Public Involvement in Water Resource Management within the Okavango River Basin

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ABSTRACT

The Okavango basin, comprising the Okavango River and its catchment plus the world-renowned Okavango Delta, spans three southern African countries and is regarded as an ‘internationalised’ river system with a wider range of stakeholders than most other transboundary rivers in Africa. Whilst regional and international treaties affirm the responsibility of each basin state to manage the water resources located within its territorial boundaries, local attempts to alleviate escalating water shortages in Namibia and Botswana by withdrawing water from the Okavango River have attracted intense local and international concern. This has led to disputes between communities, non-governmental organizations and water resource managers. Greater attention is now being focussed on joint efforts by the three basin states to develop an integrated management plan for the entire Okavango basin. However, water resource management authorities in each basin state still face enormous challenges in their attempts to ensure effective public involvement and participation in decision-making processes. These problems include: the involvement of non-governmental organisations who have ‘external’ objectives, the public’s perceptions of ‘gaps’ between national and traditional authorities, the use of at least six different languages in the catchment, high levels of poverty and unemployment amongst many rural and urbanised communities, the remoteness of many communities being compounded by inadequate provisions for transportation and communications infrastructure and, in Angola, the new national priorities posed by social and economic reconstruction activities on cessation of the Angolan Civil War. In contrast to Angola, residents in Namibia and Botswana experience far fewer problems and public participation processes are more successful. Ultimately, close collaboration and mutual trust between all stakeholder groups will be essential if the Okavango basin and its water resources are to be managed on a sustainable basis.

INTRODUCTION

Throughout southern Africa, escalating water scarcity is widely regarded as posing one of the greatest challenges to sustainable development in the region (Falkenmark, 1989; Conley, 1995; SARDC, 1996; Shela, 1996). Competing demands for water are especially acute in the more arid portions of the sub-continent where water scarcity and associated increases in water pollution have also been linked to poverty, hunger and disease (Pallett, 1997; Gleick, 1999; FAO, 2000; Ashton, 2003). The New Partnership for Africa’s Development (NePAD) and the member states of the Southern African Development Community (SADC) have recognized the links between water shortage and poverty and have placed strong emphasis on the need to relieve regional water shortages (GWP, 2000; NePAD, 2001; SADC, 2001). However, it is particularly difficult to meet the growing human needs for water in those situations where sufficient water is also needed to maintain the functioning of sensitive aquatic ecosystems and to protect the integrity of water resources (Falkenmark, 1994, 1999; Ashton, 2000a). Attempts to resolve the increasing competition for progressively scarcer water resources are often achieved in ways that damage or degrade the ecosystems concerned (Khroda, 1996; Ashton & Neal, 2003). The situation is further complicated by the fact that most of the larger river basins in southern Africa are shared by several countries (e.g. the Zambezi, Okavango, Orange and Limpopo rivers). The question of who should be allowed to use how much water and for what

purpose becomes extremely sensitive and emotionally charged under these circumstances (Biswas, 1993; Ashton, 2000a; FAO, 2000).

In southern Africa, the water-rich Okavango Delta and its major inflow, the Okavango River, provide a classical example of a transboundary river system where human and ecosystem needs compete for scarce water supplies (Ellery & McCarthy, 1994; McCarthy & Ellery 1998; McCarthy et al., 1998, 2000; Ashton & Neal 2003). The Okavango system spans three countries (Angola, Botswana and Namibia) and because of its perennial flows, the Okavango River and the world-renowned Okavango Delta function as a form of “linear oasis” in an otherwise arid area (Bethune 1991). The relative abundance of water in this system has inspired numerous plans and attempts to divert or abstract water from the system for domestic, agricultural and industrial uses (UNDP/FAO 1976; JVC 1993; Heyns 1995a). Most of these attempts have not proceeded because of concerns that adverse social, economic or environmental consequences could arise (e.g. IUCN 1993). To date, very small quantities of water are withdrawn from the system and the Okavango River and Okavango Delta remain largely intact from an ecological viewpoint, whilst the need for water remains acute or is worsening in many surrounding areas (MGDP 1997; Ashton 2003).

