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Implications of customary norms and laws for implementing IWRM: findings from Pangani and Rufiji basins, Tanzania

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Abstract

This paper presents the preliminary findings of a WARFSA-funded study, whose objective is to facilitate the formulation of better policies and guidelines for implementing IWRM through a case study of local water conflicts. It is observed that, although the current water reforms in the country focus on the use of statutory legal systems to regulate the use of water resources, the country operates under a plural legal system. Apart from the statutory laws, diverse customary systems are relied upon in resolving water-related conflicts. Neglect of these norms and laws may have negative consequences for the majority of the villagers who rely on them. The paper presents some of the water-related conflicts in the study areas and the views of government authorities and river basin managers regarding customary norms and laws for water resource management. Also, the paper describes how different types of conflicts over water resources are handled through official legal channels.
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1. Introduction

Water resources management in Tanzania is currently under reform. Prompted by increasing pressure on water resources, the government has been trying to establish formal legal systems, fixing property regimes and formalising informal arrangements related to the use of this resource. Government hopes that these measures will provide for efficient and transparent institutional frameworks for the management of water resources. Hence, the government has established Basin Water Boards (BWBs) and Basin Water Offices (BWOs) 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, 1974. In spite of government's over-reliance on statutory arrangements for water management, a number of studies have highlighted the interplay between formal and informal institutions, and the implications of legal pluralism for natural resource management (Boesen et al., 1999; Meinzen-Dick and Pradhan, 2001; Derman and Hellum, 2002; Mohamed-Katerere and Van der Zaag, 2003). These studies have emphasised 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 institutions and pieces of legislation, inter alia, statutory law, customary laws of the 120-plus ethnic groups, and Islamic law. Whenever there is scarcity and competition, though, the authorities pretend that the only prevailing law is state law.

This paper presents the preliminary findings of investigations carried out in Pangani and Rufiji basins, the first areas where the government established BWBs. It contrasts the statutory principles of water management with the customary systems of utilising water resources

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in the study area; then presents some of the local conflicts over water resources, before concluding with a discussion of how the different conflicts are handled in the official legal channels. The bulk of the data presented in this paper was collected in Rufiji basin, where the first phase of the research concentrated, although some findings from Pangani basin are also reported. Phase two of the research will concentrate in Pangani basin.

2. Statutory water management in Tanzania

There are several sources of legal regimes which exist concurrently in Tanzania, and which inter-play and affect the utilisation and management of water resources:

- Written laws, consisting of the Constitution, laws made by the Legislative Council before independence (known as Ordinances) and laws made by the post-independence parliament (known as Acts of Parliament). Under these written laws there are hundreds of pieces of subsidiary legislation for various purposes.
- Received Laws from England. This body of law is used to fill-in any gaps existing in the written laws of Tanzania. This source of law opens an avenue for the incorporation of English laws and principles into laws of Tanzania by filling any gap existing in the body of written laws.
- Islamic Law and
- Customary Laws, covering a broader terrain than that contained in court precedents.

Below is an overview of some of the laws that have been used to regulate Tanzania's rivers, streams and internal lakes.

(i) *Water Ordinance 1948*. This law was enacted during the height of the Indirect Rule system of governance in Tanganyika, and it vested entire property over water to the Governor of Tanganyika in trust for His Majesty as Administering Authority for Tanganyika. The law recognised the rights of native Africans to divert, obstruct, abstract or use water in accordance with their native law and custom: this recognition was unilaterally stopped in 1974 by the Water Utilisation (Control and Regulation) Act, 1974. In other words, the 1948 Water Ordinance recognised the continued operation of traditional customary uses and access to controlled waters.

(ii) *Water Ordinance 1959*. This legislation was enacted to define ownership of and rights to the use of water, to provide for grants of Water Rights and easements and to amend the Mining Ordinance, the Land Registration Ordinance and the Registration of Documents Ordinance. It was based on the established conception that, 'All water in the territory is vested in the Governor' (Sec. 6/Ord. 3/1959). The law stated categorically that its provisions were also applicable and binding on government departments and water authorities appointed under the Waterworks Ordinance (Cap. 281/Sec. 3/1959). It created institutions responsible for water supplies to rural and urban areas and was binding on government departments, so constituting a break from past legislative practice. For the first time, government departments abstracting waters from controlled sources were brought under the regulative regime of the law. Native Africans, whose rights continued to be recognised under Water Ordinance 1948, were now required to notify the Water Registrar. Section 14 required every person having any existing right to use water (other than Water Rights registered under Water Ordinance 1948) to notify the Water Registrar of such a right. Strictly speaking, native Africans were also supposed to register their rights.

