

Hydro Hegemony in the Context of the Orange River Basin

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Introduction

South Africa is a regional hegemon with the capacity of projecting power way beyond its national borders (Bernstein & Strasburg, 1988). At different times in its political history, this capacity has been displayed to varying degrees, with the most aggressive phase being that period that was known within the official security force community as the *Total Onslaught*. Coinciding with the Cold War, the *Total Onslaught* paradigm saw South Africa become a surrogate for the United States of America (USA) on the strategic chessboard of global power politics. This became a factor in the various wars of liberation that were raging in the Southern African region to the extent that the Cold War became an element in the viability of the various liberation movements at the time. South Africa is also an industrialized state, accounting for a substantial portion of the industrial output of the whole African continent. But there are limitations to this economic capacity, with water resources being one of the most significant. The history of South Africa is thus a history of political power as it has been manifest in military conflict and the desire to capture water resources and control the economic future through river basin management. These two elements fuse together to brand South Africa as a hydro-hegemon. This chapter examines elements of this fusion by focussing on strategic elements of South Africa's history, namely the evolution of what became known as "the struggle", by which the liberation from the oppression of Apartheid became known. After setting the broader historic scene, the chapter deals specifically with the Orange River Basin as a case study in which high politics and water resource management became two key factors in order to understand how the hydro-hegemon interacted with other riparian states. The chapter ends by showing that there are different forms of power – best identifiable by their French labels of *puissance* and *pouvoir* – that can be identified with different hydropolitical actors. This study is primarily sourced from a Doctoral thesis by the author (Turton, 2003c) at the University of Pretoria, some of which has been published as Turton (2004).

A Brief Hydropolitical History of South Africa

In order to assess the relevance of water resource development in South Africa, it is necessary to first understand key elements of the hydropolitical history of the country. These historic elements have provided fundamental drivers of contemporary hydropolitical dynamics in the Orange River basin. As a point of departure, the following quotations encapsulate the key elements of the broader background of international relations in the Southern African region, and lay the foundation for the subsequent assessment of the hydropolitical dimension.

“Except for Angola, the black states in the region are economically closely tied to, and in many cases heavily dependent on, South Africa. In military terms, [South Africa] is ... the regional leviathan. On the political/ideological level, South Africa is seen by the black states as the last remnant of racism and white minority rule in Africa. In addition, South Africa is regarded as something of a colonial power too, maintaining its control of Namibia. ... Being economically dominant is a feature, which in itself can easily give a state the image of a ‘bully’. Add to this [South Africa’s] military supremacy and its political/ideological distance from its neighbours, and the scene is set for heavily strained relationships. The black states also widely believe that South Africa is bent on keeping them economically and militarily weak ... [which] they see as part of South Africa’s strategy to create a regional environment conducive to the perpetuation of the *status quo* in [South Africa]. ... Relations between South Africa and the black states are, on both sides, characterized by suspicion, fear and even a strong dose of paranoia. Each sees its security and stability threatened by the other; each side ... perceives itself the target of destabilization by the other” (Geldenhuys, 1982:48-49).

“The development of economic cooperation with South Africa, including possibly water supply from the Okavango, is likely to reinforce the respect of mutual interests which exists [between South Africa and Botswana]. A security agreement is pending. ... Water, amongst other things, is an issue between Lesotho and South Africa. Pretoria has used failure to reach a firm agreement with Lesotho on security issues, ... to delay a feasibility study on the Highlands Water Project. ... South African technicians involved were actually withdrawn from Lesotho at that time. ... [T]his is an excellent example of the two-pronged approach of South Africa to its problems – military strength [*puissance*], which has actually been used against targets in Lesotho, coupled with the carrot of development” (Gutteridge, 1985a:100).

In order to understand the hydropolitical drivers at work, a brief description of three distinct phases of political dynamics is necessary, in order to lay the foundation for the subsequent analysis of the Orange River basin. The hydropolitical dynamics of South Africa can be broken down into three distinct time periods (Turton, 2003: 190-204; 2004: 254-266).

(a) *Genesis of the hydropolitical dimension*: The period prior to 1974 covers the genesis of the hydropolitical dimension of South African international relations with the birth of the hydraulic mission as a fundamental driver and elements of *pouvoir*.

(b) *From Détente to Total Onslaught*: The period from 1974 to 1990 covers the era of transition from a policy of *Détente* to the emergence of the official approach that was known as the *Total National Strategy*, with *puissance* as a core element.

(c) *Post-Cold War era*: The post-1990 period covers the ending of the Cold War and the collapse of apartheid in South Africa, both of which resulted in a reduction of the impact of overlay¹ in the SADC region, with *pouvoir* as a core element.

Genesis of the Hydropolitical Dimension: The Failure of *Pouvoir*

It can be said that the roots of South African international relations, particularly with respect to other states in the Southern African region, date back to the Anglo-Boer War (or the closing of the frontier) (Turton *et al.*, 2004a:29-46), but for brevity details of this will be excluded.

In 1948 the National Party (NP) won an election victory in South Africa. This was seen as a major triumph for the Afrikaners with strong nationalist sentiments, many of whom still had living memory of their defeat in the Anglo-Boer War and their subsequent treatment in the British concentration camps (Evans, 1999; Farwell, 1999; Lee, 2002; Nasson, 1999; Porch, 2000; Raath, 1999; Spies, 1977; van Rensburg, 1980). So in 1948 the political power that was lost in the Boer War was returned to the Afrikaners, who immediately set about consolidating their position by implementing the policy of Grand Apartheid. While the hydropolitical dimension of South African politics was in its formative stages prior to 1948, it was not yet strongly articulated during this time, so it cannot be seen as an independent variable. The earliest known record of water resource management in South Africa can be traced back to two books, both of which were written by J.C. Brown, a botanist at the Cape Town Botanical Gardens, in the 1870s (Brown, 1875; Brown, 1877). The first of these was entitled *Hydrology of South Africa; or Details of the Former Hydrographic Condition of the Cape of Good Hope, and Causes of its Present Aridity, with Suggestions of Appropriate Remedies for this Aridity* and was published in 1875. The second book was entitled *Water Supply in South Africa and the Facilities for the Storage of it* and was published in 1877. These dates are significant because this corresponds with the closing of the first South African frontier (Turton *et al.*, 2004a:29-34). The contents of the two books deal extensively with conditions of aridity, drought and floods - factors that are still relevant in contemporary times.

Economic development was high on the agenda when the NP came to power, given the impact of the Anglo-Boer War, which saw Britain using a brutal scorched earth policy (Turton *et al.*, 2004b) that resulted in massive poverty among the Afrikaner nation - a situation made worse by the Great Depression - but without water this would be impossible. For this reason early reconnaissance work was begun on the hydrology of Basutoland as a possible source of water for the South African

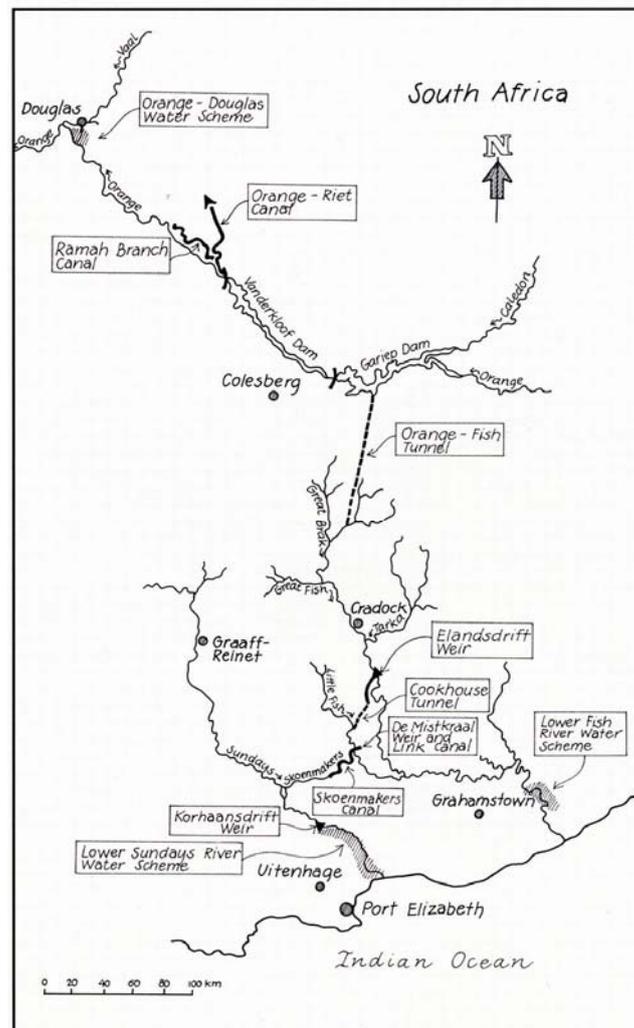
¹ Overlay refers to that condition when great power interests transcend mere penetration, and come to dominate the region so heavily that the local pattern of security relations virtually ceases to operate, such as occurred with the European colonization of Africa (Buzan *et al.*, 1998:12).

goldfields and their related industrial complex (Ninham Shand, 1956). It was against this socioeconomic background that British Prime Minister Harold Macmillan made his “Winds of Change” speech in the Cape Town Parliament, which referred to the strong desire for independence that was emerging in the former colonies (Geldenhuys, 1984:11). This set the scene for South Africa’s systematic political and economic isolation. Events unfolded rapidly after the Sharpeville massacre in which sixty-nine people were killed and one hundred and eighty wounded, which took place shortly after Macmillan’s speech (Spitz & Chaskalson, 2000:7). The UN Security Council adopted a resolution that mandated the visit by Secretary General Hammarskjöld to South Africa. The 1961 Commonwealth Conference in London saw Prime Minister Verwoerd trying to defend South African racial policies, leading ultimately to its expulsion, which for many Afrikaners was final vindication of their Boer War defeat (Geldenhuys, 1984:24 & 205). This laid the foundation for what has been described as a “garrison state” (Frankel, 1984:30). When Ian Smith, the Rhodesian Prime Minister, announced the Unilateral Declaration of Independence (UDI) of Rhodesia from Britain, South Africa immediately offered its support. This determined the patterns of conflict that were to be unleashed from that moment onwards, with long-term repercussions in the hydropolitical domain.

