

Bourblanc, M. 2017. State transformation and policy networks: the challenging implementation of new water policy paradigms in post-Apartheid South Africa. *Water Alternatives* 10(2): 303-321



State Transformation and Policy Networks: The Challenging Implementation of New Water Policy Paradigms in Post-Apartheid South Africa

Magalie Bourblanc

Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), UMR G-Eau, Montpellier, France; and GovInn, Department of Political Science, University of Pretoria, South Africa; magalie.bourblanc@cirad.fr

ABSTRACT: For many years, South Africa had represented a typical example of a hydrocracy. Following the democratic transition in South Africa, however, new policy paradigms emerged, supported by new political elites from the ANC. A reform of the water policy was one of the priorities of the new Government, but with little experience in water management, they largely relied on 'international best practices' in the water sector, although some of these international principles did not perfectly fit the South African water sector landscape. In parallel, a reform called 'transformation' took place across all public organisations with the aim of allowing public administrations to better reflect the racial components in South African society. As a result, civil engineers lost most of their power within the Department of Water Affairs and Sanitation (DWS). However, despite these changes, demand-side management has had difficulties in materializing on the ground. The paper aims at discussing the resilience of supply-side management within the Ministry, despite its new policy orientation. Using a policy network concept, the paper shows that the supply-side approach still prevails today, due to the outsourcing of most DWS tasks to consulting firms with whom DWS engineers have nourished a privileged relationship since the 1980s. The article uses the decision-making process around the Lesotho Highlands Water Project (LHWP) Phase 2 as an emblematic case study to illustrate such developments. This policy network, which has enjoyed so much influence over DWS policies and daily activities, is now being contested. As a consequence, we argue that the fate of the LHWP Phase 2 is ultimately linked to a competition between this policy network and a political one.

KEYWORDS: Policy network, State transformation, water demand management, hydraulic mission, South Africa

INTRODUCTION

In South Africa, since at least the mid-20th century, water has been entrusted to a powerful state bureaucracy, embracing a 'hydraulic mission', which some authors have dubbed 'hydrocracies' (Molle et al., 2009). Historically, it was through a predominantly supply-side focus that South Africa dealt with water scarcity. Being the 30th driest country in the world, water had to be stored in order to cope with recurrent droughts. Yet, the transition to a democratic regime in 1994 saw new reforms being put in place, in the water sector in particular. The newly appointed Minister of Water Affairs, Kader Asmal, had the ambition to bring about greater equity and ensure adequate access to water, especially for the black population, following his new motto 'some water for all forever'. The new ruling party, the African National Congress (ANC), passed the National Water Act (NWA, 1998) – one of the new Government's flagship laws – after undertaking a long participatory process across the whole country and a series of trips abroad to learn from other countries' experiences. In that respect, the democratic transition period was also favourable for experimenting with new ways of dealing with the management of water

resources. In particular, policymakers have been very much influenced by the Dublin Declaration principles¹ and by international concepts, such as Integrated Water Resource Management, and their emphasis on water demand management (Conca, 2006; Bourblanc, 2015). The commitment to a demand-driven water policy appeared strongly after the publication of the White Paper in 1997. Such a policy paradigm shift in water management was later enshrined in the NWA. In recognition for his reformist action, Asmal was later nominated as President of the World Commission on Dams which critically examined the politics of dam building.

However, some of the new principles proved difficult to accommodate within the South African water resource management context. The creation of decentralized basin-level management agencies has been a major challenge in a country characterized by major inter-basin water transfers, coordinated at central level by the DWS (Bourblanc and Blanchon, 2014). So, too, has been the demand-side management approach. In that respect, Galvin (2013: 3) claims that "expectations of changes by a post-apartheid government were dashed with new prospective dams commissioned after 1994". Recently, the 2015 Presidential State of the Nation Address² reiterated the faith in big infrastructural solutions with the announcement of the construction of new dams. Amongst these prospective dams,³ the Lesotho Highlands Water Project (LHWP) occupies a prominent place, especially because of its strategic importance for the country.⁴

The paper aims at discussing the resilience of supply-side management within the Ministry and the difficulties with the implementation of demand-side options. Policy implementation has been a huge challenge for the new government across all governmental sectors since 1994 (von Holdt, 2010). Amongst the major causes usually evoked to explain implementation failure, three processes have been particularly blamed, i.e. the political transition, state transformation, and administration restructuring linked to the new mandate, missions and policies under the new dispensation. The combination of these factors resulted in massive disorganization within public administrations. Without downplaying the role played by such explanatory factors, we would like to explore, for the DWS in particular, another major explanation. In that respect, we propose to use the concept of policy network (Marsh and Rhodes, 1992) to help explain the resilience of supply-side management and some of the disappointing results registered by demand-side management approach so far. We use the LHWP as an emblematic case to study these aspects, not least because such an enormous engineering project played a critical role in the privileged relationship that the DWS has been nurturing with civil engineering consulting firms over the years, at least since the 1980s. Indeed, we can say that the LHWP catalysed a transformation that started taking place as far back as the 1960s and ultimately led to the emergence of a genuine policy network, as defined by Marsh and Rhodes (1992), with members of this network sharing common values and a sense of trust. We argue that we can shed new light on the fate of supply and demand management orientation within the DWS through a detailed examination of this relationship. More precisely, we will examine the type of relationship that DWS civil engineers and private sector engineering consultants developed over time through the LHWP, as well as the type of tensions that this close relationship caused for the DWS at a political level in a post-apartheid context.

Data collection methods for this research include a literature review (DWS policy documents analysis; grey literature and reports; academic work) and thirty semi-structured interviews with former members of the DWS, new recruits from the DWS, civil engineers with career-long experience with the

¹ e.g. water as an economic good; full cost recovery; 'polluter-pays principle', etc.

² See also RSA (2012).

³ New measures announced target the expansion of three existing dams; the construction of the Mzimvubu Dam (Eastern Cape Province), and most importantly, the approval of the 2nd phase of the Lesotho Highland Water Project (LHWP Phase 2).

⁴ We will come back to this aspect later on.

DWS, and engineering consultants. These semi-structured interviews were conducted between November 2012, February and August 2015, and November and December 2016.⁵

First, we mention early exceptions to the new policy regarding the construction of dams. Then, focusing more on the organisational level, we assess DWS' water-demand management (WDM) activities. Moving on to study more specifically the recent decision-making process leading to a new phase of the LHWP, we describe the policy network formed by DWS civil engineers and private sector engineering consultants, its evolution over time, and its recent difficulties. We argue that the fate of the LHWP Phase 2 is ultimately linked to a competition between this policy network and a political one, i.e. a new black political network within the DWS trying to sidestep a well-established and mainly white policy network.

A HYDRAULIC MISSION REBORN: BUILDING DAMS FOR PREVIOUSLY DISADVANTAGED COMMUNITIES

Soon after 1994 discourses that legitimated exceptions to the new demand-side orientation in water resource management started to appear at the political level. The new president, Nelson Mandela, personally presented the LHWP Phase 1 as a developmental project. In a 1995 letter to World Bank President James Wolfensohn he stated: "[w]e in South Africa need the water from the Lesotho Highlands Water Project to meet the increase in our demand, and, in particular, to meet the needs of previously neglected communities".⁶ Swatuk (2010) corroborates this statement. He writes that new water access priority for previously disadvantaged people somehow justified resuming past approaches for managing water resources:

Large dam-building and inter-basin transfer projects are once again on the planning table, for what everyone can agree upon is more water for all. This marks continuity with past practice, albeit with the needs of the dispossessed and disempowered now factored into the equation (Swatuk, 2010: 534).

