

A Hydropolitical Complex as a Factor in the International Relations of Contemporary Southern Africa

By

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Introduction

This article explores some of the ramifications of the co-riparian status of the most economically developed states in the Southern African Development Community (SADC) region on key international river basins by using elements of Security Complex Theory. The first section reviews key elements of Security Complex Theory as espoused by Buzan (1991; 1994), Buzan *et al* (1998) and Buzan & Wæver (2001). This is followed by a brief review of the work by Schulz (1995) with respect to the concept of a Hydropolitical Security Complex. Finally, the article reviews current work being done by the author in Southern Africa that makes use of these theoretical elements. The fundamental logic that has driven this research effort is the fact that four of the economically most developed states in the SADC region - South Africa, Botswana, Namibia and Zimbabwe - also share two major international river basins - the Orange and Limpopo - along with a number of other strategically important transboundary watercourses. The key research question is related to two basic elements: these four states have already reached, or are reaching, the limit of their readily available water resources, which can limit the future economic growth potential of each state; and each of these states has a high reliance on transboundary river systems. The question that arises is to what extent is the politics of shared river basins likely to become a factor in the international relations between SADC states in the near future?

A Brief Overview of Security Complex Theory

A security complex is a set of units (usually states), whose major processes of securitization, desecuritization, or both, are so interlinked that their major security problems cannot reasonably be analyzed or resolved apart from one another (Buzan *et al.*, 1998:201; Buzan & Wæver, 2001:37). In this regard, securitization is constituted by the inter-subjective establishment of an existential threat within any sector (military, political, economic, societal and environmental) with a saliency sufficient to have substantial political effects (Buzan *et al.*, 1998:25); whereas desecuritization refers to the shifting of specific, strategically important issues out of the emergency mode and into the formal bargaining processes of the political sphere (Buzan *et al.*, 1998:4). Security complexes thus emphasize the interdependence of both rivalry and shared interests

(Buzan, 1991:190), or stated differently, reflect the shifting patterns of amity and enmity over time (Buzan, 1991:198). Security complexes are analytical entities consisting of units displaying distinct patterns of both amity and enmity, characterized by predominantly inward looking national security relationships, surrounded by a zone of relative indifference.

Buzan (1991:194 & 210) has noted the existence of a regional Security Complex in Southern Africa comprising the mainland SADC states of the Republic of South Africa, Namibia, Botswana, Zimbabwe, Zambia, Lesotho, Swaziland, Mozambique, Angola and Malawi. Given the fact that national security is a relational issue, usually mitigated by geographic proximity, the role of international river basins as an element of a regional security complex becomes an interesting, and as yet, largely unexplored analytical variable. In the case of contemporary SADC for example, there are no less than 16 rivers that cross the political borders of two or more states in the region. As such sovereign control over these rivers is shared when seen from the perspective of any given basin that is being managed as a hydrological entity. These international river basins are presented in Table 1.

Table 1. International River Basins found in the SADC Region.	
River Basin	Riparian States
Buzi	Mozambique, Zimbabwe.
Cunene	Angola, Namibia
Cuvelai	Angola, Namibia
Incomati	Mozambique, South Africa, Swaziland
Limpopo	Botswana, Mozambique, South Africa, Zimbabwe
Maputo	Mozambique, South Africa, Swaziland
Nata	Botswana, Zimbabwe (a component of the Makgadikgadi System)
Nile	Burundi, Democratic Republic of Congo (formerly Zaire), Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda
Okavango	Angola, Botswana, Namibia
Orange	Botswana, Lesotho, Namibia, South Africa
Pungué	Mozambique, Zimbabwe
Rovuma	Malawi, Mozambique, Tanzania
Save	Mozambique, Zimbabwe
Umbeluzi	Mozambique, Swaziland
Zaire (Congo)	Angola, Burundi, Cameroon, Central African Republic, Congo, Democratic Republic of Congo (formerly Zaire), Rwanda, Tanzania, Zambia
Zambezi	Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe

