it used to see how Tanzania is on track to reach their water access MDG. The beginning year in measuring the MDGs is set on 1990; in that year 51% of the rural population and 68% of the urban population in Tanzania had sustainable access to safe drinking water. In 2002, for the urban population that rate increased with 15% to 83% sustainable access in 18 years (which are large numbers, considering the growth of the population). However in

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[6] Since the latest National census in Tanzania is done in 2002, most statistical data given are from 2002. It must be taken into account that this information is currently ten years old, therefore many statistics might not be that accurate but although outdated, for many indicators, this is the most recent data available. Also when a comparison needs to be made while from one of the indicators more recent data is available, the 2002 is used in order to make the comparison equal.

rural areas access declined with 9% to an accessibility rate of 42%. While the drinking water target still may seem possible for urban areas of Tanzania, it unfortunately became unlikely for the Tanzanian rural areas to achieve the goal. The latest data (from 2008) indicate that 57 % of the rural population has sustainable access to safe drinking water. When looking at the beginning year it is only 6% increase, but since the fall-back of the number that was visible in 2002, the 2002-2008 period had a major increase in sustainable access. However, it is unlikely that Tanzania will reach the MDG target, which on the mainland would mean 74% of water coverage in 2015.

In Tanzania, rural access to water supply lacks behind after urban accessibility (figure 2.5), which is a trend that is also visible worldwide (United Nations 2012). Furthermore, like in Tanzania, also worldwide the rural population losing improved sources is less than urban, however, the rather big increase that worldwide has been made in the period 1990 – 2010 of the rural population gaining access to improved sources, is not visible in Tanzania.

Figure 2.5 Percentage of households by main source of drinking water
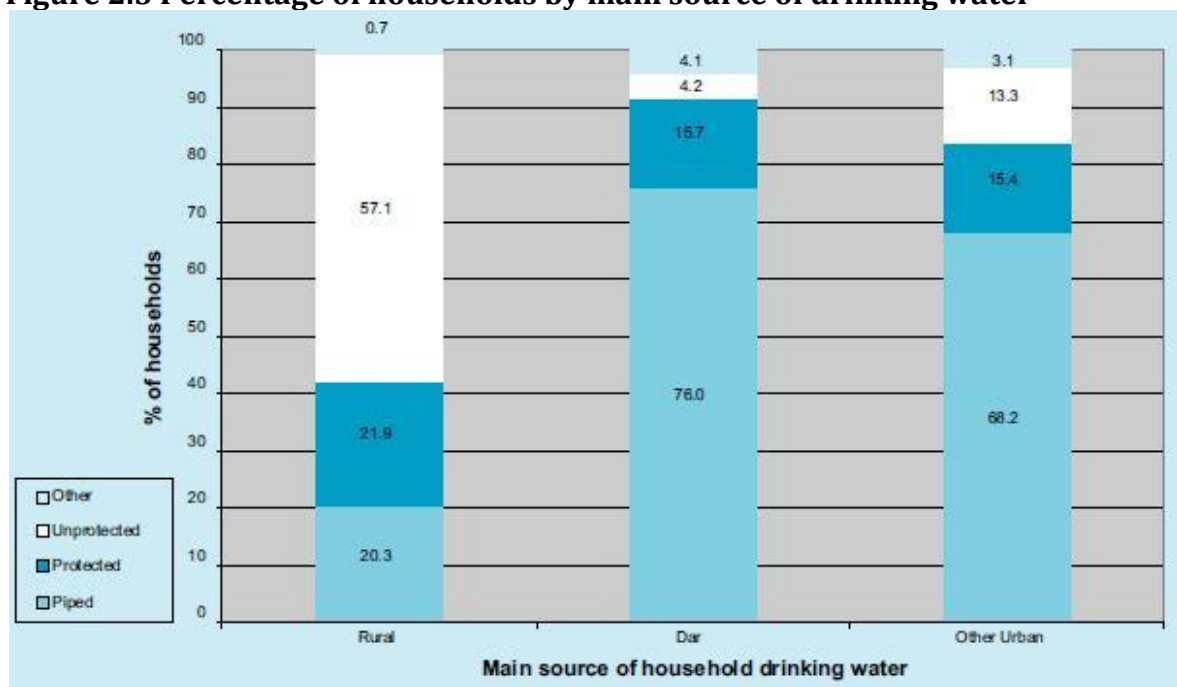
Source: WaterAid 2005, p. 5, Tanzania National Census 2002 data.

2.5.2   Recent water policies

Water policies are made for improvement of the water supply sector in a country. Tanzania has an important water policy that marked the global change towards decentralization and community participation. After that, an act was made on how the policy could best be implemented. That policy and act are at the moment still (being) implemented in Tanzania.

National Water Policy 2002

An important change in the water supply of Tanzania has been the Tanzanian National Water Policy of 2002 (NAWAPO). At that moment the government was implementing decentralization in several national sectors, in line with the subsidiarity principle introduced in Agenda 21 (see chapter 1), among which the water sector. In the policy, the government stated seven main objectives for rural water supply to "improve health and alleviate poverty of the rural population through improved access to adequate and safe water" (United Republic of Tanzania 2002, p. 30):

1. Provide adequate, affordable and sustainable water supply services for the rural population
2. Define roles and responsibilities of various stakeholders
3. Emphasize on communities paying for part of the capital costs, and full cost recovery for operation and maintenance of services as opposed to the previous concept of cost sharing
4. Depart from the traditional supply-driven to demand-responsive approach in service provision
5. Manage water supplies at the lowest appropriate level as opposed to the centralized command control approach
6. Promote participation of the private sector in the delivery of goods and services
7. Improve health through integration of water supply, sanitation and hygiene education

The objective that is most important in this study, it the fifth objective which states that the operation and maintenance of the water points in the rural areas should be at the lowest possible level: community level. The NAWAPO therefore implies a large change, not only in structure of the water supply but also a mental change among the population. Previously, water has been distributed, maintained and operated by the government for free. Since the Water Policy in 1991 that safety was suddenly gone and the NAWAPO of 2002 increases that change: water is no longer for free, and apart from the fact that communities have to pay for it themselves, they have to maintain and operate it as well. The reason for the sudden change is mentioned in the NAWAPO as an economic principle. It comes down to the fact that a water resource contributes to economic productivity and financial investments and therefore should be treated as an economic good, which requires efficient management and should be financed by the water users themselves (United Republic of Tanzania 2002).

To be able to successfully maintain and operate the water supply at community level, organizing a civil society based entity responsible for those tasks is helpful and is also what the government implies in the NAWAPO. Those organizations can officially register at the governments Ministry of Water to become autonomous legal entities, although not all organizations do. The policy mentions six options for the management of rural water supply: a Water User Association, a Water User Group, a Board of Trustees, a Company, a Cooperative Societies or a Corporation (Haysom 2006).

The NAWAPO stated seven requirements for the water supply in rural areas to reach sustainability (reformulated by Haysom 2006, pp. 4-5):

1. Management at the village level
2. Communities owning and managing their schemes
3. Communities achieving full cost recovery for operation and maintenance of the scheme, as well as replacements
4. Availability of spare parts and expertise
5. The protection of water sources
6. Compatibility of technology and service level with the capacity of the beneficiaries
7. The recognitions of women as key players

What the policy mentions is that fulfilling those seven points should lead to sustainable rural water supply. Overall, this policy focused on community participation and privatization of the water supply, and decreasing the role of the central government in implementation and management. In 2005 the Tanzanian government brought out the National Water Sector Development Strategy which focuses on issues that need to be undertaken in order to implement the NAWAPO, like strengthening the weak institutional and legal frameworks. Lastly, the Water Supply and Sanitation Act that came out in 2009

tried to describe how the NAWAPO can be put into practice. It thoroughly explained a new way of community water supply management: the COWSO (AMCOW 2010).

COWSOs

Introduced in the 2009 Water Supply and Sanitation Act was a new kind of community organization for management of the water supply: the Community Owned Water Supply Organization (COWSO). The COWSO is responsible for the operation and maintenance of a water point, and consists out of an elected, representative group of people from the community (United Republic of Tanzania 2009). COWSOs can consists in many different forms, but the bottom line is that it are community based groups and that they need to be established and registered as independent legal entities. However, in many cases the "old" system of village water committees is presently still in place and are still being formulated. Also, the registration of COWSO is a time-consuming and complex activity and therefore many groups remain unregistered (AMCOW 2010).

2.5.3 *Gender in the water supply sector*

In Tanzania, there is tried to empower women by making sure girls are able to attend schools in the same amount as boys, but also political empowerment in decision making, which can be seen in the cabinet of ministers of Tanzania, where increasingly women are influenced; at the moment approximately 30% of the legislators consists out of women. There are also special seats in the parliament, which are only accessible for women. In decision-making positions in public service, a decrease of women can be found. For example the percentage of women directors declined from 25% in 2004 to 11% in 2008. The amount of women in leading positions in Local Government Authorities over all increased (United Republic of Tanzania 2008).

A goal of the Tanzanian government mentioned in the National Water Policy 2002 concerning gender sensitivity is: *Active and effective participation of women and men in rural water supply programs* (United Republic of Tanzania 2002, p. 35). That goal is about rural water supply *programs*, which implies equality in decision making regarding water supply. However, it appears that women bear the main burden of water collection in sub-Saharan Africa (figure 2.7).

2.6 Shinyanga Region

The region where the research will be carried out is Shinyanga region, located in the north of Tanzania, below Mwanza region (Figure 2.6). The region has an area of 50780 square kilometers and is home to over 2.7 million people (according to the last census in 2002). Shinyanga consists of eight districts[7], of which Maswa District is the one where the research will take place. Shinyanga region is a region without rivers or streams that are lasting the entire year. Because the groundwater in the region is most of the time available at relatively shallow depths, wells which are about five to ten meters are functioning for many rural communities (IOB 2007).

Generally, the environment of the region is not beneficial to the water supply of the region. The semi-arid environment and tropical climate are among the causes of the inadequate water supply services in Shinyanga. Those poor water supply services are an important cause of poverty in the region. A significant amount of the population of Shinyanga lives in poverty, especially in rural areas. Besides,

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[7] Officially seven districts and one municipal: Shinyanga urban, Shinyanga rural, Bariadi, Bukombe, Maswa, Meatu, Kahama and Kishapu.

Shinyanga is one of the most rural regions of Tanzania, with nearly 91% of the population living in rural areas. In rural Shinyanga, 42% lives below the basic needs poverty line, according to 2004 numbers, which is 6% above national average (EDI 2004). Improving the limited and poor water supply services in Shinyanga can have a positive impact on the health standards of the region. Improvements can be made on for example safe drinking water and hygiene (IOB 2007). The rainy season in Shinyanga can fluctuate but usually the light rainy season is from November to January and the heavy rainy season is from March until May and the average annual rainfall is between 600 and 900 millimeter (WaterAid 2009).

Figure 2.7 Distribution of the water collection burden among women, children under age 15 and men, in households with piped water on premises in sub-Saharan Africa, 2006/2009 (percentage)

Figure 2.6 Location of Shinyanga Region
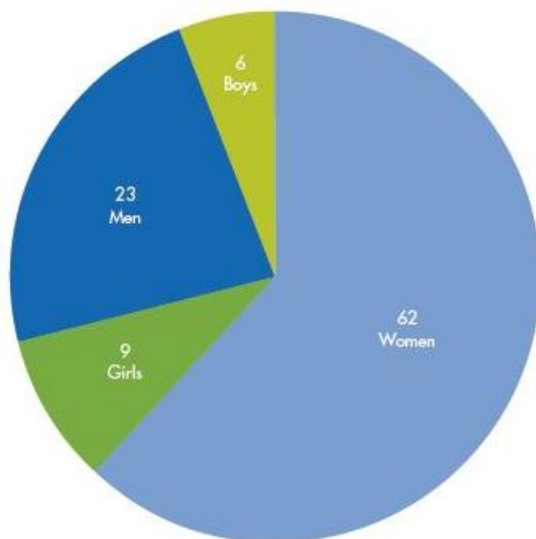
Source: United Nations 2012, p. 54, based on population-weighted averages from 25 countries.

Source: United Republic of Tanzania 2007, p.i.

The economy in Shinyanga consists mainly out of agriculture. Most people are occupied in subsistence farming, keeping of livestock and work in the informal sector. Most of the crops that are cultivated in the region are cotton, tobacco, paddy, maize, beans, cassava and sweet potatoes. Most of the citizens of Shinyanga earn their income from small scale farming and can therefore be categorized in the low-income group. Only few people depend on their livestock or selling food and other domestic products (WaterAid 2009).

2.7 Maswa District

The research area that is the focus of this study is Maswa District[8]. It is a district in Shinyanga which consists out of approximately 10 % of the population of the region. Maswa lies between 1200 and 1300 meter above sea level. The district is 3400 square kilometer of which the largest part is being used for agriculture and livestock keeping (2475 square kilometer). The average annual rainfall is 750 mm but the rainfall decreases from north to south and from west to east. The average temperature in Maswa is 26°C. In large parts of Maswa there is hardly any vegetation and the fertility of the soil is medium to

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[8] From now on, the name of the district is referred to as "Maswa" (instead of "Maswa District"). Maswa is also the centre village of the district, but if that village is meant, there will be specifically referred to as *Maswa Village*.

poor (Maswa District Council 2011). The district has three administrative divisions: Mwagala, Sengerema and Nung'hu. There are 26 wards and 118 registered villages. The District Council is located in Maswa Village, and has ten departments.

2.7.1 Demography

The last Tanzanian population census was held in 2002, when the population size of Maswa was 304.402. The estimated population size of the year 2011 is 435.000. There are 72.494 households with an average of six people per household. Maswa is a district with a poverty rate above the regional average. This indicates that in Maswa is more poverty that in the total region of Shinyanga, while the poverty in the region already is above national average. The HIV/AIDS rate amongst the population is 7.5% (Maswa District Council 2011).

2.7.2 Economy

The working population in Maswa is aged from 18-60 and is about 48% of the total population. More than 90% is working in agriculture and livestock keeping. Weather fluctuations largely affect the crops and livestock production in the district. The most important cash crops are cotton and rice. Furthermore, the district has 141 small grinding machines, 6 ginning factories and two cotton oil mills. Looking at gender, Maswa tries to involve both men and women in planning and implementing activities, especially in the economic sector (mostly agriculture) (Maswa District Council 2011).

2.7.3 Public service delivery

In Maswa there are 120 primary schools of which 2 private and 38 secondary schools of which also 2 are private. Illiteracy rate in the district is 38%. There is still a shortage of school requirements in Maswa, such as classrooms, laboratories and administration block (Maswa District Council 2011).

Regarding health, there are 47 health facilities in Maswa: one hospital, three health centres and 43 dispensaries. About 70% of the population lives within 5 kilometres distance from a facility (Maswa District Council 2011).

2.7.4 Water supply

The water in Shinyanga differs a lot in quality per place. While the water can be safe in one place, it can be dangerous in another. Visible characteristics of the surface water are a bad color and turbidity however this does not have to mean it is bad to the health of the water user. Meanwhile, pollution of bacteria and organic pollution is likely to appear in many unlined shallow wells and hand dug water holes in river banks. There are no toxic elements present in the groundwater of Shinyanga. It happens however, that the usually present minerals appear in excessive amounts. For example in the east of Maswa, the fluoride and salt contents in the groundwater are present in such a high amount that they become the main hazards to the population using that water (WaterAid 2009).

Table 2.1 Water services in Maswa District, 2011

Year	Shallow wells	Boreholes	Piped water scheme	Charcoal dams	Rain water harvests tank
2008	587	18	11	17	45
2009	648	18	11	19	65
2010	668	25	13	19	68
2011	740	35	20	35	75

Source: Maswa District Council 2011.

About 236,000 people in the district have access to safe water; which is 57% of the population. The most used improved water source in Maswa is the shallow well (table 2.1). In the past few years there has been a large increase in improved water sources. Currently there are 740 shallow wells (increased with 26% since 2008). There are also considerably more boreholes, piped water schemes, charcoal dams and rainwater harvests tanks (table 2.1).

By comparing Maswa to the region and country it is situated in (table 2.2), a few issues can be highlighted. A striking fact is that the rural population of Maswa is very large compared to the national number. With a rural population of 92.5% Maswa also ranks higher than the regional average. It can be said that it is a very rural area, as well as relatively poor, since the population below poverty line is 7% larger than the national average. By comparing, actually all the numbers show that Maswa is less developed and a poorer district than national average. Maybe that is cause by the large rural population Maswa consists out of, since poverty and rurality often go hand in hand. An interesting detail is the fact that the percentage of female-headed households in Maswa scores 5 percent above national average. Other striking numbers are the households with electricity, which is only 2.8% in Maswa, compared to 10.1% at national level and the households using unprotected water sources, which is 68.3% in Maswa; 42.3% more than national average. Comparing Maswa to the region it lays in, it can be said that it is less developed compared to the rest of Shinyanga Region since it overall scores slightly worse.

Table 2.2 Comparable data of Tanzania, Shinyanga region and Maswa District, 2002

	Tanzania	Shinyanga Region	Maswa District
Population	34.4 million	2.8 million	304,402
Urban population (%)	23.1	9.2	7.5
Rural population (%)	76.9	90.8	92.5
Population below poverty line (%)	36	42	43.5[1]
Infant mortality rate (per 1000 births)	73	91	90
Primary education net enrolment	86	89	91
Average household size	4.7	6.2	6
Households having electricity (%)	10.1	3.5	2.8
Household having earth floor (%)	73	87	90
Households which are female-headed (%)	30	33	35
Households using piped water source (%)	34.4	-	12.7
Households using unprotected water source (%)	26	65.7	68.3
Rural households using improved (piped or protected) water source (%)	34.8	35	32

Sources: Maswa District Council 2011, United Republic of Tanzania 2002, United Republic of Tanzania 2005, WaterAid 2005 and WaterAid 2009. To be consisted, data of 2002 is used even if more recent data was available.

2.8   Conclusion

Tanzania is a developing country with high poverty rates. Although progress is being made, both social and economical, the country still has a long way to go. Just as the global numbers indicate, also in Tanzania poverty is particularly present in the rural areas. The civil society of Tanzania is weak, due to

historical influences, which can cause difficulties as the Tanzanian population has to start managing its own service delivery. While Tanzania is trying to approach its MDG targets for the supply of safe drinking water, many districts in the country are nowhere near reaching them, as is Maswa District, the district of the research. Located in Shinyanga Region, it is a largely rural and (compared to national average) very poor district in the north of the country. Although the overall rate of people with access to improved water services in the district is still relatively low, in previous years a major growth has taken place in availability of water sources. However, the non-functionality rate of the water points shows that there are still important sustainability issues to tackle.

3 Methodology

This chapter describes the details about the primary data collection on community management of rural water supply in Maswa District. First, the research objective and research questions are presented. After that, the conceptual framework is included to get an insight in the important aspects and influences of the study. Furthermore research methods and the operationalization are presented and finally attention is given to the limitations of the results of the primary data collection.

