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IWRM *Avant la Lettre*? Four Key Episodes in the Policy Articulation of IWRM in Downstream Mozambique

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ABSTRACT: The first substantive piece of water legislation ever adopted in Mozambique, the *Lei de Águas* of 1991, was crafted before IWRM was endorsed as the newly emerging global consensus on water governance. Yet, the *Lei de Águas* already incorporated the river basin concept and its decentralised water management, making Mozambique a case of IWRM '*avant la lettre*'. In this paper, we reconstruct the drivers behind four key policy episodes that shaped the travel of IWRM to Mozambique, viz. the *Lei de Águas* 1991, the SADC Water Protocol, the National Water Policy 1995, and the 2007 national reforms and regulations, drawing from the experiences of two Mozambican river basins, the Limpopo and the Pungwe. In terms of process, we observe that domestic concerns, a small Mozambican water policy elite nurtured by international donors, and the agenda of financial institutions highly shaped the articulation of IWRM. In terms of outcomes, several contradictions emerge: i.e. centralised State management seems to have become further entrenched, stakeholders have virtually no say in water matters and the most powerful and wealthy stakeholders use payments to secure water cheaply at the expense of unregistered smallholder users who depend for their livelihoods on primary water.

KEYWORDS: IWRM, policy articulation, elite, stakeholder participation, Mozambique

INTRODUCTION

The first and only piece of water legislation ever approved by the Mozambican parliament, the *Lei de Águas* of 1991 (GoM, 1991), was crafted and formulated before the Integrated Water Resources Management (IWRM) paradigm and its principles were endorsed as key elements of the newly emerging global consensus on water governance. The Water Act already emphasised the management of water on the basis of (transboundary) river basins, instituted a legal framework for water allocation and water pricing, and introduced a form of decentralisation of water resources management through Regional Water Administrations (*Administrações Regional de Aguas*, ARAs) and River Basin Management Units (*Unidades de Gestão de Bacia*). The translation of a set of dominant IWRM principles, viz. seeing water as an economic good rather than as a public good, and opening up the water sector for private service providers was, however, only hastily inserted during the formulation of the 1995 National Water Policy (Serra, 2011).

Since the promulgation of the 1995 National Water Policy, several reforms have sought to strengthen the implementing capacity of the decentralised agencies in regulating bulk and drinking water use, diminish the bureaucratic power of government departments, foster the role of water pricing in both allocation and cost recovery, and strengthen Mozambique's position as downstream

water user in internationally shared river basins (GoM, 2007a; GoM, 2007b; Manjate, 2010). Meanwhile, several donor-funded projects, like the Pungwe joint IWRM project, the PRIMA project in the Incomati, and continued support for ARA-Sul (*Administração Regional de Águas do Sul*) through Dutch bilateral aid, have sought to operationalise and implement IWRM policy in a number of key river basins (RoM/RoZ/Sida, 2006; van Woersem et al., 2007).

Through the 1991 law, policies and projects mentioned above, a new 'water architecture' (Swatuk, 2002) based on IWRM ideas/principles has been introduced in Mozambican water policies and articulated in everyday water management practices. Building on the overall framework presented in the introduction to the Special Issue, this paper aims at analysing how IWRM ideas 'travelled' to Mozambique and how such ideas were articulated in policies and practices. Several studies analyse and discuss the state of implementation of the IWRM-inspired policies, given the institutional and legal framework provided by the Water Act and the National Water Policies (van der Zaag, 2010; Gallego-Ayala and Juárez, 2011, 2012; Inguane et al., 2014). Rather than assessing the degree of implementation of IWRM-based reforms, this paper first traces the origins of Mozambican water reforms and discusses the endorsement of IWRM ideas in light of domestic and international drivers. Second, it discusses how some IWRM articulations have influenced practices in Limpopo and Pungwe river basins resulting in new forms of water allocation and stakeholder participation on the ground. A second paper included in this Special Issue further elaborates on the case of Limpopo and the politics of water payments and stakeholder participation (Alba et al., this Issue).

IWRM here is understood as a comprehensive 'policy package' comprising three major shifts in water governance, according to Bolding (2004): (1) from administrative (province) to resource-based water governance (river basin); (2) from centralised state to decentralised stakeholder-based governance through the creation of local water administrations and river basin committees; and (3) from public to private and market-based forms of water governance (i.e. introduction of water pricing). Even though the earliest form of recognised integrated river basin management dates back to the early 1930s in the shape of the Tennessee Valley Authority (TVA) experiment (Miller and Reidinger, 1998; Biswas, 2004), the endorsement of the so-called 'Dublin Principles' is often referred to as a turning point in bringing together the IWRM package (Mehta et al., 2014). IWRM resulted in an umbrella framework involving a number of policy ideas (i.e. decentralisation, participation, demand management mechanisms, and so on) endorsed as the way to improve Water Resources Management (WRM) everywhere.

For the case of Mozambique, this article illustrates how the different elements associated with IWRM have received fluctuating attention serving both the domestic agenda and international donors' requests. Furthermore, the contradictory outcomes of internationally endorsed shifts in water governance are discussed. Whilst the IWRM package aims at making water accessible to all, and managing it in a sustainable, democratic and (cost)-effective way, the outcomes of the reforms in Mozambique seem to move towards a different direction: Centralised State management has become further entrenched and stakeholders have virtually no say in water matters. Meanwhile, the introduction of a water rights framework has led to a situation where the most powerful and wealthy water users (e.g. private sugar estates) use water licences to secure water at the expense of those unregistered smallholder users who depend for their livelihoods on primary water (Van der Zaag et al., 2010; Alba et al., this Issue). This points at the need to appreciate locally available repertoires of governance, State histories and existing divergent cultures of governing (e.g. technocratic versus customary rule) that inevitably shape the articulation of policy ideas into practices. Particularly for Mozambique, many authors have pointed at the lack of any tradition of democratic rule (Mamdani, 1996; Alexander, 1997) and the great dependency on foreign aid (Hanlon and Smart, 2008).

In the rest of this paper, we first outline our conceptual approach towards policy process analysis. The second section describes the context of the study and the methodology. Then, the historical trajectory of the policy process is analysed, followed by insights on the articulation of IWRM on the

ground by drawing from the cases of Limpopo and Pungwe river basins. Finally, in the conclusions, we present and discuss the main findings.