Threats to economic security can be seen as being a national security issue, because relative economic growth is a major determinant of the power of states within a given system (Buzan, 1991:242). This is particularly pertinent to international river basins that are reaching the point of closure. In this regard, a closed river basin is one with no

utilizable outflow of water (Seckler, 1996). A river basin is said to be facing closure when all of the readily available water has been allocated to some productive activity and there is no water left to be allocated (Svendsen *et al.*, 2001:184). When this condition is reached, competition for water becomes high, with a resultant increase in conflict potential. This can become an issue of high politics when this water scarcity results in a limitation of the economic growth potential of the state, or stated more accurately, when perceptions that this is possible take root in the ranks of the political elites of a given riparian state.

Seen in this light, international river basins form an important element of the Southern African Security Complex - a fact that seems to have gone largely unnoticed by scholars - leaving a significant gap in the International Relations literature of the region.

A Hydropolitical Security Complex as a Concept

Using the above-mentioned theory, Schulz (1995) has developed the concept of a Hydropolitical Security Complex in the context of the Tigris and Euphrates River Basins. He defines a Hydropolitical Security Complex as “including those states that are geographically part ‘owners’ and technically ‘users’ of the [shared] rivers and further, as a consequence, consider the rivers as a major national security issue. In this way Turkey, Syria and Iraq compose a security complex or, rather, form *the Euphrates and Tigris hydropolitical security complex*” (emphasis in original text)(Schulz, 1995:97).

Emerging from this analysis, Schulz isolates what he calls horizontal and vertical relations within the Euphrates and Tigris Hydropolitical Security Complex, and between that complex and other complexes. Vertical linkages include relationships with higher structural levels, such as superpower rivalry, whereas horizontal linkages relate to the same structural levels between complexes, such as the Palestinian-Israeli linkage (Schulz, 1995:97).

The significance of this work by Schulz is that it indicates what can happen in the field of hydropolitics, if water resource management becomes linked to national security concerns, or other issues of a high politics nature. This has happened in many parts of the Middle East North Africa (MENA) region, where economically damaging water deficits first arose (Allan, 2000:37). One of the indicators of the securitization of water resource management is the classification of hydrological data as secret, and its consequent removal from the public domain, which has occurred in the MENA region (see Lesch, 1992:148; Warner, 1996). It therefore becomes instructive to understand the dynamics of this process, and in particular, ways of avoiding the securitization of water resource management. In support of this, it is interesting to note that Allan (2000:245) has found the concept of Security Complexes to be a useful way of describing the hydropolitical dynamics of the MENA region.

The Southern African Hydropolitical Complex

Using the work of Buzan (1991; 1994), Buzan *et al.*, (1998), Buzan & Wæver (2001) and Schulz (1995), the author has been developing a model that factors in the hydropolitical dimension of international relations within the SADC region (Turton, 2001; 2003a; 2003b; 2003c; 2003d). The rationale for this model is based on the fact that a large number of international rivers (refer to Table 1) establish a permanent linkage between different states within the Southern African Security Complex as originally defined by Buzan (1991:210).

The importance of water to any given national economy is self-evident. No state has ever developed economically without developing its national water resources. It can be said that the reliable availability of water is a fundamental determinant of the economic growth potential of the state. This makes reliable access to sustainable water supply a strategic issue, particularly for developing countries that are situated in arid and semi-arid regions of the world. The full significance of water in the context of Southern Africa is illustrated by the fact that the first protocol that was signed within the context of SADC was the Protocol on Shared Watercourse Systems (Ramoeli, 2002:105). Heyns (2002:158) notes that one of the major development challenges in the near future within the context of SADC will be the implementation of large, regional water transfer schemes in order to meet the economic limitations imposed by endemic water scarcity.