3.1 Research objective and questions

The population of Tanzania has to operate and maintain their own rural water supply, by creating community organizations that are responsible for it. At the moment it is ten years ago since the government introduced the policy that subscribes this decentralized way of water supply management. Although in ten years a lot can change, there is little information available about the community level management systems of rural water supply in Tanzania overall, and specifically Maswa District; the focus of this study (figure 3.1). Many different ways of water supply management are possible. As is clarified in the first chapter, the National Water Policy of 2002 mentions that community management organizations can officially register at the government as Community Owned Water Supply Organizations (COWSOs). However, not all community managed organizations are formally registered, there are both formal and information management systems in the regions, but there is no clear indication of the number, types, status and functions of the systems. Gaining insight in the

Figure 3.1 Location of Maswa District within Shinyanga Region, Tanzania
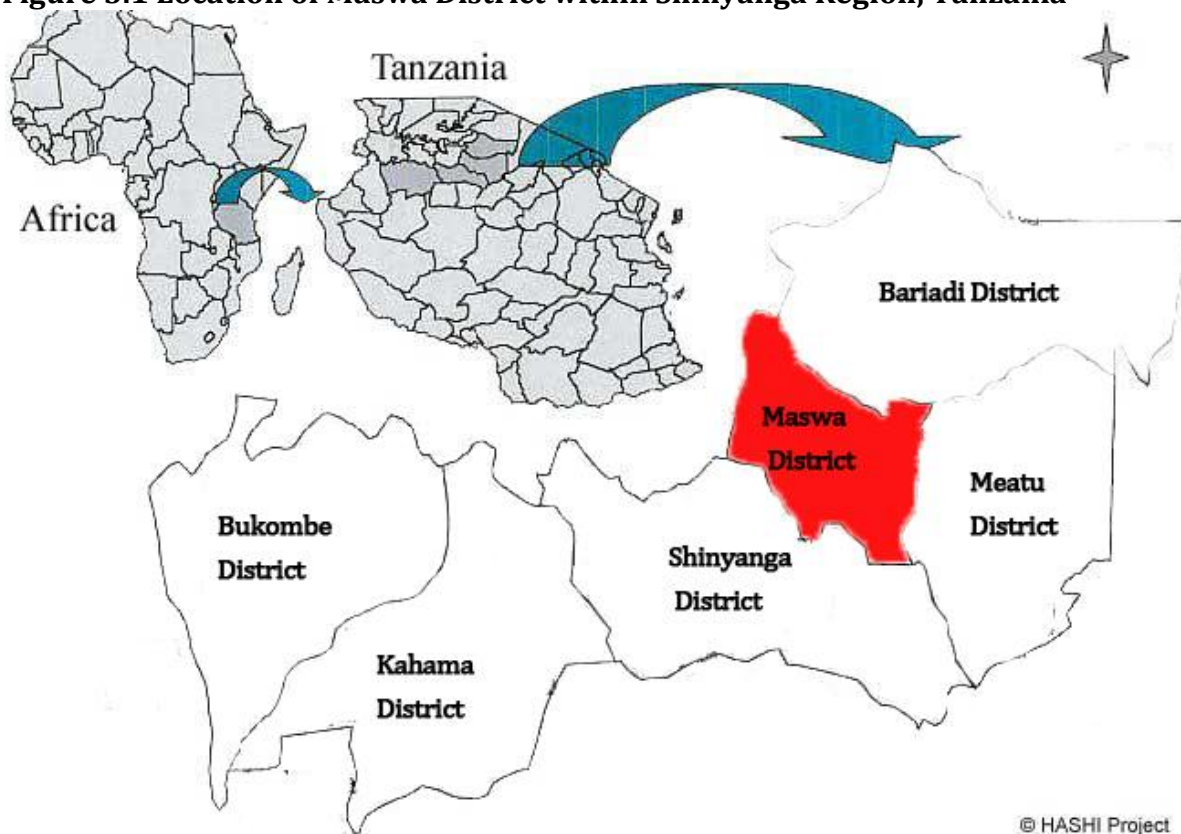
Source: Aridland 2004, edited.

different systems (and their types, functions, strengths and weaknesses) can contribute to a better understanding of rural water management at community level and the kinds of management that work and don't work. Using that information, there can be found out what management systems function better than others and recommendations can be made for both water management at community level, as well as for the government and NGOs at district level, who are trying to improve the functionality of the rural water supply management systems. The aim of this study is therefore to get a clear and complete picture of the different types of community owned rural water supply management systems in Maswa District and analyze their strengths and weaknesses to be able to provide recommendations for improvement of the operational and financial functionality and sustainability of those systems in the district. The aspect of gender will be included to find out what gender dimensions and dynamics are present within the entities and what the role of women and men are within the organizations. The overall aims of this study can be summarized into five bullet points.

- Find out the different types of rural water supply community management entities in Maswa District
- Analyze the strengths and weaknesses per management entity
- Find out the financial management systems per management entity
- Find out the gender dimensions that play a role in the management
- Find out aspects that can improve the operational and financial functionality of the management entities.

This study has relevance to the region, because getting a clear picture of the management systems and the information which kinds of systems work well and which do not can contribute to a better understanding of community management and offer opportunities for improvement of (non-functional) organizations.

To be able to reach the objective described above, the main question guiding this study is:

What are the characteristics of the various types of community owned rural water supply management systems in Maswa District and what can be done to improve the functionality of those systems?

Five sub questions are formulated as assistance in this study, to be aware of the different topics to address and to be able to comprehensively answer the central question in the end.

1. *What are the various types of water management systems in Maswa District divided by type and status?*

2. *What are the strengths and weaknesses of the different water management systems?*

3. *What are the formal and/or informal financial management systems they use and why do they use those systems?*

4. *What are the roles of women and men within the water supply sector and the management organizations?*

5. *What changes can be made to improve the operational and financial functionality and sustainability of the rural water management?*

6. *How can these improvements be implemented?*

3.2   Conceptual model and operationalization

Through the conceptual model the study is visualized, explaining the important influences of different factors on each other, and making clear what level of scale that study will focus on.

As becomes clear in the conceptual model (figure 3.2), the level of focus is the local level since the management entities operate on community level. When explaining the conceptual model, it is most useful to start with the upper box at the local level, called *Community Owned Rural Water Supply*

Figure 3.2 Conceptual model
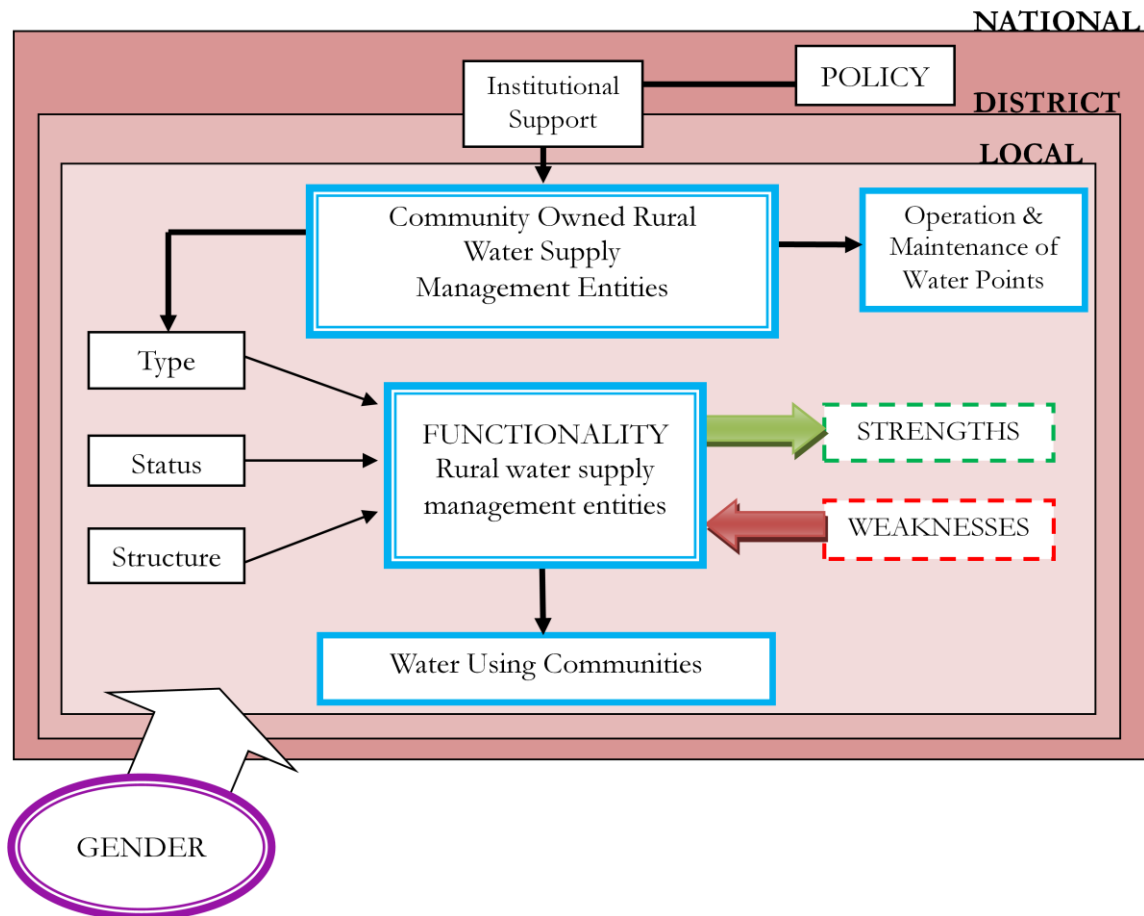
Management Entities. Those organizations are responsible for the *Operation & Maintenance of Water Points* (displayed in the upper right), so the entities directly influence the way in which the water points are maintained. The arrow from the entities to the left displays that the *type, status* and *structure* of the management entities are of direct influence on the way in which the entities function, so on the box *Functionality water supply management entities*. The functionality of the management entities influences the way there is taken care of the water supply in the communities, which influences the *Water Using Communities* (the box below *Functionality*), because they either would have good functioning water points which benefits them or non-functioning water points, which affects them.

In the boxes right from the functionality box the strengths and weaknesses are indicted. This means that the functionality of the management entities of rural water supply has strengths which can positively influence the functionality and they have weaknesses, which can be threats to the functionality.

At the national level, the governmental policy is displayed trough the box *Policy*, by which the National Water Policy of 2002 is meant. As is described in the Regional Framework (chapter 2), this policy obliged communities to manage and finance their own water supply. However, the government mentions in the policy that they will offer institutional support to the communities, so that is represented by the arrow from *Policy* to *Institutional Support* to the *Community Owned Rural Water Supply Management Entities*.

The last aspect of the conceptual model that needs to be clarified is the box of *Gender*, below the whole model, with an arrow that points not especially to one box, but to everything. Gender is a complicated concept and it is not only influencing one aspect within the study. Gender dimensions are present at any level, sometimes clearly visible and sometimes more at the background. That is why it is not possible to put gender in a box within this study, but in the way as it is displayed in the conceptual model, it becomes clear that it is present and influences everything.

Several concepts and key terms are used within this study. It is important to have clear definitions of all concepts that can be confusing, not only to be clear about what is meant by the terms for people reading the study, but especially to keep in mind that the primary data has been collected in a foreign country in a foreign language and with people from another culture. Concepts can be difficult to explain to others, that is why in the first place it is important to know precisely which concept means what within the picture of this study, before even explaining it to others. The way in which a concept can be studied and in what way concepts can be measured is also an aspect that needs thought. Complicated concepts need operationalization before the data collection can start. Some main concepts important to this study are operationalized here.

Accessibility
- Having social and physical access to information that concerns the water supply
- Having social and physical access to support and advice of local and district government
- Having social and physical access to membership of a water organization
- Having social and physical access to financing systems

Accountability
- The possibility to get elected in a water organization
- The possibility for a water leader to get re-elected
- The possibility to dismiss a water organization member when he/she performs below expectations
- The possibility for stakeholders to receive consequences when they practice against the rules
- The possibility for an organization to receive support from a governmental institution
- The possibility for an organization to receive advice from a governmental institution
- The presence of two-way communication between the water organization and local and district government

Ownership
- The possibility to organize a community based water supply organization
- Having full responsibility over the operation and maintenance of the water supply
- A feeling of responsibility
- The services provided reflect what people are willing to pay for

Participation
- The right to be eligible as leader of a water organization

- The right to vote for leaders of the water organization
- The possibility to have a voice in water management meetings

Gender

Gender influences and dimensions will be studied by indicating the different roles of women and men within the household, the water supply organization and the community.

3.3   Methods used

3.3.1   Research area and population

The area of the primary data collection is Maswa District, which is chosen in cooperation with the host organization (section 3.6). The organization is active in the district where the data has been collected therefore that district has been chosen to do an in-depth study to the characteristics and functioning of water organizations. The target population of this study is all the water organizations in Maswa, the government authorities that they are related to and the water-related department of the District Council of Maswa.

3.3.2   Sampling

The sample during data collection is determined in close consultation with the District Water Department of the Maswa District Council. Three wards have been selected for the data collection. To try to get a complete picture, there is tried to select on one ward where there is good management regarding water supply, one where is poor management and one in the middle, with mediocre management. Selecting wards based on management is difficult since there is no extensive data available per ward. Therefore, there is relied on the knowledge of the District Water Department. The three selected wards for the data collection are thus selected based on management, however, because of logistic reasons[9] some wards could not qualify. The selected wards are Busilili, Buchambi and Isanga (figure 3.3). Within each ward, three villages are chosen to visit, to get a quite complete overview of the functioning of different WUGs in the three wards. The villages in the wards are selected in consultation with the Ward Executive Officer (WEO) of the relevant ward. The approach per ward has been interviewing the WEO, after which the villages are selected. In each village conversations are held with the Village Executive Officer (VEO) and / or the Village Chairperson (VCP). Within each village approximately three WUGs are interviewed. In total 9 villages are visited and 23 WUGs have been interviewed. Another 19 interviews have been carried out with other relevant stakeholders (List of interviews can be found in Appendix 1). Names of villages and WUGs are not mentioned to ensure anonymity of the participations and be sure no harm is caused. A total of 42 interviews are conducted during the fieldwork from 18 February – 18 April 2012.

There is chosen to conduct a qualitative research, to be able to gather detailed and in-depth information from WUGs to try to understand their functioning. Qualitative research offered the opportunity to really understand the situation of a WUG, from their problems to their relations with different levels of government authority. That possibility suited the aim of the study the best. However, since there is no exact data available on how many WUGs there are and where they are located, it is not possible to make statements about the research sample and therefore no conclusions can be drawn from this research population that can be generalized for all WUGs or for the overall situation in the district.

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[9] The rainy season took place during data collection therefore some wards could not qualify as ward to research, because they become inaccessible during heavy rains.

Figure 3.3 Maswa District with study area highlighted
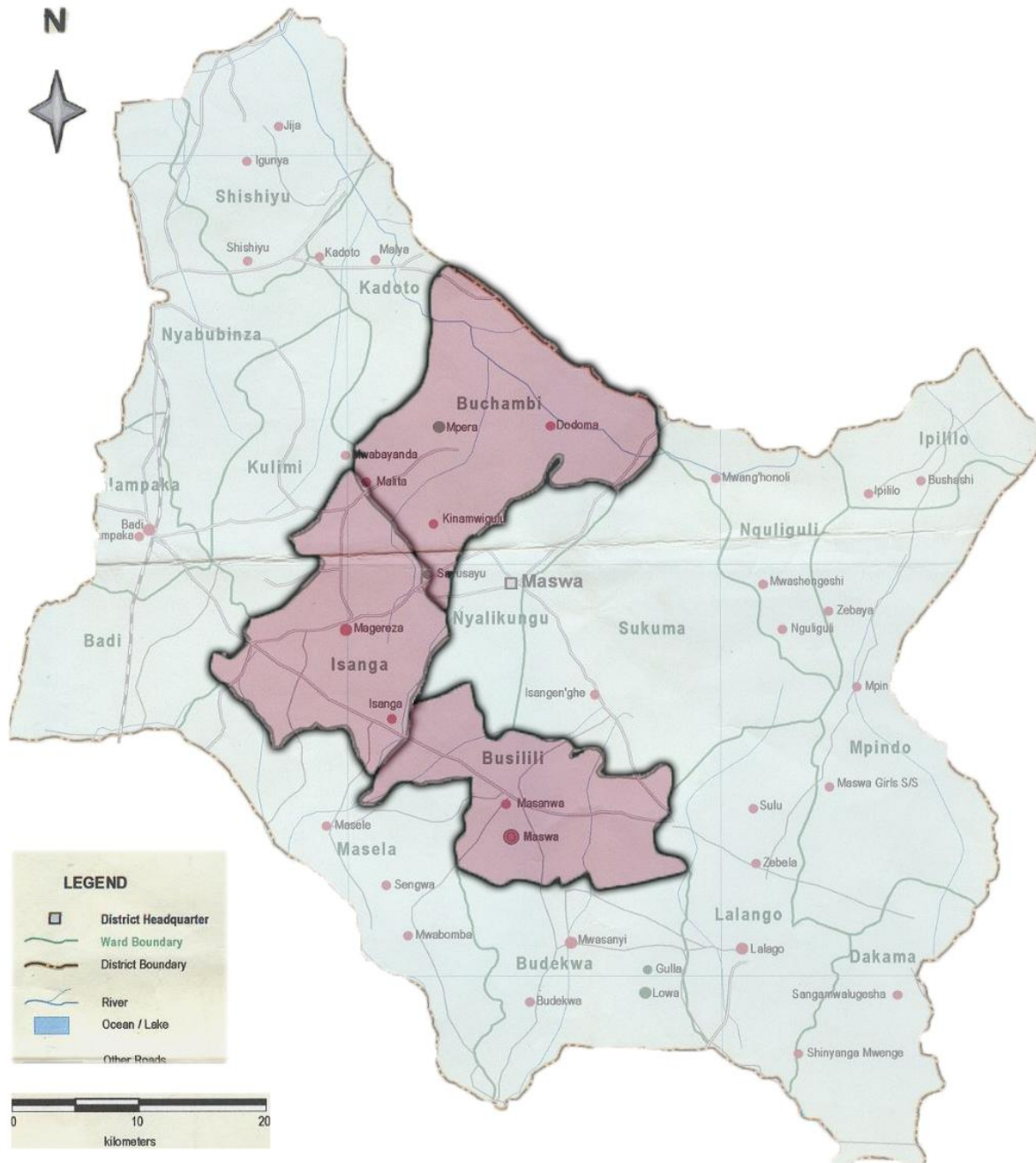
Source: Maswa District Council 2012, edited.
See for original map Appendix 2

3.3.3   *Semi-structured interviews*

Since there is chosen to conduct a qualitative research, 23 WUGs are interviewed for this study, located within nine villages spread over three different wards. The interviews that are conducted were semi-structured interviews, to be sure certain important topics were covered and the right information was gathered, but to also give the opportunity to elaborate more on certain topics that are specific for one group. Topics that were covered during these interviews are membership, functionality, meetings, financing, relations to other actors and gender (interview questions of the interviews with WUGs can be found in Appendix 3). Interviews with other relevant actors during data collection were also semi-structured. Interviews were conducted with at the District Council and with WEOs, a Councilor, VEOs,

VCPs and Sub-VCPs. Those interviews were about the responsibilities of those actors within the water supply sector and about their relations with the WUGs.

3.3.4 In-depth interviews

To be able to gather sufficient information to include the gender factor in the study, ten in-depth interviews are conducted with community members about gender. Those interviews had a few starting points of topics that could be covered during the interview, but further there could be freely anticipated on new topics that were brought up. These interviews appeared to be useful for additional WUG information as well.

3.3.5 Personal observation

Personal observation is done during the entire time spend in the district. During the first two weeks of the fieldwork, a councilor's training took place of several days at the District Council. Attending this training has contributed to getting more information about the roles and responsibilities of councilors in the district and it offered the opportunity to build up a network. Furthermore, there could be observed how people interact with each other and how the different actors behave. Personal observation furthermore contributed to a clear image of what a certain situation looks like, which was often of great importance as support of the story a WUG told. Personal observations assisted the information gathered in the interviews. Another important aspect in personal observation was the photography of the actual situations of water supply. Those pictures are included in the chapters about the fieldwork outcomes and analysis.

3.4 Data analysis

During the data collection, interviews were analyzed to see which information was useful for the following interviews, if any adjustments needed to be made or information needed to be added. This meant that it has happened that because of later adding of questions, certain information was only asked to a part of the research population. It also happened that an interviewee has mentioned another person who could be used as a new interviewee for the study (sampling according to the snowball-effect), which was mainly done during the interviews on gender, but also WUGs were found using the networks of interviewees.

3.5 Limitations and reliability

Important factors influencing the study can be found on different levels. For example since the data collection has to be conducted in 14 weeks, it was not possible to visit all community owned water supply organizations in Maswa. All information given in the next chapter is based on the interviews carried out during the fieldwork, among the population indicated in this chapter (section *Research population*). Statements that are made and conclusions that are drawn are only valid for that group of people and cannot be generalized to the entire wards or district. However, the information intends to give an impression about the situation in the district.

Conditions that influenced the data collection on another level were aspects like the weather: during rainy season in Tanzania travelling can become hard due to floods or impassable roads. Furthermore, involved risks are in the willingness of communities to participate in the study. Since people in rural

areas in Maswa hardly speak English, the use of a translator can affect the data collection because it can lead to barriers, difficulties in understanding or miscommunication. That and other reasons might have caused collection of incorrect information during the interviews. Furthermore, it is possible that people gave desirable answers. Therefore, information given in the next chapter should be treated carefully and with appropriate attention to those possible falsities.

The information that is given in the next chapter provides an image of the way in which the current functioning WUGs in Maswa work. It must be kept in mind that many wells and WUGs in Maswa are not functioning. The information that is given in the next chapter therefore only provides an image of the functioning groups. It is not very relevant that the information cannot be generalized since this study aims to describe the characteristics of the functioning WUGs, not the amount of unmanaged pumps or differences between functioning and non-functioning WUGs.

3.6 Host organization

The data collection is done during an internship at a host organization in Tanzania. The organization is SNV Netherlands Development Organization, with Lake Zone Portfolio as specific region. SNV is a non-profit international development organization which at the moment operates in 36 countries in Africa, Asia, Latin America and the Balkans. The motto of SNV is Connecting People's Capacities, which reflects to the focus on empowerment of people and local organizations in the fight against poverty. The mission of the organization is to reach "a society in which all people enjoy the freedom to pursue their own sustainable development". SNV does that by strengthening the capacity of local organizations. SNV focuses on three sectors: Agriculture, Renewable Energy and Water, Sanitation & Hygiene (SNV World 2012). This study fits within the last sector.

