

## Chapter 11

### **Politics of Water Management: The Case of the Orange River Development Project<sup>1</sup>**

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South Africa is an arid country and water is a high national priority both in a political and an economic sense.<sup>2</sup> As such, water management has always been a political, rather than a technical, issue. The history of the Orange River Development Project (ORDP) clearly illustrates the politicised role of water within the South African context. This contribution analyses the interests and issues that have helped shape this large development scheme, and locates the ORDP within the historical context of water management in South Africa.

The contribution highlights three issues. First, it illustrates the highly politicised role that water plays within the South African context and the dominance of central government in water management. Of particular importance in this context is the role of agricultural interests in shaping water policies before the establishment of the ORDP, and their supersession by other interests. Second, the contribution shows how policy frameworks shifted as economic realities came to overshadow ideologically determined policies. As the costs of the ORDP escalated and the underestimation of the initial cost projections of the scheme became apparent, government was forced to take greater cognisance of economic imperatives. Third, international trends in water management increasingly impacted on national policies over the last three decades of the twentieth century, but particularly with the establishment of a democratic government with greater international credibility and acceptability.

## **Historical context of the Orange River Development Project**

Labour-intensive irrigation settlements were constructed along the Vaal and lower Orange rivers as early as the 1920s and 1930s. However, until the 1950s, no major storage facilities for water from the Orange River were envisioned, although water diversion to the Fish and Sundays rivers was considered. A project to pump water from Lesotho, which at the time was still a protectorate of Britain, to the Orange Free State in South Africa was mooted around 1955. The project was to be paid for by power generation and most likely would have provided water to the growing industrial area of the Pretoria-Witwatersrand-Vereeniging complex.

However, during the late 1950s, the development of the entire Orange River became a priority for South Africa. The reasons for this new direction have to be sought in the historical developments that preceded the scheme and the political and economic circumstances in South Africa in the early 1960s when the Orange River scheme was tabled in parliament. The key components of the scheme were the 5 500 million m<sup>3</sup> Gariep Dam (previously known as the Hendrik Verwoerd Dam, South Africa's largest reservoir), which was completed in 1971, the 3 200 million m<sup>3</sup> Vanderkloof Dam (previously the P.K. le Roux Dam), which was completed in 1977, and the 82,8 km Orange-Fish Tunnel to the Eastern Cape, which was completed in 1975.

A key to understanding the political economy that gave rise to the ORDP is the period 1948-1960, which Davenport (1977, pp. 257-276) characterised as "the age of the social engineers". Although the proposed policies of the National Party (NP) government "differed in degree and direction, rather than in kind" (Davenport, 1977, p. 254) from the policies that preceded them, they were pursued with an enthusiasm and systematic thoroughness that heralded a new period in South African history. This period was marked not only by the establishment of the foundations of apartheid, the political platform from which the NP fought its campaign for the 1948 election, but also by concerted efforts to consolidate Afrikaner political and economic power.

The NP won the 1948 election with a parliamentary majority of only five seats. Shortly after the election it therefore set about consolidating its hold on power. In 1949 whites in Namibia were given the right to elect six members to the South African parliament, but the rights of Indians to elect parliamentary representatives were withdrawn. In 1951 the government began working towards the removal of Cape coloureds from the common voters' roll. Leading NP members were appointed to top positions in the armed forces, civil service, judiciary and major state enterprises such as the South African Broadcasting Corporation (SABC), Electricity Supply Commission (ESCOM), Iron and Steel Corporation (ISCOR) and South African Railways (SAR). These measures, together with the manipulation of constituency boundaries, ensured an increased majority for the NP in the 1953 election.

With the NP's newly-won control over the state, nationalists were also able to increase their control over the economy. As an important part of its election campaign, the NP courted white farmers who were experiencing labour shortages and rising agricultural wages as a result of the large-scale urbanisation of the African population.<sup>3</sup> The NP promised to curb black urbanisation, and offered farmers state protection, including higher prices for their products.<sup>4</sup> Until the mid-1950s, the governing parties were primarily dependent upon rural constituencies. For example, when the NP came to power in 1948, half of its members of parliament were drawn from agriculture (Greenberg, 1980, p. 88). In addition to the political importance of white agriculture to the NP, commercial agriculture was also of importance to Afrikaner businessmen and urban elites, both as consumers of agricultural products and as a source of capital. For example, agricultural savings were used by institutions such as Volkskas and Sanlam to finance Afrikaner businesses (Pampallis, 1991, p. 177).

These developments took place against a background of increasing protest and resistance from black political groups and trade unions, and the institution of repressive measures by the state. Prior to 1948 the liberation movement "had experienced almost a decade of growth in size, militancy and level of organisation" (Pampallis, 1991, p.180). The state responded to these pressures with a series of draconian laws specifically aimed at

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restricting political activity, including the Suppression of Communism Act of 1950, and the Criminal Law Amendment Act and the Public Safety Act, both of 1953.

In addition to these laws, a series of laws was introduced to consolidate apartheid policies. The laws included:

- the Prohibition of Mixed Marriages Act of 1949;
- the Population Registration Act of 1950, which required that all South Africans be racially classified;
- the Group Areas Act of 1950, which designated specific areas for occupation by specific racial groups;
- the Natives Representative Act of 1954, which led to the removal of 58 000 Africans to Soweto;
- the Natives (Abolition of Passes and Coordination of Documents) Act of 1952, which consolidated the pass laws into a more comprehensive and stricter system; and
- the Promotion of Bantu Self-Government Act of 1959, which provided for the establishment of eight (and later ten) “Bantu home lands”.

