

Viewpoint

Southern African Water Conflicts: Are They Inevitable or Preventable?

By Dr Peter Ashton*

The role of water in virtually all of the water-related disputes or conflicts that have occurred in southern Africa has been secondary to considerations of territorial sovereignty. In most cases, these disputes have been driven by perceptions that the territorial integrity or sovereignty of one country is compromised or threatened by the claims of a neighbouring territory. Many of the international boundaries in southern Africa are aligned with rivers and water courses; the locations of these boundaries are the legacies of surveys and treaties conducted by earlier colonial powers. However, because rivers are dynamic systems that frequently change their courses in response to flood events, we can anticipate future disputes over the precise locations of international boundaries when rivers change their shape and configuration.

We can also anticipate that almost all future disputes or conflicts involving water, or concerned with some aspect of water, will tend to be local in scale. These conflicts will be amenable to institutional and government intervention and the rights and responsibilities of individuals are well protected in national legislation. At the international scale of a water-based conflict or dispute between two or more countries, some principles of international law provide a solid foundation for negotiation and arbitration. However, it is clearly in the interests of individuals and

societies that appropriate national and international institutions should jointly develop management plans for shared river basins and also derive workable protocols that can be used to prevent water-based conflicts in the region.

ARE WATER CONFLICTS INEVITABLE?

The Sedudu Island case study (see box) clearly shows how current geographical and geo-political realities, together with prevailing social and economic trends, provide conditions that can promote or accentuate water-based conflicts in southern Africa. We have also seen how natural patterns of change in aquatic systems can lead to disputes or can accentuate existing conflict situations. We now need to seek answers to the question: "Are all or some of these potential water conflicts inevitable?"

The simplest direct answer is an unequivocal "Yes"; however, this answer is conditional on several factors. Simply put, and without being pessimistic, *water conflicts are inevitable if we continue to do nothing to prevent them from occurring*. Whilst this response may appear to be rather simplistic, it is guided and framed by the key insight that the finite fresh water resources that are available in the sub-continent cannot continue indefinitely to support the escalating demands that we make of

them. Competition for the available water supplies will continue to increase to a point where radical interventions are required. In addition, water conflicts that are linked to the positions of international borders will still occur in those places where the countries concerned have not yet reached joint agreements.

A critically important issue in this debate is the realisation that the relative 'scale' or size of the problem has a definite bearing on the range of options that are available to prevent disputes or conflicts over water. For example, at small (or local) scales, the individuals or communities who disagree with one another over the access to, or use of, a water source have fewer conflict prevention options available to them. This is in distinct contrast to situations at larger (national and international) scales, where international treaties, accords and laws, as well as independent mediation, are available to countries to prevent or resolve conflict situations.

Whilst water is very unlikely to be the direct or only cause of a war in southern Africa, it is very likely that water will become a contributing factor to regional instability as demands for water approach the limits of the available supplies. Inevitably, water disputes will occur first in those areas where water is in shortest supply; these will then

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tend to spread further afield as more and more of the scarce water resources are used directly or transferred further afield to meet rising demands.

In the light of these observations, it is important for everyone concerned to consider the potential preventive approaches that are available so that we can properly formulate and

implement suitable policies, strategies and actions to avoid the prospect of water-based conflicts and their adverse consequences in southern Africa.

A Southern African Example - The Kasikili Island in the Chobe River

Disputed ownership of Sedudu/Kasikili Island in the Chobe River (Namibia and Botswana)

The ownership of Sedudu/Kasikili Island in the Chobe River has been the subject of a formal dispute between the governments of Namibia and Botswana since 1996, when both governments agreed to submit their claims for sovereignty of the island to the International Court of Justice (ICJ) in The Hague. Prior to this formalisation of the dispute, the "ownership" of Sedudu/Kasikili Island had been disputed by local residents in Namibia and Botswana, as well as preceding colonial governments, since the Berlin Treaty of 1 July 1890. A brief outline of the grounds for the dispute has been drawn from the official press communiqué that announced the International Court of Justice's decision to recognise the territorial claims of Botswana.

The island known as "Sedudu" in Botswana and "Kasikili" in Namibia, is approximately 3.5 km² in area and is located in the Chobe River. The Chobe River divides around the island, flowing to the north and south, and the island is flooded to varying depths for between three and four months each year, (usually beginning in March), following seasonal rains.