SNV Tanzania focuses on three sectors of which Water, Sanitation & Hygiene is one. The organization is currently active in the strengthening of Community Owned Water Supply Organizations (COWSO): the earlier explained new system which is going to replace the Water User Groups, in line with the governmental policy. Furthermore, SNV developed an intervention framework, to guide interventions at district level in addressing issues concerning accountability. SNV argues that the accountability issue in the water sector is inadequate transparency and responsiveness, and that that issue causes high non-functionality and inequity of water points. The intervention framework aims to strengthen accountability relations within the accountability triangle for service provision (provider – client/costume – oversight). The framework focuses mainly on relationships, between the community, their representatives and the executives. Part of this study focused on that three-way relationship (SNV 2011).

3.7 Conclusion

This chapter explained the research question and sub questions and the methodology that has been used for the primary data collection in the Maswa. This was the last chapter of the first part of the study. The second part consists of three chapters in which the situation in Maswa District is reviewed. Strengths and weaknesses are explained and an analysis is made in which is clarified how community participation in service delivery in Maswa overall functions and what can be done to improve the situation.

4 Community Management of Rural Water Supply in Maswa District

This chapter is about the important actors and the roles of those actors in the rural water supply sector in Maswa. All relevant stakeholders are reviewed, but the main focus is on the community based groups managing rural water supply in Maswa. This chapter focuses mainly on the statistical and factual outcomes of the primary data collection. The first two sub questions are addressed: In the first section the relevant actors and their roles are clarified. The second and third section explain the characteristics of the water management system in Maswa District (sub question 1). It presents statistics and contains a detailed description of the functioning of Water User Groups. Section four provides a strength and weakness assessment of the management system (sub question 2).

4.1 Water point functionality in Maswa

Many inhabitants of Maswa District get their water at water pumps, which is common in rural areas in Tanzania. There are two types of pumps that can be constructed: shallow- and deep wells. The deep wells are expensive and difficult to construct, while the shallow wells are cheaper and easier to construct. Deep wells in Maswa are only constructed by the government, since the borehole needs to be very deep, which is impossible for a community to accomplish without the right machinery. The advantage of a deep well is that it can cater for about 250 households, while shallow wells only cater up to 50 households. Furthermore, since the deep well goes deeper into the soil there is less chance that it gets dry in the dry season, when the groundwater table decreases and shallow wells might become dry.

The district of Maswa has 435.000 inhabitants (according to estimation in 2011) and there are 26 wards and 118 villages. Most people that get water at an improved water source use hand pumps (exact data can be found in chapter 2, table 2.1) and the groups taking care of the hand pumps in Maswa are Water User Groups (WUGs). Latest statistics show that there are 758 wells in Maswa (both shallow and deep wells), of which 186 are not functioning, which is 25%. As explained, the shallow wells cater only for about 50 people and the deep wells for 250. However, while of the total amount of wells only 25% is not functioning, of the deep wells included in that percentage, 55% is not functioning (24 out of 44), which is more than half of the deep wells. Since the deep wells cater for much more people, those wells can be considered more important, because when they do not work, it affects five times as many people than a non-functioning shallow well. Therefore increasing the percentage of non-functioning deep wells might seem negligibly in the total amount of wells, but it increases access to safe and clean water for much more people.

116800 people in Maswa get water from shallow and deep wells. This is 27.7 % of the entire population. Apart from the shallow and deep wells, there are also other water systems. There are 34 dams, of which 12 are not functioning (equal to 35% non-functioning). There are 9 water taps of which 6 are not functioning (66% non-functioning). Furthermore, there are 113 rainfall water tanks of which 40 are not functioning (35% non-functioning) (Water Census Maswa 2012). Out of in total 914 water sources in Maswa, 268 are not functioning. That is 29.3%. Also, out of all water sources, the deep wells score worst in functionality.

In Maswa there are also 5 piped water schemes, of which at the moment 3 are active. There are plans to add another 2 piped schemes. Since this study only includes the water pumps because they are owned by the community management groups, there will only be focused on the shallow wells and not at the other water schemes and systems.

Table 4.1 Water pump coverage Maswa District, 2008 compared to 2012

Year	Total amount of WPTs Maswa District	Functional WPTs	Functional WPTs but need repair	Non-functional WPTs
2008	539[1]	345	23	171
2012	914[2]	670	-	244
Increase	+375	+325	-	+73

[1]these water points include cattle trough (6), communal standpipe (5), communal standpipe multiple (64), dams (9), hand pumps (464) and others (6)
[2]these water points include shallow wells (714), deep wells (44), dams (34), water taps (9) and rainfall water tanks (113)

Source: Water Point Mapping 2008 and Water Census Maswa 2012.

To get an impression of the functionality of water supply over time, the current water point functionality is compared to the functionality in 2008 (table 4.1). The comparison shows that there has been a large increase in water points in the district. Comparing the Water Point Mapping data from 2008 to the Maswa District Council Water Census from 2012, it shows that the total amount of WPTs has increased from 539 to 914 which is an average yearly growth of 14,1% (table 4.1)[10]. When comparing the percentage of functional water points it appears that the functionality rate has slightly increased. In 2008 31.7% of the water points were not functional, while in 2012 still 26.7% remains not functional. Therefore, the functionality has increased a bit, but still one quarter of all water points is not functioning. It can be concluded from the comparison that the rural water supply in Maswa still has difficulties with the sustainability of the water supply, since the absolute amount of non-functional water points did increase over time. Therefore, ensuring sustainability of a water point seems equally or even more useful than keeping on building new pumps while focusing less on the improvements that have to be made regarding the sustainability of the pumps.

In this study, an investigation is carried out towards the characteristics and functioning of 23 WUGs. Of that group, 87% of the pumps were functioning, which comes down to 20 pumps (figure 4.1). That rate is considerably higher than the functionality rate of 73.3% district-wide. Although the district functionality rate of water pumps is indicated as functional or non functional pumps, it appears that the pumps cannot be categorized in only functional or non-functional. The season has a large influence on that, since during the rainy seasons in Maswa, there are no problems with fetching water at the functional pumps. However, when the dry season comes, many WUGs suffer from the drought that causes decrease of the groundwater table. The result is that although the pumps are functioning, no water comes out of the pumps anymore. This is more likely to happen with shallow wells because the pump is too short to pump up water when the groundwater level decreases. It can also differ between different heights and locations. Dry season non-functionality tremendously influences the functionality rate of the pumps, since 62% of the normally functioning water pumps in this study stops working during the dry season. Therefore even the functional pumps do not all year long assure access to clean and safe water for members of WUG. Furthermore, the permanent non-functionality of pumps among

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[10] It is not possible to compare the growth of the amount of water points to the growth of the population, since the last population census in Maswa was in 2002, when the population size of the district was 304.402. After that no census has been held and there are only estimations, therefore no relative comparison between 2008 and 2012 can be made.

the researched WUGs is 4.3%, which is one WUG. Two more studied groups have no functioning water pump since those are still under construction.

Figure 4.1 Functionality of pumps of studied Water User Groups
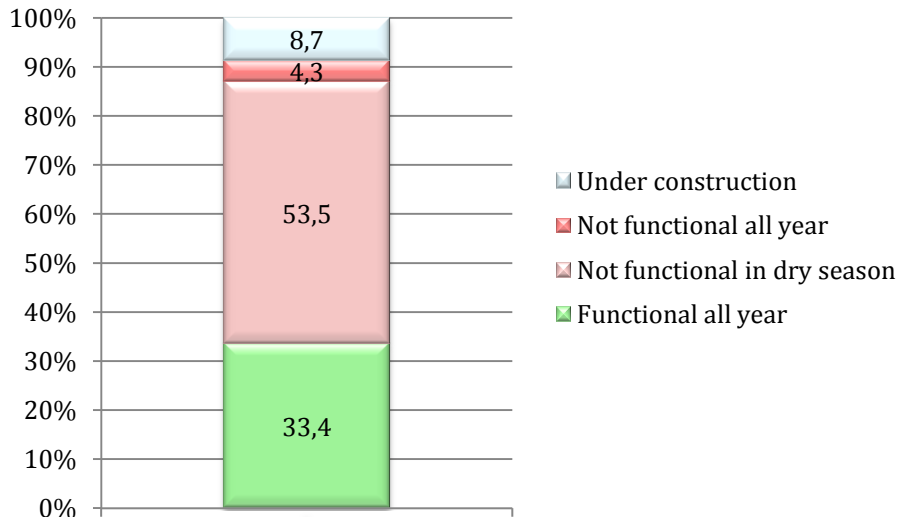
According to data from 23 WUGs
Source: Fieldwork 2012

4.2   Actors in rural water supply

To provide a clear and complete image of the situation, it is important to know all different actors that play a role in the water supply sector in Maswa. There are five main groups of stakeholders active in rural water supply. Starting at the highest level, there is the government, subdivided into the District Council (DC) (in which focus lays on the water department, since that department is closest involved with water supply) and the Local Government Authorities (LGAs), which include the Ward Executive Officers (WEOs), Councilors, Village Executive Officers (VEOs) and Village Chairpersons (VCPs). Furthermore, there is the private sector active in profitable water delivery. Then there are the community based WUGs and finally there are the water users, which is the entire population of the district. The roles and responsibilities as indicated here are retrieved from the analysis of interviews with the different stakeholders. The next chapter will compare Maswa to the original WUG system explained in chapter one.

4.2.1   *District Council - Water Department*

The overall regulation in the district is done by the DC, based in the centre of the district: Maswa Village (see figure 3.3). All sectors are regulated from there, and the regulation for water supply is done by the District Water Department (DWD), in which the District Water Engineer (DWE) is in charge. Furthermore there is a District Water and Sanitation Team taking care of the implementation of policies made by the DWE. The responsibility of the DWD to the WUGs is to provide technical advice. They give assistance to WUGs on how to get spare parts and open bank accounts. The DWD states that the WUGs that have problems can visit their department to get assistance. Not all WUGs visit them. According to the DWD, only the ones with problems go to visit the Department. However, as will

become clear in chapter five, not even all WUGs who do have problems go to visit the DWD. The DWD sometimes visits WUGs. However, that is only in case the WUGs invite them. So, if the WUG wants to be visited but does not ask, the DWD does not visit. The DWD does no planned or frequent visits to WUGs.

The DWD gives out advice to WUGs, which can improve the WUG's situation or prevent inequality. Advice can be given on different subjects; it can be technical, if there is a breakdown of a pump or it can for example be about gender. Advice the DWD gives on gender is that the best situation would be if among the members of the WUG the chairperson is a man, then the secretary should be a women and vice versa. However, this is not the case in all WUGs. Sometimes there are women involved, but it merely happens that men occupy those leading positions. The DWD also gives advice to WUGs about how to improve. An example is that the DWD advices WUGs to have shared meetings with other WUGs every month to be able to share information and exchange knowledge on how to deal with all sorts of situations.

4.2.2 Local Government Authorities

There are two levels of authority between the DC and the community, which are called Local Government Authorities (LGA). There are one WEO and one Councilor per ward and one VEO and one VCP per village. Those four actors are leaders of the population, of which two are appointed by the DC (WEO & VEO), and two are due to elections representative for the population (Councilor & VCP). All four positions focus on the overall condition and further development of the wards and villages. They are the people whom WUGs and communities need to go to in case of any problems, so also for issues regarding water supply. In this study those four stakeholders are only mentioned regarding their roles and responsibilities in rural water supply.

Ward Executive Officer

The WEO is the last link to the council (figure 4.3). The role of the WEO within rural water supply is to ensure that people have and get safe water, to motivate them to form groups and to inform them about how to treat the water. The WEO also has to inform the VEO, VCP and Councilor, who can pass through the information to the community. The data collection is done in three wards, and after speaking to those three WEOs in the district, some aspects can be highlighted about their relation with the DC. However, since only three of the 26 WEOs are interviewed, and their responses are already quite diversified, it does not say anything about the overall relation between WEOs and the DC. What came out is that the extent to which WEOs feel connected to their population differs. One WEO for example visits all WUGs in the ward on annually basis and finds that very important. However, this cannot indicate the commitment of him to the population, since some wards have far less WUGs than other wards. Out of the three WEOs, two are rather positive about their relation with the DC, while one WEO feels that there is a lack of communication from the DC towards him, regarding projects they are carrying out and schemes they implement.

Councilor

The role of the Councilor is being in charge of the development in the ward. A duty is to motivate groups in the communities to formulate themselves, for water supply that means encouraging people to formulate WUGs. That is why in figure 4.2 there is a direct link from the councilor to the community. Difference between WEO and councilor is that the WEO is in charge to manage and control over the ward. The councilor is there to understand and motivate the community. The councilor is chosen to be representative of the community. During elections candidates from different Tanzanian parties compete. Within parties there is voted for the representative of that party and all representatives compete in the election. The population votes for the councilor. The councilor should inform the DC

Figure 4.3 Institutional relationships between actors in rural water supply, Maswa District
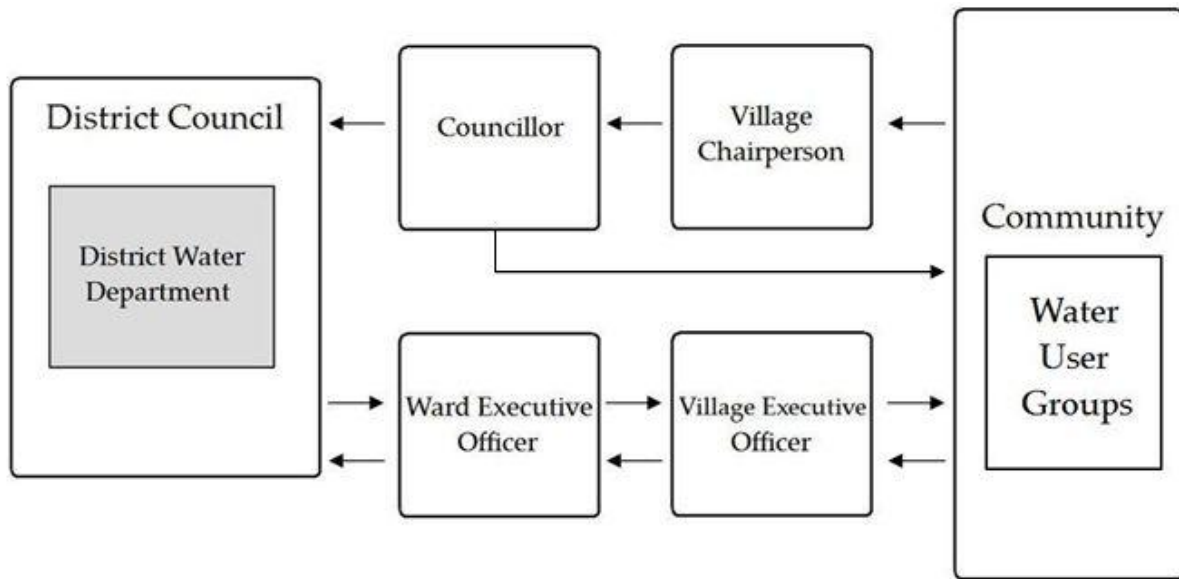
Source: Fieldwork 2012

about the situation of the population of the ward and report to the DC what has been discussed in meetings. Furthermore they can help the population in enforcing their rights at the DC, indicated by the arrow from councilor to DC in figure 4.2. During the fieldwork a Councilor's training took place in Maswa Village, where the Councilors learned about their duties and responsibilities (figure 4.2). A lot of basic information about their responsibilities was explained to the Councilors, which indicated the ignorance of duties among most of them. The fact that the Councilors received a financial compensation for showing up at the meeting also indicates a lack of interest and sense of responsibility.

Figure 4.2 Councilor's training at the District Council in Maswa

Source: Fieldwork 2012

Village Executive Officer and Village Chairperson

The role of the VEO is to ensure peace in the community and listen to and understand the community. The VCP has the same duties, the only difference is that the VEO is appointed by the DED and the VCP is elected by the community. The VEO receives orders from the WEO, the DED and councilors. The VEO makes sure that tasks are fulfilled and reported back to the DC. Every three months all VEOs of a ward have a Ward Development Meeting together with the WEO. There are no meetings for the VEOs at district level; Councilors will represent information from the Ward Development Meeting to the DC.

4.2.3 Private sector

Companies can sell water in different forms, for example tapped water or water that is sold in tanks or bottles in shops. Those companies are not controlled by the state and sell the water for their own profit. This private sector is an important stakeholder, since it can influence people's accessibility towards safe and clean water. However, when looking at the situation in Maswa, the private sector seems less important since this study focuses on the rural areas, and many people in rural areas rely on water sources like wells, dams and rivers. So, although it can be an important influence in water supply in a district that is not the case in rural Maswa and therefore it is more or less disregarded in this study. Although the private sector has not many influences in Maswa yet, it seems an upcoming business. The DC has plans to increase the private sector in the district. The council addresses the involvement of private sector in the provision of social economic services as key issue (Maswa District Council 2011).

4.2.4 Water User Groups

WUGs are the community based management organizations which are the main focus of this study. As could be read in section 2.5.2, a lot of districts have not yet implemented the 2009 Water Supply and Sanitation Act of the Tanzanian government that introduced the new system of community management: Community Owned Rural Water Supply Organizations (COWSOs). This is also the case in Maswa, where the WUG-system is still implemented. COWSOs are also community based organizations taking care of the water points, but an important difference with WUGs is that the COWSOs are organizations based on a higher level in the community. As WUGs have one member per household, COWSOs have only a small amount of members who take care of the water pump for the larger group of households. In some regions in Tanzania, like Sengerema, the COWSOs are already introduced. At the moment trainings are given in Maswa to introduce the new COWSO-system[11]. Although the new COWSO-system is going to be implemented in Maswa soon, this study to WUGs is still relevant to get an impression of the current situation and to see what positive and negative aspects of WUGs there are. In that way when COWSOs are implemented, lessons can be learned from earlier experiences, positive aspects can be adopted in the new system and negative aspects can be changed or improved. The central question of this study (section 3.1) requests the *various types* of community owned rural water supply management. In Maswa there appears to be just one type of community management, in form of the Water User Groups. The characteristics of WUGs are explained extensively in section 4.3.

4.2.5 Population

The last stakeholder in rural water supply in Maswa is the group of people that makes use of the service delivery: the population. This is the actor that is directly influenced by the functionality and quality of the water supply that is delivered. The WUGs are community based organizations, which means that they represent the voice of the population, but the real population making use of the water points is much larger than the members of the WUG. The population includes all men, women and children: since water is a basic need, it is important for everyone to have access to improved water sources. However, some groups in the population are closer related to the water supply services than others. Far away water sources can negatively affect the people who have to fetch it. This are in most cases the women, as figure 2.2 shows. This trend of women fetching water is also present in Maswa, just like they are also most often in charge of activities in the household that need water, for example washing, cooking and cleaning. Furthermore it appeared that if women cannot fetch the water it is

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[11] The trainings are given to relevant actors at district level by SNV Netherlands Development Organization in cooperation with Local Capacity Builders.

often done by children. However, because every citizen needs and uses water, everyone is in some way involved in the water supply in the region.

There are also parts of the population where people are no member of a WUG, either because they do not want to, have no money or they live too far from any improved water source: is has to do with different forms of social and physical accessibility. In Maswa it even happens that because of geological circumstances the population is not able to build water pumps themselves, due to lack of the right machinery. This was the case in one village during the fieldwork; where the largest part of the community gave up on trying to build a water pump (Box 1). There, and in many other places in Maswa, the population still has to fetch water in dams and rivers, while surface water is often of bad quality because of organic and bacterial pollution, as described in the regional framework. However, although those people do not make use of the water services, they too are directly involved in the water service delivery because every citizen has the right to an improved water source, by policy statements even within 400 meters from their households (explained in section 1.4.1). The reason that those people lack access to improved sources therefore has a direct link to a clearly inadequate water supply in Maswa.

4.3   Characteristics of Water User Groups

In Maswa there are 889 WUGs (Cabuipa 2012), which are only involved in managing water pumps in rural areas. This part of the chapter focuses on the WUGs, their characteristics and how they function. Every WUG normally owns one water point, in most cases a shallow well and in few cases a deep well. The role of a WUG is the operation and maintenance of the pump and the collection of revenue among the water users. A detailed description of the functioning of WUGs is given here.

4.3.1   Formulation of Water User Groups

WUGs are management groups at the lowest possible scale: the groups consist out of community members. Groups can formulate themselves by coming together with the shared interest of building a water pump. When they are grouped they can try to find more interested people, and then register. They have to put money together, open a bank account and build the pump. They can do that with or without technical support of the government (depending on the type of well, as explained in the previous section). When a group is formed, every person can try to contribute by bringing materials to build the pump, or contribute their men power during the construction, by for example digging the hole. The group can also come up with its own name, which can be written down at their water pump, often together with the date of construction (figure 4.4).

