

Local Water Rights and Local Water User Entities: the Unsung Heroines to Water Resource Management in Tanzania

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Abstract

When considering water management, formal institutions tend to overshadow the local informal ones although the latter guide day-to-day interactions on water use. Conversely Integrated Water Resource Management (IWRM) has demonstrated a bias toward the formal state-based institutions for water management. A study was carried out to examine how local water rights and local informal institutional arrangements influence water management in the Great Ruaha River catchment in the Rufiji basin in Tanzania. Participatory appraisals were carried out, supplemented by focus group discussions, interviews, and stakeholders' workshop. It was found that local water rights, local water rotations and local water user groups are widely in use and are more influential than the formal water rights, water fees and water user associations (WUAs). Water allocation at the driest period depends on local informal relations among irrigators. More than 70% of water users choose to settle disputes over water via informal channels and the latter are more effective in resolving water conflicts and reconciling the victims compared to the formal routes. It was also found that although much emphasis and resources have been expended in transforming local water rights and water related organizations to formal registered ones, the former have remained popular and water users feel more affiliated to local arrangements. The paper concludes that local informal water management can offer the best lessons for the formal management arrangements and should not be simply overlooked. Finally, the paper recommends that the formal and informal institutions should be amalgamated to bring forth a real Integrated Water Resource Management framework.

Keywords: integrated water management, formal institutions, informal institutions, water rights, water conflicts, best lessons.

Introduction

Water resource management in Tanzania has undergone series of transformation, mainly in the past decade. The great thrust however, has been on the support of state-based formal institutional arrangements through water rights, water fees and water user associations. Under these arrangements all water users in the basin are expected to apply for water rights through the River Basin Water Office (RBWO). The wider assumption is that water rights would help in monitoring existing and in issuing new rights for abstractions, and that through this, the state would control conflicts which are widely believed to be arising from unchecked abstraction.

Consequently, the water rights have been linked with water taxes expressed as water user fees where any user is estimated and billed annually depending on the allowable abstraction in the water right. The basic argument for the water user fees are that they would propel awareness in the use of water resource and as a result encourage efficiency through reduced water use. Water user associations, like the water rights and fees, are supposedly expected to take over the majority of water rights formerly allocated to individuals and government, and administer water use among users.

This paper sounds the alarm that what may generically seem a best practice and attract a lot of investments and resources may as well have a lot of pitfalls to avoid. We argue that water rights, water fees and water user associations have not fully worked as anticipated and that contrary to the understanding of many, water management at the local grassroots user level is still widely governed by informal institutions and even where the formal arrangements have worked, they have drawn heavily from the informal ones.

Several studies have acknowledged the fact that informal local level institutions can make a difference in water management. (Bruns and Meinzen-Dick, 2000; Bruns and Meinzen-Dick, 2003; Maganga, 2002; Mwakaje & Sokoni, 2003; Shah et. al., 2001; Sokile et. al., 2002; Van Koppen, 2002). It is therefore amazing how the majority of practitioners and decision-makers keep being inclined towards supporting and propelling formal state-based water rights, water fees and water user association, while closing their eyes to some local informal best practices. However, even among the scholars who agree with the informal arrangements, there is somewhat a laxity to stand the ground and bring the practical local practices on board without drawing from the formal-informal mix. Hence, the risk is real that, even if local rights are recognized as legitimate by formal law, the way in which this is done still stifles the dynamics that are at the core of local arrangements and thus negatively affects local rights (Boelens, personal communication).

Most scholars link water management with the conventional theories of common resource management per se. However, certainly in Africa, water goes far beyond a common resource. In Sub Saharan Africa, water is a basis for life for agro- and for pastoral societies and its allocation mechanism is firmly anchored in the deeper socio-cultural and economic context that cannot be simply understood by mainstream economic, social, and legal principles.