Sharpeville also reverberated around South Africa, with the banning of the African National Congress (ANC), Pan Africanist Congress (PAC) and the imprisonment of leaders like Nelson Mandela and others. This dramatic series of events saw the birth of the “armed struggle” in the face of the apparent failure of Gandhi-styled passive resistance. The Rivonia Trial that convicted Nelson Mandela and others in 1964 was a direct outcome of this series of events (Spitz & Chaskalson, 2000:7). On the water and development side of the hydropolitical equation, the South African focus of attention again turned to Basothuland, but this time as a source of water for the rapidly growing industrial complex in the Witwatersrand that was outstripping the capacity of the Vaal basin (Young, 1961; Carter, 1965; Turton *et al.*, 2004b).

At the same time, the Orange River Project (ORP) was launched, which was designed to transfer water from the Orange River downstream of Lesotho, through the escarpment into the Fish River, and then across another catchment into the Sundays River (Conley & van Niekerk, 1998:145; Turton *et al.*, 2004a:173) (see Map 1). This has a profoundly political undertone to it as it was designed to restore investor confidence in South Africa in the post-Sharpeville period, and it can probably be regarded as the actual birth of the South African hydraulic mission (Turton *et al.*, 2004a:174). The strategic importance lies in the fact that the ORP started to make inroads into the economic underdevelopment in the so-called “border” area, which was the geographic home of the “armed struggle”, thereby designed to stem the flow of impoverished militants to the military wings of the respective liberation movements. One dam in the ORP, which was called the H.F. Verwoerd Dam as testimony to the political significance of this project, was completed in 1971 and is still the largest reservoir by volume in South Africa. It has since been renamed the Gariiep Dam. The 5,35-m diameter, 82,8-km long delivery tunnel was the longest in the world at that time and today sustains a major economic hub around the city of Port Elizabeth that would otherwise not have been possible to develop (Conley & van Niekerk, 1998:145). The ORP was hailed as a triumph of Afrikaner independence and technical ingenuity at the time. In a speech made by Verwoerd, he claimed that the entire project was a symbol of the determination of the white civilization in Southern

Africa to stay in the African Continent, representing a heritage to be passed on to the next generation (Turton *et al.*, 2004a:188).



Map 1. The Orange River Project (Pallet *et al.*, 1997:60).

In 1966 the guerrilla war was launched in South West Africa (present day Namibia), significantly drawing South African security forces into the Caprivi Strip where the Okavango and Zambezi form a water-rich haven in the midst of surrounding aridity (Frankel, 1984:102) (Photo 1). Faced with this reality, which was manifest as increasing isolation for South Africa, diplomatic contact with Black Africa was deemed to be vital. One of the targets of this period of *détente* or peaceful coexistence was Chief Leabua Jonathan, who was destined to become the Prime Minister of Lesotho, when it gained its independence in 1966 (Geldenhuys, 1984:19). Strong relations were forged with him, and he was even regarded as being a South African *protégé*, until this began to sour (Geldenhuys, 1982:48). In an attempt to divert growing criticism of his own domestic political style, Jonathan became one of South Africa's strongest critics, openly declaring his support to the liberation struggle. This was a diplomatic slap in the face for South Africa (Turton, 2004:257).

Early aspects of the water, economic development and energy nexus can be found in two agreements between South Africa and Portugal during 1969 (Turton, 2004:257). The first was on the Cahora Bassa Project on the Zambezi River in Mozambique, while the second was on the Cunene River (Treaty, 1969a; Treaty, 1969b). Both saw the need to mobilize water resources on a grand scale in order to create the necessary energy infrastructure on which subsequent economic developments could be based. They also laid the foundation for a regional network of water resource projects that were to have far-reaching implications for Southern Africa as a whole.



Photo 1. South African troops became involved in the guerrilla war in Namibia and the subsequent Angolan Civil War. This photo shows a combat patrol in the Cuvelai area of southern Angola prior to moving into an overnight bivouac. (Photo courtesy of A.R. Turton).

In 1970 the Jonathans government was toppled in a military *coup d'état* and Lesotho was plunged into political crisis. The State Security Council (SSC) was established in South Africa during 1972 against the background of this rising insecurity (Gutteridge, 1994:215). This was later to become an extremely important organ in the formulation of South African foreign policy (Geldenhuis, 1984:93). The end of this period is characterized by the deterioration in the threat perception and the publishing of the 1973 *White Paper on Defence*, which for the first time introduced the concept of a “total strategy” (Republic of South Africa, 1973; Geldenhuis, 1984:140). The height of the *détente* era occurred in 1975 with the Victoria Falls Bridge meeting between the intransigent Rhodesian government and Black nationalists, which had been made possible by the interaction between Prime Minister Vorster of South Africa (who was dabbling with *pouvoir*) and President Kaunda of Zambia (Geldenhuis, 1984:39).

From *Détente* to *Total Onslaught*: Recourse to *Puissance*

Similar to the 1960 period, when a series of events rapidly shaped a transition phase, 1974 can be called a watershed year in a political sense. The start of this was signalled by the *coup d'état* in Portugal (Geldenhuys, 1984:78). This event, taking place thousands of kilometres away from Southern Africa, set off a domino-effect that was associated with the rapid decolonization of the former Portuguese territories as part of the process of removing overlay. White Africa was getting smaller, so Macmillan's "Winds of Change" were apparently becoming a real phenomenon. The fact that in each of the former Portuguese colonies, there was an unfinished war of liberation, and the speed with which the decision was made and executed, left no time to prepare for an interim administration. The effect was startling. Overnight the Angolan War of Liberation turned into the Angolan Civil War (Turner, 1998:100-125), which became the longest running civil war in Southern Africa. This raged on for more than a quarter century, but it ended with the signing of the Memorandum of Understanding on 4 April 2002 (Porto & Clover, 2003:65). South Africa was irretrievably drawn into this with the launch of Operation Savannah (Geldenhuys, 1984:79; Turner, 1998:36), which saw South African soldiers cross the border, to become a feature of the regional political landscape for the next few decades. Alarm bells were sounded as the regional balance of power changed overnight (Gutteridge, 1983:35). The Rhodesian Bush War was already ongoing, and virtually overnight a second front was opened up along the border with Mozambique (Turner, 1998: 126-150). The Cahora Bassa Project immediately became a target for military attack, with the long power lines to South Africa proving impossible to defend. This drew in South African military support, further strengthening the garrison state mentality that had already taken root in South Africa (Frankel, 1984:30). The South African border with Mozambique, a short distance from Pretoria, became a military frontline. Enthused by this series of events, youths took to the streets, angry at the apparent inability of the older generation to liberate South Africa, and the now famous Soweto Riots occurred on 16 June 1976. As with the Sharpeville Massacre, security force retaliation was swift and brutal.

The 1977 *White Paper on Defence* was largely devoted to refining the concept of a *Total National Strategy*, first mooted in 1973, as an official policy (Republic of South Africa, 1977). This defined a *Total National Strategy* as being "the comprehensive plan to utilize all the means available to a state according to an integrated pattern in order to achieve the national aims within the framework of specific policies" (Geldenhuys, 1984:140). This total strategy had its roots in the counter-revolutionary experiences of the Americans in Vietnam, the British in Malaya, and the French in Algeria and Indo-China. The term "total strategy" is derived directly from André Beaufre's work *An Introduction to Strategy* (Frankel, 1984:46). As such it resonated well with the security elites in the emerging South African garrison state, with its peculiar threat perception that interpreted the Cuban and East German support of the African liberation movements in Southern Africa, as being evidence of a *total onslaught*, driven by Soviet imperialism (Frankel, 1984:55). This saw the development of a two-pronged approach to security-related issues, and heralded the start of the gradual securitization of water resource management. The one element was based on a strong military response to any threat (*puissance*), supported by destabilization through economic means (Gutteridge, 1983:38). The olive branch of economic development thus became securitized with far-reaching ramifications. This

was given greater structure when P.W. Botha produced a twelve point plan for survival at the NP Congress in 1979 (Gutteridge, 1985a:93).

The Rhodesian Bush War had a strong effect on the Garrison State mentality that was emerging in South Africa. One particular event played a major role in this process. On 3 September 1978 Air Rhodesia flight RH 824 was shot down by guerrilla forces belonging to the Zimbabwe People's Revolutionary Army (ZIPRA) using shoulder fired surface to air missiles (SAM 7) (Turner, 1998: 27; Reid-Daly, 1982: 346; Stiff, 1985: 215). Of the original forty-eight passengers that were on board, eighteen survived the subsequent crash, with ten of these being bayoneted by ZIPRA soldiers before the security forces could reach the crash site. The second attack was based on an identical *modus operandi*, taking place in 1979 where all fifty-nine passengers were killed by the blast. This coincided roughly with an attack on the strategic oil storage depot in Salisbury that left the land-locked Rhodesian economy crippled. These attacks signalled a new phase in the armed struggle that would see unarmed civilians become targets for military aggression and terrorist-styled bombings. It was against this background that the *Total Onslaught* mentality really took root in South Africa, *via* a process similar to what is happening in England after the recent bombing of London.

Central to this *Total National Strategy* was economic development and the resultant dependencies that would emerge from this. The foundation for this thinking can be traced to the speech made by Prime Minister Vorster in 1974, in which he spoke of a power block of states (Geldenhuys, 1984:39). This was subsequently refined when he spoke of a constellation of politically independent states maintaining close economic ties. When P.W. Botha came to power, he used what he called a Constellation of Southern African States (CONSAS) as the basis of his policy (Geldenhuys, 1984:41; Turton *et al.*, 2004a:72). Foreign Minister "Pik" Botha subsequently announced in 1979 that this vision embraced some forty million people south of the Cunene and Zambezi Rivers all joining forces to design a common approach to the security, economic and political field. In short, CONSAS was to be a regional non-aggression pact that bound the various states together, using economic development and infrastructural projects as an inducement to cooperate (*pouvoir*).