Figure 4.4 Water User Group information is written down at the water pump

Source: Fieldwork 2012

A WUG member is always a whole household. One representative of the household attends the WUG-meetings. Since every household that is getting water

BOX 1. FETCHING WATER IN THE RIVER

THE CASE OF ISANGA VILLAGE

Constructing a water pump is not just about finding people who want to contribute the money to build a pump. Perhaps more important is finding the right location for the pump. There is one village encountered during data collection where there are no water pumps at all: Isanga Village (location is indicated on the map in Appendix 3). All inhabitants of the village (about 2000 people living very scattered) have to fetch their water at the river that has partially dried up riverbeds in the dry season (figure 4.5), which is a considerable part of the year. People have to dig holes on the riverbed, wait until those holes fill with water and then they can fill their baskets, unfortunately with unsafe water, since precisely in those places pollution of bacteria and organic pollution is likely to appear (see regional framework section 2.7.4). In the morning and evening hours it is busy at the river because every household needs to get its water there. In a first impression one might think that people here do not have the motivation, knowledge, skills or possibilities to form WUGs and build water pumps. However, in the past many groups have been formulated but they never managed to remain. This was due to the problem all inhabitants faced time after time: they always encountered rocks in the ground, which made it impossible to continue digging a hole to build the water pump. Because this problem was faced over and over again, WUGs gave up hope to try building a pump and separated. Therefore at the moment just one WUG is still present in Isanga. The group is managing to build a pump close to the river. They already faced problems digging the hole for the pump, because it collapsed two times, but they plan to have that first water pump in Isanga finished in the summer of 2012.

Source: Fieldwork 2012

Figure 4.5 The riverbed in Isanga

Source: Fieldwork 2012

at the pump has a representative in the WUG, WUGs do not have to be elected. It is a voluntary group, motivated to take care of the WPT, in which every household is involved. The amount of household member of a WUG varies a lot between WUGs and between villages. Sometimes the WUGs state a maximum amount of households that can get member. Because there is scarcity of water pumps in Maswa, there are cases in which a lot of households are dependent on one pump. In those cases the amount of members can go up to even 130 members (figure 4.6). However regularly, there are about 10 – 60 households member of the group. Nine of the 23 studied WUGs had an amount of members between 21 and 40 people. The average amount of members among the studies WUGs is 36.

Figure 4.6 Amount of WUG members per WUG in Maswa District
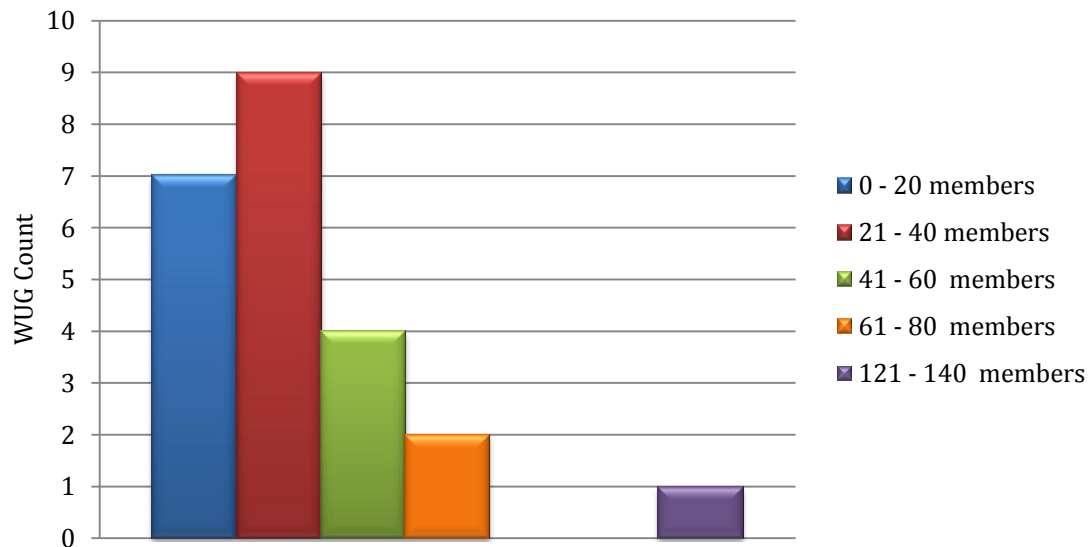
According to data from 23 WUGs
Source: Fieldwork 2012

In the interviews with the LGA it became clear that the communities in Maswa are overall not very enterprising or organizing, which means that the initiative to formulate a WUG does often not come from the community itself. That can have to do with a lack of information about it, but another logical explanation is the weak civil society in Tanzania, which is most likely a result of the Ujamaa policy present in Tanzania during the '60s and '70s and caused a restrained attitude among the population, since the government took care of all public services (explained in section 2.3.1). Because of that, there might be a rooted idea that the government should still take care of the population. Therefore, the LGA of Maswa has the important responsibility to motivate and mobilize the communities to formulate their own groups and manage their own water supply. Councilors, WEOs, VEOs and VCPs can organize meetings in which they motivate the community to formulate groups. According to the LGAs, after such meetings often new WUGs are formed. Those groups keep on motivating each other or gather more people, which make the meetings successful.

4.3.2 *Responsibilities*

WUGs exist out of members who often have the task of managing the water pump. Managing the pump means being in charge, being able to take care of the pump and make sure people are satisfied with the water. Also WUG members should make sure that the surroundings of the pump are safe and clean. Besides responsibilities to take care of the pump, every WUG contains three leading positions: the chair, secretary and treasurer. In most cases they are elected every three years, but in some cases

they are just appointed to those functions. This is a description of their responsibilities (derived from interviews with those who fulfill that function):

Chair

The chair has the leading position of the WUG. He or she has to call for regular meetings and make sure the group does not separate. The chair also brings the members together and educates them on how to take care of the pump and how to manage it. The chairperson often is the representative of the WUG in case someone needs to go to the LGA for support or advice.

Secretary

Being a secretary has to do with the administrative side of the WUG. The secretary should keep all the records and minutes of the meetings and information about memberships. However, it differs a lot among WUGs to what extent all those records are kept. Some studies WUGs kept minutes and made reports but overall it seemed more informal since there was no constitution, minutes or reports of the WUGs and meetings.

Treasurer

The treasurer is responsible of all the issues concerning finance. The treasurer collects the money for the group and charges non-members who get water at their pump. If the WUG has a bank account the treasurer brings the money there and should know how to save. If other members find any problems at the water pump, they can inform the treasurer to get money for repairs. Also, the treasurer should report to the whole WUG about their finance to create financial transparency. In practice, although in some WUGs there is transparency, it other WUGs members do not precisely know how much money there is and what is done with it. There is a case where a member complained because only the chair and treasurer knew what was done with their money. There are also cases when confusion about finance emerged because even the treasurer does not precisely know how the bank account exactly works, how much money there is and how to get to that money. Those financing issues will be discussed in the next chapter.

WUG Committee

The DWD told in an interview that each WUG has a committee which is responsible for the management of their water pump. These committees would consist out of 6 members, 3 male and 3 female. Because the WUGs can get really large, as explained above, the idea is that the committee is a smaller group of people who takes care of the pump for all the members. In practice it turns out that most WUGs have such a committee, but it also happens that there is no committee and it is the job for every WUG member to manage the pump. That contradicts to the facts given by the DWD that every WUG contains a management committee.

4.3.3   Ownership

As is explained in the theoretical framework (section 1.2.1), ownership is about members of a WUG feeling responsible for the management of their pump; if they feel connected to it and feel that they are the owner of it. As is explained there, culture and habits can stand in the way of proper ownership. However fortunately that is not the case in Maswa. The DC officially acknowledges the right of WUGs to legally exist, register and own a bank account. They have the right to be the official owner of the pump and therefore that external factor cannot negatively influence the sense of ownership of WUG members.

Nevertheless it is difficult to measure the amount of ownership a WUG feels over his property. In the interviews with the WUGs is asked what their duties are within the WUGs, to get an impression about

their commitment to what they are doing. The basic idea was that if they knew what their role is, they at least have some degree of awareness about their responsibilities and ownership as WUG members. The results of that basic concept were positive: the WUG members that were interviewed could explain their roles in the WUG, which mostly came down to cleaning and protecting the pump and treating it carefully. In case of the chair, treasurer and secretary, they could rather easy explain their duties within the WUG, which correspond to the above described explanation of their functions.

Discussing further about ownership, in Maswa it has happened that WUGs formulated but for some reason needed help or support which they did not receive. An example is of one WUG that waited for many months for the government to support the members in building their water pump, which made their motivation slowly fade away and therewith reduce the amount of ownership they felt over their pump and responsibilities. Therefore, a reason for a WUG to lack ownership can be an unfinished or broken water pump and needing assistance which they due to any reason do not receive.

The type of ownership that is described here can give a distorted image of the situation in Maswa, since the WUGs that have been interviewed during the fieldwork are all functioning. As mentioned in the methodology chapter, this study gives no information about non-functioning WUGs or unmanaged pumps, where the sense of ownership might be very low. The reasons for that lack of ownership is attributed to the lack of legal registration of WUGs (there are 889 WUGs but only few have formal registration) and lack of active community participation and involvement in planning and decision making processes together with lack of awareness among the community about their roles and responsibilities in ownership, management, operation and maintenance of the water pumps (Cabuipa 2012). According to Cabuipa (2012), a Local Capacity Builder in the district, those issues caused non-functionality rate of domestic water points in Maswa of more than 50%. They state that this situation has led to:

> "Lack of community willingness, readiness and acceptance of their responsibilities for management, operation, maintenance and sustainability of those domestic water points; Use of inappropriate rural water supply technologies leading to non-functioning of water points in a short period of time after construction. Failure of communities to appreciate the need to pay for water services; Lack of maintenance of water facilities by communities; and hence non-functionality or poor state of those water supply facilities in the district." (Cabuipa 2012, p. 13 & 14).

Seeing all those issues emerging in the communities, it can be stated that the WUGs interviewed during the fieldwork are already to some extent sustainable since they are still active and functioning. While the sense ownership in the district might be low, the feeling of ownership among the functioning WUGs might be higher, which is most probably one of the causes of their good functionality.

4.3.4 Regulations

Because a WUG is managing a water pump, they need to set some regulations to prevent confusion and be able to guide everything in the right way. Officially, WUGs need to sign a Memorandum of Understanding (MoU) when the WUG is formulated, in which all duties and responsibilities are officially written down and signed. However, the WUGs encountered during the fieldwork had no MoU or any constitution. That was also found by another study towards water supply carried out by Verhoeven (2008) in Maswa district. It appears that none of the WUGs had signed a MoU.

Furthermore, some villages suffer from vandalism against the water pumps, and there are actions which to a certain extent can prevent that. For example there are WUGs that only open their water pumps a set amount of hours a day, for example in the morning from 8 – 10 am and in the afternoon from 4 – 6 pm. That can prevent people from stealing the water, because at the other times of the day, the pump is locked with a padlock. Many WUGs use padlocks to close their pumps outside the set times. However, there still was a WUG that faced problems because youth was demolishing the pump at night. The WUG-members had to set a patrol at night, to supervise the water pump. Fortunately after three weeks of patrol the vandalism stopped and the problem was solved.

Other regulations that have to be made are concerned to behavior. Because the WUG members need to manage the pump together, there need to be a good atmosphere and social cohesion. As stated in the theoretical framework, social cohesion contributes to sustainability of a WUG. In this study, no problems have been found regarding disagreements or fights within WUGs and the social cohesion seemed fine.

4.3.5   WUG registration

WUGs can be registered at the DC, who keeps record of all officially registered WUGs in the district. Not all WUGs are registered. Most of the time that is not on purpose and it happens because they do not have the information or knowledge on how to register. The DC indicates that it is obligatory for a WUG to register, but in the interviews it turned out that often WUGs do not know that.

There is a Non-Governmental Organization (NGO) active in several wards in the district that helps WUGs formulating and helps them constructing water pumps. The WUGs often think they are registered at that organization. However, an interview with that NGO proved that that there is no possibility to register there and the organization does not know about that misunderstanding among WUGs. Most likely those WUGs are not registered at all, because it is only possible to register at the DC. Besides that misunderstanding, there is also confusion among WUGs whether or not they are registered at all. While during an interview one WUG told they were not registered, the WEO reminded him of the fact that they were and probably forgot or did not know. Eight out of 20 groups thought they were registered at the NGO. Because of this misunderstanding, it is not possible to

Figure 4.7 Place of registration of WUGs according to their own saying, Maswa District
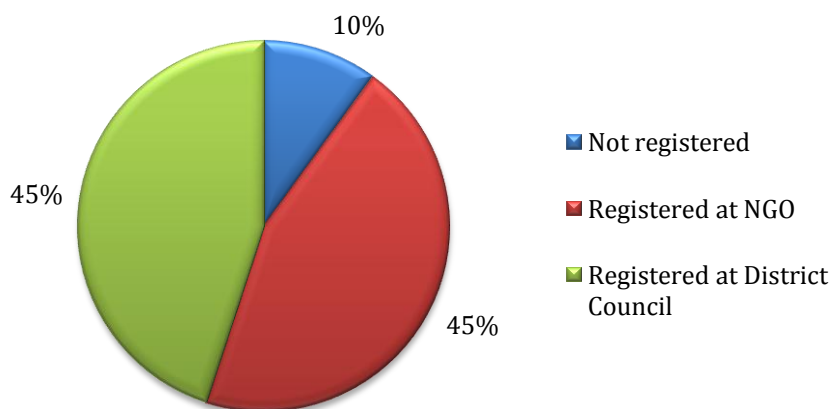
According to data from 20 WUGs
Source: Fieldwork 2012

52

consider the answers of the WUGs on where they are registered as right. Therefore, the registration indicated here is the registration according to the WUG's own saying (figure 4.7). 90% says it is registered, which are 18 WUGs. Half of them say they are registered at the DC and the other half at the NGO. 2 WUGs are not registered at all.

4.3.6   WUG meetings

All WUGs have meetings with all members, in most cases it are regular scheduled meetings. 50% of the groups have one meeting per month and one third has meetings more often (table 4.2). Only 17% has meetings less frequent then every month. All WUGs indicate that if there are issues coming up during the month, an extra meeting can be planned. WUGs use the meetings to discuss issues that came up since the last meeting, for example if there are any problems with the pump regarding vandalism. Other things that are discussed in a WUG meeting are the people that indicated that they want to become a member of the group. In the meetings is discussed if every member agrees on that person to become member, if the person is qualified or if there are any objections. Furthermore, there is discussed how to repair the water pump if there are any damages, and how to keep it clean. Other issues that can be discussed are how and where to build a new pump in case a WUG is trying to do that. Apart from the financial possibility, there also needs to be a right location to build a pump (as explained in Box 1).

Table 4.2 Frequency of WUG meetings, Maswa District

Amount of meetings	# WUGs	Percentage
1 per week	2	11
2 per month	2	11
1 or 2 per month	2	11
1 per month	9	50
1 per 1 to 3 months	1	6
1 per 3 months	2	11
Total	18	100

Source: Fieldwork 2012

Ideally in WUG meetings, all members attend. However, that is not always the case, and the bigger the groups are, the bigger the chance not all members can attend. Of one WUG with 130 members, only about 80 made it to the meetings each time. Not attending WUG meetings can have to do with not having the information about the meeting, being unavailable at the set time or not being motivated to attend the meeting.

Normally there are no other participators in the meetings apart from the members. However if an important issue needs to be discussed, someone from the local government can attend, which is in the first instance the VEO. If other people are needed, for finance, materials or ideas, they need to be invited by the WUG to attend their meeting.

Shared WUG meetings

It can be useful for WUGs to have meetings together to share information on how to deal with the operation and maintenance of their water pumps and how to solve problems concerning water. More than half of the WUGs already have shared meetings and there is one village with a meeting system, which means that all the groups in that village come together occasionally (every 3 or 4 months) to share information and new ideas (table 4.3). This kind of information sharing system is only found in

one village. Besides that village there are also other WUGs who indicate they sometimes have shared meetings. 10 WUGs indicated they never have shared meetings with other WUGs, but all said they would like to have those meetings to exchange information. Learn how to solve problems they are facing, or get an idea of how other WUGs manage. One WUG who does not have shared meetings further indicate that think shared meetings will bring the community closer together, which they find a good thing. Another WUG would like to have more cooperation because it plays part in development that they can exchange ideas and support each other.

Besides WUG meetings there are no other, more general meetings for WUGs. Every three months there is a Councilor meeting at the DC in Maswa that the WEO and VEO can also attend and they have the duty to disseminate the information to the groups and communities.

Table 4.3 Shared WUG meetings, Maswa District

	# WUGs	Percentage
Having shared WUG meetings	11	52
Having no shared WUG meetings	10	48
Total	21	100

Source: Fieldwork 2012

4.4 Strengths and weaknesses assessment

Now all characteristics of the WUGs are made clear, an assessment can be made of the overall strengths and weaknesses of the management system. Because chapter six goes further into depth on the obstacles hampering functionality of the system and improvements that can be made, the strengths and weaknesses given here are derived from the characteristics mentioned in this chapter and reviewed only shortly.

4.4.1 Strengths
Five overall strengths of the WUGs as community based management organizations in Maswa are mentioned here.

The DWD has good intentions towards WUGs.
The WUGs can ask the DWD to visit them. Furthermore, the DWD is open to helping the WUGs and they give the right advice on gender and shared meetings. This support from district level government is important for the motivation and feeling of inclusion among WUGs.

Clear responsibilities of WUGs
The studied WUGs were able to explain their responsibilities. That indicates their commitment to their work. The members take their duties seriously and all studied WUGs contain a chair, secretary and treasurer, which means that the group is formed in a structured way and it is everywhere the same.

Proper sense of ownership and motivation among WUGs
Once the WUG managed to build a pump, they feel responsible for it and are motivated to take care of it (remark with this strength is that is only counts once a WUG is formulated, which is further explained in the section about weaknesses).

Most WUGs have a committee
Not all, but most WUGs have a small committee of members taking care of the management of the pump. That is can be seen as a main strength since it gets structure in the WUG and indicates proper division of roles.

Shared WUG-meetings
There is one village with a shared meeting system for all community based groups and besides that there are also WUGs in other villages having shared meetings. Having shared meetings is positive, since it is advised by the DWD and increases exchange of knowledge. All WUGs who do not have shared meetings are positive about it and would like to have it themselves.

4.4.2   Weaknesses
Ten main weaknesses of the WUGs managing their own water supply in rural Maswa are mentioned here.

Short pumps cause dry wells.
Most WUGs have a shallow well that, even although it is functioning, can get dry in dry season and therefore is no assurance of access to safe water during the whole year.

Lack of sense of responsibility among Councilors
Since the Councilors are important factors in motivating the communities to formulate WUGs and construct pumps, their disinterest in carrying out their duties is detrimental for the WUG-system.

Communities are not motivated.
The communities in Maswa do not show much initiative, which is of considerable importance for the WUG-system, since communities have to construct the WUGs and pumps themselves. The LGA is very important to make sure communities are motivated and enabled to make

Building a pump is not always possible
A disadvantage of this management system is the fact that not the entire population of Maswa can participate, since sometimes WUGs lack the possibility to build a pump because of physical geographical circumstances, as is the case in Isanga Village (Box 1).

Most WUGs have no constitution
Most WUGs do not have a constitution, while the advantage of a constitution is that member are bound to their duties and that it is clearly written down what is expected of the members.

Confusion about registration
Some WUGs are not sure if or where they are registered and other WUGs who are sure that they are registered at an NGO are wrong, since the only place they can register is at the DC. Furthermore there are WUGs who are not registered at all while it is obligatory.

Not all WUGs have a committee
Although a strength mentioned above was that most WUGs have a committee, still not all WUGs do, while it is of great importance to meet the expectations of the WUG-system and to have a clear division of the managing duties.

Uncertainty about money issues
Money is an essential aspect in the functionality of a WUG. Lack of clarity, confusion or issues regarding money can be a severe threat to the sustainability of the WUG. This issue will be further explained in the next chapter.

Lack of deeply rooted sense of ownership in WUGs
As mentioned in the strengths above, there is a sense of ownership among WUG-members. However, it appeared to be rather shallow. When a severe problem with the pump occurs, there is no deeply rooted sense of ownership, and therefore if solving problems takes too long WUGs get discouraged and sometimes the pump gets abandoned.