(iii) *Waterworks Ordinance, Cap. 281, 1963*. This law permits construction of water supply works for supply to towns, minor settlements and villages. It mostly regulates the supply of water for domestic use, and it also has provisions designed to prevent pollution of water.

(iv) *Water Utilisation (Control and Regulation) Act, 1974, with amendments in 1981, 1989*. This legislation declares that all property over water belongs to the Republic, and it establishes 'controlled' waters access requiring Water Rights. The law regulates access and pollution by those abstracting water directly from controlled waters. Under this law, the prominent Water Right holders include large-scale farmers, irrigators, hydroelectric power stations, industries and mines. Persons abstracting water for domestic use, without building water works, are not regulated by this law.

(v) *Urban Water Supply Act, 1981 as amended*. This law establishes the Dar es Salaam Water and Sewerage Authority (DAWASA). DAWASA holds a Water Right under Water Utilisation (Control and Regulation) Act, 1974 as Amended in 1981. DAWASA is responsible for supplying water in Dar es Salaam and Coast Region; DAWASA is also responsible for drainage of water and sewage matters. The co-ordination of organs dealing with water pollution is complicated by a number of laws (e.g., Local Government (District Authorities) Act, 1982; Public Health (Sewerage and Drainage) Ordinance, Cap. 336) also dealing with various aspects of pollution.

(vi) *Public Health (Sewerage and Drainage) Ordinance, Cap. 336, 1995*. This law is concerned primarily with the release and quality of waste water/effluents and also with drainage in urban areas. It is not applicable to pollution at water sources. Local government authorities (acting as Sewerage Authorities) are expected to regulate waste and effluents from industries that do not abstract their waters using Water Rights (i.e. industries which do not have Water Rights) and ensure urban industries have waste treatment plants.

Hence, currently, 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'. The ability to declare certain rivers and watercourses to be 'National Waters' or 'Regional Waters' empowers the minister responsible for water development to regulate the use of water from any source as a national water supply (Sec. 9). To this end, the Minister has declared several rivers, e.g. Umba, Sigi, Ruvu and Pangani, to be national waters, subject to the control of the Principal Water Officer and the Central Water Board. [1] All other sources of water not designated as 'National Water' are regional water supplies, under the control of Basin Water Boards (BWBs), Basin Water Offices (BWOs) and Regional Water Engineers (RWEs). [2]

3. Integrated water resources management in study area

In Tanzania, IWRM is implemented through River Basin Management (RBM). The RBM concept has been defined as 'management of water systems as part of the broader natural environment and in relation to their socio-economic environment' (Mutayoba, 2002, p. 4). This approach is not new in Tanzania, having started in the late 1950s and early 1960s, when water resources in the Rufiji basin were extensively studied by FAO. In 1961, government undertook a study for integrated utilisation of the Ruvu basin (Mutayoba, 2002). According to URT (1981), the Minister for Water Development 'may, by order published in the Gazette, declare any area of land to be water basin in relation to any river. There shall be a Basin Board in respect of each declared basin'. Under this amendment of the Water Act, in 1989 the Minister for Water gazetted nine river basins: Pangani, Wami/Ruvu, Rufiji, Ruvuma and Southern Coast, Lake Nyasa, Lake Rukwa, Lake Tanganyika Lake Victoria, and the Internal Drainage basins of Lakes Eyasi, Manyara and Bubu. So far, five Basin Water Offices and Boards have been created: Pangani Basin (since 1991); Rufiji Basin (since 1993); Lake Victoria Basin (since 2000); Wami/Ruvu basin (since 2001); and Lake Nyasa basin (since 2001) (Mutayoba, 2002, 7).