Allan et al. (2003: 41), also note that by 2003 there had been "a substantial shift in narrative back to a supply-driven, basic needs approach". More recently, a new public declaration by Water Minister Nomvula Mokonyane reiterated the commitment of the DWS to dam construction, while distancing herself from dam construction projects in the past, and provided a renewed justification for dam building:

In the past when dams were being built for energy and mining industries, they were built along villages in our communities and yet our people remained without water or jobs, and it is for this reason that we are introducing a game changer that will enable us to move away from single purpose water sources like dams.⁷

Against this backdrop, the LHWP is of particular significance as its objective is to augment water availability in the Vaal River system. This river system represents the most important water resource in South Africa, supplying water to 60% of the country's economy, especially to the whole Gauteng province, which is considered to be the country's economic hub.⁸ The project was first conceived in the

⁵ Interviews with new DWS staff members were mainly conducted during a three-day conference co-organised with DWS (*Freshwater Governance for Sustainable Development*, Drakensberg, 5-7 Nov. 2012). Later on, in 2015, interviews were conducted with experienced engineers from DWS. One of them kept an updated register of previous technical staff who had left the Department over the years. Through that register, we managed to contact former DWS members and also to select engineers who had strong interactions with DWS officials over the years.

⁶ Cited in Bond, 2002.

⁷ DWS, Media Statement, 26 August 2015.

⁸ More specifically, it supplies 45% of the population of the country, strategic economic sectors in other provinces such as the bulk of ESKOM's coal-fired power stations on the Western Mpumalanga Highveld, North-West and Free State goldfields;

1920s but was only officially formalised through the signing of a Treaty between Lesotho and South Africa in 1986. It foresaw the building of six dams on the upper reaches of the Senqu-Orange River, as well as the construction of 200 km of diversion tunnels. Completed in January 1998, the Katse Dam (Phase 1A of the LHWP) became the highest dam in Africa (185 metres). Phase 1B consisted of building the Mohale Dam, the Mohale Tunnel and the Matsoku Diversion Weir, which was achieved in 2002. The initial plan envisioned a Phase 2, with the construction of the Mashai Dam, and a Phase 3, with the construction of the Tsoelike Dam in the future. Figure 1 represents a map of the various achieved and foreseen construction phases of LHWP, as envisaged under the 1986 Treaty. However, Phase 1B met with large opposition and protests. In that respect, the decision to proceed with the LHWP appears even more surprising, since the very rhetoric around equal access to water as the new justification for dam building was challenged by protest movements emanating precisely from the disadvantaged communities. Based on his PhD research work, Meissner (2016: 266) invokes the role and involvement of interest groups in the LHWP Phase 1, which he qualified as unprecedented:

Before the implementation of the LHWP, [DWS] generally went about its business in an undisturbed manner. Many projects were implemented without the interference of interest groups [... With the LHWP no longer] were water projects seen as good in that they provided more water to a growing society. Interest groups started to question the LHWP's viability to society, voiced concern about the project's negative impacts and even proposed an alternative policy initiative – water demand management.

Bond (2002: 40) examines in more detail the campaign to delay the building of the Mohale Dam (phase 1B) launched in January 1998 by civil society organisations such as the Soweto and Alexandra Civic Associations and environmental groups (either locally based or global NGOs⁹). They demanded that more attention be given to demand-side management, as they feared that an increase in water prices would be passed on to the users. The protests received wide media coverage. In one newspaper article, a Rand Water official – the powerful water board that delivers bulk water to many municipalities – declared that a 40 % water savings could be obtained, showing how a demand-oriented approach might be sustained:¹⁰

'we could drop supply by 40 %' and in the process delay the LHWP 'by years', hence 'conservatively' saving R800 million per annum. That money could be spent on demand-side management alternatives that would conserve water and assure equity.¹¹

The anti-dam international NGO, International Rivers, also referred to a report from Rand Water claiming that the building of the Mohale Dam could be postponed by almost 20 years if water conservation measures were implemented; nevertheless, the DWS urged the World Bank to fund Phase 1B without delay.¹² Hence, despite the protests, the new government went ahead with the Mohale Dam. In fact, it was considered that the execution of Phase 1 was too advanced to be stopped and that alternative approaches to water resource management would have taken too long to produce results on time to be substituted for supply-side solutions in the water mix. Yet, Bond claimed that the environmental justice movement opposing LHWP Phase 1B was still somehow victorious. Indeed, he mentioned that: "no new Lesotho dams would be built in the foreseeable future, thanks to a decision apparently taken in mid-2001 and codified a year later" (Bond, 2002: 163). Letsie and Bond (2000: 47)

agricultural users in the Gauteng, North-West, Free State and Northern Cape Provinces; or mines and industries on the Mpumalanga Highveld.

⁹ The Group for Environmental Monitoring (GEM) in Johannesburg, EDF in Washington, Earthlife Africa, the Environmental Justice Networking Forum, the Lesotho Highlands Church Action Group and the IRN.

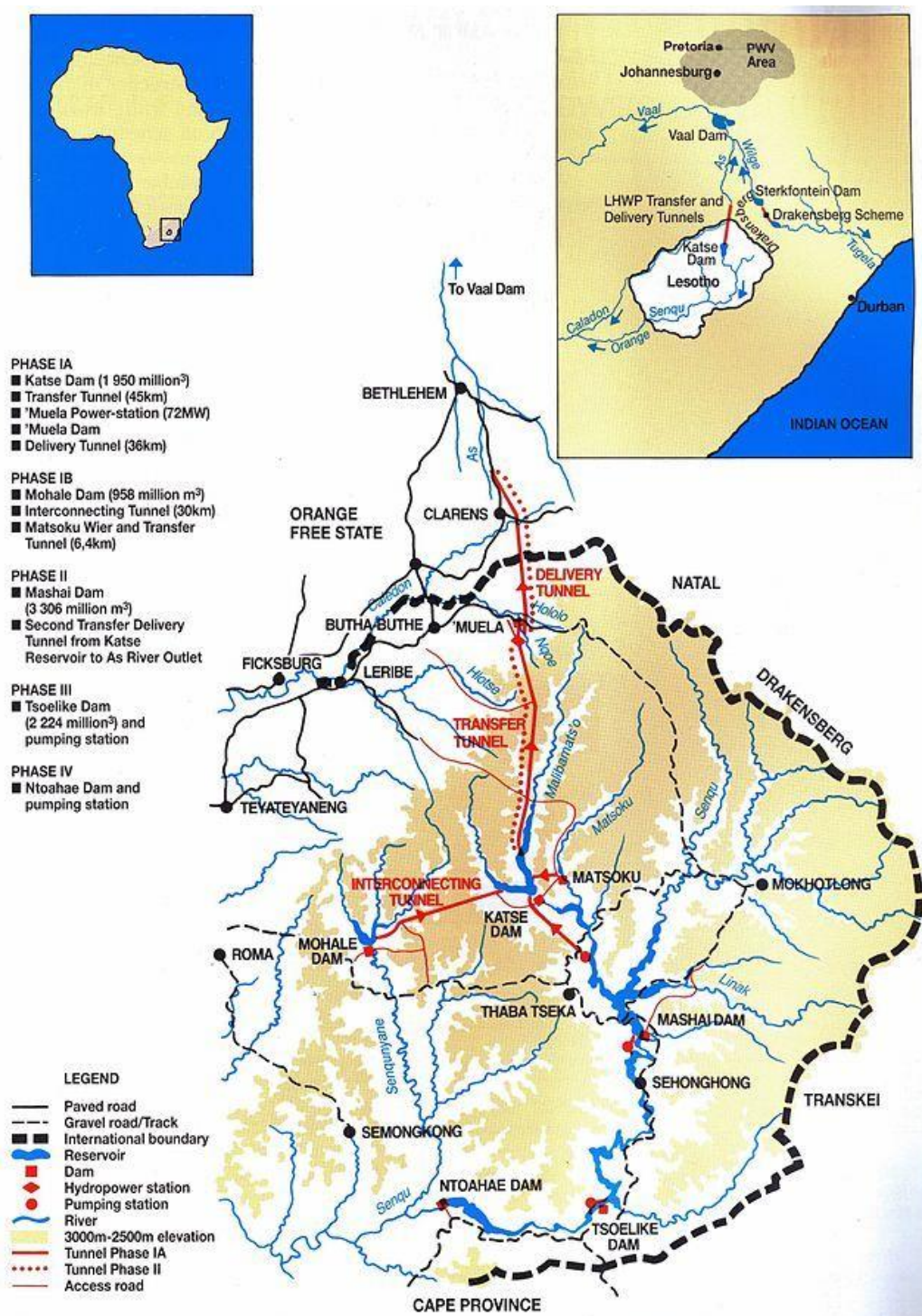
¹⁰ *Business Day*, 13 March 1998.