HOW DOES POLICY TRAVEL? (POLICY NETWORK AND POLICY ARTICULATION)

Drawing from Wester's study on the decentralisation of irrigation management in Lerma-Chapala Basin in Mexico, we use the term '*policy articulation*' to define the dynamic process "by which policy actors support, modify, displace and translate a policy idea" into something 'real' (Wester, 2008: 24). The idea works as a 'form of connection' that makes a whole of different elements (Hall, 1996 cited in Li, 2000), like how IWRM brings together land, water, people, livelihoods, donor organisations, and so on. Meanwhile, the articulation of these elements translates the idea into material practices. Thus, scrutinising the articulation of IWRM is about investigating how abstract ideas such as volumetric water pricing, decentralisation and stakeholder participation, are translated into contextualised practices (e.g. setting water prices, creating river basin authorities and committees).

Our view on policy processes is partly inspired by the actor-network theory as a descriptive tool that seeks to explain 'how' relations assemble (Law, 2009). Indeed, rather than framing policy as a linear process, moving rationally from formulation to implementation to outcomes, 'policy articulation' looks at the practices as the contingent outcome of the assemblage of heterogeneous elements such as people, ideas, interests, events and objects that constitute the '*policy network*' (cf. Long and van der Ploeg, 1989; Mosse, 2004). The articulation of these elements translates the idea into material practices through uneven and unpredictable policy pathways. Such articulation is inherently political as it represents the outcome of the struggle between different interests, priorities and objectives that are continuously negotiated and contested by policy actors (see Mollinga, 2008).

As policy ideas travel through different networks they engage in a transformative process where ideas are translated and transformed while they move around and are confronted with local circumstances and interest groups. Indeed, as Mukhtarov (2009) discusses in his insightful analysis of IWRM translation, in travelling, policies are not just transferred but translated across places and times. He points at scales, contingency and modification on meanings as important elements in the translation of IWRM in England, Turkey and Kazakhstan (Mukhtarov, 2009). Similarly, but with a different geographical focus, the analysis proposed here and in Mehta and Movik (2014) considers how different countries and/or river basins with their history, resources and people actively and have recursively shaped the articulation of IWRM ideas.

While we call such transformations and reinterpretations a form of policy articulation, Wedel et al. (2005) suggest looking at policy transformations as 'chemical reactions'. In her study on Western aid to Eastern Europe, Wedel (2001) describes aid policies as a series of reactions that "begin with the donor's policies but are transformed by the agendas, interests, and interactions of the donor and recipient representatives at each stage of implementation and interface" (Wedel et al., 2005: 39). Likewise, IWRM principles have been transformed by local, regional and national agendas and through the interplay between donors, banks and local interest groups (Mehta et al., 2014). As in chemical reactions, the articulation of policy ideas involves experts, instruments and laboratories. Water professionals, bureaucrats and academics within one or several epistemic communities represent the experts; national laws, documents, strategies, guidelines, the instruments and river basins or pilot projects represent the 'laboratories of practices' (cf. Latour, 1987).

RESEARCH METHODOLOGY

The paper brings together the main findings of a number of studies on the case of Mozambique (Bolding, 2004; Praagman, 2013; Alba, 2013; Bolding and Alba, 2013) conducted under the Flows and Practices research project. For the case of Mozambique, the flow of IWRM ideas is analysed focusing on

the recursive interaction of different actors in policy-making fora at river basin, regional, national and international levels (Table 1) and four key moments, so-called 'policy episodes' (cf. Wester, 2008), each corresponding with the endorsement of key policies and legislations (the *Lei de Agua* 1991, the National Water Policy 1995, the 1995 and 2005 SADC Water protocol and the 2007 national reforms and regulations). Meanwhile, the experiences of Limpopo and Pungwe river basins provide insights from the field on the articulation of IWRM into practices. The research methodology is illustrated below.

Table 1. Overview of the actors involved in each policy area.

Policy arena	Actor
International	Global Water Partnership and other global water-related initiatives Donor agencies and international financial institutions (i.e. World Bank, International Monetary Fund)
Regional	SADC and transnational river basin commissions (i.e. Limpopo Watercourse Commission, LIMCOM)
National	National Directorate of Water (<i>Direcção Nacional de Água, DNA</i>) under the Ministry of Public Works and Housing National Water Council National Water Regulatory Council (<i>Conselho de Regulação do Abastecimento de Água, CRA</i>)
River Basin	Regional Water Administrations (i.e. ARA-Sul, ARA-Centro) River Basin Management Units (i.e. Limpopo River Basin Management Unit, UGBL) River Basin Committee (<i>Comité da Bacia, CdB</i>) Water Users (i.e. individual smallholder farmers, large-scale ones, irrigation schemes, etc)

At regional and national level, the water reform process that unfolded in the 1990s was 'studied up' (Nader, 1972) through a literature review, study of secondary documents retrieved from the National Water Directorate library and a total of 23 interviews with key policy actors. Interviewees included senior engineers and staff working for the National Water Directorate, the ARAs, Limpopo River Basin Management Unit, and the Water Regulatory Board and independent consultants. Interviews were carried out also with academics and Dutch policy actors operating with the Development Cooperation Agencies. At local level, due to their history, geographical characteristics and recent developments, Limpopo and Pungwe river basins were selected (Figure 1).

Although providing an in-depth presentation of the two basins is beyond the scope of this paper (see Alba et al., this Issue; van der Zaag and Bolding, 2009; Praagman, 2013), here we clarify the main motivations behind the selection of the two basins. Limpopo provides an interesting example of a transboundary river basin; indeed the basin comprises a shared watercourse between Zimbabwe, South Africa, Botswana and Mozambique, with only 20% of the total river basin surface belonging to Mozambique. The downstream Mozambican stretch of the basin has been an important area for agricultural production since colonial times and, today, most of the water demand is concentrated on irrigated agriculture (van der Zaag et al., 2010; Ducrot, 2011). Furthermore, the proximity of the basin to Maputo, the capital of Mozambique, made it one of the first testing grounds for the establishment of new river basin-based institutions, following the Mozambican tendency of geographical spread of policy implementation from the capital outwards to the rest of the country. Meanwhile, the Pungwe River was

selected given its role as a testing ground for a Swedish consortium of donor agencies (including Sida and SWECO) from 2000 onwards to 'make IWRM happen' through the formulation of a joint IWRM management and development strategy and subsequent investment phase (RoM/RoZ/Sida, 2006). Several field visits were carried out in different locations in the Limpopo River Basin in 2012 and 2013; and in three locations in the Pungwe River Basin between 2005 and 2007.