In addition, increasing restrictions were placed on unions, job reservation was strengthened, and provision was made for separate education for the different race groups.

This battery of repressive measures resulted in a reduction in real wages for black workers, greater profits for employers, and the attraction of large-scale foreign investment. South African mining houses also started investing heavily in manufacturing. An additional boost was given to the economy by the development of the newly discovered Orange Free State gold fields. The state also intervened directly in the economy, establishing SASOL in 1950, expanding production at ISCOR and setting up the National Finance Corporation and the Industrial Finance Corporation to provide funds for mining and manufacturing. In particular, Afrikaner businessmen benefited, for example from lucrative government contracts, appointments to official economy boards and the transfer of government bank accounts to Afrikaner banks. White farmers also bene-

fited from the stricter pass laws, favourable prices for agricultural produce and even the provision of prison labour by the state.

The economic resurgence, however, was threatened on two fronts. On the one hand, black resistance to the state was growing. The coming to power of the NP, with its more explicit racist policies, and the government's implementation of repressive laws increasingly moved the African National Congress (ANC) and other related organisations towards a more militant stand against the state. During the ANC's 1949 conference, for example, the Programme of Action drafted by the more militant Congress Youth League was adopted. The programme claimed the right to self-determination for black people and called for the use of mass action through boycotts, strikes and civil disobedience. The first major mass action was taken in 1950 with the general strike on May Day in the Transvaal and culminated in the police opening fire on and killing protesters in Sophiatown, Alexandra, Orlando and Benoni. As a result of the killings, a National Day of Protest and Mourning was called for 26 June.

In the following year the Joint Planning Council of the ANC and South African Indian Congress launched a strategy of mass resistance against unjust laws, including the pass laws, Suppression of Communism Act and the Group Areas Act. This strategy, known as the Defiance Campaign, was launched in mid-1952 and led to the arrest of over 8 000 people, the banning of a number of prominent leaders of the campaign, and further violence and shootings of protesters. An additional consequence of the Defiance Campaign was that many black people joined the ANC, paid-up membership increased from 7 000 to 100 000 and the organisation became more representative. Throughout the 1950s various protest campaigns and other actions were taken against apartheid policies and structures, including the boycotts associated with the campaign against the Bantu Education System, the Congress of the People in 1955, the formation of the South African Council of Trade Unions (SACTU), as well as a series of protest actions by communities (both urban and rural) and the ANC Women's League. These protest actions culminated in the shootings of protesters at Sharpeville, Langa and Nyanga in March 1960, the institution of a state of emergency, and the banning of the ANC and the Pan-Africanist Congress (PAC) in April.

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These developments coincided with increasing pressure from outside the country. The growth of the anti-colonial movement through the 1950s and the granting of independence to African colonies in the 1950s and 1960s not only raised the hopes of the oppressed in South Africa, but also changed the international context, making white domination in non-white countries less and less acceptable to the international community. The Defiance Campaign also drew international attention to racial domination in South Africa and attracted condemnation by the United Nations, in particular the massacres at Sharpeville, Langa and Nyanga (and their aftermath).

International pressure increased steadily in the 1960s while the ORDP was being planned. In response to the increasing repression within the country, the liberation movements established bases abroad. Besides the launching of the military struggle at the end of 1961, attempts were made to unify the various liberation organisations of southern Africa and to mobilise international support against South Africa.

Even before Sharpeville some foreign investors became nervous about the stability of the South African state in the face of the growing internal resistance and began withdrawing their investments. After Sharpeville, however, the withdrawal of investments accelerated, and between January 1960 and May 1961 gold and foreign exchange reserves dropped by 51% (Pampallis, 1991, p. 214). In a bid to stem the outflow of capital, the South African government introduced tighter currency and trade controls in 1961, and early in 1962 Premier Verwoerd announced that the Transkei bantustan would be granted self-government in the following year. An underlying intention of this move was to counteract international criticism of government policies.

Concerted efforts were also made to deal with the threat posed by the liberation movement to the state. For example, through the General Laws Amendment Act of 1963, the police were allowed to detain anyone without trial for a period of 90 days. Later in the same year the military headquarters of the liberation movement were raided and some of its major leaders, including Nelson Mandela, were arrested and ultimately sentenced to life imprisonment. Further arrests, bannings and detentions

followed, driving the major political and labour leaders underground or into exile. The combined effects of these assaults on political and labour organisations and the reorientation required of the liberation movement to sustain the armed struggle and create its base in exile, severely weakened the movement, creating a temporary hiatus in internal resistance to apartheid until the mid-1970s.

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### **Orange River basin**

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The Orange River basin is the largest watershed in South Africa. The river (also called the “Gariep”, the Khoi word for “Great River”, or “Dragon River” by the San) is the largest in Africa south of the Zambezi, with a total catchment area in excess of 1 000 000 km<sup>2</sup>. More than half the catchment area is in South Africa, spanning six of the country’s nine provinces, with the remainder in Lesotho, Botswana and Namibia. The Orange River’s water constitutes more than 22% of South Africa’s surface water.

The river originates in the Drakensberg range, in the north-eastern corner of Lesotho. After leaving Lesotho, the river flows westwards for 2 100 km through regions of steadily decreasing rainfall and increasing aridity, finally discharging its water in the South Atlantic Ocean near Alexander Bay. The rainfall at the source is in the order of 2 000 mm per year, dropping to less than 50 mm per year near the mouth. Evaporation rates range between 2 000 to 2 500 mm per year, generally increasing from east to west.

