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Incorporating customary laws in implementation of IWRM: some insights from Rufiji River Basin, Tanzania

Faustin P. Maganga

Institute of Resource Assessment (IRA), University of Dar es Salaam, P.O. Box 35097, Dar es Salaam, Tanzania

Abstract

The Integrated Water Resources Management (IWRM) paradigm, which underpin current water reforms in Tanzania focus on the use of statutory legal systems to regulate the use of water resources. However, Tanzania operates under a plural legal system, where the diverse customary systems are relied upon in the implementation of IWRM. Very few human activities are regulated by statutory laws alone. Neglect of customary laws may cause IWRM implementation to fail, or will have negative consequences for individuals and groups who were better served by customary-based systems. This paper describes statutory and customary systems of managing water resources and discusses some of the challenges of implementing IWRM whilst taking appropriate account of customary laws in Tanzania, with the Rufiji River Basin as a case study.

Keywords: Water resources; Conflict; Legal pluralism; Irrigation; Integrated water resources management; Tanzania

1. Introduction

For a long time, water resources in Tanzania have not been managed in a comprehensive manner. The sector has been characterised by fragmented planning and management; a lack of integrated approaches and conflicting sectoral policies which have contributed to increasing conflicts over water use (URT, 1995a). As noted by Maganga et al. (2001), conflicts and inefficiencies make it imperative that available water resources are managed in a comprehensive manner, which takes into consideration the multiple users of water resources, land use impacts, pollution control, environmental and public health issues. These are some of the issues which are addressed by the new Integrated Water Resources Management (IWRM) paradigm (URT, 1995a,b). IWRM is supposed to promote integration across sectors, applications, groups in society and time and is based upon the Dublin principles agreed in 1992. These principles recognise the finite and vulnerable nature of water resources, the need for more participatory approaches to development and management, and the economic value of water. But how participatory can IWRM be, when it relies on statutory systems alone and neglect customary arrangements which are relied upon by the majority of the people in the villages? In order to indicate the challenges of incorporating customary arrangements in the implementation of IWRM, this paper compares statutory and customary systems of managing water resources and discusses the possible implications of implementing IWRM whilst taking appropriate account of customary laws in Tanzania, with the Rufiji River Basin as a case study. The paper starts by a brief outline of *legal pluralism*, the theoretical framework under which the discussion is based. The paper then describes the statutory system of managing water resources, followed by the application of the approach by the Rufiji Basin Water Office. A description of the customary system which is used by the majority of the people then follows, before concluding with a discussion of the implications of incorporating customary arrangements in the implementation of IWRM.

2. Managing water resources under legal pluralism: a theoretical framework

As it was noted by Meinzen-Dick and Pradhan (2001), policymakers are often influenced by approaches to property rights which regard these rights as unitary and fixed, rather than diverse and changing. This is also the case in Tanzania, where the government, prompted by increasing pressure on land and water resources, has

E-mail address: efh@udsm.ac.tz (F.P. Maganga).

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been busy trying to establish formal legal systems, fixing property regimes and formalising informal arrangements. These are what it considers to be efficient and transparent institutional frameworks for the management of these resources. With regard to water resources, the government has established Basin Water Boards (BWBs) and Offices in order to manage water utilisation by different users, i.e. to allocate water rights; legalise, grant, modify and control water abstractions; protect the existing water rights and take to court defaulters of the Water Utilisation (Control and Regulation) Act.

In spite of the government's over-reliance on statutory arrangements for water management, some studies have highlighted the crucial role played by both 'formal' and 'informal' institutions in NRM (Boesen et al., 1999; Odgaard and Maganga, 1995). The interplay between formal and informal institutions in NRM is well captured by Meinzen-Dick and Pradhan (2001), who have written about the implications of *legal pluralism* for natural resource management, noting that many conceptions of property rights have focused only on static statutory law, ignoring the co-existence and interaction between multiple legal orders such as state, customary, and religious laws. Tanzania has a pluralistic legal system and hence land and water resources are regulated by different pieces of legislation and institutions, including statutory law, customary laws of the 120-plus ethnic groups, Islamic law, etc. Whenever there is scarcity and competition, though, the authorities pretend that the only prevailing law is state law. Before discussing how the statutory system of managing water is organised in Tanzania, it is important, first of all to introduce the study area (Section 3 below).

