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SHARED WATERCOURSES IN THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY: CHALLENGES AND OPPORTUNITIES

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ABSTRACT

The countries of the Southern African Development Community (SADC) are characterized by sharp variations in size, population, economic development, as well as water availability. The SADC region is, by and large, arid or semi-arid, and as a result faces tremendous challenges in its water sector. The challenges stem from a number of factors, including the high rate of population growth, urbanization and environmental degradation. Those problems are compounded by periodic floods and droughts. Moreover, the Region depends, to a considerable extent on river waters, most of which are shared by two or more states. As such, those shared rivers could be a source of conflict as well as a catalyst for cooperation. The article examines the water resources problems of SADC, with particular emphasis on its shared watercourses, and analyzes the problems thereon and the attempts to deal with them.

I. INTRODUCTION AND BACKGROUND

The Southern African Development Community (SADC) region encompasses the fourteen African countries south of latitude 5 degrees south and includes Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

The history of SADC can be traced to the year 1979 when nine countries (Angola, Botswana, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, Zambia and Zimbabwe) met in Gabarone, the capital of Botswana, to discuss means of achieving economic cooperation. One year later, those countries established the Southern African Development Coordination Conference (SADCC), with the primary objectives of facilitating economic development and integration, and decreasing dependence on South Africa which at that time was ruled by the white minority regime. SADCC lacked legal status as there was no treaty or any legal instrument establishing it. Realizing this lacuna that curtailed the effectiveness of SADCC, the member countries concluded in 1992 the Treaty of the Southern African Development Community, establishing SADC in place of SADCC as an official international organization with legal personality. Namibia joined in signing the Treaty, and South Africa joined in 1994. Seychelles and Mauritius, and lastly the Democratic Republic of Cong, joined SADC, bringing the membership to the current size of fourteen countries.

The objectives of SADC, as stipulated in Article 5 of the Treaty, include achieving development and economic growth, alleviating poverty, enhancing the standard and quality of life of the peoples of Southern Africa and supporting the socially disadvantaged through regional integration. The objectives also include achieving

"sustainable utilization of natural resources and effective protection of the environment," as well as promotion and maximization of productive employment and utilization of resources of the region. Article 6 obliges the member states to adopt adequate measures to promote the achievement of the objectives of SADC, in addition to refraining from taking any measures likely to jeopardize the sustenance of its principles, the achievement of its objectives, and the implementation of the provisions of the Treaty. Article 21 of the Treaty states that the member states shall cooperate in all areas necessary to foster regional development and integration on the basis of balance, equity and mutual benefit. The Article enumerates the areas of cooperation which include food security, land and agriculture, natural resources and environment, as well as politics, diplomacy, international relations, peace and security.

This SADC region is characterized by climatic zones that range from the tropics of the Democratic Republic of Congo to the arid region of the Kalahari desert in Botswana, and the Namib desert which extends from southern Angola through the coastal part of Namibia to the northern coastal areas of South Africa. The countries of the SADC region are also characterized by sharp variations in size, population, economic standards, and water availability and use. The tiny island states of Mauritius and Seychelles, and the small landlocked countries of Lesotho and Swaziland, sharply contrast with the vast countries of the Democratic Republic of Congo, Angola and South Africa. The heavily populated countries of the Democratic Republic of Congo and South Africa, with population of fifty million and forty two million, respectively, are vastly different from the small populations of Seychelles, Swaziland, Mauritius and Namibia, that vary between eighty thousands and two millions. The region also includes some of the poorest

countries in the world such as Malawi, Angola, Mozambique and Tanzania, whose GNP per capita ranges between $190 and $240. In contrast, the GNP of Seychelles, Mauritius and South Africa is $6,420, $3,370 and $3,160, respectively (World Bank 2000a). As such, the countries of the SADC region present wide variations in climatic zones, area size, population and economic standards.

Water availability in the SADC countries also varies sharply due to a number of factors including the climate which affects rainfall patterns, as well as the number and size of the river basins in each country. In the Democratic Republic of Congo and Angola, freshwater availability, in cubic meters per capita, is 15,000 and 12,000, respectively. This contrasts sharply with the water scarce countries of South Africa, Zimbabwe and Malawi where freshwater per capita ranges between 1,000 and 2,000 cubic meters (World Bank 2001b). Groundwater potential in the region is limited by the dry climate of the Kalahari desert that offers little recharge possibilities to the fossil groundwater there, and by saline intrusion from the coast of Mozambique that affects groundwater quality (Hirji and Grey 1998).

