

Water institutional reforms in Namibia

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Abstract

After years of colonial rule and a long struggle to end external administration, Namibia became independent in 1990. The realization of political reform within a modern democratic framework has called for wide-ranging reforms in all sectors of the economy to which the water sector is not an exception. Institutional reforms in the water sector were undertaken with an overall aim of introducing integrated water resources management as a durable solution to the water challenges of the arid environment prevailing in Namibia. The reforms included the development of a new national water policy, the preparation of draft legislation, and new organizational changes to develop, manage and regulate activities in the water sector. Although institutional reforms in the water sector are necessary to meet the demands of a new nation, they cannot succeed without the required level of skill and capacity both within and outside water administration. While it is relatively easier to formulate new policies, promulgate legislation and create new organizations, it is very difficult for an emerging country to develop quickly the human capacity necessary to handle the reforms, especially when inadequate funding constraints create a conflict between resource development and capacity building.

Keywords: Water sector; Institutional reforms; Water policy; Water legislation; Capacity building; Decentralization; Commercialization; Community participation; Cost recovery; Namibia

1. Introduction

Namibia is located on the western side of the southern African subcontinent and has an area of 824,300 square kilometres. The neighboring states of Namibia are Angola and Zambia in the north, Botswana in the east and South Africa in the south. The Atlantic Ocean, adjacent to the Namib Desert, is located in the west. The population is 1.83 million and the capital city (population 250,000) is Windhoek. The internal affairs of Namibia were dictated by external political powers for more than 100 years of colonial rule between 1884 and 1990. The country became independent

in 1990 and the Constitution was generally regarded as a model to be followed. A new generation of socio-economic and environmental rights, such as social security, health care, education, food, water and sanitation, environmental protection and others became major responsibilities of the new government. These required changes in existing priorities and the development of new policies, including in the water sector, which called for appropriate legislation and other institutional arrangements to meet the demands of a liberated society.

The average per capita gross domestic product (GDP) in Namibia is relatively high for an African country and is five times more than the average for countries in the South African Development Community (SADC). However, poverty remains a major issue because the few rich people are very rich and a large number of the poor people are extremely poor. In view of the inherent aridity of the country, the prevailing level of poverty in the rural areas is difficult to ameliorate and the rate of urbanization is very high at 5% per annum (Namibia Trade Directory, 2003). The need to improve social conditions enhanced the view that an improvement in water supply and sanitation services would be a major contributing factor to improve the standard of living and address many of the poverty issues. However, the low population density in the rural areas complicates the provision of water and sanitation facilities, while the adverse location of large water sources to supply major centers of development requires high capital investments in the water supply infrastructure. This situation led to the adoption of a Water Supply and Sanitation Sector Policy in 1993 (Department of Water Affairs, 1993).

Institutional reforms in the water sector are normally indicated when performance in water resources management must become more efficient. This can result from a variety of factors, and in the case of Namibia it relates to political imperatives, policy adjustments, new legislation, the need for accelerated socio-economic development, increased natural resources constraints and emerging adverse environmental conditions. As far as water resources management is concerned, the Government of Namibia embraced the concept of integrated water resources management (IWRM) as propagated by the four 1992 Dublin Principles. A new National Water Policy was adopted in August 2000 (Government of the Republic of Namibia, 2000). This policy concentrates on resources management issues and instead of replacing the 1993 Water Policy, it complemented it. The objective of the 2000 Water Policy is to provide a framework for equitable, efficient and sustainable water resources management that is perfectly in line with internationally accepted best practices in IWRM. However, the preparation of legislation to enforce the 2000 Water Policy directives and the actual creation of the required institutions to give effect to the implementation of the policy are still in a process of development.

The main thrust of the institutional reforms proposed in the 2000 Water Policy is to improve functional capabilities and to increase management capacity in order to meet the technical, environmental, social, economic and legal challenges in water management. Therefore the establishment of a Policy and Strategy Unit in the Ministry of Agriculture, Water and Rural Development, a water resources management agency, an independent water regulator and a water tribunal were proposed. The strategy proposed to improve management capacity is to introduce a training system that allows individuals to advance by demonstrating competence through performance, to develop standards in the area of human resources development in those organizations involved in water sector activities and to empower senior professionals with knowledge, competence and skills through programs for professional development and affirmative action. The purpose of this paper is to provide an overview of the institutional reform process in Namibia and

to compare it with the principles identified by Saleth & Dinar (2004) in order to develop a generic strategy for institutional reform.

2. Key features of the Namibian water sector

2.1 *Water resources availability*

Namibia is the most arid country in Southern Africa with an average mean annual rainfall of 250 millimetres per year (mm/yr). As a result of the extremely arid hydroclimate, it is estimated that only 2% of the precipitation ends up as surface runoff while 1% recharges the groundwater. Namibia's water resources originate both nationally (within its borders) and internationally, and are shared with its neighbors. The internal water sources have a potential of 510 million m³/yr and comprise surface runoff, groundwater and the utilization of unconventional water sources, such as wastewater. Of the estimated 200 million m³/yr safe yield capacity of the dams that can be developed on the ephemeral river systems, only about 90 million m³/yr have been developed. It is also estimated that the long-term sustainable safe yield of the groundwater sources is 300 million m³/yr and, of this potential, 150 million m³/yr have been developed (Heyns *et al.*, 1998). The yield from unconventional water resources is based upon the extent to which wastewater is recycled, reused or reclaimed, which is about 10 million m³/yr. Although it is a relatively small quantity of water, it has a big impact on the household water budget where it is practiced.