Data for this study were obtained from two of the nine river basins Tanzania has defined for water resources administration—Pangani and Rufiji (see Fig. 1). As noted in Maganga et al., 2002, the Pangani river basin has a total area of 42 200 km^2 (including 2320 km^2 in Kenya). The basin carries waters from Mt. Kilimanjaro and the Northern Highlands into the Indian Ocean. It contains an artificial lake called Nyumba ya Mungu, constructed for hydro-power generation. Since the 1930s hydro-power production in Tanzania depended on the Pangani basin, although in recent years the country has developed other hydro-power sources, including power stations at Kidatu, Mtera and Kihansi. Pangani basin is also within the Northern tourist area. This is one of the most visited areas in Tanzania, and contains the Arusha and Moshi industrial municipalities. A sizable area is also under traditional livestock keeping, an important component in overall basin water management.

The Rufiji basin covers an area of about 177 420 km^2 (about 25% of the total land area of Tanzania), and drains the Southern Highlands into the Indian Ocean. It comprises four major rivers: the Great Ruaha, Kilombero, Luwengu and Rufiji. Within the basin, water scarcity is acute in the Great Ruaha catchment, resulting in very low water levels at Mtera Reservoir, the main regulatory structure on the Rufiji River (Baur et al., 2000; URT, 1995). Since 1988, when the Mtera Dam was commissioned, water levels have been declining and have not recovered. Low water levels have had negative impacts on hydro-power generation, resulting in load shedding and rationing of electricity nationwide. According to URT (1995), a number of factors caused low water levels at Mtera, including drought, increased

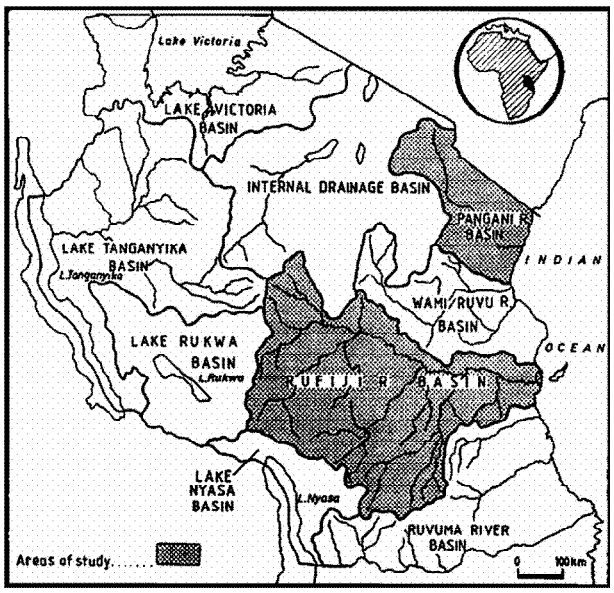


Fig. 1.

[1] Established by the Water Utilization (Declaration of National Water Supply Sources) Notice, 1975, Government Notice No. 242/1975 and the Water Utilization (Declaration of National Water Supply (Amendment) Notice 1978, Government Notice No. 59/1978.

[2] Amendment Act No. 10 of 1981 introduced the basin management and pollution control systems. This Act provides for the Central Water Board and Basin Water Boards to oversee administration of the legislation.

upstream abstractions for irrigation, and poor operation of the Mtera reservoir.

During fieldwork, concern was raised about how Basin Boards are constituted with fear expressed regarding the possible inclusion of outsiders with no direct interests in water resources management. Also, it seems that the capacity of the Rufiji Basin Water Office is overstretched. Apart from the Water Officer (hydrologist), the office employs a hydrologist, a forester, a social worker and two technicians stationed at each of the Field Offices at Utete, Rujewa and Ifakara.

The small office is expected to perform many tasks. Pre-existing traditional water rights have been recorded and given new numbers. Once concluded, any remaining unregistered interests and rights are regarded as illegal and owners liable to prosecution. Even former chiefs and sub-chiefs were given water rights under the new legal regime. Following the Arusha Declaration and nationalisations of the major means of production that followed, most Water Rights appearing after 1974 were owned by government ministries and departments, and public corporations. Proper and adequate preparations are needed before the government ministries and departments surrender their Water Rights. During its recent survey, Rufiji Basin Office discovered that 255 Water Rights had been abandoned over the years and most of these were issued to government ministries and departments. The majority of people in Rufiji Basin still abstract water from rivers without any water right. In a survey carried out 2 years ago, there were 568 abstractions throughout the Rufiji Basin that were made outside the Water Right system. Many of the abstractions take place in far off villages where the Basin Board has little access. The 'offenders' are many and can not conveniently be taken to court. The Rufiji Basin Office prefers to use its existing administrative structures to regularise illegal abstractions rather than going to court. To this end, the Basin Water Board encourages the formation and constitution of water users' associations that are then encouraged to apply for Water Rights.