During the same year, a scheme to divert up to $3,000 \times 10^6 \text{m}^3 \text{yr}^{-1}$ of water from the Zambezi, through the Thamalakane and Boteti Rivers in the lower Okavango basin downstream of the Delta, was found to be economically competitive with the Tugela-Vaal scheme (Scudder *et al.*, 1993:263; Midgley, 1987:15). This project, designed to abstract water from the Chobe River (a tributary of the Zambezi in close proximity to the Okavango Delta) and feed it down to South Africa, where it would account for 130% more than was currently available in the Vaal River basin at the time, became an element of this emerging strategy (Trollaldalen, 1992:138). Given the fact that Botswana would benefit from this project, this served to mute their opposition to South Africa's policy of apartheid. Another study from the same period found that as much as 7% of the Zambezi River mean annual runoff (MAR) at Katima Mulilo ($95 \text{m}^3 \text{s}^{-1}$) could be diverted to South Africa, without having to develop storage facilities on the Zambezi River itself (Basson, 1995:46; van der Riet, 1980). The water, economic development and state security nexus was becoming stronger, with augmentation plans becoming increasingly sophisticated and ambitious.

At the Lancaster House Conference in late 1979, the foundation was laid for the cessation of hostilities in Rhodesia. Bishop Abel Muzorewa was widely tipped to win the elections. It therefore came as a great shock to the security elites in Pretoria when Robert Mugabe swept to victory in 1980. Mugabe immediately announced that he had no intention of joining the proposed CONSAS (Turton *et al.*, 2004a:73). Instead Zimbabwe, along with Botswana, Lesotho, Swaziland, Mozambique, Angola, Zambia, Malawi and Tanzania, joined forces in the Southern African Development Coordination Conference (SADCC), which was formally launched in Lusaka during 1980 (Pallett *et al.*, 1997:70). This new grouping was specifically designed to reduce their combined dependence on South Africa (Bernstein & Strasburg, 1988:13), and was quickly dubbed the “counter-constellation” (Baynham, 1989:88; Conley & van Niekerk, 1998:145; Geldenhuys, 1984:41). The establishment of SADCC was thus a direct response to South Africa’s perceived policy of destabilization (Bernstein & Strasburg, 1988: 13). The linkage between water and development became manifest at the Fourth SADCC Consultative Conference which was held in Lusaka during 1984. Opening the conference, President Kaunda of Zambia said that the effects of water scarcity and drought had resulted in food deficits and poor prospects for agricultural development in Southern Africa (Africa, 1984).

The emergence of this *Total National Strategy* approach saw South African foreign policy becoming captive to the SSC, which had an all-consuming security focus to it (Frankel, 1984:149). Seen in this light, every aspect of foreign relations became securitized, including cooperation over water resources. An example of the impact of the *Total National Strategy* in the water sector can be found in a paper that was written by the Chief Engineer of the Rand Water Board (RWB), who used the concept to contextualize the need for the South African economic heartland to gain access to secure supplies of water (James, 1980). Listed in this document are inter-basin transfer (IBT) schemes such as the Lesotho Highlands Water Project (LHWP), the Tugela-Vaal link and the mooted Okavango development. Significantly, gaining access to the Okavango is referred to in the context of CONSAS, indicating the strategic relevance of water in terms of this overall policy (Blanchon, 2001:123). This is the basis of the “pipelines of power” thesis where political power is seen to result from the construction of major water transfer schemes in semi-arid areas as part of an aggressive hydraulic mission (Turton, 2000b).

In 1980 the armed struggle intensified after an announcement to this effect by the ANC during festivities to mark the occasion of its seventy-eighth anniversary (Gutteridge, 1990:167). A hostage incident at a bank in Silverton involving armed guerrillas, along with a rocket attack on the South African Coal and Oil Company (SASOL) refinery, and the subsequent derailment of a train near Richards Bay, all came in quick succession (Gutteridge, 1981:5). This was punctuated by the political energy that the newly-independent Zimbabwe had given to the creation of SADCC, which was devoted to mutual cooperation for development, and the reduction of members’ collective dependence on South Africa (Bernstein & Strasburg, 1988:11-12) and therefore seen as further evidence of the *Total Onslaught* (Geldenhuys, 1984:41; Simon, 1991:205).

In 1981 the first military retaliation was launched, with a South African Defence Force (SADF) Special Forces raid on ANC bases at Matola near Maputo in Mozambique (Geldenhuys, 1984:140; Gutteridge, 1981:14). This was followed in

1982 with retaliatory attacks against ANC targets in Maseru, Lesotho (Gutteridge, 1983:35). These signalled that South Africa was not prepared to countenance what they perceived as being terrorist (or guerrilla) bases in neighbouring states, using rhetoric that resembles the contemporary US-led “War on Terror” (Geldenhuys, 1982:47). This was manifest in subsequent attacks on targets in Angola, Mozambique, Lesotho, Botswana and Zimbabwe. A Southern African Defence Zone was conceived embracing Namibia, Botswana, Swaziland and Zimbabwe to counter the presence of East German troops in Angola and Mozambique (Gutteridge, 1981:19). This marked an escalation in South African destabilization tactics, involving both military action and economic pressure with the entire Southern African region becoming a theatre of *puissance*-styled operations (Geldenhuys, 1982:43). This approach simply strengthened SADCC resolve to liberate their members from the stranglehold of South African economic power (Geldenhuys, 1982:47). Swaziland was seemingly exempt from this practice because it seemed never to become deeply embroiled in activities that were deemed to be a security risk to South Africa (Geldenhuys, 1982:46).

In 1983 a car bomb was detonated in front of the Department of Military Intelligence (DMI) Headquarters in Pretoria, with significant casualties. This marked the escalation of the conflict into previously neutral areas, as evidenced by the subsequent bombing of the ANC offices in London, assassination attempts on ANC figures in Brussels, and the actual assassination of Dulcie September, an ANC representative in Paris. This series of events had unforeseen circumstances, and South Africa increasingly became isolated as a pariah state, associating closely with the experiences of Taiwan and Israel (Frankel, 1984:65; Geldenhuys, 1990:206). Central to this association was the notion that these states were strategic pillars against a global Marxist onslaught that the Free World would not be able to ignore, which was a cornerstone in the *Total National Strategy* rationale (Geldenhuys, 1984:116).

This round of “tit-for-tat” exchanges ushered in a new era when in 1984 the South African constitution was changed and P.W. Botha was elevated to the status of Executive President. During the build-up to this constitutional watershed event, a security agreement between South Africa and Swaziland was reached, supported by an economic cooperation agreement (Treaty, 1982; Treaty, 1983b). This was followed shortly afterwards when the *Nkomati Peace Accords* (Treaty, 1984a) were signed by President Samora Machel of Mozambique and Prime Minister P.W. Botha of South Africa, during March 1984 (Gutteridge, 1985a:94; Turner, 1998:140). Water was intimately linked to the *Nkomati Peace Accords* when an agreement was signed during May in Cape Town between Mozambique, Portugal and South Africa on the revival of the Cahora Bassa Project (Treaty, 1984b).

Similar security agreements were mooted between South Africa and Botswana, where economic cooperation and possible access to the Okavango River was discussed; and Lesotho, where access to water was also a feature (Gutteridge, 1985a:100). Water and energy thus became a key element of this *Total National Strategy*. The need for such a security agreement was underscored by unrest within South Africa that was escalating uncontrollably, with the SADF being increasingly committed to internal riot control. This started to blur the lines between police and army responsibilities. The ANC held a high-level meeting in Kabwe, Zambia during June 1985 at which time a decision was taken to allow attacks on soft targets (Gutteridge, 1985b:129). Special Forces reprisal was launched in Kabwe a few days later. A State of Emergency was

announced in 1985, giving security forces wider powers (Gutteridge, 1985b:124). The ANC leadership started to regard the internal situation as a “peoples’ war” from this moment onwards (Gutteridge, 1995b:130). The situation deteriorated rapidly with a flight of foreign capital threatening a total collapse of the economy, so all foreign currency trading was suspended in South Africa on 27 August 1985 (Gutteridge, 1985b:144). The security situation was precariously balanced indeed, with the possibility of a collapse of the South African Apartheid State a very real one at the time.

During 1986 violence erupted in Natal between *comrades* from the ANC and Zulu *impis* from Chief Buthelezi’s Inkatha Freedom Party (IFP) (Gutteridge, 1990:168). This degenerated into a localized low-intensity civil war, which endured until after the election of Nelson Mandela as the first democratic President of South Africa (Percival & Homer-Dixon, 1995:3). In neighbouring Lesotho, Major General Justin Lekhanya overthrew Leabua Jonathan during a military *coup d’état* on 20 January 1986 (Esterhuysen, 1992:46; Lawrence, 1986). Shortly after this the *Treaty on the Lesotho Highlands Water Project* (LHWP) was signed on 24 October 1986 between “Pik” Botha of South Africa and Colonel Thaabe Letsie of Lesotho, fuelling speculation about possible South African involvement in the *coup d’état* (Homer-Dixon, 1994:19; Treaty, 1986a). Commentary on the LHWP from that time reflects the *pouvoir*-styled socio-economic benefit angle that was central to the *Total National Strategy* approach (Vorster, 1988:95).

During 1987 an agreement was reached between South Africa and the Transitional Government of Namibia on the creation of a Joint Technical Committee to oversee future projects on the Orange River (Treaty, 1987). During the same year another study on the feasibility of transferring water from the Zambezi through Botswana found that the cost of water delivered to Pretoria was competitive with existing water supply schemes (Scudder *et al.*, 1993:263; Midgley, 1987:15). This plan had been developed from earlier studies, with the most refined version consisting of a 1,116-km concrete structure feeding $2,500 \times 10^6 \text{m}^3 \text{yr}^{-1}$ of water from the Zambezi/Chobe confluence through Botswana to a dam in South Africa, from where it would be reticulated to the Vaal River Supply Area (Borchert & Kemp, 1985; Borchert, 1987; Scudder *et al.*, 1993:268; Trollaldalen, 1992:138). This water was needed to meet the estimated demand by 2015 even with the LHWP functioning (Williams, 1986; Scudder *et al.*, 1993:268). Botswana would have been supplied $60 \times 10^6 \text{m}^3 \text{yr}^{-1}$ from this aqueduct (Borchert & Kemp, 1985; Scudder *et al.*, 1993:268). The existing (smaller) transboundary water supply from the Molatedi Dam in South Africa to Gaborone should be seen in light of this *Total National Strategy* approach (Turton, 2005).