The extreme spatial and temporal variability of rainfall in the region, which includes tropical, semi-arid and arid climatic zones, makes the region susceptible to both drought and floods. "About seven per cent of the region is desert with less than 100mm of rain a year; close to a third is arid or semi-arid with 100-600mm a year; while only three per cent is humid with more than 1,500mm a year. As a whole, the region is prone to unpredictable droughts alternating, in some areas, with floods from tropical cyclones" (Amanor-Wilks 2000). The effects of such droughts can be quite serious. "In Southern Africa, severe droughts in the early 1980s and 1990s have had serious social and

environmental impacts, bringing famine, disease, land degradation, loss of domestic stock and wildlife, and even loss of human life" (Hirji and Grey 1998). The drought that currently afflicts the region, particularly in Malawi and Zambia, is quite devastating. The effects of floods can be even more serious. The floods of February and March of 2000 in Zimbabwe, South Africa and particularly in Mozambique, were the worst in living memory. Due to a combination of heavy rain and the cyclone Eline, the Limpopo and Zambezi rivers expanded their width to 125km, washing away buildings, swallowing livestock and causing huge loss in human life.

Another challenge facing the SADC countries is the steady increase in population. Average population growth for most countries of the SADC Region exceeds 3%, and the total population of the Region, which was less than 200 million in 1999, is projected to exceed 350 million by 2025 (World Bank 1992).

The SADC region includes a large number of transboundary rivers, with large seasonal and annual flow variations. Most of those rivers such as the Zambezi, Limpopo, Okavango, Orange and Congo rise in the central plateau of the region and flow eastward or westward, crossing, or forming the boundaries between a number of countries. As such, a number of river basins are shared by a large number of countries, such as the Congo river which is shared by nine countries, and the Zambezi river which is shared by eight countries.

About 90 per cent of the region's surface water is used for irrigation, and about 70 per cent of the region's population depends on agriculture for subsistence and wage employment. The fast population growth and the heavy dependence on irrigated agriculture, together with the rapid urbanization and the increasing use of water in the

mining and other industries is adding to the already existing pressure on water resources in the region. resulting in a larger demand for water. The larger demand will, in turn, lead to a considerable decrease in freshwater availability per capita, and to stress and scarcity in many of the countries in the SADC Region. It will also sharpen competition among those countries for the waters of their shared rivers.

II. SHARED WATERCOURSES IN THE SADC REGION

As stated earlier, one of the major characteristics of the SADC region is the presence of a large number of transboundary rivers. Each country in the SADC Region shares at least one river basin with another (except, of course, for the island states of Mauritius and Seychelles). Mozambique is a riparian to nine international rivers, and is the lowest down stream riparian to eight of them, and each of Angola and Zimbabwe shares six such rivers with other SADC countries. Moreover, South Africa, Tanzania, Democratic Republic of Congo and Namibia each shares five international rivers, while Botswana shares four international rivers with other SADC countries. Table 1 shows the international river basins shared by each of the countries of the SADC region.

TABLE 1

SADC COUNTRIES AND THEIR INTERNATIONAL RIVER BASINS

Country	No. of Basins	Basin Countries
Mozambique	9	Buzi, Umbeluzi, Incomati, Limpopo, Maputo, Ruvuma, Sabi, Zambezi, Pungue
Angola	6	Kuene, Cuvelai, Okavango, Zambezi, Chiloango, Congo
Zimbabwe	6	Buzi, Limpopo, Okavango, Sabi, Zambezi, Pungue
South Africa	5	Incomati, Limpopo, Maputo, Orange, Umbeluzi
Tanzania	5	Congo, Nile, Ruvuma, Zambezi, Umbi
Namibia	5	Kuene, Cuvelai, Okavango, Zambezi, Orange
Congo (D.R.)	5	Nile, Ogooue, Congo, Nyanga, Chiloango,
Botswana	4	Limpopo, Okavango, Orange, Zambezi
Swaziland	3	Umbeluzi, Maputo, Incomati
Zambia	2	Zambezi, Congo
Lesotho	1	Orange
Malawi	1	Zambezi

Sources: Gleick (2000); Hirji and Grey (1998).

With the exception of the Congo river, all the major rivers of the SADC region are shared only by the SADC countries. None of the major rivers in the Southern African region runs exclusively in one country. The Congo and the Zambezi rivers are shared by nine and eight countries, respectively, while each of the Orange, Okavango and Limpopo rivers is shared by four countries. Table 2 shows the basin countries that share each of such major rivers in the SADC region, as well as the basin areas. The presence of such a large number of shared rivers within the SADC countries increases the potential for conflict over the waters of such rivers. It could also act as a catalyst for cooperation among the riparians of the shared rivers.