3. The study area

The Rufiji basin covers an area of about 177,420 km^2, and drains the Southern Highlands into the Indian Ocean (see Fig. 1). Various water uses co-exist in the basin, including domestic and livestock water supply; irrigation (mainly in the Great Ruaha and Kilombero valleys); hydro-power generation; fishing and wildlife water supply; and transport. The basin comprises four major rivers: The Great Ruaha, Kilombero, Luwengu and Rufiji. A number of studies have documented the water resource problems facing the basin (Baur et al., 2000; World Bank, 1997; and URT, 1995c). Water resources in the basin are mainly used for irrigation, generation of electricity, and domestic use.

As it was noted in Maganga et al., 2001, within the Rufiji basin, the greatest water use occurs in the Great Ruaha sub-basin, and already water shortages and water use conflicts are being experienced. Competition is mainly between downstream hydropower generation and upstream irrigation, due mainly to the design of

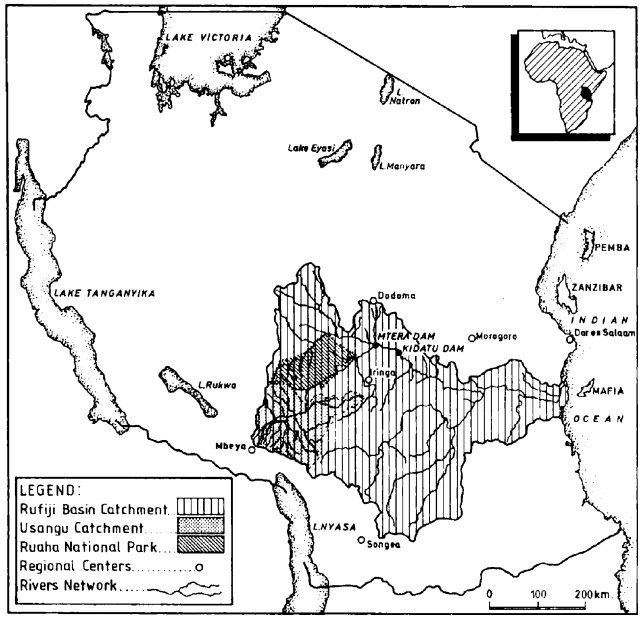

Fig. 1. Map of Tanzania, showing Rufiji Basin.

hydropower schemes that did not take increasing irrigation demand into account. The situation is further aggravated by wastage of water as nearly all abstractions by smallholder irrigators are neither controlled, nor have incentives to use water efficiently.

In theory a person or community must have a water right to be allowed to take water from a pump or irrigation 'furrow'. However, in general smallholder irrigators do not hold water rights. Currently efforts are being made to persuade communities to accept them, but there is understandably resistance. Tanzania has a very long history (stretching back into pre-history) of indigenous irrigation, and people do not understand why they must now pay for a permit for something their ancestors have always seen as a right.

4. Statutory systems of managing water resources

The Water Utilisation (Control and Regulation) Act, 1974 is the main piece of legislation in Tanzania regulating rivers, streams and internal lakes. This law has an elaborate system of controls, ranging from declaring all water to be the property of the Republic, to designation of waters as "National Waters" and "Regional Waters." As a way of exerting further controls, the Act divides the country into drainage basins under BWBs. Also, the Act furnishes an elaborate system of Water Rights. The system of Water Rights is the means through which water abstractions, and uses and diversions are brought under regulative regimes of law. Several conditions are read into every Water Right granted for mining, or for forestry or for industrial purposes or for the generation of power. The first condition, is that the holder of the

Water Right in question is obliged to return the water he has used back to the stream or body of water from which it was taken or to such other stream or body of water as may be authorised by the Water Officer. The holder of any Water Right is further required to ensure that before water he has used under a Water Right is discharged into receiving waters, that water so discharged must be so treated or otherwise modified as to comply with prescribed Effluent and Receiving Water Standards.