The SADC region is characterized by significant maldistribution of water resources, with large swathes of land receiving less than 500 mm of precipitation per annum. In fact, around 60% of the total mean annual runoff (MAR) of the entire Southern African region arises from just 20% of the land surface area. Coupled with this is an extremely high evaporative demand, which means in effect that what water does fall as rain, is almost immediately lost to evaporation. In South Africa for example, the annual average rainfall is 487 mm, with one of the lowest conversions of rainfall to runoff in the world. In fact, the total average runoff (that portion of rainfall that is not lost to evaporation and which eventually finds its way into rivers) is only some 10% of total annual rainfall (Rabie & Day, 1992:647). Of the resultant runoff that becomes streamflow, a mere 60% (Rabie & Day, 1992:647) to 62% (O'Keefe *et al.*, 1992:278) can be economically exploited, because of the extreme variability of these rainfall events. This natural climatic variability has acted as a stimulus for the construction of dams in an attempt to retain as much streamflow as possible. Significantly, the World Commission on Dams report listing the top ten countries by virtue of the number of dams constructed for particular purposes (irrigation, water supply, flood control and hydropower), contains both South Africa and Zimbabwe (WCD, 2000:373).

The erratic nature of streamflow, particularly in Namibia, Botswana, Zimbabwe and South Africa, has also resulted in a number of ephemeral rivers in the region. A distinguishing fact of the SADC region is that Botswana and Namibia have no permanent rivers flowing on their sovereign soil, other than a short reach of the Okavango, which is difficult to exploit for a variety of reasons. This series of facts is generally left unexplored in the International Relations literature of the region, so the political implications of this

are largely unknown at present. This has prompted the author to develop a series of research projects in Southern Africa, in an effort to determine the role of international river basins as potential drivers of political dynamics within SADC in future, particularly in light of the unpredictability of global climate change as an interceding variable. This has led to the development of a typology of riparian states and international river basins, which appears at first glance to be useful.

As noted earlier, a distinguishing feature of the SADC region is the large number of international river basins. The relevance of this fact becomes clearer when one realizes that four of the economically most developed states in the region - South Africa, Botswana, Namibia and Zimbabwe - are all water scarce. In fact these four states have all approached the limits of their readily available water resources, so water scarcity is posing a fundamental limitation to economic growth potential in the near future. Significantly, these four states are also linked by virtue of their co-riparian status with each other, in the Orange and Limpopo River Basins.

The emerging typology is based on a distinction between two distinct types of riparian state (pivotal state and impacted state), and two distinct types of international river basin (pivotal basin and impacted basin). In this regard, the following definitions have been developed (Turton, 2003d):

- Pivotal States are those riparian states with a high level of economic development that also have a high reliance on shared river basins for strategic sources of water supply. In the context of Southern Africa, there are four states in this category - the Republic of South Africa, Botswana, Namibia and Zimbabwe.
- Impacted States are those riparian states that have a critical need for access to water from international river basins that are shared with a Pivotal State for their own economic and social development, but by virtue of the unequal power relations within the basin concerned, are unable to negotiate what they consider to be an equitable allocation of water. In the context of Southern Africa, there are seven states in this category - Angola, Mozambique, Swaziland, Lesotho, Zambia, Malawi and Tanzania.
- Pivotal Basins are those international river basins facing closure that 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 the context of Southern Africa, there are two basins in this category - Orange and Limpopo.
- Impacted Basins are those international river basins that have at least one (or more) of the Pivotal States as co-riparians, which in turn reduces the freedom of choice for the Impacted States to develop their water resources in a manner that they deem to be fair and equitable. In the context of Southern Africa, there are seven basins in the category - Zambezi, Cunene, Okavango, Incomati, Maputo, Pungué and Save.