TABLE 2

MAJOR INTERNATIONAL RIVER BASINS IN THE SADC REGION AND THE COUNTRIES SHARING THEM

Basin	No. of Basin Countries	Basin Countries	Basin Area (000 km.²)
Congo	9	Congo (D.R), Central African Republic, Angola, Congo (R.), Zambia, Tanzania, Cameroon, Burundi, Rwanda	3,690
Zambezi	8	Zambia, Angola, Zimbabwe, Mozambique, Malawi, Botswana, Tanzania, Namibia,	1,388
Orange (Sengue)	4	South Africa, Namibia, Botswana, Lesotho	950
Okavango	4	Botswana, Angola, Namibia, Zimbabwe	709
Limpopo	4	South Africa, Botswana, Mozambique, Zimbabwe	416
Ruvuma	3	Tanzania, Mozambique, Malawi	150
Incomati	3	Mozambique, South Africa, Swaziland	46
Maputo	3	South Africa, Swaziland, Mozambique	31
Cuvelai (Etosha)	2	Angola, Namibia	167
Sabi (Save)	2	Zimbabwe, Mozambique	116
Kunene (Cunene)	2	Angola, Namibia	110

Sources: Gleick (2000); Rangeley (1994).

In addition to the eleven shared river basins included in Table 2 above, there are five other smaller shared river basins within the SADC region to which a reference should also be made. Those river basins are (i) the Buzi river which is shared by Mozambique and Zimbabwe, (ii) the Umbeluzi river which is shared by Swaziland, Mozambique and South Africa, (iii) the Pungwe river which is shared by Mozambique and Zimbabwe, (iv) the Chiloango river which is shared by Democratic Republic of Congo, Angola and Republic of Congo, and (v) the Songwe river which is shared by Malawi and Tanzania (Gleick 2000, Chenji and Johnson 1996).

III. DISPUTES OVER SHARED BASINS IN SADC

With the growing water shortage in the SADC region and the large number of shared rivers there, it is not surprising that disputes among SDAC members have emerged in a number of basins. Dams on shred rivers, and diversion of flows of such rivers, are the main cause of such disputes. It is reported that the construction of the M'njoli dam in Swaziland over the Umbeluzi river (shared by Swaziland, Mozambique and South Africa) has decreased the flow of water of the Umbeluzi river to Mozambique by almost a half. The construction of the Driekoppies dam in South Africa over a tributary of the Incomati river (which is shared by Mozambique, South Africa and Swaziland) has raised concerns about the reduction of communal cropping land in Swaziland because of flooding (Ebenizario 2000). Another potential problematic project is the proposed abstraction of about 17 million cubic meters of water from the Okavango river by Namibia, and transferring it through a 260 Km. pipeline to Namibia's Eastern National Water Carrier. The Okavango river is shared by Angola, Namibia, Botswana and Zimbabwe. Although the project is still under study, concerns have been raised in the

other riparian countries about the likely adverse impact of the project, particularly on the Okavango Delta in Botswana (Ashton 2000). Moreover, Mozambique, being the lowest riparian to eight of its nine major shared rivers, is distrustful of the other riparians' intentions with regard to those shared rivers (Leestemaker 2000).

In addition to navigational and non-navigational uses, international rivers and lakes serve as boundaries between a number of countries in the world. Boundaries between a large number of countries in Africa lie across one of the many international rivers and lakes shared between them. Although boundaries, as a general rule are demarcated by treaties, the problem of interpreting those treaties as to the exact location of the boundary across the shared river has started cropping up in Africa. Namibia and Botswana disputed the line demarcating their boundaries across the Chobe river (a tributary of the Zambezi river), and as a result disputed the ownership of an island on the river, called Kasikili by Namibia, and Sedudu by Botswana. Attempts to resolve the dispute through negotiations which started in 1990, failed, and the matter was referred to, and decided by the International Court of Justice in 1999. The Court interpreted the 1890 Treaty demarcating the boundaries between the two countries in such a manner as to place the boundary in the northern channel of the Chobe river, which results in the island being a part of Botswana (Salman 2000). Similarly, South Africa and Namibia dispute the line demarcating their boundaries across the Orange river. The Orange river forms the boundaries between the two countries for the entire southern borders of Namibia with South Africa. Namibia claims that the border should be the middle line of the Orange river. On the other hand, South Africa believes that the border should be the deepest part of the river, which would be on the northern high water mark, and not the middle of the

river. Malawi and Tanzania dispute their borders across Lake Malawi. Currently, the borders run along the Tanzanian shore, placing the entire lake under Malawi's sovereignty (Caflisch 1998).

