

# Building the role of local government authorities towards the achievement of the human right to water in rural Tanzania

Alejandro Jiménez and Agustí Pérez-Foguet

---

## Abstract

*In recent decades, many changes have occurred in the approach to financing and operating water services in developing countries. The demand-responsive approach is now adopted in many countries in a context of donor-supported decentralization processes, which gives more responsibility to end users. However, the government's responsibility at different levels is enforced by the international recognition of the human right to water. This paper examines specific actions that build the role of local government authorities in this scenario. A collaboration between an international NGO and a rural district in Tanzania from 2006 to 2009 is used as an action research case study that is representative of local capacity-building needs in decentralized contexts and rural areas. Three main challenges were detected: i) lack of reliable information; ii) poor allocation of resources in terms of equity; and iii) lack of long-term community management support from the district. Two mechanisms were established: i) water point mapping as a tool for information and planning; and ii) a District Water and Sanitation Unit Support (DWUS) for community management. The results show how the framework provided by the goal of human right to water helps to define useful strategies for equity-oriented planning and post-project support at the local level.*

*Keywords:* Rural areas; Water supply; Right to water; Water point mapping; Local government; Africa; Tanzania.

---

## 1. Introduction

Water provision is indisputably the most politicized of public services, and developing countries have been greatly affected by the consequences of the ideological and political tendencies surrounding it. Although public service provision was predominant until the 1980s, this approach changed during the liberalization era, supported by the failure of the International Water and Sanitation Decade 1981–1990 (Carter *et al.*, 1993). The Dublin Principles (Box 1), which recognized water “as an economic good” (ICWE, 1992), opened the door to controversial interpretations. On the one hand, it paved the way to commercialization (Mehta and La Cour Madsen, 2005) and supported privatization (Lee and Floris, 2003). Another interpretation views the principles as means of making the

right choices about the allocation and use of water resources on the basis of an integrated analysis of costs and benefits in a broad sense, which leads to the concept of integrated water resources management (Savenije and van der Zaag, 2002). On the other hand, a strong movement has defended the role of public institutions in the provision of basic social services (Hukka and Katko, 2003; Hall and Lobina, 2004),

### Box 1. Dublin principles

Principle No. 1: Fresh water is a finite and vulnerable resource, essential to sustain life, development, and the environment

Principle No. 2: Water development and management should be based on a participatory approach involving users, planners, and policy-makers at all levels

Principle No. 3: Women play a central part in the provision, management, and safeguarding of water

Principle No. 4: Water has an economic value in all its competing uses and should be recognized as an economic good

*Source:* ICWE (1992).

---

Alejandro Jiménez collaborates both with Ingeniería Sin Fronteras-ApD and the Research Group on Cooperation and Human Development (GRECDH) of the Universitat Politècnica de Catalunya (UPC), Spain. E-mail: alejandrojfp@gmail.com.

Dr. Agustí Pérez-Foguet is Associate Professor at the Civil Engineering School of Barcelona (ETSECCPB), Universitat Politècnica de Catalunya (UPC), Spain. E-mail: agusti.perez@upc.edu.

and the wider principle of considering water as a commons (Barlow, 2001, 2009; Bakker, 2007).

However, the recognition of the human right to water contained in General Comment 15 of the Committee on Economic, Social and Cultural Rights of 2002 was a key milestone that enforces clear obligations on governments to protect, respect, and fulfil this right. The obligation to fulfil is disaggregated into the obligations to facilitate, promote, and provide, which requires states to adopt the necessary measures to ensure the full realization of the right to water, “facilitating, inter alia, improved and sustainable access to water, particularly in rural and deprived urban areas” (UN, 2002; Kiefer and Brölmann, 2005). Moreover, a number of core obligations are identified with immediate effect in the General Comment, such as transparent planning, equitable distribution of resources, and monitoring. The designation of an independent expert on human rights obligations related to access to safe drinking water and sanitation will deepen in the practical implementation of the General Comment mentioned (HRC, 2008).

Although the international private sector has focused its attention over the past decade on the urban water supply subsector (Jiménez and Pérez-Foguet, 2009), the Dublin Principles also affected rural areas. They were translated into what is known as the demand-responsive approach (DRA), which received considerable support during the 1990s (World Bank, 1997; World Bank, 1998). The underlying idea was that supply-led approaches had been financially unsustainable and ultimately failed the poor. In focusing on water as an economic good and the costs related to its supply, financial sustainability would result in improved services. Thus, users are brought into the process of selecting, implementing, and ultimately financing the long-term delivery of water services (ODI, 2003). The main aspects of the DRA are summarized in Box 2. While this approach leads to greater participation of end users in the design and management of their services, it also shifts to them the responsibilities and costs related to the full operation and maintenance (O&M) of these services.

This approach has generally been applied together with institutional decentralization processes. Theory says that

the delegation of power to local governments will improve service delivery, decrease corruption, and increase public participation and the accountability of public officials (Steiner, 2007). However, decentralization outputs vary between countries. Experience shows that when governance is decentralized, local elites are frequently even less likely than national elites to target government resources to the poor (Blair, 2000; Crook, 2003). This problem is aggravated in the rural water sector by the lack of reliable information systems capable of reflecting the reality of the situation at the grassroots level. At community level, the targeting problem remains (Galasso and Ravallion, 2005), while the poor are frequently less able to participate in those community processes that could eventually benefit them (Cleaver, 2005; Agrawal and Gupta, 2005; Hickey and Bracking, 2005). A more critical point of view relating to the characteristics of communities and their current limitations has emerged (Cleaver and Toner, 2006; Harvey and Reed, 2007; Bakker, 2008). Meanwhile, a very low level of sustainability of community rural supplies is found worldwide, especially in Africa (Harvey and Reed, 2004; RWSN, 2009).