This era drew to an end in the upper reaches of the Okavango River basin, where the battle of Cuito Cuanavale took place in 1988 (Turner, 1998: 118-119). Popular perceptions are that this battle saw the first significant setback of the SADF since its initial incursion into Angola during Operation Savannah in 1975/6, thereby shattering the myth of South African invincibility. Although officially denied at first, General Magnus Malan subsequently admitted that this event turned the balance in favour of ditching “the millstone which Namibia had become” (Simon, 1991:187). Turner (1998:53-54) notes that the SADF withdrawal was orderly and must be seen in light of the negotiations that were taking place at Ruacana to establish the Joint Military

Monitoring Commission (JMMC). Furthermore, the battles leading up to Cuito Cuanavale were the climax of the superpower involvement, when Operation Modular resulted in the routing of the Angolan Armed Forces (FAPLA), which was described as the biggest defeat to befall an army since World War II (Turner, 1998: 115).

The Post-Cold War Era: The Renaissance of *Pouvoir*

This era was ushered in by the political demise of P.W. Botha and the assumption of power by F.W. de Klerk (Turton, 2004:263). On 2 February 1990 de Klerk made a watershed speech in which he appealed for a united South Africa as a way to overcome the divisions of violently conflicting nationalisms (Gutteridge, 1994:214). This effectively marked the end of the SSC and the *Total Onslaught* mentality that they had established in the international relations of South Africa, which by this time had become all-embracing and somewhat paranoid (Spitz & Chaskalson, 2000:15). Almost immediately Nelson Mandela was released from prison and a process of the “normalization” of South African politics began. This was being actively brokered behind the scenes by the National Intelligence Service (NIS), with the Convention for a Democratic South Africa (CODESA) as a key high profile component.

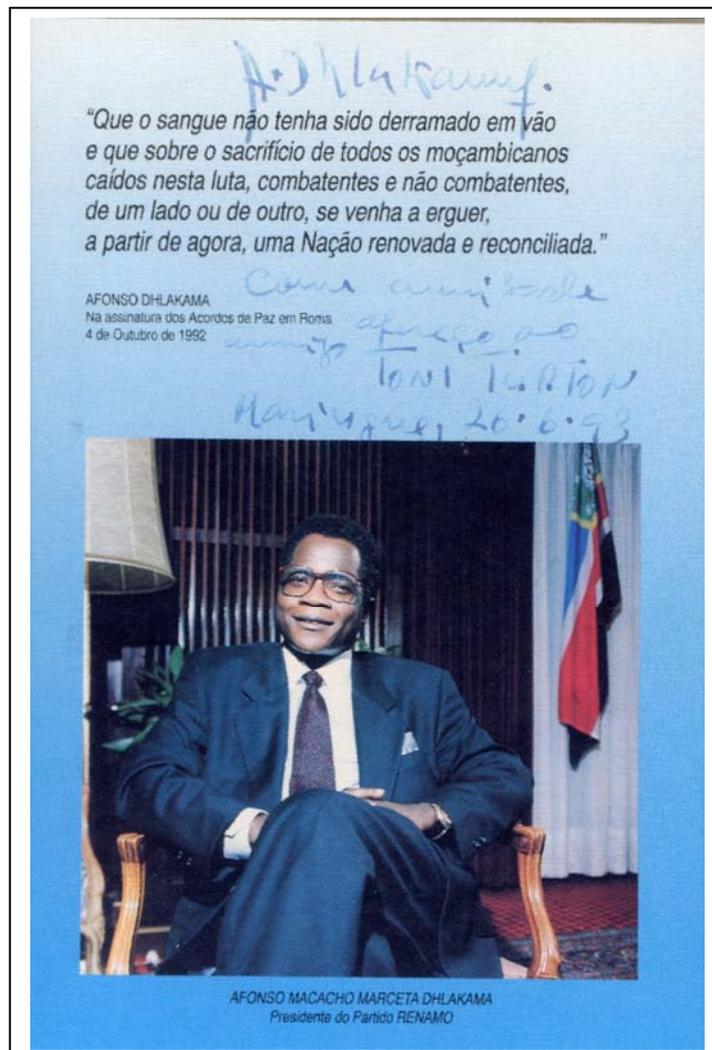


Image 1. RENAMO Party Manifesto signed by Afonso Dhlakama and given to the author while establishing the platform for negotiations to end the Civil War.

The security forces had become deeply divided during the latter parts of the 1980s, with “hawkish” elements of the Police and Army combining to form the now deeply discredited paramilitary Vlakplaas Unit and Citizens Cooperation Bureau (CCB), whose antics included the bombing of the London ANC offices and the assassination of a senior South West African Peoples Organization (SWAPO) activist in Namibia. “Dovish” elements clustered under the leadership of Dr. Neil Barnard, Director General of the NIS, with various special operations units being tasked with the sensitive role of determining the strategic implications, strategies and pitfalls of a negotiated settlement. As such this unit played a significant role in the renaissance of *pouvoir* as a preferred style of politics, both domestic and international. This “dovish” element played a low profile role in establishing the enabling environment in which a number of strategic actions could occur. These included the Cuban troop withdrawal from Angola and the implementation of UN Resolution 435 in Namibia; CODESA that negotiated the necessary transitional arrangements needed to ensure that the process of democratization could proceed with relative peace and stability; and the cessation of hostilities in Mozambique, in particular bringing the rebel *Resistência Nacional Moçambicana* (RENAMO) into the elections through Operation Bush Talk (see Image 1). Operation Bush Talk involved sensitive diplomacy that was conducted in strict secrecy, with the intention of inducing RENAMO to participate in a negotiated settlement in Mozambique, to the ultimate benefit of the entire SADC region.

Namibian independence followed shortly after the release of Nelson Mandela, heralding the end of a liberation struggle that was second in duration only to that of South Africa itself (Simon, 1991:185). This series of events threatened to outpace SADCC, whose *raison d'être* was now being challenged by the rapidly changing political climate as *pouvoir*-styled politics began to take root all across Southern Africa. A decision was therefore made to transform SADCC into the Southern African Development Community (SADC), which was concluded formally in Windhoek, Namibia in 1992 (Treaty, 1992a; Pallett *et al.*, 1997:70; Granit, 2000). A small blemish on South African / Namibian relations occurred in the form of a dispute over the border² between the two countries along the shared portion of the Orange River, but this has never become a major issue (Ashton, 2000:86-89; Maletsky, 1999; Meissner, 2001).

The first democratic elections took place in South Africa during 1994, marking the end of isolation and the policy of destabilization. One of the first tasks of the newly elected ANC Government, was to resume full state control over water, most of which was linked to the land rights of approximately 60 000 white commercial farmers, on behalf of the majority of South Africans (Conley, 1997:23). Significantly, the first protocol that was agreed on within the context of SADC after the admission of South Africa as a full member was the *SADC Protocol on Shared Watercourse Systems* that was signed in Johannesburg during 1995 (Ramoeli, 2002:105). This was amended in 1997 and became known as the *Revised Protocol on Shared Watercourses* in order to incorporate the principles found in the *United Nations Convention on the Non-*

² While the South African government is of the opinion that this issue has been effectively resolved, the Namibian government perspective differs somewhat (Heyns, 2003:20). The important aspect is that it is not a major driver of conflict at the time of writing.

Navigational Uses of International Watercourses (Granit, 2000; Ramoeli, 2002:106). While this has laid the foundation for greater cooperation in the water sector, economic development is still threatened by the current political turmoil in Zimbabwe, and the aftermath of the civil wars in Angola and the DRC (Granit, 2000).

In 1998, political instability again erupted in Lesotho. This became a major test for SADC in general, and South Africa in particular given its past history. SADC decided to send in a peacekeeping force, comprising soldiers from South Africa and Botswana. This became known as Operation Boleas, which moved across the border and immediately came under heavy and unanticipated fire. Boleas forces split into two with one element concentrating on Maseru while the other moved in to secure the infrastructure related to the LHWP. A number of casualties were sustained on all sides. This has unfortunately caused strained relations between South Africa and Lesotho (Laurence, 1998; Mopheme, 1998a; Mopheme, 1998b; Mills, 1998).

Overlay and South African Hydropolitics

If the events noted above contextualize the patterns of regional conflict and cooperation, then it is necessary to locate these within the broader Cold War theatre. The interaction between the sub-regional and international political milieu relates to what Buzan (1991:216-220) and Buzan *et al.*, (1998:13-14) have called overlay. The link between these regional dynamics and global political interaction can be traced back to 1957. At that time a Soviet strategist and expert on economic warfare by the name of Major General A.N. Lagovsky, formulated what became known as the “weak link principle” (Gutteridge, 1984:60-61). In terms of this thinking, the Western powers such as the North Atlantic Treaty Organization (NATO) and its allies, were almost entirely dependent on a wide range of strategic minerals that were imported from countries in the developing world. By contrast, the Warsaw Pact countries were more-or-less self-sufficient in those strategic resources. This prompted General Alexander Haig to conclude, in a presentation to the US House of Representatives in 1980, that the era of the “resource war” had arrived (Gutteridge, 1984:61).

This made Southern Africa a theatre in which proxy-wars were played out, some of which involved strategic access to natural resources. Central to this was the theory of limited war that had been developed by Henry Kissinger, an academic and one-time US Secretary of State, who postulated that in the thermo-nuclear age, the risk of total war was so high that it was to be avoided at all costs (Dougherty & Pfaltzgraff, 1981:111-116). Instead of total war between nuclear powers, a series of local proxy wars could be fought, each allowing global political tensions to be dissipated in a controlled way, and each allowing non-nuclear military technology to be developed by the nuclear powers and tested through the proxy forces. The linkage was established after the 1974 Portuguese *coup d'état*, when through a series of rapid political events, the Angolan War of Liberation became the Angolan Civil War. South Africa became deeply alarmed at this turn of events. Encouraged by Kissinger's statement that the Soviet and Cuban support of the Popular Movement for the Liberation of Angola (MPLA) in the Angolan Civil War was a “serious matter”, and that Moscow's “hegemonial aspirations” would not be tolerated, South Africa decided to become the US proxy force in the region (Geldenhuys, 1984:79). This notion of limited warfare was played out in classic fashion when US support for the SADF proxy force, which at that time was literally in sight of Luanda, was suddenly

withdrawn. This was seen as a humiliation by South Africa whose soldiers were left stranded and therefore forced to withdraw without capturing the capital city (Gutteridge, 1985a:97).