VI. COOPERATION OVER SHARED BASINS IN SADC

The above incidents of disputes should not overshadow the emerging trend towards cooperation among the SADC countries. Shared basins can indeed be a source of conflict, but they can also be a catalyst for cooperation. Cooperation among SADC countries is manifested in the relatively large number of bilateral and multi-lateral agreements concluded by some of those countries. It is also manifested in the conclusion by most members of SADC of two protocols dealing with shared watercourses in the SADC region.

(i) Bilateral and Multilateral Agreements

The agreements that some of the SADC countries concluded vary in importance and deal with both quantitative as well as qualitative issues. They also deal with the establishment of joint commissions and technical committees. Such agreements include the Agreement between South Africa, Swaziland and Mozambique on the Establishment of a Tripartite Permanent Technical Committee, concluded in 1983. They also include the Treaty between South Africa and Lesotho on the Lesotho Highlands Water Project, entered into on October 24, 1986. The Agreement on the Action Plan for the Environmentally Sound Management of the Common Zambezi River System, was signed on May 28th, 1987 by Botswana, Mozambique, Tanzania, Zambia and Zimbabwe. On June 5, 1986, Botswana, Mozambique, South Africa and Zimbabwe signed an agreement on the establishment of the Limpopo Basin Permanent Technical Committee. Swaziland

and South Africa signed on March 31, 1992, the Treaty on the Development and Utilization of the Water Resources of the Komati River. Angola, Botswana and Namibia entered into an agreement on August 28, 1995, on the establishment of a Permanent Okavango River Basin Commission. South Africa and Mozambique signed an agreement on July 26, 1996 on the Establishment and Functioning of the Joint Water Commission (FAO 1997).

The shortcomings of most of those agreements are apparent. Some of them, such as the agreement on the Zambezi, do not include all the riparians of the shared river. The issues they are addressing are varying and none of them is comprehensive with regard to the basic issues needed for a meaningful agreement. With the acute and growing problem of water scarcity, and the large number of shared basins within SADC, it is not surprising that the SADC countries decided to deal with the issue of cooperation on a wider regional basis as soon as they concluded the Treaty establishing SADC in 1992.

(ii) The 1995 Protocol on Shared Watercourse Systems in SADC

Shortly after the 1992 Treaty was concluded, the SADC turned to the issue of regulating the use and protection of the waters of those shared river basins, placing the issue of cooperation over those rivers high on its agenda. That was initially achieved through the conclusion of the "Protocol on Shared Watercourse Systems in the Southern African Development Community (SADC) Region." The Protocol was signed in Johannesburg, South Africa, by ten of the then eleven members of SADC on August 23, 1995. Angola which was afflicted by civil war at that time, did not sign the 1995 Protocol. The Protocol entered into force three years later on September 29th, 1998.

The 1995 Protocol is based largely on the Helsinki Rules adopted by the International Law Association in 1966 (ILA 1966). Article 1 of the Protocol defines the term "Drainage Basin" as "a geographical area determined by the watershed limits of a system of waters including underground waters flowing into a common terminus" which is based largely on the Helsinki Rules. However, the Protocol includes also a definition of the term "watercourse system." This system is defined in Article 1 as "the inter-related hydrologic components of a drainage basin such as streams, rivers, lakes, canals, and underground water which constitute a unitary whole by virtue of their physical relationship." The definition is based largely on the early work of the International Law Commission on the draft UN Convention of the Law on the Non-Navigational Uses of International Watercourses. Despite the dissimilarities in the two terms (drainage basin and watercourse system), the Protocol uses both of them, sometimes seemingly in a synonymous manner. The inclusion of both terms has resulted in major ambiguity as o the approach adopted by the Protocol.

The 1995 Protocol lays down some general principles such as the concept of equality of rights in the use of the shared watercourse systems, the principle of community of interests in the equitable utilization of the shared watercourses, and the need to maintain proper balance between resource development and the conservation of the environment. Those general principles also include the need to pursue and establish close cooperation with regard to the study and execution of all projects likely to have an effect on the regime of the watercourse system, and the exchange of information and data on the shared watercourse.