Lack of ownership and responsibility among communities and WUGs
In this study it appeared that existing studied WUGs have a certain sense of responsibility and ownership. However, a conclusion that is drawn in a study from an LCB in Maswa (Cabuipa 2012) states that overall among communities and WUGs there is a lack of ownership and responsibility, which causes non-functionality of a large part of the rural water supply in Maswa.

4.5 Conclusion

The system of community managed service delivery in the water sector of rural Maswa is adopted according to the National Water Policy of 2002. Looking back at the information given about WUGs in this chapter, it can be stated that the system of WUGs in the district has developed towards a clear and concrete system. The system is known and implemented in the entire district and has clear characteristics that are the same everywhere, for example responsibilities and membership. However, there also appear to be differences between groups, villages and wards, for example in functionality, registration and meetings. There are differences in the degree of development between villages and wards, which can cause differences in the way WUGs function. However, there are also many other factors influencing the functionality and sustainability of a WUG. There are several strengths and weaknesses mentioned relating to the current system in Maswa. The next chapter gives an in-depth perspective on three essential aspects for proper functionality of a WUG after which in chapter six improvements are given which aim to increase functionality and sustainability of the system.

5 The Water User Group in Maswa: discussing gender, financing and relations with other actors

The system of community based groups managing rural water supply in Maswa District has many characteristics. This chapter focuses on three of those characteristics: gender, financing and relations with other actors. An in-depth approach was chosen for these three characteristics, because they are important to the functionality of the water management groups. Financing is of great importance since the communities themselves have to pay for the operation and maintenance of their pump. Therefore, the first section of this chapter explains about financing in the Water User Groups (WUGs) (sub question three of this study). Subsequently, the second section focuses on gender (sub question four). Gender is important in water supply since women are generally closely involved in fetching water, so it is important to see if they are also included in the decision-making process. The last aspect is the relation of WUGs with other actors in rural water supply. Those relationships are essential for proper functionality and sustainability of a WUG. Additionally, information provided in section three forms the basis for the explanation of the accountability situation in Maswa which will be described in chapter six.

5.1 Finances

The operation and maintenance of a water pump also includes the financing thereof. Communities have to pay for everything themselves. The way in which WUGs keep their money differs. Some WUGs have an official bank account, while there are also other ways in which the money can be kept. Different financial issues, methods, explanations about that and problems regarding finance, are explained here.

5.1.1 Entrance fee

One of the most important aspects contributing to sustainability of a WUG is financing, to build the pump and to buy spare parts. A general rule among WUGs is that members do not pay for water: once a household became member of the WUG, it never pays for getting water at that pump anymore, there are no monthly or annually contributions for members. However, when becoming a WUG-member, one has to pay an entrance fee. This fee exists to compensate the money and effort that other WUG-members have put into building the water pump. It happened that the WUG-members in the earliest stage of the WUG formulation had to pay a lot of money for construction of the pump; therefore it would not be equal and fair if new members do not have to pay. Besides, there needs to be money for repairs or other unforeseen circumstances. Because people who were in the WUG during construction of the pump have contributed their money and/or materials and man power, no entrance fee has to be paid by them.

The entrance fee that has to be paid to become member of a WUG varies a lot between WUGs (figure 5.1). The WUGs can determine the fee themselves and there does not seem to be a standard amount of money which is common to take as an entrance fee, since it the fees between WUGs range from Tsh. 1.000 to Tsh 50.000. Only four out of 23 WUGs have a higher entrance fee than Tsh. 20.000, of which two have a fee of Tsh. 50.000. Most WUGs however have fees in the lowest categories, most in the category 0 – 5000. The average of all entrance fees is Tsh. 16.257.

Figure 5.1 Entrance fee for new WUG members in Maswa District, in Tanzanian Shilling*
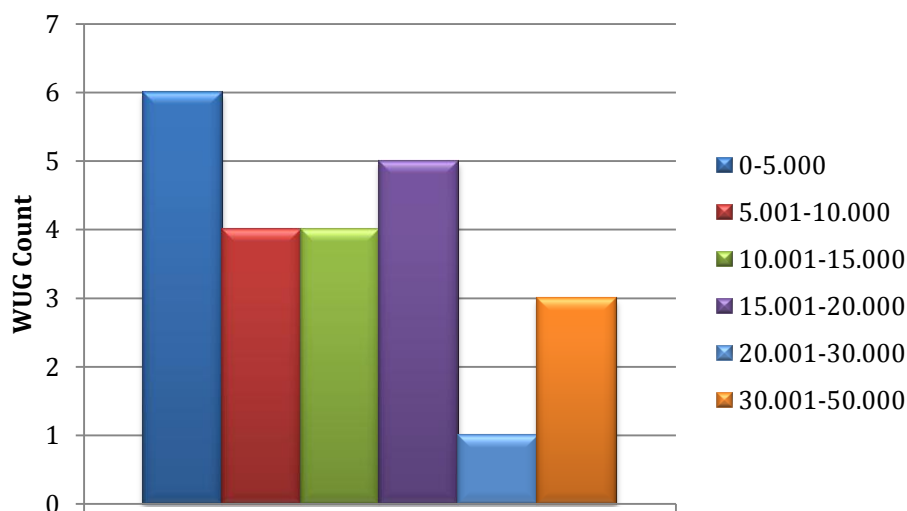
*1 Euro = ± 2000 Tanzanian shilling
According to data from 23 WUGs
Source: Fieldwork 2012

It happens in communities that households cannot become member of a WUG, because they do not have the financial possibilities to pay the entrance fee. It can also happen that they do not want to become member of the WUG. In those cases it is still possible for them to get water at the pump, but most of the time they still have to pay for it, either per month or per bucket. Eight WUGs charge non-members per bucket of water, which is 42% of the WUGs (figure 5.2). The price of the bucket varies from Tsh. 10 per bucket to Tsh. 200 per bucket. Three WUGs charge non-members by distinguishing small and big buckets in which the small one is Tsh. 50 and the big one Tsh. 100. Those three WUGs are all from the same village, which suggests that it is a general agreement there. The WUGs that charge per month charge Tsh. 1000 for one month water. 5 WUGs give water to non-members for free and there are also 4 WUGs where it never happens that people who are no member want to get water at their pump.

5.1.2   Finance needed for repairs

To be able to act upon the consequences of a breakdown when it occurs WUGs should have the financial possibilities to buy spare parts. However, there is no WUG in which the members have to pay an annual fee to get water. When a breakdown happens and there is no or not enough money to repair it that can be a serious threat for the sustainability of the water pump and therewith of the WUG.

An annual or other regular payment can help the WUG saving to ensure there is enough money to repair any future breakdowns. The only income WUGs have is the entrance fee from new members and the charging of non-members. However, that is no steady contribution and since the payment for non-members is relatively low, that is not sufficient to buy spare parts, because those can be really costly. Since the WUGs have the money from the entrances fees, they at least they have the possibility to do some repairs. However on the long term it is not sustainable since there are no large amounts of money coming in anymore, therefore the possibility to save and increase the money becomes harder.

Because of this lack of regular saving, the impression is created that WUGs tend to have no long-term view. It does not happen that WUGs regularly save money beforehand to make sure any future

breakdowns can be repaired. Therefore when it happens that there need to be bought spare parts and there is no money on the account, the money has to be collected among the members. However, that might be too much for the WUG members to pay straight away which can lead to long term non-functionality of the pump.

Figure 5.2 Charging non-WUG-member for water, Maswa District
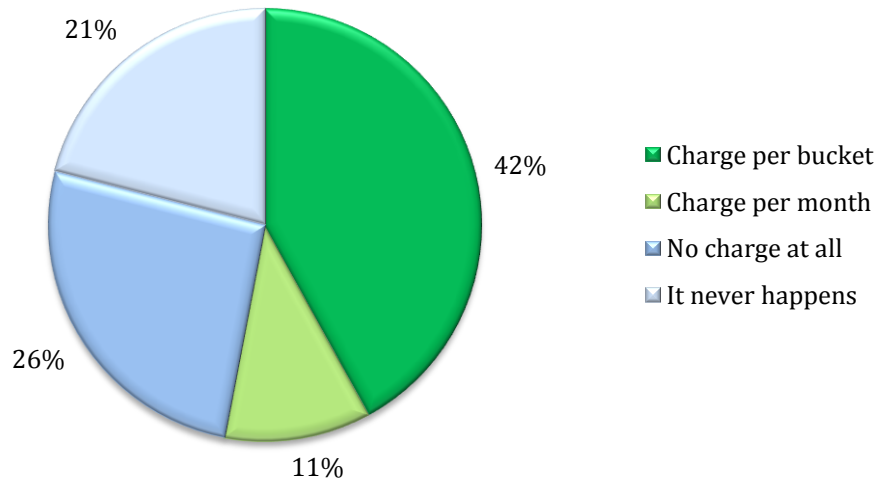
According to data from 19 WUGs
Source: Fieldwork 2012

5.1.3   Bank accounts

There are 338 registered bank accounts of Water User Groups in Maswa who have a total of Tsh. 54.280.000 (Interview 1). This is an average of approximately Tsh. 160.600 per WUG, which is converted about 80 euro. Since there are 889 WUGs in the district, 38% of the WUGs have an account. From the 21

Figure 5.3 Presence and location of WUG bank accounts
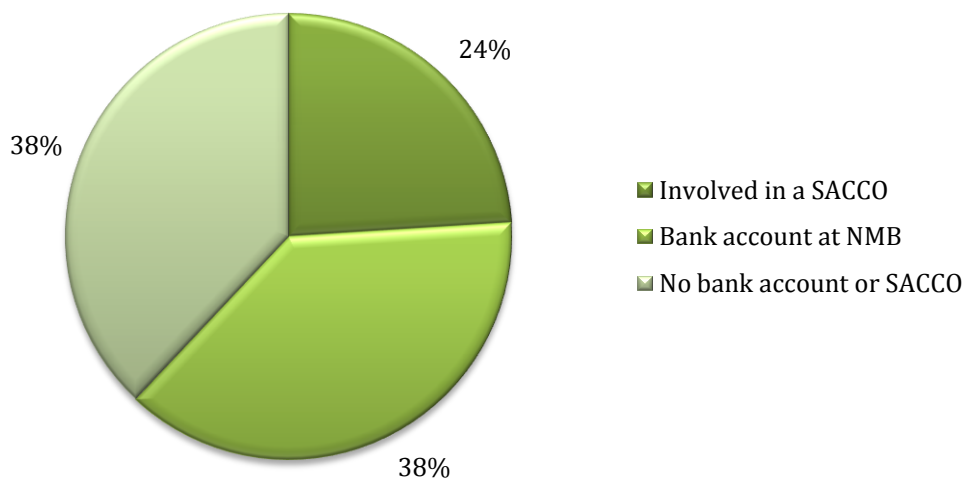
According to data from 21 WUGs
Source: Fieldwork 2012

WUGs that are interviewed during the fieldwork, eight have a bank account, which is also 38% (figure 5.3). The sample of the WUGs used in this study exactly corresponds to the district information of WUGs, which makes the sample plausible. The number tells that more than one third of the WUGs own a bank account, while at least 45% is registered at the District Council (DC). The DC however stated that WUGs have to open a bank account at registration, which apparently not all WUGs have done.

WUGs with a registered bank account have an account at NMB, which can be visited in the centre of the district; Maswa Village. Another option is to be member of a SACCO; a Savings and Credit Co-operative. Five out of 21 WUGs are member of a SACCO. A SACCO is a democratic and member-driven cooperative comparable with a credit union. It is owned, managed and controlled by its members. Members can get loans from the SACCO which they have to pay back with a certain interest. The SACCO is managed within the group itself, in the village.

Eight out of 21 WUGs had no bank account (38%). In those cases the money, if there, is kept in local ways, which comes down to the treasurer keeping it at his or her house. There was also a WUG who used the bank account of the treasurer to keep the money. When WUGs do not have a bank account or a SACCO it can have different reasons. In several cases the WUGs did not have money, so opening a bank account was useless because they had no money to put on it. In another case the WUG did not realize there is the possibility of opening an account, so they did not have the skills to know how to open and manage the account. People without bank account lack access to it. That is not only because of physical inaccessibility of having no money to get there but also social inaccessibility: because they are not well informed or because they did not have the right education to know how to manage and deal with it (this concept of accessibility is explained in the theoretical framework). The other access they lack is affordability, because they have no money to put on an account they have no possibility to own one.

From this information can be concluded that whether or not having a bank account differs between WUGs and villages, and 62% of the investigated WUGs do not have an officially registered bank account. However, among WUGs there exists some confusion about the institution where they have a bank account or SACCO, further explained in Box 2.

5.1.4   Social Security Group SILK

Besides having a bank account or being SACCO member, one other financing system has been found during the research. There is a group, called *Social Security Group SILK*, in which you can put your money to save it. The idea is the same as a SACCO. Many people put their money in the group account and every month someone can get a loan from the money, for example to do business. After that month, the person needs to bring back the money with a certain amount of interest. Because of the interest, people can save their money while it will automatically increase. Of the 23 WUGs, one WUG was using this system. The WUG combined this saving system with a bank account, so when their money in SILK becomes much they take some money from there to put it on their bank account. In that way the WUGs saves and let the money increase at the same time.

5.1.5   Transparency

Within the WUG, the treasurer is responsible for transparency about the money. Most WUGs say that there is transparency within their groups; that the information through meetings is transferred to all members. However, other groups they there is no transparency, in one case only the chair and treasurer knew about the financial matters because they did not communicate it through to all the members. That can have to do with unawareness of the fact that everyone needs to and has the right to know where

the WUG money is, how much it is and what is bought with it. It can also be because there is no attention given to it etcetera. In one WUG it was the case that the members always gave their money to the treasurer. They had no idea where their money was or what was done with it, and they would like to have more information. However, the problem was that they had never asked the treasurer to give them information about the money. Therefore, there was no transparency. It is not only the treasurer's fault of not telling the other members, because it is also important that the WUG members enforce their rights to the treasurer. The WUG-members can ask the treasurer to explain the finances to them. Transparency as a term is one facet of the broader concept of accessibility, which also incorporates accountability. The WUG members in this case lack access to the information that concerns them, because there is no transparency (see section 1.1.1 for more information about accessibility and transparency). If there is a lack of transparency, corruption can happen easily, because the chair, treasurer or other members might say there is no money and at the same time misuse it. However, none of these cases are found during this research.

BOX 2. CONFUSION ABOUT FINANCES

THE CASE OF THE NGO

Among several WUGs, there exists confusion about their bank account. This is because in Maswa District, a non-governmental organization runs a project that includes supporting of WUGs to help them constructing a water pump, as explained in the section about WUG registration. In two of the three wards selected for the fieldwork, that NGO is active in supporting WUGs. In this case, it is important to have an idea of the process of WUG-support that the NGO provides, to understand the confusion that occurs among the WUGs in those wards.

The organization mainly focuses on the construction of water pumps, which can be done once a WUG is formulated. To accomplish that, the NGO supports LGAs motivating the communities and WUG formulating and registering. Once people have grouped together and a WUG has been formulated, they can go to the NGO to ask for support constructing the water pump. There are a few conditions for the WUG that have to be met. Among others, the WUG members need to bring their materials together and put their own effort into digging a hole for the water pump, before the organization comes to construct the pump for them. Besides that, the WUGs need to put Tsh. 160.000 on a bank account, which does not go to the organization or the government: It is for the WUG itself, to make sure future maintenance costs can be paid.

Now the confusion is caused in this formulation phase of the WUG. During interviews with WUGs, four out of 23 mentioned that they are involved in a banking system at that NGO, while according to that organization that is not possible, since the organization does not handle any money issues and has no banking or SACCO system. A possible reason of the WUGs to think their money is at the organization is because that organization has been in close contact with them during the construction months, also by giving them training etc. Their SACCO or bank account, if they have one, is also opened in those months; therefore the WUGs possibly think that is under control of the NGO. This is a large miscommunication, because WUGs argue that they know for sure that their money is at that organization, while it does not have any system like that. However, the WUGs do not exactly know how the banking system of the NGO works. This confusion might be caused by misunderstanding or lack of communication.
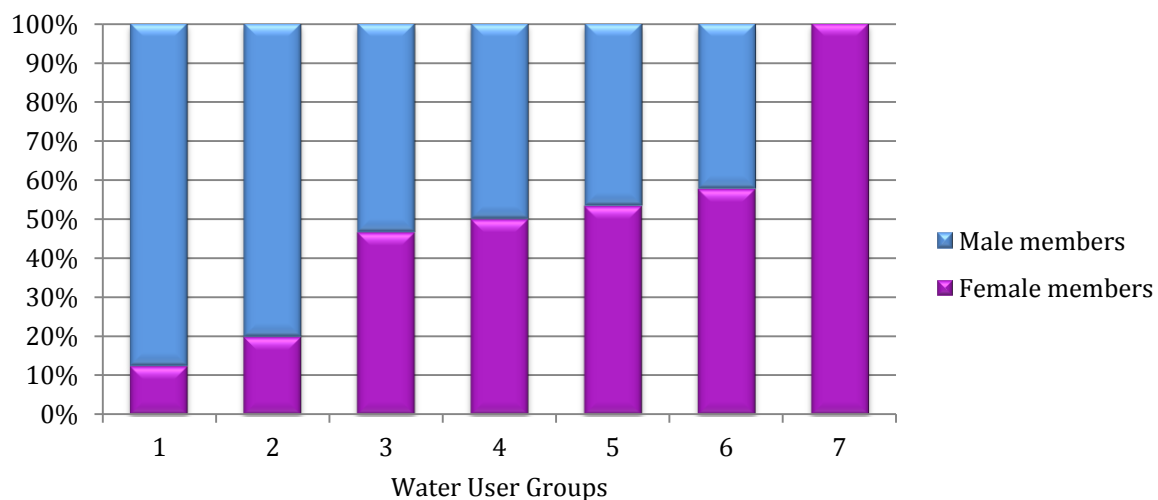
Source: Fieldwork 2012

5.2 Gender in the WUG

The gender aspect in this study is reviewed by looking on different roles of men and women regarding water supply. In all in-depth interviews about gender women indicated that their husbands are head of the household. When asking why, a lady of 31 answered *"Because I am young and I am not able to make the decisions"*. The women said that because the man is in charge, he is also the person that attends the WUG meetings. However, gender in the WUG differs a lot between villages and WUGs. Instead of mainly male members, there are also WUGs who have mostly (or only) female members. In those cases they say that is because women in the household are in charge of the water (e.g. cooking and cleaning) and are therefore involved in the management group. In cases there are mostly men involved, it are still the ladies who are fetching the water. That can possibly cause an imbalance between what is discussed in the WUG meetings and what is really happening at the water pump, since the ladies who fetch the water do not attend the meetings. When indicating this problem at a WUG, they made sure they discussed those things with their wives before attending the meeting.

Another issue on gender is the amount of female members in leading positions in the WUG and the question whether or not they can really raise their voice during meetings. It is hard to investigate whether in WUG meetings women really raise their voice and give their opinion, or if they are just participation in an appropriate and preferred way. Gender interviews gave the impression that gender empowerment in Maswa seemed to be about men allowing their wives to make their own decisions (Box 3). An equal gender division is a difficult term, because the idea of what equality actually is differs among cultures. Therefore women who are obviously not empowered say there is equality, because for them that is normal. Despite the fact that there still is an unequal gender balance because of that rooted cultural habit, there seems to emerge increasing attention for gender balance and women empowerment. The VCP of a village, a man, tells: *"The division between men and women changed. At the moment there has to be equality between men and women. Men can't be inferior, both men and women have to be given equal opportunities. Although there currently is not much equality, it is coming up. In leadership females also get a chance to be in charge"*. The Community Development Officer of Maswa states the same: *"Nowadays women would like to change, but it goes slow. […] It is not given that much priority. That is not only in Maswa, but in the whole of Tanzania, because of culture. The culture of Tanzania marginalized women, to make them feel inferior in the community. That culture is still present, because the gender education is going very slowly. […] In the past more boys than girls went to school, so therefore women feel inferior as well. Nowadays*

Figure 5.4 Gender balance in Water User Groups in Maswa District

Source: Fieldwork 2012

BOX 3. THE ROLE OF MEN AND WOMEN IN RURAL WATER SUPPLY

THE CASE OF BUGARAMA VILLAGE

When problems concerning rural water supply occur and solutions are tried to be found, it is important to include all relevant aspects in society. Therefore in this research the different roles of men and women within the public service delivery are analyzed. By investigating a certain sector, influences of gender may not be underestimated. By looking at the role of men and women in society, understanding about the way in which communities act or decide can increase.

Because of deeply rooted culture in the village of Bugarama, there is a certain division between men and women (location of Bugarama Village is indicated on the map in Appendix 3). Men are most often the head of the household. Fetching water is the job of the women in the households. Julia, mother of three children, tells about her duty to fetch water: *"I have to fetch the water. My husband never has to do that, because I have to do it and if I can't, the kids are there. He can't do it because he is the head of the family"*. When asking why the husband is the leader of the household, Jesca, mother of six children, answers: *"Because that is the system that I have found ever since I was born. My husband paid the bride price for me, in that way he bought me. To some extent I feel inferior to him, because women are bought and men not, so it is not an equal exchange"*.