The main tributaries are the Caledon River, which forms part of the western border of Lesotho, the Kraal River, and the Vaal River, the latter draining large parts of the Free State and southern Mpumalanga. Further downstream the Orange receives water from the Hartbees, Molopo and Fish rivers, the latter draining a large part of Namibia. Under natural conditions all these rivers fall dry several months of the year. Even the lower Orange River fell dry during severe droughts before the dams were built.

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In spite of the political upheavals inside the country and the pressure from abroad, the South African economy continued to grow. Trade and currency controls introduced by the government from 1961 were able to stem partially the outflow of capital after Sharpeville, and increased military spending boosted the economy. Furthermore, the setbacks inflicted on black opposition groups encouraged foreign investment, and from 1964 until the recession of the mid-1970s South Africa experienced a period of sustained economic growth.

### **Context at conception of the Orange River Development Project**

It was during the economic growth and successful suppression of political opposition within South Africa, sometimes referred to as “the golden age of apartheid”, that the huge ORDP was planned and executed. Within its historical context, the ORDP may be seen as an outgrowth of the increasing confidence of Afrikaner nationalists<sup>5</sup> during this period. As we have shown, the NP was highly successful in consolidating both its political and economic power after its narrow electoral victory in 1948. It brutally suppressed concerted black opposition to its policies and laid the basis for a comprehensive and radical scheme of racial segregation and domination. Just as the “grand scheme” of apartheid represented the culmination of Afrikaner nationalists’ political dream, the ORDP may be seen as a culmination of their economic dream of South Africa as the economic giant of the south.<sup>6</sup>

The conception of the ORDP may be traced back to 1928, when the administrative head of the Department of Irrigation (later Water Affairs), Dr A.D. Lewis, proposed a scheme to link the Orange and Fish rivers by means of a tunnel. Although Lewis’s proposal was not implemented, it was revived on several occasions through the following decades, but was considered too costly an undertaking. The formal plan for the ORDP was eventually put forward in 1962 (a year after South Africa became a republic under the leadership of Hendrik Verwoerd, the “grand architect of apartheid”). The stated aims of the ORDP were to



- provide for the further development of irrigation along the Orange River and in other areas within reach of the river in order to increase food production;
- regulate the river's flow, prevent floods, and stabilise the water supply to existing irrigation schemes;
- revitalise the fertile, but water-deficient valleys of the Great Fish and Sundays rivers by means of the Orange-Fish Tunnel;
- supply water to various urban centres, mines and industries, and promote economic activity and development in the areas directly involved;
- counteract the migration of the rural population to the cities by creating stable farming communities;
- create recreation facilities in the interior and promote tourism;
- create employment both through the construction of the scheme and the expansion of agricultural production; and
- generate hydro-electric power.

(Department of Water Affairs, 1962-1963, pp. 17-28.)

In spite of this diverse set of aims, the major focus of the ORDP was clearly on irrigation and agricultural development. It was envisaged that the ORDP would increase the value of agricultural production, make provision for the establishment of a large number of irrigation farms, and stimulate the production of meat, wool, milk, lucerne, cotton, wheat, raisins, dried beans and peas. This was consistent with the interests of white farmers in the first two decades of NP rule. However, even today irrigation dominates water use within the Orange River basin as it accounts for 54% of water use, in contrast with 10% that goes towards environmental demands and 2% that goes towards urban and industrial use. The remaining 34% is accounted for by evaporation and flow into the sea through rivers and canals. Furthermore, the generation of hydro-electric power at both the Gariep and the Vanderkloof dams is relatively small in relation to national power production. Moreover, the demand for electricity is highest during the winter when the need for irrigation is lowest.

Since 1962 the objectives and the planning of the ORDP were reviewed from time to time due to the changing circumstances and priorities within the Orange River basin and surrounding catchment areas, as well as changing political and economic circumstances. A full system analysis of the Orange River was started in 1987, and completed in 1993. This study was updated by the Orange River Replanning Study that commenced in 1994 and was completed in 1998. More studies are being carried out to investigate specific development options in an effort to continue using the Orange River water efficiently. The impact of further developments on water quality and the environment is also being assessed. Current large water projects, such as the Lesotho Highlands Water Project, place greater emphasis on urban and industrial development. It is also widely accepted that supplying water to industry has a considerably greater effect on productivity and employment than supplying water to agriculture. For example, it is estimated that the direct contribution to real gross domestic product (GDP) of irrigation agriculture per cubic meter of water is about one-tenth of that of other sectors of the economy.

A number of other unstated goals were probably also instrumental in the decision to embark upon the ORDP. One of these was to restore international confidence in South Africa in the aftermath of Sharpeville and the political repression that followed it. Besides demonstrating that South Africa was capable of undertaking a scheme of this magnitude, the ORDP would also provide considerable opportunities for co-operation with foreign governments and business interests. In this regard, the lucrative contracts awarded to French, British and Italian firms undoubtedly played an important role in securing political support and investment from abroad. The ORDP also provided major opportunities for South African firms,<sup>7</sup> as well as employment for both skilled and unskilled workers.

