

Chapter 2

Water Decentralization Experiences: A Literature Review

Abstract As noted in Chap. 1, most of African countries have adopted integrated water resource management after the international conference on water and environment, which took place in Dublin in 1992. The implementation of the integrated water resource management has been different within the continent and even within the same region or country. This scenario has produced different results existing within the continent some good experiences while other countries and region are lagging behind. In order to understand the different forms of implementation of integrated water resource management, this chapter describes the process followed in different countries. The description is centered in the policies and other legal instrument enacted by the respective governments, and highlights the key success and failure histories and finally discuss in critical point of view the results obtained from different experiences during the implementation of integrated water resource management in Africa.

Keywords Decentralization process and performance • Integrated water resource management • Water policies

2.1 Background

Although the concept of decentralization has been attempted and practiced over decades, its application to water resources, especially in Sub-Saharan Africa, is contemporaneous and unprecedented. Water management decentralization reforms, based on the principles of Integrated Water Resource Management (IWRM) were characterized by several aspects. They established catchment and sub-catchment organizations, adding another layer of institutions to those dating back to the pre-independence or to the immediately post-independence frameworks. The reforms were presumed to redress problems of inequitable access, high pollution levels, seasonal scarcity, and ever-increasing conflicts. Such conflicts had bedeviled the water sector, as well as delivering water and livelihoods for the people, especially the poor, through incorporating them into the decision-making process.

Studies elsewhere show decentralization endeavors to be successful in some cases while unsuccessful in others. Dinar et al. (2005) recommend decentralization of water management by arguing that when decision-making is centralized and local conditions are not appropriately taken into account, then accountability of decision-makers is weak, and water resource management is inadequate. Empirical evidence from river basins in the developed and developing world shows that decentralization of water management has led to tremendous achievements in conflict and pollution reduction, productive and allocative efficiency, and environmental sustainability (Blomquist et al. 2005a, b, c, d; Dinar et al. 2005).

However, Stalgren (2006) argues that political entrepreneurs at the national level strategically position themselves by influencing the “construction of reality” in matters of water governance decentralization at the local level to their advantage. Smith (1983) and Fesler (1968) also point out that decentralization promotes parochial and separatist tendencies and may deepen enclaves of authoritarianism as well as exacerbate inequalities. Kambudzi (1997) states that democratization of water may go beyond our intention and turnout to be a recipe for further disaster.

In most Sub-Saharan African countries the level of awareness to the national reforms, as a starting point, differs significantly from country to country, catchment to catchment, sub-catchment to sub-catchment, and from locality to locality. Operations and effectiveness of the resultant institutional arrangements remain heterogeneous, even within the same national boundaries, in which laws and statutory arrangements governing the process are almost homogeneous. This fact suggests that the decentralization process appears not to be a linear and steady process in these countries. However, a thorough analysis of the factors that contribute to the success and failure of the water management decentralization process in these countries has not yet been conducted.

2.2 IWRM, Decentralization, and African Water Policies

At the heart of most of the water reforms that were implemented in Africa from the early 1990s is the concept of integrated water resource management (IWRM) (ICWE 1992). This concept is defined as “equitable access to and sustainable use of water resources by all stakeholders at catchment, regional, and international levels, while maintaining the characteristics and integrity of water resources at the catchment scale within agreed limits” (Pollard 2002, p. 943). The IWRM encapsulates each of the four Dublin Principles as follows (Swatuk 2005):

1. Fresh water is a finite and vulnerable resource, essential to sustain life, development, and the environments;
2. Water development and management should be based on a participatory approach, involving users, planners, and policy makers at all levels;
3. Women play a central part in the provision, management, and safeguarding of water;

4. Water has an economic value in all its competing uses and should be recognized as an economic good.

Among these four principles, stakeholders' participation is the one calling for the definition of river basin management at the lowest appropriate level. This refers to the idea of decentralization of water policies implementation. In other terms, following the subsidiary principle, the design and implementation of water management and allocation policies are transferred from the state to local institutions, which are supposed to have a better knowledge of the catchment functioning and where representatives of local water stakeholders are able to negotiate and decide jointly water management strategies and measures to be put in place. It is what Ostrom (1990) calls *collective action* in the management of common pool resources through the design by stakeholders themselves of the rules governing those resources.