¹¹ Cited in the Inspection Panel Claim regarding World Bank involvement in the Lesotho Highlands Water Project, World Bank, 23 April 1998. <http://siteresources.worldbank.org/extinspectionpanel/Resources/lesothorequestforinspection.pdf>

¹² Source: www.internationalrivers.org/resources/a-brief-history-of-africa%E2%80%99s-largest-water-project-3664

also report that while demand-side management alternatives might not have been investigated during the first phase of LHWP, this changed after Phase 1B. The DWS committed itself to collaborating with Rand Water on a comprehensive demand-side management study for the Vaal River System Supply Area. Expected to have been completed in 1999, the study was meant to be used to assess options for the future, including whether and when future phases of LHWP might be needed.

Figure 1. Map of Lesotho Highland Water Project.



Source: https://en.wikipedia.org/wiki/Lesotho_Highlands_Water_Project#/media/File:LHWP_map_resized.jpg

However, the success of social protest movements pushing for more community-based and demand-driven approaches to domestic water provision was somehow short-lived, as within the Ministry, the implementation of water conservation and water demand management showed a poor achievement record.

A CHALLENGING IMPLEMENTATION OF WATER CONSERVATION AND WATER DEMAND MANAGEMENT STRATEGIES

At first, the new objectives for water resource management prompted some changes within the Department of Water Affairs and Sanitation (DWS), which had to undergo some kind of organisational 'restructuring' to accommodate new policy objectives and approaches.¹³ In 1998, soon after the promulgation of the new Act, a new directorate was created to deal with water conservation/water demand management (WC/WDM), later renamed 'water use efficiency'. The DWS defines water conservation as the minimization of loss or waste of water, the care and protection of water resources, and the efficient and effective use of water. Water demand management is defined as the implementation of a strategy to influence the water demand and usage of water. DWS' WC/WDM policy strategy is supported by three subsidiary strategies, focusing on water services, agriculture,¹⁴ and industry, mining and power generation.

The protocol on water resource infrastructure of the National Water Resource Strategy, 1st edition (DWAF, 2004), stated that new water resource infrastructure projects would only be considered if sufficient WC/WDM measures had been implemented as the first option in the provision of water. It was thus made clear that the commissioning of any new water resource infrastructure would from then on depend on the completion of the WC/WDM policy strategy. Still optimistic, the DWS announced in 2008 that:

Water conservation must be successfully implemented by all water users to optimise the use of our current water supplies and if successful could postpone the need for the augmentation of some of our water supplies (DWAF, 2008).

Again, in 2012, the second edition of the National Water Resource Strategy identified WC/WDM as the first step to be implemented in reconciliation studies in the different water management areas (DWS, 2012: 54). In other words, WC/WDM was to be considered as the first option in water resources management.

Yet, despite being introduced in strategic policy documents, the implementation of the WC/WDM strategy proved to be very challenging. Generally speaking, the 'water use efficiency' directorate does not implement solution-oriented programmes that could achieve specific targets in the different sectors identified. For instance, the function dealing with water re-use and recycling solutions has been transferred to water planners falling under a different directorate. On a daily basis, the water use efficiency directorate mostly deals with education and awareness campaigns, or runs programmes which mainly revolve around reporting tools on water use measurements in different sectors. So far educational and information campaigns around water scarcity awareness have had very limited impact. Messages about the false promises of what Turton (2002) refers to as a "structurally-induced relative water abundance" and the necessity to change water usage patterns and attitudes towards a precious

¹³ See the creation of a new directorate for institutional oversight, for instance, to ensure adequate coordination with newly created catchment management agencies in the initial 19 river basins of the country.

¹⁴ The agricultural sector accounts for approximately 60 % of water utilisation in South Africa. Many irrigation agricultural schemes experience water losses of between 35 % and 45 %. Employing efficient irrigation systems, such as drip irrigation, is perceived as being paramount to improving water use efficiency on farms.

common good do not reach their audience, as South African citizens have continued consuming water way above the world average (Hedden and Cilliers, 2014). In Johannesburg, 46 % of household water supply is used for swimming pools and watering gardens.¹⁵

The cooperation with municipalities on the implementation of Water Conservation and Demand Management actions certainly represents the most disappointing policy area. Local Government and the water services sector's water use is estimated at around 23 % of South Africa's water consumption. Considering that the biggest water users are the metropolitan and some large municipalities, and that the biggest savings could be achieved by these municipalities, the focus has been on the large metropolitan and larger municipal areas. The DWS has engaged with municipalities to address the issue of non-revenue water loss (such as leaking pipes, dripping taps and other infrastructure failures), as currently even the large municipalities might waste up to 40 % of the bulk water supplied to them (Meissner and Jacobs-Mata, 2016: 2). Actions promoted include metering of water use, replacement of old infrastructure, effective billing and cost recovery, and promotion of water efficient devices (low water consumption shower roses, taps, etc).¹⁶ Based on a WRC study from 2012 (WRC, 2012), it was expected that water losses could have been realistically reduced by half without too much trouble. The 2011 National Development Plan assumed it would be possible to achieve a 15 % reduction in water demand in urban areas by 2030, with specific targets between 2012 and 2017. However, municipalities have seldom achieved their targets. They even tend to present rising water demands because of their population growth. The first *No Drop* certification programme¹⁷ that measured municipalities' water loss reduction efforts demonstrated that there had been little mobilization on that front from municipalities: the report stated that only 51 % out of the 151 municipalities could show that they had proper or partial WC/WDM strategies and plans in place, and that they were busy with some form of implementation in the field (DWS, 2014). Cooperative governance is often blamed, as the relative independence between the three tiers of government is not conducive to accepting acts of intervention from the national government towards the local level. Yet, the National Water Act allows for the DWS to intervene on behalf of water service authorities (i.e. municipalities). The problem lies in the fact that so far, the role of DWS has been perceived as being primarily supportive of these municipalities. Therefore, it is not conducive to a change of attitude by local governments, which cannot imagine the DWS ever sanctioning them for failing to curtail their water consumption and demand. Up until now, there has been no enforcement strategy concerning WC/WDM.¹⁸ The current drought situation and the presence of an emergency task team could change the strategy, however, and help implement standard WC/WDM objectives, as it is envisaged that the legally binding water restriction procedure that applies in times of drought could be extended to non-drought periods.¹⁹

THE RETURN OF THE MEGASTRUCTURE: LHWP PHASE 2 AND THE RHETORIC OF A LOOMING 'WATER CRISIS'

The difficulties experienced in achieving water conservation and water demand management targets gave the civil engineers within the DWS and beyond another opportunity to make their case for a Phase 2 of the LHWP.²⁰ Against that backdrop, Lesotho and South Africa signed an agreement in 2005 to

¹⁵ Source: *The Water Wheel*, January/February 2016, p.14.

¹⁶ Source: Department of Water Affairs and Forestry, Outcomes of Cabinet Discussion on Water and Augmentation of the Vaal River System, Media release, 4 December 2008.

¹⁷ The No Drop Programme is an assessment tool; it informs on the status of municipalities as pertaining to their water losses, non-revenue water, and water use efficiency.

¹⁸ Interview with acting director 'Water Use Efficiency', DWS Pretoria, Nov. 2016.