Tanzania is a good example of these changing and sometimes contradictory processes. Table 1 shows the responsibilities related to water service provision, operation, and maintenance in recent decades, together with the progress achieved by the end of each period. The right to water is mentioned several times in the latest national water policy (Government of Tanzania, 2002), and the corresponding water act (GoT, 2009), according to which the central government plays the role of coordinator and facilitator, while the main implementation responsibility falls on the district council, the local government authority (LGA). Communities should demand, own, and maintain their water services and participate in their design. Full operation and maintenance costs are their responsibility, and they have to provide part of capital costs through cash and in-kind labour. Hence, we are dealing with a state that recognizes the right to water, has decentralized competences, and takes a fully demand-responsive approach to service delivery. The main policy implementation instrument is the Water Sector Development Program, whose rural component is the Rural Water Supply and Sanitation Program (RWSSP). Some of the challenges compromising the success of the RWSSP, which features ambitious targets for 2025 (Table 1), have already been highlighted:

**Box 2. Main principles of the demand-responsive approach (DRA)**

Communities must initiate the process of making the demand, normally with initial financial contribution;  
Communities must contribute a certain percentage of capital costs towards their project (sometimes paid partially by in-kind labour) and 100% of O&M costs;  
Communities must participate in all decision-making steps;  
Communities own the system and are responsible for its management.

- Poor targeting of underserved areas in the first phase of the programme, despite the RWSSP’s objective of raising coverage in all districts to values between 80% and 95%. This is shown in a recent study on the allocation of projects at district level (TAWASANET, 2009).
- Low durability of implemented rural water supplies. A detailed study of three regions of central Tanzania shows

**Table 1. Evolution of water provision roles in Tanzania**

Period and implementation arrangement	Target of coverage for rural areas	Roles and responsibilities	Coverage achieved in rural areas
1930–1970	No explicit target	<ul style="list-style-type: none"> <li>• 75% financed by the central government and 25% by the LGA</li> <li>• O&amp;M paid by the LGA through taxes</li> <li>• Passive role of the community</li> </ul>	12% in 1971 (Tanzania Society, 1975)
1971–1990 Five-year development plans	100% coverage in 1990 (Nyerere, 1971)	<ul style="list-style-type: none"> <li>• 100% financed by the central government</li> <li>• O&amp;M financed by the central government</li> <li>• Community self-help initiatives for basic services</li> </ul>	39% in 1990 (JMP, 2009)
1991–2001 Water policy 1991 (GoT, 1991)	100% coverage in 2002	<ul style="list-style-type: none"> <li>• 100% financed by the central government</li> <li>• O&amp;M partially financed by end users (cost-sharing)</li> <li>• Community only participates as regards O&amp;M</li> </ul>	44% in 2000 (JMP, 2009)
2002–2025 Water policy 2002 (GoT, 2002)	65% by 2010, 75% coverage by 2015, and more than 90% by 2025 (GoT, 2006)	<ul style="list-style-type: none"> <li>• Approx. 90% financed by central government, 5% by LGA, and 5% by end users</li> <li>• O&amp;M by end users</li> <li>• Community demands and fully participates in the design, implementation, and operation of services</li> </ul>	46% in 2006 (JMP, 2009)

that, depending on the type of water point (WP), 22% to 38% broke down within five years and only 35% to 47% of WPs were working 15 years after installation (Jiménez and Pérez-Foguet, 2010). Sustainability rates did not improve during the RWSSP pilot phase (2002–2008); the evaluation showed an average of 34% of non-functional WPs in recently finished infrastructures (World Bank, 2008).

- The lack of a reliable information system to monitor progress and inadequate institutional set-up to learn from past mistakes (Giné and Pérez-Foguet, 2008).
- Water provision sustainability is threatened by the limitations of community management of funds (World Bank, 2008), the establishment of intra-village pro-poor arrangements, and the difficult relationship between water user entities and elected village representatives (Clever and Toner, 2006).

This paper builds on the role of LGAs in addressing these challenges and focuses on how to realize their responsibility as duty bearers for the fulfilment of the human right to water. It draws on the results of a collaboration between the international NGO Ingeniería Sin Fronteras (ISF) and the Same District Council (SDC) from 2006 to 2009 in the framework of an EU-funded programme.

Firstly, background information about water point mapping (WPM) as an information tool is given. Secondly, the evolution of the district's water services from 2006 to 2009 is presented. The analysis leads to the definition of a new framework for improving the role of LGAs as regards resource allocation and long-term support to management, two of their key responsibilities for the fulfilment of the right to water. The conclusions draw on the relevance and replicability of using the frame of the human right to water at the local level.

## 2. Water point mapping (WPM) in Tanzania

The WPM approach was designed as a procedure for measuring access to water. WPM can be defined as “an exercise whereby the geographical positions of all improved WPs in an area are gathered in addition to management, technical, and demographical information. This information is collected using GPS and a questionnaire carried out at each WP. The data are entered into a geographical information system and then correlated with available demographic, administrative, and physical data. The information is displayed using digital maps” (WaterAid, ODI, 2005). The definition of improved WP is consistent with the one that is accepted internationally<sup>1</sup> (WHO/UNICEF, 2000). WPM has been applied extensively by Water Aid and other NGOs in various African countries for a number of years. It was first used in Tanzania in 2005. So far, 51 districts out of 132 have been mapped, and the government plans to extend it to the whole country.

WPM calculates coverage through density, which is equal to the number of improved WPs per 1,000 inhabitants (Stoupy & Sudgen, 2003). According to Tanzanian national water policy (GoT, 2002), a certain area is considered to have access if its density is four or more WPs per inhabitant (one WP per 250 people). The percentage of people who are not served in an area is proportional to the lack of WPs available compared with that threshold. Various indicators can be considered depending on the characteristics of the WPs assessed (Jiménez and Pérez-Foguet, 2008). These range from the mere existence of WPs to the assessment

<sup>1</sup> A water point is considered as “improved” when it fits into one of the following categories: piped water (at home, yard, or public standpipe), borehole, protected dug well, protected spring, rainwater, and bottled water (only if there is a secondary source for other uses such as hygiene or cooking).

**Table 2. Indicators used by water point mapping**

Indicator	Calculation
Improved community WP density (ICWPD)	Number of improved community WPs (ICWPs) per 1,000 inhabitants
Functional community WP density (FCWPD)	Number of functional ICWPs per 1,000 inhabitants
Year-round functional community WP density (YRFWD)	Number of ICWPs working at least 11 months per year per 1,000 inhabitants
Bacteriological acceptable WP density (BAWD)	Number of functional ICWPs with an acceptable number of coliforms at the time of the test per 1,000 inhabitants
Bacteriological acceptable and year-round functional WP density (BA&YR-WD)	Number of ICWPs working at least 11 months per year and with an acceptable number of coliforms at the time of the test per 1,000 inhabitants

of functionality and the seasonality and quality of the water delivered (Jiménez and Pérez-Foguet, 2008). The possibilities are summarized in Table 2.