The internationally shared water sources available to Namibia can be obtained from the northern and southern border rivers. In the north, there are the perennial Cunene, Okavango and Zambezi rivers, as well as the ephemeral Cuvelai system that drains from the south of Angola into the Etosha basin in northern Namibia. In the south, there is the perennial, albeit heavily regulated, Orange river. At present there are pumps installed in the perennial rivers, with a capacity to abstract 150 million m³ of water per year. The total developed potential of the internal water resources, plus the perennial river abstraction can yield 400 million m³/yr.

2.2 *Water consumption and demand*

About 70% of the rural population and 95% of the urban population have access to safe water supplies for domestic use. The country does not have heavy industries and the relatively small quantity of water consumed by the small service industries is therefore included in the urban domestic water consumption. Only 5% of the water supplied is used for mining, but it has always been subject to full cost recovery. Namibia has one hydropower scheme with a generating capacity of 240 MW in operation on the Cunene river at Ruacana, a 90-MW thermal power station with a closed water-cooling system in Windhoek and a 30-MW gas turbine in Walvis Bay along the coast. The total consumptive use of water for power generation is therefore negligible.

Water consumption in agriculture is divided into stock drinking and irrigation. The water consumed by wildlife is included in stock drinking. The number of equivalent large stock units for small stock, wildlife and large stock varies between 3.5 and 5 million, depending on rainfall conditions and the availability of grazing after a rainy season. Most of the 82 million hectares of land available are unsuitable for irrigation because of poor soils that are due to the arid climate,

Table 1. Growth and composition of future water demand in Namibia.

User groups	Annual use (million m ³)					
	2000	2005	2010	2015	2020	2030
Domestic	67	75	80	90	100	120
Stock	77	80	80	80	80	80
Industry	6	7	8	9	10	20
Mining	14	19	24	30	35	40
Irrigation	136	209	288	361	435	510
Total	300	390	480	570	660	770

The estimates reported in this table are based on growth assumptions adopted for various water uses. The domestic use group is expected to increase at an average annual rate of 1.96%, owing to the HIV/AIDS effect. The stock use group is based on the assumption that equivalent large stock units for domestic and wildlife animals will fluctuate, on average, between 3.5 and 5.0 million units, depending on drought conditions. The industrial use group is expected to increase, on average, by about a million m³/yr every five years. The water use for the mining use group is based on the assumption of two new mines every five years with each using about 2.5 million m³/yr. Finally, the irrigation use group is based on the assumption of an average addition of 1,000 hectares of irrigated land per year with a water duty of 15,000 m³/ha/yr.

except for 950,000 hectares classified as highly suitable for irrigation and 2,650,000 hectares classified as suitable for irrigation. In spite of these large tracts of irrigable soils, there is not enough water to irrigate them. The high evaporation rate and low rainfall are not conducive to irrigation in Namibia and, as a result, only 7,500 hectares are presently under irrigation.

Table 1 shows the water use by category of major consumer groups in the year 2000 and the estimated future water demand by 2030 (Department of Water Affairs, 2000). The estimated future increase in the use of water for irrigation would be the highest in comparison to all the other water-consuming sectors. Water for further large-scale irrigation will, mostly, be available only from the perennial border rivers, and as a downstream nation on all these rivers, Namibia will have to negotiate access to this water with the other riparian states. When the 4.4% contribution of agriculture to the GDP in 2001 is compared with the 12.8% contribution of the mining sector, it is important to note that the agriculture sector has consumed 71% of the water supplied in Namibia compared to only 5% by the mining sector. Agriculture is therefore not an efficient user of water, but this is mainly due to the inefficiency of irrigation in an arid environment rather than to stock farming or dryland crop farming. In spite of this, the agriculture sector employs about 29% of the active workforce of about 432,000 people in Namibia and provides a subsistence livelihood (self-employment) for about 300,000 people in the rural areas. The mining sector is relatively very small and employs only 1% of the active workforce, but positive results in existing exploration may result in substantial increases in both job opportunities and water demand. However, water use in mining and industry is conservative owing to the encouragement of the government of efficient water use in a water scarce environment.

2.3 Adequacy of the water resources

The water scarcity index for a country, as proposed by Falkenmark (1984), is defined in terms of the annual per capita volume of water that would be required to ensure and maintain different

levels of sustainable socio-economic development. According to calculations based upon the available data for Namibia, the country is in a state of absolute water scarcity as far as the adequacy of the resources to meet the demand is concerned. For instance, compared with the water barrier norm of 500 m³/person/yr suggested by water experts, the water availability in Namibia is only 360 m³/person/yr. This has been calculated by looking at the present population (1.83 million) and the full potential of the internal water sources, including the present pumping capacity, which gives access to a portion of the water from perennial rivers (a total of 660 million m³/yr). The abstraction of perennial water is limited to the present pumping capacity and it is therefore clear that the situation can be improved by gaining access to more of the internationally shared river water through negotiation and pumping more water.