Because of the extensive lobbying towards providing relief to Eastern Cape farmers by linking the Fish and Orange rivers, and consequently the degree of public support for the ORDP, debate on the scheme was relatively limited. In particular, the opposition party, the United Party (UP), found itself in a difficult position because some of its leaders had been actively involved in the lobbying. The debate in parliament tended to

focus more on who should take credit for the scheme, than on its inherent weaknesses. The UP's approach to the ORDP was therefore cautious. For example, opposition spokesperson, D.E. Mitchell, carefully avoided directly challenging the government's plan, and rather raised questions about the planning and economic rationale of the ORDP. In particular, he used government's poor performance in the planning and execution of the Pongola-Makatini Flats scheme to raise questions about the planning and rationale of the ORDP. He also questioned the wisdom of expanding food production (a principle argument for the ORDP) at a time when agricultural production was being subsidised to an amount of R34 million a year, and when agricultural surpluses were being exported at a loss.<sup>8</sup>

Moreover, the extensive positive statistical data and results of earlier investigations presented in the 1962-63 White Paper, as well as the commitment of ESCOM to pay for the capital costs of the power plants, may have played a role in convincing parliamentary representatives of the viability of the ORDP. Another contributing factor may have been the fact that the ORDP was debated as part of the national budget, which projected the ORDP as a positive initiative in contrast with more negative issues of the day, such as the huge increase in the defence budget and the proposals for apartheid legislation.

Misgivings about the scheme were expressed at the Orange River Development Conference organised by the South African Association for the Advancement of Science in 1963. At the conference questions were raised about whether agricultural production should be the primary concern of the ORDP. Delegates agreed that

there was a need to re-examine more fully the economic implications of the scheme with special reference to the relative value of water utilisation for a variety of purposes under the headings of agricultural, pastoral, hydro-electric, industrial, regional development (Biesheuvel, 1963, p. 306).

The conference proposed 12 sets of recommendations based on a broad scientific assessment of the project. Although its representatives presented several papers, it appears that the Department of Water Affairs imple-

mented only the more technical recommendations, ignoring those on the development of coloured communities, public health, and the need for an Orange River Development Authority.

The scheme was rapidly approved, and with far less analytical support than would be acceptable today. In consequence a series of modifications had to be made to its design during the implementation period over the next decade. However, the approval of a large project with relatively little planning may have been common practice at the time, as illustrated by the Tennessee Valley scheme in the United States.

South Africa financed the ORDP from the national budget during the 1960s and 1970s primarily through foreign exchange earnings from gold exports.

### **Changes in water management since the 1950s**

Three major phases can be identified in relation to water policies in South Africa in the second half of the twentieth century:

- an early phase in which agricultural needs dominated water policy;
- a second phase in which industrial needs were dominant; and
- a third (the current) phase in which water provision to disadvantaged communities takes priority.

All three phases are characterised by the following trends:

- *The dominant role of central government*

In terms of the 1956 Water Act, the Minister of Water Affairs is the custodian of water, and acts in the public interest. The accompanying all-encompassing powers have been retained in the 1998 Water Services Act, e.g. the definition of what constitutes public interest, budget allocations,<sup>9</sup> pricing<sup>10</sup> and the allocation of water rights. Throughout the ORDP implementation process several other national government departments were involved in providing supportive legislation, e.g. Bantu Administration and Land Affairs.

- *Changes in policy frameworks due to economic imperatives*  
Based on incorrect assumptions and calculations, the 1962 White Paper attempted to show the economic viability of the ORDP. Initial budget increases were approved until they could no longer be justified within the national budget. From 1972 the demand for cost recovery resulted in more realistic projections of the value of the scheme, and extensions were increasingly limited.
- *Influence of international trends in water management*  
The South African government's assumptions about the value of the ORDP were also in tune with international attitudes on large dams at the time.<sup>11</sup> Therefore, as international trends shifted to water conservation, demand management, and multi-sectoral consultative decision making, South Africa followed suit.<sup>12</sup>

It is difficult to assign clear dates to the phases of water management in South Africa because the phases tend to blur into one another as priorities and emphases shift and change. The transition from the first phase to the second phase appears to have commenced in the 1950s (when the 1956 Water Act was passed), and gained momentum in the 1960s and 1970s as industrial development assumed increasing economic and political importance. Similarly, although the emphasis on water provision to disadvantaged communities was an apparent need before 1994, it was only after the new government assumed power that this need was explicitly attended to in state policy. The most important legislation in this regard are the Reconstruction and Development Programme (RDP) of 1994, the Growth, Employment and Redistribution (GEAR) Strategy of 1995, the White Paper on Water Supply and Sanitation Policy of 1994, the White Paper on a National Water Policy for South Africa of 1997, the Water Services Act of 1997, and the National Water Act of 1998.

The three phases are apparent in both the historical developments associated with the ORDP and the evolving institutional context within which the ORDP was planned, expanded and revised. In terms of the historical context, the strong relationship between white agricultural interests and the NP government after 1948 is crucial. As our brief histori-

cal account demonstrates, the NP was not only heavily dependent upon the political support of farmers<sup>13</sup> to keep it in power, but also relied on agricultural capital to finance the small, but rapidly expanding Afrikaner business sector. Moreover, a significant proportion of NP leaders (as well as their supporters in the urban areas) had strong roots in agriculture and the rural areas. Government policies therefore clearly reflected rural and agrarian interests. Indeed, it is possible to make a good case for agricultural interests as a dominant factor in the institution of apartheid, although this is a controversial point in South African historiography. Nevertheless, that the massive and costly ORDP was undertaken at all attests to the political significance of agricultural interests at the time.

Just as agricultural interests dominated the early planning and implementation of the ORDP, so too do industrial interests dominate the reviews and replanning of the ORDP and later water schemes, including the Lesotho Highlands Water Project.