4. Conflicts over water resources in Pangani and Rufiji basins

According to a number of recent studies (e.g. Ngana, 2002), water management in Pangani basin has to balance between following competing uses (i) on the slopes of Mt. Kilimanjaro and Mt. Meru there is water demand for coffee and banana cultivation; (ii) on the lowland large amounts of water are required in the paddy farms; (iii) around Arusha town water is required for flower cultivation (for export); (iv) further downstream, water is required in hydropower plants at Nyumba ya Mungu, Hale and Pangani Falls to generate electricity for various needs, including several industries in Arusha and Moshi towns. As a consequence of these competing needs, sectoral water demands are not being met, water levels in storage reservoirs are low, and competition for water between farmers and hydro-power generators and between groups of farmers has intensified. With respect to Rufiji basin, 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.

After noting the vastness of Rufiji basin, the BWB initiated sub catchment-based water boards. These boards will assist the Basin Board in management of water resources within the sub-catchment and mediate conflicts therein. Membership to sub-catchment boards is conditional upon having a Water Right. Prospects of creating sub-catchment boards have evolved out of the experience within Rufiji Basin. At the moment, however, the Water Utilisation (Control and Regulation) Act, 1974 does not provide for the establishment of sub-catchment basin boards. The Rufiji Basin Office has high hopes for these Boards. It is expected that they will assist the Basin Office at Iringa and field water offices in the processing of Water Rights.

5. Utilising water resources through customary arrangements

For the majority of the people in Pangani and Rufiji basins, access to land and water for irrigation is regulated according to customary norms and rules. As noted by Boesen et al. (1999), it is imperative to remember that most customary laws and norms are unwritten and flexible, implying that we are dealing with a complex phenomenon. In this respect, Boesen et al. (1999, p. 121) point out that it is possible to conceptualise four different types of customary law, including the customary laws of specific ethnic groups; customary law as applied in courts; customary law as applied by traditional authorities (e.g., chiefs, headmen) outside the state system; and living customary law, i.e. customs and practices of the people today and the principles underlying these practices.

In the two basins, irrigation is carried out by gravity, using simple unlined canals to divert water from their sources (normally rivers). In some cases simple dams are erected by barriers of boulders, and 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 (Adams et al., 1994). Below are two examples of customary water management for irrigation from Pangani basin (Musa Mwijanga scheme) and Rufiji basin (Nyeregete scheme).

5.1. The Musa Mwijanga irrigation scheme

Kilimanjaro region in the Pangani basin has a long tradition of gravity-fed irrigation canals (*mifongo*) with some schemes established during the 17th century (Tagseth, 2002). Tagseth (2002) observes that these canals are important elements in the cultural and technological heritage of the Chagga people who, for centuries, have utilised a network of these canals for irrigation and other purposes. The Musa Mwijanga scheme started about 50 years ago when a farmer named Musa Mwijanga created an irrigation canal, abstracting water from Weruweru River by means of a traditional weir (Maganga, 1998). Soon other farmers joined in and extended the canal to a considerable length. There was no question of obtaining a 'water right' as demanded by statutory law presently. Most of these furrows were originally built for domestic water supplies, but subsequently they were adapted for supplementary irrigation of coffee, bananas and vegetables.

According to informants, operation and maintenance of the scheme is supervised by an elder, *Mzee wa Mfereji*, who is assisted by one overseer for each of the three secondary furrows. The allocation of water between the furrows is based on long standing agreement. During the dry season there is considerable competition for water, and plots on the lower reaches of the supply system tend to suffer most when only limited water is available. Maintenance of a routine nature, particularly cleaning of the canals, is carried out four times a year by the farmers—the main canal and secondary furrows are cleaned collectively, but at the tertiary and farm level cleaning is done individually. Approximately 600 families use the Musa Mwijanga scheme, irrigating a total of 600 ha. The scheme has been operating for more than 50 years without any noteworthy environmental problems, and good crops are still being obtained. The traditional system, with its multi-culture combination of trees, rice, vegetables, beans and groundnuts, combines well with naturally good soils to lead to sustainable resource management (Maganga, 1998). The Pangani Basin Water Office is supposed to ensure that schemes such as Musa Mwijanga apply for, and pay for their water rights.