The scenic beauty and extraordinarily rich biodiversity of the Okavango Delta and its component ecosystems have attracted widespread national and international concern about the future of this unique system (Ellery & McCarthy 1994; Ramberg 1997). In particular, local and international attention has emphasized the need to avoid forms of manipulation or management that could lead to adverse ecosystem changes; in short, the Okavango system can be considered to be an “internationalized” basin with a range of stakeholders that extends beyond the norm for most transboundary rivers in Africa (Pallett 1997; Ashton & Neal, 2003; Turton et al., 2003).

However, despite the growing local and international interest in the Okavango basin, recurring droughts and escalating regional water shortages in Botswana and Namibia continue to pose enormous challenges for water resource managers in these countries (Ashton 2000a; 2000b; 2003). In addition, the recent cessation of civil war in Angola now means that Angolan authorities need to consider options for rehabilitating the country’s economy - the development of agriculture, water supply and hydropower facilities in the upper catchment of the Okavango River offer ideal opportunities to assist in achieving this goal (Turton et al., 2003). Taken together, these tensions, coupled with mounting local and international anxiety for the biological integrity of the Okavango Delta and its inflowing rivers, have accentuated the need to reach consensus on appropriate ways of managing the system (Ellery & McCarthy 1994). Clearly, both human and ecosystem perspectives must be taken into account if an equitable and sustainable solution is to be found (Ellery & McCarthy, 1994; Ashton, 2000b).

In recent years, Integrated Water Resource Management (IWRM) approaches have become widely accepted as the offering the best way to achieve sustainable water resource management (Ohlsson, 1995; Van der Zaag & Savenije, 2000; Van der Zaag et al., 2000). In particular, the IWRM approach promotes consideration of all components of the hydrological cycle and encourages wide public participation and transparency of decision-making. In addition, IWRM also advocates that responsibility for water resource management should be delegated to the lowest appropriate level, and recommends the use of joint fact finding and consensus-seeking approaches for the resolution of problems. Ultimately, sustainable management of the shared water resources and aquatic ecosystems within the Okavango basin will require all stakeholders within each of the three basin states to participate in the development and implementation of a management plan for the system (Ashton & Neal, 2003).
The sustainable management of a transboundary river system that is shared by more than one country depends on the collaborative efforts and collective goodwill of all the basin states involved (Wolf 1999; Lundqvist 2000; Ashton 2002). The activities of individual countries sharing a river basin are guided and directed by the provisions of national and international water law, as well as any international or regional watercourse management treaties and protocols that may have been ratified by the basin states (Wouters 1999). Within this statutory and legal framework, however, it is the decisions, attitudes and actions of national governments and individual stakeholders that usually play a decisive role.

The three basin states have signed and ratified several international accords and treaties, as well as the revised SADC protocol on shared watercourse systems. Whilst these instruments recognize the sovereignty of individual states, they also provide a framework for collaboration and impose specific obligations on the signatory states (Ashton & Neal, 2003). In addition, the basin states have signed the OKACOM accord to provide a formal institutional basis for the joint development of a management plan for the Okavango basin (OKACOM, 1994). A key part of the activities promoted and supported by OKACOM has been the initiation of extensive processes of public participation.

This paper examines the degree to which stakeholders within the basin states are involved in the development of water resource management strategies for the Okavango basin and highlights some of the challenges that have been encountered. Because of widespread confusion over prevailing circumstances in the basin, this paper focuses attention on the prevailing geographic and political context within which local and regional initiatives seek to promote public participation in decision-making processes.

GEOGRAPHICAL CONTEXT

The Okavango system forms part of the Makgadikgadi basin, which drains portions of four countries (Angola, Namibia, Botswana and Zimbabwe; see Figure 1). The Makgadikgadi basin is internally draining (endorheic), receiving inflows from one perennial river system in the north-west (the Okavango River), as well as several smaller, ephemeral or episodic rivers in the drier southern portion of the basin. These smaller rivers only contain surface water flows for short periods after heavy rainfall and have not contributed water to the Okavango Delta in living memory (Pallett 1997). Based on its topographic and hydraulic characteristics, the Makgadikgadi basin can be divided into four distinct sub-basins or catchments that seldom have direct hydraulic contact with one another, and a small river basin (the Boteti River) that directs occasional outflows from the Okavango Delta towards the Makgadikgadi pans. Ntwetwe and Sowa pans comprise the Makgadikgadi Pan system in the east, while the Deception Pan complex forms the southern portion of the basin. Sowa Pan, the easternmost sub-basin of the Makgadikgadi basin, receives seasonal inflows from the Nata River system that rises in western Zimbabwe (Pallett 1997; Ashton 2000a; Figure 1).