At the institutional level, too, the prioritisation of agriculture in the early years is evident. Perhaps the clearest indication of this is that the department responsible for water management in South Africa until 1950 was called the “Department of Irrigation”. It was also only with the implementation of the 1956 Water Act that an attempt was made to statutorily recognise water user sectors other than irrigation. In spite of the Act and the name change, it is likely that the emphasis on irrigation lived on within the Department of Water Affairs, and influenced the decision to implement the ORDP in the early 1960s. Even today it is estimated that more than half of the work of the Department of Water Affairs and Forestry is associated with irrigation and agriculture.

Institutional changes between 1963 and 1999, represented in policy documents, legislation and the appointment of commissions and committees, clearly illustrate the change from an agricultural focus to a focus on industrial and community needs. The original and the later foci were both based on ideological, economic and international considerations, which considerations were in most cases interrelated.

### **Shifts in ideology and policy making**

The international anti-apartheid boycotts and internal democratic struggle of the 1970s and 1980s undermined the NP government's economic basis, and forced it to adopt a more pragmatic political approach. The severe drought of 1982-1984 exhausted the economic contributions and political power of the farmers (Davenport, 1992, p. 316). In addition, the population growth in the black "homelands" resulted in a socio-economic crisis that could no longer be ignored. Black agricultural interests were also increasingly competing with those of white commercial farmers, particularly in relation to access to water and land. Furthermore, the government required support from business and industry, which were largely in the hands of non-Afrikaner groups, and in which black labour played a powerful role. Following the Riekert and Wiehahn commission reports (1979), unions were legalised, which led to an escalation in the struggle for democracy after the unions joined the United Democratic Front that challenged apartheid. Forced to accept the inevitability of urbanisation, government abolished influx control and accepted the challenges of providing infrastructure to the black townships.

The second ideological shift in legislation took place after the 1994 election. The newly elected ANC-led government followed a community-centred, reconstructive and redistributive policy, aiming at equity and the restitution of human rights, including the right of access to water and agricultural land. Communities, and especially previously deprived ones, were clearly prioritised over commercial farmers and, to some extent, over industrial interests.

### **Impact of economic imperatives on the Orange River Development Project**

More important than the ideological shifts—and often underlying them—was the impact of economic imperatives on the ORDP. Analyses during the first few years of the ORDP revealed a large underestimation of costs in the original proposal. This became apparent after the first assessments by professional consultants, but it was ignored by government. Olivier

reports that, although the project was "... ideal on basis of projections on future developments and trends in South Africa ... one thing that puzzled us in London was the fact that the estimates of cost seemed to be on the low side" (Olivier, 1975, p. 110). The subsequent requests by the Department of Water Affairs for additional funds led to an increase of costs from the initial R85 million for the whole scheme in 1962 to R490 million for only phase one in 1975.

The 1962 White Paper made no provision for inflation. This almost brought the Orange-Fish Tunnel project to a halt, as the consortiums realised that they would incur huge financial losses if they continued. The final cost of the tunnel was almost double the amount originally proposed.

The escalation of costs made the ORDP increasingly unattractive to a government that was struggling with limited financial resources. From 1980 the government focused on the problem of unemployment and the most economical ways to generate jobs. Changes to the ORDP were now motivated in terms of the project's contribution to job creation, the labour needed for construction, the development of more irrigation schemes in the Eastern Cape, and the prioritisation of water for industry. In relation to the latter, it was argued that, per unit of water, industry could produce ten times more jobs than agriculture.

As economic factors now formed the basis for assessment, the ORDP was reformulated to accommodate the following principles:

- The highest possible yield per unit of water should be applied.
- There should be a balanced apportionment of water among the various consumer sectors.
- Only soils with high production potential were to be considered for new irrigation development.
- Water rates would be levied on a sliding scale to cover at least the operating costs of the ORDP.

Against the background of the multi-dimensional and multi-sectoral nature of the economy, government appointed a Commission of Enquiry into Water Matters in 1966 to analyse the total water situation in South Africa,



and to submit proposals for a comprehensive and economically sound policy on water management. The recommendations of the Water Commission's report in 1970 led to extensions of the ORDP with the expectation that they would increase the economic value of the system, through, inter alia, the recovery of at least the operating costs plus a part of the interest on and redemption of capital. For example, the 8<sup>th</sup> Supplementary Report on the Lower Sundays River Scheme stated that end users would provide full cost recovery through their municipalities (Department of Water Affairs, 1991). Although irrigation remained a major objective, levies were increased, which impacted negatively on the viability of irrigation schemes.

The Water Commission made extensive recommendations in its 1986 report, *Management of water resources of the Republic of South Africa*, completely overhauling government policy on water resource management (Department of Water Affairs, 1986, pp. 1.13-1.61). The 45 recommendations directly impacted on the development of the ORDP, and can be summarised as follows:

- A more economical distribution of water, that is, to all sectors of the economy, with industry taking precedence over agriculture;
- Increased water rates on government irrigation schemes to recover costs;
- The development of conservation and water re-use strategies, which were increasingly seen as better investments than the construction of new dams, tunnels and pumping stations, weirs and pipelines;
- The reconciliation between water supply and demand, which will be reflected in cost recovery from end users; and
- Decentralised water management through integrated catchment area management and the allocation of water rights to limit the past free use of water by riparian farmers.