2.4 Trans-boundary water resources issues

The international rivers of Namibia are shared with nine other riparian states and access to an equitable and reasonable share of the water is subject to negotiation and agreement between the watercourse states. A water master plan for Namibia was developed in the early 1970s and presented in 1974. An important feature of the plan is that the water resources of the international rivers should be used as much as possible adjacent to those rivers, but when it becomes necessary, water must be transported into the interior of the country to augment the internal water sources. Two major national water carriers have thus far been developed according to the master plan. The Calueque-Oshivelo Water Scheme conveys water from the Cunene river in southern Angola to the Cuvelai basin in northern Namibia, and the Eastern National Water Carrier, which is still under development, will link the existing reservoirs near Windhoek in the central area of Namibia to the Okavango river.

2.5 Water sharing arrangements

Namibia is a party to water commissions established on the Cunene, the Okavango and the Orange rivers (Wolf *et al.*, 2002). The government is at present engaged in negotiations to establish water commissions on the Zambezi and the Cuvelai rivers. Namibia ratified the SADC Protocol on Shared Watercourse Systems and the United Nations Convention on the Non-navigational Uses of International Watercourses. There is an agreement with South Africa on the operation of a joint irrigation authority for the Orange river.

3. Water institutional reforms: nature, extent, and rationale

Institutional reforms in the water sector in Namibia were dictated by a unique set of events that require further elaboration to explain how they influenced the establishment of new administrations with different approaches to the development of policy and legislation. Before Namibia gained independence in 1990, it never had a sovereign government and the laws of other countries were imposed on it to the extent that it was made applicable in Namibia. In August 1884, the German Imperial Government proclaimed Namibia a German protectorate. The territory fell under German law, but there was neither an institution responsible for water matters, nor any

water policy or water legislation in place. The need to find water along the railway routes from the coast into the interior of the colony resulted in the first major policy decision, i.e. to introduce two government drilling teams, to find and develop groundwater sources for the railway system, new urban settlements, stock farms, irrigation projects and mining developments. After the First World War, the League of Nations allocated the German protectorate to the Union of South Africa for further administration. In 1921, an irrigation department, with a drilling division, was created by the South African authorities because it was envisaged that groundwater sources could be developed to support large-scale irrigation. The first formal water legislation, taken over from South Africa and adjusted for local conditions, was promulgated to regulate the development and use of artesian water sources. However, it soon became clear that irrigation had extremely limited potential and in 1925, the irrigation department was integrated as a water division into the Department of Works of the newly established South West Africa Administration. The water division expanded its activities to develop farm dams for the impoundment of water during the rainy season, to construct hydrological gauging stations and to find groundwater. It soon became necessary to regulate the diversion, storage and use of water and in 1932, a Water Ordinance was promulgated by the Legislative Assembly of the South West Africa Administration. This ordinance made provision for the institution of a water board to advise the Secretary for South West Africa on water issues and this laid the foundation for the development of a technical water policy, as issues arose and decisions had to be made to manage water resources.

In May 1961, the Union of South Africa became a Republic and it was decided to prepare a comprehensive development plan for South West Africa. In April 1969, the South West Africa Affairs Act was promulgated in South Africa to provide funding for the development plan and to authorize the re-regulation of the administration of the territory. Many divisions in the South West Africa Administration were incorporated as directorates in their equivalent departments in the Government of South Africa and as a result they fell under South African legislation, to the extent it was made applicable to the territory. In this way, certain clauses of the South African Water Act (Act 54 of 1956) (Government of the Republic of Namibia, 1956) were made applicable to Namibia. Although all other water legislation in the country was repealed, provision was made for an advisory water board that had the same functions as the previous water board. The existing Water Division in the Department of Works was incorporated into the Department of Water Affairs in South Africa. These institutional arrangements improved the capacity of the existing water division because more human, technical and financial resources became available from South Africa. This made possible the preparation of a Master Water Plan for South West Africa that laid the foundation for the construction of large-scale water supply infrastructure started in 1973 that could support the water needs until, at least, 2000.

The new dispensation was also guided by two major policy decisions, dictated by political imperatives. The South African authorities started to implement the “apartheid” homelands policy and the responsibility for the provision of rural water services was given to those authorities. In September 1977, South Africa appointed an Administrator-General who had to prepare for the independence of Namibia in cooperation with the United Nations. This process led to the establishment of a minister’s council and the creation of a new government service in 1980. A new Department of Water Affairs was created, which was completely weaned from its mother department in South Africa. This resulted in substantial staff losses and reduced capacity because many competent people elected to return to South Africa. Neither South Africa nor South West

Africa had any formal, generic water policy document for Namibia up to 1990 and most of the water policy decisions remained in the minutes of the water board meetings or the institutional memory of the board members. However, since 1987, several attempts have been made to draft a new water act, which would be built on the relevant policies and existing legislation, but which would include issues to be addressed in the Namibian context. This initiative was subsequently abandoned because manpower was limited. The need to replace an existing act with a new one was not an immediate priority and it was thought that new water policy and legislation should be developed by an independent Namibian government.

