

Chapter 7

An analysis of trans-boundary water management in the SADC in the context of Pan-Africanism and regional integration

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Abstract

This paper examines how trans-boundary water management is used as part of climate change adaptability within the context of the Southern African Development Community (SADC) and weakening Pan-African ideology. This is because it appears as if at the level of regional integration, Pan-Africanism is abandoned for a different set of inspiration, theories and actors. Thus, the paper's intention overlaps internal conceptual and political problematics inherent in Pan-Africanism using documentary review and a field visit to the Limpopo Watercourse Commission, a river basin organization in Southern Africa, to examine geographical realities, river basin organizations and climate change in an increasingly interdependent and pragmatic global order. Findings point out that the structures of trans-boundary water management in the SADC show that it uses a functionalist approach. This is apparent in the role of trans-boundary water management and integrated water resources management as a key strategy for climate change adaptability around SADC's shared watercourses where cooperation among member states has been instrumentalized to achieve pragmatic rather than substantive political outcomes. Recommendations for policy makers are for more deliberate political demands for a sense of belonging and local participation/ownership in the direction of research and development of river basin organizations as incrementalism or gradualism on its own may never eventually get to address the core concerns of SADCs cooperation efforts against climate change, poverty and other challenges in southern Africa.

Key Words: Hydro-politics, Pan-Africanism, regional integration, functionalism, pragmatism.

Introduction

While the Southern African Development Community (SADC) has been traditionally analysed as a security and economic community, it has rarely been identified as an environmental community despite the persistence of trans-boundary natural resources that defy national boundaries. The research thesis is that despite the eminence of Pan-African ideas in the making of regional organizations such as SADC, it appears as if at the level of regional integration especially as seen through climate change adaptability in SADC, Pan-Africanism is abandoned for a different set of inspiration, theories and actors. A comparative analysis of trans-boundary water resources with Pan-Africanism and regional integration produces insights into SADC's approach to climate change. The knowledge produced out of that ideation is changing political practice in southern Africa. This chapter presents SADC's history, water, ecosystems and laws

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at the edge of national borders. It must be noted that SADC's strategy towards climate change adaptation and sustainable development in the water sector is based on an international best practice mechanism called Integrated Water Resources Management (IWRM). Integrated Water Resources Management (IWRM) principles recognised in these policies require open and transparent institutions, inclusive and participative decision-making, equitable access to the resource, and coherent and integrated policies (Global Water Partnership, 2005). The research examined how trans-boundary water management is used for climate change adaptability within the ideas of regional integration in SADC. I begin by introducing the core issues of the paper, its method and subsequent analysis of findings reviewing Pan-Africanism and climate change adaptability literature in SADC before discussing trans-boundary water management and its use in functionalist regional integration.

This research involved a field visit to the Limpopo Water Course Commission (LIMCOM) in Mozambique and a desk review of literature to understand the research objectives. While attending a SADC WaterNet regional conference in Mozambique, it was apparent that most of the approaches used in the studies were scientific and mostly geographic. And yet clearly the function under description was regional integration, with its origination in Pan-African ideologies. It was using other field specific terms such as ecosystem and river basins but still one could see the antecedents. Herein lay my research objective to understand how the technical approaches are changing the historical and political approaches to Southern African unity - a trans-disciplinary endeavour. The importance of trans-disciplinarity was to capture the intersection of geography and political economy through the attributes of trans-boundary water management and climate change. The dominance of a single discipline - perhaps international relations, civil engineering, water management, geography, or development studies - does not capture the essence of events on the ground. Disciplines have had to support each other, perhaps as assumed in concepts such as Integrated Water Resources Management or the legislative aspects of bilateral and multilateral agreements, national laws and local government by-laws in catchment areas. Pan-Africanism, regional integration, and climate change can thus be discussed together.