The final link to the Cold War is related to the cessation of hostilities associated with the collapse of the former USSR. On the same day in January 1990 on which President Gorbachev was in Vilnius remonstrating with Lithuanian secessionists, President de Klerk was in Umtata trying to persuade General Bantu Holomisa to reintegrate the “independent homeland” of Transkei back into South Africa, which was now firmly on the road to negotiations with the previously banned ANC and other political parties through CODESA (Gutteridge, 1990:176). The demise of apartheid is intimately linked with the collapse of the former USSR and consequently the ending of the Cold War. In fact, one commentator has said that the climax of the superpower involvement occurred in the SADC region at this time, with the Battle of Cuito Cuanavale breaking the Cuban and Soviet will to fight on (Turner, 1998: 115). As such, this watershed removed the influence of overlay and consequently unleashed a set of political dynamics that will start to shape a new pattern of conflict and cooperation, and consequently impact on hydropolitical dynamics within the international river basins found in South Africa (Buzan, 1991:216-220; Buzan *et al.*, 1998:13-14).

The Southern African Hydropolitical Complex as a Concept

Using the work by Buzan (1991), Buzan *et al.*, (1998) and Schulz (1995) as a point of departure, a conceptual model was developed that factors in the hydropolitical dimension of international relations within the SADC region (Turton, 2003a; 2003b; Turton & Earle, 2005; Ashton & Turton; in press). The rationale for this is based on the fact that international rivers provide permanent linkages between different states within the Southern African Regional Security Complex as originally defined by Buzan (1991:210), but the *exact* nature of the relationship is too nuanced to be understood merely in terms of geography, and a study that focuses only on the river basin level misses this complex reality. Definitions of the four key components of the Southern African Hydropolitical Complex are as follows (Turton, 2003b; Turton & Earle, 2005; Ashton & Turton, in press):

- Pivotal States are riparian states with a high level of economic development³ that also have a high degree of reliance on shared river basins for strategic sources of water supply, with the real prospect of water scarcity posing a limitation to future economic growth and development. In southern Africa, four states fall into this category: Botswana, Namibia, South Africa and Zimbabwe.

³ This higher level of economic development means that the Pivotal States also have the capacity to project their power outside of their borders, which becomes a factor in understanding the dynamics of hydro-hegemony. It is significant that all four of the Pivotal States have a history of military activities beyond their own sovereign territory. South Africa was active militarily across many countries in Africa during the Cold War. In the immediate post-Apartheid period, South Africa was involved in Operation Boleas in Lesotho, along with Botswana, in an action that was officially sanctioned by SADC (Turton, 2004:268). Namibia and Zimbabwe both have troops in the Democratic Republic of Congo (DRC), engaging in military actions that have not been sanctioned by SADC. Zimbabwe also deployed troops inside Mozambique to protect its interests during the Mozambique Civil War (Turner, 1998:131-145).

- Impacted States are riparian states that have a critical need for access to water from international river basins that are shared with a Pivotal State, but appear to be unable to negotiate what they consider to be an equitable allocation of water. In southern Africa, seven states are seen to be in this category: Angola, Lesotho, Malawi, Mozambique, Swaziland, Tanzania and Zambia.
- Pivotal Basins are basins that face closure⁴, and which are also strategically important to any one (or all) of the Pivotal States by virtue of the range and magnitude of economic activity that they support. In southern Africa, three basins fall into this category: Orange, Limpopo and Incomati. Significantly, all three of these are Basins at Risk (Wolf *et al.*, 2003:29; Turton, 2005).
- Impacted Basins are those where at least one of the Pivotal States is a co-riparian, and where there appears to be less freedom of choice for an Impacted State to develop its water resources in a manner that is deemed to be fair and equitable. In southern Africa, six basins are in this category: Cunene, Maputo, Okavango, Pungué, Save-Runde and Zambezi. Significantly, three of these are Basins at Risk (Wolf *et al.*, 2003:29; Turton, 2005).

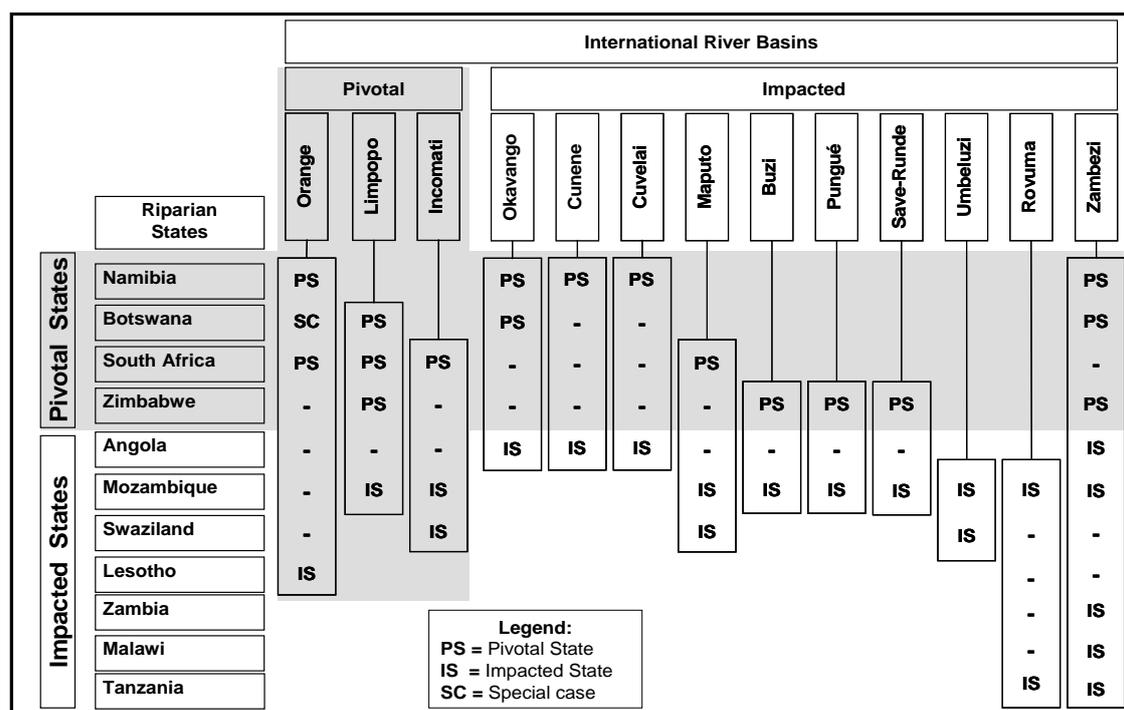
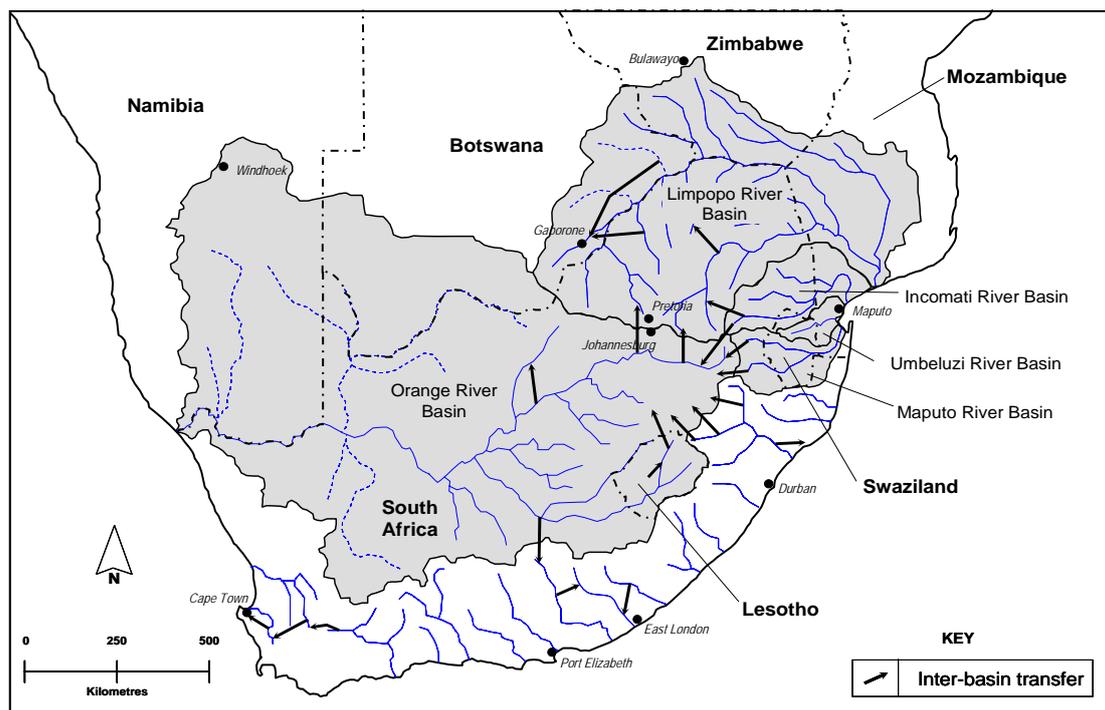


Figure 1. The Southern African Hydropolitical Complex showing linkages across river basins (Ashton & Turton, in press).

⁴ Basin closure is defined as a river with no utilizable outflow of water (Seckler, 1996). A basin is said to be facing closure when all of the available water has been allocated to some productive activity and there is no more water left to be allocated (Svendsen *et al.*, 2001:184). Basin closure therefore becomes a key variable in our understanding of Basins at Risk, because once that threshold is reached, water scarcity can become a trigger for conflict, unless sufficient second-order resources can be mobilized to mitigate that conflict.

By using the Southern African Regional Security Complex as defined by Buzan (1991:210), it is possible to use these concepts, linked as they are *via* the SAHPC, to develop a more nuanced understanding of the patterns of co-operation and competition in international river basins. More specifically, a nuanced understanding is possible by analyzing the hydropolitical configuration of Pivotal States versus Impacted States in each basin. In short, one can understand the dynamics of hydro-hegemony as it has evolved in South Africa, by using the Southern African Hydropolitical Complex as an analytical tool.