Using these key concepts, the author has started to develop a model that attempts to show the impact of inherent patterns of amity and enmity within international river basins as a

critical component of the Southern African Security Complex as defined by Buzan (1991:194). Figure 1 shows the author’s rendition of what he visualizes as being the structure of the Southern African Hydropolitical Complex. In this regard it must be noted that earlier work by the author used the terminology “Southern African Hydropolitical Security Complex” (Turton, 2001), in keeping with the work by Schulz (1995). Subsequent research has shown that the degree of securitization within the water sector is far less in Southern Africa than is the case in the Euphrates and Tigris Hydropolitical Security Complex, prompting the author to rethink the concepts being used, and to remove the word “security” from the chosen name of the concept. Within the SADC region however, water has a long history of politicization, having played a prominent but subtle role during the conflict years of Superpower overlay and Apartheid’s struggle for regional hegemony (Turton, 2003a). In the post-Apartheid era, the overt nature of water politics has changed somewhat in the region, but the underlying drivers remain largely unchanged. The four economically most developed states in the region are the most water scarce, they all share international river basins with other states, and they all face significant limitations to their future economic growth prospects as a result.

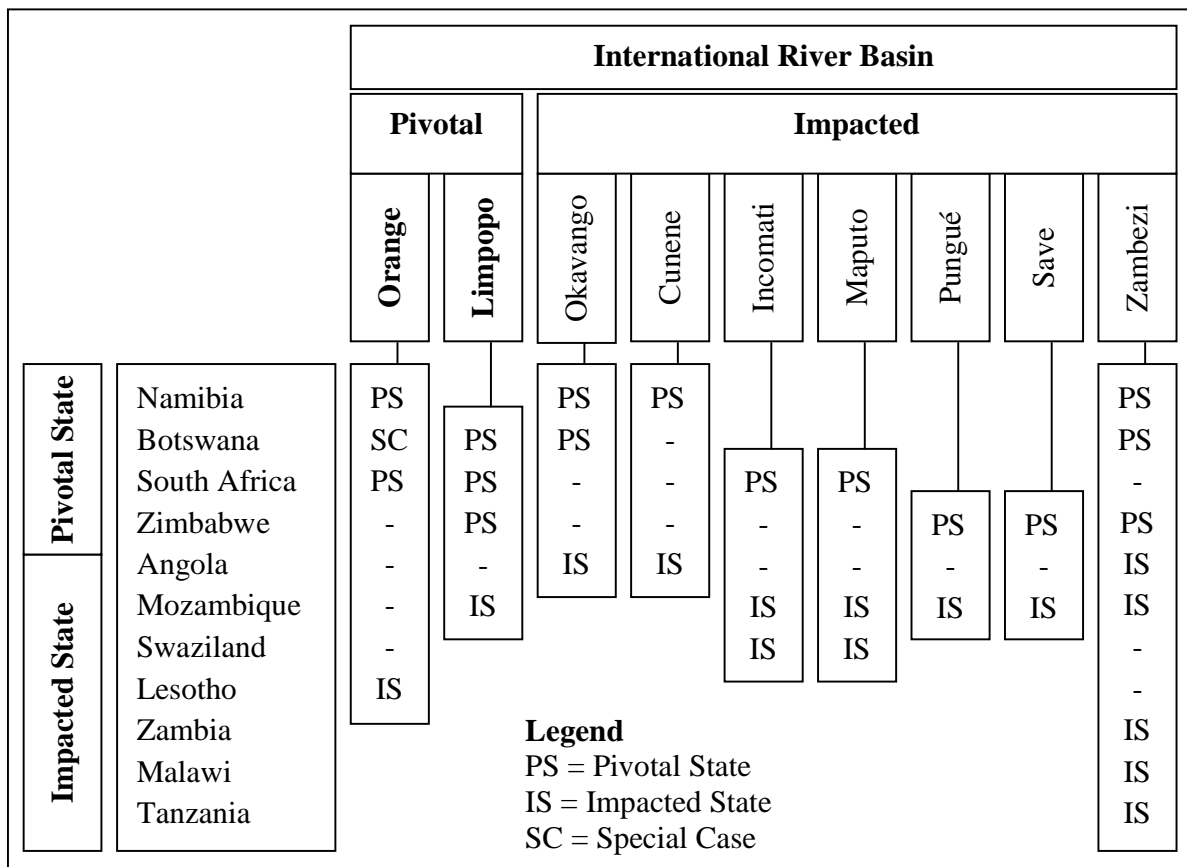


Figure 1. Schematic representation of the Southern African Hydropolitical Complex.