The Protocol embraces the concept of "equitable and reasonable utilization" and enumerates a number of factors and circumstances to be taken into account in determining such "equitable and reasonable utilization." Those factors are based mostly on the Helsinki Rules, except for the last factor which deals with "guidelines and agreed standards to be adopted." However, the Protocol does not indicate what those guidelines and standards would be, nor who would set them.

The 1995 Protocol obliges the member states to require any person intending to use the waters of a shared watercourse for purposes other than domestic use, or intending to discharge waste into such waters to obtain a permit for that purpose. It also obliges member states to issue permits for discharge of waste but only after determining that such discharge would not have a detrimental effect on the regime of the watercourse system. Those are clearly elements of national legislation and their place is not an international treaty.

The Protocol includes provisions that require each riparian to notify other riparians of any planned measures of utmost urgency originating within its territory. It also includes provisions for notification of other potentially affected states and competent international organizations of any emergency originating within its territory. However, the Protocol does not require notification for normal planned measures that are not of utmost urgency or emergency nature.

The Protocol recommends the establishment of a number of institutions such as the monitoring unit to be based at the SADC Environment and Land Management Sector, river basin commissions between basin states for each drainage basin, and river authorities or boards in respect of each such drainage basin.

In summary, the 1995 Protocol devotes most of its articles to procedural matters, and to the establishment and operation of a number of institutions whose effectiveness, if they were established, might not be that certain. The factors for determining what is equitable and reasonable utilization are subjected to other guidelines which are not defined, nor does it make clear who would issue those guidelines. The 1995 Protocol does not include any provisions on the obligation not to cause significant harm, and the chapter on planned measures and the environment are quite cursory. It deals only with planned measures of utmost urgency, and does not lay down any procedures for dealing with planned measures in normal times, despite its calls for close cooperation with regard to the study and execution of all projects likely to have an effect on the watercourse. Moreover, the issue of the effects of the 1995 Protocol on the existing and future agreements and their relationship to the Protocol was not addressed.

(iii) The Revised Protocol on Shared Watercourses 2000

The limitations of the 1995 Protocol became quite apparent following adoption of the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses by the United Nations General Assembly in 1997. Although the 1995 Protocol entered into force and effect on September 29th, 1998, the Summit of Heads of States of SADC decided to revise the Protocol to take into account the developments in the field of international water law as reflected in the UN Convention, as well as to address the limitations of the 1995 Protocol.

The UN Convention was adopted by the General Assembly on May 21, 1997 by a vote of 103 for and 3 against (Tanzi 2001). Nine of the SADC countries voted for the Convention (Angola, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia,

South Africa and Zambia). Four countries did not participate in the voting (Democratic Republic of Congo, Seychelles, Swaziland and Zimbabwe) while one member abstained (Tanzania) (Salman 2002). This wide margin of endorsement of the UN Convention by the SADC countries should be seen as another reason for revising the 1995 Protocol to align it with the UN Convention.

The UN Convention is *a framework convention,* which aims at ensuring the utilization, development, conservation, management and protection of international watercourses. It also promotes optimal and sustainable utilization thereof for present and future generations. The Convention is divided into seven parts and consists of 37 articles, as well as an Annex on arbitration which consists of 14 articles.

The Convention asserts that the uses of international watercourses for navigation is not within its scope, except insofar as other uses affect navigation or are affected by navigation. The Convention defines the term "watercourse" to include both surface water and groundwater that is connected to surface water. It embraces the principle of equitable and reasonable utilization, and lays down certain factors and circumstances which should be taken into account for determining such equitable and reasonable utilization. The Convention also deals with the obligation not to cause significant harm, and requires the watercourse states to take all appropriate measures to prevent the causing of significant harm to other watercourse states.

Other basic obligations under the Convention include the obligation to cooperate through the establishment of joint mechanisms or commissions and regular exchange of data and information, and through notification of other riparian states on planned measures which may result in significant adverse effects on such riparians. The

Convention also includes detailed provisions on the environment that deal with the protection, preservation and management of international watercourses. Article 33 and the Annex to the Convention deal with dispute settlement mechanism and procedures.

The Convention shall enter into force on the ninetieth day following the deposit of the thirty-fifth instrument of ratification, acceptance, approval or accession with the Secretary General of the United Nations.

Despite divergent views on the UN Convention, the Convention, building on the work of the Institute of International Law and the International Law Association, has, no doubt, brought international water law a long way. The Convention has codified a number of customary international water law principles. Those principles include the principle of reasonable and equitable utilization, the obligation not to cause significant harm, the notification requirement for planned measures and the provisions relating to the protection of the environment (McCaffrey 1998).