Despite the use of WPM as an information tool, its potential remains underexploited in Tanzania. A field study was carried out to assess the use of WPM in four districts where it had been in place since 2005 (Wateraid, 2009). The results showed that the use of WPM for better planning was still low despite the acknowledgment of its potential usefulness. The main use constraints were related to the updating system and how the tool can be effectively included in the planning process. The work presented here shows a number of initiatives to overcome these difficulties in the application of the tool.

### 3. Methodology

The methodology followed was an extensive field study at the district level combined with interviews and meetings at village and ward levels. Working sessions and seminars were held with district officials to analyse the results. An initial WPM study was conducted at the end of 2006 as a baseline on the state of water services in Same District, the results of which were presented on World Water Day 2007 to the Same District Council (SDC), stakeholders and the general population. The application of the tool was monitored with a focus on the coordination of stakeholders and decision-making regarding the water resource allocation of the SDC. In July 2009, a basic WPM update was carried out to assess its evolution from 2007 to 2009, which enabled a critical analysis of the investments made during the period, the programmes planned up to 2011, and the general evolution of rural water services. This process led to the development of a framework for improving the LGA's planning and support to ensure the sustainability of water services and resulted in the setting up and approval

**Table 3. Comparative table between basic indicators of water access in Same District (2006–2009)**

PARAMETERS	Same 2006	Same 2009
Rural population	207,800	217,935
Number of total WP for human consumption	598	956
Percentage of functional WP	63.04%	64.02%
<b>COVERAGE DATA</b>		
ICWPD	65.06%*	68.76%
FICWPD	43.37%*	46.78%
BAFD	33.17%*	No data
YRFD	31.77%*	39.95%
BA&YR-FD	24.90%*	No data
<b>EQUITY IN ACCESS DISTRIBUTION</b>		
Gini coefficient calculated at village level	0,62	0,59
Percentage of functional WPs situated in villages already served	22%	33%
Number of villages without any improved WPs	20	7
Number of villages without any functional WPs	23	8
Number of subvillages with at least one functional WP	32%	51%
<b>MANAGEMENT DATA</b>		
Percentage of functional WPs collecting a tariff	No data	27.45%
Number of villages where none of the functional WPs collect a regular tariff	No data	63
Percentage of villages that have service and private connections	No data	61%
Number of villages with 15 or more private connections	No data	32

\* Coverage data in 2006 were calculated aggregated at ward level. In 2009, coverage was calculated by village.

of new institutional arrangements and priorities for water in Same District.

A joint working team was established by the District Water Department (DWD) and the NGO (ISF). Five people from the DWD, including the district water engineer, were involved at various stages of the process. A consultant was engaged for the WPM process in 2006. The 2009 update was carried out by a joint team comprising ISF and DWD members. The programme coordinator and institutional development officer were the main actors from ISF. The researchers followed up the process with several visits to the area from 2005 to 2009. Volunteers were also involved in the gathering and processing of information.

### 4. The evolution of water provision in Same District

Same District is a rural district belonging to the Kilimanjaro region of northeast Tanzania. It has an area of 5,186 km<sup>2</sup> and a rural population of slightly more than 200,000 distributed in 24 wards, 82 villages and 445 sub-villages, according to the national census of 2002. Table 3 shows a comparison of Same District's water services between 2006 and 2009. During this time, 358 new WPs were constructed, which represents a 60% increase in total numbers. The WP functionality rate was static at around 64%. Many of the

new WPs were built in villages where the national coverage threshold was already met, since the proportion of redundant WP (those situated in villages already covered) rose from 22% to 33%, while the Gini coefficient only decreased from 0.62 to 0.59. Nevertheless, the number of villages without a WP dropped from 20 to 7 villages, and the number of subvillages with at least one functional WP has increased from 32% to 51%. This is an important factor in access analysis, given the scattered distribution of the population in the villages.

This scattered distribution precludes the construction of many multi-village systems in the District, and makes difficult the joint management of services in water trusts, which is a successful model implemented in nearby Districts (Cleaver and Toner, 2006).

Between 2006 and 2009, improvements were made to the coverage calculation. In 2006, the data were aggregated by ward, which concealed the inequalities between villages belonging to the same ward; in 2009 the calculation was done by village. These facts, combined with a population growth of 10,135, led to only a slight rise in overall coverage from 43.37% to 46.78%, despite the effort made to build new WPs.

The 2009 update compiled two additional aspects concerning the collection of regular WP tariffs and the existence of private connections. Only 27.45% of functional WPs collect regular tariffs. In aggregated terms, there is a regular tariff collection system in only 11 villages in the entire district (13%). There are users with private connections in 45 villages; 32 of those villages we found with more than 15 private connections. Some of these connections serve more than one family. In general, the uncontrolled connection to the network affects the functionality of community WPs and threatens the sustainability of the services. Only 13 villages with private connections stated that they collect some kind of payment for them, and it is a small yearly fee in almost all cases. If we presume that each private connection serves one

household, around 11,606 people in Same receive this kind of service. Connections that were not reported to village leaders have not been considered.

#### 4.1. Analysis of investments 2007–2009

The results of the evolution of water services were contrasted with the investments made. The only planning document for water services available in 2006 was the one that related to the water shortage suffered in 2005 (SDC, 2006). Twenty-two rural villages were prioritized in the document based on the vulnerability to droughts.

In the financial years from July 2007 to June 2009, 47 actions involving provision and/or rehabilitation of water services were implemented in 35 villages. The first striking point is that nine villages benefited from more than one intervention, and there were cases of three interventions in one village and four in another. Meanwhile, 47 villages received no support. This can be partially justified by the fact that certain actions relating to the provision of WPs are far from complete, and therefore one village may not be completely served by one action. Twenty-three out of 46 villages with access below 25% were not targeted by any programme. Eleven of the implemented actions (23.4%) were directed at villages above the average coverage.

The disaggregation of data by type of actor reveals who performed best (Table 4). The government appeared to perform very well in terms of allocation, but failed to direct NGOs to the most underserved areas. There was also significant overlapping between the actions of the government and the NGOs, and between NGOs. Most of the projects implemented in the period by NGOs were designed before the first WPM campaign was conducted. The 2006 Water Shortage in Same District document had been the main planning tool. All of the villages where NGOs and other foundations had intervened were included as priority areas in that document.