A Pan-African background

Pan-Africanism is in essence about the unity of the people and place called Africa. The original Pan-African pantheon as espoused by different generations had race pride, unity, nationalism and socialism as core components. Mazrui (2001) identifies about four trends in Pan-Africanism - Trans-Atlantic Pan-Africanism (of Blyden and other Afro-American descendants), Trans-Saharan Pan-Africanism (Unity between the Maghreb region and those to the south of the Sahara), Sub-Saharan Pan-Africanism (unity of the black African countries), and Global Pan-Africanism (for the unity of the black diaspora in North America, the Caribbean and Latin America). It was an idea elaborated with different emphases by a variety of people of African descent whose list includes Booker T. Washington, Anna Julia Cooper, Marcus M. Garvey, W E B Dubois, Kwame Nkrumah, Julius Nyerere and Frantz Fanon. While these people represent variations which Kasanda (2016) describes in detail it is probably the minimalist and maximalist approaches that have been the dominant theme. The latter to whom Garvey and Nkrumah firmly belonged called for a radical unity although they lived in different times and had different visions for that unity. Washington, Dubois, Nyerere, Cooper and Fanon though very diverse in approach were cautionary and pragmatic. Both strands emphasised humanistic concepts.

An instance of difference is the variation between Kwame Nkrumah and Julius Nyerere. Shivji (2008) describes the argument as one of a question between Pan-Africanism and pragmatism

respectively, or whether the processes should be continental or regional. Nkrumah (1973:4) believed that 'regional economic groupings retard rather than promote the unification process,' while Nyerere was pragmatic about it arguing for an East and Central Africa bloc. However, Shivji (2008:239) notes that while 'logic and pragmatism were on Nyerere's side; he won the argument but lost the cause.' Nyerere (1997) was to later say that 'After Kwame Nkrumah was removed from the political scene nobody took up the challenge again.'

Shivji (2008) goes on to identify four pillars of Pan-Africanism in its various types and eras. There was firstly, a rejection of territorial nationalism. Secondly, Pan-Africanism was consistently anti-imperialist as Nkrumah (1965:259) postulated that imperialist capitalism operated on a Pan-African scale such that 'the only effective way to challenge this economic empire and to recover possession of our heritage, is to act on a Pan-African basis, through a Union Government.' Thirdly, the Pan-African project was a political project. Fourthly, the foreseen unity was supposed to be never imposed but a voluntary act.

Yet, Pan-Africanism in the context of regional integration represents contradictions between yesterday's dreams and today's realities. When the quest previously was mostly for identity politics, in the present age it seems it is for livelihood and is depoliticized. Some of the insightful questions arising out of this time have been raised by Ackah (1999) apparently reflecting on the emergent contradictions, thus: 'Is a sense of 'being,' of knowing who one really is, essential to one's personal development? [And] Is a sense of being, of understanding who one really is, essential to a whole 'race' or continent and its quest for development?' In a way it is not enough to stick to Pan-Africanism for sentimental reasons. The new set of problems facing Africa such as climate change seems to indicate that the reality being exposed by regional integration in Southern Africa is of a world beyond Pan-Africanism. Some 'political demands beyond anti-discrimination and racial equality' have come up (Shivji, 2008). Observing communism's decline, globalization, and the new social, cultural and political awakening in black communities, Pan-Africanism was re-assessed denouncing the institutionalization and the ossification of the ruling Pan-Africanist thought (Kasanda, 2016). As an abused ideology and in response to changed local and international realities, the appeal of Pan-Africanism receded and demands for development took pre-eminence. One such area is climate change.

Climate change adaptability and the role of trans-boundary water management

SADC has responded to climate change using the approach of climate change adaptability. Climate change is defined by the United Nations Framework Convention on Climate Change (UNFCCC) as 'a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.' Climate change is one of the anthropogenic events (meaning pollution emanating from human activity) which has featured in the 21st century beyond race, identity and, to some extent, nationalist politics. This does not mean that the vulnerability of Africa has decreased; it may even have increased. Despite the scientific fact that southern Africa contributes only about 1% of greenhouse gas emissions, it is one of the most susceptible and affected regions with unpredictable weather patterns, mostly of floods and droughts, as a result. Climate change as phenomena is therefore trans-boundary; it affects the inside to beyond national and continental boundaries. It is because of this meagre contribution to the ozone depletion that SADC understands that its thrust has to be about adaptation rather than prevention. This means its climate change focus is more on response and recovery from the extremes of climate change, rather than its prevention. All SADC members have already signed the mitigation accords and have agreed to stick to the emissions

limit, largely because they are already under the limit. Nevertheless, SADC has pushed both mitigation and adaptation to member states encouraging them to mainstream reforms along SADC's approach to climate change. SADC has called for the need for Water Advocacy (the thinking that policy needs to stop marginalising water issues in climate change adaptation and reflect their pivotal role) at all levels: international, regional and local. However, there is need for research and development of adaptation specific to local conditions and capacities and in this place the importance of indigenous knowledge is paramount. Evidently, climate change adaptability would require more stakeholder participation and increased climate financing.