The process of revision of the 1995 Protocol started in late 1998, and culminated in the completion and signing of the Revised Protocol on August 7th, 2000.

The Preamble to the Revised Protocol is fairly comprehensive. It acknowledges the progress with the development and codification of international water law initiated by the Helsinki Rules, as well as by the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses. Similarly, it recognizes Agenda 21 of the United Nations Conference on Environment and Development, the existing and emerging socio-economic development programs in the SADC Region, and the desire for developing close cooperation for judicious, sustainable and coordinated utilization of SADC shared watercourses.

Article 2 lays down the objectives of the Revised Protocol which are "to foster closer cooperation for judicious, sustainable and coordinated management, protection and utilization of shared watercourses, and advance SADC's agenda of regional integration and poverty alleviation." In addition, Article 2 lays down a number of ways for achieving these objectives, including, promoting shared watercourse agreements; advancing the sustainable, equitable and reasonable utilization of such shared watercourses; and promoting a coordinated and integrated environmentally sound development and management of shared watercourses. Thus, the Revised Protocol, similar to the United Nations Convention, goes beyond the issue of sharing the waters of the international rivers by addressing issues of sharing benefits, sustainable utilization and protecting the environment, all through coordinated development and management.

Other principles stated in the Revised Protocol include equality of rights of the riparian states, respect for the rules of customary or general international water law, and the importance of maintaining a balance between resource development and the needs of the environment, so as to promote sustainable development. Moreover, the need for close cooperation and exchange of information and data has also been highlighted in Article 3 of the Revised Protocol.

The Revised Protocol is based, to a considerable extent, on the UN Convention, and embodies a number of concepts adopted by the Convention. Indeed, the preamble to the Revised Protocol itself refers specifically to "the progress with the development and codification of international water law initiated by the Helsinki Rules and that of the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses."

Consistent with the UN Convention, the Revised Protocol uses the term "watercourse" and adopts a similar definition for the term as that of the UN Convention, to refer to a system of surface waters and groundwaters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus.

Drawing on the UN Convention, the Revised Protocol adopts the concept of "equitable and reasonable utilization" as the guiding principle. It enumerates factors similar to those enumerated in the UN Convention for determining what is equitable and reasonable utilization. The provisions regarding the obligation not to cause significant harm under the Revised Protocol are also based on the provisions of UN Convention, albeit with one difference. This difference relates to what a watercourse state should give "due regard to" when significant harm is caused to another watercourse state as a result of its utilization of the shared watercourse. The UN Convention requires that due regard be given to the provisions of articles 5 and 6 on reasonable and equitable utilization, while the Revised Protocol requires that due regard be given to the requirement to take all appropriate measures to prevent the causing of significant harm.

Despite the different wording of the UN Convention and the Revised Protocol about the obligation not to cause significant harm and the principle of equitable and reasonable utilization, one could still conclude that the Revised Protocol, like the UN Convention, has indeed subordinated the former to the latter. This conclusion is supported by the paragraphs of the Revised Protocol which tolerates the causing of harm by including provisions on mitigation of such harm.

The provisions of the Revised Protocol on "Planned Measures" are reiteration of Articles of the UN Convention on this matter. Those provisions address the same issues

addressed by the UN Convention regarding notification to other riparians of planned measures which may have a significant adverse effect upon them, the period for reply, obligations of the notifying state during the period for reply, reply to notification, or absence of a reply. They also address issues of consultation and negotiations concerning planned measures, procedures in the absence of notification, and the urgent implementation of planned measures. As discussed earlier, the 1995 Protocol only addresses planned measures of utmost urgency, or of emergency nature, and no procedures for notification on regular planned measures are spelled out in the 1995 Protocol.

The articles the Revised Protocol which deal with "Environmental Protection and Preservation" reiterate, with minor adjustments, those of the UN Convention. Both sets of articles deal with the protection and preservation of ecosystems; and with the prevention, reduction and control of pollution. Measures recommended to deal with such matters include setting of joint water quality objectives and criteria, establishing techniques and practices to address pollution from point and non-point sources, and establishing a list of substances whose introduction into the waters of the shared watercourses is to be prohibited, limited, investigated or monitored. Similarly, the Articles oblige the State Parties to take all measures to prevent the introduction of alien or new species that may have detrimental effects on the ecosystem of the watercourse. State Parties are also obliged to take all measures for protection and preservation of the aquatic environment (called marine environment in the UN Convention) of the shared watercourse. Thus, treatment of the environment under the Revised Protocol is far more elaborate than the 1995 Protocol, and is indeed in line with the UN Convention. Such treatment credits the

Revised Protocol with paying the same attention to the qualitative issues as it has done to the quantitative ones.