5.2. The Nyeregete irrigation scheme

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 system is Nyeregete village canal, 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 unreliable rains (Maganga, 1998). In constructing the canal, villagers were influenced by indigenous knowledge and customs related to water use in the area. As noted by 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 is controlled by the chief, and, although a single individual could tap a stream 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 is the exclusive property of the people who constructed it. Should it be abandoned, ownership reverts to the chief. Over time, this tribal law has undergone some changes as chieftainship was formally abolished in Tanzania in the early 1960s.

In any case, the Nyeregete canal was constructed by referring to the customary system of obtaining irrigation water. People organised themselves informally and constructed a canal to divert water from Kiyoga river. Each member of the canal constructed smaller furrows to tap water from the main canal to their fields. Canal groups like the one in Nyeregete are usually initiated by a few individuals, sometimes growing into larger Canal Committees. According to informants, Nyeregete's current membership is 300 and the canal covers a distance of about 32 km (interview with village leadership, Nyeregete village, 4 June 2003). Canal Committees and subcommittees (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 August–December, and if a member abstains from maintenance activities, he or she is liable to a fine.

There was much resentment when the Rufiji Basin Water Office tried to assert its authority over water allocation in Nyeregete. According to regulations, all such canals are supposed to apply for water rights, to pay Tshs 30 000 [3] for the application form and the annual fee of Tshs 250 000 (about US$250). Villagers said that the imposition of payment for water rights exacerbated competition and conflicts between different water users. The Basin Water Office has not been very helpful because it is more concerned with collection of fees and levies rather than reconciling conflicts, or assisting in building or rehabilitating irrigation infrastructure. In a dry year such as 2003, villagers found it difficult to pay for their traditional irrigation furrow, when no water was flowing.

6. Managing water conflicts

There are several formal avenues through which disputes over water may be resolved or referred to. The dis-

[3] Equal to about US$30. The official exchange rate during the time period covered in this paper is roughly Tshs 1000 = US$1.

putes can be styled as civil proceedings or criminal proceedings either in Ward Tribunals or Magistrates' Courts. Village government can be a complainant to a criminal or civil proceeding. The following examples serve to illustrate how different disputes are handled in different primary courts in Mbarali District.

6.1. Simon Dangala (Complainant) versus Manyenga 'A' Irrigation Association (Respondent)

In this case, Simon Dangala first uses customary arrangement to obtain water for irrigation. However, he switches to statutory arrangements of applying for Right of Occupancy, when he sees that he could take advantage of this system for personal benefit, even though he ends up creating conflict and tension within the community.

In 1969 Simon Dangala in collaboration with 5 other villagers started the Manyenga irrigation canal. They invited other villagers to join in, and soon the canal had a membership of 36 villagers, most of them cultivating rice. As the membership grew, tensions emerged among them, especially regarding maintenance of the canal, and competition over scarce water. All other villagers who started the canal have since died. In 1997, Dangala (who physically lives in another village, Mawindi), applied for and got a 33-year Right of Occupancy for 59 acres of land on the upstream of the canal, creating tensions with villagers located downstream. He did not have the ability to cultivate all 59 acres, cultivating roughly 4–5 acres, and renting the rest for between Tshs 15000 and Tshs 20000/acre. At about the same time, the Rufiji BWB encouraged villagers to form a Water Users Association in order to benefit from a World Bank-assisted smallholder irrigation project. In 1998, the villagers applied for a Water Right for their association but Dangala objected, since the canal passed through his land. He demanded 'compensation' of Tshs150000 for his efforts in maintaining the canal since 1969, before he could allow the canal to pass through 'his land'.