¹⁹ Interview with acting director 'Water Use Efficiency', DWS Pretoria, Nov. 2016.

²⁰ See also Blanchon (2015) on the role of acid-mine drainage pollution control implementation challenges in the decision to proceed with LHWP Phase 2, with the prospects of using this additional water to dilute AMD-polluted water in Gauteng.

commission a new feasibility study on Phase 2 of LHWP. This feasibility study was completed in 2008. It follows a previous study conducted in 1996, i.e. the Vaal Augmentation Planning Study (VAPS), which concluded that either a further phase of the Lesotho Highlands Water Project (LHWP) or further water resource developments in the Thukela River System could be considered as solutions to augment the water resources of the Vaal River System (DWS, 2009). Alternatives to water resources augmentation were not seriously considered in this scenario.

Reference to energy saving options was an argument strategically used by engineers within the DWS and their supporters outside the government in the consulting world. Indeed, the 2008 DWS feasibility study motivated its selection of the Lesotho Highlands Water Project Phase 2 as the preferred option on the basis of cost-effectiveness criteria. At a projected cost of R7.3 billion, the construction of the Polihali Dam in Lesotho is described as currently the cheapest way to increase supply into the Vaal system:

the project has a low energy requirement in that water can be transferred under gravity to South Africa without pumping – unlike the Tugela option, which is energy intensive as water must be pumped from the Thukela River over the escarpment. Furthermore the existing hydro-power generation capacity of the Lesotho Highlands Water Project Phase 1 can also be increased. The project would bring substantial benefits to Lesotho as well as a regional benefit, as it will mean the prevention of increased carbon emissions (Department of Water Affairs and Forestry, 2008).

It was for the same reason that the siting of the new prospective dam was changed and that the Polihali Dam was recommended over the initial Mashai Dam, since the construction of the Mashai Dam would have entailed pumping water to the Katse Dam. In other words, it was argued that the project would also have some benefits in terms of climate change mitigation policy and would save on electricity costs, something which was less of an issue at the time of signing the 1986 Treaty (Earle et al., 2015: 165).

The decision to proceed with the implementation of Phase 2 of the Lesotho Highlands Water Project was approved by Presidential Cabinet on Dec. 3rd, 2008 (DWAF, 2008). However, the project experienced a number of delays. The 2008 decision was followed by a Declaration of Intent signed by the Heads of State from South Africa and Lesotho only on August 12th, 2010, but it was only in early 2016 that the Cabinet approved for the tenders to be issued. Box 1 below presents the timeline of the different LHWP phases, together with milestones in DWS policy reorientation.

These convolutions in the decision-making process about whether to proceed or not with LHWP Phase 2 met with a continued mobilisation from DWS engineers in favour of the supply option. The same recommendation for an infrastructural augmentation option was reiterated in the subsequent reconciliation strategy study. It was advised that such measures were to take place alongside Water Conservation and Water Demand Management measures in the Vaal, such as curbing unlawful water uses, reducing municipalities' water demand by 15 %, and utilizing treated effluent, especially acid mine drainage to reduce the need for dilution. However, none of these complementary options was really put into effect. Minutes from meetings of the bi-annual steering committees on the Vaal reconciliation strategy repeatedly mentioned no improvement on the delivery of such goals, particularly concerning water use compliance and water consumption reduction targets by municipalities. Yet, no strategy was discussed to ensure progress on that level before the next meeting. Such a scenario made the augmentation option, defended by civil engineers, even more unavoidable as the gap between demand and supply kept increasing.

Box 1. Timeline of main events.

1954 Lesotho Highlands Water Project conceived.
1983 Protests and violence break out in Lesotho over selling Lesotho's water to South Africa.
1986 Treaty signed in October by South Africa's apartheid government and Lesotho's military regime that established the Lesotho Highlands Water Project.
1989 Construction begins on Katse Dam.
1997 White Paper on water policy reform
1998 <i>National Water Act</i> , confirming the new commitment to a demand-driven water policy
1998 Creation of the Water Use Efficiency Directorate within DWS
1998 Phase 1A of the LHWP (Katse Dam) completed
January 1998 launch of the civil society campaign to delay LHWP Phase 1B
March 1998-2002 Construction period for Phase 1B of the LHWP (Mohale Dam)
1999 Numerous multinational companies on the LHWP Phase 1 found to have bribed the project's CEO.
2004 World Bank finally debars Canadian firm, ACRES International, one of the firms found guilty of bribery on LHWP Phase 1
2004 National Water Resource Strategy, 1st edition, declares WC/WDM as the first option in the provision of water
2005 Lesotho and South Africa signed an agreement in 2005 to commission a new feasibility study on Phase 2 of LHWP
2008 LHWP Phase 2 feasibility study completed
December 2008 Phase 2 of the Lesotho Highlands Water Project approved by South African President's Cabinet
August 2010 LHWP Phase 2 Declaration of Intent signed by the Heads of State from South Africa and Lesotho
Early 2016 South African Cabinet approved that the tenders be issued
End 2016 New delays in the procurement process; no consortium appointed yet

Moreover, apart from their involvement in strategic reconciliation studies and their influence over the selected water management solutions, civil engineers have developed over the years a narrative around a looming water crisis in a bid to create a sense of emergency that would favour a phase 2 project of the LHWP. For a long time, they have been using a narrative of a pending 'crisis' within the Vaal River System to convince DWS top-management to urgently proceed with Phase 2. They argued that Gauteng's water capacity was only sufficient to provide citizens with an uninterrupted supply until 2019, warning that if a prolonged drought were to hit after that date, there would be massive water restrictions. However, the South African water expert community, as a whole, does not necessarily share the view about a water crisis as defined in quantitative terms by DWS civil engineers. Researchers

from the national Council for Scientific and Industrial Research (CSIR), for instance, have warned that the water crisis was currently primarily one of water quality rather than quantity,²¹ alluding to mismanagement at municipal level and the scope of water leaks. On the other hand, civil engineers criticise the water leak fixing approach as a short-term strategy:

If we don't keep our eye on those long-term projects, we can be running around and putting our fingers in the dyke and fixing leaking pipes, but if in ten years' time there is no water to go into those pipes, there won't be any leaks, but there also won't be any water for you and me.²²

Drawing a parallel with the electricity crisis that hit the country severely in 2015-2016, the 'water crisis' has been recently framed, especially by representatives of SAICE (South African Institution of Civil Engineering), to echo the very worrying electricity crisis in South Africa causing power cuts across the whole country.²³ Popular newspapers have been borrowing the terminology used during the electricity crisis, using the expression 'water shedding'²⁴ as a substitute for 'water restrictions', making reference to the very unpopular 'load shedding' during the electricity crisis. This rhetoric of a looming 'water crisis' has been used to pressure DWS top management into expediting the decision on LHWP Phase 2. For instance, high-profile actors such as Mike Muller, former DWS Director-General (1997-2005) who later also served on the National Planning Commission,²⁵ and himself a civil engineer by training, recently went public and warned that further delay in the execution of LHWP Phase 2 would create irreversible consequences for the country's water resources.²⁶

Although the Cabinet gave approval for the tenders to be issued in early 2016, the procurement process itself has encountered further delays, and no consortium has been appointed as yet. This amounts to a five-year delay in the Polihali commissioning date, and the dam can now only be expected to achieve completion by 2025. In the next section, we explain these circumvolutions by shedding light on the growing distrust between DWS top-management and the engineering policy network.

POLICY NETWORK VS. POLITICAL NETWORK WITHIN DWS

Engineers' shortage and declining power within DWS (1994 to present)

The democratic transition in 1994 triggered a new policy of 'transformation', i.e. a transformation of the State apparatus in a bid to better reflect South African society's racial and gender diversity, since under the apartheid regime only white people could hold senior executive positions. The White Paper on the Transformation of the Public Service adopted in 1995 and the Employment Equity Act of 1998 were promulgated to remedy the weak representation of black, coloured and Indian groups within public administration executive echelons. Milne's work demonstrates significant improvement obtained in that domain (Milne, 2009: 978).