The Revised Protocol addresses, three main areas related to management, regulation and installations. These areas are dealt with in much the same way as the UN Convention. Both call for consultation concerning the management of a shared watercourse that may include the establishment of a joint management mechanism. They also call for cooperation, where appropriate, to respond to the needs or opportunities for regulation of the flow of the waters of a shared watercourse. Watercourse states are also asked to employ their best efforts to maintain and protect installations, facilities and other works related to the shared watercourse. Similar provisions on exchange of available information and data are included in both instruments. This language underscores the overall spirit of the two instruments on the need for cooperation for attaining optimal utilization and adequate protection of the shared watercourses.

The Revised Protocol language on watercourse agreements is based on Article 3 of the UN Convention, albeit with one significant modification. Both the UN Convention and the Revised Protocol agree that the rights and obligations of watercourse states arising from agreements in force are not affected by the UN Convention or the Revised Protocol. Similarly, both agree that such watercourse states may consider harmonizing such agreements with the UN Convention or the Protocol. With regard to future agreements, the UN Convention gives the watercourse states the right to enter into agreements which "apply and adjust" the provisions of the UN Convention. The Revised Protocol does not allow future agreements to "adjust" its provisions; only to "apply" them. This is indeed a significant difference.

Since the UN Convention is a universal framework instrument that is supposed to cater to the particular characteristics of different international watercourses, as well as to the varying interests of different riparian states, it is not surprising that the Convention has allowed such "adjustment" to its provisions by future agreements to provide the needed flexibility. The Revised Protocol, on the other hand, is a regional instrument whose application is limited to certain defined countries and watercourses, and as such there is the need for ensuring stability and predictability.

Both the UN Convention and the Revised Protocol state that future agreements could cover all or part of the watercourse, or they could apply to a particular project or program. Both also agree that the rights or obligations of riparian states that are not parties to a certain agreement are not affected by such agreements. In addition, both instruments give every watercourse state the right to participate in negotiations and become a party to any watercourse agreement that applies to the entire watercourse. If the agreement may affect the use of a watercourse by another watercourse state, the latter is entitled to participate in consultations or negotiations of such an agreement.

This comparative analysis of the Revised Protocol and the UN Convention shows that the Revised Protocol has drawn considerably from the UN Convention. This should not come as a surprise given that the UN Convention codifies a number of customary international water law principles, such as equitable and reasonable utilization, the obligation not to cause significant harm, as well as the obligation to protect the environment, and to notify other riparian states of, and to consult with them, on planned measures. It also should not come as a surprise given that nine member countries of SADC voted for the UN Convention following the General Assembly debate.

Aside from the above concepts which the Revised Protocol has drawn considerably from the UN Convention, the Revised Protocol addresses a number of issues differently from the UN Convention. The main areas of differences include navigational uses of shared watercourses, institutional framework and settlement of disputes.

The title of the UN Convention indicates clearly that it is dealing with the law of the non-navigational uses of international watercourses. Article 1(1) explains this matter further by stating that navigational uses of international watercourses are not within the scope of the present Convention except insofar as other uses affect navigation or are affected by navigation. Unlike the UN Convention, the Revised Protocol extends to navigation. Article 1 (1) defines "navigational use" as "use of water for sailing whether it be for transport, fishing, recreation or tourism." Article 3 (2) of the Revised Protocol, extending freedom of navigation to all the riparians of a watercourse, states that utilization of shared watercourses within the SADC Region shall be open to each Watercourse State, in respect of the watercourses within its territory and shall include agricultural, domestic, industrial, navigational and environmental uses. By opening the watercourse for navigation for all the riparian states, the Revised Protocol has clearly codified the principle of customary international law in this field (Caflisch 1998). Addressing the issue of navigation, and extending it to all riparian countries of the watercourse is a commendable step, particularly in light of the fact that the SADC Region includes six landlocked states among its fourteen members. Those landlocked states (Botswana, Lesotho, Malawi, Swaziland, Zambia and Zimbabwe), representing half of SADC continental members, should be able to use the shared rivers with other countries to reach the sea.