According to government thinking access to various types of water can only be had through the grace of the Republic. This ultimate ownership of water enables the Republic to exert control over not only distribution and supply of water, but prevention, reduction and control of pollution of waters. Direct abstraction of underground water is allowed under certain circumstances elaborated under Water Utilization (Control and Regulation) Act, 1974. Section 11 allows the owner or occupier of any land to sink or enlarge any well or borehole thereon and abstract water not exceeding 22,700 litres a day. This form of ''Direct Abstraction'' under Section 11 is not entirely free of regulation by the Government. When an application is made for abstraction and use of ground water, the Water Officer will prepare a notice setting out particulars of the application. The applicant for abstraction and use of ground water is required to submit data and information collected during the ground water exploration and drilling activities. This requirement furnishes the government with database it could use in its day to day decision-making. Other particulars expected from the applicant include the quantity and quality of water abstracted; the area of activities in the basin and the purpose for which the water will be used. These particulars can potentially be used to monitor polluting materials and be a basis for Ministerial Regulation over human activities for the purposes of protecting the marine environment from land based pollution. Harvesting and use of rainwater is not subject to any restriction by the Government. Owner or occupier of land may construct on his land canals, channels, reservoirs etc., for conservation of water resulting from rainfall. Whoever harvests and collects rain water is required by the Law of Tort (Strict Liability) to ensure that the water so collected does not escape and cause injury to persons or property of their neighbours.

The Water Utilization (Control and Regulation) Act 1974 also created a novelty in the form of Water Users' Associations. Water Users' Associations are an important conflict resolution tool of water management. The associations seek to reduce the number of Water Rights Holders for effective supervision over water use. A Water Users' Association with a Water Right is obliged like any other Water Right holder to: (a) return water used to the stream or body of water from which it was taken; (b) ensure that water is substantially undiminished in quantity; (c) ensure that water is not polluted with any matter derived from such use by the Associations' Members; and (d) ensure that water used by their respective members is, before its direct discharge into receiving waters, be so treated as to comply with prescribed Effluent and Receiving Water Standards. Water Users' Associations are required to install water treatment plants to ensure that water returned by the associates after use is of the acceptable standards. Water Rights granted to Water Users' Associations include the obligation to install at the point of discharge all machinery and other facilities necessary for the taking of samples and the collection and treatment of effluents. Water Users' Associations are required, like the other holders of Water Rights to make periodical returns on pollution to their respective Water Officer.

BWBs are an important water management and pollution control mechanisms under Water Utilization (Control and Regulation) Act, 1974. BWBs were, before the 1981 amendment of Water Utilization (Control and Regulation) Act 1974 known as Regional Water Advisory Boards. A ''Water Basin'' is defined as any area of land delimited and declared by the Minister under Section 7 of the Water Utilization (Control and Regulation) Act 1974 to be a Water Basin in relation to any river or other water source. BWBs are supposed to be established in respect of each Water basin declared by the Minister—and for each BWB, the Minister responsible for Water Development matters appoints not less than seven nor more than 10 persons to be members of that BWB.

The BWB is the principal advisory organ in matter relating to the utilisation of water and regulation of pollution. The Board advises the RWO on all matters concerning the appointment of regional water supplies, the determination, diminution or modification of Water Rights, measures to be taken in case of drought and priorities to be given. Before granting or refusing to grant any application for Water Right, RWO is required to consider the advice of BWB. BWBs have great potentials for management of conflicts over water resources. In addition, the BWB has the power to carry out, and promote the carrying out of research and investigations into the causes and ways for the efficient prevention or control, of water pollution.

The BWBs are empowered to formulate and recommend to the Government comprehensive plans for the regulation of the discharge of effluents by industrial, trade and other categories of users of water. The Boards formulate and recommend to the Minister the best ways of ensuring compliance with, uniform procedure for the sampling and examination of water sewage and industrial effluent, designating units for expressing results. Powers of the Minister for Water Development are supposed to be used to make regulations suggested by

the BWBs. They are expected to advise and assist the Government, public authorities and other persons or bodies of people' measures for the more efficient control or prevention of water pollution. They are also supposed to recommend to the Minister responsible for Water Development legislative measures necessary/suitable for the effective control of water pollution; and formulate Effluent and Receiving Water Standards, and programmes for ensuring compliance by domestic commercial, industrial and other users of water.