By using these conceptual nuances, the facts presented in Table 1 start to take on a new meaning. Clearly all international river basins are not equal in strategic importance or in

terms of their inherent conflict potential. The two Pivotal Basins in the SADC region are the Orange and Limpopo, by virtue of three critical criteria: significant portions of the basin fall within Pivotal States; those Pivotal States have a high reliance on the water from those basins; and the basin itself is approaching the point of closure. A deeper analysis of the two Pivotal Basins raises a number of subtle but important facts that are not visible when one uses the Regional Security Complex approach on its own. For example, the larger of the two Pivotal Basins in terms of volume is the Orange River (11,200 Mm³ per annum compared with 5,750Mm³ per annum for the Limpopo)(Basson, 1999). The Orange River is extremely important for South Africa, arguably being the strategically most important river it has unfettered access to. Botswana is listed in Table 1 as being a co-riparian, yet the portion of the basin that lies within the geographic area of that country is located within the Kalahari Desert. As such the watercourses within the Orange basin that lie in Botswana are ephemeral in nature, contributing no streamflow to the main stem of the river. Botswana is therefore listed as being a Special Case, because it occupies its position as co-riparian in all deliberations over the Orange River, but it makes no use of the water and it contributes no streamflow. This prompts one to ask why this should be the case? The answer is revealed when one examines Botswana strategic interests in greater detail. Botswana is a rapidly growing economy and is critically water scarce. The main economic growth hub is located around Gaborone, which is supplied with water via the recently completed North-South Carrier, deriving its source of supply from the Limpopo Basin. This supply is supplemented by a small transfer from South Africa via the Molatedi Dam (Conley, 1995:13). Gaborone can be supplied in future by gravity from Lesotho, giving it a strategic interest in the Orange Basin. In addition to this however, Botswana can use its presence in all international negotiations on the Orange River Basin, to leverage advantage for itself in other more strategically important basins such as the Limpopo and Okavango. This can be achieved by offering to support certain parties such as South Africa in return for diplomatic favours in other deliberations on the Limpopo or Okavango River Basin. Conversely, pressure can be placed on South Africa by offering to side with Namibia when future deliberations about Phase 2 of the Lesotho Highlands Water Project (LWHP) occur. Seen in this light, Botswana is certainly not as powerless as it first seems on the strength of hydrological data alone, and can be seen as being the balancer of hydropolitical power in both the Orange and Limpopo River Basins. The significance of this only becomes apparent when one understands the historic relevance of past South African planning to gain access to the waters of the Zambezi River, via Botswana (Blanchon, 2001:123; Borchert & Kemp, 1985; Borchert, 1987; James, 1980; Midgley, 1987:15; Scudder *et al.*, 1993:263 & 268; Turton, 2003a; Williams, 1986), which now seem to have been placed on the backburner in the immediate post-Apartheid era, but which could conceivably be resurrected in the future as water scarcity becomes more acute in the various Pivotal States.

Referring now to the concepts of an Impacted Basin and an Impacted State, again a more nuanced understanding of the international relations of the SADC region can be developed. Figure 1 indicates the existence of no less than seven Impacted Basins and seven Impacted States. What is the significance of this in terms of the international relations of the region? Two classic examples exist by way of illustration.