Table 4. Summary of actions by actor

ACTIONS IMPLEMENTED 2007–2009				
Actor	Number of actions	Number of villages involved	Targeted villages below average access	Targeted villages below 25% access
Government	37	28	82.14%	71.43%
NGOs	10	8	62.50%	50.00%
<b>Total</b>	<b>47</b>	<b>36</b>	<b>77.14%</b>	<b>65.71%</b>
FORESEEN ACTIONS 2009–2011				
Actor	Number of actions	Number of villages involved	Targeted villages below average access	Targeted villages below 25% access
Government	13	13	76.92%	61.54%
NGOs	9	8	88.89%	88.89%
<b>Total</b>	<b>22</b>	<b>21</b>	<b>81.82%</b>	<b>72.73%</b>

#### 4.2. Analysis of foreseen investments 2009–2011

In addition to the projects implemented up to June 2009, the actions planned between 2009 and 2011 were analysed. The main interventions planned for the period are the first phase of the RWSSP, which will provide access to 10 villages in the District, and two major programmes by international NGOs. These actions were planned before the update of WPM information carried out in July 2009. Therefore, the WPM of 2006 was used to base the decisions and to compare the allocation of projects. The picture is now different, as illustrated in Table 4. While NGOs have been able to adjust priorities according to the updated coverage data (88.89% of actions targeted villages with less than 25% coverage), the performance of the government has worsened. Only 61.54% of targeted villages have less than 25% coverage. This is very significant. The government projects allocated between 2007 and 2009 were the Quick Wins, which consisted of a small amount of money (around €20,000) for a short extension of service that can be decided directly by the DWD. The RWSSP provides full intervention in villages, with a significantly higher foreseen investment. Thus, the selection of villages had a greater relevance and received political influence. Out of the 10 villages selected for the RWSSP, two had already received support in recent years.

It is important to underline that 19 out of the 22 villages prioritized in 2006 by the water shortage document will be targeted by a full coverage intervention in 2011. Only one of the three remaining villages has access below the district's average. By the end of the 2006–2011 five-year period, 69 interventions will have taken place in 46 villages. However, eight villages that did not have an improved WP in 2006 will not be targeted by any programme, and 12 villages with less than 25% of coverage of improved functional WPs will also remain without support.

### 5. Analysis of results

Analysis of the water situation conducted by researchers and the DWD led to the following conclusions:

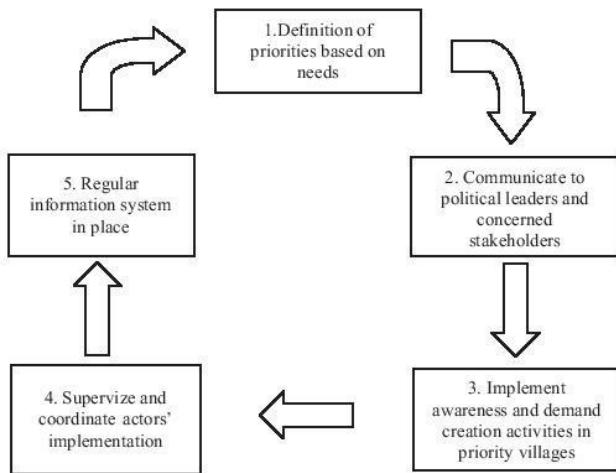
- The water shortage document had been the most commonly used driver of planning for the major intervention programmes. However, it was recognized that the priorities mentioned therein were not adequately justified. The WPM campaign showed that most of the villages were suffering low access (coverage in 18 of the 22 prioritized villages was lower than 25%), but seasonality of service was seriously affecting only three of them, despite this being the focus of the document.
- The understanding of the human right to water at District level was limited to the increase of coverage (construction of new water points). Hence, there was far less attention paid to other aspects, such as quality

of water, affordability, participation and sound management, or principles of non-exclusion of some population groups.

- The DWD had made an important effort to allocate projects to underserved areas. However, this was mixed with a demand-driven approach, which was in fact “cash driven” given that the total amount of money in the bank account was used as the main factor for allocating projects. Additionally, political influence affected the selection of villages for the RWSSP, while the DWD lacked the tools to objectively defend their priorities. As a matter of fact, the same amount of RWSSP projects was allocated to each of the two constituencies of the district. Ward councillors were not sufficiently aware of the prescribed procedures for applying for water projects and were more dedicated to lobbying for support in their respective wards. The selection of projects and the criteria used were not adequately recorded.
- Village leaders and villagers had little information about their relative situation of access to water compared to neighbouring villages, about the procedures to apply for water services, and, in general, about their rights and obligations regarding water. People are aware that project allocation is mainly a political decision taken at District level, sometimes influenced by the amount of cash contribution made by the community.
- Coordination of stakeholders was not successful. Different stakeholders (NGOs, private foundations and donors) come with their own timetables, and budget and logistics limitations. Hence, there are a number of actions that need to be planned, including the construction of new WPs, renovations, environmentally oriented actions, and places suitable for minor interventions. Rather than the specific intervention needed, full intervention was frequently identified, directing all efforts and actors to the same areas, resulting in overlapping actions.
- Since the WPM campaign conducted at the end of 2006, no regular information system had been in place in Same District to update the information on the existence and functionality of WPs. The implementing partners were not giving enough information about their actions. The situation had significantly changed during this time as a result of the high number of interventions, but investments could not be reoriented accordingly.

### 6. Framework for the improvement of planning

This analysis led to the establishment of a framework for the improvement of planning. First, it was agreed that the district itself should take on a leading role and define priorities with a view to directing investments accordingly. This should be reflected in a document to be approved by the relevant organs and shared with political representatives and other concerned stakeholders. The agreed priority



**Figure 1.** Framework for the improvement of planning.

locations should be assisted in terms of awareness creation and facilitation of the initial steps of project application. During the implementation phase, there should be close supervision and coordination of incoming actors to avoid overlapping. Finally, a regular information system should be in place to direct investments according to the situation on the ground. Figure 1 illustrates the simplified framework that was agreed. The main steps are described below.

### 6.1. Definition of priorities

One of the most significant difficulties in adequately defining priorities has to do with the lack of systematized data available for all the villages of the district. WPM remedied this weakness with a minimum of bottom-up information that can be easily used for analysis and planning. Some simple indexes, organized in three groups, were defined to rank the priority of a variety of actions, as described below. The indexes are summarized in Table 5.