In 2001, Dangala filed a civil case before Rujewa Primary Court, alleging that Adriano and Ayubu had encroached and trespassed into his duly registered canal by building bricks (*Simon Dangala versus AdrianoTandika and Ayubu Kanyamala Civil Case 38 of 2001, Rujewa Primary Court*). The canal in question was registered in Dangala's name and given number RBWO 96. He traced his ownership to the canal to a 1997 letter from the Rufiji Basin Office. The letter urged him to pay for the Water Right before 1st June 1998, and on 14th October 1998 he was given the Water Right, stipulating terms and conditions for his use of water. The complainant claimed that after getting the water Right he built a canal in 1999 by engaging the services of paid casual labourers. On 19th October 2001 while returning from his farms he found the respondents constructing a canal to draw water from the source, through his farms. Dangala denied that he was a member of the Irrigation Association of Manyenga 'A'. Adriano Tandika told the Primary Court that he farmed at Manyenga, although he was not a resident of the village. He only used the Manyenga 'A' by virtue of being a member of the Irrigation Association of Manyenga 'A', which he joined in 1997. He alleged that when he joined the canal membership, it was under the leadership of Dangala. The canal broke down in 1997, and Tandika joined in the canal repair, eventually rising to the position of Assistant Secretary in the Irrigation Association. He further testified that, in 1998, misunderstandings arose when Dangala demanded and was given Tshs 150000 for his role in the founding of the canal. Tandika further contended that Dangala's Water Right was RBWO 96, whereas the canal they were building had 200 registered members with a Water Right RBWO 102. The Primary Court, comprising of the Primary Court Magistrate and two Court Assessors visited the canal in dispute. The court found that Dangala had no claim over the registered canal RBWO 102 that the two respondents were building. In addition, the Primary Court noted that Dangala's Water Right (RBWO 96), had been revoked by the Rufiji Basin Water Office. Dangala lost his case and was ordered to pay the cost incurred by the two respondents. He appealed to District Court (*Simon Dangala versus Ayubu Kanyamala and Adrian Tandika*, Civil Appeal No. 2/2001) who dismissed the appeal noting: (a) the two respondents were given ownership of water registered as RBWO 102 as formal owners of Manyenga 'A' Irrigators Association; and (b) though it is true Simon Dangala built the canal of Manyenga 'A', he was compensated for the labour and costs he incurred.

6.2. Igurusi Primary Court, Criminal Case No. 41/2003: Semu Mwakibete (Complainant) versus John Mwigombe (Respondent)

In this case, Mwigombe, a Nyakyusa tribesman, was accused by the Complainant (a fellow Nyakyusa) of destroying his water canal and preventing water from flowing into his paddy field. The accused was charged under section 326(1) of the Penal Code (Chap. 16 of the Laws of Tanzania). Mwigombe denied the charge. Witnesses testified that the area was experiencing low flow of irrigation water due to failing rains at the time, and that the accused went out at night to block the canal to enable water to flow into his own paddy field. The canal belongs to a local irrigators' group, the complainant being its leader. The accused was not a member of the group. Section 326(1) of the Penal Code provides that: 'Any person who wilfully and unlawfully destroys or damages any property is guilty of an offence and is liable if no other punishment is provided, to imprisonment for 7 years. Section 326(3) provides for possible life impris-

onment, 'if the property in question is a bank or wall of a river, canal, aqueduct, reservoir or inland water which appertains to a dock, reservoir or inland water, and the injury causes actual danger of inundation or damage to any land or building'. The accused was found guilty, and the Primary Court imposed a fine of Tshs 100000 or 6 months imprisonment. Mwigombe paid the fine.

6.3. Chimala Primary Court, Criminal Case No. 49/2003: Tambi Tony (Complainant) versus (1) Mandalu Kulwa, (2) Said Kashinje, and (3) Hamisi Mtanzania (Respondents)

The parties to this criminal case are all members of the Wasukuma tribe of Tanzania. The Accused were alleged to have dug an irrigation canal through the farm belonging to the Complainant. Judgement in this case is still pending and witnesses for both parties have testified.

This case, as with 6.2 above, illustrates the fact that members of the same ethnic group may resort to official legal channels rather than customary institutions in addressing conflicts.

6.4. Igurusi Primary Court, Criminal Case No. 35/2003: Ibrahim Kada (Complainant) versus (1) Philipo Kavuta and (2) John Makosano (Respondents)

The Complainant, a Tanzanian of Baluchstan origin, locally known as 'Bulushi' tribesman, owned a Water Right for his private canal. The Respondents (Nyakyusa tribesmen) were accused of trespassing and destroying the canal for purposes of leading water to irrigate their farms. During the course of the criminal proceedings, the two parties requested to be allowed to settle their dispute out of court, and the complaint was withdrawn.