The areas of the different sub-basins of the Makgadikgadi basin are shown in Table 1. The Makgadikgadi basin covers an area of approximately 725,293 km², with Botswana providing the largest proportion (46.9%), followed by Angola (27.6%), Namibia (22.7%) and Zimbabwe (2.8%). The Okavango catchment or sub-basin covers an area of some 413,550 km² (in Angola, Botswana and Namibia), with an additional 15,844 km² contributed by the wetland area of the Okavango Delta plus its islands (in Botswana; Gumbricht et al., 2003). The combined area of the Okavango sub-basin and the Okavango Delta comprises approximately 59% of the Makgadikgadi basin (Table 1). This paper focuses on the Okavango sub-basin and does not deal with other components of the Makgadikgadi system.
The quantity and quality of water that enters the Okavango Delta depends on climatic factors (Wilson & Dincer, 1976) and is influenced by any water development activities that may take place in the upstream basin states (Ashton & Manley, 1999; Ashton, 2000a). Under international law (ILA, 1966; Biswas, 1993; ILC, 1994; UNCSW, 1997), Angola and Namibia are technically entitled to withdraw water from, and develop, water systems to which they are riparian; this right is entrenched and confirmed in terms of the revised SADC Protocol on Shared Watercourse Systems (SADC, 2001). As the lowermost riparian state, Botswana is theoretically in a vulnerable position and would clearly like to ensure that its interests are not unduly prejudiced by any developments that may take place in Namibia or Angola (SMEC, 1987; IUCN, 1993; Turton et al., 2003). To date, very little water (less than 1% of the mean annual runoff) is abstracted from the Okavango River and the system remains in a near pristine state (Ashton & Neal, 2003).

Good inter-state co-operation between Angola, Botswana and Namibia jointly to resolve issues relating to the Okavango River is not only highly desirable, but is also essential if sustainable solutions are to be achieved in the long-term (OKACOM, 1994; Heyns, 1995a, b; FAO, 2000; Ashton & Chonguiça, 2003). However, there are perceptions in certain quarters that the relative costs and benefits of such co-operation may be unevenly distributed between the three countries (Ohlsson, 1995; Ali, 1996; Shelal, 1996; Ramberg, 1997; Turton, 1999). Nevertheless, whilst the three basin states may not have the same economic, technical and personnel resources at their disposal, each country has pledged itself to co-operate with its
neighbours on the matter of water resources (Republic of Botswana, 1990; Heyns, 1995; Republic of Namibia, 1995, 2000a, b; SARDC, 1996; Pallett, 1997; Ashton, 2000b).

Table 1. Comparison of the area of each Makgadikgadi sub-basin within the different countries comprising the basin, and their proportional contribution to the area of the Makgadikgadi basin. (See Figure 1 for the position of each sub-basin; data taken from Ashton & Neal, 2003).

<table>
<thead>
<tr>
<th>Sub-basin</th>
<th>Country contribution (km²)</th>
<th>Total area (km²)</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Angola</td>
<td>Botswana</td>
<td>Namibia</td>
</tr>
<tr>
<td>Okavango River</td>
<td>200,192</td>
<td>59,575</td>
<td>153,783</td>
</tr>
<tr>
<td>Okavango Delta</td>
<td>0</td>
<td>15,844</td>
<td>0</td>
</tr>
<tr>
<td>Boteti River</td>
<td>0</td>
<td>10,920</td>
<td>0</td>
</tr>
<tr>
<td>Deception Pan</td>
<td>0</td>
<td>11,241</td>
<td>11,241</td>
</tr>
<tr>
<td>Ntwetwe Pan</td>
<td>0</td>
<td>74,028</td>
<td>0</td>
</tr>
<tr>
<td>Sowa Pan</td>
<td>0</td>
<td>26,389</td>
<td>0</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>200,192</td>
<td>340,058</td>
<td>165,024</td>
</tr>
<tr>
<td><strong>Proportion (%)</strong></td>
<td>27.60</td>
<td>46.89</td>
<td>22.75</td>
</tr>
</tbody>
</table>