Figure 1. Map showing the different Regional Water Administrations (ARAs) and the location of the Limpopo and Pungwe river basins.



Source: Adapted from <http://america.pink/images/2/7/0/5/3/4/9/en/2-list-rivers-mozambique.jpg>

Semi-structured interviews were carried out in English, Portuguese or Changana (the vernacular language), the latter with the help of a field assistant, using snowballing as a method to select the

participants. While archival material and interviews with senior water professionals proved to be very useful in understanding the unfolding of the policy process, some limitations in reconstructing the politics of the process also surfaced. We managed to identify key negotiations and conflicts, but could produce only a limited understanding of the details about them. Moreover, it seems there was a tendency to edit contradictions and contestations out of the historical narrative, making the policy narrative 'too neat'.

ARTICULATING IWRM IN POLICY NETWORKS: DRIVERS AND TIMELINES

The articulation of IWRM ideas is analysed by focusing on four policy episodes (cf. Wester, 2008) defined around policies and key events in the Mozambican water sector. The first episode focuses on the Water Act, the second centres on the process that led to the SADC Shared Watercourse Protocol of 1995. The third episode considers the formulation of the first Mozambican National Water Policy (1995). The fourth episode describes the impulse that IWRM ideas had in the water sector during the 2000s leading to the approval of several key documents that constitute the current framework for water resources management in Mozambique. Insights on the development occurring at river-basin level are provided along with the episodes. A timeline of key events is provided in Table 2.

Table 2. Overview of key policy episodes and resulting policies, regulations and institutions.

Policy episodes	Key events
Policy episode one – 1980s until 1991	Water Act (GoM, 1991)
Policy episode two – 1982 until 2005	SADC Shared Watercourse Protocol of 1995 Ratified in 2005
Policy episode three – 1990s	National Water Policy (GoM, 1995) National Water Tariff Policy (GoM, 1998)
Policy episode four – 2000s	Consultation GTA for renewal of the National Water Policy and Act New National Water Policy (GoM, 2007b) National Water Resource Management Strategy (GoM, 2007a) Regulation for Licences and Concessions Water Policy (GoM, 2007c)

Policy episode one: The emergence of IWRM ideas

Occurring at the height of the civil war and with the end in sight, the Water Act (1991) represents the only legislation concerning water formally approved by the Mozambican parliament to date. It puts together socialist ideas with new 'modern' ideas in water resources management that later became part of the IWRM paradigm. It stresses the role of State institutions in water resources management and declares all water resources public- and State-owned. The Act sets the distinction between common use (*uso comun*) and private use (*uso privativo*). The former refers to the use of water for primary requirements such as domestic needs, watering livestock and small-scale irrigation of up to 1 hectare (ha) of land without the use of siphoning or mechanical instruments while the latter refers to all other uses (Veldwisch et al., 2013). From a rather fragmented and non-integrated water sector, the Act promised regulated and organised management of water resources based on decentralised Regional Water Administrations (ARAs) and river basin management.

Three main issues steered the formulation of the Act: the lack of a legal framework for water allocation, the national and international impulse for decentralisation of water resources management and the need to deal with transboundary issues seeking to secure a minimum water allocation to the downstream nation of Mozambique, while protecting its populous urban centres in the delta from devastating floods. To properly understand the context in which the Act was crafted, we need to step back in time.

Before the approval of the Water Act, legislation on water resources management was scattered in several texts dating to the colonial times, without apparent coordination (Caponera, 1983). As a result, the legislation was "either unknown or ignored" (ibid: 15). Since the early 1980s the Government of Mozambique (GoM) had established collaboration with the Food and Agriculture Organisation of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and, later on, with the United Nations Development Programme (UNDP) for assistance in the development of water-related legislation (Caponera, 1983; Solanes, 1989). As Dante Caponera, one of the key figures in the Act formulation process wrote in his Mozambique mission report for the FAO legal branch: "there was a sincere desire from all concerned to secure the most rational use of available waters and, for these purposes, to introduce a water policy, and set up an adequate legal institutional framework" (Caponera, 1983: 4). Several interviewees mentioned a panel meeting held in Maputo in 1984 as a key moment in the development of the Water Act. During the meeting, a group of Mozambican and international engineers coming from different sectors (e.g. Agriculture, Water Management, Electricity), including experts from the TVA, Thames Water and Dutch engineers from the Delft University, concluded that Water Resources Management in Mozambique should be based on an integrated and multifunctional approach (DNA, 1984).

The ideas discussed within the FAO and UNDP reports and the experiences of the TVA and European countries in water resources management informed the deliberations of a new generation of Mozambican engineers. As students, most of these young Mozambican engineers, spent a semester or more in the Netherlands and studied at the Technical University of Delft. Otherwise, they were trained at the Engineering Faculty of Eduardo Mondlane University by Mozambican professors who in turn were trained in the Netherlands or by Dutch experts. During their education they were exposed to new ideas on WRM, particularly river basin management that they eventually brought into the national policy arena. After Independence, "despite the leaving of Portuguese technicians, DNA became a strong institution with the incorporation of young Mozambican technicians and with the support of the cooperation of different countries, mainly of the Netherlands, Italy and Bulgaria" (Carmo Vaz, 2003: 67). During the 1970s and 1980s several young professionals from socialist countries came to Mozambique to support the newly created Mozambican revolutionary State (e.g. the Soviet Block, the Netherlands, Italy, Cuba). Among others, several students, recently graduated from Dutch universities, were recruited through solidarity groups. Known as '*cooperantes*', they were employed by the Mozambican government. In the water sector, several (Dutch) students from Delft Technical University and Wageningen University worked at DNA or as engineers in large-scale irrigation schemes. Since most donors left the country in the late 1980s or were severely constricted in their development efforts due to the intensifying civil war, these young and highly educated engineers became key policy actors in the formulation of the Water Act and subsequent policies in the water sector (Alba, 2013).