Also children fetch water in many cases (figure 5.5). In most cases men never fetch water. The amount of time women spend fetching water depends on the place the water pump is located. Sometimes it is located next to their house, but in other cases women have to walk for 15 minutes to the water pump (that is the case in Bugarama, in other villages it is even an hour or more). It also differs if the water pump is functioning, which can depend on the season (when it is rainy season most water pumps are functioning well, while in the dry season it often happens that the well becomes dry, or only a few buckets can be fetched there each day). In case there is no water at the pump, water has to be fetched in the river.

Women in the village do most of the time not take place in decision making positions. That is also visible in the WUGs. Often the men attend the WUG meetings and women only do when their husband is not around. A possible explanation for this inequality between men and women in decision making positions can be fear of the women. The chairperson of Bugarama, who is also the chair of the WUG, explains: *"The ladies in the village have a fear that they can't perform good, they don't believe in themselves. I don't know why, but maybe some of the men don't like to see the women in position of leadership"*. His own wife is the treasurer of the WUG. She tells about her position *"I am happy and I feel good being the treasurer of the Water User Group. I don't have fear, but I understand that some women do. I have no fear because my husband has permitted me to do this. If my husband would not permit it I would stop it. I'm happy that he permits me to do it"*. Empowerment in Bugarama therefore seems in the first place to be about men allowing their wives to make their own decisions. Because of habits that are deeply rooted within the culture, men have the final say within the household.

That is also the case for education. Men expect women not to be higher educated than themselves. The chairperson tells *"If you, as a women, are educated and have a job, then men here would run away from marrying you, because you know so much. If you would pretend to know nothing, then you would get married very easily"*. Overall regarding water supply in Bugarama it seems that women are more involved in fetching the water while men are more involved in the WUG meetings and decision making.

Source: Fieldwork 2012

that is still unequal, but there is already a difference between the past and now. Nowadays there are already both men and women in the head of communities, so women already developed to get leading roles" (Interview 32 & 35). According to these two people women empowerment is an upcoming, changing aspect in Maswa.

It is difficult investigating gender balance in a WUG by looking at the amount of male and female members. That is caused by the fact that not all WUGs have a set membership. In some WUGs it differs per meeting which household member attends. It happens that a man always attends the meeting, but if he is not available, his wife goes to the meetings. In that way, it cannot be said how many man and how many women attend the meetings. However, this is not the case for all WUGs; there are also groups where membership is specified to one person. There is data from seven WUGs with a set amount of male and female members (figure 5.4). It differs a lot between groups if there are more male or female members. In two cases less than 20% of the members are female, four groups are approaching a fifty-fifty division of gender and one WUG consists entirely out of female members. This broad variety indicates that there is no overall statement to make about gender in WUGs. The average within the studied WUGs is 49% female members per group, which indicates a gender balance. When look at the amount of male against female member in the WUGs, it could be stated that there is a gender balance in WUG-membership in Maswa. However, as stated above, this does not say anything about their ability to reach their voice and be in leading positions.

Figure 5.5 Children fetching water in Bugarama

Source: Fieldwork 2012

5.3   Relations between actors

5.3.1   *Support and advice to WUGs*

To ensure sustainability of a WUG, continuing support of Local Government Authorities (LGAs) is of great importance, as is stated in the sustainable management theory in chapter one, which will be further analyzed in the next chapter. When WUGs have serious problem with the water pump, an extra WUG meeting can be held (apart from the monthly meeting most WUGs normally have). The WUG members together can decide how to solve the problem. If it is a difficult problem, a technician has to be found, because WUGs usually do not have a technician in their group. If there is another problem and they need advice or they need to find a technician, the WUGs need to be able to find support from LGAs. WUGs who have faced problems with their pumps in the past, indicate that they in the first place go to the Village Executive Officer (VEO). One representative, normally the chair, is sent to ask

for help. The VEO can give the WUG advice or assist the WUGs in finding the right person to solve the problem, for example a technician or the person who knows where to buy a certain spare part (there is usually no technician in the WUG). If the VEO for any reason cannot help the WUG, he or she should present the problem to the Ward Executive Officer (WEO), who will try to solve it. The WEO helps solving the problem or directs the WUG to the facilitation the problem concerns. A few WUGs, who were supported by an NGO during the construction of their pump, indicate they prefer to go to that organization if they need advice or help. As is indicated in the part about the District Water Department (DWD) in the previous chapter, WUGs can also attend the DWD if they have any problems or questions or if they are in need of assistance. The DWD will assist and advice them. However, none of the WUGs involved in this study have ever asked the DWD for advice or to be visited.

Some WUGs receive medicine to treat the water against animals and insects and minerals that infect the water. The water then is treated while it is still in the pump, so that all the water that comes out is safe. However, there are also WUGs who indicate that they received that medicine only once, while is has to be added regularly. When speaking to a VEO it appeared that the VEO can play an important role in asking for medicine for the pumps in the village. That specific VEO had in the two years as a VEO in that village never received medicine for the water or education about how to handle the water. However, the VEO also never asked for medicine to the WEO or the DWD. It is clear that here also the two-way interaction of WUGs and LGA is important, because the WUGs have to ask the VEO for new medicine, because otherwise the VEO might forget it or think about it as not important. And the VEO need to ask higher authority levels to bring it to their village. However, it is not sure if WUGs put effort into getting medicine to treat their water, which they should to prevent the spread of infections and diseases, because otherwise the water is not safe.

Some WUGs also receive information from the LGA; they are for example instructed on how to keep the water pump clean. It varies a lot between WUGs if they are visited by any LGA or the DWD, if they receive medicine to treat the water, if they receive education, if they are visited at all or if the LGA attends their meetings. It has not become clear what determines this difference.

There is a tendency among WUGs that if nothing went wrong with the pump yet they have no idea where they should go when something does go wrong. When suggesting to a WUG that it might be useful to think before-hand about how to anticipate on a problem when it happens, the interviewee answered that it would be a good idea but that most likely they will discuss the matter only when it happens. Again, just as with the lack of long-term vision in the financing of a WUG, there seems to be no thinking about what might happen in the future. When WUGs have to start thinking about how to solve problems when they already occurred, it can cost a lot of time, which can threaten the sustainability.

5.3.2   *Relations*
When asking WUGs about their relationship with LGAs and the DWD and about if they feel supported, answers vary from negative to positive. Overall there seems a tendency of lack of knowledge among WUGs. Either they do not know they can ask for support, they never thought about it or they do not feel the need to do it. However, most of the time when asking if they would like to be visited more often they indicate that they would prefer that, but never ask for it. An overall impression of relations between different actors is given here.

A WUG with a strong opinion tells they do not feel supported by the LGA and the DWD. The support they receive is the medicine to treat the water, but they indicate that they also would like the LGA to

visit their group to have a conversation and discuss how the group is doing. They indicate that such a meeting would be useful, because they could get advice how to deal with certain issues, for example the water scarcity during dry season. However, they never had the idea of letting the LGA and DC know they want to be visited, by for example calling or writing a letter. This is the same problem with another WUG. The secretary indicates that he would like the DWD to provide more aid to them. However, he never asked that from them. He admits that in their WUG there is no good communication with the local government (on all levels; VEO, WEO, and DWD). He indicates that h understands that it is important to tell the LGA what their WUG wants (by enforcing their rights at the LGA) because otherwise they keep on blaming the government for not helping, without having asked anything from them yet. He states that they can only start blaming the government for not helping after having asked for help and possibly being ignored. However, it also happened to one WUG that they were promised a water pump would be build for them by the government when they put money on their bank account. Although they did, they waited already for two years for the government.

Overall it appeared that a cause of problems is the lack of communication between the WUGs, LGAs and the DWD. WUGs would like to be visited by LGAs or the DWE, to receive medicine, talk about their development or ask for advice on how to solve problems or how to improve. One WUG indicated it would like to be visited because they want to show the DC how they cope with development: *"Yes, we would like to be visited more often by any LGA. What we as WUGs do is development. We want the leader to see how the village members are taking part in development."* Another WUG said that they want to get advice on how to get their development to the next level and they want to feel included in the process of development. It appeared that the WUGs do not know or realize that they can ask the DWD to visit them. Most of the WUGs do not know that it is possible to write a letter, call or attend the office to ask for advice or support or give an invitation to visit their WUG. Because the WUGs do not know they can ask for a visit, the DWD does not know the WUGs want to be visited. It can cause unjustified frustration among the communities about the district government. Lack of communication causes this problem that can be prevented by well-informed WEOs and VEOs who pass through the information to the WUGs (figure 5.6). Furthermore it can change the attitude of WUGs towards LGAs, according to a WUG who says their perspective would change if they would be visited more often; they would feel supported and would continue on developing.

Figure 5.6 Main aspects of relations between actors in rural water supply
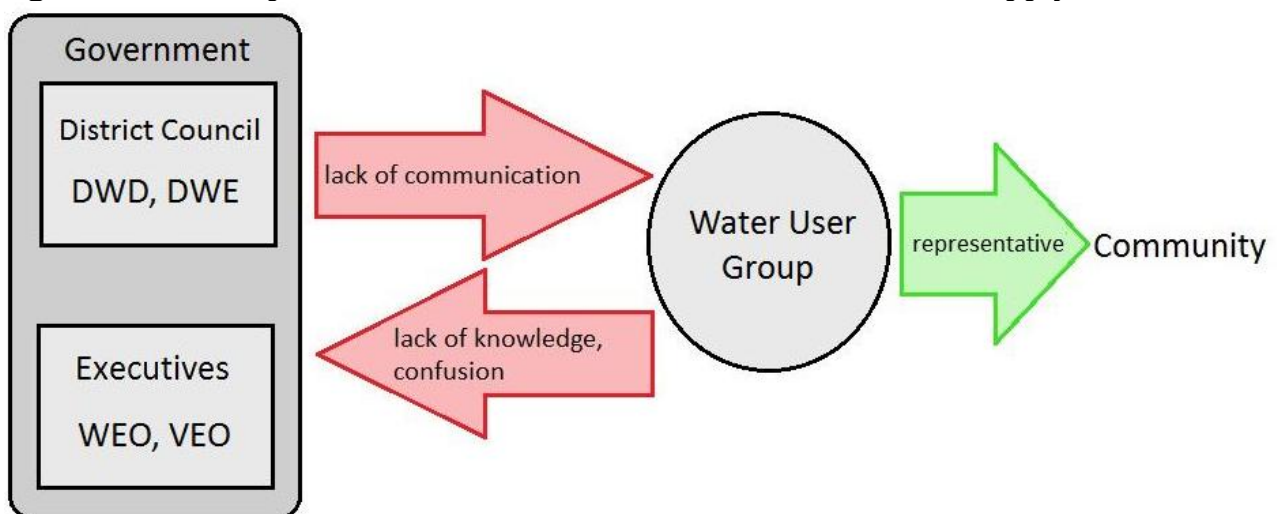
Source: Fieldwork 2012

One WUG blames the government for not helping them and indicates the members suffer from an accountability issue. They need governmental assistance by the building of their water pumps, because

they have not the rights machinery to build on the rocks in the soil of their village (Box 1). They do not feel supported by the government and blame them for not knowing their responsibilities and not helping them: *"If the whole system of the government will change then we would have leaders that know their responsibilities and we need laws that are enforceable and a government that at least takes care of its population. At the moment […] it feels like we cannot enforce our rights"*.

There are also WUGs who do feel supported by LGAs. A WUG indicated being pleased by the education about the pumps they received from LGA. Since there is a difference between levels of development of the rural water supply sector between wards, in one ward WUGs might be better functioning than in other wards. This WUG tells: *"I feel supported for the information on how to formulate groups, given by the LGA. We are also supported with engineers. The councilor assists us and presents problems to the DC"*.

Overall it can be stated that there is a lack of communication from the DC and LGA to the WUGs and there is lack of knowledge and confusion among the WUGs (figure 5.6). This situation is by the actors not indicated as a direct problem. However, probably without them knowing, by improving this relationship progress can be made towards sustainable rural water supply and motivated, responsible community ownership. About the relation between WUGs and the community, not much can be said, since the members of the community who are not attending the WUG-meetings are not interviewed in this research. However, since WUGs consist out of one person from every household, it can be stated that the WUG members are representative of the population.

5.4   Conclusion

A main problem preventing WUGs from proper functionality and sustainability is the lack of accessibility, for example to financing systems. Inaccessibility can be threatening for the existence of the WUG, because in case there is a breakdown and there is not enough money for repairs or the members do not know where to find spare parts, in the worst case the pump can get abandoned. Furthermore, lack of long-term vision seems so be common among WUGs, which manifests itself in the absence of annual fund raising and lack of plans on what to do when a breakdown occurs. It happens that repairs that take a long time jeopardize the sense of ownership and responsibility.

Actors from all different legislative levels within the district are involved in rural water supply. The most important actors for good functionality of the WUGs are the LGAs and the DWD. Confusion and unawareness occurs in the communication between WUGs and those actors, which can threaten the sustainability of the WUGs and their confidence in the local and district government. Informed consent is needed which makes communities well informed and able to enforce their rights at the government. The next chapter expands upon that accountability relationship and analyzes the entire community management situation by linking it up with the theory and coming up with improvements.

6 Towards improvement oriented interventions

This chapter discusses improvements that can be made in the management system to increase the functionality rate of water pumps in Maswa District. It answers the remaining two sub questions of the study by first indicating the situation regarding accountability in rural water supply in Maswa, which is used as a starting point in the subsequent indication of how improvements can be made (sub question five) and implemented (sub question six). Those improvements are ways to remove the main obstacles that bar the way towards increased functionality and sustainability.

6.1 Water User Groups: worked out as planned?

In this study is made clear how WUGs in Maswa exactly function. By looking at the way in which WUGs were originally intended, as indicated in the study of SKAT (2001), a comparison can be made to find out if the management system has worked out as planned and if the goal is reached: sustainable community management of rural water facilities. Currently more than ten years after the starting phase of the WUG system, there can be looked at the way that the WUGs were intended and the way they turned out to be functioning in Maswa. The in the study of SKAT (2001) indicated way the WUGs should be going to look like and the requirements that were set were indicated in section 1.4.1 and will be repeated shortly through the text while comparing it to the encountered situation in Maswa.

The overall idea of how the WUG system had to look like is present in Maswa District. The system meets the set expectations since WUGs consists out of groups of individuals, representatives from households that are voluntarily joined to participate in improvement and maintenance of their water pump. As was intended, the government of Maswa gave the WUGs recognition and legal rights to own their own water supply. This system, unique at the time of implementation, is still present in Maswa. In Maswa, it appears to be a system in which the functioning WUGs really act according to their duties and responsibilities and therefore it can be said that they feel a certain sense of ownership over their pump. The idea was that this sense of ownership will make the WUG-members motivated to take care of their property. That theory is true, at least for the WUGs investigated during the fieldwork, since it seemed that because the groups constructed the pump themselves and contributed to that, they seem to feel involved, since what happens to the pump affects their water collection while they have paid for it themselves. During speaking to a WUG which elaborated more on the formulation and construction period of their existence, it appeared that the construction phase of finding a group and motivating each other to take part and help constructing the pump seemed really important for the WUG. That phase already helps a WUG to connect and group and that social cohesion can contribute to sustainability of the WUG

Another goal of the WUG system was assuring the WUG-members of easy access to clean and safe water. WUG members in Maswa have access to an improved source certainly is the case: once a household is member of the group, it can get free water and is assured of access as long as the pump is functioning. However, among the investigated WUGs it turned out that they do not regularly receive medicine from the government to treat the water (an issue that will be discussed later this chapter). Regardless of the cause thereof, it makes the water not durable clean and safe, and as indicated in the regional framework of the district, groundwater in Maswa in some places contains unhealthy amounts of minerals. Besides, 62% percent of the investigated WUGs in Maswa get affected by the dry season since their pump gets dry (see figure 4.1). That causes WUG members fetching their water at other, unimproved sources during dry season. Therefore it cannot be stated that WUG-members in Maswa

are always ensured of easy access to clean and safe water, which however is not a result of the (mal-) functioning of the WUG or the pump.

By looking at the outcomes of the WUG system after more than ten years of implementation there can also be focused more on the responsibilities of different actors, since the study of SKAT (2001) gave a clear description of the tasks and duties per actor (partly included in section 1.4.1. of chapter one). By comparing that to the situation that was encountered during the fieldwork there can be seen how actors perform their roles. Because the entire description of responsibilities was quite extensive, only some important ones are highlighted here.

District Government

Comparing the roles of the District Government that have been found during the fieldwork to their intended roles (SKAT 2001), there are some striking features. It is the role of the government at district level to implement the national water policies. A new water policy has been implemented by the government in 2002, which announced the introduction of community based water management groups. Those groups are present in the district, so in that regard the District Government implemented the national policy. However, the new management system of COWSOs that are introduced and explained in the Water Supply and Sanitation Act 2009 (see section 2.5.2) are not yet implemented in the district. At the moment the COWSO system in Maswa is going to be implemented. At district level decisions are being made about how the format is going to look like. However, since it currently is four years after launching the national policy and the district still has no COWSOs, it can be stated that there is a large delay of implementation of this policy between the national and district level in the case of Maswa.

Furthermore mentioned in the study is the advice the District Government ought to give on gender balance in the leading positions of WUGs. This advice turned out to be effectively given by the DWD, as they explained during an interview (interview 1). Monitoring and evaluation of water activities seems to be done in the district as well, since most up to date information is from the water census from 2012, which is very up to date, and every ward indicated the amount of water points they still need to be able to have sufficient water supply for their entire population. For example a ward with 31 functioning and 17 non-functioning wells indicated that they are still in need of 90 wells. Altogether, the amount of missing wells in the district is stated at 1795, which is two and a half times as much as the current amount of functioning pumps in the district.

LGA

By having a look at the intended roles of the LGAs (SKAT 2001) comparing to the situation in Maswa, it can be said that overall they fulfill their functions. Their duties are mainly to promote improvement of water services in their ward/village and motivate and mobilize the community. In chapter 4.2.2 already appeared that the LGAs among which data is collected were often included in this process of motivation and mobilizing, which expresses itself in meetings to motivate the community and offering help and support if WUGs have problems. Except that the WUGs indicate that they would like to be visited more often by LGA, there are no specific faults or shortcomings in the fulfilling of the responsibilities of the LGAs in Maswa.

WUG

The study of SKAT (2001) wrote down the many roles and responsibilities that apply to WUGs. Overall, the WUGs in Maswa seem to correspond to the picture of what a WUG needed to look like. However, there are some aspects that do not match the overall WUG framework. For example the indicated WUG-size of 25 to 50 households (which is equal to the amount of members) per WUG does not

correspond to the findings in Maswa. The amount of households per group in Maswa varies enormously (figure 4.4), with 30% of the WUGs having less than 20 members and 13% even more than 60 members. There is no clear agreement district-wide how many members there should be per WUG. However, large amounts of members in one WUG can logically have to do with the severe lack of water pumps in the district, as explained earlier this chapter. Furthermore, the WUG members should not be living more than 400 meters from the pump, which in Maswa is certainly not the case, which has to do with the lack of pumps and the scattered way in which the households are spread over the area. However, this cannot be blamed to the functionality of the WUGs, since there is just an overall lack of pumps. Another aspect is that the WUGs should register at the DC which at least two out of 20 investigated WUGs in Maswa did not do, and some confusion was created about another eight who thought they were officially registered at an NGO. Furthermore, not all WUGs have a committee, of which the importance was clearly stated in the study of SKAT (2001). However in those WUGs, the tasks that should be carried out by the committee are fulfilled by the entire group, like construction, participation and cleaning. Also, there was indicated that the WUG members must feel they want an improved water source and although the WUGs in Maswa build the pump themselves, it sometimes seems that a breakdown can easily result into the former custom of getting water at an unimproved source, which for most researched WUGs is a river. Besides, dried pumps during dry season do naturally not give the WUG members a possibility to really give weight and importance to the use of only improved water sources.

It turns out that many roles and responsibilities of the WUG system in Maswa District correspond to the system that was formulated and created more than ten years ago which was the main basis of the system implemented in Maswa. The overall duties of the different actors are adopted in Maswa and therefore it can be said that it worked out as planned, apart from several details regarding the characteristics of a WUG.