A simple ratio of Pivotal States to Impacted States in a transboundary basin can give some indication of likely strategies that can be considered by each state (Turton, 2005). For example, a basin with a Pivotal State downstream, is likely to have a regime that is negotiated upstream, in order to protect the interests of the Pivotal State. Similarly, a basin with a Pivotal State upstream, might not have enough incentive to negotiate a basin-wide regime downstream, and might thus manifest as a bilateral arrangement in a multilateral basin. Where more than one Pivotal State occurs in a given basin, there is more chance of a basin-wide agreement being negotiated, because it suits the combined interests of those states. The theoretical work by Lowi (1990:386) is useful in this regard, even if it is couched in the language of Realism (a trend that is outdated in contemporary International Relations literature).



Map 2. The Southern African Hydropolitical Complex showing the three Pivotal Basins, major inter-basin transfers and the location of the capital cities of the Pivotal States (Ashton & Turton, in press).

A unique aspect of the Southern African Hydropolitical Complex is the location of the capital cities of the four Pivotal States, all of which straddle watershed divides (Map 2). This means that major infrastructure is needed to service these economic and

political hubs. The more these cities grow the greater becomes the complexity associated with the procurement of a high assurance of supply, which can only be achieved by means of cooperation with co-riparian states (Turton, 2005).

The Orange River: A Pivotal Basin in the Southern African Hydropolitical Complex

The Orange River basin is the most developed of all the rivers in Southern Africa, with at least twenty-nine dams having a storage capacity of more than $12 \times 10^6 \text{m}^3$ (twenty-four in South Africa and five in Namibia) (Heyns, 1995:10-11) (see Map 3). The largest of these are the Gariiep Dam, with a storage capacity of $5,600 \times 10^6 \text{m}^3$ and the Vanderkloof Dam, with a storage capacity of $3,200 \times 10^6 \text{m}^3$, both of which are in South Africa, with the former being a critical component of the ORP (see Map 1). The fact that the Gauteng Province is 100% reliant on IBT water, all of which is channeled through the Vaal River system, illustrates the strategic importance of the Orange River basin, given the heavy reliance of the South African national economy on water from this particular basin. It is evident that the Orange River basin is the largest of all the international river basins in South Africa, both in terms of physical size, and in terms of the volume of water (MAR) involved. The importance of this river basin is also evident, because the Orange is a recipient basin for three IBTs; a donor basin for three IBTs; with four intra-basin transfers also in existence. The Orange River basin is considered to be “at risk” Wolf *et al.*, (2003:47), but this is refuted by Turton (2005).

Physical Description of the Orange River Basin

The Orange River basin has a total basin area of $964,000 \text{ km}^2$ with an annual MAR of $11,200 \times 10^6 \text{m}^3$. There are four riparians, with 4% of the basin area lying in Lesotho (upstream riparian and an Impacted State), 62% in South Africa (a Pivotal State), 9% lying in Botswana (a Pivotal State), and 25% in Namibia (downstream riparian and a Pivotal State) (see Maps 2 & 3). Contribution to MAR by each riparian is unequally distributed, with 55% coming from South Africa, 0% coming from Botswana, 41% coming from Lesotho and 4% coming from Namibia (Basson, 1999). There are slight variations in this data between the riparians, but this is not contested in any way, so this minor discrepancy is hydropolitically irrelevant. The Orange River carries approximately 20% of the total river flow in South Africa, with the Vaal being an important tributary (Basson *et al.*, 1997:40).

The Vaal River is regarded as being a river basin in its own right and provides Gauteng with all of its water. Gauteng (formerly Witwatersrand) in turn houses 40% of the South African population, creates 50% of the country's wealth and generates 85% of the electricity in the entire country (Conley & van Niekerk, 1998:146). It also produces 10% of the economic output of the entire African continent (Turton *et al.*, 2004b). In order to support this economic activity, the Vaal sub-basin has links to eight other river basins in a complex arrangement of IBTs that range from the Limpopo in the North, to the Sundays in the South (Heyns, 1995:18) (see Maps 1, 2 & 3). In the Vaal basin, much of the water returns to the Orange River as treated effluent, which is available for downstream users (Conley, 1995:11) A staggering 100% of the economic activity in Gauteng is reliant on IBTs (Basson *et al.*, 1997:55). This makes the Orange River of great strategic importance to South Africa, hence the significance of the LHWP (Blanchon, 2001; Davies *et al.*, 1993:169; Davies & Day,

Southern Africa. It began with the establishment of the Southern African Regional Commission for the Conservation and Utilization of the Soil (SARCCUS) in 1948. This has ten standing committees, one of which deals with water (Ohlsson, 1995:60). An historic overview of regime creation is presented in Figure 2. For the purposes of a detailed analysis, the basin has been divided into three distinct components - the upper, middle and lower basin - with international relations in the hydropolitical realm having been characterized by the creation of various bilateral regimes of increasing sophistication over time, until a multilateral basin-wide agreement was reached between all riparian states in 2000, known as the *ORASECOM Agreement* (Treaty, 2000b).

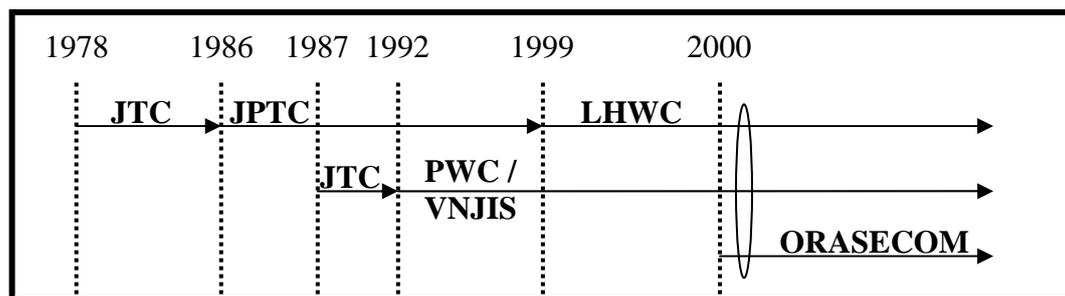


Figure 2. Historic Overview of Regime Creation in the Orange River Basin.

The Orange-Senqu River Commission (ORASECOM) that was established through the *ORASECOM Agreement* is the fourth basin-wide regime to be established in Southern Africa and the first under the *SADC Protocol on Shared Watercourse Systems* (Treaty, 2000b). A significant aspect of the *ORASECOM Agreement* is the fact that Botswana is a recognized riparian state, even though it contributes no stream-flow and makes no use of the surface water from the Orange River. This gives Botswana a wider range of diplomatic options by allowing concessions to be granted to other riparian states in return for political support in River Basin Commissions (RBCs) where they have a greater strategic interest such as in the Limpopo and Okavango basins (Turton, 2003a:152). This makes Botswana the balancer of political power in ORASECOM, with bargaining positions either in support of Namibia (in return for concessions elsewhere such as in the Okavango and Zambezi River basins), or in support of Lesotho (in return for future concessions such as the supply of water to Gaborone). This is classic *pouvoir*-styled politics at work.

The *ORASECOM Agreement* recognizes the *Helsinki Rules*, the *United Nations Convention on the Non-Navigational Uses of International Watercourses* and the *SADC Protocol on Shared Watercourse Systems*. It also refers to the *Revised Protocol on Shared Watercourses* with respect to definitions of the key concepts “equitable and reasonable” and “significant harm”. Dispute resolution is formally vested in the SADC Tribunal, which is a first for regime creation in the regional water sector. It recognizes the right of the Parties to form bilateral arrangements (such as the Lesotho Highlands Water Commission (LHWC) and the Permanent Water Commission (PWC) although these are not mentioned by name), and it says that any new Commission will be subordinate to ORASECOM, while existing Commissions must merely liaise with ORASECOM (Treaty, 2000b: Article 1, para.1.4). This means that the LHWC will essentially continue to function as a bilateral arrangement, but that downstream riparians will be kept informed of upstream developments. Similarly, the

PWC and its associated Vioolsdrift and Noordoewer Joint Irrigation Scheme (VNJIS) will also continue to exist as separate entities. As such, South Africa as the hydro-hegemon, will still have direct control over its strategic interest in the basin, while Botswana will have formally gained a foothold into negotiations on future water-sharing agreements between the riparians. This translates into a plus-sum outcome for all stakeholders in the Orange River basin, made possible only by *pouvoir*-based politics.

The Upper Basin: South Africa and Lesotho

Unlike the Limpopo basin case (where the management of international rivers *via* RBCs started in South Africa), for a long period of time there was no regime creation at all in the Orange River basin, until 1978 when a Joint Technical Committee (JTC) was established between South Africa and Lesotho to investigate the feasibility of the proposed LHWP (Mohammed, 2003:226). A year later the JTC tabled its preliminary feasibility investigation, and a decision was taken to proceed to the next stage of the work (Heyns, 1995:11). In 1986 the *Lesotho Highlands Water Project Treaty* was signed (Treaty, 1986a), but this did not constitute a determination of the apportionment of water according to Conley & van Niekerk (1997:11). The *Lesotho Highlands Water Project Treaty* has four protocols covering in detail aspects of design, construction, operation and maintenance, and the institutional arrangements needed to manage such a complex project. The *Lesotho Highlands Water Project Treaty* is the most comprehensive in existence in the Southern African water sector, with the main document being eighty-five pages in length, excluding annexures. From an institutional perspective, the *Lesotho Highlands Water Project Treaty* established two autonomous statutory parastatal bodies (Heyns, 1995:11). The Lesotho Highlands Development Authority (LHDA) is responsible for the management of the dam construction and related issues within Lesotho itself (Treaty, 1986a:23-32), whereas the Trans-Caledon Tunnel Authority (TCTA) is responsible for the management of the complex set of delivery tunnels into South Africa (Treaty, 1986a:33-39). In addition to these, a Joint Permanent Technical Commission (JPTC) was established, consisting of delegates from both riparian states, with the responsibility of coordinating the two parastatals, as well as to report back to their respective Governments. Article 10 of the *Lesotho Highlands Water Project Treaty* stipulates that South Africa is responsible for the costs of the project except for the Muela hydroelectric power station, which Lesotho has to pay for. Paragraph 6 of Article 11 of the *Lesotho Highlands Water Project Treaty* stipulates that South Africa will guarantee the loans. Article 5 of the *Lesotho Highlands Water Project Treaty* stipulates the calculation of royalty payments, which has been determined as half of the difference in cost for supplying $70\text{m}^3\text{s}^{-1}$ from the LHWP, and the least cost of the alternative Orange Vaal Transfer Scheme. Annexure II of the *Lesotho Highlands Water Project Treaty* stipulates minimum quantities of water to be delivered by the LHWP over time, starting with $57 \times 10^6\text{m}^3\text{yr}^{-1}$ in 1995, and ending with $2,208 \times 10^6\text{m}^3\text{yr}^{-1}$ after 2020. A related treaty deals with issues of diplomatic immunity for the JPTC members (Treaty, 1986b).