The first is found in the Okavango River Basin, which is strategically important for the two Pivotal States (Namibia and Botswana) that lie downstream. The Okavango is somewhat of a unique river basin. It is endoreic in nature, meaning that it does not flow into the sea. The water that arises from the relatively water-abundant Angolan highlands, flows into the Kalahari Depression in Botswana and simply disappears, lost largely through evapotranspiration in the Delta (Scudder *et al.*, 1993:290; Turton, 1999). In this case, the two downstream riparians are Pivotal States with a high resource need, but they are held captive in a sense because the upstream riparian (Angola) is somewhat reluctant to agree to anything that will ultimately limit its own future economic development potential, which is likely to become more important as post-war reconstruction commences. Therefore, when seen strictly in terms of the Okavango River Basin, both Namibia and Botswana can be considered as being rivals with different development agendas and resource needs. Namibia and Botswana are not entirely equal in terms of hydropolitical power in this basin however. Namibia is highly dependent on water from the Cunene River Basin, which it shares with Angola. As such, there is a long history of cooperation between Namibia and Angola, which is not mirrored by the Botswana experience. Namibia and Botswana are also co-riparians on the Zambezi, but they both share portions of the basin that are unfavorable for the development of the resource. This forces them into a cooperative mode. As such, Namibia and Botswana could be induced into cooperation with Angola in order to develop the water resources of the Zambezi in future, which can also impact on their negotiations regarding the Okavango. Similarly, South Africa could consequently gain future access to Zambezi River water only if it is channeled via Botswana, which could be used to the advantage of the latter, illustrating the complexities of future strategic hydropolitical options in greater detail.

The second relates to the Impacted State of Mozambique, which shares a number of international river basins and on paper ought to be relatively water abundant. The truth is somewhat more pessimistic however. In all six cases presented in Figure 1, Mozambique is a downstream riparian and therefore in a traditionally weak position. In the case of the Limpopo as a Pivotal Basin, Mozambique is downstream of three of the four regional Pivotal States, so the volume of water left after the strategic needs of those states has been taken care of is negligible. Furthermore, any attempts by Mozambique to develop dams on the Limpopo will be opposed by the upstream riparians because this will mean that they will have to relinquish a degree of sovereign control over water that they already monopolize. On the other five Impacted Basins, Mozambique is downstream of South Africa (as an historically hegemonic Pivotal State) in two cases (Incomati and Maputo), and downstream of Zimbabwe (as a Pivotal State with a known aggressive posture) in two cases (Pungué and Save), being downstream of seven riparians (three of them being Pivotal States) in the case of the Zambezi. This means that in the overall context of the hydropolitics of Southern Africa, Mozambique is always in a weaker position than its co-negotiating partners, which is manifest in the relative absence of working agreements involving Mozambique, and which accounts for the extremely cautious approach that Mozambican officials have always adopted when negotiating the SADC Protocol on Shared Watercourse Systems and the various Zambezi River agreements that have been attempted in the past.