However, looking at the benefits that the system should have brought to the water supply sector in the district, ten years after implementations some remarks can be made. The WUG-system aimed to be a model for sustainable community management of rural water facilities. To indicate the impact that the WUG system has made to sustainability of water supply in Maswa, there can be looked at the water point functionality, since increased functionality and sustainable water supply is the ultimate aim of the management groups. However, although recent years the amount of water points increased enormously (375 new pumps over the last four years), there has been only little increase in relative functionality in the period 2008 – 2012 (namely 5%, mentioned table 4.1). Still one quarter of all the water points in the district is not functional and the policy requirement that one water point must serve 250 people at maximum is still far from succeeded. After ten years it seems that the system must have been able to show its success but overall the idea that the system would considerably increase functionality and sustainability did not work out for Maswa yet. Also what was assumed from the WUG-system beforehand was the idea that the legal status can make WUGs aware of the consequences of failure and it makes a true commitment to the obligation of managing their facilities. However, that is not that visible in the field yet, since there are still cases of abandoned water pumps and WUGs that fell apart.

A positive aspect that is that the system is fully integrated, accepted and implemented, and maybe that already is a great progress achieved in a little more than ten years, since the community management after all is an entirely new system to the population of Tanzania. It was not without reason that the study in 2001 mentioned that the WUG concept requires to be: *further nurtured, strengthened and supported in order to be firmly institutionalized in the communities* (SKAT 2001, p. 9.) Although already

indicated by the 2001 study, those expectations for the development of the community management system might still need prior attention to be sure functionality is increased in a sustainable manner.

6.1.1   Management and functionality chain of WUGs in Maswa

Having presented all the important information of the functioning of WUGs in Maswa, a short assessment can be made of the sustainability of the management and functionality of the community management system in Maswa, using the sustainable management theory explained in chapter one, section 1.4.2 (Carter et al. 1999). Four essential components of sustainable community management are mentioned in that theory: motivation, maintenance, cost recovery and continuing support: one link missing immediately endangers the functionality and sustainability of the entire management.

Looking at the motivation aspect it can be said that that is working well among the WUGs in Maswa. Although motivation does not often come from the community itself, LGAs contribute in motivating the communities and after formulation they are committed to their duties. An indicated obstacle for motivation of a community was the fact that the communities need to pay for the water themselves, but that has not been brought up as a negative aspect by any of the WUGs among which data is collected. The population in Maswa has accepted that and the payment therefore does not seem to threaten sustainability.

About the second point, maintenance, the WUGs in Maswa are clearly structured, although there sometimes is absence of the separate committees. Furthermore, the members of the groups are often not trained. That causes that when a breakdown occurs, the WUG has to get assistance from a technician. This decreases the independency of the WUG, but since many WUGs in the research never had any issues with their pump yet, it is not clear to what extent the lack of a technician within the group decreases the sustainability.

The third aspect, cost recovery, seems a more difficult aspect in the district. Sustainability of a WUG is highly dependent on the finances that they have, because WUGs should be able to afford the management of their pump. The cheaper costs are the reason why most WUGs own a shallow instead of a deep well, which caters for less people and is more shallow so more likely to get dry the dry season. Unfortunately the revenue collection of WUGs in Maswa is not sustainable. All WUGs in Maswa only receive money when a new member joins because of the entrance fee. Some also charge non-members for water. Further, money is only collected among members when there is a breakdown, which can be unaffordable for some at such a short notice. That is a negative aspect and can threaten the functionality of the WUG. A positive aspect is the fact that it does not seem that community members are priced out of the opportunity to access improved drinking water sources, since there is a large variety in entrances fees in Maswa. However, there are still large parts of the population in Maswa no member of a WUG, due to reasons like lack of pumps and WUGs and lack of physical access to the pump. There is no relative payment for WUG-members in Maswa, which ideally would charge rich people more than poor people. However, all groups indicate that they would provide free water to people who are too poor to afford it.

Then there is the last link of the chain: continuing support. As was explained in Carter et al. (1999), community enthusiasm can fade away within two or three years after implementation. Although a part of the WUGs in this research have not been implemented for two years yet (30.4 %, table 6.1), many WUGs among which data is collected already exist longer than two years and 43.4% even longer than seven years. That indicates some form of sustainability already among the investigated WUGs. Even

though it proves that WUGs can function for a longer period, continuing support is needed and some WUGs indicate that that is not always received. However, apart from being visited, the ability to count upon external factors like LGA or a NGOs is essential in times of a breakdown, because then only those institutions can assist the WUG and make sure they are maintained. As is indicated in Carter et al. (1999) short term projects have a larger chance of failure.

Table 6.1 Construction year of WUGs in Maswa

WUG construction year	# WUGs	%
1995-2000	5	21.7
2001-2005	5	21.7
2006-2010	6	26.1
2011-2012	7	30.4
Total	23	100

Source: Data collection during fieldwork

Overall, according to the theory, there still needs to be worked on the functioning of the WUGs to ensure a higher level of sustainability. Two of the four links from the management and sustainability chain in Maswa (figure 6.1) function quite well: motivation and maintenance, however with the remark that the WUGs in Maswa are not able to repair their pumps in case of a severe breakdown, since they do not contain technicians. The main weaknesses in Maswa seem to lie in the cost recovery and continuing support links, two aspects that cannot be measured that easy. The cost recovery is not an immediate problem among the WUGs, but since there is no regular payment for WUG-members, there is decreased chance of sustainability in case of a breakdown. Continuing support in Maswa seems to be good at LGA level, but WUGs are not always satisfied with their interaction with the LGA in the same way as LGA are not always satisfied with their interaction with the DC. However, because the answers among WUGs vary very much, it is impossible to define a general outcome of the support to WUGs.

Figure 6.1 Management and sustainability chain
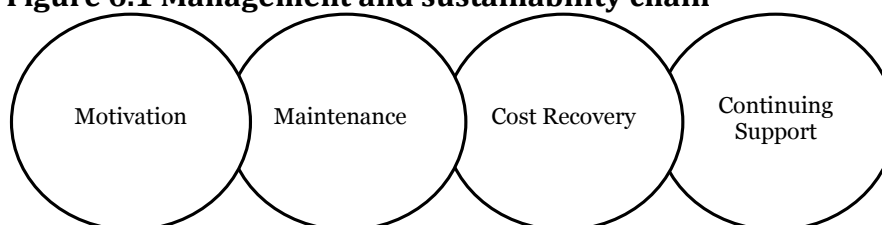
Source: The Sustainability Chain, Carter et al. 1999, edited.

6.2   Accountability rural water supply

Accountability in the rural water supply sector in Maswa is reviewed here. Accountability can be found everywhere in society, but the focus here lies on the accountability relation between WUGs, LGA and the DC. The situation in the district is explained referring to the accountability model of Bill Tod (figure 1.2.). Although all aspects mentioned in his model are relevant within an accountability relation, two are highlighted: the informing and enforceability aspects between the right holders and the duty bearers. Those links appear to have the most relevance for the situation in Maswa looking at community participation because most information found can be applied to those two links in the accountability process.

As explained in chapter five, from the study among WUGs appeared that the main problems in the relationship between the WUG and the LGA & DC lie within the accountability relationship of informing and enforcing. The LGA and DC from Maswa fail in informing the WUGs sufficiently, while informing is of great importance to decrease the lack of knowledge and confusion that currently arises because information dissemination fails in the district. Overall problem is that the close link of the district government to the community is lacking, a conclusion that has also been found in the study of Verhoeven (2008) towards accountability in the water supply sector in Maswa. The explanation for the absence of a close link to the community according to that study is that the DC has sufficient capacity in manpower and knowledge to perform their duties, but that capacity is underutilized due to lack of resources. There are for example not enough vehicles available to do the field visits. So the DC fails in sufficiently performing their informing task to the communities. In turn, the enforcement of the rights of the WUGs fails; mainly because the WUGs do not know what their rights exactly are or that they have a possibility to enforce those rights. This is a logical consequence of the lack of information. The absence of a signed WoU among WUGs contributes further towards this lack of basis for accountability. Clarity needs to be provided about for example the provision of medicine to threat the water in the pumps to make it safe. Currently WUGs do not know if they have to ask for it and there is uncertainty about if the VEO if has to arrange it or if the DC brings it themselves. Besides that, WUGs can visit the DC to ask for assistance, but in practice only few WUGs know that and most of the WUGs never thought of the possibility. In her study, Verhoeven (2008) found out that only WUGs or villages that asked the DC are monitored. However, in practice it is not possible for the DC to visit all villages that ask for assistance. Therefore it appeared that the DWST only visits 12 out of 104 villages[12] in Maswa per year. That also indicates a failure in performance of the duty bearer (figure 1.2). What was already found in this research, and also indicated by Verhoeven is that the civil society in Maswa is too weak to be able to fulfill its regulating and monitoring function.

Overall, the roles of different actors in rural water supply in Maswa need to be clarified more clearly. The accountability relationship between WUG and the DC currently is weak. That poor accountability situation of Maswa has already been encountered by Verhoeven in 2008 and in this study again: there is weak accountability in Maswa because there is lack of sufficient spread of information by the governmental authorities and lack of access to that information which causes unawareness about rights and responsibilities among the WUGs and communities.

6.3 Improvements to increase functionality

Currently more than ten years after implementation in Maswa, there are many issues that still need improvement. Still one quarter of all the water points in the district is not functional. Instead of building new ones, there could be made so much progress by improving the sustainability of the existing pumps. But the question is how to improve the functionality and sustainability. Therefore, this part of the study indicates improvements that can be made to increase the functionality and sustainability of the current WUG-system. First the improvements are mentioned and clarified and thereafter the specific steps that need to be undertaken are explained.

6.3.1 Changes to make to improve functionality

As came out of the assessment of the management and sustainability chain about the current water supply community management system in Maswa, most important is that improvements are made regarding cost recovery and continuing support. Five issues are mentioned here that are changes that

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[12] This is information from 2008. Currently there are 118 villages in the district.

can improve the operational and financial functionality and sustainability of the rural water management (sub-question five).

1. **Long-term vision among WUGs needs to increase**

The lack of long-term vision among WUGs appeared to be a severe threat for the functionality, since WUGs do not think about possible solutions for a problem before it occurs. Only starting to think about a problem when it already has occurred can bring WUGs into a challenging situation, since they have to start finding out where they can find help, spare parts, a technician and money for repairs all after it occurred. It can work, but when it takes to long WUG motivation decreases and a pump can get abandoned. Therefore, making WUG-members think ahead and make a plan about what to do when there is a problem decreases the chance of the breakup of a WUG and therefore increases the functionality and sustainability.

2. **WUGs need to be able to finance severe breakdowns**

This point is in line with the previous one of increasing WUG's long-term vision. The fact is that WUGs can get into trouble if a severe breakdown occurs and they need to buy spare parts. This is because the only income of a WUG comes from the new members' entrance fee and non-members that are charged for water. However that is no regular steady income, so WUGs do often not have the chance to save money. To decrease the chance that WUGs cannot afford the spare parts or service costs when a breakdown occurs, they need to have the financial possibilities to finance that.

3. **LGAs need to be closer involved in the operation of a WUG**

Since the current water supply system asks for LGA assistance to WUGs, closer involvement of LGAs can contribute to faster and better acting upon problems, a more motivated community and WUGs who want to contribute to the development of their village or ward.

4. **Sense of urge among the population to the use of safe drinking water needs to increase**

Functionality of the water delivery system can be increased if the population would have a stronger sense of urge towards using the sources that provide safe drinking water. In an interview during the fieldwork it already appeared that using a well is chosen over the use of an unimproved water source, because it is safer. However, when a well gets dry or breaks and an entire population would have a strong feeling of aversion towards using unimproved sources instead, the process of reparation would speed up and the motivation of the WUG-members to repair their pump would increase. It prevents people from getting back to their former habit of getting water at an (unimproved) water source and feeling alright about that.

5. **Accountability relation needs to be strengthened**

As is explained in section 6.2, there need to be made improvements in the accountability relation between the WUGs (right holders) and LGA & DC (duty bearers) in the water supply sector. By strengthening the relationship with a focus on increasing informing and enforcing, confusion can be removed and a true and complete picture will be created of rights and responsibilities of both groups and how they relate to each other so both parties know where they stand.

6.3.2 *Steps to undertake for implementation of improvements*

The above mentioned changes can bring increased functionality of the water supply sector in Maswa. The question however is how these improvements can be implemented (sub-question six). The more practical steps that need to be undertaken to ensure that the improvements can be achieved are explained here.

1. **Long-term vision among WUGs needs to increase**
   a. WUGs can be trained about the importance of thinking and planning ahead. Trainings can be given by LGA, DC, an NGO or a local organization.
   b. LGA should make sure they spread information that they get. WUGs need to be informed about the fact that they need to think ahead.
   c. To make sure that information is spread and make WUGs plan and think ahead shared WUG meetings can be held. That is because when a training happens always follow-up training is needed to ensure sustainability and make sure the training does not only work for the following two or three years. If WUGs have meetings altogether they can spread their knowledge to each other. The idea is that WUGs will be motivated by each other to think ahead.

2. **WUGs need to be able to finance severe breakdowns**
   a. The revenue collection system needs to be changed. WUGs need to collect money among all members on regular basis, for example annually, to make sure there is money to repair future breakdowns. Also it enables WUGs to save and possibly build new pumps in the future.
   b. All WUGs should be obliged to have a bank account, including someone who know how it all works and has access to their money. The regular saving enables the WUG to not forget their account and the regular income might increase their motivation to save.
   c. The treasurer should keep a cash book, know exactly how much money there is and know how to save and access the money. When transparency increases members might see the possibilities that saving offers their WUG.
   d. Transparency needs to be ensured by the treasurer informing the entire WUG about the amount of money and what is done with it during the monthly meeting.
   e. WUGs need to be informed and, if needed, educated by the LGAs or DC about those changes.

3. **LGA need to be closer involved in the operation of a WUG**
   a. Regular, good controlled and structured monitoring and evaluation of the community management system can help the DC to keep on track with the district situation
   b. The DC should inform the LGAs about that situation and about their roles and responsibilities towards WUGs to stimulate continuous development. Councilor should be made aware of their duties and responsibilities and there needs to be ensured that LGAs properly carry out their job.
   c. LGA training on their roles towards WUGs combined with regular visits of LGA to all WUGs can increase functionality, commitment and a feeling of connecting. WUGs might feel more involved in the bigger picture and get an indication of the importance of their activities, which can make them more motivated.
   d. A yearly assessment of the WUGs can show if WUGs are still functioning, and in case not it can be found out why not. If the exact reason can be indicated that problem can be tackled, because apparently that endangers the sustainability of the WUGs in Maswa.
   e. VEO and WEO need to have regular interaction to ensure information is passed from district level to village level.

4. **Awareness on the urge of using safe drinking water needs to increase among the population**
   a. Educate the population on health and hygiene so they get to know the importance of sustainable access to improved sources. They need to learn about the dangers of using

unimproved sources and build up the desire to use improved sources. That might prevent them from fetching water at unimproved sources, for example if that is closer, which they might see as advantage (see *affordability* in section 1.1.1, chapter one), but appears to be a big health-risk. The education will also increase their motivation to use improved water sources. That information might spread among the population and people who are still using water from an unimproved source might become motivated to form a WUG themselves, which increases functionality of the pumps.

5. **Accountability relation needs to be strengthened**
   a. Communication between all actors in rural water supply needs to increase. WUG can do regular (e.g. annual) reporting to the LGAs who can write an overall report for the DC. DCs can give regular (e.g. annual) instructions to the LGAs about the situation in the district and relevant topics. The DC might also write a letter to VEOs or all WUGs about the possibility for them to ask the LGAs and DWD for a visit, about that they have to ask for medicine and they have to register and open a bank account. That can also contain information given above about the new revenue collecting system etc.

Overall, there is also a switch needed from the preference of the DC to construct new water points rather than focusing on the sustainability of the already existing points by improving and increasing training.

6.4 Conclusion

The WUG system in Maswa has partially worked out as planned. The overall system is implemented as intended but the main benefits that the system had to bring, which are increased functionality and access to safe water for a larger part of the population, are not yet achieved. Large problems, such as lack of long-term vision and weak accountability are still hampering the functionality and sustainability of the WUGs. However, feasible improvements, such as increased communication and follow-up training, can enable progress in the system.

Conclusion

This study has been reviewing community based groups managing their own water pumps in rural areas of Maswa District, Tanzania. Both theoretical and empirical information is provided in this study and the two can be combined to answer the research question:

What are the characteristics of the various types of community owned rural water supply management systems in Maswa District and what can be done to improve the functionality of those systems?

The idea behind indicating the characteristics of the system is that it gives an overview of what the situation looks like, which enables the formulation of improvements. Therefore the aim of the research was to obtain a clear and complete picture of the different types of community owned rural water supply management systems in Maswa. By analyzing the strengths and weaknesses, improvements for the operational and financial functionality and sustainability of those systems could be provided. This conclusion will first state the different systems and the strengths and weaknesses. Subsequently, the aspects that need improvement are mentioned. Thereafter, a view on the future of the rural water supply in Maswa is given and finally the main conclusion of the study is presented.

Maswa is a largely rural district located in Shinyanga region in the north of Tanzania. As is often the case, also in Maswa poverty and rurality go hand in hand. The rurality in the area is largely above average and the poverty rates in Maswa are high, which is also visible in the fact that only 57% of the population in the district has access to improved water sources. That indicates the urge of looking at the situation to find out what obstacles there are and what can be done to improve the situation. The importance of access to safe water is for example acknowledged by the MDGs, since it is mentioned in one of the MDG-targets for 2015. Unfortunately that target is not going to be accomplished neither by Maswa nor by Tanzania overall, a fact that clarifies demand for improvement even more.

Answering the central question

Community management of service delivery has been an innovative approach that emerged in the past two decades. The increased emphasis on the subsidiarity principle in the United Nation's Agenda 21 in 2002 caused developing countries to introduce community management of service delivery. This also happened in Tanzania, where due to the implemented National Water Policy communities became obliged to manage the maintenance and operation of their own water supply. The characteristics of those systems of communities managing their own water supply can be explained by answering the first four research sub-questions. The first question was about the various types of water management systems in Maswa Districts by assigning them a type and status. In Maswa just one system appeared to be implemented: the system of Water User Groups (WUGs). The WUG is a group consisting of household members owning one pump which they build themselves. The WUG is the only owner of the pump and therefore fully responsible for the operation and maintenance.

The second research question asks what the strengths and weaknesses are of the different water management systems. An assessment has been made at the end of chapter four and the conclusion thereof is that it appears that the WUG-system has properly been implemented in the entire district. Furthermore, as was intended beforehand, the District Council (DC) allows communities to be legal entities, own their own pumps and bank accounts and collect revenue among the population. A striking strength of the system encountered during the primary data collection was the sense of

responsibility and ownership that WUGs seemed to have. The civil society of Tanzania is weak due to historical influences, which is also the case in Maswa, and therefore community management could cause difficulties. However, the WUGs studied in this research were motivated and aware of their tasks as a member of the group. But that finding is in contrast with information from another study about Maswa, where there appeared to be an overall lack of ownership and responsibility among communities and WUGs in the district. That absence is seen as the cause of the non-functionality of a large part of the rural water supply in Maswa. So there are conflicting results of the encountered proper sense of ownership in this study on the one hand and the lack of responsibility and ownership in the entire district on the other hand. An explanation for these conflicting outcomes is the fact that the sense of responsibility and ownership among WUGs is not deeply rooted. Therefore, WUGs that were interviewed during primary data collection might seem motivated and feeling ownership over their pump however, when a severe problem occurs and the WUG-members have a lack of physical or social access to the required equipment (e.g. spare parts, advice, a technician, sufficient information or knowledge), the sustainability of the WUG is highly threatened and such problems can result into abandoning of the pump and disintegration of a WUG. Most likely, the superficial nature of the sense of ownership and responsibility was experienced in this study. This lack of deeply rooted ownership and responsibility is a weakness of the system. Other weaknesses of WUGs have to do with the way in which WUGs function, since WUGs most of the time do not have a constitution or Memorandum of Understanding. Furthermore there are sometimes no committees and it happens often that there is confusion in the WUG and there are no clear plans on what they need to do in case any problems occur. That all causes lack of sustainability and makes WUGs very vulnerable for breakdowns and changes.

The third sub-questions asked about financial management systems that WUGs use and why. The money is managed differently in wards with respect to villages and with respect to WUGs. There are WUGs with bank accounts and others are involved in a SACCO. If WUGs do not have a bank account it is because of lack of access to it, either because they do not have money to put on an account or because they lack the knowledge and information on how to access the bank. WUGs without bank account or SACCO keep their money in local storage facilities, most often at the house of the treasurer. Financing sometimes causes confusion among WUG members. Many groups lack access to proper ways of money saving and some groups are not sure where they have a bank account. Besides that, many WUGs suffer from lack of money since there is no regular income WUGs receive, apart from entrance fees for new members and the charging of water for non-members. Improvements in the financing system can make a considerable contribution to the sustainability of WUGs.