But what is climate change adaptability? The UNFCCC defines it as 'the capacity of natural and human systems to reduce vulnerability against actual or expected climatic stimuli and their effects on society, the economy and the environment.' According to SADC (2012:9) the main objective of its Climate Change Adaptation Strategy:

is to improve climate resilience in Southern Africa through integrated and adapted water resources management at regional, river basin and local levels. The objective is to promote further the application of integrated water resources management as a priority tool to reduce climate vulnerability and to ensure that water management systems are well adapted to cope with increased climate variability.

This means that the region is in the process of adapting water management practices to reduce vulnerability to climate changes. Water management became a principal method to increase the region's climate resilience. These measures were adopted due to increased global connectivity in terms of innovation and vulnerability which made self-regulated adaptation inadequate, and thereby based on the ability of Southern Africa to act collectively (SADC, 2012:i).

This also entailed building infrastructure climate resilience. Southern Africa only manages to store 4% of rain water, contrasted to 70 – 90% in some developing countries (SADC, 2012:21). This then leads to the shortages in proper water supply and sanitation in southern Africa. Strengthened irrigation and drainage would maximise uses of water resources while the development of groundwater resources would reduce the dependence on surface water. Infrastructure is needed to pursue alternative water supply sources such as green water, waste water reuse and desalination. As floods increase, flood protection infrastructure such as levees are an important focus. Capacities towards Hydrogeo-Meteorological Monitoring Systems are also needed to increase the monitoring of run-off and assist communities in adaptation.

In this regard water management takes a salient role. There is the need for data and information to assist with the uncertain knowledge around climate change. The development of Climate modelling and scenarios also becomes important. Vulnerability assessments will help identify the most vulnerable spaces at particular points in time. Precipitation and flow forecasting will assist in predicting floods or other climate change variations on river basin systems. This hints at the development of an early warning system. Yet the weaknesses of dams in Southern Africa, which were built for hydro-electric development and supplying urban, agricultural or industrial needs, require their optimisation to suit the excesses of floods. This management also includes water demand (usage) management and groundwater management. It is critical to note that river basin management has been identified by SADC as a major objective of its climate change adaptability strategy.

The geography of trans-boundary water management

The world has about 263 international rivers (Giordano and Wolf, 2003). Africa has 63 international rivers and about 15 river basins which are the Limpopo, Maputo, Nile, Incomati, Buzi, Congo, Okavango, Pungwe, Cunene, Orange, Save, Cuvelai, Umbeluzi, Zambezi and Ruvuma (Food and Agriculture Organisation, 2003). About half of the 63 international rivers in Africa are shared by three or more riparian countries, 10 basins are shared by three or more riparian countries and 10 are shared by four countries (Obae, 2006). Southern Africa has about 15 international rivers and three major basins that are the Okavango Basin, the Limpopo Basin and the Zambezi Basin. The Zambezi Basin covers eight nations while the other two cover four riparian states each, to make a total of 16 nations on three river basins. As a shared resource, water therefore has strategic significance in Southern Africa as the region grapples with environmental security research (Turton, 1997). As an ecological boundless landscape, river basins naturally lend themselves more to liminal thinking like Pan-Africanism and regional integration than the bounded rationality of state sovereignty and nationalism whose nation state limitations had been a curse to Africa.