A second element that influenced the policy process was the ongoing decentralisation of water resources management. Since the 1960s, several experiments based on river basin planning and management had been taking place in Mozambique. As a report written by a Dutch group of engineers working at DNA observes "with the construction of three dams [Pequenos Limbobos, Corumana and Massingir] in the South of the country the necessity to define regional water supply policies gained again impetus" (WaterGroup, 1988: 14). Among others, the *Unidade de Direcção de Aproveitamento Hidráulicos* (UDAH) was created in order to coordinate the construction works of the first two dams (Pequenos Limbobos and Corumana dams) providing water to Maputo. UDAH offered the institutional

template for the creation of the first regional water administration (ARA-Sul) and the subsequent ones. With regard to water pricing, an early experiment was instituted involving the introduction of bulk water tariffs paid by those benefitting from the use of water stored in the dams in Umbeluzi and Limpopo river basins (Manjate, 2010). Yet, water tariffs became a key concern only later, at the end of the 1990s, when new legislation was introduced and put into practice. Then, new experiments with water payments were introduced at basin level, as we discuss below for the case of Limpopo.

Eventually, the developments occurring at regional level provided further impetus for the definition of a clear framework for the management of national water resources. In particular, a framework for water rights allocation (e.g. water licences) provided a way for accounting for existing water demand at river basin level. Indeed, while water supply was increasingly regulated through the construction of hydraulic infrastructure, high uncertainty surrounded water demand. This becomes relevant in relation to the downstream position of Mozambique and the increasing competition for water at the international level. The next policy episode further illustrates how Mozambican policy actors and concerns in the transboundary Incomati River Basin shaped the articulation of IWRM ideas.

Policy episode two: The definition of 'shared water course'

While at the national level the institutional and legislative framework inspired by IWRM was emerging, at the regional level the attention was concentrated on the SADC Shared Watercourse Protocol claimed by Mozambican and other southern African policy actors as the 'Mozambican SADC Protocol'. Mozambican downstream concerns regarding sharing water of the Incomati River with Swaziland and South-Africa played a key role in the policy process that led to the definition of 'shared water courses' in the regional agreement (Carmo Vaz and Lopes Pereira, 2000). Several tripartite agreements between these countries on sharing Incomati water paved the way to the ultimate SADC revised protocol signed in 2005.

The first agreement between South Africa and Portugal about rivers of mutual interest was signed in 1964, and was known as the Cunene Agreement (named after a dam in southern Angola). The agreement introduced a number of principles, which recurred in later bilateral and trilateral agreements over the sharing of the Incomati River. The first principle emphasised 'best joint utilization' in developing the river's water resources. Secondly, cooperation should take place through sharing (hydrological) information and performing joint studies. Thirdly, these two principles should form the basis for diplomatic negotiations over mutual interests (van der Zaag and Carmo Vaz, 2003).

Despite these auspicious beginnings during the colonial era, it was, however, only by 1982 in the wake of a terrible drought, which reduced the inflow of water in the Incomati River at the Mozambican end of the border to zero, when representatives from the water sector of South Africa, Mozambique and Swaziland met again. They established the Tripartite Permanent Technical Committee (TPTC) that would advise their ministers responsible for water on the uses of the water resources of common interest, i.e. the Maputo and Incomati River basins, in February 1983 (van der Zaag and Carmo Vaz, 2003). All three riparian countries had big plans with regard to developing a dam in their part of the river basin. The consultations took place in a tense political climate: FRELIMO government supported the African National Council (ANC) against the South African government of the day while South Africa supported RENAMO forces that fought against the Mozambican government. This represented a case of interstate *hydro-politics* (Mollinga, 2001) and showed that at times of strained diplomatic relations between the countries, the management of international waters became one of the few possibilities for negotiation. Interestingly enough, the water-based negotiations led to a breakthrough on the diplomatic front rather than on the water front, when the then president of Mozambique, Samora Machel, promised to evict the ANC from Mozambican territory in exchange for apartheid South Africa withdrawing its support of RENAMO. This diplomatic Incomati Agreement of 1984 did unfortunately not secure the peace Mozambique had hoped for.

On the water front, the World Bank, through a team of Dutch experts, established that Mozambique had suffered heavily from upstream water developments in South Africa. Swaziland required Mozambique's no objection to the construction of the Maguga Dam in order to receive World Bank funds towards its construction. Furthermore, South Africa demanded a no objection from Mozambique for the construction of the Driekoppies Dam, which Mozambique was only prepared to give as long as a minimum inflow into the Mozambican end of the Incomati was guaranteed. These developments paved the way for the Piggs Peak Agreement of February 1991 in which South Africa guaranteed a minimum inflow of 2m³/s (van der Zaag and Carmo Vaz, 2003). The Piggs Peak agreement led to subsequent joint studies in the Incomati that eventually resulted in the SADC Shared Watercourse Protocol of 1995. This was ratified by Mozambique on the condition that its definition of shared water courses was expanded to shared rivers, preventing the practice of South Africa to strike separate (bilateral) deals with Swaziland over sharing the headwaters of both the Maputo and Incomati rivers without including Mozambique.

The expanded definition of shared rivers was included in the second SADC protocol, which was ultimately ratified by Mozambique in 2005; hence, the reference to the 'Mozambican SADC protocol'. Of further note is that the ongoing discussion between the Governments of Mozambique, Swaziland and South Africa over the joint management of the Maputo and Incomati rivers, made the Mozambican engineers very conscious of the river basin concept. The contest over water-related disasters (droughts and floods) with its upstream apartheid neighbour, probably resulted in the innovative and modern use of the river basin concept in the *Lei de Aguas* as highlighted in policy episode one above.

Policy episode three: The neoliberal turn

The third episode centres on the endorsement of IWRM ideas in the national policy arena. The episode demonstrates the influence of Mozambican post-war concerns and neoliberal, market-inspired International Monetary Fund (IMF)/World Bank (WB) agenda in the formulation of the National Water Policy (NWP) and the water sector as a whole.