The fourth sub-question was about the roles of men and women in WUGs. There is an unequal division between men and women in decision making positions in Maswa. The case study undertaken during fieldwork showed that empowerment in Maswa is more about men allowing their wives to be in leading positions than women making those decisions themselves. Gender equality in Maswa is therefore still in an early phase and it has no priority yet. Nevertheless, the amount of women in decision making positions is increasing, which is for example noticeable in the amount of women that are WUG member. Also the DC gives advice on gender equality in the WUG. However, on the community level men are still the head of the household. Sometimes it happens that while women are the ones who fetch the water, men attend the WUG meetings. There is lack of communication in such a situation that can easily result in meetings where there is no detailed knowledge about what is going on at the water pump. Because of deeply rooted culture it is hard to change the gender division in the rural communities in Maswa. However, overall progress in gender equality is being made, which is for example visible in the fact that at the moment both boys and girls attend schools.

The first four sub-questions gave a complete picture of the community managed water supply situation in Maswa. To answer the fifth sub-question, improvements are indicated. These are five main improvements that can be made to increase the operational and financial functionality and sustainability of the rural water management in Maswa:

1. The long-term vision among WUGs needs to increase to ensure that members know how to sufficiently act upon problems when they occur
2. WUGs need to be able to finance severe breakdowns by regularly collecting revenue (for example annual fees among member) to make sure breakdowns do not threaten sustainability of their existence
3. LGAs need to be closer involved in the operation of a WUG so the groups can count on adequate support and advice
4. Awareness on the urge of using safe drinking water needs to increase among the population so motivation to formulate new WUGs will increase and a preference for the use of improved sources will be created
5. Accountability relations need to be strengthened to prevent confusion and make sure all actors have a clear image of their rights and possibilities and know how they relate to other actors

Chapter six has explained how those improvements can be implemented (sub-question six). Adequate and sufficient training and follow up training is needed, which takes time and is expensive, but can contribute significantly to the sustainability and functionality of the rural water supply sector in Maswa. Furthermore, some of the above mentioned improvements require significant change, but all issues are achievable. If there is a structured, clear and controlled plan on how to address the issues and if changes are made based on annual evaluation programs, the improvement of the WUG-system can certainly be accomplished.

Future: From WUG to COWSO in Maswa

The WUG system in Maswa is going to be replaced by the new system introduced in the Water Supply and Sanitation Act of 2009: Community Owned Water Supply Organizations (COWSOs). Currently, at district level trainings are taking place to be able to successfully implement the new system soon. The reason that the mentioned improvements for the current system are still useful is because they can also be taken into account when implementing the new system.

A specific detail that will change in the new system can work as an advantage to the functionality of the groups, namely, in the new system most likely a smaller group will take care of the water pump and therefore will be responsible for a larger part of a community. Working on a larger scale might offer the opportunity of including a technician in the COWSO, which would increase independency and enables groups to repair the pumps themselves. However, a technician needs to be trained and really able to repair the pump, not only for one or two years after the training, but for many years to come, so follow-up trainings are needed there. The technician needs to be informed about where to get the spare parts, because only being able to repair a pump is not sufficient.

A new challenge that has to be taken into account when the system switches to COWSOs is the communication of the group to the community. Suddenly the group is not instantly representative of the community anymore, since not every household has a group-member. The COWSO needs to be transparent and give informed consent to the community. A positive aspect however is the fact that

groups positioned on a higher level (although still community level) might stand stronger towards receiving assistance and enforcing their rights.

Furthermore, the future system is not going to be completely different from the current situation since WUGs and COWSOs are both community based organizations. The major change in service delivery has already taken place, which was when the management switched from government to communities. The details about what the new system is going to look like are currently being decided.

Main conclusion

The main conclusion that can be drawn after having provided a complete view on the situation in Maswa and indicated the main improvements that have to be made is that this way of community participation in service delivery is a system with great potential for increased functionality. It is demand-driven, it decreases the dependency on the government and if it functions as intended, many people are provided with access to safe water. However, looking at the subtitle of the study which asks if it fulfills expectations in practice, unfortunately the answer is no, it does not. After ten years of implementation in Maswa, the increase in functionality is still not enough to give credit to the community management system. However, it cannot be said that the system is not successful at all. Community management has potential and progress can be made, however it has not yet happened. Currently there are a few major obstacles that get in the way of the proper functionality and sustainability of rural water supply in Maswa. Those obstacles all have to do with the training of-, educating of-, or communicating with WUGs. Overall increase in informed consent from the government to the communities is needed, to inform communities and WUGs about what is happening, what their rights are, how they can enforce their rights, where they can go for help, how sustainability within the group can be ensured and overall how they themselves can contribute to the proper and durable functioning of their own WUG and pump. Regular shared WUG meetings can help spread this information so not only in trainings but also in shared meetings WUGs can learn how to function properly. In Maswa the lack of knowledge and communication is a big threat to functionality so those are the most important aspects to focus on. Furthermore, the government authorities need to switch their preference from continuing the construction of new water pumps to improving the functionality and sustainability of the already existing pumps. If all those obstacles are going to be removed, the functionality and sustainability will increase, which is the ultimate goal of this way of community participation. The new system that soon will be implemented in Maswa can be considered as a fresh start to be able to learn from mistakes from the past and try to build up a good functioning, sustainable water supply sector which provides durable access to as many people as possible.

Reflection

The study that was undertaken needs to be considered bigger picture of community participation in service delivery. That approach is used as a development tool to increase poor people's sustainable access to service delivery in rural areas. This research focused on a present system and formulated improvements that can be made in that system. Therefore the focus was on obstacles that could be removed. However, apart from removable obstacles there are also overall constraints that negatively affect the sustainability and functionality of service delivery. Those constrains are deeply rooted and hard to influence. It is important to think of those constraints and realize that committing fully to the community participation in service delivery overlooks bigger problems. Paying attention to those constrains can truly make a difference in development, although those challenges can be really tough. The issues raised in this reflection are not only applicable to community management of rural water supply in Maswa District: it are aspects that need to be taken into account in community participation everywhere and some issues are even relevant for the overall attempt to achieve development.

First, looking at the study that is carried out, it is important to mention the relativity of a good functioning community management system, because in the dry season many water pumps fall dry. If people then go to other unimproved sources, for example go back to fetching water in a river or dam, the actual intention of using the improved source fails. This problem does not depend on the functionality of a Water User Group or the functioning of the pump. Even though everything functions well, it results in people lacking access to safe drinking water during parts of the year and therefore still being exposed to the dangers of using unsafe drinking water. The reason that the pumps fall dry is because of the limited depth of the shallow wells. Therefore the question arises to what extent a government can be satisfied by a system of shallow wells which, although properly managed, is still unable to produce water year round. Furthermore there also remain communities who cannot build pumps themselves, no matter how motivated they are, because when the physical conditions of the soil do not allow communities to build a pump, they cannot do anything but keep on fetching water at the unimproved sources. Thought needs to go into these kinds of challenges that are faced and solutions need to be considered constantly.

Another issue has to do with the indicating of water pumps as improved sources, since water from a pump is not always improved. Chemical analysis of the groundwater in many different places in a region needs to occur, to see if the water is really safe. Also, when medicine can be provided to treat the water in the pump to make it safe, as was encountered several times during the research, it must be sure that what is put in the water really ensures safety of it. Furthermore, when the medicine improves the quality, it has to be provided regularly. Also, if water from a pump still is not safe, people need to be informed about this so they can act upon that information. Building water pumps regardless of the quality of the groundwater that comes out of it ignores the actual purpose of the pumps.

Furthermore, a main concern in community participation is the fact that community management actually demands a lot from the rural poor population. It would be wrong to simply assume that communities are able to manage their service delivery themselves. The education level in rural areas is low and there is a lot involved in managing service delivery. That is also a remark with providing training to a community, since giving training does not directly suggest that the communities also understand the training and are really able to apply what they learn. The managing capacities of communities must not be overestimated. The possibilities of communities need to be carefully reviewed to find out what tasks they actually can fulfill and what in fact asks too much of them. There may be high expectations that they fail to live up to. This also indicates the extreme importance of good quality

education for the rural population since that can create understanding, logical thinking, planning ahead and sense of responsibility.

Another matter constraining development in many sectors is the corruption in the country that seems irremovable since it is so deeply rooted. There is so much favoritism and self-interest involved in the society which for example causes lack of sense of responsibility. Trying to change this implies a very large mentality change for everyone in the country. At the moment, projects are just implemented within this system, while it would differ so much if the corruption would be removed and proper development would get a fair chance.

When looking at this study in the bigger picture of development of a country, a remark can be made about development projects, since an overall problem seems to be that NGOs have to show results. The current sector of development cooperation demands that NGOs can show what they achieve. Also the donors highly demand short-term result and transparency about what is done with their money. It is logical that people want to have an idea of where their money goes, but sometimes that is difficult to measure. Real development can only take place by achieving change of behavior and carrying out long-term projects where a lot of training and follow-up training is involved to change people's mentality and learn them about their responsibilities. In that way not only short-term progress is made which implies for example the construction of new pumps that get dysfunctional as soon as a breakdown occurs because of lack of training. An example encountered in Maswa is an organization that only gets funds for continuously building water pumps however it does not receive any funds for follow-up training, so they cannot provide that even though they actually know that it is important for the sustainability. Organizations to a certain extent have to act in line with what their donors expect. Unfortunately behavior change and long-term projects are difficult to measure and short-term projects directly show the demanded result. There is a dilemma that forces many organizations carry out the short term projects. Development cooperation is essential, however its positive impact can increase when a mentality switch takes place among donors which enable organizations to do projects concentrating on achieving long-term- and behavioral change without having to show immediate results, since those may not be available initially. That way of addressing the situation will show sustainable results over time.

Overall it is important to say that although making progress is good, it would not be right if people got pleased with an improved situation, because still so many people lack access to drinking water. Therefore, even in regions where an MDG target will be reached, people need to think immediately of all those people still lacking access to safe drinking water, health care, hygiene and many aspects that can offer them chances and opportunities to fight against their poverty. Furthermore, it appears that there is a lot people can do to try to improve functionality and sustainability of service delivery, but if the contextual circumstances obstruct too much an attempt must be made to find solution on a larger scale.

It has become clear that it is of crucial importance to keep on studying development, since all people on this planet have the same rights and deserve fair chances. Trying to find out what is constraining the access of people to equal opportunities in their lives can provide pathways to step by step improvement of the situation and help people in their fight against poverty.

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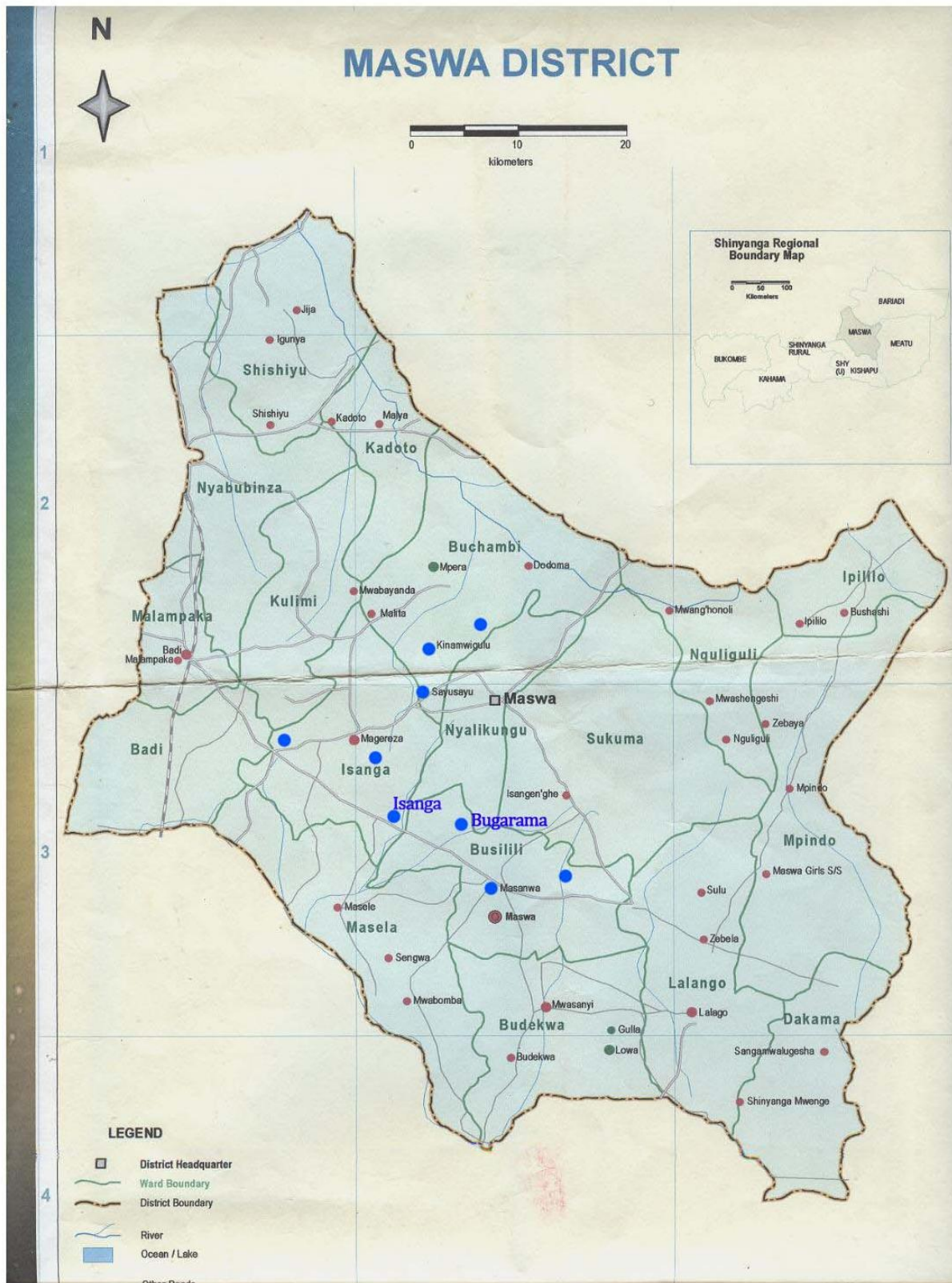
Appendices

Appendix 1: List of Interviews

No.	Interview Date	Interviewee	Location
Interview 1	23 February 2012	District Water Engineer's assistant Maswa and Community Development Officer Maswa	Maswa Village, Maswa
Interview 2	28 February 2012	Ward Executive Officer	Busilili Ward, Maswa
Interview 3	28 February 2012	Water User Group	Busilili Ward, Maswa
Interview 4	28 February 2012	Water User Group	Busilili Ward, Maswa
Interview 5	28 February 2012	Water User Group	Busilili Ward, Maswa
Interview 6	6 March 2012	Water User Group	Busilili Ward, Maswa
Interview 7	6 March 2012	2 Water User Groups	Busilili Ward, Maswa
Interview 8	6 March 2012	3 Water User Groups	Busilili Ward, Maswa
Interview 9	6 March 2012	Village Chairperson and Village Executive Officer	Busilili Ward, Maswa
Interview 10	7 March 2012	3 Sub-village chairpersons	Busilili Ward, Maswa
Interview 11	7 March 2012	Councilor	Busilili Ward, Maswa
Interview 12	7 March 2012	Water User Group	Busilili Ward, Maswa
Interview 13	7 March 2012	Water User Group	Busilili Ward, Maswa
Interview 14	7 March 2012	Water User Group	Busilili Ward, Maswa
Interview 15	8 March 2012	Ward Executive Officer	Isanga Ward, Maswa
Interview 16	8 March 2012	Water User Group	Isanga Ward, Maswa
Interview 17	8 March 2012	Water User Group	Isanga Ward, Maswa
Interview 18	8 March 2012	Water User Group	Isanga Ward, Maswa
Interview 19	12 March 2012	Water User Group	Isanga Ward, Maswa
Interview 20	12 March 2012	Water User Group	Isanga Ward, Maswa
Interview 21	12 March 2012	Water User Group	Isanga Ward, Maswa
Interview 22	12 March 2012	Village Executive Officer	Isanga Ward, Maswa
Interview 23	13 March 2012	Water User Group	Isanga Ward, Maswa
Interview 24	14 March 2012	Village Executive Officer, Village Chairman and Sub-village Chairman	Buchambi Ward, Maswa
Interview 25	14 March 2012	Water User Group	Buchambi Ward, Maswa
Interview 26	14 March 2012	Water User Group	Buchambi Ward, Maswa
Interview 27	15 March 2012	Water User Group	Buchambi Ward, Maswa
Interview 28	15 March 2012	Village Executive Officer	Buchambi Ward, Maswa
Interview 29	19 March 2012	Water User Group	Buchambi Ward, Maswa
Interview 30	19 March 2012	Village Executive Officer	Buchambi Ward, Maswa
Interview 31	19 March 2012	Ward Executive Officer	Buchambi Ward, Maswa
Interview 32	10 April 2012	Community Development Officer Maswa	Maswa Village, Maswa
Interview 33	11 April 2012	2 female community members	Busilili Ward, Maswa

Interview 34	11 April 2012	Male community member	Busilili Ward, Maswa
Interview 35	11 April 2012	Village Chairperson and his wife	Busilili Ward, Maswa
Interview 36	11 April 2012	Female community member	Busilili Ward, Maswa
Interview 37	12 April 2012	District Water Engineer	Maswa Village, Maswa
Interview 38	12 April 2012	Male community member	Busilili Ward, Maswa
Interview 39	12 April 2012	Female community member	Busilili Ward, Maswa
Interview 40	12 April 2012	Female community member	Busilili Ward, Maswa
Interview 41	12 April 2012	Female community member	Busilili Ward, Maswa
Interview 42	18 April 2012	Program Development Coordinator and Program Development Facilitator, World Vision	Shinyanga Town, Shinyanga

Appendix 2: Map of Maswa District

The villages where the primary data is collected are shown in blue. The locations of Isanga and Bugarama are indicated since they are specifically mentioned in the study.

Appendix 3: Interview Questions Water User Groups

General
1. Water User Group name:
2. What is the year of construction of the water point?
3. What type of Water Point is it?
4. Is the water point functional or not? If not functional, for how long and why is it not functioning?
5. Are there alternatives if the water point is not functional?
6. What is the number of households that depends on this water point?
7. How many buckets of water produces this water point daily?
8. Does the well ever get dry?
9. By whom is the water point managed?
10. What does the task of [function of interviewee] within the WUG mean?
11. Does it ever happen that the WUG does not repair the WPT or does not feel responsible?
12. How long does this Water User Group exist?
13. Is the Water User Group registered?
14. How many people are in the Water User Group?
15. What are their functions?
16. Is it time-consuming? (is it voluntary? how many hours a week?)
17. Is there any constitution or other type of contract?
18. Do you have meetings on weekly or monthly basis?
19. Who attends those meetings?
20. What kind of issues are discussed in those meetings?
21. How is the Water User Group formulated?
22. Can anyone join?
23. Are there committees within the Water User Group and how are they arranged?
24. Are there women involved in the Water User Group? How many?
25. Why is the gender division divided like that? (coincidence, rules/regulation?)
26. Does every water user of the WPT know that your WUG is in charge?

Support/advice
27. Where can you go for support or advice?
28. Who can you ask if you have problems?
29. Do you feel supported by the district water department?
30. Do LGAs ever visit? For what reason?
31. Would you like to be visited more often? By which LGA? (if yes, ask if they have invited the LGA + why/why not)
32. What kind of things would you like to discuss with the LGA?
33. Do you think if the LGA visits more often it would change your way of thinking about the LGA? If yes, in what way?
34. Does the district water engineer visit this water user group? At regularly basis?
35. Do you have responsibilities to the community?

Financial Management
36. What is the budget of the Water User Group and where does it come from?
37. How is the paying system arranged?
38. Are there special arrangements (i.e. for poor people) with regards to payments?
39. Who is in charge of the money?
40. Do you use a bank account, if not why not?

41. What financial management systems do you use?
42. Do you know anything about traditional financial management systems (e.g. social security groups)?
43. Is there transparency in financing issues? (do all members know how much money is in the bank and what is done with it?)
44. Are there checks and balances to prevent corruption?
45. Are the known cases of corruption?
46. Where can you get your spare parts?

LGA
47. Do you get information from the Local Government Authorities? What kind of info?
48. Do you feel supported by LGAs? Why/why not?
49. Do you want them to be more supportive? Which LGA and how?

Other WUGs
50. Do you cooperate with other neighboring Water User Groups?
51. Are there meetings with other WUGs? At regularly basis?
52. Would you like to cooperate (more) with other WUGs?
53. Explain how 5 – 10 WUGs can form a COWSO to strengthen, would they prefer that?
54. Would you like to see changes in the way the water supply is managed at the moment?