Background to Study Area and Study Methodology

Tanzania adopted the River Basin Management (RBM) concept in 1981 and immediately started the process of gazetting and creating Basin Water Boards. Nine basins were established: Rufiji Basin, Pangani Basin, Ruvu-Wami Basin, Ruvuma-Lukuledi-Mbemkuru Basin, Lake Nyasa Basin, Lake Rukwa Basin, Lake Natron-Manyara-Eyasi Basin, Lake Victoria Basin, and Lake Tanganyika Basin. The Great Ruaha River catchment is in South-west Tanzania. Within the Great Ruaha River catchment in the Rufiji basin, the Mkoji sub- catchment is the most stressed sub-catchment with diverse water use and increasing external institutional support to manage the scarce water and mitigate conflicts, especially during the peak of the dry season between August and November. Major water uses in the study area are supplementary and dry season irrigation with smallholder farmers and three large-scale state paddy farms, pastoralism, domestic water supply and construction and brick making. Downstream of the catchment are Ifushiro swamp and Ihefu wetlands that draw a lot of environmental attention. Further downstream is the Ruaha National Park that has been topical, following the cessation of the dry-season flow of the Great Ruaha River across the National Park. Downstream of the Ruaha National Park, it borders the Mtera dam. The dam has also suffered during the dry season, resulting into power quagmire in the big cities and industries.

As a response to the growing water management concerns, the Ministry of Water, supported by the World Bank has initiated a twin project called River Basin Management and Smallholder Irrigation Improvement Project (RBMSIIP). The RBM component of the project is charged with the formation of Water User Associations (WUAs) and the SIIP component works on the improvement of the irrigation off-take structures and other hardware. The River Basin Water Office is coordinating these efforts, with a sub-office within the sub-catchment. Since the efforts started, some donor-funded projects such as World Wildlife Fund have joined in forming WUAs and in assisting local communities to apply for state-based water rights.

The study was conducted in the Mkoji sub-catchment of the Great Ruaha River Catchment in the Rufiji basin between July 2002 and June 2003, under the auspice of the Raising Irrigation Productivity and Releasing Water for Intersectoral Needs (RIPARWIN) project. Nine villages were randomly selected from the upper, middle and lower zones of the Mkoji catchment, three from each zone. Participatory Rural Appraisal (PRA) was conducted in each of the three zones to establish trends in the performance of formal vis-à-vis informal ones. Focus Group Discussions were then done in each village to triangulate the findings. This was followed up by semi-structured structured interviews with key informants to further qualify the findings. This was followed by a River Basin Game¹. Workshop

¹River Basin Game (RBG) is a role play tool that is used to elicit stakeholders feelings and opinions with respect to his/her strategic location in the river basin and how that location affect his/her seasonal access to water. In November 2002, forty-five local water users from upper, mid and lower zones of the Mkoji catchment were invited in the workshop and as they played different roles in the RBG, they discussed several implications of the external state-based intervention in water management. In July 2003, forty-two senior water management stakeholders and decision makers attended the second workshop and discussed several expectations and implications of both local and state-based institutional considerations on water management.

that brought together local participants from the three zones. A second River Basin Game workshop was conducted with senior basin and national level stakeholders. Some of the findings are presented below.

Sounding the Alarm: Pitfalls to Formal Water Rights

Water rights are mechanisms through which a user can access water for a particular use without jeopardizing another users' right. Water rights can be local or customary; meaning that a way through which users get access to their water and solve their allocation mechanism among themselves without necessarily having a written document to define volumes and time for abstraction. Water rights are however, mostly thought to be statutory where it refers to a blueprint document issued by the government, defining volumetric allocation of water and sometimes, period for that particular allocation and whom it is provided for.

There are about 990 formal water rights in the Rufiji basin alone. The number is expected to rise, as there are several pending applications. At its present capacity, the River Basin Water Office may not efficiently administer water charges for all water rights that are sparsely located within the basin. To ensure efficient charging, River Basin Water Office would require extra staff; elaborate billing system and efficient institutions for collection of the fees.

It's worth understanding then who hold these formal water rights. More water rights are held by private users (28.2% by private individuals and 19.4% by private companies, making a total of almost a half of all water rights; i.e. 47.6%) despite the directives in the National Water Policy of 1992 that WUAs should hold most water rights. The government also still holds a high proportion of water rights (40.5%) and has been reluctant to transfer them to (WUAs). WUAs, on the other hand, have the minority share, accounting to less than a tenth of the water rights (9.9%).