3.1 Immediate post-independence arrangements

After the independence of Namibia in March 1990, the government implemented a new public service. The existing departments, created by the interim government, were replaced by ministries, but the existing institutional structures were basically retained. New ministries were established in cases where no equivalent departments existed before independence, for example, the Ministry of Lands, Resettlement and Rehabilitation, the Ministry of Foreign Affairs and the Ministry of Defence. The existing Department of Water Affairs (DWA) and the Department of Agriculture were incorporated into a newly created Ministry of Agriculture, Fisheries, Water and Rural Development. The objectives, functions and responsibilities of the DWA remained the same as before independence, namely control over and conservation of water resources, as well as the provision of bulk water supply services. The existing Water Act remained in force because the Constitution made provision that all South African laws applicable in Namibia would remain in force until changed by parliament. The government abolished the water board because it was thought that the board was not representative enough in the new dispensation and this caused a vacuum in the development of a new water policy in an independent Namibia. The social responsibility of rural development and the rural water supply functions of the eleven homeland authorities were centralized and allocated to the Department of Agriculture and Rural Development (DARD) in the ministry. However, it soon became clear that there was a lack of technical capacity to attend to the difficulties of rural water supply issues in an arid environment.

3.2 Need for water policy adjustment

Soon after the independent government started to function it was realized that, in some cases, there was an absence or duplication of water services or, in other cases, inadequate services and, in most cases, a complete lack of coordination between the different ministries. Schools and clinics were built without ascertaining whether there were water sources nearby. Irrigated agriculture was encouraged where the soils were poor with little water available. People were resettled as part of a rural development program in areas with limited resource potential. Entrepreneurs, who came to Namibia as a result of investment programs, were encouraged to develop water-intensive industries that impacted adversely on the environment and the available water resources. This made it clear that a new water policy was necessary to improve water management to meet the needs of a developing nation in the face of water scarcity.

In November 1991, an inter-ministerial committee was appointed to develop a Water Supply and Sanitation Sector Policy. In September 1993, the new policy was adopted by the government. The

Table 2. Broad division of water functions and responsibilities.

Functions	Responsibility
Planning, regulation, control, and rural water services	Department of Water Affairs
Commercial bulk water supply services	Department of Water Affairs*
Water reticulation to urban water consumers	Local authorities
Wastewater treatment and disposal	Local authorities
Government facilities (border posts, clinics, rural schools)	Department of Works
Water supply and sanitation on private land	Private sector

* The function of this department was handed over to the newly created Namibia Water Corporation in 1997

1993 Water Policy had a number of generic policy guidelines, such as the principles of equitable access to water and sanitation, maximum community participation, the delegation of responsibilities to the lowest appropriate level and the environmentally sustainable use of water. The 1993 Water Policy also dealt with more technical issues, such as the priorities for water supply, allocation of water, role of irrigation, water service provision, full cost recovery in water development and supply, and how provision should be made for those who cannot afford to pay for water. Practical issues, as well as the functions and responsibilities in the water supply and sanitation sector were identified, formulated and allocated as broadly shown in Table 2.

The local authorities (municipalities and village councils) under the jurisdiction of the Ministry of Local Government and Housing became responsible for the reticulation of bulk water supplies to the local consumers in towns, villages and settlements, as well as for the disposal of sewage effluent. The Department of Works in the Ministry of Works, Transport and Telecommunications was given the responsibility to supply water to small outposts such as police stations and border posts while the Ministry for Environment and Tourism had to look after water supply in all nature conservation areas. The Ministry of Health and Social Services was responsible for ensuring that all water suppliers comply with the aesthetic, chemical and bacteriological water quality guidelines applicable in Namibia. The role and importance of the private sector in water supply were also recognized. The management of water resources remained the responsibility of the Department of Water Affairs as mentioned before, but it had to investigate the feasibility of commercializing bulk water services, to relocate the rural water supply function from the DARD to the DWA and to establish an Inter-Ministerial Water Supply and Sanitation Coordinating Committee that would be able to ensure coordination in the water sector.

3.3 Rationalization

The lack of coordination and the duplication of public services, as well as the huge size of the public service for a country with such a small population, led to a decision by the government in 1992 to rationalize the public service. A new Ministry of Agriculture, Water and Rural Development (MAWRD) was established by removing the fisheries function. The DWA and the DARD remained, but the rural water supply function was shifted from the DARD to the DWA. A new directorate with two water supply divisions and a planning division was established to take responsibility for rural water supply. The Directorate for Resource Management was strengthened with a new division to deal with environmental and sustainability issues related to water. It was also

decided to expedite the plan to commercialize the bulk water supply services provided by the government.

3.4 Decentralization

After independence, many government functions executed by the homeland authorities had to be centralized because the authorities were abolished and did not perform well in any case. This temporary shift of responsibilities away from the local communities was not only politically unacceptable but an impractical arrangement for a country with a large surface area and small, localized population concentrations. A policy of decentralization was therefore adopted and the country divided into 13 regions, which have regional authorities with governors in charge of them. This arrangement meant that certain government functions would be executed at the regional level and the consequence was that the rural water supply functions would also revert to the regions. However, the poor performance of the previous homeland authorities, especially as far as rural water supply is concerned, is known and it was therefore decided that the decentralized rural water supply functions would be controlled from the center where technical capacity is available to assist the regions.

3.5 Commercialization

The investigation undertaken to determine the feasibility of government involvement in commercial bulk water supply activities found that it would be more beneficial to commercialize bulk water supply services. The main reasons, among many, were that the government should not run the core business of a service industry, but concentrate on policies, legislation, regulations and strategies to facilitate development by improving conditions in the water sector. There was also a need to split the regulatory function and the social responsibilities of the government from that of a service provider. The first two functions are incompatible with a business approach by a commercial water supply company who should make water services more competitive, cost effective and efficient.