This regime was further strengthened in 1999 with the agreement on what became known as *Protocol VI of the Lesotho Highlands Water Project Treaty*, which upgraded the JPTC into the Lesotho Highlands Water Commission (LHWC) (Treaty, 1999a). This in turn resulted in the implementation of a new governance model that

retained the two parastatal bodies (TCTA and LHDA). This change was the result of a study that highlighted problems with respect to reporting relationships and lines of authority between the LHDA and the JPTC. The final proposals regarding those changes were accepted by the two Governments on 22 November 1995, and implemented in 1999 as the New Governance Model of the original *Lesotho Highlands Water Project Treaty* (Treaty, 1999b). In essence the implementation of the new governance model marked the end of the initial construction phase (Phase 1a) and the commencement of water delivery.

The Middle Basin: South Africa and Botswana

There was no regime creation with respect to the Orange River basin between South Africa and Botswana prior to the *ORASECOM Agreement*, but there is a strong history of close cooperation between the two riparians on the management of the Limpopo (Turton, 2004: 271-272; Turton, 2005). This is because although Botswana is technically a riparian state by virtue of its geographic location within the Orange River basin, it has contributed no streamflow in living memory, and the tributaries in that country can be regarded as being endoreic (Basson, 1999:17; Conley & van Niekerk, 1997:9; Heyns, 1995:10). Botswana therefore has had no overt interest in the Orange River basin prior to the *ORASECOM Agreement*; or stated differently, had not been given a chance to articulate those interests, because during the *puissance*-dominated past, regime creation was bilateral in nature, always involving South Africa as the hegemonic state, and one other hydrologically weaker riparian state. This is now changing as the Botswana government has begun to realize that one of its strategic future options is to possibly obtain water from Lesotho (or at least to keep that alternative open to future exploration) (Turton, 2003a:151).

The Lower Basin: South Africa and Namibia

In 1987 a Joint Technical Committee (JTC) was established to advise the South African government and the South-West African Transitional government on matters pertaining to the Orange River, referred to as the *Cooperation Agreement* (Treaty, 1987). Given that Namibia was not a sovereign state until 1990, and was therefore unable to enter into formal agreements with its' co-riparians, there was a spate of agreements signed immediately after independence (Pinheiro *et al.*, 2003:117). It was against this background that the JTC was upgraded during 1992, when a treaty was signed between South Africa and Namibia, known as the *Agreement on the Establishment of a Permanent Water Commission* (PWC) (Treaty, 1992b; Chenje & Johnson, 1996:165; Pallett *et al.*, 1997:70). At the same time an agreement was signed on the establishment of a Joint Irrigation Authority (JIA) to implement the *Agreement on the Vioolsdrift and Noordoewer Joint Irrigation Schemes* (VNJIS) (Treaty, 1992c; Chenje & Johnson, 1996:165; Pallett *et al.*, 1997:70). This was followed in 1994 by the launching of the Orange River Replanning Study (ORRS) (DWAF, 1998). Initially intended to clarify South Africa's own priorities as a country study, formal invitations were extended to Namibia and Lesotho to participate. This caused officials in those countries some unease at the time, because the study was not being conducted under the auspices of a recognized international forum, and South African officials also initially experienced misgivings at exposing potentially acrimonious internal deliberations to outside observers (Conley & van Niekerk, 1997:13). After the inception of the ORRS however, Namibia undertook its own study, to be followed by

Lesotho. While these two studies did not have observers from the other riparian states, the results were shared. This created an improved climate of trust. Subsequent to this, negotiations were started between all of the riparian states, motivated largely by Namibia, on the establishment of a basin-wide regime. This came to fruition when the Orange-Senqu River Commission (ORASECOM) was formally established on 3 November 2000 under the *ORASECOM Agreement*.

The Orange River Basin and Groundwater

An important aspect of the Orange River basin is associated with the resource-base in the context of an arid or semi-arid climate. While the Orange River is a significant resource in its own right, the geographic confines of the basin also cover groundwater reserves that are extremely important. Table 1 lists some of the more important transboundary aquifer systems to which South Africa is entitled. The hydraulic connection between the surface and groundwater resources has not yet been firmly established in all cases. In the context of the Orange River Basin, one of the reasons why Botswana has become such an active partner in ORASECOM, is the importance of groundwater that is sourced from the geographic extent of the basin. Within the broad parameters of Integrated Water Resource Management (IWRM) as a concept, groundwater is clearly a significant component, yet in practice this is not reflected in the transboundary water management regimes. ORASECOM therefore has no clear jurisdiction over groundwater resources, focusing instead on the surface flows in the Orange River system. Botswana has a vested interest in opening up the debate on the management mandate over groundwater, and is likely to use the growing acceptance of IWRM as a paradigm to introduce this aspect to future ORASECOM deliberations.

Transboundary River Basin	Riparian States	Transboundary Aquifer	Riparian States
Orange	Lesotho South Africa Botswana Namibia	Karoo Sedimentary Aquifer	South Africa & Lesotho
		Ramotswa Dolomite Aquifer	South Africa & Botswana
		Kalahari Aquifer	South Africa, Botswana & Namibia
		Gariiep Coastal Aquifer	South Africa & Namibia
Limpopo	Botswana South Africa Zimbabwe Mozambique	Tuli-Shashe Aquifer	South Africa, Botswana & Zimbabwe
		Pafuri Alluvial Aquifer	South Africa, Zimbabwe & Mozambique
Incomati & Maputo	South Africa Swaziland Mozambique	Incomati Coastal Aquifer	South Africa, Swaziland & Mozambique

Source: Ashton & Turton (in press).

The Orange River Basin within a Broader Regional Setting

The Orange River basin is an extremely important source of water for three of the most economically developed states in Southern Africa - South Africa, Botswana and Namibia. While it is the largest single water resource available to South Africa, it is also extremely important for Namibia, with a quarter of the total basin area falling under the sovereign control of that state, containing no less than five dams with a combined capacity of $452 \times 10^6 \text{m}^3$ (Pallett *et al.*, 1997:80). Botswana's main economic development is centered on the city of Gaborone, which can be supplied with water from Lesotho, and which is being fed at this moment in time from an IBT from South Africa and a major scheme in the form of the North-South Carrier (NSC), which derives its water from the Limpopo River basin. A unique feature of these three riparian states is the geographic location of the respective capital cities, all of which are located on (or near to) the watershed that defines the outer limits of the Orange River basin (see Map 2).

Critical Hydropolitical Issues within the Orange River Basin

From the perspective of regime creation, there are four critical issues to note within the Orange River basin.

(a) *ORASECOM and existing bilateral regimes*: The relationship of the historically older bilateral regimes (JPTC and PWC) with the relatively new basin-wide multilateral ORASECOM is as yet largely unknown. In this regard, Paragraph 1.4 of Article 1 in the *ORASECOM Agreement* specifically states that all parties have the right to form bilateral agreements, and that existing Commissions will merely liaise with ORASECOM. As such, the existence of ORASECOM does not threaten the hegemonic status of South Africa within the overall hydropolitical configuration of the basin, but this situation may not go unchallenged by other riparian states. The robustness of the *ORASECOM Agreement* as a regime *vis-à-vis* the existing bilateral arrangements will be tested in the middle-term future, with hydropolitically weaker riparian states like Namibia and Botswana probably throwing their support behind ORASECOM as a multilateral structure, while the hydro-hegemon (South Africa) is likely to opt for a maintenance of the *status quo* and the retention of the existing bilateral arrangements as the dominant instruments of cooperation.

(b) *Impact of basin closure*: Basin closure is known to result in a growing sense of insecurity for the respective riparian states in other international river basins, so why should the Orange River case be any different? In this regard, the key element is likely to be the extent to which water deficit impacts negatively on the economic growth potential of the respective riparian states. It is in this context that Sectoral Water Efficiency (SWE) starts to become relevant. The existing water use in the Orange River basin is known to be inefficient, with around 90% of the current allocation going to irrigation, which in turn produces low value crops (Basson, 1999:10). The relatively low SWE of agriculture will thus become a management focal point in the near future, with attempts being made to redirect agricultural water to industrial and other activities. This will likely have a significant social and political effect as the agricultural economy is slowly transformed to an industrial one. Significantly, the Namibian interest in the basin is mostly agricultural, so the shift to

industry is likely to favour South Africa and thus be complex to negotiate. ORASECOM as an institutional arrangement will be severely tested as water allocations are made between riparian states at some time in the future.

(c) *Strategic ramifications of IBTs:* Given the high level of economic development in the basin, and its central role in a number of existing IBTs, the Orange River basin is likely to become more of a recipient basin in future as current resource capture trends continue. This has the capacity to increase the conflict potential within the basin, particularly when donor basins such as the Thukela, Incomati, Maputo and others, have their own economic growth potential capped as the result of what is in essence a form of induced scarcity. Basson (1995:42) has already noted that “the operation of the water resources systems in the central part of South Africa already impacts on the flow of major rivers draining from the central plateau of the country. Therefore, it also impacts on Botswana, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe, as well as on Lesotho as a donor state”.