Prior to the formal ratification of the SADC protocol on shared river basins (SADC, 1995) and its subsequent revision (SADC, 2001), Botswana and Namibia had a relatively long history of amicable inter-state co-operation on matters relating to their shared water resources (Taylor & Bethune, 1999). The first, mostly informal, instances started in the early 1950s and were expanded over time to include joint flow-gauging exercises on the Okavango, Chobe and Cuando rivers, as well as concerted efforts to control the invasive aquatic weed *Salvinia molesta* that infested rivers shared by the two countries (Taylor & Bethune, 1999). A similar level of goodwill exists between Angola and Namibia concerning their joint interests in shared watercourses, most notably the Cunene, Okavango and Cuando rivers.

**POLITICAL CONTEXT**

**The international context**

The International Law Commission (ILC) drafted The Helsinki Rules in 1966 in an attempt to bring greater uniformity to international water law by providing a comprehensive code for the use of transboundary drainage basins (Eckstein, 2002). Since their introduction, these rules have formed the basis for negotiations among riparian states over the reasonable and equitable use of shared water resources (ILC, 1994). Due to its involvement in the development of the Helsinki Rules, the General Assembly of the United Nations commissioned the ILC in 1970 to draft a set of articles to govern the non-navigational uses of transboundary water (Eckstein, 2002). After some 25 years of debate among UN member states, the text of the UN Convention on the Law of Non-Navigational Uses of International Watercourses (UNCSW, 1997) was finally adopted on 21 May 1997. Whilst the majority of member states adopted the text of the convention, the voting results showed that factors such as economic conditions and geographic position, as well as other national interests, played a major role in deciding the vote. It is interesting to note that all three basin states of the Okavango system voted for the Convention even though Angola and Namibia are classified as upper and lower riparian states, whilst
Botswana is classified as mostly lower (Eckstein, 2002). However, five years after its adoption by the UN General Assembly, only 12 states have ratified the convention whilst another ten states have signed the Convention. It is important to note that even if this convention never enters into force, it is the product of a democratic vote and it has had an obvious influence in the development of other water resource agreements. For example, the SADC Protocol on Shared Watercourse Systems in the Southern African Development Community Region is closely aligned with the Helsinki Rules and the principles of the Convention (SADC, 1995).

Other international conventions that can potentially influence the management of the Okavango basin include the Ramsar Convention (Ramsar, 1971), the United Nations Convention on Biological Diversity (UNCBD, 1992), the United Nations Convention to Combat Desertification (UNCCD, 2001), and the United Nations Framework Convention on Climate Change (UNFCCC, 1992). All of these conventions contain provisions that specify obligations and responsibilities for the riparian countries to use their international water resources reasonably and equitably, whilst also promoting open and active participation and collaboration between riparian states. The fact that the three Okavango basin states have signed and/or ratified these conventions, or are contemplating doing so, provides clear evidence of political goodwill and a shared spirit of co-operation and collaboration amongst the basin states (Table 2).

The regional context

Southern African Development Community (SADC)

The southern African Development Community (SADC) comprises 14 member states, including Namibia, Angola and Botswana, and the objectives of the organization are outlined in the SADC Treaty (SADC, 1992). In summary, SADC aims to promote sustainable development and economic growth, alleviate poverty, enhance the standard and quality of life of the people of southern Africa, and support the socially disadvantaged through regional economic integration. These objectives are not easy to attain, and SADC has recognized that the people and institutions within the region must be encouraged to take the initiative to develop bilateral and multilateral economic, social and cultural ties across the region, whilst also participating fully in the implementation of SADC programmes and projects (SADC, 1992).

Table 2. Ratification dates of key international conventions by Angola, Botswana and Namibia (modified from Ashton & Neal, 2003).