Southern Africa is a region of intense water scarcity, floods and droughts which have been exacerbated by climate change. Economic scales in the Limpopo riparian states show widespread poverty and under-development. All the four riparian states, namely Botswana, South Africa, Mozambique and Zimbabwe, are members of the Southern African Development Community (SADC). SADC is a fourteen member grouping of Southern African states which are Malawi, Zambia, Tanzania, Mozambique, Mauritius, Madagascar, Democratic Republic of Congo, Angola, South Africa, Namibia, Botswana, Zimbabwe, Swaziland and Lesotho. These countries have a history of shared conflict especially during apartheid South Africa's total war strategy that destabilized the region and where the other countries united as the Front Line States. However, with the demise of apartheid, the evolvment of a regional organization that was known as the Southern African Development Coordination Conference (SADCC), which later became SADC occurred. The stabilization of Southern Africa enabled SADC to extend its approach to regional integration and security – reflecting a widening concept of security – to include human and environmental security (probably reflecting a broader shift in Pan-Africanism which saw the Organization of African Unity change to the African Union). This reflected 'Africa's evolving security architecture and the concept of multi-layered security communities' (Franke, 2008). Since its formation in 1980 SADC has experimented with different approaches to regional integration in order to guide its strategy for regional cooperation, sustainable development and integration. This is envisioned in the SADC Treaty, signed on 17 August 1992 in Windhoek Namibia, designed to cope with complex regional and global changes, facilitate cross border trade, and achieve economic integration on the understanding that it was more feasible on a regional than national basis (Nhara, 2003). Peace has therefore created conditions necessary for a deeper, wider and sustained process of regional integration.

State control over water resources in certain instances passed on to other players such as regional authorities, creating a unique relationship between regional maritime law and municipal law. As a result, some (mostly) developed countries, international organizations and non-governmental organizations have come on board, among them the World Bank which has advocated for trans-frontier control of water resources under a philosophy of integrated water resources management. In the Limpopo basin this has crystallized in the establishment of the Limpopo Watercourse Commission (LIMCOM) by the four riparian states. This can be said to have been in line with trends on the global front and the political economy of complex interdependency and international institutionalism (Steans and Pettiford, 2001). Trans-boundary governance has not been limited to water but to other natural resources such as parks and wildlife and its drivers 'range from basic development needs to external factors influencing Southern Africa' (Katerere et al, 2001). These interstate arrangements restrict state

sovereignty whilst broadening regional co-operation. Assertions have then been made that 'water is recognized as a fundamental political weapon in the Southern African region. Water will increasingly shape the international relations and security arrangements of Southern Africa' (Turton, 2008a). This forms the strategic value of water governance in SADC's regional integration. In the preceding discussion one may note Pan-Africanism ceding direct influence as other actors and ideas, in particular the idea of non-normative regional integration, assume centre stage.

Pragmatic unity: Neoliberal and functionalist

Given the ossification of Pan-African ideas, yesterday's dreams of African unity were in some ways abandoned severally in responding to current problems such as climate change. The importance of a sense of being for development was downgraded or questioned. Trans-boundary water management as a key objective of climate change adaptability fell in the trend of Pan-Africanism identified by Mazrui as Sub-Saharan Pan African Unity. Its thrusts were not continental, in-fact it was regional and even sectoral (in this case pivoting on water resources) based on the belief that eventually there will be spill over effects into the broader continental effort. This was therefore a pragmatic way that Nyerere had argued for, which however he eventually regretted. Nevertheless, all the approaches reject territorial nationalism and would differ in extent of the rejection and speed with which the state should be abandoned. It must also be noted that this desire for African unity beyond states was more than unique or incidental to Africa; it was part of a universal trend towards integration – Pan-Americanism and the formation of the European Union are among other examples. States had built authority based on structures of the principle of territorialism yet theorists of regional integration such as Karl Deustch, Adler and Barnet, and Baylis and Renger recognized the role of inter-state co-operation in creating communities of regional integration (Ngoma, 2003:18-19). One of the theories of regional integration which SADC has followed is that of functionalism, itself a phenomenological approach, which proposed to build a form of transnational authority based on functions and needs, which linked authority with needs, scientific knowledge, expertise and technology (Mitrany, 1933:11). This was meant to facilitate a supra-territorial concept of authority entailing collective governance and interdependence.