In the 1990s, the country witnessed great changes in the political scene that inevitably influenced the entire Mozambican society and economy (Pitcher, 2002). In 1992, FRELIMO and RENAMO signed a peace agreement, and in 1994 the first multiparty elections took place. Mozambique was worn out by years of conflict, several natural disasters and a severe drought and famine (1991-1992). Reconstruction and poverty alleviation were the main objectives of the government, that soon became an 'exemplary client' for the WB and the IMF (West, 1997; Hanlon and Smart, 2008; Hanlon, 2010). Meanwhile, "[n]early all donors made aid conditional on the recipient having programmes with the IMF and World Bank" (Hanlon, 2010: 86), thus pushing the Mozambican government to follow an economic structural adjustment programme. Within the water sector, the agenda focused on improving (or creating) basic services such as water supply in both urban and rural areas.

The drafting of the National Water Policy started before the Peace deal was signed, received a lot of attention after 1992 and was approved by the Council of Ministers in August 1995 (GoM, 1995). The NWP endorsed IWRM (*Gestão integrada de recursos hídricos* in Portuguese) and promoted the decentralisation of water management and the participation of water users in planning, implementing, managing and financing of water infrastructure. The NWP, however, focused on Water Supply and Sanitation leaving little space to water resources management concerns. This shift should be understood in the context of the low water coverage rate that characterised post-war Mozambique (Coppel and Schwartz, 2011), the international attention towards providing safe drinking water (e.g. the International Drinking Water Decade) and the IMF/WB agenda mentioned above.

Furthermore, the NWP diverges from the 1991 Law as it emphasises the definition of water as an economic good and promotes public-private partnerships in the provision of drinking water. Following the adoption of the NWP, the Water Tariff Policy (in Portuguese *Política Tarifaria de Águas*) was

approved in 1998. The document contains guidelines for the introduction of water charges following cost-recovery, user-pays and polluter-pays principles. As Alba (2013) reports, the shifts towards increased participation of the private sector and market-based reforms did not come without contestations that resulted in the definition of water as an economic as well as a social good. Nevertheless, the intervention of Bretton Woods institutions was seen as a good option (if not the only) to obtain financial support required for reconstruction.

Informed by the emerging IWRM paradigm, new forms of stakeholder participation were introduced at river basin level. The southern region and Limpopo River Basin were again the main focus: in 1993, ARA-Sul was established, followed by the creation of the Limpopo River Basin Management Unit and the Limpopo River Basin Committee that met for the first time in 1998. The Committee still represents the arena for discussion and participation of stakeholders at river basin level. The experience of ARA-Sul served as an example for the other four regional administrations (ARAs) created between 1993 and 2007 (see Figure 1). The decentralisation process was rather slow, characterised by a lack of political and institutional commitment to transfer of authority from the central administration to new decentralised administrations and a lack of human resources (Inguane, 2010). Indeed, during the 1990s the water sector was characterised by an outflow of skilled people from the central administration (i.e. the National Water Directorate) to either newly created agencies dealing with water supply or to the private sector (i.e. consultancy companies). This only slowed down the establishment of the ARAs, but the sector as a whole, since the formulation of water policies, became increasingly shaped by skilled engineers and water management working for consultancy companies with ties in the government.

It can be observed that the three shifts in water governance described in the introduction were articulated and endorsed in Mozambican policy documents in the 1990s. From centralised management, decentralised water administrations and river basin units and new forms of stakeholder participation, were created (however stunted they functioned in practice); water was formally defined as an economic and social good and new water pricing mechanisms coupled with increased private sector participation were introduced. The events highlighted above, however, suggest that the globally endorsed IWRM discourse was not the main driver behind these shifts. National concerns regarding post-war reconstruction and lack of public finance guided the articulation of IWRM ideas. Indeed, during the 1990s, water resources management was not the core concern of the GoM as attention was diverted to drinking water supply and increased attention towards economic instruments for WRM. The role of water charges was enhanced both as a way to pursue cost-recovery and as an instrument to promote rational use of water and environmental protection. Yet, it seems that the definition of water as an economic good and the introduction of the Water Tariff Policy have produced only limited effects at river basin level (Alba, 2013).

Policy episode four: Promotion and acceleration of implementation

In 2007, another key moment occurred when the Council of Ministers approved the new National Water Policy, the National Water Resources Management Strategy, the Regulations on Water Licenses and Concessions and the Water Tariff for the southern region. Following the World Summit on Sustainable Development, held in Johannesburg in 2002, which called on all countries to develop IWRM plans (Jønch-Clausen, 2004), in Mozambique IWRM-based water governance was further promoted and great efforts were devoted to the conversion of IWRM-inspired policies into practices.

The Policy and the Strategy came about as a result of a participatory consultation process started between 2001 and 2002 financed by the World Bank. A stakeholder forum (*Grupo de Trabalho Alargado* – GTA) was created with participants representing donors, the private sector, NGOs, university and governmental institutions. According to one of the participants, the whole process was quite

exceptional in terms of participation of a wide range of stakeholders and quality of the discussion, "for the first time, even the environmental NGOs were involved".¹ The consultation was organized into eight thematic sections or building blocks. For each block a consultancy was in charge of an inventory of the situation and strategy development that subsequently were both discussed and presented to the whole GTA. Within the consultation process, a failed attempt to revise and amend the Water Act took place. It is not clear what reasons were behind the nonapproval of the proposed amendments of the Law. Some interviewees mentioned disagreements about the allocation of responsibilities among different ministries as a possible reason, particularly between the increasingly powerful Ministry of Natural Resources and Energy and the Ministry of Public Works and Housing. On top of the revisited Policy and Strategy a much more elaborate and specific World Bank country WRM strategy was published which attached funds and projects/programmes to Mozambique's stated ambitions. If the renewed NWP and the Strategy outlined the principles in WRM, the World Bank country strategy set the agenda by defining the priority areas of investment for the bank and the donors (World Bank, 2007).

Approved in 2007, the Regulations on Water Licenses and Concessions set the basis for achieving financial sustainability on the part of the ARAs. Together with the 1991 Act, the document sets the framework for water rights in Mozambique including the procedures regarding the granting of water rights, in the form of a licence or a concession, and the collection of water taxes. Over time, more and more staff and energy have been devoted at river basin level to the establishment of decentralised administrations, passing of licences and collection of tariffs. During the 2000s, the last regional water authority was formally created (ARA-Norte in 2006), while several river basin committees were set up (Inguane, 2010). The operational decentralisation of water resources management and the financial autonomy of Regional Water Administrations received great attention from the GoM and from the ARAs themselves. In order to improve fee collection, within the ARA-Sul several measures were undertaken including the development of a business plan, the creation of a commercial department and the amendment of a new bulk water tariff for the southern region. Rules and regulations were translated in local practices giving rise to new experiments that fit local contexts. Insights from Limpopo and Pungwe river basins presented in the next section provide some examples of the articulation of water rights and stakeholder participation on the ground.