The first group is formed by the indexes related to the increase of coverage, which includes the construction of new WPs (coverage index), the rehabilitation of non-functional points (rehabilitation index), and the construction of new WPs in underserved subvillages (intra-village equity index), which help to unmask inequalities at subvillage level that would otherwise be hidden. Same has a very scattered population distribution, and it can be presumed that subvillages without a WP are unserved according to the 400 m maximum distance set in the policy. Whenever two villages had the same index coverage, the biggest one was ranked first. This criterion does not maximize the number of beneficiaries. Hence, the objective is to achieve a minimal coverage of WPs per village across the entire district. This criterion increases the coverage at the lowest rates but promotes equity among villages. The assumption is that the highest vulnerability occurs in the absence of improved water sources: people in a “served”

environment have easier access to some kind of improved service, even when the distance is longer and/or consumption is lower. This simple method was preferred to any combination of criteria (such as a mix of the proportion of unserved and number of beneficiaries) for two reasons: i) the territorial equity criteria targets universal coverage, which is aligned with the contents of the human right to water; ii) it was considered important to have simple concepts that could be easily explained and discussed with politicians at ward and village levels, and clearly understood by villagers.

The second group comprises indexes that affect the quality of the service. The seasonality index (SI) gives the proportion of functional WPs offering year-round service (at least eleven months per year) in a village. This index helps to spot environmental actions (particularly those related to source protection) and conflicts over use of the resource. The quality index (QI) shows the proportion of WPs that provide safe water compared with the functional ones.

The third group is formed by the indexes related to service management. The proportion of functional WPs that collect regular tariffs (pay per bucket or monthly payment) was taken as the key indicator for assessing management and led to the creation of the management index (MI). A low proportion of WPs paying a tariff would indicate a risky situation against any O&M requirement and therefore can be set as a priority for supporting community management. A private connection index (PCI) was also created to express the percentage of a village’s population served by private connections. The assumption is that every private connection serves one average-sized household. This index aims to highlight the water user entities that should be specifically supported in the management of private connections, as they may otherwise threaten the sustainability of the service.

The ranking produced by every indicator was transposed into league tables, with priorities shown by type of action. Seven lists were created. Villages were prioritized when the threshold of the corresponding index was below 25%, except for the PCI, for which a value above 15% was taken as the threshold. This is represented in Table 5, together with the number of villages prioritized on each list. One village could not appear on more than one list of the first group (increase of service); evidently, the existence of WPs (CI) is the precondition for the other two indexes to be meaningful; the same village could appear on the two lists that deal with quality of service (SI, QI) as they each treat different aspects; and management is treated separately from the other groups.

It is acknowledged that some important aspects are not captured by the indexes defined. The tariff collected, compared to the level of service and financial capacity of each community can indeed leave people inside “served” villages without access to water. The same applies to discrimination on the grounds of tribe or social exclusion

Table 5. Indexes based on WPM used for selecting priority villages for water-related interventions

Name of Index	Formula	Application	Threshold for prioritization	Number of prioritized villages
<b>Indexes related to the increase of coverage</b>				
COVERAGE INDEX (CI)	$CI = \frac{ICWP}{\text{Village population}} \times 250$	Construction of new WPs	25% or less	8
Rehabilitation Index (RI)	$RI = \frac{FCWP}{\text{Total ICWP}} \times 100$	Rehabilitation of existing WPs	25% or less	6
Intra-village Equity Index (EI)	$EI = \frac{\text{Subvillages with FCWP}}{\text{Total number of subvillage}} \times 100$	Construction and/or rehabilitation of WPs in unserved subvillages	25% or less	8
<b>Indexes related to the quality of service</b>				
Seasonality Index (SI)	$SI = \frac{\text{Year Round FCWP}}{\text{Total FCWP}} \times 100$	Actions to increase reliability of the source and/or finding of additional sources	25% or less	8
Quality Index (QI)	$QI = \frac{\text{Good Quality FCWP}}{\text{Total FCWP}} \times 100$	Actions to improve quality of water	25% or less	7
<b>Indexes related to the management of the service</b>				
Management Index (MI)	$MI = \frac{\text{FCWP with regular tariff}}{\text{Total FCWP}} \times 100$	Management-supporting activities (establishment of WUEs tariff collection, etc.)	25% or less	51
Private Connections (PCI)	$PCI = \frac{\text{Number of PC} * \text{Household size}}{\text{Village population}} \times 100$	Support the establishment of specific bylaws for private connections regulation	Above 15%	6



in the community. Another important aspect that is not captured in this process is the level of satisfaction of the consumers with the service provided, and their feeling of ownership and participation in its management. These aspects have to be monitored and regulated by the District through the long-term support to management described in section 6, since those aspects need a more intensive knowledge of each community concerned, which cannot be addressed in a WPM survey.

As a result of the process, the DWD was able to target different actions in different villages according to their specific situation (SDC, 2009a). The management of services and more specifically the establishment of tariff collection systems are now the biggest priorities at the district level.

The framing of the resource allocation decisions in terms of this group of indices, oriented to tackle some important aspects of the content of the human right to water, will help to reduce the influence of local politics, through decision evaluation. Of course, local power relationships will continue to have influence despite the availability of WPM, but this initiative clearly facilitates a desired development result, and enhances transparency.

#### *6.2. Communicating priorities to concerned stakeholders*

The discussion and approval of the priorities in the relevant district organs legitimated the criteria used. The establishment of an official LGA-owned priority document (SDC, 2009) aims to reduce the political influence on resource allocation. In addition, communication to concerned stakeholders is deemed to increase the downward accountability of the LGA and facilitate coordination of non-governmental stakeholders.

#### *6.3. Implement awareness creation in villages*

To date, two meetings are held per year in the district capital to raise awareness among leaders of water project applications. Nevertheless, the effectiveness of these meetings is questionable, as confirmed by the knowledge level found during interviews at ward and village levels. The villages that are newly prioritized for full intervention will be specifically visited and supported in order to channel their needs into a demand and to help with the policy's application requirements. Thus, the demand creation will be included in the cycle and it will not be a pre-requisite that excludes less organized and remote communities.

#### *6.4. Supervision and coordination of implementing actors*

The national budget has already considered this activity, and a significant amount of money is being devoted in 2009/2010 to the field supervision of contractors during the first phase of the RWSSP. This is deemed crucial for the sustainability of the newly implemented services

(World Bank, 2008) and must be complemented with regular stakeholder meetings. A greater engagement of non-governmental actors is required to effectively improve coordination.