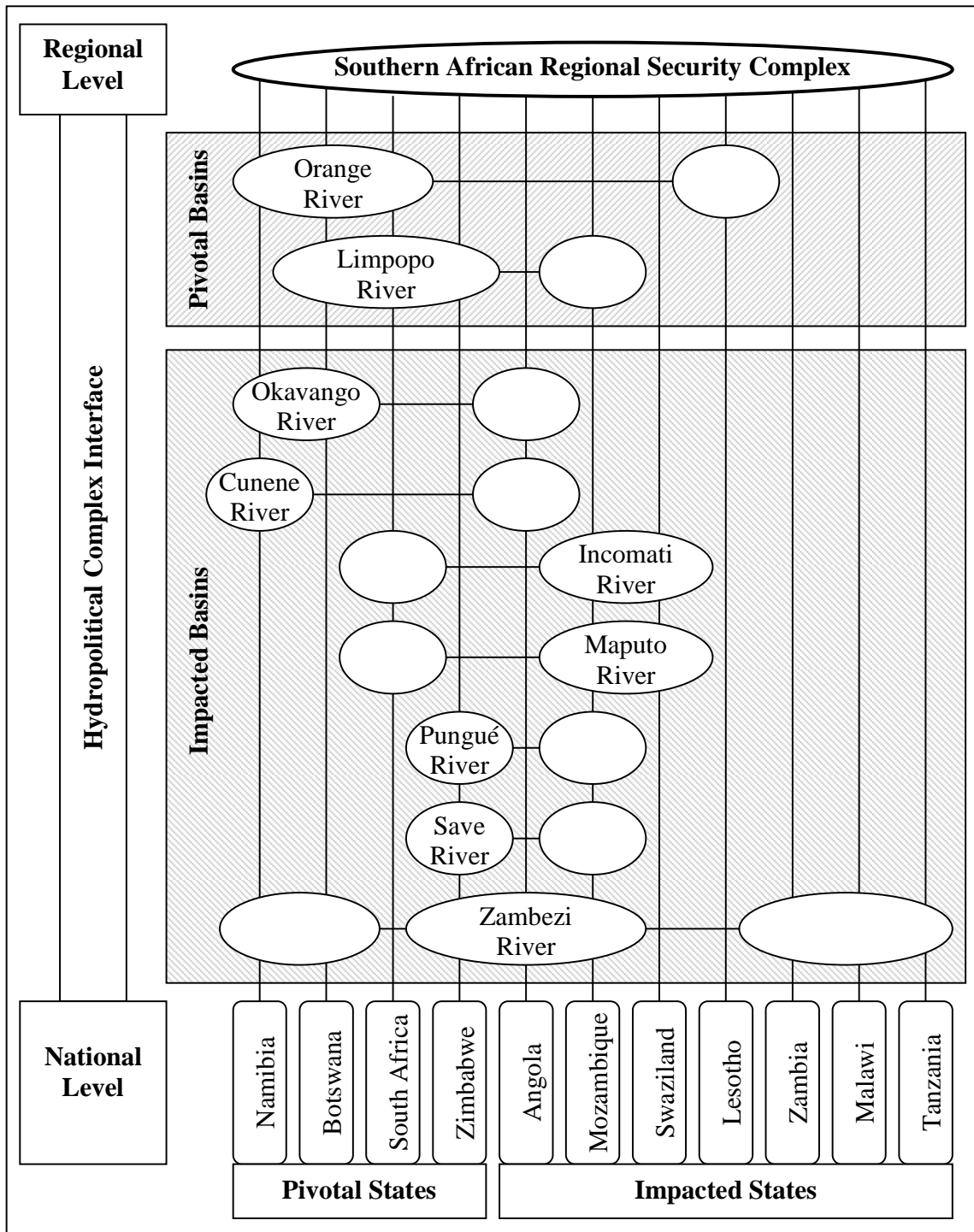


Figure 2. Schematic rendition of the Southern African Regional Security Complex showing the relationship of the Hydropolitical Complex as an interceding variable.

Seen in this light then, the hydropolitical dimension of the international relations of Southern Africa can be seen as being a key component of the Regional Security Complex, acting as an interceding variable on occasion. This is shown schematically in Figure 2. Nowhere in contemporary Southern Africa is there hard evidence of the emergence of a Hydropolitical Security Complex along the lines of that found in the Euphrates and Tigris River Basin, and possibly the Nile and Jordan River systems. This has resulted in a revision of the original concepts used by the author (Turton, 2001) to those presented subsequently (Turton, 2003a; 2003c).

A Hydropolitical Complex as an Element of the Southern African Regional Security Complex

So what are the implications of the development of these theoretical elements?

Firstly, it is felt by the author that by using these new concepts, a more nuanced understanding can be developed of the international relations dynamics of the Southern African region. This is particularly relevant in the post-Cold War and post-Apartheid era, where the dynamics of regionalism seem to be more strongly manifest than before.

Secondly, the current drought and looming famine can be analyzed in greater detail than before. The role of water as an independent variable in the overall political dynamics of the SADC region can now be assessed in greater detail. The implications of this for early-warning capabilities are self-evident. For example, while environmental factors have long been considered by some as being a driver of migration and conflict (Homer-Dixon, 1991; 1994a; 1994b; 1996; 1999), few predictive models have been developed.

If there is any validity to the author's assertion that a Hydropolitical Complex exists in Southern Africa, and acts as an important interceding variable in the context of the Regional Security Complex that Buzan has identified, then it becomes potentially fruitful to dwell for a few moments on four strategic issues that arise.