This episode shows how IWRM ideas were further articulated within a new round of policy-making resulting in the introduction of several policy documents in 2007. The policy episode reveals the role of both State bureaucracies and consultancy companies in shaping the articulation of IWRM ideas. While the creation of the GTA reinforced the consensus around the policy process by promoting dialogue among different institutions, we have limited knowledge on how the voices of different stakeholders have been incorporated in the policies. It has also become clear that IWRM policy discourse has become more influential in shaping policy regulations and strategies, if only because these are indirectly or directly supported by sector funding agreed with donor organisations.

INSIGHTS FROM THE FIELD: WATER RIGHTS AND STAKEHOLDER PARTICIPATION IN LIMPOPO AND PUNGWE RIVER BASINS

On the ground, policy ideas have been translated into several heterogeneous practices depending on local geographical and sociopolitical circumstances and the presence of international donors. In the Limpopo River Basin, the shift from central to decentralised water administrations, stakeholder participation and the introduction of payments for water, have been shaped by the number of users and the magnitude of their water use as well as their political importance both at national and local level (see Alba et al., this Issue). In the Pungwe River 'laboratory', where events on the ground were

¹ Interview by Rossella Alba with a senior consultant, Maputo, Mozambique, June 2013.

heavily influenced by the Swedish-financed Pungwe River Basin Joint Water Resources Management and Development Strategy (RoM/RoZ/Sida, 2006), the lack of big water users, except for a sugar estate owned by a South African company and an urban water supply company (*Águas de Beira*) both located in the downstream end of the river, has resulted in a definite focus on hydrological dam studies and water development scenarios at the expense of an active engagement with stakeholders and their water management concerns (GoM/GoZ/Sida, 2005a, 2005b). We briefly review below the emergence of new water governance forms in the two basins.

The introduction of water permits and charges

Based on the Water Act (GoM, 1991) and the Regulation of Licensing and Concession (GoM, 2007c), all water uses should be registered in a cadastre and legal permits granted for private water uses. As soon as a user formally obtains a licence, he or she is required to pay for the volume of water abstracted. The process for obtaining a licence is rather long (taking up to one year) and bureaucratic. The user has to present several documents (i.e. information about the abstraction point and the technology used, the method for measuring the volume abstracted, a copy of the land right) and these need to be verified by the river basin authorities with a field visit. The length of the registration process is also due to the limited availability of human and financial resources at the disposal of ARAs. For instance, in early 2013 only two persons were in charge of registration of users within the whole Limpopo River Basin. In order to deal with these and other local challenges, water rights frameworks have been (or had to be) dovetailed.

In the Limpopo Basin, formal provisions in relation to water users' registration have been translated into two main local 'arrangements': Large-scale water users enjoy tailor-made agreements (memorandum); meanwhile, smallholder farmers scattered along the river banks have been organised into water users' groups represented by 'Focal Points' (see Alba et al., this Issue). The memorandum represents the outcome of ad-hoc negotiations between the river basin management unit and large-scale agricultural users. For instance, HICEP, the agency managing the Chokwe Irrigation Scheme, negotiates a yearly memorandum with UGBL/ARA-Sul while in early 2013 negotiations were taking place between the regional water administration and the large-scale water user agency present in the downstream Baixo Limpopo, RBL-EP, and MAI, the commercial water user in the upstream end of the basin.

Water charges have also been recontextualised into local practices. Depending on the opportunities to actually measure the volume of water abstracted from the river, water charges are calculated in different ways. In the case of the Chokwe Irrigation Scheme water charges are calculated according to the volume of water abstracted (with a discount of 40% on the official water rate). This is due to the physical feature of the irrigation scheme, namely the presence of one intake that allows for volume measurements. Instead, given the high transaction costs involved with measurement of the volumes of water abstracted and the physical difficulties in calculating the volume, the water charges in the case of the smallholder users are calculated in relation to the area cultivated.² Local farmers representing their neighbours, so-called Focal Points, are in charge of both establishing the amount of land cultivated by each user and collecting the fees, in exchange for keeping part of the collected fees as reward (Alba et al., this Issue).

In the Pungwe River Basin, the matter of water use licences became an issue for ARA-Centro (*Administração Regional de Águas do Centro*) only as a result of the IWRM project's attempts to mobilise and register actual water use stakeholders in the river basin. Hence, what started in March

² In 2013, a flat fee was charged per hectare. Depending on the location of the land in the Limpopo River Basin either 12,000 m³ (upper part) or 21,500 m³ (middle and lower part) of water were assumed to be used per hectare (the difference reflects climatological variation as calculated in crop water requirements, see Alba, 2013: 54).

2003 as a stakeholder 'mobilisation' exercise to shape and articulate stakeholder participation in IWRM soon turned into an opportunity to "increase the number of water use licences" (GoM/GoZ/Sida, 2005a: 3-2). This motive for stakeholder participation, viz. providing a source for cost recovery of ARA-Centro, soon became the overriding legitimization for stakeholder engagement, besides the initial claims that stakeholder participation formed a 'building block' of IWRM and that such participation was "of paramount importance" as "input to the work of the Consultants, and in order to get feedback on certain issues" related to scenario and strategy development (GoM/GoZ/Sida, 2005a: 2-1).

The outcome of five stakeholder mobilisation workshops held at administrative district level in 2003-2004 was the realisation that: (1) users were not aware of the need to have water permits, partly because the Water Act was unknown; (2) the procedure to get a water permit should be simplified and accessible at district level (rather than only at the ARA-Centro office in Beira); (3) stakeholder participation had to be organised per subbasin rather than per administrative unit; and that (4) a limited number of local actors, named '*elementos*', were key in establishing effective links between the multitude of water users and the ARA-Centro office (GoM/GoZ/Sida, 2005a, annexes on stakeholder mobilisation workshops). These '*elementos*' can be seen as precursors of the 'Focal Points' that were later instituted in the Limpopo.