#### *6.5. Regular information system*

The lack of a regular information system in districts has been recognized as a recurrent problem in rural areas in Tanzania (Wateraid, 2009). The DWD recognized that the figures submitted annually to the ministry are not based on an extensive review of the situation. Again, the potential of WPM should be considered, especially as it will be rolled out for the whole country. The methodology foreseen for updating the information did not initially involve a direct visit to the villages. It was based on the collaboration of the existing actors: i) information on newly installed WPs was to be sent to the DWD by implementers; ii) status information on already installed WPs was to be collected by government officers at village level once a year (village executive officers-VEOs); and iii) a full new WPM exercise was to be conducted every four to five years. The methodology faced some constraints. Forty-seven interventions were recorded by the DWD in the period 2007–2009, but no detailed information was submitted by the implementers. Additionally, a pilot questionnaire was sent to six villages to test the efficiency of VEOs for updating, but it received a weak response in terms of quantity and quality of information.

These constraints highlighted the need to visit the villages in order to update the information. A simplified procedure was established to minimize costs. Rather than visiting each WP separately, the information was collected at village level. Village and sub-village leaders were summoned by letter to a meeting at the village office on a certain date, based on a timetable of visits that was established for the whole district. The situation of each WP was revised during the visits according to the existing database, and new WPs were recorded. This basic WPM update offered enough information summarized by village to complete the indexes described in Table 5. The exercise gave good results but had some limitations. The position of new WPs was not recorded with GPS (although the name and location up to sub-village level is available) and quality tests were not carried out. During each visit, the DWD member gave village leaders some recommendations and inputs regarding the village's water status. Additional information was also collected that is not usually recorded in WPM, such as the number of sub-villages without functional WPs in every village and the estimated number of functional private connections.

This basic update is not intended to substitute the complete campaign that is to be carried out every four to five years, but it does give a basic intermediate update on the situation. The implementation of routine information systems as initially foreseen is believed to be the procedure

to work towards. Additionally, it is worth exploring the potential of mobile phones to provide updated information.

## 7. The institutionalization of post-project support

The analysis also underlined the alarming situation of community management and highlighted three main issues:

- Only 11 out of 82 villages collect regular tariffs, and 61% of villages have private connections. Bank accounts are rarely used, and the management of funds is not adequately controlled.
- Although the policy defines that the district is responsible for providing support to communities (GoT, 2005), there was no regular mechanism in place to support community-managed systems. Support was mostly based on emergency calls.
- Challenges affecting sustainability are wide and complex. Fund management is upfront, but a lack of technical capacities, disputes about land uses, and source unreliability are also frequent. Moreover, the overall hygiene and sanitation remains weak and needs to be promoted in the long term.

These facts confirmed the need for sustained support to communities in order to keep services functional. Hence, the establishment of a district water and sanitation unit support (DWUS) was approved to specifically address these challenges. The expected outcome is an increase in the sustainability rates of the rural water and sanitation services in Same District, and the expected output is related to the establishment, legalization, and timely assistance to water user entities (WUE) (SDC, 2009b).

Two main points were addressed regarding the DWUS:

- i) A multisectoral team will be required to assist in different aspects. The team will be chaired by the district water engineer and have a secretary of the same department and another officer. A component of health, community development, education, finance, and planning departments will also be permanent members. A land officer, forest officer, and legal officer will occasionally be invited as members; and
- ii) The unit will be accountable to the district water and sanitation team formed by a water-related head of department who is responsible at the LGA level for the implementation of the RWSSP.

The team will be in charge of continuous monitoring and support for the management of services, through regular visits to the communities and contact with WUE leaders, to detect and solve conflicts that might arise, and to supervise key aspects such as transparency, affordability of the service and non-exclusion.

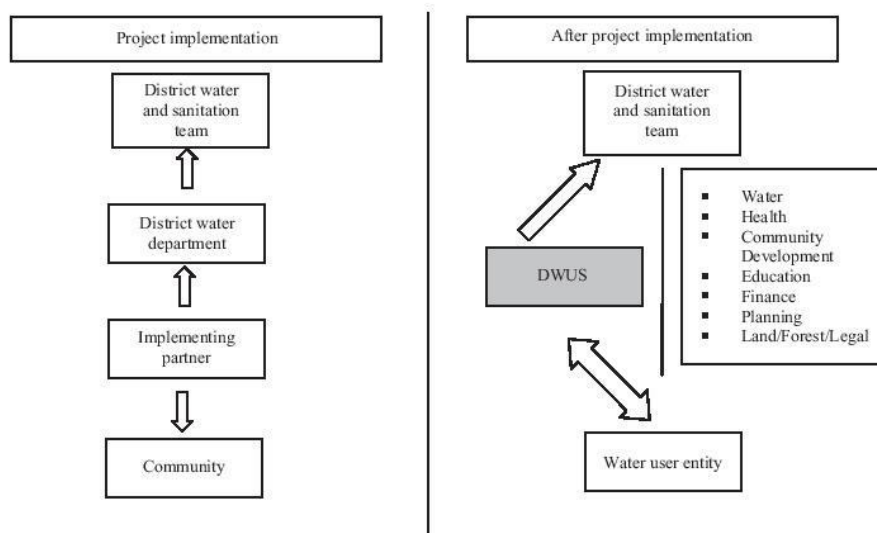
However, some challenges will need to be overcome. The funds for recurrent costs at LGA level remain

low, which makes it difficult to effectively support O&M at the community level. Additionally, LGAs lack capable human resources in many departments, and daily coordination between departments remains a challenge. Operational rules of DWUS have been developed, taking into account these limitations (SDC, 2009c). Additionally, it is believed that the regular reporting and upward accountability of this unit, based on specific targets, can foster its efficacy. In this sense, the support to this initiative from higher levels of government is crucial for its success. Additionally, in order to be fully effective, this measure will need to be complemented by others already foreseen in the Water Sector Development Plan, such as the mechanisms for availability of spare parts in rural areas, and the capacity building of staff at District level.

Figure 2 shows the institutional arrangements for project and post-project implementation and the sectors that form the DWUS. The project implementation arrangement is already applied at the national level. Implementing partners have already been subcontracted in every district, and the DWD is responsible for their supervision. No specific setup has been defined for the post-project situation. The DWUS has been created looking to fill this gap, which has also been recently highlighted in the pilot phase review (World Bank, 2008).