<table>
<thead>
<tr>
<th>Country</th>
<th>Ramsar#</th>
<th>UNCBD#</th>
<th>UNCCD#</th>
<th>UNCSW#</th>
<th>UNFCC#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>N/P*</td>
<td>1 Apr 1998</td>
<td>30 Jun 1997</td>
<td>N/P*</td>
<td>17 May 2000</td>
</tr>
</tbody>
</table>

# Ramsar = Ramsar Convention on Wetlands of International Importance.
UNCCD = United Nations Convention to Combat Desertification.
UNFCCC = United Nations Framework Convention on Climate Change.
* N/P: not yet party to convention (based on available information).
The SADC Protocol on Shared Watercourse Systems (SADC, 1995) was the first protocol to be developed by SADC and emphasizes the region’s strong commitment to ensuring that member states collaborate with each other in the management of their shared watercourses. The rationale behind the development of this protocol was based on the recognition that a single legal instrument for river basin management would be more beneficial for the region than the development of individual management plans for each basin as and when the need arose. As a consequence of this decision, SADC member states initiated a process of negotiation to formulate the SADC Protocol, which was adopted and signed by 10 SADC member states in 1995. Due to the fact that some SADC countries expressed concerns and/or reservations regarding certain specific articles within the Protocol, a process of amendment was initiated in 1997; this included a series of consultative workshops at regional and national level (Ramoeli, 2002). In addition, the amendment process was influenced by concurrent developments in international water law, specifically the adoption of United Nations Convention on the Law of Non-Navigational Uses of International Watercourses (UNCSW, 1997), and SADC member states felt that it was essential for the Protocol to be closely aligned with the Convention. A discussion paper was then circulated to all SADC member states for comment and the results were incorporated into the Revised SADC Protocol on Shared Watercourse Systems (SADC, 2001). The Revised Protocol, which contains all the key elements of the United Nations Convention on Shared Watercourse Systems, has been signed by all fourteen SADC member states and has already been ratified by three member states. The original Protocol, which entered into force in 1998, will remain in force until 12 months after the Revised Protocol has come into force (Ramoeli, 2002).

The overall objective of the Revised SADC Protocol on Shared Watercourse Systems is to advance the sustainable, equitable and reasonable utilisation of the shared watercourses and to promote co-ordinated and integrated environmentally sound development and management of shared watercourses. It order to do this, it is recognised that the processes of research and technology development, public participation, information exchange, capacity building, and the application of appropriate technologies in shared watercourses management need to be promoted (SADC, 2001; Ramoeli, 2002).

The Permanent Okavango River Basin Commission (OKACOM)

Both the original (SADC, 1995) and revised (SADC, 2001) versions of the SADC Protocol on Shared Watercourse Systems require the establishment of river basin institutions to manage shared water resources (Ramoeli, 2002). Within this context, as well as in response to public opinion and perceived and actual threats to the Okavango basin, Angola, Botswana and Namibia signed an agreement in 1994 to form the Permanent Okavango River Basin Commission (OKACOM). The objectives of the OKACOM are to advise the respective governments on technical issues relating to the conservation, sustainable development and utilization of the shared water resources of the Okavango basin (OKACOM, 1994). A key part of the importance of OKACOM is that it provides a regional example of a river basin commission that includes all riparian states and establishes a precedent that places a burden of responsibility on their commitment jointly to manage the basin in a participatory and sustainable manner (Ramoeli, 2002; Ashton & Neal, 2003). Articles 2 and 5 of the OKACOM agreement state that the commission may liaise with advisors on particular issues that are relevant to the Okavango basin to ensure sound decision-making (OKACOM, 1994). Although the onus lies with OKACOM to ensure appropriate stakeholder involvement in discussions held by the commission, it is encouraging that non-contracting party delegates may be included in decision-making processes.
The national context

In the context of national policies and legislation, Angola, Botswana and Namibia have clear policies and laws that govern the ownership and use of water resources. These are summarised in Table 3.

Table 3: National policies, legislation and management plans, pertaining to water resource management in Angola, Botswana and Namibia (adapted from Ashton & Neal 2003).