These economy-based principles have been integrated into the water policies of the post-1994 government. However, the new policies also prioritise the basic human need for water. Provision has therefore been

made for a national reserve to ensure a minimum water supply to all communities. The right of access to water is also included in the Bill of Rights of the Constitution. However, the redistributive nature of the new water policies (e.g. the prioritisation of small farmers) is in conflict with the demands from urban communities and industry. In addition, the principle of cost recovery may make it difficult for emerging irrigation farmers from previously disadvantaged communities to make a living. Subsidies for emerging small farmers are under consideration but may be permanently under threat from other sectors, such as environmental conservation interests, which, for example, lobby for the conservation of wetlands.

### **Changes in the management of the Orange River Development Project**

Economic considerations have also impacted on the way the ORDP has been managed. Since the late 1970s water management has changed from a highly centralised to a less centralised system. This is apparent in the increasing use of consultation, as well as institutional arrangements for water management and the completion of the ORDP.

Consultations for the 1962 White Paper were largely limited to engineers and representatives of other government departments. Although government participated in the 1963 ORDP conference, it ignored many of the valuable suggestions on how to improve the project. However, as economic criteria became more important to government, stakeholders from the industrial sector gained greater influence over project implementation. Both ESCOM and the mining industry played an important role in this regard. For example, the Water Commission's 1972 report was drafted after consultation with many professionals and administrators. Drafts of the 1986 policy document entitled *Management of water resources in the Republic of South Africa* were submitted to all government departments as well as to over 50 municipalities, unions, consultants, water boards and research organisations. Their inputs were used to finalise the document. The 1998 National Water Act makes provision for consultation on the licensing of water rights, tariffs and water resource protection.

Consultation over the Lesotho Highlands Water Project (LHWP), the final phase of the ORDP, was extensive. It involved the governments of South Africa and Lesotho, various departments, and consulting engineers. Many interest groups used the opportunity to comment on the plans and the process of the LHWP. Strong protest came from the Development Research Institute (DRI), an NGO representing 100 civic associations in Gauteng, which formally opposed continued development of the project after Phase 1A (Pottinger, 1997). The DRI argued that the LHWP would lead to unjustified water price increases. These increases could be prevented if water was more effectively managed on the demand side. The DRI also argued that the LHWP would impact negatively on the environment and inhabitants of Lesotho. It was estimated that about 30 000 people would be directly affected. Resettlement arrangements were apparently not properly implemented, e.g. replacement housing was far behind schedule. The LHWP's Rural Development Programme for the retraining of displaced people was said to be unsuccessful. Although the World Bank, which had been asked to investigate the allegations, did not agree with the DRI conclusions, it appeared to be acutely aware of pitfalls in the management of the LHWP.<sup>14</sup>

With regard to management, government increasingly decentralised the project, aiming at an increase in the efficiency of water management.<sup>15</sup> An early attempt at such decentralisation was made through the appointment of water boards in terms of section 108 of the Water Act of 1956. Since 1963, 12 water boards were established in several provinces. These boards played a major role as intermediaries between the ORDP management structures and local authorities. The Department of Water Affairs favoured the formation of water boards because of the highly specialised nature of water management and the desirability of ensuring that tariffs for water supply accorded with the objectives of national water management (Department of Water Affairs, 1986, p. 6.51).

The complexity of the management of large water schemes is also reflected in the institutional arrangements for the LHWP. In contrast to the ORDP, the LHWP treaty made provision for three autonomous governing bodies that would be responsible for implementation, operations and main-

tenance. These were the Lesotho Highlands Development Authority for project governance in Lesotho, the Trans-Caledon Tunnel Authority for South Africa, and the Permanent Joint Technical Committee to monitor the project. The treaty described in detail the agreements and arrangements for the project, including funding that would be raised through international loans for which South Africa would provide guarantees.

### **International trends**

Besides ideological and economic considerations, international trends influenced water policy and management since 1972, and critically impacted on the ORDP. This is reflected in three ways: (a) the adoption of specific principles underlying sustainable development and resource protection, (b) the conducting of regular professional assessments, and (c) the acknowledgement of international interests through treaties.

Reports produced by the Water Commission in 1972 and 1986 clearly reflected international approaches to water management. Besides the principles mentioned above, emphasis was increasingly being placed on ecological sustainability, for example the conservation of wetlands, fauna and flora, and management based on multi-disciplinary principles and strategies.

After the election of a democratic government, South Africa was afforded greater opportunities for international participation in water issues. For example, the former South African Minister of Water Affairs and Forestry, Kader Asmal, is currently chairperson of the World Commission on Dams, which recently launched a comprehensive international study on the contribution of large dams to sustainable economies. Other international trends which influenced South African water management policies and practice, and therefore the ORDP, include

- an emphasis on water management in strategies to reduce the evaporation and distribution loss of water;<sup>16</sup>
- improved control over water abstraction; for example, in terms of the National Water Act (1998), riparian farmers do not own or have an automatic right to river water, and licences have to be acquired from

the Department of Water Affairs and Forestry, are valid for a limited period and specify categories of water use;

- improved water release management based on a reliable monitoring system;
- the adoption of the demand-responsive supply approach, which balances the right to water with the need for cost recovery, i.e. water is supplied to the extent that end users are willing and able to pay; and
- the development of deep-level storage dams to reduce evaporation.

### **Recent assessments of the relevance of the ORDP**

Against the background of international trends and internal economic and political imperatives, two major external assessments of the ORDP were commissioned by the Department of Water Affairs. A full system analysis of the Orange River took place between 1987 and 1993. This assessment was primarily of a technical nature, assessing the water inflow, abstraction and distribution, as well as infrastructure and demand.