In view of many other funding priorities, the government had limited funds available in the national budget for capital investments and it was found that the long-term planning required to establish expensive water supply infrastructure, by the time the predicted need would arise, was seriously constrained and adversely affected by the conservative annual government budget allocations. It was also impossible for the government to build up capital reserves to finance major maintenance work on the water supply infrastructure. A commercial company would be in a much better position to do long-term planning, attract capital investments from the private sector or to borrow money from commercial banks to establish water projects that would be operated on a full cost recovery basis. The inequitable government water tariff system was heavily subsidized and cost recovery had no bearing on budgets or expenditure. This could be improved by a company who would be able to operate on business principles to recover water supply costs and supply water more efficiently at less cost. The inadequate remuneration structure of the public service also made it difficult to recruit competent technical personnel or to terminate the services of less competent people. A commercial company can offer better service conditions, lay people off after negotiations according to a due process and recover personnel costs through the services provided.

This assessment confirmed the advantages of removing the bulk water supply responsibility from the government and a number of alternative models were then examined to determine how those bulk water services could be provided. The options considered were that the government must sell all the water supply assets and privatize the water supply services; or the water supply assets must be retained, but the water supply operation must be contracted out to a service provider; or the water supply assets must be retained, but the operation must be commercialized by running it on business principles. The government eventually elected to commercialize the bulk water supply function and this decision led to the creation of the government-owned Namibia Water Corporation NamWater in April 1997.

3.6 Consequences of the creation of NamWater

Because NamWater was created as part of government policy to rationalize and reduce the size of the public service, the staff complement in the DWA was substantially reduced. This was achieved by transferring some key officials to the NamWater establishment and by retrenching redundant staff who were involved in activities that could be privatized, such as engineering services, construction, drilling, maintenance and analytical services (the water laboratory).

The reduced staff complement in the DWA caused a lack of capacity in the execution of certain water resources management functions. A request to improve the situation was not well received by the Office of the Prime Minister so soon after NamWater was established, because it would have required an increase in the public service staff complement. The deficiencies identified were the need to deal with the strategic water resources management issues, to administer the existing water legislation more effectively, to regulate water service providers, to negotiate international water-sharing agreements on the international rivers and to deal with river basin management issues in the country. A more representative Advisory Water Board had to be established to advise the minister responsible for water affairs on the policy of the allocation of water resources, water abstraction, dam construction, wastewater disposal, pollution control and IWRM.

Additional capacity was also required to develop a new water policy that would incorporate the principles of IWRM, and to prepare new water legislation, including the promulgation of regulations and the elaboration of procedures to give effect to the act. The DWA was faced with the reality that most of the senior technical and management staff, who elected to remain with the DWA when NamWater was established, would reach retirement age by the year 2006–2007. Succession planning had to be done and young people had to be recruited and trained to fill those positions when they fell vacant. It was therefore proposed that suitable candidates should be employed to work as understudies to the existing senior staff and to receive proper on-the-job training. In order to manage this situation, the DWA prepared a motivation for an investigation to strengthen the existing DWA in a changed environment caused by the creation of NamWater.

3.7 The Namibia Water Resources Management Review (NWRMR)

The motivation submitted for consideration by top management in the ministry led to a decision by the minister, in consultation with the Cabinet, that a water resources management review project will be conducted by young indigenous Namibians. The NWRMR comprised a technical

team, supported by consultants and directed by a task force of stakeholders. The whole project was mostly donor-funded, but included a small contribution by the Government of Namibia. The technical team comprised young Namibians with acceptable academic backgrounds, but unfortunately very little practical experience in the water sector. They operated in isolation from the DWA (because the DWA was also “reviewed”) and were guided mostly by foreign consultants with little knowledge of the Namibian situation. The review prepared seven thematic review reports about water legislation, institutions, human resources development, economics and finance, shared international rivers and a water resources assessment, but very little attention was given to practical, technical issues.

A comprehensive program of public consultations took place and as a result of the recommendations emanating from the work of the review, the government approved the new 2000 National Water Policy, as well as the establishment of a number of new institutions. Accordingly, the existing DWA would be replaced by a Water Resources Agency (WRA), and be operated on business principles. Refer to Annex 1 for an overview of the existing institutional structure and Annex 2 for the proposed new structure. A distinction was made between the water resources manager, the water supplier and the water sector regulator. (This was of course not a new discovery in comparison to the findings of the investigations into the establishment of NamWater.) In order to achieve the set objectives, it was proposed to create a Cabinet Committee on Water Resources (at ministerial level), a Standing Committee on Water Resources (at permanent secretary level), an independent price regulator and a water tribunal.

Provision was also made for a policy and strategy unit in the MAWRD to advise the minister on water issues and a public water advisory council to assist the minister with decision making. All these institutions would oversee activities in the water sector (the “regulators”). The commercial water supply activities would remain with NamWater and other water suppliers, but the rural water supply and operation and maintenance (O&M) functions would be community-based and decentralized to the regional level, while being coordinated and supported by the center (the “suppliers”). The regional councils would get water management responsibilities while river basin management committees, water user associations and water point committees would be established to promote IWRM at the local level. The proposed WRA would take the responsibility as the “water resource manager”. The NWRMR prepared a new draft Water Resources Management Bill with the assistance of consultants and conducted broad public consultations. The draft bill is still under review and particular attention is given to technical issues that were not adequately dealt with as a result of preoccupation with social and other issues.