(d) *Hydrological data and regime creation:* The role of shared and uncontested hydrological data is clearly manifest in the Orange River basin. While the decision to make the ORRS an inclusive process was regarded with some misgiving at the time, it ultimately yielded a body of data that is transparent and uncontested. It can be argued that this aspect, combined with other factors such as the historic linkage between the Namibian and South Africa Departments of Water Affairs, is one of the main reasons why the conflict potential in the Orange River basin remains well within manageable limits, to the extent that the sovereign issue of border demarcation has become a *de facto* non-event.

The Adaptive Security Spectrum in the Orange River Basin

Given the importance of second-order resource availability to the initial establishment and subsequent maintenance of a regime in an international river basin, it becomes instructive to contextualize the Orange River basin in terms of the Adaptive Security Spectrum for South Africa’s Co-riparian States. The adaptive security spectrum as it applies to the Orange River basin is presented in Figure 3. From this it is evident that three of the four riparian states are considered to be adaptively secure, which suggests that they have the capacity to mobilize the political goodwill with which to manage the basin effectively. An interesting aspect of this case relates to governance, with a high dependence on scientific inputs into the management process, particularly when it comes to determining environmental flows and resource quality objectives in a basin that has reached closure. In this regard work currently being done at the Council for Scientific and Industrial Research (CSIR) in South Africa, in cooperation with the Global Water Partnership (GWP) and the Universities Partnership for Transboundary Waters (UPTW), suggests that a triad model is an appropriate governance structure. This model envisages a dynamic interaction between three major sets of stakeholders – government, science and society – with the interfaces between each being of specific relevance (Turton *et al.*, 2005). It is likely that this model will be tested in the management of the Orange River in the future.

The real-life situation as it pertains to the Orange River basin, specifically with respect to the clustering of adaptively secure states, challenges the conclusion by Wolf *et al.*, (2003:47) that it is a basin “at risk”. In reality, of all the international river

basins in Southern Africa, the Orange has a functioning set of bilateral regimes, one of which is arguably the most sophisticated in the SADC region (*Lesotho Highlands Water Project Treaty*), and a new but apparently healthy basin-wide regime (*ORASECOM Agreement*) (Turton, 2005).

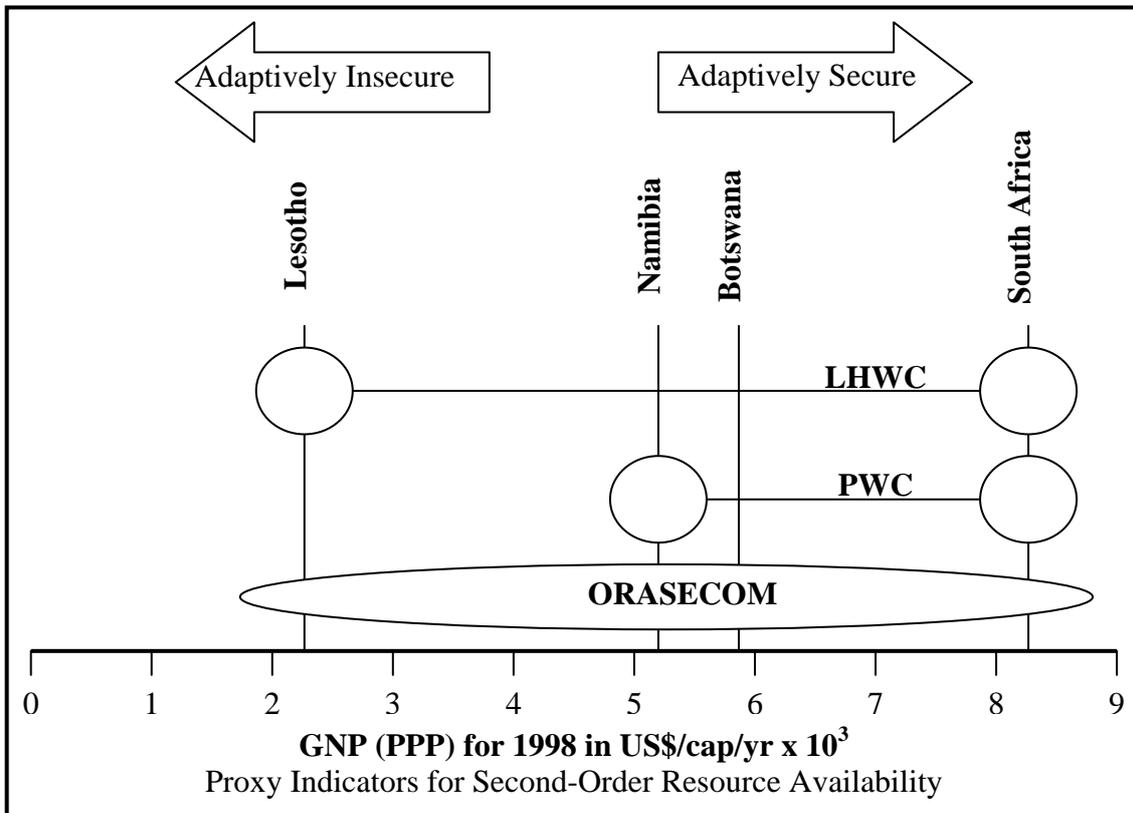


Figure 3. The Adaptive Security Spectrum in the Orange River Basin (Drawn from World Bank 2000:42-43 data used in Turton & Warner 2002:65) (Turton, 2003c:213).

Conclusion Regarding the Orange River Basin

South Africa, as a hydro-hegemon with a history of both military and economic destabilization, is an interesting case to study. It is therefore significant to note that the preferred option has been to move the management of a strategic resource like water, out of the security domain with a dominant *pouissance*-focus, into the normal political domain with a more robust *pouvoir*-focus. This is commensurate with findings by Gleditsch *et al.*, (2005) that states with endemic water scarcity, have a vested interest in finding cooperative solutions that minimize the potential for future conflict (Turton, 2005). This has major ramifications for the study of hydropolitical power and negotiation strategy, with the Orange River case showing a preponderance of *pouvoir* over *pouissance*, associated as it is with a plus-sum outcome that benefits all of the riparian states. The Orange River basin has the most comprehensive history of successful regime creation in the entire Southern African region, with the *Lesotho Highlands Water Project Treaty* being the most complex bilateral arrangement in existence, placing it somewhat at odds with Wolf *et al's.*, (2003:47) classification of being a so-called Basin at Risk. This experience has subsequently been cascaded

across to the Incomati River Basin *via* the Komati Basin Water Authority (KOBWA) and the *Incomaputo Agreement*, and is also starting to find its way into the Limpopo Water Commission (LWC). The negotiation of such complex arrangements is a classic example of *pouvoir* at work, because it reflects the power of the state, not as naked military might (*puissance*), which is always difficult to sustain over time, but rather as the more robust yet subtle power to control through political engagement. This is the major lesson to be learned from the Orange River case in general, and the Southern African Hydropolitical Complex in particular.

This reflects South African strategic needs for water, with regime creation having been driven largely by their own national interest over time. An interesting aspect of the basin is the role that was played by Namibia in driving the *ORASECOM Agreement* negotiations, which reflects the fact that downstream riparians with a high resource need have a vested interest in taking the lead in regime creation, because it is perceived to be in their own national interest. In short, the Namibian engagement merely reflects the realization that *pouvoir* is more robust than *puissance*, because it enables asymmetrical power arrangements to be engaged through the clever use of negotiations and international legal instruments like negotiated inter-governmental regimes. The Orange River basin thus illustrates five distinct hydropolitical tendencies.

(a) *Hydropolitical conditions favouring bilateral regimes*: Hegemonic states with a high resource need logically prefer to enter into bilateral arrangements, particularly where the source of their strategic supply is located upstream, because under such conditions, they are more likely to have their national interest served.

(b) *Hydropolitical conditions favouring multilateral regimes*: Other states within a given international river basin, with high resource needs but in a low-order riparian position, logically prefer a multilateral basin-wide approach, with a preference for well-defined legal principles such as “equitable and reasonable” use and “significant harm” as central components, because these best serve their own national aspirations.

(c) *Emergence of a hydropolitical complex*: Certain riparian states with cross-cutting interests, such as those manifest by Botswana, which has a greater interest in other basins such as the Limpopo, Okavango and Zambezi, can maximize their strategic advantage by becoming involved in certain regime creation where they act as balancers of hydropolitical power. Similarly, with Namibia being hydrologically insecure but adaptively secure, the clever use of negotiations and the recognition of the enduring value of *pouvoir*, has managed to drive regime creation to the extent that their future strategic needs are adequately taken care of. This has provided impetus to the emergence of a Hydropolitical Complex, clustered on Pivotal Basins in which key riparian states have a high dependence on the transboundary resource-base for their long-term economic security. The real significance of this dynamic is associated with the de-securitization that is inherent to the *pouvoir*-dominant process. Seen in this light, a plus-sum outcome has been possible with all riparian states emerging with their key strategic interests having been met. This suggests an enduring nature to the cooperative solution in the form of basin-wide management that the *pouvoir*-approach seems to engender.

(d) *Hydrological data and regime creation*: The role of uncontested basin-wide hydrological data in the establishment of a climate of trust is a distinct feature of the Orange River basin. This highlights the significance of second-order resources as a factor in the negotiation and maintenance of a regime in an international river basin. Significantly, this is not possible using *pouissance*-styled political engagement, because under such conditions knowledge is seen to be power, so shared knowledge translates into a dilution of that power. In contrast to this, a *pouvoir*-styled approach sees data as being the vehicle that builds a common future vision and hence a relatively uncontested relationship in which the conflict potential is mitigated by becoming proceduralized.

(e) *Second-order resources as an independent variable*: The prognosis for the stability and success of ORASECOM in good, given the fact that the membership is mostly distributed across the upper end of the adaptive security spectrum, thereby challenging the conclusion by Wolf *et al.*, (2003:47) that the Orange River basin is “at risk” (Turton, 2005). The real value of this aspect is found in the border issue between South Africa and Namibia. With both riparians being adaptively secure, they have managed to negotiate an RBC that is robust enough to endure challenges to sovereignty, which under “normal” conditions could become a driver of armed conflict in its own right. As such the *pouvoir*-styled engagement that is possible in ORASECOM, has refocused the core management issue around the technical aspects of water resource management, and deliberately avoided the high politics normally associated with territorial issues.

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