The system analysis was updated through the Orange River Replanning Study (ORRS) between 1994 and 1998, which coincided with the Vaal Augmentation Planning Study (Basson, 1998).

The ORRS has been the most comprehensive assessment of water supply schemes in South Africa to date. The investigation consisted of

- an evaluation of the resources that have already been used as well as an evaluation of options for future use;
- an evaluation of all water requirements and uses, and the efficiency of these uses; and
- a reconciliation of the resource potential with the competing requirements for water.

The assessment was conducted by a multi-disciplinary consortium of consultants. The team adopted an integrated biophysical and social environment approach. Public participation in the investigation was ensured through a broad consultation process, guided by the Reference Group for

ORRS Public Involvement and the ORRS Project Steering Committee, both of which represented a broad cross-section of role players in many disciplines. The process consisted of workshops at national, regional and local levels, formal stakeholder meetings and communications through a variety of media.

The ORRS teams investigated a great variety of water-related issues, including water supply and demand, environmental water needs, regional planning and economics, water quotas, water conservation, prices and rights, and social upliftment through the ORDP.

The ORRS led to a number of recommendations, such as the integration of the management of the LHWP and the ORDP, the building of additional dams at Vioolsdrift and Boskraai, increased water supply to Port Elizabeth, full cost recovery of water, and the replacement of water quotas with use allowances.

### **Development of international relationships for water management**

Another international trend that influenced the state's management of water revolves around the development of relationships with countries through which the rivers flow. The Orange River is an international water-course, that is, Lesotho, South Africa and Namibia are its riparian countries. Actions by one country, such as the regulation of the river, the abstraction of water and the discharge of return flows as well as other related matters, are therefore of interest to the other states.

At the inception of the ORDP, Lesotho was still a British protectorate, and was not unduly affected by developments downstream of the Orange River. No formal agreements with the Basutoland government are mentioned in the original proposal<sup>17</sup> for the ORDP. This situation changed completely with the signing of the treaty on the LHWP in 1986, which stipulated in detail the agreements with regard to water flow, abstraction, finance, payment of royalties and management responsibilities.

Previously, South Africa, as mandatory authority over South West Africa until 1990, administered what is now Namibia, and did not negotiate with the territory over the waters of the Orange River (Heyns, 1995,

p. 489). The border between the two countries was ambiguously defined as a line running along the northern bank of the Orange River, which effectively meant that Namibia had no legal access to the river. In 1980 an interim government was established in Namibia, and in 1987 this government and the South African government agreed to co-operate on the utilisation of the Orange River. They subsequently established a joint Technical Committee, which was upgraded to a Permanent Water Commission after Namibia gained independence.

Currently South Africa fully subscribes to international law and principles for the joint utilisation of watercourses by countries sharing these watercourses. Of specific relevance are existing agreements, such as the Helsinki Rules, the articles of the UN International Law Commission applicable to international watercourses, the Southern African Development Community (SADC) protocol on shared watercourses, and the recognition of the relevant provisions of the UN Conference on Environment and Development. The Orange River mouth and estuary are conserved in terms of the 1971 RAMSAR Convention on Wetlands<sup>18</sup> agreement.

## **Conclusion**

This contribution has shown that the vision, launching and further development of the ORDP were a product of specific political, economic and international forces of the time. On a very general level, the scale and original orientation of the ORDP mirrored the massive social engineering of apartheid, as well as the height of Afrikaner self-confidence. Its later development mirrored the increasing predominance of economic imperatives, which resulted in more pragmatic policies and a focus on its contribution to the regional and national economy. After 1994 the ORDP remained a significant water scheme, both with regard to the provision of water to the growing metropolitan areas of the Witwatersrand and Port Elizabeth, and as a socio-economic development project involving several countries. After the change in government the names of the two major dams (Hendrik Verwoerd and PK le Roux<sup>19</sup>) were changed because of their association with apartheid. The new Minister of Water Affairs decided not to “dance on the graves of our predecessors in government” by

renaming the dams after new political figures. Instead, the new names (the Gariiep Dam and the Vanderkloof Dam) refer to the river's earlier, and more honourable, history, namely the Khoi people and the pioneer Van der Kloof (Asmal, 1995, pp. 4, 5).

The ORDP enjoyed wide public support at its inception. However, what surprised political observers was not the decision to embark on a water scheme for the Orange River, but the scale of the proposed project. In opting for a water scheme so large that it exceeded even the dreams of its most fervent proponents, the NP government clearly intended to capitalise on the symbolic value of the dam. Nevertheless, the exploitation of political and symbolic advantages is common to many a large development project in other parts of the world. Indeed, the visibility and scale of large projects lend the projects to the establishment of "development monuments".<sup>20</sup> In addition to their symbolic potential, large projects (particularly within the intellectual context of modernisation theory) also evince a number of other characteristics that may be detected within the ORDP. For example, the assumption that the larger the project, the greater will be its benefits, is relatively common to large development projects. So, too, is the assumption that benefits of a large project will "trickle down" to a broad range of beneficiaries. Such assumptions, together with the difficulties of predicting potential costs and benefits, discourage detailed assessment of the potential effectiveness of the project. Furthermore, because they involve large sums of money, large projects tend to attract a variety of vested interests both within and outside the state. On the other hand, because of the large sums of money involved in grand schemes, mistakes can leave a costly heritage to future generations.