There are strong assumptions being held here which coincide with and diverge from Pan-Africanism. Firstly, like Pan-Africanism they both argue that the process of integration takes place within a framework of human freedom; secondly, that knowledge and expertise are currently available to meet the needs for which the functional agencies are built; and thirdly, that states will not sabotage the process (Laursen, 2008). This facilitates open regionalism, a process where explicit integration policies complement and are made compatible with policies that increase international competition. A complementary ingredient is reinforced by geographical proximity and cultural affinity within the region which is amenable to the existence of hydrologically-based water management institutions at international river basin level. In this perspective international agencies become part of development initiatives. Open regionalism carries with it tenets of outward orientation, market driven integration process, and private sector involvement. While Pan-Africanism remains suspect of these aspects of open regionalism, functionalism embraces them. Pan-Africanism begins and sustains a problematizing of open regionalism and is suspicious of global integration. In functionalist thought Nkrumah's persistent anti-imperialism has no place. What in essence looks the same – unity being the similar objective between Pan-Africanism and regional integration – is actually therefore different. It is not just climate change the scientific spectre as functionalism assumes;

rather it is the embodiment of global politics, maintaining and centring Africa's need to eventually free itself from a historically unequal relationship.

While Pan-Africanism also emphasised the urgency of resolving past and persisting challenges requiring African unity to demand a fair resolution of global problems such as poverty and climate change, functionalist regional integration uses the principle of pragmatism (at times referred to as gradualism or incrementalism) which indicates how, given differences in countries' conditions, integration may proceed realistically so as to build on demonstration cases and minimize the frequency of policy reversals. Closely linked is the principle of subsidiarity that emphasises handling of matters at their lowest most appropriate level such as sub-regional, national and catchment agencies (Niekerk, 2008). In this approach regional integration can be defined in terms of three dimensions, namely: geographic scope, substantive coverage and depth of integration. The geographic scope involves the voluntary membership of countries, substantive coverage or width involves the actual reach of spill over effects from each sector, and depth of integration is the characterization of cooperation according to activities or loss of sovereignty (Niekerk, 2008). Evidently three key elements are crucial, that is cooperation, harmonization or coordination, and integration. As a theory of regional integration, neo-functionalism's proponents aspire to be non-normative and try to describe and explain the process of regional integration based on empirical data. Integration is regarded as an inevitable process, rather than a desirable state of affairs that could be introduced by the political or technocratic elites of the involved states' societies. Trans-boundary water resources has the sufficient geographic scope to ensure that SADC member states are included in the unity while depth of coverage and substantive coverage would depend on cooperation, coordination and integration which come incrementally through activities such as trans-boundary water management.

As a result, regional integration is discussed as a non-political concept, being only political to the extent of its formulation of rules of the game without centring the game itself. It is the functionalist approach that is behind trans-boundary water management in SADC in which the river basin represents a unified hydrologic and geographic unit that supports a holistic perspective on river basin management. All trans-boundary basins in SADC have agreements in various forms – bilateral, multilateral, basin-level, regional, and international. In SADC the four most important basins are the Limpopo, Incomati, Maputo and Orange which are shared variously by Botswana, Lesotho, Mozambique, Namibia, Swaziland and Zimbabwe, forming a Hydro-Political Complex (Ashton and Turton, 2007). River Basin Organisations (RBOs) have been promoted as the most appropriate means to manage water resources in response to climate change under some form of supranational authority. A configuration of hydro-political dynamics established on one hand a traditional paradigm dominated by seemingly unassailable state sovereignty because of the pervasive priority accorded to national security among other issues, and on the other hand a converse proposition for a benefit sharing approach hammering on factors such as institutional architecture and harmonization of laws – factors which reduce the pervasiveness of national security. These are 'confidence building measures' which institutionalize behaviour, allowing the evolution of robust institutions important for attracting investors that help local economies integrate with regional and international economies (Turton, 2008b).

This thinking flows from the SADC Treaty of 1992 and provides for deeper integration on the basis of balance, equity and mutual benefit, providing for collective responses to climate change, cross-border investment and trade, and freer movement. It provides the institutional basis for cooperation and integration, and uses the approach which is based on project or sectoral coordination (Lee, 1999; Katerere et al, 2001). It also allows for the establishment of protocols such as the SADC Protocol on Shared Watercourses. A Regional Strategic Indicative

Plan was developed against a country-based coordination of sectoral activities and programmes as a more centralized approach through which 21 Coordinating Units were grouped into four Directorates (Nhara, 2003). These Directorates are the Trade, Industry, Finance and Investment; Infrastructure and Services; Food, Agriculture and Natural Resources; and the Social and Human Development and Special Programmes. The Water Division belongs to the Infrastructure and Services Directorate. SADC has resolved to adopt better administered sectoral plans and policies augmented by developing regional policy analysis and planning (Moyo, Tevera in Turton, 2008; Turton, 2008b). Therefore, these RBOs have resulted from a deliberate promotion of the regional integration and cooperative agenda through the SADC Water Division, the SADC Protocol on Shared Watercourses and the Regional Indicative Strategic Plans.