At the same time, the Dublin Statement of 1992 demands a holistic approach to management of water resources, linking social and economic development with protection of natural ecosystems and also linking land and water uses across an entire catchment area of groundwater aquifer. According to Mody (2004, p. 8), "this holistic approach thus entails greater integration and centralized decision-making in certain dimensions, while competition for resources makes feasible and increases the desirability of decentralization and stakeholder participation."

In other terms, while centralization in the river helps achieve coordination of infrastructure, human resource development and the setting of general priorities for water allocation, water quality, and land use, decentralization can achieve efficiency gains through more effective delivery of services to users, and also through more prudent use of local resources and initiatives.

In terms of economic efficiency and institutional effectiveness of the water governance set-up, centralization can take advantage of economies of scale, internalize externalities and manage the hydrological interconnectedness, but it suffers from the disadvantage of bureaucratic cumbersomeness and slow response. Decentralization on the other side risks the danger of raising transaction costs and requires the pre-establishment of a property right system on the resources (Mody 2004, p. 10).

Mody (2004, p. 12) concludes that there is no generic recipe for the identification of the lowest appropriate level of management in a river basin. This appropriate level can correspond to the river basin authority that offers participation, or it may be a water user association that monitors, operates, and manages a small-scale irrigation system.

African states, and particularly those of the Southern Africa Development Community (SADC) region, are primarily "a collection of economically weak, primary commodity exporting, debt-distressed countries with unconsolidated democracies" (Swatuk 2005, p. 877). This fact has important consequences on the budgets and human resources capacities that SADC countries in Africa can put in place in order to implement in practice the IWRM principles that underpin their water policies. Two exceptions in the region are represented according to Swatuk (2005) by water reforms in South Africa and Namibia.

According to Swatuk (2005), the main difficulties in the implementation of IWRM policies in the SADC countries can be identified by the following aspects: *institutions*, due to the institutional inertia that pushes towards maintaining and adapting existing institutions rather than creating new (decentralized) ones proposed by IWRM; *finance*, due to the troubles in finding economic resources and the dependence on foreign donors; *conflict resolution*, due to the significant intra-basin (and, to a smaller extent in the region, inter-basin) competition for use of the limited water resource; and *information*, due to the lack of reliable and valid data and information about the state of the resource.

Van der Zaag (2004), quoted by Swatuk (2005 p. 878), suggested during the opening session of a SADC meeting that “perhaps the creation of wholly new institutions for water resources management was a mistake. Rather, the new institutions might be more effective if they were endowed with advisory powers only, and that more effort should be made to introduce IWRM practices into existing bureaucratic forms and procedures.”

The particular and disadvantaged situation represented by most African countries requires a specific approach with regard to the implementation of the concept of IWRM through water policies, and especially when it comes to decentralization. The complex, expensive, and non-linear nature of decentralization, combined with the difficult socioeconomic and institutional conditions of African countries, seem to create dubious pre-conditions for the introduction of a suitable environment for decentralization policies. The following section provides an overview of African experiences in terms of implementation of policies directed towards IWRM and decentralization.

2.3 Success and Failure Stories from Africa, with Focus on SADC Countries

It seems useful to look into concrete examples of recent water policy implementation in Africa and observe the assessments that authors have for these institutional dynamics, in light of the problems raised in the previous section.

Following Swatuk (2005) who uses South Africa and Namibia as two positive exceptions in the region, we will start our overview from these two countries and will proceed towards Botswana, Zimbabwe, Tanzania, Mozambique, Mali, and Burkina Faso.