²¹ See Engineering News, 29 July 2015, www.engineeringnews.co.za/article/scientists-say-there-is-no-debate-that-sa-is-experiencing-a-water-crisis-2015-07-29

²² M. Muller, in *Mining Weekly*, 3 Dec. 2015, www.miningweekly.com/article/water-decide-now-on-lesotho-2-acid-mine-drainage-projects-prof-2015-12-03

²³ *Mining Weekly*, 3 Dec. 2015: www.miningweekly.com/article/water-decide-now-on-lesotho-2-acid-mine-drainage-projects-prof-2015-12-03

²⁴ Consultant and ex-member of DWS, and SAICE president www.bdlive.co.za/national/2015/11/03/brace-for-water-shedding-say-experts

²⁵ He was part of the team who prepared the National Development Plan 2030.

²⁶ Reconciliation studies have exposed a foreseen mismatch between water supply and water demand in the very near future, i.e. by 2020.

As a result of this transformation process, new staff profiles were brought in within the DWS, including new recruits who seldom had civil engineering educational backgrounds. Moreover, the new mandate inherited from the 1998 National Water Act also caused the institutional identity of the DWS to change. The combination of this new focus and the transformation process resulted in many engineering positions remaining vacant, while the number of administrative and support positions increased rapidly. Indeed, the educational system could not produce 'black' engineering graduates quickly enough to fill the positions within the Ministry. As a result, the technical skills shortage within the department increased. In May 2015, the DWS had only 31 % of its civil engineers – 78 out of 250 funded posts. Moreover, 25 % of these were aged between 60 and 64, which meant they would be retiring within the following five years – a loss which represented 44 % of the chief engineers at the DWS. As a result, DWS civil engineers have articulated the need to put engineers back in charge. They lament the view that staff members with a technical background tend to be halted in their career progression. At the same time, they denounce the fact that new DWS recruits, who they perceive to be politically aligned with the ANC political party network, occupy the highest echelons within the DWS, although they lack minimum technical and engineering proficiency.

Against such backdrop, SAICE, for instance, has been calling for an urgent re-professionalization of the public sector, and of DWS in particular. According to the results of a survey it commissioned, engineering professionals are willing to work in the public sector, provided, amongst other conditions, that infrastructure departments distance themselves from politics; that people with technical expertise receive decision-making powers; that development and career paths are clarified; and finally, that unwarranted interference by the department of Human Resources and Finances is curtailed in the departments carrying out the work of infrastructure engineering professionals.²⁷

A very active public-private engineering policy network (1980s to present)

Despite the staff shortage and their confinement to low-level decision-making positions, engineers within the DWS have managed to maintain an influence over the way in which DWS operations are conducted. This has been achieved through the close relationship built over the years with a few members of the engineering consulting world. Post-apartheid government has been outsourcing many of its tasks due to an internal capacity problem after affirmative action policies were applied. Yet, in the water sector, the outsourcing practice is not only the consequence of affirmative action policies but actually goes a long way back. For lack of space, we cannot delve into the roots of this practice.²⁸ It is evident, though, that the LHWP represented a game changer in the nature of the relationship between the DWS and the consulting sector, and led to the formation of a policy network. Indeed, the LHWP made it necessary to resort to private consulting firms to undertake core tasks of the DWS. From then on, outsourcing became the norm within the DWS. Considering the rate at which DWS personnel were leaving the Ministry to join consulting firms in the 1980s, DWS staff were soon outnumbered. Its new challenge was then to maintain a minimum capacity within the Ministry to supervise the work outsourced. When this proved to be too difficult, by the early 1990s, the DWS tried to 'in-source' its controlling expertise and to supervise all the work being outsourced:

we had to out-source the whole function but we couldn't be an ignorant client otherwise they just take you for a ride (...) we couldn't write the specifications any more on the jobs tendered, someone had to do it for us with the level of ethics that the Department requires. (...) that was almost an impossible concept.²⁹

²⁷ <http://saice.org.za/latest-news/minister-of-water-affairs-and-sanitation-signs-mou-for-italian-engineering-expertise>

²⁸ See Bourblanc (2017) for some details on the origins of these practices.

²⁹ Interview with the ex-Chief Director, Directorate Information Services, DWS (1957-2001), Pretoria, Feb. 2015.

Some trusted individuals were seconded to the Department through that project. However, the project eventually failed to find enough support and was abandoned at the turn of the 2000s.

At the same time, the DWS was very concerned with keeping competent and experienced engineers within the consulting world and making sure that if capacity no longer existed inside the Ministry, at least such capacity could be contracted outside: "we had to train the consultants to do the work as we wanted them to do it".³⁰ The DWS had to reserve a privileged relationship with a few 'hand-picked' engineers, especially those from the consulting firms who could handle the very sophisticated stochastic modelling called the *Water Resource Yield Model* that runs the country's inter-basin transfer system. DWS engineers felt obliged to surround a restricted number of consultants with special care, as such scarce resources and competence had to be maintained, if not within the department, then at least within the country:

if we give four studies out in the year and there are maybe 15 engineering companies, you can't spread.... There is not enough work from the Department to sustain more than those number of people (...) Otherwise we would ask this person to do that work now and then in three years' time, 'now it's your turn to do that work again'. He would have forgotten how we do it. There is just a certain amount of work [that can be given out often enough to sustain this expertise].³¹

DWS engineers ended up favouring a few consulting firms. In January 1991 a 'Consultancy committee' was created to keep track of consulting work records, as the DWS wanted to start evaluating their performance. Résumés were collected. Work outsourced was evaluated, although the evaluation remained confidential and for internal use only. The idea was also to identify consultants who might fail to comply with professional ethics, for instance by over-charging for work done. Procurement procedures were kept as simple as possible. For small contracts, DWS staff would select someone from the 'approved consultants panel'. For a contract of less than a million rands, three firms would be approached and asked for proposals.³² Mostly, it was a matter of: "the phone rang, someone from [the DWS] saying 'I would like to discuss an appointment with you', as simple as that (...) I didn't have to apply".³³

Later on, due to the affirmative action policy implemented in the DWS during the 2000s, greater numbers of experienced technical staff left the Department for the consulting sector, especially those who were white, as they realized they would no longer be considered for promotion in the Ministry under the new regime. As a result, the dependence on the consulting sector has reached an unprecedented level, to the extent that the private sector has now become the new training ground for civil servants. Indeed, given the fact that most DWS projects are outsourced, newly recruited engineering graduates now have to do internships with consulting firms if they want to get proper training and experience.³⁴ Consulting companies also have an interest in this setup, as they need to make sure that the Department remains an 'intelligent client', populated with skilled engineers who can write the terms of references for the tenders they will apply for. This is all the more true, as the last representatives of the white 'old guard' within the DWS will retire in a few years' time, causing the private consulting sector to lose its precious ties within the Ministry.

³⁰ Interview, ex-Director Water Resources Planning Directorate, March 2015.

³¹ Interview, ex-Director Water Resources Planning Directorate, March 2015.

³² Ex-Chief Director, Directorate 'Information Services', DWS (1957-2001), interview Pretoria, 12 Feb. 2015.

³³ Interviews, ex-DWS (1961-1965), ex-Chunnett, Fourie & Partners / ex-Hydroconsult, Feb. 2015.

³⁴ Interview, Chief Engineer, National Water Resource Planning, DWS, ex-secretary 'Consultancy Committee', Pretoria, Feb. 2015.

Considering the special bonds and the long-lasting interactions that exist between a handful of private consultants,³⁵ it is not surprising that the so-called ex-'old boys' from the DWS are often presented as part of the 'family'.³⁶ Together with DWS engineers, they form a policy network in the sense used by Marsh and Rhodes (1992), formed on common values and a sense of trust. For this reason, up until now, all the water reconciliation strategy studies have been undertaken by consultants who are part of this engineering network. Thanks to this network, DWS engineers have been able to continue their business-as-usual, i.e. managing the country's water resources with the supply-side approach they believe in.