The first strategic issue that needs to be unraveled further is the implication of water as a limiting factor to the long-term economic growth potential of the four Pivotal States in particular, along with the implications of this for the seven Impacted States in general. In this regard it has been suggested by Turton & Warner (2002:67) that the determining variable is the relative availability of so-called Second-Order Resources. This has been defined by Ohlsson (1999:161) as the ability of societies, administrative organizations and managers responsible for dealing with natural resource scarcities, to find the appropriate tools for dealing with the consequences of those natural resource scarcities. This is similar to the logic used by Homer-Dixon (1994c; 1995; 1996; 2000) and Barbier & Homer-Dixon (1996) in developing the case for ingenuity as a resource with which to develop economies. If this is true, then the Pivotal States will need to mobilize significant quantities of what Ohlsson calls "second-order resources", and what Homer-Dixon calls "ingenuity", if they are to avoid the consequences of water scarcity as a limiting factor to their future economic growth potential. In other words, if a Hydropolitical Security Complex along the same lines as that found in the Euphrates and Tigris River Basins is to

be avoided in Southern Africa, special emphasis will have to be placed on the mobilization of so-called “second-order resources” by the relevant Pivotal States. What are the necessary conditions for this to occur in a sustainable manner?

The second strategic issue relates to what can be considered to be the great unknown of our modern times - the political impact of Global Climate Change in the developing world. In all likelihood, climate change will create more variability in what is already a highly variable precipitation pattern. This is likely to result in more extreme events such as floods, droughts and famines, with a series of knock-on effects that are not fully understood. From an early warning perspective, this has major ramifications for SADC and its international trading partners.

The third strategic issue relates to the conflict potential of water scarcity. This is not well understood at present, despite the work that has already been done by Homer-Dixon (1991; 1994a; 1994b; 1994c; 1996; 1999) and others (Molvaer, 1989; Porter, 1998; Turton, 2003b; Warner, 2000; Westing, 1991). A significant component of this issue-area relates to the impact of famine and drought as manifest in the SADC region. To what extent can this have a politically destabilizing effect? How will this impact on the economic growth potential of both Pivotal and Impacted States in the SADC region?

This leads directly into the fourth strategic issue, which relates to the trade of Virtual Water as a mitigator of the conflict potential inherent in water scarcity. Virtual Water is the volume of water used to produce a commodity such as wheat, which has been identified as one of the fundamental reasons why war over water has not erupted in the water scarce economies of the MENA region (Allan, 1997; 1998a; 1998b; 1999; 2000; 2002). Basically, it is easier to meet national water deficits via the importation of water-rich cereals, but this raises a series of downstream political issues that are not yet fully understood. For example, what level of economic activity is needed in a given Pivotal State before it can rely on the importation of Virtual Water as a strategic solution to the problem of endemic water scarcity? What new dependencies arise from this situation, particularly in terms of a global economy that is characterized by a playing field that is skewed in favour of the industrial nations of the world? How can this trade in Virtual Water be used to balance out the skewed intra-regional trade patterns within SADC, with hard currency being directed to water water-rich but economically weak economies such as Zambia, Angola, Mozambique and the Democratic Republic of Congo, rather than being sent to the already rich United States of America, Canada and the European Union?

Conclusion

This article has attempted to show that the Southern African Regional Security Complex is a useful but incomplete concept when it comes to understanding the nuanced international relations of the SADC region. In this regard, what has been called a Hydropolitical Complex can be thought of as being an important interceding variable within the Regional Security Complex, acting as a mediating factor at three different but distinct levels: between states that may be linked by virtue of co-riparian status on either Pivotal or Impacted River Basins; between the state level and the regional level, and

between the regional level and the global trade arena. As such, the concepts allow a range of both vertical and horizontal linkages to be isolated and evaluated. These ideas are being incorporated into work that is currently being done by the author, which is being offered to other scholars of International Relations in an attempt to streamline the concepts, and build better models for future use by researchers and decision-makers alike.

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