Brown (2010) explored the institutionalization of participatory water resource management in post-apartheid **South Africa**, analyzing the situation in one of the two (out of the nineteen originally foreseen) catchment management agencies (CMAs) currently fully operational in South Africa, the Incomati CMA. The author argues that participation in natural resource management, often coupled with moves for more local ownership of decision-making, is based, among other things, on assumptions about the role of the state and the transformation potential

of institutional reforms. Brown (2010) concludes that, after empirical research in the Incomati water management area, there might be fundamental weaknesses in the participatory model and the underlying assumptions. The implemented approaches of decentralization may actually reinforce inequitable outcomes rather than achieving equity, efficiency, and sustainability in the use of water and other resources.

Brown (2010, p. 183) advocates in South Africa, as in all transitional countries, a reassessment of the role of the state, which should be reinforced, as it moves toward participatory governance to not render traditional hierarchical government intervention obsolete, but overall because a “laissez faire” approach to water participation and decentralization by the Department of Water Affairs and Forestry (DWAF) in Pretoria could have provided opportunities for existing powerful water users and vocal groups to co-opt processes and dominate the new organs of governance of CMAs and water users associations (WUAs).

Hossain and Helao (2008) presented some experiences from Northern **Namibia** and shed light on how the management and distribution of water resources have changed in independent Namibia, within the background of the government’s decentralization efforts. The authors observe that Namibia continues to suffer from acute water shortage, recognizing that decentralization is not a monolithic concept, neither is it inherently positive or negative. They conclude that there is very little evidence that the liberal and commercial approach adopted by the Namibian government towards water resource management resulted in policies that are more responsive to the poor or indeed to citizens generally. According to Hossain and Helao (2008), local governments are familiar with local circumstances, therefore, they may be in the best position to more equitably distribute public resources and target poverty within their own jurisdictions. However, redistribution issues from richer to poorer areas must be the responsibility of central governments. In this statement, the authors agree with the thesis of Brown (2010) in terms of the role of the state. A reason for concern, according to Hossain and Helao (2008), is represented by the importance that private interests have in the public decision-making process: “By promoting participatory good governance, grassroots-based local government institutions like the Oshikuku village council can ensure public trust much more easily than the private corporations” (Hossain and Helao 2008, p. 210).

Botswana is a Southern African country regarded by many authors as a “success story” because of nearly four decades of unabated economic growth, multi-party democracy, conservative decision-making, and low levels of corruption (Swatuk and Rahm 2004). The country faces increasingly high water scarcity, due to the dramatic rise in water use of water resources. Local policy makers recognized that water supply is limited in this arid/semi-arid country and took deliberate steps to manage water demand. Botswana then devised a national water master plan (NWMP) and undertook a series of institutional and legal reforms throughout the 1990s so as to make water resource use more equitable, efficient, and sustainable (Swatuk and Rahm 2004).

In other words, IWRM once again drove the design and implementation of Botswana’s water policy. But according to the authors, policy measures have had

limited impact on the practice, due to a number of socioeconomic and political challenges, identified in: *the character and pace of development* (focus on infrastructure development in support of jobs with negative consequences, and externalities on the environment and on the use of natural resources); *institutional overlap* (too many actors decide about water management, with little coordination from the government); *cultural impediments* (no general belief that water will run out and a sense that “government will provide”); *human resource capacity* (lack of data, information, and expertise); *Power relations* (the continuing preference for new supply, despite stated support for demand management, reflects the tension between international and national networks of power).

Swatuk and Rahm (2004, p. 1363) conclude that the current surplus capital reinforces the belief that water can be acquired “somewhere”: alternatively, technology will provide, and then “somewhat ironically, this wealth inhibits rather than fosters sustainable water resource management.”