The growing distrust towards DWS engineers' policy network (1994 onwards)

Although the engineering network has managed to circumvent the black elite's new political power within the DWS until now, the arrangements put in place have become more complicated lately. Consulting companies complain that most of their tender-approved projects are inexplicably stuck inside the DWS. Procurement rules were changed during the 2000s, with the Departmental Bid Adjudication Committee (DBAC) replacing the Consultancy Committee. Following that change, the procurement process became more formalized, with a greater number of top-management officials. While in the past such committee was composed of engineers only, now only two engineers usually sit on the DBAC. In addition, the concern of human resources personnel about racial and gender representation features high in this new procedure, which is considered as important as the technical criteria for the project.³⁷ More importantly, it is becoming more and more difficult to secure procurement approval. In the strategic planning chief directorate, one engineer admits:

Now they [the senior management in DWS] make it very difficult for us to have studies approved (...) To commission a study, what a problem that is, it may take about a year to get approval and start the tender process (...) they may think we want to do things that are not necessary with these studies.³⁸

Members of the engineer policy network distinguish between DWS members like themselves, who have been trained over the years in drawing, design, construction, planning, etc. and staff who have not progressed through the ranks before reaching the highest management positions. Regularly, tensions between these two groups within the DWS can be observed. Recently, disputes have revolved around dam releases and water restrictions in a context of drought (2015-2016), with the top-management being blamed for failing to apply urgent and necessary restrictions for fear of taking unpopular measures, especially during election times. The differences in background and career trajectories would allegedly feed a misunderstanding from the top-management part of the DWS about proper functioning and operations. New procurement procedures, and even the mere facility to secure procurement, illustrate these difficulties:

People who came from outside, they didn't understand why there was a need to procure for that task. The current instruction is to say 'do it yourself'. They are the ones who started questioning the number of consultants, asking why isn't the government doing it itself?³⁹

³⁵ They all belonged to the six or seven originally South African consulting companies that have now merged with larger players to become multinational companies tendering all around Africa and the world: AECOM (ex-BKS), Aurecon (ex-Ninham Shand/ex-Africon/ex-van Wyk & Louw), A. Gibb Consulting, ex-Chunnett, Fourie & Partners/ex-HydroConsult. Thus, although South African consultancies are now foreign owned, they were created by former members of DWS who subsequently left the Department.

³⁶ Interview, Chief Engineer, National Water Resource Planning, DWS, ex-secretary 'Consultancy Committee', Pretoria, Feb. 2015.

³⁷ Idem.

³⁸ Interview, engineer, National Strategic Planning Chief Directorate, Pretoria, March 2015.

As stated above, South African public administrations have resorted extensively to consultants, partly to compensate for skills shortages due to the transformation policy. Recently, the exponential increase in expenditures on consultants across all departments, combined with the economic crisis, motivated a decision by the Presidential Cabinet to limit outsourcing practices.⁴⁰ Another major reason explaining the growing reluctance within the DWS to appoint consultants is precisely linked to the transformation agenda: "they were saying 'if you do not have a plan to increase [racial] representation within your Directorate [Water Resources Planning], then we are not going to appoint a consultant".⁴¹ More straightforwardly, an ex-member of the DWS recalls: "I remember (...) a new Minister there told us 'the problem is that it is all going into the white sector, we've got to stop this'".⁴²

This shows the existing distrust between the new black elite and the engineering policy network. We have seen that outsourcing was an entrenched practice within the DWS, largely motivated by the necessity to carry on the hydraulic identity and legacy, despite the Department's staff shortage. The new black elite within the DWS perceived this widespread practice differently, mainly as a sign that the racial transformation agenda was not being adhered to. White staff members were being replaced by black, coloured and Indian staff, but the bulk of the work was still being executed by ex-DWS members who had joined the consulting sector soon after the democratic transition. Against that background, recent initiatives by top-management have been interpreted as a way of sidestepping the engineering policy network. To illustrate that point, we can mention two recent episodes in which DWS top-management has been reaching out for foreign assistance to help compensate the lack of technical expertise within the DWS. These episodes provoked a strong reaction from members of the network who felt they were being bypassed. In 2015, when the DWS Minister asked the Cuban government to send civil engineers to South Africa in an endeavour to train and develop South Africa's young engineer, technician and technologist recruits within the public sector, SAICE emphasized that South Africa did not need help and that engineering skills already existed sufficiently in the country. In 2016, when the Minister of Water Affairs and Sanitation signed a Memorandum of Understanding with the Italian government for it to make Italian engineering expertise available at local level,⁴³ Consulting Engineers SA (CESA) went public, declaring that there is currently a 40 % under-utilisation of local consulting engineering capacity in South Africa.

Another good illustration of mistrust between the two networks can be found in the Minister's decision to foster the creation of a new global network around water issues.

A new global water network: Public-private-civil society network promoting alternative solutions (2011 onwards)

Indeed, in 2011 the higher political echelon in the DWS created a 'Strategic Water Partners Network' in South Africa (SWPN-SA). This is not a network of water professionals or water experts *per se*. Rather, it gathers stakeholders who have an interest in the water sector. The SWPN-SA is part of the 2030 Water Resources Group (2030 WRG) that was launched in 2008 at the World Economic Forum's Summit in Davos, Switzerland. Over the last few years, the World Economic Forum's Global Risks report has

³⁹ Interview ex-director Water Use Efficiency, DWS Pretoria, Nov. 2016.

⁴⁰ For an indication of DWS' increase in spending between 2005 and 2012, see National Treasury, vote 38 (Water Affairs), Budget 2012, Estimates of national expenditure, Republic of South Africa, 22 February 2012.

⁴¹ Interview, ex-Director Water Resources Planning Directorate, March 2015.

⁴² Ex-Chief Director, Directorate 'Information Services', DWS (1957-2001), interview, Pretoria, Feb. 2015.

⁴³ Sources: *BusinessLive*, 19 Oct. 2016: "Water Affairs and Sanitation (DW&S) Minister, Nomvula Mokonyane, along with Italy's Deputy Minister of the environment, land and sea, have signed a water-cooperation agreement 'to work on joint projects that will enhance capacity building, technology transfer and technical assistance in the fields of water quality enhancement, water resource management, water service management and rural sanitation technology'".

identified water as one of the top five global risks. For this network, "water scarcity is no longer merely a series of local or even national crises" (2030 WRG, 2014: 3), it is a global issue by nature. The 2030 WRG is co-led by the International Finance Corporation (World Bank) and McKinsey & Company, and comprises a business consortium made up of Barilla, The Coca-Cola Company, Nestlé, New Holland Agriculture, SABMiller plc, Syngenta AG, and Standard Chartered Bank. It declares being "concerned about water scarcity and growing competition for scarce water resources [that constitutes] an increasing business risk [that cannot be ignored]". It frames the so-called 'water crisis' as primarily a business and security risk. Hence, 2030 WRG defines its mission as follows: "to help countries achieve water security by 2030, by facilitating collective action on water between government, private sector and the civil society". This takes the form of global multi-stakeholder platforms that are not exclusive to the water sector.⁴⁴ Actually, this new model, which brings together public, private, civil societies and experts can be found elsewhere, such as in the food security sector, for instance.⁴⁵

The South African version of the network (SWPN-SA) was set up in response to a request by Mrs B.E.E. Molewa, Minister of Water Affairs, at the 2011 World Economic Forum Annual Meeting in Davos. Consequently, the DWS and the 2030 WRG launched a DWS-WRG partnership at the World Economic Forum's Africa Summit in May 2011 in Cape Town. The multi-stakeholder platform, brokered by the 2030 WRG, is chaired by the Department of Water and Sanitation (DWS), and co-chaired by South African Breweries (SAB)-Miller on behalf of the private sector.⁴⁶ The NEPAD Business Foundation acts as secretariat. SWPN-SA proposes to develop concrete programmes that can address the increasing gap between demand and the available supply of water, or to use the network's own phrasing, to "close the water [supply demand] gap by 2030" (SWPN-SA, 2011: 3). A South African geopolitics think tank, the Institute for Security Studies, has estimated that such a gap could reach 17 % by 2030 (Hedden and Cilliers, 2014). In that respect, former DWS Minister Molewa (SWPN-SA, 2011: 6) declared that:

[s]olutions that maximise the supply of water and minimise demand are therefore most essential. However, it is not envisaged that large-scale projects of building dams can solve current problems because while they increase overall water supply, it is [sic] unlikely to curb the underlying sources of the water supply/demand gaps. Due to the scale of the gap, it is also unlikely that such capital-intensive projects can be financed and developed with enough quick wins to manage the gap.