The existing formal water rights are complex to operate. Some were issued under the Water Ordinance 1959 which was repealed by the Water Utilization (Control and Regulation) Act No. 42 of 1974 and had no provision for payment of any water fee altogether. Some water right holders passed away and some new users have taken over. Some rights have been abandoned through migration or death of the bearers, or by change of river regime, depth and flow. Some water uses have changed, far from the original purpose of the application. Some water rights have been illegally transferred to new holders or sublet, while some 'right holders' have changed their practical abstraction, mostly by increasing the quantity of abstraction against their allocation. Water rights are issued irrespective of the season, despite major differences in availability and value of water in the wet and dry seasons. This may have exacerbated concerns over water use between May and December when there is scarcity.

Formal water rights in the sense they are operating now may not solve the problem of water management in Tanzania due to several considerations. Formal water rights are alien to pre-colonial Africa. They are not rooted in the long-term stable natural resource management context in African communities. Water rights were first introduced in Tanzania during the German colonial era as a colonial resource management tool to protect the interests of the settlers in the potential agricultural land in the northern highlands which encompass the Pangani river basin and the southern highlands which make up the catchment area of the Rufiji basin. Ever since, the concept of fancy state-offered water rights has met some resistance at the grassroots level.

Formal water rights are difficult to administer in Tanzania and other African countries where water users are mostly poor and the local abstraction structures are complex, e.g. *dindilos*². The existence of so many water users with flexible, changing off-take structures makes it difficult to monitor all abstractions within a given river. Even in cases where there is some permanent off-take structure, it is normally local with no volumetric adjustments. In the few cases where there are modern permanent off-takes, it remains always difficult to monitor the volumes abstracted by users all the time.

² *Dindilo* is a local name for traditional water off-takes in the Usangu plains. They are normally made by blocking all or part of the river with grass and mud, strengthened by poles and stones. Each *dindilo* is managed by a complex institution with binding customs and agreements and led through a local committee, that oversees water allocation, operation and maintenance, and consensus building.

Water rights are connected to water fees- making it even more complex to implement and to elicit local support. Since 1990s when cost-sharing policies were adopted in Tanzania, the river basin management concept was aligned with water rights that are charged volumetrically by the River Basin Water Office. The domination of the water use by many small-scale poor water users makes it difficult to collect water fees. Water users are agitated about the applying for or identifying with water rights.

Sounding the Alarm: Pitfalls to Water User Associations

While most water management specialists believe that WUAs are a promising means of managing water at the local level, and while many donor-funded NGOs and international agencies have been supporting the formation of WUAs and their apex organization in Tanzania, this study has found that WUAs are not a panacea to water management and may not necessarily result into the desired management imperatives. WUAs as they are currently formed and operated, may results in high levels of inequality, partiality and isolation, in most cases favoring few local-level elites and the village-level bureaucrats: those who can talk, walk, and work before, during and after the formation of a WUA.

Table 1. Various options for registering Water User Entities

Typo of WUE	Where they register	Legislative provision
Water User Associations	Ministry of Water and Livestock Development	Water Utilization Act, amendment no.8, 1997
Water User Groups	District Councils where they are based	Local Government Act. No. 8, 1992
Water Companies	Ministry of Finance	Companies Act no. 212, Section 3(1)
Trustees	Ministry of Justice and Constitutional Affairs	Trustee Act Cap.375
Cooperative Societies	Ministry of Cooperatives and Marketing	Cooperative Societies Act No. 14, 1982
Corporation Sole		Corporation Act No.25, 1974
	Ministry of Home Affairs	Cap. 337 of the Civil Society Act (like NGOs)

In Tanzania, there are six options for forming Water User Entities (WUEs) for registration by the Ministry of Water and Livestock Development, as given in Table 1. The options are diverse in nature and operations, ranging from profit maximization- like water companies, to the attainment of social equity- like in cooperative societies. Legislative provision for registering the WUEs is also diverse, covering six different acts in different government ministries. This has resulted into a lack of coordination and networking between the WUEs. Table 2 shows the general trend of the formation of the WUEs and the fact that more Water User Groups have been formed under the Local Government Act.8 of 1992, followed by local water companies under the Companies Act. 212, Section 3 (1). Water User Associations in the strict sense of associations are quite few (only 16, which is equivalent to 55% of the 29 WUEs in the Usangu plains).