As observed during the field visit to the Limpopo Water Commission (LIMCOM) it is apparent that trans-boundary water management is a sector approach in SADC's regional integration. This has been because trans-boundary water management in SADC as seen through the Limpopo Basin and the Limpopo Agreement of 2003 represents a struggle between determinism and voluntarism. Determinism is created by the interdependence resulting from shared international rivers and voluntarism manifests as state sovereignty and management principles such as Integrated Water Resources Management. The Limpopo basin is a region of intense water scarcity and variability which makes this dichotomy more acute. The Limpopo Watercourse Commission Agreement of 2003 and its subsequent coming into being over years represents a trend in SADC trans-boundary water management as member states move from bilateral to multilateral agreements. This phenomenon of integrated river basin management is taking the form of river basin organisations with secretariats. Like most international organisations, these bodies operate more on the basis of consent, recommendation and cooperation rather than compulsion and enforcement. A corollary is the use of bilateral agreements by parties involved in river basin organisations to resolve certain specifically localized issues. States have subsequently moved towards water policy, institution and legal harmonisation to further their common interests although, whenever they are at variance, states have asserted their right to self-determination. Consequently, the regional integration in SADC has had to bank on international capital. Funding has come through various organisations such as the Global Water Partnership. These have been grafted into SADC mainstream Secretariat as auxiliary and ex-officio members. International capital is also tied to certain standards that it promotes, particularly as principles of integrated water resources management codified in various international agreements such as the United Nations International Convention on Shared Watercourses, the Dublin Principles and Agenda 21. Both the SADC Protocol on Shared Watercourses and bilateral or multilateral agreements such as the Limpopo Watercourse Agreement make reference to these documents and principles. These principles place emphasis on stakeholder participation, equitable utilisation and protection of water resources. The whole point seems to be sustainable development.

Since expertise is a key aspect of functionalist theory it is evident from the visit to the Limpopo Watercourse Commission (LIMCOM) in Mozambique that trans-boundary water management requires research and technical expertise to update baseline surveys and make use of available data. Research makes available common data sets, assuming there is sharing of information across state boundaries and the research can be used in facilitating meaningful and accurate climate change adaptability and trans-boundary water resource management. Internationally financed research institutes such as WaterNet and the International Water Management Institute have sprouted in SADC. The development of necessary human resources with expertise is a priority in this regard – LIMCOM implores policy makers to keep developing local expertise as at times expatriates dominate the field. Paradoxically, as noted by the LIMCOM secretariat the impact of this research is still to be felt as it has not reached decision makers

and local communities resulting in expensive projects that have not been successful. Apparently, this has been the core to the problem for indigenous ownership of the processes involved, since at times governments and communities feel like events are just happening on them. This is pertinent in that it shows at times a mere repetition of international platitudes when context specific scenarios might require radical approaches. One may see these as mere procedural glitches requiring refining the system or one may see them as ideological problems, as functionalist theory's pursuit of non-normativity and efficiency, as failures to prioritise and think in terms of communities, their knowledge production and needs, which are pushed to a gradual or incremental basis. Pan-Africanism had attacked neo-liberalism as usually meaning that this pragmatism would usually mean never at worst and at best the forces of production would allow the inclusion of a few people hence there should be a deliberate emphasis to change lives without abandoning it to the eventuality of process. In this ideological way of thinking there is a much more critical attitude to regional integration processes which avoids an over trust in the technical abilities of functionalist regional integration, allowing for the recognition of what has been lost and gained in giving up a Pan-African emphasis.