Hence, the willingness arises to bring "the private sector on board to fight water scarcity".⁴⁷ From the early 2010s, SWPN-SA started shifting away from the solutions supported by the entrenched engineering policy network. It announced that the partnership initiative would "focus on water conservation and increasing the water supply mix".⁴⁸ Alternative green technologies (irrigation infrastructures, water re-use technologies, etc) are therefore being promoted since a business-as-usual supply build-out "would address only 20 per cent of the supply-demand gap, leaving a large deficit to be filled" (2030 WRG, 2009: 46).

We have assumed that getting involved in SWPN-SA was a way for the DWS to diversify its expert networks and avoid relying exclusively on the white 'old guard' in the future. Indeed, without an adequate technical background, the new DWS political elite was dependent on the established engineer

⁴⁴ Even in the water sector, the SWPN-SA is not the only global network in which DWS partakes (see for instance the International Water Stewardship Programme), but we posit that it is the most relevant for our discussion on the competition between networks.

⁴⁵ See for instance the New Alliance for Food Security and Nutrition.

⁴⁶ Alongside with Coca-Cola, Anglo American, Sasol, Nestlé, Eskom, to name but a few big players in the South African economy.

⁴⁷ DWS, *Media Statement*, 26 August 2015.

⁴⁸ Minister Molewa foreword, Strategic water partners network South Africa-closing the gap by 2030, Nepad Business Foundation, Nov. 2011.

policy network for all the technical decisions that had to be taken. Hence, according to the new DWS Minister, the work of the SWPN-SA was pivotal in developing the second draft of government's national water resource strategy, published in July 2012.⁴⁹

In 2011⁵⁰ Minister Molewa declared that the SWPN-SA project focus areas would be threefold: water conservation (leakage reduction from distribution networks), water demand management (increasing water use efficiency in agriculture, industry and households) and diversification of the water supply mix (reuse of effluent; desalination of seawater and acid mine drainage; and use of groundwater).⁵¹ Three working groups have so far been in operation. They are the 'no drop programme' for the municipalities; the water administration system for the agricultural sector, which allows for a better monitoring of water usage and better scheduling in irrigation schemes, to optimize their water use efficiency; and finally, the water and waste group which addresses acid-mine drainage issues. The first two groups have liaised closely with the Water Use Efficiency Directorate's existing WC/WDM programmes.⁵² It seems that after experiencing difficulties in the implementation of the WC/WDM strategy, the new SWPN-SA network has been used to fast-track existing DWS programmes. Indeed, re-use options are back on the agenda, as a DWS water quality specialist confides: "when SWPN came, with their 'closing the gap' thing, I saw an opportunity to get the industries to re-use rather than discharge, starting with mining industries and their acid mine drainage".⁵³

The buy-in of this economic sector was not too difficult to obtain, especially in specific parts of the country where a water deficit exists. Indeed, the mining sector saw it as an opportunity to augment their water supply. Unlike the national electricity producer, Eskom, the mining sector is not considered a strategic user and therefore cannot ask DWS to provide more water. The reconciliation strategy, too, made it clear that no water transfer would be made, and that solutions to reduce the deficit and meet water balance would now have to be found within the catchment.

COMPETING MANAGEMENT APPROACHES OR COMPETING NETWORKS?

The growing gap between the engineering policy network and the DWS political network has had an impact on big projects decisions, such as the LHWP Phase 2. Yet, it is not obvious that both networks are defending really different policy options. Mike Muller, ex-DWS Director-General (1997-2005), recently revealed in the press the plan by the DWS Minister and the Mayor of Mangaung in the Free State to build a two-billion-rand⁵⁴ pipeline to provide more water to the city from the Gariep Dam on the Orange River. He emphasized that DWS technical studies have shown that this option is about three times more expensive than any of the other alternatives that would meet the needs of the city in the next 20 years, and warned that such a project could reduce funds for water provision in the province by more than a billion rands.⁵⁵

More specifically, critics of top-management hesitations regarding phase 2 would invoke bad planning – due to a lack of suitable qualifications for the job, political interference, or even corruption allegations, as explanation for the delay in LHWP Phase 2. Some do not hesitate to mention a 'Lesotho Watergate', reminiscent of a recent past when French, Canadian and German companies, as well as

⁴⁹ Public declaration, 10 May 2013.

⁵⁰ *Strategic water partners network South Africa-closing the gap by 2030*, Nepad Business Foundation, Nov.2011, p.3.

⁵¹ *Strategic water partners network South Africa-closing the gap by 2030*, Nepad Business Foundation, Nov.2011, p10. The new DWS Minister Nomvula Mokonyane reiterated it again in her Budget Vote speech, in May 2015.

⁵² Interview acting director 'Water Use Efficiency', DWS Pretoria, Nov. 2016.

⁵³ Interview water quality scientist, Chief Directorate Strategic Planning, Pretoria, Dec. 2016.

⁵⁴ Approximately 138 million euros.

⁵⁵ Approximately 70 million euros. Sources: *Mail & Guardian*, 5 Dec. 2016.

South African and Lesotho individuals, were prosecuted for bribery during LHWP Phase 1.⁵⁶ Since July 2016, numerous press articles have made allegations about the Minister's efforts to replace experienced engineers with politicians to represent both governments on the tender board for the Polihali Dam. Against this background, the delayed decision is ultimately framed as an issue of 'State capture by politically connected businesses'.^{57,58} Minister Mokonyane's decision is allegedly meant to halt the procurement process, rejecting the companies which the Lesotho Highlands Development Authority had initially shortlisted, and instructing to re-advertise the tenders. Officially, this decision was prompted by the need to incorporate transformation objectives ensuring that black people, women, the disabled and poor communities benefited. Mike Muller, today probably the most vocal critic of current DWS top-management, would rather denounce the Minister's efforts as tampering with regular procurement procedures: "[Minister] Mokonyane is trying to change the preference arrangement from ordinary BEE [Black Economic Empowerment procedure] to a special BEE". More crucially, what seems to be at stake is the possibility of the established engineering policy network being bypassed:

[DWS] spokesperson has said 'we can't have the same six or seven companies always getting the work'. The trouble is that there is only six or seven companies in South Africa that have the capabilities for this and they are all BEE compliant (...) The companies they are trying to push do not have the qualified technicians, they are going to buy-in services outside the country, it was what used to be called in the ANC 'comprador bourgeoisie', these are people who don't actually do any work, they just act as intermediaries to bring other people in.⁵⁹

Hence, beyond the decision to proceed or not with LHWP Phase 2, there is more at stake than a preference for this or that water resource management approach. What is actually going on is a competition between networks.