3.8 Rationale for reform

The driving force behind the NWRMR and the reforms proposed was the need to improve institutional arrangements to meet new challenges in a changing water management environment and to accommodate political views, perceptions and requirements to meet the expectations of the electorate. The rationale behind the institutional reforms proposed in the water sector in Namibia can be basically related to a number of important issues. The post-independence sentiments of the public created political imperatives to remove all unacceptable practices originating from the colonial past, including the institutions, policies and legislation that could be associated with that period. Institutional reforms were slowly implemented over time through a process of

rationalization, by allocating clear responsibilities for certain functions in the water sector to certain institutions best suited for the task, a process of commercialization to increase efficiency in bulk water service delivery and by the decentralization of certain government functions to enable local communities to promote their own interests by participating more directly in the administration of the country.

A huge portion of the Namibian population is extremely poor and the provision of equitable access to safe and adequate water resources was seen as a means of reducing poverty, of increasing food production and of improving the standard of living of the population. In order to take care of this, an institutional review process was used to establish IWRM principles by developing a national water policy, promulgating new water legislation, creating appropriate management institutions, decentralizing community water supply responsibilities, treating water as an economic good through appropriate cost recovery mechanisms and by giving due recognition to water conservation and environmental issues.

4. Reflections on Namibian reforms

As seen from the Namibian experience, the studies by Saleth & Dinar (1999, 2004) correctly identified and confirmed that institutional reforms must be accompanied by a review of the policy, legislation and administrative competence in the water sector. Such an assessment will direct the establishment of new institutional mechanisms that can deal with water management in the face of water scarcity, social expectations and the maintenance of ecological sustainability. This phased approach to reform, followed in Namibia after independence, is broadly consistent with the study view, but the delay in implementation made it difficult to assess the qualitative and quantitative performance of the water sector in Namibia as anticipated in the 2000 Water Policy. Although there may be an initial excuse in the Namibian case, the assessment of performance may remain subjective for a long time. It is therefore clear that there must be mechanisms and criteria in place to assess whether the institutions are operating effectively as far as water resources development, allocation, use, protection and management of water resources are concerned. The process of evaluating institutional interlinkages and institutional performance linkages in the study provide insight into the requirements for the design of a water institution that will be able to perform and can be established successfully.

The analytical framework developed for the study was subjected to a quantitative institutional inquiry and produced results that are not inconsistent with experience in the Namibian context. It can therefore be stated that the approach was at least sound, although it may not be adaptable to all cases. Here it can be specifically pointed out that in a third world country like Namibia, compliance with environmental demands, decentralization issues and land reform have a severe impact on the water sector and such issues should somehow be attended to in the further development of the study process. In Namibia, practical water policy, effective water legislation and a technically competent water administration constitute the foundation of successful water resources management in the face of water scarcity. The physical, equitable, economic and financial dimensions used in the study are important aspects to consider in the examination of performance, but other issues must be considered as well, for example, political interference or political direction,

social demands, legal constraints and environmental sustainability that have a major impact on the performance of the water sector.

Although the 1993 and 2000 Water Policies do not express themselves on project selection criteria, the determination of the socio-economic and environmental viability of water projects is an inherent engineering requirement to obtain financial support. The linkage of the two water policies with other policies such as the environmental policy of Namibia is well established. However, the implications of decentralization and land reform on restructuring are not very clear, but these issues became extremely important from a political point of view in southern Africa. The rationale behind land reform is that the landless, poor majority will be able to improve their livelihoods to the same extent as commercial farmers belonging to the minority community, by getting access to commercial farmland. The study does not cover the consequences of these issues, but they may have dire consequences for the water sector in an arid country like Namibia. It may therefore be prudent that the development of a generic model for reforms should be able to accommodate such issues.

The need for functional specialization to perform in the arid Namibian water environment is a vital necessity, which is why the need for capacity building and innovative thinking is so important in the local water sector development and management activities. The notion that the performance in policy administration is more important than legal performance is very true. In the Namibian policy directives, the cooperation between the state and the public user has been favored instead of legal action and punitive measures. As far as water administration is concerned, the need for a water pricing regulator in the water sector has been identified, but an appropriate institution still needs to be created to replace the present function of the minister.

One of the most serious constraints on institutional performance in the water sector of a developing country like Namibia is the relatively small budget made available for water resources administration, infrastructure development and operations. This is further compounded by the effects of the non-payment for water services. Finally, the implementation of the 2000 Water Policy and the replacement of existing institutions, as adopted in Namibia after the water sector review, did not take place with immediate effect as anticipated. It has become clear after three years that a more gradual process is now indicated to achieve changes that go with feasibility and ultimate effectiveness to the benefit of IWRM. This approach is supported by one of the outcomes of the study.

5. Analysis of practices in institutional reforms

Although the former South West Africa had its own administration, it was under the control of South Africa and firmly subject to the same public policy, exercised within a welfare state under minority rule. The country was also divided into homeland areas where a limited majority democratic system was allowed. In this context, there was no real sovereignty and a centralized, quasi-parliamentary, authoritarian public administration prevailed in Namibia while an external South African government control dictated foreign affairs, negotiations about international waters, defense and monetary issues. This situation changed dramatically at independence when the previous process of carefully directed incremental policy changes in a constrained environment was abruptly ended and replaced by a new political dispensation. Although there was a bitter

struggle for independence that lasted nearly 30 years, the transition to independence was peaceful and allowed the negotiation of a model Constitution, free and fair elections and the realization of political reform in a real democracy. The Constitution maintained existing laws, regulations and policies, including those in the water sector, until “Namibianized”. The introduction of some of the new reforms was immediate, but in other cases, like the water sector, a more gradual process was followed making full public participation possible.