## **Notes**

<sup>1</sup> This contribution is based on a study of historical and institutional issues associated with the ORDP commissioned by the World Commission on Dams (WCD) in 1999. The financial contribution of the WCD to that study is hereby acknowledged.



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- <sup>2</sup> During an internal coup d'état in Lesotho in 1998, the South African army moved in to stabilise the situation and protect South Africa's interests. One of the army's first moves was to take control of the Katse Dam, which is part of the Lesotho Highlands Water Project (LHWP) that provides water to the Witwatersrand industrial area in South Africa.
- <sup>3</sup> "World War II brought on a crisis in South African agriculture. The contradictions in labour tenancy, already apparent in the thirties, were exacerbated by wartime demand for agricultural products and the accelerating flight of African labour to the cities. But European farmers responded to the crisis, as they had in the past, not by generalising market relations, but by insisting on even more elaborate state measures to control the African rural population" (Greenberg, 1980, p. 85).
- <sup>4</sup> Within three years of the NP's coming to power, the maize price increased by 50%, allowing the doubling of farm profits (Greenberg, 1980, p. 89). As Greenberg (1980, p. 53) argued, "racial domination is rooted in the pre-capitalist countryside". That is, long before industrial and commercial capital demands control over labour and unions, farmers require their own forms of subordination of labour.
- <sup>5</sup> In the period leading up to the announcement of the ORDP, a government commission recommended that a proposed irrigation scheme in the Pongola Valley should be completed before embarking on the ORDP. On its own admission, the government decided to ignore this advice and to undertake both schemes at the same time. In addition, the government decided to "think bigger in regard to the Orange River than had ever been done in the past" and "to look at the full possibilities of the Orange River". In a lengthy address to Parliament in March 1962, Verwoerd highlighted the "grand scale" of the ORDP proposed by his government. This, he maintained, was "the image of a South Africa which is constantly growing. In the past 14 years we have actually brought into being a new State of which we can be proud, a country with a great future, a country which economically is as stable and as promising as it has hardly ever been before..." (Hansard, 29 March 1962, p. 3469).
- <sup>6</sup> Through the years Afrikaner nationalism found expression in the construction of massive monuments such as the Voortrekker monument in Pretoria and the Afrikaans language monument in Paarl. During the budget debate of 1962 when the ORDP was extensively discussed, the member of parliament for Kimberley North made explicit reference to the water scheme as a monument to NP rule. He maintained that although Verwoerd had been in office for only three and a half years, his government had already established three major

monuments. These were the Republic of South Africa, the granting of self-government to the Transkei, and “the harnessing of the waters of the Orange River” (Hansard, 28 March 1962, pp. 3392-3393).

- <sup>7</sup> In the past, government contracts were extensively used to foster the growth of Afrikaner capital. The inclusion of a large number of South African firms in the ORDP team was probably aimed at realising the same effect.
- <sup>8</sup> Hansard, 28 March 1962, pp. 3384-3390.
- <sup>9</sup> After Parliament had approved the 1962 White Paper, all subsequent changes and substantial budget increases could be approved by the Minister without consultation with Parliament. Subsequently budget increases of R240 million (1968) and R385 million (1972) were submitted to the Minister and accepted “...to meet the ever-increasing escalation in the cost of civil engineering works”. This resulted in a total estimated cost of R490 million in 1975 (DWA, 1975, pp. 1, 5).
- <sup>10</sup> The National Water Act (1998) empowers the Minister inter alia to formulate a pricing strategy in order to balance costs of delivery and demand for equity. The pricing strategy is based on a number of variables, such as geographic location, water use and waste discharges. The Minister has the power to provide financial assistance to consumers who cannot afford even the most basic services.
- <sup>11</sup> Examples are provided in Olivier, 1975.
- <sup>12</sup> This is best shown in the 1986 *Management of water resources of the Republic of South Africa* document, as well as various multi-disciplinary assessments of the scheme by consultants.
- <sup>13</sup> Through the years of NP rule, the rural vote assumed a significance out of proportion to its numbers through the manipulation of constituency boundaries and the relative weights assigned to rural and urban constituencies.
- <sup>14</sup> Report by E.-G. Guenther Groeder, chairman of the inspection panel, 18 August 1998. See Lorrington, 1997.
- <sup>15</sup> The association between the interests of agriculture, subsidisation, and centralised control of water appears to mirror the relationship between agricultural production and the need for state control of labour. These relationships may not be coincidental, as they can all be related to the economic vulnerability of agriculture.

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- <sup>16</sup> Some critics of the water supply in which the focus was on water use, rather than comprehensive management, argue that almost 40% of all water supplied to the Witwatersrand is lost through leakages, abuse, deteriorating infrastructure and illegal connections.
- <sup>17</sup> Basutoland (Lesotho) is an enclave in South Africa and could be put under economic pressure if its government limited the water flow to South Africa. Examples of such pressure include the closure of the borders between Lesotho and South Africa, cutting all import through South Africa, and refusal to extend the access permits of the thousands of Lesotho mineworkers who work on South African mines.
- <sup>18</sup> The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international co-operation for the conservation and wise use of wetlands and their resources. There are presently 119 contracting parties to the convention, 1 021 wetland sites, totalling 74.8 million hectares and designated for inclusion in the Ramsar List of Wetlands of International Importance.
- <sup>19</sup> PK le Roux was Minister of Water Affairs when the ORDP was launched.
- <sup>20</sup> This does not mean that small projects cannot also be made into “monuments”. The ceremony that for instance accompanied the opening of community water projects in South Africa in recent years, suggests that small development projects carry significant symbolic value.

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