CONCLUSION

In South Africa, almost 20 years after a new demand-side management policy paradigm was enshrined in the law, the same old supply-side solutions to water resource management still prevail. We sought to explain that puzzle in this paper. We analysed why the transition from the supply-led system to a demand-driven approach to water provision never really materialized on the ground, showing the role played by a policy network and its set priorities in the resilience of supply-side management approach. Indeed, we described a close relationship between DWS civil engineers and engineering consulting firms and its evolution over time, and demonstrated how that policy network might explain why new policy objectives have remained largely ignored, despite a transformation and restructuring process that brought a new staff profile into the Department. Focusing on the LHWP as an emblematic case study, we argue that the hesitant and delayed decision to proceed with a new mega-dam is indicative of a growing distrust, emanating from the ANC political network, towards the old-guard engineering policy

⁵⁶ The LHWP Phase 1 was the largest development project on the continent at the end of the twentieth century, at an estimated cost of \$4 billion, and it was also by far the most controversial bilateral project that South Africa became involved in, not the least because of its status as the "highest-profile corruption case in the Third World". Galvin (2013: 7) explains that: "The CEO of the LHWP was charged with accepting bribes from numerous multinational corporations seeking contracts on the project. Even the World Bank began to debar some of the dozen multinational corporations convicted of bribing Lesotho officials, one of which (the giant Canadian firm Acres International) effectively closed due to the revelations".

⁵⁷ State capture can be defined as a type of systemic *political corruption* whereby private interests extensively influence decision-making processes within the State to their own advantage.

⁵⁸ Source: *City Press*, 10 July 2016.

⁵⁹ Interview for the TV show '*KN Verslag in gesprek*', 24 August 2016. On top of this, two of the preferred companies are described as being alleged funders of the ANC political party.

network. Consequently, the DWS new political elites have tried to bypass the engineering policy network by promoting alternative networks. To an extent, the fate of supply-side approaches to water resource management is linked to the competition between an established public-private policy network and the DWS' new political network, allegedly involved in 'state capture' activities. As a result of the competition between these two networks, the construction of the Polihali Dam has been stalled. As both networks are neutralizing one another on LHWP Phase 2, we may witness revenge being taken by more marginalized water experts, e.g. water quality specialists within DWS, backed up by the SWPN-SA network, which could benefit water conservation and water demand management alternatives. Indeed, the delay experienced by Phase 2 may provide new opportunities for other solutions, such as re-using water, especially in a drought context when further delay in the progress of securing alternative options creates a risk of deficit in South Africa's water system.

REFERENCES

- Allan, T.; Turton, T. and Nicol, A. 2003. *Policy options in water-stressed States. Emerging lessons from the Middle-East and Southern Africa into decision support for policy makers*. POWSS final report.
- Blanchon, D. 2015. Le Lesotho Highland Water Project ou le retour de la grande hydraulique en Afrique australe. *Bulletin de l'Association des Géographes Français* 92(2): 167-183.
- Bond, P. 2002. *Unsustainable South Africa. Environment, development and social protest*. Pietermaritzburg: University of Natal Press.
- Bourblanc, M. 2015. The South African 'Ecological Reserve', a travelling concept. *Politikon* 42(2): 275-292.
- Bourblanc, M. and Blanchon, D. 2014. The challenges of rescaling south African water resources management: Catchment management agencies and interbasin transfers. *Journal of Hydrology* 591(c): 2381-2391.
- Conca, K. 2006. *Governing water. Contentious transnational politics and global institution building*. Cambridge: The MIT Press.
- Department of Water Affairs and Forestry. 2004. National Water Resource Strategy, first edition. Pretoria, South Africa.
- Department of Water Affairs and Forestry. 2008. Outcomes of Cabinet Discussion on Water and Augmentation of the Vaal River System. Media release. 4 December 2008. Pretoria, South Africa.
- Department of Water and Sanitation. 2009. Vaal, 2nd stage reconciliation strategy. Pretoria, South Africa.
- Department of Water and Sanitation. 2012. National Water Resource Strategy, second edition. Pretoria, South Africa.
- Department of Water and Sanitation. 2014. No Drop Assessment Report. Pretoria, South Africa. www.dwa.gov.za/Dir_WS/ndrp/docs/DownloadMyDocument.aspx?docid=28 (accessed 14 May 2017)
- Earle, A.; Cascão, A.E.; Hansson, S.; Jagerskog, A.; Swain, A. and Ojendal, J. 2015. *Transboundary water management and the climate change debate*. London: Earthscan, Routledge.
- Galvin, M. 2013. Constructing large dams in Southern Africa: What has been learned? In Karunanathan, M.; Campero-Arena, C.; Galvin, M. and Kumar, M. (Eds), *Dam truths. A compilation of case studies about popular struggles against dams*, pp. 3-9. Ottawa, Ontario: Blue Planet Project. www.blueplanetproject.net/index.php/dam-truths-a-compilation-of-case-studies-about-popular-struggles-against-dams/ (accessed 14 May 2017)
- Hedden, S. and Cilliers, J. 2014. *Parched prospects. The emerging water crisis in South Africa*. African Futures Paper No. 11. Pretoria, South Africa: Institute for Security Studies.
- Letsie, D. and Bond, P. 2000. Debating supply and demand characteristics of bulk infrastructure: Lesotho-Johannesburg water transfer. In Khosa, M.M. (Ed), *Empowerment through service delivery*, pp. 170-246. Pretoria: HSRC Press.
- Marsh, D. and Rhodes, R.A.W. 1992. *Policy networks in British Government*. Oxford: Clarendon Press.
- Milne, C. 2009. Affirmative action in South Africa: from targets to empowerment. *Journal of Public Administration* 44(special issue 1): 969-990.

- Molle, F.; Mollinga, P.P. and Wester, P. 2009. Hydraulic bureaucracies and the hydraulic mission: Flows of water, flows of power. *Water Alternatives* 2(3): 328-349.
- Meissner, R. 2016. Coming to the party of their own volition. *Water SA* 42(2): 261-269.
- Meissner, R. and Jacobs-Mata, I. 2016. *South Africa's drought preparedness in the water sector: Too little, too late?* SAIIA Policy Brief 155. Johannesburg, South Africa: South African Institute of International Affairs.
- Republic of South Africa. 2012. National Infrastructure Development Plan. Pretoria, South Africa.
- Swatuk, L.A. 2010. The state and water resources development through the lens of history: A South African case study. *Water Alternatives* 3(3): 521-536.
- SWPN-SA (Strategic water partners network-South Africa). 2011. *Closing the gap by 2030*. Johannesburg, South Africa: Nepad Business Foundation.
- Turton, A.R. 2002. WDM as a concept and a policy: towards the development of a set of guidelines for Southern Africa. Commissioned paper for the IUCN Water demand management programme for southern Africa: Phase II. www.awiru.co.za/pdf/op5.pdf (accessed 14 May 2017)
- von Holdt, K. 2010. Nationalism, bureaucracy and the developmental state: The South African case. *South African Review of Sociology* 41(1): 4-27.
- Water Research Commission. 2012. Compendium of WCWDM interventions and measures at the municipal level in SA. WRC report No TT519/12. Pretoria, South Africa.
- 2030 WRG (Water Resources Group). 2009. *Charting our water future. Economic frameworks to inform decision-making*. Washington D.C., USA: International Finance Corporation.
- 2030 WRG (Water Resources Group). 2014. Strategic Plan for FY15-17 (July 2014-June 2017). Washington D.C., USA: International Finance Corporation.

THIS ARTICLE IS DISTRIBUTED UNDER THE TERMS OF THE CREATIVE COMMONS *ATTRIBUTION-NONCOMMERCIAL-SHAREALIKE* LICENSE WHICH PERMITS ANY NON COMMERCIAL USE, DISTRIBUTION, AND REPRODUCTION IN ANY MEDIUM, PROVIDED THE ORIGINAL AUTHOR(S) AND SOURCE ARE CREDITED. SEE [HTTP://CREATIVECOMMONS.ORG/LICENSES/BY-NC-SA/3.0/LEGALCODE](http://creativecommons.org/licenses/by-nc-sa/3.0/legalcode)