Ultimately, the outcomes with regard to water permits and cost recovery were not very different in the Pungwe River Basin from those observed later in the Limpopo River Basin. It was basically a 'game of overwhelming numbers' whereby the transaction costs of charging a multitude of smallholder users exceeded the administrative costs and potential rewards of registration. By July 2004, only 90 stakeholders had been registered while another 44 had been identified, making up a total of 134 stakeholders in a river basin the size of the Netherlands (GoM/GoZ/Sida, 2005a: 3-7). A study to identify existing smallholder irrigation schemes in seven districts in central Mozambique, of which five fall in the Pungwe River Basin, found a total of over 10,000 ha under irrigation in at least 320 different systems (Beekman, 2011; Beekman et al., 2014). In 2005, a staff member of ARA-Centro indicated that rather than registering and charging each and every smallholder user, the stakeholder registration liaison officer would limit his scope to the few big water users in the Pungwe River, who signed annual agreements on monthly water payments (at discounted fees) irrespective of their actual (volumetric) water use.³ It is unclear whether the collection of water fees from smallholder water users through Focal Points, as instituted in the Limpopo recently, is presently also rolled out for the Pungwe River Basin, particularly in the wake of the renewed emphasis since 2007 on fee collection.

Decentralization and stakeholder participation

In the Pungwe Basin, the Swedish-funded IWRM project initially made a substantive effort to shape and articulate stakeholder participation, which the project considered weak and limited in Mozambique when compared to the role accorded to stakeholders in Zimbabwe's National Water Authority (ZINWA) and Catchment Councils. It was observed that stakeholders in Mozambique, united in the Basin Committee, only played an advisory role in decision-making processes that were the prerogative of ARAs and other government agencies. Also stakeholders played only a limited role on the management boards of ARAs, according to the 1991 Water Act. In a bold move, the Pungwe Basin Committee was constituted in July 2004 as an integral part of ARA-Centro, whereas the constitution of the latter agency was only formally approved in August 2004 (after its legal creation by Ministerial Decree in 1997!) (GoM/GoZ/Sida, 2005a: 3-14). The internal regulations of the Pungwe Basin Committee were primed on existing regulations for basin committees that were already operational under the wings of ARA-Sul with one crucial difference – the operational costs of the Pungwe Basin Committee (PBC) would be

³ Interview with staff member of ARA-Centro by Alex Bolding, Beira, 27 September 2005.

borne by ARA-Centro.⁴ Rather than electing the 18 stakeholder representative members of the Pungwe Basin Committee (together with one representative of ARA-Centro), it was decided to have them appointed by ARA-Centro, because it was a function of the PBC to 'give voice' to stakeholders rather than 'giving a vote'. The latter was not considered in accordance with the Water Law's stipulations on stakeholder participation (GoM/GoZ/Sida, 2005a: 3-15, 3-16).

In the Limpopo Basin, the introduction of stakeholder participation reflects local circumstances and power relations where a seat in the River Basin Committee is guaranteed to all large-scale water users and only one member of the Committee represents hundreds of smallholder farmers (Praagman, 2013). Furthermore, representatives of smallholder users' groups (Focal Points) have not been invited to attend meetings of the basin committee, since they are only a "tool in establishing a payment system for water use" according to the chairman of the Limpopo Basin Committee (Praagman, 2013: 69).

Both the Pungwe and Limpopo Basin Committees function as a purely advisory and consultative body to "optimise the water use in the basin, minimise damages and conserve the environmental balance in the basin" (GoM/GoZ/Sida, 2005a: 3-16). The Pungwe Basin Committee met twice a year, on average (with the exception of the 2007-2008 period) and the issues discussed at their meetings were often of an informative nature (flood warning) or to do with information needs of ARA-Centro with regard to new infrastructural developments. The topics discussed at the twice annual meetings of the Limpopo Basin Committee are also mostly of an informative nature to do with weather forecasts, basin hydrology, finances and water tariffs. Furthermore, future large-scale agricultural developments of the basin are only presented to the members of the committee who have no decision-making power in this respect. This is the case of Massingir Agro-Industrial (MAI) who at the time of the research planned to abstract 682 million m³/year water for irrigating a large sugar cane estate in the upstream end of the basin (see Alba et al., this Issue). Van der Zaag et al. (2010) have demonstrated that such a large water concession may seriously impair the existing water use by downstream irrigators in Chokwe and Baixo Limpopo. However, the potential negative impact on water access for downstream water users was only partly discussed during the Committee's meetings. The MAI representative later commented that his presentation in the meeting was only for the benefit of future relations with other stakeholders, and not to solicit their approval for the water concession, which in his view was a matter for decision-makers at the highest level only (Praagman, 2013: 70).⁵

These local arrangements represent different 'translations' of the policy into practices. They offer an example of how policy ideas are transformed in the day-to-day management of water resources. The articulation of the policy into practices seems, in the end, influenced by local circumstances and the action of local policy actors. Both users and water authorities with their interests and concerns contribute to the creation of a particular 'local' version of the policy process. Equally indicative of the influence of previously existing cultures of governance is the concentration of decision-making power in the hands of a small policy elite, who jointly with big investors and large-scale (foreign) water users, decide on the allocation and distribution of the 'water cake'. The way stakeholder participation has been shaped in both the Pungwe and Limpopo policy 'laboratories' bears a heavy imprint of previously existing Portuguese centralised and authoritarian forms of governance, where legally recognised authorities jointly with corporate business make decisions on behalf of the masses of 'beneficiaries', reviving romantic notions associated with the Salazar-coined *Estado Novo*.

⁴ This promise proved conditional, as was borne out by the fact that funds for organising meetings of the Pungwe Basin Committee ran out when the IWRM project was negotiating a second phase and its funding dried up for two years. During those years (2007-2008) no Basin Committee meetings were held, emphasising the donor-pushed nature of this element of water governance.

⁵ Ultimately the water concession for MAI was approved by ARA-Sul. In July 2016, the MAI project was at a standstill (email communication, R. Ducrot, 10.08.2016).