Table 2: Number of Water User Entities registered in the DRWS of the Ministry of Water and Livestock Development

No	Type of WUE	Basin			Total
		Rufiji	Pangani	L. Victoria	
1	Water User Associations	12	3	25	40
2	Water User Groups	0	0	1709**	1709
3	Water Companies	21*	2	0	22
4	Trustees	0	2	0	2
5	Cooperative Societies	0	0	0	0
6	Corporation Sole	0	0	0	0

* All water companies are in the Morogoro Region

** All water User Groups are Shinyanga and Morogoro and are made up domestic water users who use pumps

These few WUAs have also a lot of issues to settle; they do not meet frequently, most of them do not follow their own constitutions nor are their accounts regularly audited. Moreover, the formalization of decision-making into committees and members, which only meet at certain intervals, is inappropriate for irrigation problems that are highly dependent upon variable climate. Often, once a WUA finally agrees on a problem, it is already too late to design a solution strategy.

The Unsung Heroine: Local Water Rights Work!

Vermillion (1997) pointed out some pitfalls that formal, external interventions on water management are often blind to local existing arrangements and ignore local parameters and variations such as soils, slopes and drainage. Bruns and Meinzen-Dick (2000) add further parameters such as local values and longstanding neighborhood relations, leaderships, sanctions and motivations to the list of the frequently bypassed issues. Locally, customary water rights are widely recognized. Our experience in the Usangu plains and elsewhere in Tanzania has found out that local water rights widely work in managing water resource.

Local water rights in the Usangu plains are attained by:

- Inheritance: of land, *madindilo* or canals from a previous family member
- Rent: short-time ownership of irrigable land and related water through payment of a rent
- Status: acquired or non-acquired e.g. *Mwene*, Councilor, widow, poorest of the poor. These people category would access water owing to their special status in the society
- Voluntary labour: in cleaning canal, digging *dindilo*, etc. Once someone participates in voluntary labour, locally known as *maendeleo*, s/he is entitled to some water.
- Negotiations: verbal/ monetary-knowledge and information; one may get water through talking to another user who have extra, or who do not need water at that particular time or season, or may compensate for water by money

Local water distribution is arranged and enforced through:

- Water rotations (*zamu*): *Zamu* are effective in minimizing water conflicts. They are self-sustainable, as the current irrigator is barred from continuing irrigating by the next person in the shift. Even the formal water rights are operationalized by *zamu*.
- Local bye-laws: local water users sit together and agree on the dos and don'ts and the penalties thereof.
- Phobia: Water users would scare an irrigator who is on the rotation, especially at night. As the latter shies and runs away, the former directs water to his/her field.
- Customs and traditions; e.g. permissions for digging and reviving *dindilos* in the upper catchment

The local water rights are embedded in the tools that are working in conservation of water sources and distribution of water, mainly local negotiations and agitations and/ or customs and traditions that are based on the dual principles of enforcement of personal positive behavior and equity through fear and respect of the aftermath of the failure to abide to the agreed principle in water management.

The local rights are participatory in operation; all users in the area must normally consent to the right. They are also self-regulatory in the sense that there are low or no extra costs, so no external resource are needed to enforce and monitor them. Local rights are also sensitive to the vulnerable e.g. widows, the poor, for example, during the water rotations (*zamu*), widows and the poorest in the irrigated area will get their share before others irrigate. They can also contain conflicts to non-reactive levels. However, the major weaknesses of the local rights and challenges that external interventions should focus on are, first, that local rights are not necessarily gender sensitive, and, second, that they do not incorporate catchment/ basin-wide solutions. They are local indeed and once basin-level conflict is reactive, local arrangements cannot handle it.

The Unsung Heroine: Local Informal Associations Effectively Manage Water!