The Courts of law have been given prominent controlling role within the framework of the Water Utilization (Control and Regulation) Act 1974. The sanctity of water management organs under Water Utilization (Control and Regulation) Act 1974 are guaranteed by both criminal and civil laws. Several offences have been created under the Water Utilization (Control and Regulation) Act 1974. It is an offence, for example to make false statements to procure grant of a Water Right. Also, it is an offence to destroy, deface or to remove any level marks, beacon or other structure or appliance, or obstructs, molests or hinders any public officer in the lawful exercise of his powers or duties under Water Utilization (Control and Regulation) Act 1974. It is also an offence to divert, dam, store, abstracts or use water without a Water Right. In line with the common law tradition, Water Utilization (Control and Regulation) Act, 1974 envisages a supplementary role of civil proceedings by private individuals to enforce rights and privileges arising out of the Water Utilization (Control and Regulation) Act, 1974. Section 36 specifically saves civil proceedings by categorically providing that:

> "... Nothing contained in this Act shall affect the civil liability of any person for any damage resulting from the construction, alteration or destruction of any works or failure to maintain the same in proper repair or from the obstruction, storage or diversion of any water ..."

Section 4.1 below illustrates the application of the statutory water management approach by the Rufiji Basin Water Office.

4.1. IWRM in the Rufiji basin

In 1995 the World Bank and Danida funded a Rapid Water Resources Assessment (URT, 1995a), as part of a comprehensive Water and Sanitation Sector Review. The assessment highlighted the increasing competition for water resources in the Rufiji and Pangani basins, noting the growing demand for water for irrigation and domestic use. In addition, the assessment noted that there was considerable conflict between upstream irrigators and downstream hydro-power generation. In order to manage water resource in the Rufiji Basin, the Rufiji Basin Water Office was established after the inauguration of the BWB in 1993. The main objectives of the office are firstly, to act as principal executors of the water Utilisation Act no. 42 of 1974 and its subsequent amendments (namely of 1981, 1989 and 1997) on water allocation and water pollution; and to carry out research pertaining to water resources management in the Rufiji River Basin.

The following are among the immediate plans of the Office:

- To update and establish a water rights and water abstractions register as per existing situation.
- To establish and maintain a water resources data bank for water management purposes.
- To carry out awareness creation activities and education to raise the communities' social and political will and commitment towards water resources management problems.
- To involve stakeholders in water resources management issues particularly those related to equitable utilization, allocation and conservation of water resources.
- To establish Water Users Association or Water User Groups as legal institutions linking the Office with stakeholders in all matters related to the management of water resources.
- To continue with water pollution monitoring and control and water apportioning in the basin.
- To continue with monitoring, regulation and control of water resources
- In collaboration with other institutions, to facilitate environmental and water resources management issues in the basin.

As it was noted in Maganga et al. (2001), farmers in both Rufiji basin view basin management suspiciously, and consider it as an effort to safeguard TANESCO's [1] interests in reserving sufficient water for hydropower (World Bank, 1997). This negative perception is reinforced by the fact that TANESCO is providing most of the financial and material support for managing water resources in the basin creating an impression of inequitable use of water resources and inequitable sharing of benefits derived from using the basin water resources.

5. Customary systems of managing water resources

For the majority of the people in the Rufiji Basin, access to land and water for irrigation is regulated according to customary arrangements. Irrigation is carried out by gravity, using simple unlined canals to divert water from their sources (normally rivers). In some cases simple dams may be erected by barriers of boulders,

[1] Tanzania Electric Company, the power generating company.

strengthened with branches and mud in order to control the water flow, but the technical efficiency of such simple technology has been found to be wanting, as noted by Adams et al. (1994).