Article 5 of the Revised Protocol deals with the institutional framework for implementing the Protocol, and establishes a number of committees with varying functions. Those committees include the Committee of the Water Ministers, the Committee of Water Senior Officials, the Water Sector Coordinating Unit, and the Water Resources Technical Committee and Sub-Committees.

At the top of the structure is the Committee of the Water Ministers of SADC whose main responsibilities are to oversee and monitor implementation of the Protocol, and assist in resolving potential conflicts on shared watercourses. This is followed by the Committee of Water Senior Officials whose responsibilities include examining all reports and documents put before them by the Water Resources Technical Committee and the Water Sector Coordinating Unit. The Coordinating Unit organizes and manages all technical and policy meetings and mobilizes financial and technical resources needed to implement the Revised Protocol. The Technical Committee provides technical support and advise to the Committee of Water of Senior Officials and discusses issues tabled by the Water Sector Coordinating Unit.

In addition, the Revised Protocol obliges the Watercourse States to undertake to establish appropriate institutions such as watercourse commissions, water authorities or boards. The UN Convention has not established an institutional mechanism for overseeing its implementation, because, being a framework Convention, as it does not require one.

The UN Convention lays down elaborate procedures and mechanisms for settlement of disputes. It also includes a separate annex, with fourteen articles on arbitration. Unlike the UN Convention, the Revised Protocol establishes a simple

procedure and mechanism for dispute settlement. It states that the parties shall strive to resolve all disputes regarding implementation, interpretation or application of the provisions of the Revised Protocol amicably, in accordance with the principles enshrined in the Treaty establishing SADC. Those principles include sovereign equality of all members; solidarity, peace and security; and peaceful settlement of disputes. The Revised Protocol stipulates further that disputes between States that are not settled amicably shall be referred to the SADC Tribunal which is established under the SADC Treaty. According to the SADC Treaty, the decisions of the Tribunal are final and binding.

The Revised Protocol shall enter into force thirty days after the deposit of the instruments of ratification by two-thirds of the Member States of the SADC. This has not yet been achieved and, as such, the Revised Protocol has not yet entered into force.

V. CONCLUSION

The Southern African region faces acute problems with regard to freshwater resources both in terms of availability, and in terms of spatial and seasonal variations. The steady increase in the population of the countries of the SADC region, coupled with the increase in urbanization, will continue to add more pressure to the competing demands on the limited available water resources. This situation is further complicated by the large number of transboundary rivers in the SADC Region. Under these circumstances, it is not surprising that the countries of the SADC have placed the use and protection of, and the larger issue of cooperation over, shared watercourses on top of their agenda,

The signing and entry into force of the 1995 Protocol was certainly an important step towards cooperation among the SADC countries in the sharing and management of

their common water resources. The revision and updating of the 1995 Protocol to incorporate recent developments in this field and to make the provisions of the Protocol largely consistent with the UN Convention is another significant development because it aligns the Revised Protocol with internationally accepted norms in the field of shared watercourses. The provisions of the Revised Protocol that oblige the member states to apply without adjustment the Revised Protocol to future agreements is a praiseworthy deviation from the UN Convention. It is praiseworthy because it brings stability and predictability to the region's watercourses agreements. The regional nature of the Protocol and the defined sphere of the watercourses which it is supposed to cover need more certainty, while the global nature of the UN Convention requires more flexibility. Furthermore, the inclusion of provisions on navigation in the Revised Protocol and expanding freedom of navigation to all the riparian states of the watercourse on a reciprocal basis is another progressive, praiseworthy development, particularly since one half of the continental members of SADC are landlocked states to whom these rights are crucial.

The sharp variations among the SADC countries in their size, population, economic vitality, fresh water resources availability, institutional capacity, as well as downstream, upstream locations may create apprehensions among some SADC countries about the prospects for meaningful cooperation in the area of shred water resources. Similarly, the already existing disputes, as well as the potential ones, may persist for some time. However, the recent positive developments in the region such as the peaceful resolution of the dispute over the Kasikili/Sedudu Island between Namibia and Botswana, and the cooperative environment that led to the conclusion of the Revised Protocol should allay

such apprehensions, and should assist in resolving existing and potential disputes. Such positive developments should also assist in making shared water resources a catalyst for cooperation, rather than a source of conflict.

Taking the necessary steps for implementing the provisions of the Revised Protocol after it enters into force and maintaining the cooperative spirit generated by the conclusion of the Revised Protocol will undoubtedly be the next challenge for the countries of the SADC Region. Indeed it will be the real challenge since it addresses the most precious and scarce resource in the SADC region.

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