Trans-boundary water management in SADC is a combination of geography and politics, two factors at the base of the cooperation. SADC countries have great climate and temporal variability which makes planning difficult and has a direct impact on livelihood security for the population of the region. As economic growth progresses and population numbers increase, several of the states in the region are predicted to become 'water stressed' by 2025, including the most developed economies (in terms of Gross Domestic Product) in the region, that is South Africa, Namibia, Botswana and Zimbabwe (United Nations Environment Programme 2005). However, water scarcity does not necessarily result in conflict as it 'can lead to a more rational policy away from the paradigm of national self-sufficiency, which in turn can stimulate the efforts being made towards greater regional integration within the framework of SADC' to gain the maximum benefit within the context of the regional economy, and between the regional economy and the global economy (Turton, 1997; 2008). Trans-boundary water management in SADC is an international process of interdependency incorporating governance, legal and policy responses in the development and security discourse. These findings show that the rationale and implementation of trans-boundary water management limits the traditional role of the state thereby meaning that the theory and practice of trans-boundary water management essentially enhances regional integration. The effect of trans-boundary water management breaks the traditional role of the state and democratizes international relations.

It shows that in SADC there is a perception that trans-boundary river basin management optimizes economic growth, political stability and regional integration. It appears the state's role changes as formal cross border arrangements result in greater state control and regulation although in reality the state would have surrendered part of its sovereignty to a supra-regional entity and the activity of non-state actors. Communities, civil society, the private sector, and academia all have a role to play in integrated water resources management. It is reasoned that subsequently suitable governance, legislative and policy frameworks are needed to make this a reality. This milieu of factors provides the rationale for efforts towards such frameworks in SADC. Regional integration has differed with the radical Pan-African approaches as given by Nkrumah and it would seem even by Nyerere. Functionalism accedes to the difficulties of radically resolving climate change adaptability challenges while emphasising more efficient systems. It tones down the apparent reality that Africa suffers disproportionately from climate change and has begun to suffer this already, way before the rest of the world has done so. Trans-boundary water management shows the distancing of the process from the popular connections and appeal that Pan-African ideology had. Rather than being a mere technical process of geography it is a significant alteration on the political demands of Pan-Africanism.

The realities of African challenges however, show how and why prevailing functionalist approaches hold despite this draw back.

Conclusion and recommendations

I have argued in this chapter that climate change adaptability using river basin management in SADC's functionalist regional integration actually shows a redefinition and, at times, departure from Pan-African thinking. Post-Cold War peace facilitated the transition of SADC to adopting innovative measures to global problems such as climate change using the integrating power of trans-boundary water management which has benefits for regional peace and security. SADC's belief that trans-boundary water management is a useful approach to the region's climate change adaptability strategy is a well-founded premise and could lead to deepened integration. However, it must be noted that it is a significant departure in several ways from the Pan-African pantheon whose invocation may not only yield a regurgitation of an old African ethos but a dynamic independent, locally owned and useful process. Analysing the geography alongside the politics of humanities and rule formation in trans-boundary water management brings out the unique characteristics of regional integration in southern Africa as more of a pragmatic approach to Pan-Africanism. The reconstruction of African geography (place) as basin systems in institutional terms is succeeding in reconstructing new identities in southern Africa. Scholarship and political practice have had to follow this regional movement, evoking laws, science, and common sense. These water systems, while providing the essence of new analytical registers and aspirations for non-exclusionary ontologies, are affected by the fact that they are left to an indefinite gradual realization. Climate change adaptability in SADC portrays the triumph of the minimalist view of Pan-Africanism with the many dotted regional basin organizations being building blocks. The sense of belonging has been depoliticized and instrumentalized for regional integration by a market oriented functionalist approach promising democracy and human rights, core things fundamentally problematic in the Pan-African pantheon. It is recommended that adding the political emphasis of pan-Africanism's sense of belonging and ownership to trans-boundary water management may add more meaning to the need for adaptive management structures, clear and flexible criteria for water allocations and quality, the equitable distribution of benefits, and detailed conflict resolution mechanisms. This holistic approach will grow and create a virtuous circle of stability and prosperity as processes assume local roots, and investors will have faith in the environments which will be less likely to rebel against organizations they invest money in. There is need for research and development of climate change adaptation approaches specific to local conditions and capacities and in this place the importance of indigenous knowledges is paramount. Evidently, climate change adaptability incorporating a stronger Pan-African element would require more stakeholder participation and increased climate change financing towards indigenous knowledges and systems, but the results would be far-reaching and long lasting.

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