On 29 May 1996, both Namibia and Botswana jointly submitted their cases for territorial sovereignty of Sedudu/Kasikili Island to the ICJ, asking the Court for a ruling based on the Anglo-German Berlin Treaty of 1890 and the principles of International Law.

The historical origins of the dispute are contained in the Berlin Treaty of 1890, when the eastern boundaries of the Caprivi Strip along the Chobe River were defined in very vague terms as "the middle of the main channel" of the Chobe River, so as to separate the spheres of influence of Germany and Great Britain. In the opinion of the ICJ, therefore, the dispute centred on the precise location of the "main channel". Botswana contended that this is the channel running to the north of the island, whilst Namibia contended that the channel to the south of the island was the main channel. Since the terms of the Berlin Treaty did not define the location of the channel, the Court proceeded to determine which of the two channels could properly be considered to be the "main channel".

In order to achieve this, the ICJ considered both the dimensions (depth and width) of the two channels and the relative volumes of water flowing within these two channels, as well as the bed profile configuration and the navigability of each channel. The Court considered submissions made by both parties as well as information obtained from *in situ* surveys during different periods of seasonal flow. Against the background of the object and purpose of the Berlin Treaty, as well as the subsequent practices of the parties to the Treaty, the Court found that neither of the two countries had reached any prior agreement as to the interpretation of the Treaty nor the application of its provisions.

In reaching its verdict, the Court also considered Namibian claims that local Namibian residents from the Caprivi area had periodically occupied Sedudu/Kasikili Island, since the beginning of the twentieth century, depending on seasonal circumstances as well as river flows and inundation levels. The Court considered that this occupation could not be seen to reflect the functional act of a state authority, even though Namibia regarded this "occupation" as the basis for claims for "historical occupation" of the island. The Court also found that this so-called "occupation" of Sedudu/Kasikili Island by Namibian residents was with the full knowledge and acceptance of the Botswana authorities and its predecessors.

The final Court ruling was given in favour of Botswana, with the ICJ indicating that the northern channel around Sedudu/Kasikili Island would henceforth be considered as the "main" channel of the Chobe River. Accordingly, the formal boundary between Namibia and Botswana would henceforth be located in the northern channel of the Chobe River. Botswana and Namibia have agreed that craft from both countries will be allowed unimpeded navigation in both the northern and southern channels around Sedudu/Kasikili Island.

(to page 24)

The ICJ ruling is very welcome after a relatively long period of protracted debate and intermittent threats of military action, including formal military occupation of the island by the Botswana Defence Force. The Sedudu/Kasikili Island dispute provides an excellent example of a water-based conflict situation that reached a high level of tension, preventing resolution of the problem by the disputing parties, thus requiring an independent third party (the ICJ) to be called in to arbitrate the dispute. However, it is important for us to note that, like all other rivers, the Chobe River is a dynamic system where the shape and position of its channels will change over time. Natural processes of sediment deposition and erosion will continue to occur, each depending on the flow patterns in the river. Therefore, it is inevitable that the Chobe River will continue gradually to alter the position and configuration of its main channel in the future. Future changes in the position or shape of the main channel could possibly become a source of future dispute between the two countries.

In this example, the primary dispute between the two countries was one of territorial sovereignty rather than about access to water or to water-dependent resources. However, water is the physical driving force for changes to the aquatic system that forms the territorial boundary. Unless these two countries jointly develop a formal protocol to address this type of situation, similar cases of "water-related conflict" can be expected to occur in future.

There are still five islands in the Caprivi sector whose territorial sovereignty or "ownership" is contested; three of these islands are in the Chobe River and two are in the Zambezi River. Without wishing to pre-empt any options that may be considered by the countries concerned, we can anticipate that the legal principles upon which any decision will be based are likely to follow the same principles and logic used to resolve the dispute over Sedudu/Kasikili Island.



Good Neighbour Agreements on South Africa's Shared Watercourses

Tony van der Watt summarises the Department of Water Affairs and Forestry's viewpoint

Just as "no man is an island unto himself", so too, no nation within an economic region can prosper in isolation. This is recognised in the existence of the Southern African Development Community (SADC), the overall objective of which is "the attainment of an integrated regional economy on the basis of balance, equity and mutual benefit for all member states".