## 8. Conclusions

The approach to the delivery of water in developing countries has shifted according to successive, predominant political and economic ideologies. Today, the recognition of the human right to water is a milestone that requires governments to take on proactive roles in the provision and keeping of the service. Nevertheless, and despite being recognized in policy documents, the implications of acknowledging the human right to water are not sufficiently considered in policy implementation. The main target of current plans is the rapid increase of coverage, while other aspects of the human right remain overlooked: i) universal coverage is denied against efficiency of the investments, ii) quality of service is not controlled, and iii) the principles of non-exclusion on economical or social grounds are not sufficiently implemented at the community level. Indeed, the approach to service delivery is marked by the demand-response approach and full operation and maintenance (O&M) costs are borne by the community, with results that are unequal and hardly sustainable. In this context, local government authorities (LGAs) are frequently trapped in a pitfall: clear targets of increased service and fulfilment of rights are proclaimed at the national level, and they are responsible for implementation but are not always given enough resources. This paper has used a case study to address how LGAs can overcome some of these limitations



**Figure 2.** Institutional arrangements for project and post-project implementation of water services.  
*Note:* Arrows show the direction of accountability; grey shows the new institutional arrangement.

and discusses pro-poor resource allocation, the creation of information routines, and long-term support to communities.

The framework for the improvement of planning presented in this paper tackles some key points. First, LGAs must play a leading role if they are to be responsible for service provision. This was done by defining priorities based on objective data looking to reduce the influence of politics. They were based on needs — territorial equity being the key driver — aligned with the target of universal coverage of such a right. Second, the inclusion of the demand creation by LGA's in the project cycle will prevent funds from being allocated only to the most prepared and organized villages and will focus on helping underserved communities to meet the requirements. Third, the inclusion of a basic regular information collection system will help to monitor progress and ensure that resources are allocated according to the situation on the ground. Framing the planning in terms of a human right can definitely help to reduce local power influences, include the government support to weak communities and promote measures towards universal coverage. This would additionally require a wider acceptance of the contents of the human right at all levels of government, together with the definition of guidelines on how to mainstream it into the daily governance of water services. Downwards accountability and citizen awareness campaigns about the contents of the human right to water also need to increase to allow for these changes in service delivery approach to be kept over time.

Long-term support to community management is an unmet need for the rural sector in many countries and one of the key reasons for the low rates of water provision sustainability that are observed worldwide. Thus, the establishment of a multidisciplinary and institutionalized unit into the District Council is a step forward to address

this aspect. However, challenges related to the lack of funding from the central government, weak capacities, and departmental coordination remain.

The implementation of the human right to water is far from being embedded in the most common service delivery approach to rural water in developing countries. Despite being formally recognized, little has been done to deliver the right to citizens. Moreover, this challenge is greater in a process of decentralization, like the one of Tanzania, with lack of technical, human and financial resources at lower levels of government. While incoherencies in policies, institutional capacities and the service delivery approach remain unsolved, there remains a strong need to support understaffed and resource-limited LGAs and promote downward accountability. The process described herein is considered relevant given that the problems addressed affect many rural LGAs in developing countries in their capacity to effectively fulfil their responsibilities related to the human right to water, and it is replicable due to the simplicity of its tools and processes.

## Acknowledgments

The authors would like to thank Ingeniería Sin Fronteras-ApD for their support for this research. Thanks are also given to ISF-staff and volunteers in Tanzania, especially to Gema Mico, Angel Fernández, Sergio Verdejo, Daniel Mwita and Gaspary Gratian. This work was possible thanks to the grants provided from European Commission (9.ACP.RPR.101 Commitment No. 7), Ayuntamiento de Madrid, Junta de Comunidades de Castilla La Mancha, Región de Murcia, and Universidad Politécnica de Madrid. Research grants provided by the UPC-CCD 2009 and the ACCD U2008 are also acknowledged. The collaboration of

the Same District Council, and especially, the District Water Department, is gratefully recognized. Further thanks go to Paloma García, David Muñoz and three anonymous referees for their useful comments and suggestions.