<table>
<thead>
<tr>
<th>Country</th>
<th>Policy/Act</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Angolan Water Law (ANGOP, 2002).</td>
</tr>
<tr>
<td></td>
<td>National Environmental Management Programme (PGNA; Russo et al., 2002).</td>
</tr>
<tr>
<td></td>
<td>National Environmental Strategy (ENA; Russo et al., 2002).</td>
</tr>
<tr>
<td></td>
<td>Water Act of 1968</td>
</tr>
<tr>
<td></td>
<td>Water Act No. 54 of 1956 (including amendments up to 1979).</td>
</tr>
<tr>
<td></td>
<td>Water Amendment Act No. 22 of 1985.</td>
</tr>
<tr>
<td></td>
<td>Namibia's Second National Development Plan (NDP2; Republic of Namibia, 2001)</td>
</tr>
</tbody>
</table>

Within Angola the management and use of water are currently regulated as part of the Environmental Framework Law (Republic of Angola, 1998). This law is based on the Angolan Constitution (Republic of Angola, 1992) and falls within the ambit of the Department of Water Affairs in the Ministry of Fisheries and Environment (Russo et al., 2002). The Department will administer Angola’s new water law when it comes into effect (ANGOP, 2002). Meanwhile, water use in Angola is administered by the Department of Agriculture since agriculture is the largest water use sector in the country (Ashton & Neal, 2003). Water resource management is decentralized to provincial authorities wherever possible (ANGOP, 2002) and is guided by two key documents, the National Environmental Management Programme (PGNA) and the National Environmental Strategy (ENA) – both of these documents include provisions for public consultation and participation processes (Russo et al., 2002).

The Ministry of Mineral Resources and Water Affairs, through the Department of Water Affairs, is responsible for the conservation and protection of water resources in Botswana (Khupe, 1994). Botswana's Constitution and its national policies stipulate that all activities that can impact on the use of water resources have to be co-ordinated through the Department of Water Affairs (Republic of Botswana, 1990, 1991; Khupe, 1994). In addition, all developments related to water, are required to meet the provisions of the National Water Master Plan (SMEC/KPB/SGAB, 1992) and the objectives of Botswana’s National Development Plans (Khupe, 1994). These documents were drawn up after an intensive public consultation process.

In Namibia, the Department of Water Affairs is part of the Ministry of Agriculture, Water and Rural Development (MAWRD), and is responsible for water resource management (Heyns,
The control, conservation and use of water is currently regulated by the Water Act No. 54 of 1956 and the Water Amendment Act No. 22 of 1985 (Heyns et al., 1998), which were originally promulgated in South Africa prior to, and shortly after, Namibia's transition to independence (Ashton & Neal, 2003). A new Water Act for Namibia is in the process of being finalized (Republic of Namibia, 2000a) and is aligned with the Constitution of the Republic of Namibia, which expresses the need to preserve the environment and prevent natural resource degradation (Republic of Namibia, 1989). The key role that water plays in Namibia's development plans and the need to align the activities of all government departments that have an influence on the country's water resources is made explicit in Namibia's Second National Development Plan (NDP2; Republic of Namibia, 2001). Once again, processes of public participation and consultation are promoted in each of these documents.

PUBLIC PARTICIPATION PROCESSES

Within the Okavango basin states, public participation in local and national decision-making processes related to natural resource management is promoted through specific provisions in the national constitution of each country (Republic of Namibia, 1989; Republic of Botswana, 1990; Republic of Angola, 1992). Typically, responsibility for management and decision-making are devolved to the lowest appropriate level (usually a local authority) though responsibility and accountability for "strategic" decisions (i.e. those with international implications) are still taken at national level. Each country has specific provisions in its national water and environmental management policies regarding the ownership and management of natural resources (including water) and defines responsibilities for achieving sustainable development goals (Turton et al., 2003).

Within each country, local and regional levels of government promote public participation in decision-making processes, whilst NGOs also play an important role in informing and shaping public opinion. Until recently, the civil war in Angola hampered effective participation by government and civil society; cessation of hostilities has revealed that the Angolan Government must now deal with a number of key priorities to rehabilitate the country's economy and infrastructure. Widespread poverty and pervasive ill health, combined with economic and infrastructural damage and the presence of numerous displaced communities and ex-combatants, have hampered government activities in the Angolan portion of the Okavango basin (Ashton & Neal, 2003; Turton et al., 2003).