Three key development objectives have been identified as the basis for an integrated regional economy in Southern Africa, namely poverty alleviation, food security and industrial development¹. Fundamental to the achievement of these goals, is the sufficient availability of water throughout the region. It enables

food production, hygiene, industry, power generation, environmental diversity and indeed life itself. No regional or national development can take shape, economic prosperity be achieved or reasonable standard of living sustained, without giving primary consideration to water.

An inescapable fact of life for South Africa is that four major river systems arise within or flow across this country, are utilised by its people for a variety of purposes, but are also the concern of other upstream or downstream nations. These are the Limpopo, which is shared between South Africa, Botswana, Zimbabwe and Mozambique; the Incomati and Maputo Rivers, which rise in South Africa, with Swaziland and Mozam-

bique as downstream users; and the 2 300 km long Orange River, the basin of which covers the whole of Lesotho and (including the Vaal River catchment) half of South Africa, as well as a small part of southern Botswana and the southern part of Namibia.

This gives relevance to the warning by Dr Peter Ashton of the CSIR's Division of Water, Environment and Forestry Technology, in this issue of Water Wheel, that water conflicts are inevitable if nothing is done to prevent them from occurring. Fortunately, bilateral foundations exist between South Africa and its neighbour states on the management of their respective shared watercourses, leading up to a Protocol on

Shared Watercourses in the SADC Region (1995), followed by an Agreement between the Governments of Botswana, Lesotho, Namibia and South Africa on the establishment of the Orange-Senqu River Commission.

The Protocol recognises the UN Convention on the uses of international watercourses, the UN Conference on Environment and Development, the socio-economic development programmes in the SADC Region and their impact on the environment, the desire for close co-operation for judicious, sustainable and co-ordinated utilisation of the shared watercourses in the Region, and the need for development of their resources to support sustainable socio-economic development.

A useful background document on the watercourses that South Africa shares with its neighbours is the paper entitled "Implications of Protocol on Shared Watercourse Systems in the SADC Region", delivered by M S Basson as the SA Country Paper on Shared Watercourse Systems at the SADC Water Week Workshop in Pretoria in September 1999. The paper provides an overview of the relevant shared watercourses and elements of potential conflict, as well as suggestions for improved co-operation between the various users of water in the Region.

Briefly summarised, Basson's observations are:

ELEMENTS OF POTENTIAL CONFLICT

A prominent element of potential conflict lies in the population growth of the area and consequent shrinkage of water per capita for domestic needs and economic growth, with social and environmental impacts.

Incompatible priorities and perspectives between countries regarding the use of water could also lead to

conflict, particularly as the point of full resource utilisation is reached.

Mozambique, as the most downstream country of three shared river systems, has already expressed concern on several occasions about upstream developments. One complaint is that reduced freshwater flow into the ocean has caused damage to coral reefs and prawn banks in Mozambique, and seawater intrusion into some rivers.

Incompatible legislation and technological approaches may also lead to misunderstanding, suspicion and different perspectives between countries concerning the efficiency of water use and resource management.

Basson's observations on the various shared river systems in which South Africa has an interest, briefly summarised, are as follows:

LIMPOPO RIVER SYSTEM

Water use from the Limpopo system in South Africa is dominated by irrigation (about 50%) with mining, industrial and domestic use accounting for the rest. There is a further great need to provide domestic water supplies to some millions of people in under-developed areas of Limpopo Province.

Additional essential usage of water from the Limpopo basin is made by Botswana and Zimbabwe. It is furthermore vital to provide a sufficient supply of high quality water to maintain the delicate ecosystems of the Kruger National Park. This then leaves Mozambique, with its interest in expanding its irrigation and domestic water supplies, in the unenviable situation of being the most downstream user on the Limpopo.

With all three upstream countries in dire need of utilising their water resources, a careful balance needs to be achieved to ensure the equitable apportionment of water to Mozam-

bique, and to maintain the ecology of the river and its important tributaries, some of which suffer from water quality problems due to upstream usage.

International co-operation with respect to the management of this watercourse system is overseen by the Limpopo Permanent Technical Committee, representing South Africa, Botswana, Zimbabwe and Mozambique.

INCOMATI AND MAPUTO RIVER SYSTEMS

The Incomati River basin (of which the Sabie River is an important tributary) feeds through the north of Swaziland into Mozambique, and the Maputo River basin (of which the Usutu and Pongola Rivers are important tributaries) feeds around the south of Swaziland into Mozambique.