DISCUSSION AND CONCLUSIONS

Even though ideas concerning river basin management, decentralisation and demand-management were present in Mozambique before the 1990s making it a case of Integrated Water Resources Management (IWRM) *'avant la lettre'*, IWRM as a policy package was endorsed only with the 1995 National Water Policy. The key policy ideas associated with IWRM such as volumetric water pricing, stakeholder participation and decentralisation had to be dovetailed with the existing legal framework and institutional organisations introduced by the Water Act to the extent that they often seem grossly at odds with it. For instance, whereas in the Water Act it is stated that the State plays a key role in water supply and management, in the Water Policy that same State will withdraw from any involvement in the provision of water. According to the Policy, the State and its organs should be reduced to an agency that sets priorities and acts as a policy regulator and monitor, determining minimum levels of service, and promoting private-sector involvement. This very shift in the role of the State from being the key development agency to a mere regulator, reflects an evolution of national policies in line with the simultaneous transformation of the dominant party FRELIMO from a socialist-to a capitalist-oriented movement. The contradiction between the Act and subsequent Policies has remained intact, because no new water legislation has been passed since 1991 (i.e. since the introduction of multiparty elections in 1994).

Furthermore, the shift from central to decentralised water resources management was built upon the early post-colonial efforts in river basin planning as well as upon existing institutions and institutional formats. The decentralisation process led to the creation of tailor-made institutions in the Mozambican water sector, the regional water administrations, dealing with water resources management from a position between the central State and the river basin. At the lower policy level, management units and river basin committees were created. Nevertheless, the newly created decentralised administrations have been endowed with only limited decision-making power and financial autonomy. This politics of decentralisation has resulted in a limited mandate of the river basin units and committees: managerial for the former and consultative for the latter.

The articulation of IWRM ideas did not follow one linear path, but passed through different rounds of policy-making illustrated by the four episodes: 1) emergence; 2) international influences; 3) neoliberal transformation; and 4) donor-funded promotion and acceleration of implementation. The analytical framework proposed in this paper and by the Flow and Practices project as a whole (see Introduction to this Special Issue), centring around the concepts of policy package, articulation and networks, allows the unpacking of the key drivers and elements responsible for the translation of the idea of IWRM into a number of concrete practices of water management on the ground, though one may wonder who, and at which point in time, made the crucial translation from Dublin principle into the practice on the ground. Of importance to the Mozambican case were the, often donor-funded, policy experiments in the Incomati, Limpopo and Pungwe river basins. Three main features of the policy process are discussed below: the encounter between the domestic political agenda and international one; the tensions between policies and practices; and the role of national champions in translating IWRM ideas and historical patterns that shaped the unfolding of IWRM in Mozambique.

First a considerable domestic Mozambican agenda informed the formulation of the *Lei de Águas* (1991). The Water Act represented the culmination of Mozambican efforts to deal with its antagonistic upstream neighbour South Africa, and the new forms of cooperation in the water field which had evolved in the Incomati River Basin informed by international experiences (e.g. TVA). The emphasis on drinking water supply and the promotion of private participation in the 1995 National Water Policy also reflects the priorities of the government at the time (e.g. addressing the huge water supply problems in the aftermath of the devastating civil war) and the requests of the World Bank/IMF. The introduction of volumetric water pricing responded to national concerns in relation to the financial sustainability of the envisaged Regional Water Administrations, rather than the global understanding of water as an

economic good. The Mozambican concern was with cost recovery, not with economising the use of water according to market principles. The reference framework for water licensing remained the one included in the Water Act and the socialist imprint that characterised the wide definition of common use (primary water use) resisted, for a long time, the neoliberal transformations occurring in Mozambique.

Second, when the policies eventually reached the ground, they faced the complexities of the reality. Or better put, local water administrations dealing with the translation of the policies from documents into operational guidelines, had to face the local physical, economic and political difficulties. Then, the water bureaucrats working at the lower policy level, who Lipsky (2010) calls street-level bureaucrats, turned into key policy actors. In close interaction with the users, they reformulated the policy while translating it. Hence, the emergence in the Pungwe Basin of the so-called '*elementos*': key local actors who could act as intermediaries between actual water users and ARA-Centro. These were again later transformed into the Focal Points, collecting water fees from fellow water users, in the Limpopo River Basin (Alba et al., this Issue).

Third, a rather small network of Mozambican policy actors were involved in the above policy episodes. They were partly trained in Delft and Wageningen, the Netherlands, and were exposed to some extent to prevalent international policy ideas emanating from the Dublin and Rio conferences. The Dutch can be said to have played a large role in the training and support of this closely knit Mozambican policy elite through university programmes, *cooperantes* networks and international aid. For instance, in 2006, the Netherlands contributed 13% of the total ODA funds disbursed to the Mozambican water sector, less than the African Development Bank (with 40%) and the World Bank (with 35%), but more than the rest of all bilateral donors together (van Woersem et al., 2007: 16). This emerging water elite over time spread its wings, rotating offices of important State institutions in the water sector and at the Eduardo Mondlane University, whilst diversifying into consultancy companies making use of the burgeoning bilateral aid networks affiliating themselves with the water sector. This reveals a rather exclusive policy process where the 'power to define' (Shore and Wright, 1997) the content and the terms of reference of the water reforms is concentrated in the hands of a few well-positioned and well-connected actors.

Eventually, the study points at some historical patterns, influences and manifestations in the shaping of the water reforms. Firstly, the massive investment in hydraulic infrastructure of the Portuguese in the late colonial period (1960s, early 1970s) was accompanied by the crafting of heavily centralised, yet autonomous, regulating and managing institutions which eventually provided the institutional template for the crafting of ARAs. Secondly, the development and management of water resources constituted a key political terrain for the post-colonial State 'hydraulic mission' (e.g. the Limpopo Valley was defined as the 'breadbasket of the nation') and provided for the affirmation of Mozambique political influence within the SADC. Ultimately, the Portuguese tendency to establish top-down, hierarchically structured, and highly centralised, State-affiliated managing agencies has partly continued to the present day supported by current Mozambican governments. This is revealed by the weak forms of stakeholder participation and the discriminatory treatment of users in relation to distribution of water licences and water pricing in the Limpopo River Basin. This State authoritarian tendency has left Mozambique with little experience on how to set up a responsive, accountable, democratic and representative management agency.

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