African and other agrarian societies are built under strong social relations and bonds that draw heavily from resource use and allocation. Available literature show how kingdoms, chiefdoms, territories,

clans and households were linked and/or divided by resources such as water bodies, forests, etc.¹. Local informal groups are often amorphous, temporary, and difficult to appreciate by outsiders. They don't have written constitutions, registration numbers and vocal committees. However, daily resource use interactions are widely determined by these relations. On the other hand, formal associations are often rigid, solitude, and difficult to enter into and enter out. As a result, many water users choose the informal routes to address their resource use challenges.

In the Usangu plains, local informal associations are influential, powerful and attractive to the local communities. Most people feel a stronger sense of identity and belongingness than in the formal WUAs. Some of the most evident local associations are:

- Rotational labour-based groups commonly called “*Njaanwa*”.
- Duty-based canal cleaning groups called “*Maendeleo*” in Rufiji basin and “*Msaragambo*” in Pangani.
- Local committee for organizing water rotation and canal clean-up, normally made up of irrigators at the tail-end or downstream called “*Kamati ya Maji*”
- (Originally more) clan-based groups that dig and manage their own canal (*dindilo*), referring to themselves as “*Mwana wa pepa*”
- Local brewery groups called “*Kilabu*”

The local groups have been into existence for a long time and have been evolving and adjusting to the changes with time. For example, while the original “*njaanwas*” and “*dindilos*” were basically made up of one ethnic group, they are nowadays composed of members with other similar identities such as those who live closer, or have farms closer, or go to church together. Evidently, the state-driven WUAs also drew heavily from the existing social affiliations.

The Unsung Heroine: Local Conflict Mediation and Arbitration Processes Work!

Most of disputes are resolved well before they erupt into serious conflicts. This conflict resolution dynamic is not normally outspoken. In the Usangu plains, we learned that local level informal institutions perform a significant role in resolving conflicts. Most conflicts are resolved at different levels:

- One to one level between the victims
- Local elders level
- Canal committee level
- Village leaders level
- Ward level

One to one conflicts resolution level is the most effective institution in managing water conflicts. Water users would quarrel and solve their dispute among themselves before reporting it elsewhere. Once the bickering is beyond the individual level, one of the victims would report the matter to local elders. The elder may not necessarily be the same who handle such disputes, as any affected party may choose to seek assistance from any other elderly person whom he deems capable. Most water users prefer this route because both parties feel more safe and secure therein, unlike in the courts of formal law where one party would lose altogether. The informal conflict mediation is based under the win-win solutions where the drive to arbitration is to make sure that any party attains satisfaction. Most water committees operate informally, by bringing together different parties to an amicable solution.

There are several institutions that water users can select to forward their disputes. Should the conflicts fail to be resolved, one of the parties would forward it to the village water committee or to the ward tribunal, although they would normally start with the former. Unless all these levels have failed to arbitrate, the one who feels more unduly refuted would take the matter to the primary courts of law.

The major challenge that faces the informal conflict mediation arrangements is that the formal courts of law tend to nullify the rulings of the former. This has encouraged those who are somewhat knowledgeable to run to the courts of law, although the ruling reached has further propelled new dimensions of conflict, taking it further to the relatives.

Conclusion

In sum, there are many lessons to learn from the local institutions; there is much fire to collect from the ashes. The key lesson learnt from the study in Usangu plains is that local institutions play a significant role in water management. Some local arrangements such as local water rights, water rotations and one-to-one conflict resolution mechanisms are more efficient, more cost-effective, longer-lasting and more widely accepted among local water users than most top-down state-driven institutions. As the institutional reform takes place in many countries, reformers need to learn from the existing experiences. Local informal institutions should not be thrown away as primitive and obsolete. Local water management arrangements need to be given time to evolve, with least support possible from the external agencies, as they seek to address newly emerging water management imperatives.

When considering formal state-based institutions, water users should not think that they are a panacea to all water management challenges. In the Usangu plains, it is evident that water rights, water fees and water user associations need to be applied with much caution, lest we may craft new challenges and conflicts. Contrary to the expectation of many, government and non-government water management organizations, topical rights, fees and WUAs have not solved the problem of water resource management. Water management practitioners, governments and donor agencies should not embrace the formal state-based institutions as a panacea for IWRM. The government, private sector, local water users and other stakeholders themselves need to sit together to dialogue and agree on the basis, modality, policy and procedures for managing water resources.

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