## References

- Agrawal, A., Gupta, K., 2005. Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai. *World Development*, 33(7): 1101–1114.
- Bakker, K., 2007. The "Commons" Versus the "Commodity": Alter-globalization, Anti-privatization and the Human Right to Water in the Global South. *Antipode*, 39(3): 430–455.
- Bakker, K., 2008. The ambiguity of community: Debating alternatives to private-sector provision of urban water supply. *Water Alternatives*, 1(2): 236–252.
- Barlow, M., 2001. Commodification of water — the wrong prescription. *Water Science and Technology*, 43(4): 79–84.
- Barlow, M., 2009. *Our water commons: towards a new freshwater narrative*. Available at <http://www.canadians.org/water/publications/water%20commons/index.html>. Last accessed January 2010.
- Blair, H., 2000. Participation and Accountability at the Periphery: Democratic Local Governance in Six Countries. *World Development*, 28(1): 21–39.
- Carter, R., Tyrre, S.F., Howsam, P., 1993. Lessons Learned from the UN Water Decade. *Water and Environment Journal*, 7(6): 646–650.
- Cleaver, F., 2005. The inequality of social capital and the reproduction of chronic poverty. *World Development*, 33(6): 893–906.
- Cleaver F., Toner, A., 2006. The evolution of community water governance in Uchira, Tanzania: The implications for equality of access, sustainability and effectiveness. *Natural Resources Forum*, 30: 207–218.
- Crook, R., 2003. Decentralisation and poverty reduction in Africa: The politics of local–central relations. *Public Administration and Development*, 23: 77–88.
- Galasso E., Ravallion, M., 2005. Decentralized targeting of an antipoverty program. *Journal of Public Economics*, 89: 705–727.
- Giné, R., Pérez-Foguet, A., 2008. Sustainability assessment of national rural water supply program in Tanzania. *Natural Resources Forum*, 32: 327–342.
- Government of United Republic of Tanzania, 1991. *National Water Policy*. Ministry of Water, Dar es Salaam.
- Government of United Republic of Tanzania, 2002. *National Water Policy*. Ministry of Water and Livestock Development, Dar es Salaam.
- Government of United Republic of Tanzania, 2005. *Water Sector Development Program. Annex6: District Operational Manual*. Ministry of Water, September 2005.
- Government of United Republic of Tanzania, 2006. *Water Sector Development Program 2006–2025. Main report*. Ministry of Water, November 2006.
- Government of United Republic of Tanzania, 2009. *The Water Supply and Sanitation Act*, No 12, 15 May 2009.
- Hall, D., Lobina, E., 2004. Private and public interests in water and energy. *Natural Resources Forum*, 28: 268–277.
- Harvey, P., Reed, O., 2004. *Rural water supply in Africa: building blocks for handpump sustainability*. Water, Engineering and Development Centre, Loughborough University Press, UK, pp 5–6.
- Harvey, P., Reed, R.A., 2007. Community-managed water supplies in Africa: Sustainable or dispensable? *Community Development Journal*, 42(3): 365–378.
- Hickey, S., Bracking, S., 2005. Exploring the politics of chronic poverty: From representation to a politics of justice? *World Development*, 33(6): 851–865.
- Human Rights Council, 2008. *Human rights and access to safe drinking water and sanitation*. Resolution 7/22. 41st meeting, 28 March 2008.
- Hukka, J.J., Katko, T.S., 2003. Refuting the paradigm of water services privatization. *Natural Resources Forum*, 27: 142–155.
- International Conference on Water and the Environment, 1992. *The Dublin Statement and Report of the Conference*. Development Issues for the 21<sup>st</sup> century. 26–31 January. Available at <http://www.wmo.ch/pages/prog/hwrp/documents/english/icwedece.html> Last accessed January 2010.
- Jiménez, A., Pérez-Foguet, A., 2008. Improving water access indicators in developing countries: A proposal using water point mapping methodology. *Water Science & Technology: Water Supply*, 8(3): 279–287.
- Jiménez, A., Pérez-Foguet, A., 2009. International investments in the water sector. *International Journal of Water Resources Development*, 25(1): 1–14.
- Jiménez, A., Pérez-Foguet, A., 2010. Use of Water Point Mapping for the analysis of rural water supply plans: a case study from Tanzania. *Journal of Water Resource Planning and Management*. Paper submitted, under revision.
- Joint Monitoring Programme WHO/UNICEF, 2009. *Tanzania data summary sheet*. Accessible at [www.mdgs.un.org](http://www.mdgs.un.org). Last accessed August 2009.
- Kiefer, T., Brölmann, C., 2005. Beyond state sovereignty: The human right to water. *Non-State Actors and International Law*, 5: 183–208.
- Lee, T., Floris, V., 2003. Universal access to water and sanitation: Why the private sector must participate. *Natural Resources Forum*, 27: 279–290.
- Mehta, L., la Cour Madsen, B., 2005. Is the WTO after your water? The General Agreement on Trade in Services (GATS) and poor people's right to water. *Natural Resources Forum*, 29: 154–164.
- Nyerere, J., K., 1971. *TANU ten years after independence*. Report submitted to the TANU National Conference, Dar es Salaam, September 1971.
- Overseas Development Institute (ODI), 2003. Secure water? Poverty, livelihoods and demand-responsive approaches. *Policy Brief*, 4. Available at [www.odi.org.uk/rpeg/wpp/](http://www.odi.org.uk/rpeg/wpp/) Last accessed January 2010.
- Rural Water Supply and Sanitation Network, 2009. Available at <http://www.rwsn.ch/prarticle.2005-10-25.9856177177/prarticle.2005-10-26.9228452953> Last accessed January 2010.
- Same District Council, 2006. *Serious Water Shortage in Same District*. District Water Department, February 2006, Same, Tanzania.
- Same District Council, 2009a. *New water supply and sanitation services priorities in Same District*. September 2009. Same District Water Department, P.O.Box 7, Same, Tanzania.
- Same District Council, 2009b. *District Water and Sanitation Unit Support*. July 2009. District Water Department, Same, Tanzania.
- Same District Council, 2009c. *Kamuni na taratibu za DWUS*. Version 1.2. December 2009. District Water Department, Same, Tanzania.
- Savenije, H.H. G., van der Zaag, P., 2002. Water as an economic good and demand management paradigms with pitfalls. *Water International*, 27(1): 98–104.
- Steiner, S., 2007. Decentralisation and poverty: Conceptual framework and application to Uganda. *Public Administration and Development*, 27: 175–185.
- Stoupy, O., Sudgen, S., 2003. *Halving the Number of People without Access to Safe Water by 2015 — A Malawian Perspective. Part 2: New indicators for the millennium development goal*. WaterAid.
- Tanzania Society, 1975. *Water Supply; service to the nation to speed development*. Tanzania notes and records, 76. Tanzania Society, Dar es Salaam.
- TAWASANET (Tanzania Water and Sanitation Network), 2009. Out of sight and out of mind?. Are marginalised communities being overlooked in decision making? *Water and Sanitation Equity report 2009*. TAWASANET, PO Box 80099, Dar es Salaam.

- United Nations, 2002. *The Right to Water*. Economic and Social Council Committee on Economic, Social and Cultural Rights, E/C.12/2002/11, General Comment No. 15. November 26<sup>th</sup> 2002, Geneva: UN.
- Wateraid/ODI, 2005. *Learning for advocacy and good practice. WaterAid water point mapping*. Prepared by Katharina Welle, Overseas Development Institute. Available at [http://www.wateraid.org/international/what\\_we\\_do/policy\\_and\\_research/](http://www.wateraid.org/international/what_we_do/policy_and_research/). Last accessed January 2010.
- Wateraid, 2009. *Waterpoint Mapping, Planning and Obstacles to Equity in Rural Water Supply. A Review in Mpwapwa, Kongwa, Iramba and Nzega*. Prepared by Ben Taylor. WaterAid Tanzania June 2009, Dar es Salaam
- World Health Organization, UNICEF, 2000. *Global Water Supply and Sanitation Assessment 2000 Report*, Geneva: WHO.
- World Bank, 1997. *Making rural water supply sustainable: Recommendations from a global study*. Water and Sanitation program, Washington, DC: The World Bank. Available at <http://www-wds.worldbank.org>. Last accessed January 2010.
- World Bank, 1998. *Community Water Supply and Sanitation Conference*. Water and Sanitation program, Washington, DC: The World Bank. Available at <http://www-wds.worldbank.org>. Last accessed January 2010.
- World Bank, 2008. *Implementation Completion and results report (IDA-36230, IDA-3623A) on a credit in the amount of SDR20.8 Million (US\$26.00 Million equivalent) to the United Republic of Tanzania for a Rural Water Supply and Sanitation Project*. Report No:ICR 0000730, Washington, DC: The World Bank.