The framework for institutional reform in Namibia is based on the allocation of responsibilities in the water sector to different entities that are best suited to execute those responsibilities. The relevant hierarchy is basically at three levels. First, there is the government with its responsibilities for regulation and control, including a social water supply commitment to the previously disadvantaged sector of the community. Secondly, there are the commercial water suppliers and thirdly there is the private sector. The reform process is based on both the 1993 and 2000 water policies, which carry the support of the public, the new Water Bill that is presently under discussion, as well as the creation of new institutions. There are basically two sides to institutional reforms. One is to design an institutional framework by restructuring an existing arrangement or creating something new to implement policies that are based on best practices in water resources management. The other is to ensure that the institutional capacity exists to give effect to the policies, legislation and regulations. However, at the end of the day it must also be possible to measure the performance of the new institutions. This is not always so easy owing to the perception of what have been the achievements and successes in the reform process and what needs to be measured to determine the efficiency and sustainability of the reforms.

One perception may also be that the creation of a new institutional structure and the provision of the required financial resources are all that is necessary to ensure the desired results. Another perception is that without competent human capital to man the structure, success is impossible and then the need for a structural change is purely cosmetic because it will not improve the situation. When human and financial capacities are adequate, the achievement of certain policy objectives can be measured against the results obtained and a different picture may emerge. In the Namibian context, the thrust of water policy development has been directed at serving the poor (water as a social good) and recovering the investments in water service delivery for those who can pay (water as an economic good). In this regard, the 2000 Water Policy states that the economic value of water must be recognized (“no longer a free good, but rather an economic good”) owing to the scarcity and vulnerability of the water sources and that water must be used efficiently and cost effectively. As far as the social (free) good of water is concerned, it is stated that all Namibians shall have an equal right to use water, including the freedom of use and to get the benefit of water sources. It is also stated that enough safe water shall be provided. There seems to be a contradiction between the right to have access to water and the recovery of the cost to provide the water, but the 1993 Water Policy gives more clarity by stating the following about water supply:

- The water supply sector must promote socio-economic development. The provision of water supply points should reduce the burden of water collection, promote community-based social development and support at least basic human needs. Irrigation should increase the food supply, improve nutrition and maintain a healthy society.
- Water supply services must be available to all Namibians at a cost affordable to the country. This should be achieved through a combined effort between the government and the beneficiaries.

Communities must therefore determine the service levels required and contribute to cover the cost of those services exceeding basic needs. Furthermore, water development must be environmentally sustainable.

It was also accepted that the overall sustainability of the sector will depend on its ability to become self-sufficient by at least recovering running and maintenance costs and that the details of a tariff policy should be worked out by each of the institutions responsible for water supply and reticulation. In this regard, the utility created to supply bulk water in Namibia has a clear mandate to provide water on a full financial cost recovery basis because it mainly supplies water to towns and commercial enterprises such as mines.

In rural areas, water supply is facilitated by the government through the Directorate of Rural Water Supply in the Ministry of Agriculture, Water and Rural Development. A policy of community-based management was introduced to enable rural communities to make a small contribution towards water provision by taking the responsibility for the O&M of the facilities and eventually to carry the full cost of the water supplied. In this case, there must be an agreement between the community and the authorities on their respective responsibilities and commitments, before government support is provided. The ability of each community to pay for the services rendered must be assessed and evaluated in order to determine the need for subsidization and to quantify the subsidy. In the case of urban water supply for the poor, a low price for a defined minimum lifeline volume of water and progressively increasing rates for increased consumption (block tariffs) should be considered. In the case of irrigation water supplied by the government, an economic rate should be charged, but this may be reduced through a special subsidy to be determined by the value of the produce relative to its socio-economic benefits for the country.

The levy of water tariffs is subject to administrative approval by the minister responsible for water affairs in order to ensure that the tariffs will comply with government policy and that any adjustments in tariffs or tariff structures are warranted and reasonable. It is also considered appropriate to enforce payment for water, but for those who still cannot afford to pay, assistance should be given by the relevant government authorities. The bottom line of the discussion is that the 1993 Water Policy advocates recovery of the full financial cost to supply water, but that in cases where some of the population cannot afford to pay for water services, special provision must be made by the government to assist that section of the population.

It is now ten years since the adoption of the 1993 Water Policy. Competent institutions, like the Directorate of Rural Water Supply and NamWater, have been created to give effect to the water supply and cost recovery policy, but the success in cost recovery is questionable. Progress in development of community-based management of rural water supply has been very successful and coverage in safe rural water supply facilities has increased from about 30% to 90% since 1990. However, when it comes to the cost recovery aspect, the picture is not so promising, as can be seen in Table 3. The outstanding debt has increased at an average rate of US\$2.1 million per annum since the creation of NamWater in 1997 and progress in the recovery of costs from rural water supply and local water committees has not been very successful. From this it is clear that successful institutional reforms created theoretically competent institutions, but the resulting water sector performance as far as cost recovery is concerned, is not acceptable. It is, therefore, difficult to differentiate between the success of successful organisational reforms and the degree of success with the cost recovery process to measure the efficiency.

Table 3. Outstanding debt on water sold.