Meeting the requirements of the exploding population along the upper reaches of the Sabie River, with its need for additional irrigation and domestic water, would impact on delicate ecosystems in the Kruger National Park and on Corumana Dam in Mozambique. Extensive upstream usage would also impact on Mozambique's need to supply water to the city of Maputo from the Incomati River.

The upper reaches of the Maputo River's tributaries in South Africa and Swaziland also face demands for urban water supplies and power generation, as well as for additional interbasin transfer to the Vaal River. The perceived lack of effectiveness of flood control at Pongolapoort Dam in South Africa has been a contentious issue with Mozambique in the past. Sufficient water also needs to be released from this dam to maintain water supply and ecosystems in Mozambique.

In respect of the Incomati basin, bilateral regulatory authorities have

existed between South Africa and Swaziland, and between South Africa and Mozambique respectively. In respect of the Maputo basin, a tripartite technical committee formed the point of contact between the three countries involved. These agreements have now been merged into the Incomaputo Agreement on Water Sharing, which was signed at the World Summit on Sustainable Development in Johannesburg in August 2002.

ORANGE RIVER SYSTEM

Four countries have an interest or potential interest in the Orange River system, namely South Africa, which contributes 55% of the total natural runoff of 11 200 million cubic metres per year, Lesotho 41% and Namibia 4%. No runoff from Botswana has been known to have reached the Orange River in recent times.

Several bilateral agreements and institutional arrangements on the Orange River have been entered into between South Africa and its co-basin neighbours. These include the Lesotho Highlands Water Commission, the Agreement on the Lesotho Highlands Water Project and the Trans-Caledon Tunnel Authority, between South Africa and Lesotho, the Permanent Water Committee between South Africa and Namibia, and the Joint Permanent Technical Committee between South Africa and Botswana. The bilateral agreements culminate in (but are not replaced by) an agreement between all four countries (South Africa, Lesotho, Botswana and Namibia) to establish the Orange-Senqu River Commission. The basic objective of the Commission is to provide

technical advice to the four parties on the development, utilisation and conservation of water resources in the river system.

ECOLOGICAL CONSERVATION

Besides the direct human dependence on the abovementioned shared river systems, which is the concern of the SADC, a further vital aspect (which the SADC takes into account) is the need to conserve their ecology in order to support sustainable socio-economic development for the future².

Interbasin transfers have various physical, environmental, technical and resource management impacts on the watercourse systems involved.

Basson notes that effluent return flows, as well as highly saline mine pumpage, are exerting a significant impact on the water quality of the Vaal River downstream of urban centres. He also notes that water quality along the lower Orange River is still good, but that the transfer of water from the Senqu River (upper Orange River in Lesotho) to the Vaal River, combined with lower-quality flows from the Vaal River into the Orange River, as well as irrigation return flows, are having an effect.

FUTURE CO-OPERATION

In his paper, Basson pays tribute to the good co-operation achieved on trans-boundary rivers in the past, through the bilateral channels between the various countries. However, the Protocol on Shared Watercourse Systems in the SADC Region provides a much wider base for a comprehensive multi-sectoral

approach to international co-operation.

Some key elements towards facilitating the goals of the Protocol, in which South Africa could play a leading role, are the harmonisation of strategies and concerted efforts at basin, national, regional, sectoral and international level, with recognition of water as a key, but limited, natural resource.

To ensure equitable sharing of the resource, there is a need to identify and agree upon water-use priorities and allocation criteria – in particular, trade-offs between users. There is a need to pro-actively address the situation of water requirements exceeding the availability of water, and attention needs to be given to specific interbasin water transfer considerations.

Harmonisation is also needed in respect of environmental standards and resource management (sharing of technology and databases), leading to common insights and understanding and a common knowledge base among SADC states, as well in the legal and institutional arrangements between the participating countries.

Ideally, the natural resources of the SADC regions should be subjected to holistic perspectives to determine their comparative and competitive advantages and identify obstacles to development. This study should include natural, human and financial resources together with factors such as climate, infrastructure and technology, and how these could best be utilised towards achieving the common regional goals. Such an exercise would also give rise to principles for the optimum utilisation and sharing of water. 

¹ *Implications of Protocol on Shared Watercourse Systems in the SADC Region, M S Basson, SA Country Paper on Shared Watercourse Systems, SADC Water Week Workshop, Pretoria, 16 September 1999.*

² *Revised Protocol on Shared Watercourses in the SADC region.*