6.5. Igurusi Primary Court, Criminal Case No. 36/2003: Faro Mtafya (Complainant) versus Daudi Ngolele (Respondent)

This case illustrates conflicts over water in their more violent manifestation. The Accused person was charged under section 241 of the Penal Code, Chapter 16 of the laws of Tanzania. The section provides that: 'Any person who commits an assault occasioning actual bodily harm is guilty of an offence, and is liable to imprisonment for 5 years'. The parties in this case were involved in a fight, using machetes. It was alleged that Daudi Ngolele went out at night to destroy a private canal in order to allow water into his farms. Faro Mtafya was at the time armed with a machete, and a fight ensued. The parties asked the court to allow them to settle their dispute out of court, and their plea was granted—the criminal charge was dismissed.

6.6. Chimala Primary Court, Criminal Case No. 9/2003: Anthony Kilando (Complainant) versus Shomary Chekeche (Respondent)

The Complainant is a Mkinga tribesman, while the Accused is a Mngindo. It was alleged that Chekeche destroyed a canal taking water to the paddy fields of Kilando. Kilando, a leader of the Irrigation Canal Group in Usunula village within the Ward of Rujewa, complained that the Accused destroyed the canal in order to allow water into his farm. The Accused was set free after agreeing to pay a compensation of Tshs 50000.

6.7. Rujewa Primary Court, Criminal Case No. 296/2002: Women's Economic Association (Ruchana Kiponda) (Complainant) versus Pemne Msavandezo (Respondent)

The incident occurred at Imalilo Songwe in the Ward of Ubaruku, Rujewa. Acting on behalf of the Women's Association, Kiponda (a Msangu by tribe) alleged that Msavandezo (a Sukuma tribesman) built a canal through the women's group's area to his farm. He was charged under Section 326(1) of the Penal Code and subsequently found guilty, and ordered to pay the group Tshs 60000 in compensation. He also was ordered to enter into an agreement with the group on how to utilise the waters of the canal he had constructed on the group's land.

6.8. Rujewa Primary Court, Criminal Case No. 54/2003: Damani Mponzi (Complainant) versus Charles Mlambalafu (Respondent)

Mlambalafu (a Mhehe tribesman) was accused by Mponzi (a Msangu tribesman) of destroying a water canal leading to the Complainant's paddy fields. The Accused went into the Complainant's farm and blocked the water canal to enable irrigation water to go into his own paddy. The Complainant contended that this blockage caused water to stop flowing into his farm, leading to the farm's destruction. In his defence, the Accused told the court that he did not block water from flowing into the Complainant's farm, but to direct some of the water into his own farm as well, because he was also entitled to some of the water. Mlambalafu was ordered to pay Tshs 45000 in compensation to Mponzi, and a fine of Tshs 8000.

7. Conclusions

This paper has described statutory and customary systems of managing water resources in Tanzania, discussing some of the challenges of implementing IWRM whilst taking appropriate account of customary norms and laws, with Pangani and Rufiji river basins as case

studies. The 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. It has been noted that:

- The implementation of RBM in Pangani and Rufiji basins focuses on formal Water Rights, introduction of user fees, promotion of WUAs, and enforcement of statutory laws guiding water use. There is very little indication of consideration for people's water rights as provided by customary arrangements. Smallholder farmers in Rufiji basin view basin management suspiciously, with many regarding it as an effort to safeguard the Tanzania Electricity Supply Company's (TANESCO's) interests in reserving sufficient water for hydropower.
- The Water Right system is not well defined and suffers from lack of implementation. The system is viewed by smallholders as a way of organising them for the purpose of extracting fees, which they do not believe in. Rather than trying to charge large numbers of smallholders for small quantities of the water they use, it is suggested that the government should target the few high-volume users, who derive considerable benefits from water (e.g. TANESCO).
- Organizing small-scale water users into WUAs for the single purpose of making them pay fees is economically unrealistic. The non-monetary costs of the Water Rights system include seriously antagonising and alienating citizens and voters and disrupting a customary water rights system that works well to allocate water in times of abundance and during dry spells (see Van Koppen, 2003).
- Data on water conflicts and conflict resolution indicate that villagers, irrespective of their ethnic composition, resort to both customary and official legal channels. In addition, some of the conflicts in official legal channels are settled out of court.

In order to address the challenges of implementing IWRM while at the same time taking account of customary arrangements it is recommended to adopt an approach which includes people's water rights as provided by customary arrangements. This approach, which combines elements of RBM and customary arrangements at the local level is the only way to implement IWRM based on the second of the four Dublin principles—that water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels.

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