According to Mapedza and Geheb (2010), **Zimbabwe** emerged as a country with one of the most progressive (on paper, at least) water reform processes within the Southern African region. Decentralization was certainly a milestone of the water reform in the country. The 1998 Water Act set up a decentralized water management structure, based on seven catchment councils. More than a decade after, the authors state that water reform in Zimbabwe was not simply a technical process, but “it is clearly linked to issues of power, political connectedness, and gender, with fewer women benefitting from the largely violent fast track land reform process” (Mapedza and Geheb 2010, p. 525).

Similar to the arguments quoted above by Brown (2010) about South Africa, and by Hossain and Helao (2008) about Namibia, Mapedza and Geheb (2010) state that “Zimbabwe’s water reform has negatively impacted the livelihoods of the poor, whose position is weakened by a lack of resources....How the reform played it out in Zimbabwe is a function of unequal power dynamics amongst the stakeholders ...mechanisms should pro-actively be put in place to tilt the power asymmetries in favor of the poor people in Zimbabwe, who largely rely on informal and multiple water uses...” (Mapedza and Geheb 2010, p. 525).

Dungumaro and Madulu (2003) make reference to three experiences from irrigation projects in **Tanzania**, leading to very different outcomes to stress the importance of community involvement and participation into any developmental initiatives, including water-related projects.

In 2006, the government of Tanzania launched a national program to meet, by the year 2015, the water sector targets set out in the Millennium Development Goals. According to Giné and Perez-Fouquet (2008), there is evidence that the government is promoting more sustained facilities, focusing on cost recovery and on “decentralization by devolution.” But shortcomings exist, due principally to a number of factors determining non-sustainability of the program. According to the authors, “decentralization to the lowest appropriate level is usually interpreted as the need for local communities to assume responsibility for their water supply, while little attention has been given to define responsibilities of sector-related institutions, nor to methods for tracking their performance” (Giné and Perez-Fouquet 2008, p. 18). For the

authors, the main challenge is identifiable in the management of the systems and in their financial sustainability, once installed. Operation and maintenance costs should then be covered by water users. Other important challenges hindering the performance of water decentralization in Tanzania are identified in the need for additional external funding, the lack of strategic vision by local authorities, the lack of skills, the crucial need for technical support, and the lack of a supervision and monitoring system.

In the field of urban and peri-urban domestic water supply, Matsinhe et al. (2008) looked at the possible synergies derived from the public-private partnership in the provision of water services in Maputo, **Mozambique**. The authors present the critical situation of the Mozambican capital in terms of water service provision (only 40 % of households have an indwelling water source), while 38 % of the population is served by small-scale independent providers (SSIP). To secure and improve water service provision to the poorest and most disadvantaged households of the city, the authors advocate the legalization of SSIP and the decentralization of certain regulatory functions from the central regulatory body (CRA—Conselho de Regulação de Aguas) to the neighborhood level. The sustainability of peri-urban water services regulation, based on neighborhood water committees, requires that CRA and the municipalities formalize a system of payments of license and regulatory fees to ensure long-term functioning of institutions created for the purpose (Matsinhe et al. 2008).

Looking at Western African water reforms, the national water law in **Mali** was voted in 2002, and was followed by the 2006 National Water Policy, based on the principles of IWRM (Water Aid 2008). Water management in the country is under the responsibility of the Ministry of Mines, Energy and Water, and decentralization has taken place since 2002, when local authorities (*collectivités locales*) were legally mandated for economic, social, and cultural development. In the water sector, the local authorities in charge of water management and allocation are the municipalities. The report of WaterAid indicates that, although on the technical side the decentralization process showed solid advances, financial concerns are still hindering the dynamics proposed in the policy. Financial problems and lack of investment funds represent, according to WaterAid, the main constraint that seriously risks jeopardizing the whole decentralization process (Water Aid 2008). The institutional reform of water policies in **Burkina Faso** took place in three big phases and is closely connected with the IWRM agenda at the international scale (Petit and Baron 2009). In 1998, the government adopted the “Water Policy and Strategies” policy document. Three years later, in February 2001, a Water Framework Law was approved by the parliament. In 2003, an action plan for the integrated management of water resources (IWRMAP) was proposed and covers a period until 2015.