For example, on Usangu Plains there are many instances where villagers organise themselves under an informal association, *chama*, in order to construct an irrigation system. A good example of such a "traditional" irrigation systems is found in Nyeregete village, which started in 1964 when a small group of villagers organised themselves to dig a canal to irrigate their farms, in order to complement the erratic and un-reliable rains. As they undertook the task of constructing the canal, no doubt the villagers were influenced by indigenous knowledge and customs related water use in the area. As noted in Odgaard and Maganga (1995), the Sangu, who are the dominant ethnic group have laws and customs guiding the use of water. Under traditional laws and customs the construction of irrigation canals and furrows was controlled by the chief, and, although a single individual could tap a stream for his purpose without first consulting the chief, the latter could prohibit the construction or use of any such canal or furrow. Once constructed, the canal or furrow was the exclusive property of the people who constructed it until they abandoned it, then it reverts to the chief. Over time, this tribal law has undergone some changes. Still one needs a right in order to use water for irrigation nowadays, but there are two ways of obtaining such a right. For the so-called indigenous/traditional irrigation one obtains the right as defined in customary regulations which are administered in the various levels where customary law operates (local water committees, councils of elders, village authorities, etc.). The formal water rights, on the other hand, are obtained by applying to the recognised authorities.

The Nyeregete canal was therefore constructed by referring to the customary system of obtaining irrigation water, where people organise themselves informally and construct a canal to divert water from Kiyoga river. Each member of the canal then constructed smaller furrows to tap water from the main canal to their fields. Such canal groups may be initiated by a single individual, and afterwards it may grow into a larger Canal Committee, such as the one in Nyeregete, which, according to informants, has a membership of 100 and it covers a distance of about 20 miles. The Canal Committees and sub-committees (established for each sub-canal) oversee the allocation of water to members, as well as the maintenance of the canal. The Nyeregete Canal has to be cleaned every year during the months of August–December, and if a member abstains from the maintenance activities, he or she is liable to a fine.

Irrigation has made it possible for Nyeregete villagers to introduce an important cash crop, rice, a feat they could never hope to achieve without the construction of the canal. With the income accruing from irrigated rice some villagers can now buy the maize they need for food instead of trying to raise it themselves (maize does not do very well in Nyeregete).

As it has already been noted, there is a lot of resentment among the local people about attempts by the newly-created Rufiji Water Board to assert its authority regarding water allocation in Usangu Plains, which is one of the areas under its jurisdiction. Concerning by the Board that all irrigation canals like the one in Nyeregete should be registered and pay Tshs 40,000/= (about US$60 at the time of data collection) annually for water rights, the villagers found it incomprehensible that now they were being subjected to the demands of the statutory system. Their typical reaction was ... this water was given to us free by God, and so far we have been using it freely ... why are we forced to pay for it now?

6. Conclusions

This paper has shown how the current water reforms in Tanzania have focused on the use of statutory legal systems to regulate the use of water resources, in spite of the fact that Tanzania operates under a plural legal system, where the diverse customary systems are relied upon in getting access to and utilizing the water resources. It is noted that very few human activities are regulated by statutory laws alone, and neglect of customary laws may cause IWRM implementation to fail, or will have negative consequences for individuals and groups who were better served by customary-based systems. In order to address the challenges of implementing IWRM while at the same time taking account of customary arrangements it is recommended to adopt the approach which was suggested in URT (1995c). In that important study, water resources management is divided into four major management functions:

- Water resources development;
- Allocation;
- Pollution control;
- Environment protection.

URT (1995c) noted that since 1993 allocation, pollution control and environment protection were the main responsibilities of the Rufiji Basin Water Office, which started with an exclusive focus on monitoring and allocation of water resources in the Great Ruaha River sub-basin, while other parts and management functions were left until demands arise. Applying the principles of demand driven and management at the lowest appropriate levels, it was recommended to identify basin-wide priorities and functions to be performed by the RBWO, while leaving management functions at lower levels, including:

- Allocation: irrigation canals and furrows committees or groups can allocate water, while village governments regulate access;
- Access conflicts can be mediated by village elders as well as formal law courts;
- Pollution can continue to be the responsibility of Regional Water Engineers, who have the laboratories to execute the function. However, this function can also be performed by village bye-laws which restrict cultivation close to streams in order to reduce the risk of pollution;
- Environment protection: it was suggested that this function could be done in cooperation between village governments, ward, division and the District Council.

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