Institution	Amount of debt (in million US\$)
Ministries	0.72
Directorate Rural Water Supply	0.31
Local water committees	1.62
Regional councils	0.49
Municipalities and towns	4.32
Other	3.06
Total	10.53

After the establishment of NamWater in 1997, it was anticipated that many senior management staff (at director and deputy director levels) in the DWA would have to be replaced within the following five to ten years. Most of the posts at the management level just below deputy director were also not adequately filled and there would have been no staff available to fill the deputy director positions. One option was to employ junior staff to serve as “understudies” for the existing management staff. However, the government budget system could not provide for such a plan, but donors were willing to support capacity building in the ministry. Some of the technical team members who implemented the NWRMR project were seconded from the public service and others were recruited as “consultants”. They all worked under the guidance of the Stakeholder Task Force and a number of consultants. One of the objectives of the project was to build up capacity in the team and a huge investment was made to achieve that goal.

Because one of the tasks of the technical team was to review the existing DWA as well, the team members were therefore never employed as understudies to the senior management staff in the DWA. Towards the end of the review it became clear to the team members that their task would come to an end and most people involved in the project moved to other jobs instead of electing to be employed in the DWA. In this way, the team disintegrated and an opportunity was lost to kindle the interest of the team members in a career in Water Affairs. The result is that, after six years, only a few young, trained professionals are ready to take over from the senior management and most probably this cannot take place without disrupting the future activities of the DWA.

Although the recommendations of the NWRMR project were approved in August 2000, very little has been done so far to implement the decisions. The reason for this is that the proposals for the new institutions were developed in theory, but that many practical aspects and implications were unfortunately not investigated properly and resolved by the technical team before the recommendations were submitted for approval. The recommendation to abolish and replace an existing institution like the DWA was not compared with other more practical and cost-effective alternatives at all. A possible scenario would have been to strengthen and improve the DWA to perform the newly identified functions. The availability of competent manpower with technical capacity to staff and operate all the proposed institutions was not examined. Another issue is a lack of staff and funding to develop and implement the other proposed institutions (policy unit, regulator and tribunal).

6. Conclusions and policy implications

In the Namibian case, factors exogenous to the water sector such as independence and the attendant political changes forced a total adjustment in the mindset among politicians and policymakers at the national level. These changes were also informed through a process of stakeholder participation and the evolution of concepts that were articulated and agreed upon at the community level to change perceptions and direct activities related to the water sector. The 2000 Water Policy was introduced to bring about the envisaged activities, but the promulgation of the draft water legislation to establish the institutional changes required to implement and enforce the 2000 Water Policy, has not yet been achieved.

The present Namibian water legislation has been reviewed and the issue of international water conflict resolution has been covered because it is very important for Namibia to get access to the waters of the international rivers. The principles of IWRM have been introduced because it is a major vehicle to protect critical water resources in an arid environment. The regulation of private sector participation in the provision of water services has also been recognized because it is absolutely necessary for economic and financial sustainability in the water supply sector.

One of the pitfalls of institutional reform in a developing country is that the rationale behind the reforms may have been based upon sound best practices in water resources management, but when it comes to practical implementation, there is a lack of human capacity or adequate funding available to meet the needs identified. It is clear that the development of new policies that are in line with the principles of IWRM is of little use when there is no legislation and regulations in place to give effect to the 2000 Water Policy. The technical, social, environmental and financial scope of the legislation must also be in line with the existing technical capacity of the existing institutions, or those to be created for that purpose, to facilitate the practical administration of the law.

Care should be taken that there is no over-institutionalization in the water sector because the creation of a number of new institutions that cannot be staffed owing to lack of manpower and cannot operate owing to a lack of technical capacity may cause them to become white elephants. Too many institutions may also create an overlap of responsibilities and undue bureaucracy that can impede efficient and streamlined decision making about water management issues. At present the *de facto* situation in Namibia is that the water sector review process, initiated in 1997, came to its logical end and succeeded in producing a set of generic water policy guidelines. By August 2003 it had still failed to achieve the promulgation of the proposed water legislation and the creation of the new institutions to implement the 2000 Water Policy. As a result, very little progress has thus far been made to address the real needs the water sector, as originally identified by the experts in the DWA after the creation of NamWater.

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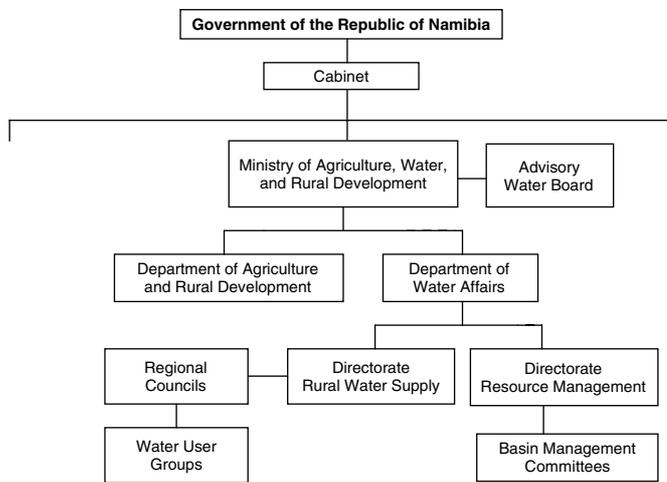
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Annex I. Existing water institutional arrangements



Annex II. New water institutional arrangements