Within the IWRMAP, a decentralization process took place and, as in other countries of the West African region, encounters serious implementation difficulties. Nevertheless, according to the authors, “we can mention concrete achievements, even if numerous dysfunctions still remain. For instance, a water agency was created in March 2007 in the Nakambé Basin, and about 20 local water committees have been created” (Petit and Baron 2009, p. 56). The main limits identified by the authors

with regard to the implementation of the IWRMAP in Burkina Faso include: (a) the gap between design and implementation of the water policy; (b) the lack of clarity and the subsequent conflict of competences and power in the water sector; and (c) the lack of coordination between the national and the local level. This last aspect is particularly relevant for the decentralization process, which “is experiencing difficulties of implementation because of a lack of delegation of competencies, and because of the limited funds allocated to local authorities in the water sector” (Petit and Baron 2009, p. 57).

2.4 Some Reflections Emerging from the Literature Review

IWRM is a complex and expensive process, and decentralization is a crucial component of IWRM. Sub-Saharan African countries suffer from chronic inefficiencies and gaps inherited from their recent past, and do not seem to represent a proper socio-economic, political, and institutional environment for the fast and successful implementation of such policies in the water sector.

Following the IWRM principles and recipes, most African countries reformed their water policies starting from the early 1990s, and put much emphasis on decentralization processes and the creation of new agencies at the local level for water management and governance.

The experiences illustrated in the previous paragraph show that although progress is visible in the field of water policies implementation and decentralization processes, many challenges still exist. Substantial differences are observable around African countries, but even those nations indicated as good examples in the difficult path toward the practical application of IWRM principles in the real life, like South Africa, Namibia and Botswana, still face delays and difficulties in the implementation of water policies, with particular reference to decentralization.

The main challenges are represented by the lack of clarity in terms of power relations and distribution of competences between central and local institutions, and between old and new organizations; the insufficient budgets and the lack of financial sustainability of the managing agencies; the lack of knowledge and skills (human resources) available to manage water at the various institutional and geographical scales; the conflicts raising as a consequence of increased decision-making power given to local actors with colliding interests; the unclear role of the state in the more participatory and “democratic” arena represented by local water forums, users’ associations and agencies; the difficult public-private relations and the issue of delegation/devolution of power to private actors for the management of a vital resource; the lack of reliable data and information available for a responsible and effective decision-making process; the cultural impediments to water pricing for the recovery of investment and O&M (operation & maintenance) costs, both for bulk water and for water services.

As described above, the level of decentralization process is heterogeneous among countries and even within the same national boundaries, in which laws and statutory

arrangements governing the process are almost homogeneous. This fact suggests that the decentralization process appears not to be a linear and steady process in these countries. This scenario indicates that the decentralization process and performance is affected by diversified factors, and an assessment of these factors contributing to the decentralization process and performance of water resource management is essential.

This study applies an institutional framework presented by Dinar et al. (2007), Kemper et al. (2007) and Blomquist et al. (2010) in an early global study to appraise the factors contributing to the decentralization process and performance of water resource management in African river basins.

The institutional framework used to analyze the factors behind the successful or unsuccessful decentralization process and performance is described in the next chapter. This framework is applied at both the case study (catchment) and the regional levels. We introduced several modifications to the original framework in order to address issues pertaining to Sub-Saharan Africa. We will detail these modifications in the following chapters.

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Water Governance Decentralization in Sub-Saharan
Africa

Between Myth and Reality

Mutondo, J.; Farolfi, S.; Dinar, A.

2016, XII, 125 p. 3 illus., 2 illus. in color., Softcover

ISBN: 978-3-319-29420-9