In contrast, Botswana and Namibia have very active and extensive processes of public participation within the Okavango basin. These involve individuals and communities, traditional leaders, local, regional and national government officials, and NGOs. Specific public concerns around the need for effective management of the Okavango basin and the Okavango Delta were sparked by earlier attempts to withdraw water from the Okavango Delta in Botswana and the Okavango River in Namibia, as well as steadily declining river inflows to the Okavango Delta during the past twenty years. In both countries, several active NGOs and community associations are involved in activities to promote public awareness, as well as in the development and expansion of projects and actions designed to enhance the socio-economic status of rural communities (Every River Has Its People, 2003).

Perhaps the most well known NGO project in the Okavango basin is the "Every River Has Its People Project", which is funded by the Swedish International Development Cooperation Agency (SIDA), and run jointly by the Kalahari Conservation Society in Botswana and the Namibia Nature Foundation in Namibia (Every River Has Its People, 2003). Jointly, these two organizations have succeeded in developing an excellent basis of knowledge and information sharing between water resource managers in OKACOM, government...
departments, local communities and traditional leaders. In both countries, the participants are extremely enthusiastic about the project and its objectives and see this as an ideal example of how best to involve communities and all levels of government in appropriate types of decision-making processes. In the near future, project participants and facilitators will visit selected sites in the Angolan portion of the Okavango basin to initiate similar processes of public participation. Here, a partnership arrangement will be initiated with a suitable Angolan NGO who can facilitate the public participation process in Angola (Dr C. Brown, CEO: Namibia Nature Foundation, personal communication, 12 May 2003).

To date, participants from Botswana and Namibia have visited sections of the catchment within both countries and held meetings with the relevant OKACOM commissioners; they now have a far better appreciation of the situation in each country and more fully understand the needs and aspirations of local residents. This process of reciprocal visits will be repeated (and extended) when the Angolan partners have been brought into the association (Every River Has Its People, 2003).

The “Every River Has Its People Project” aims to promote and facilitate the effective participation of Okavango basin stakeholders in natural resource decision-making and management, with a particular (though not exclusive) reference to water resources. In order to achieve this aim, two primary objectives have been established (Every River Has Its People, 2003) that seek to:

- Increase the capacity of communities and other local stakeholders to participate effectively in decision-making processes at local, national and regional (basin-wide) levels; and
- Develop mechanisms to assist communities and other local stakeholders to participate in natural resource management and decision making activities, particularly those related to water resources, at local, national and basin-wide levels.

The Kalahari Conservation Society (KCS) is the leading Botswana environmental NGO, with a particular emphasis on the sustainable utilisation of natural resources where this can benefit local communities. Overall guidance of project implementation in Botswana is provided by the Botswana Steering Committee, which meets on a quarterly basis. The committee functions on a consensus basis and works to ensure that there is close communication and coordination among project partners within Botswana (Every River Has Its People, 2003).

The Namibia Nature Foundation (NNF) is a non-profit, environmental NGO whose mission is to promote sustainable development, the conservation of biological diversity and natural ecosystems, and the wise and ethical use of natural resources for the benefit of all Namibians (Every River Has Its People, 2003). The Project Manager at NNF provides overall project management for activities within Namibia, with guidance by the Namibian Steering Committee. This committee is made up of representatives from NNF, Integrated Rural Development and Nature Conservation (IRDNC), the Desert Research Foundation of Namibia (DRFN) and the Rössing Foundation. The IRDNC is a Namibian NGO and Trust, which seeks to link conservation and the sustainable use of wildlife and other natural resources to the social and economic development of rural communities in Namibia. The DRFN is a non-governmental organisation dedicated to creating and furthering awareness and understanding of arid environments and developing the capacity, skills and knowledge of people to manage arid environments appropriately. The Rössing Foundation aims to promote education in general, foster greater understanding amongst Namibians and, through environmental education and networking, improve living standards of Namibians, the sustainable use of natural resources, community-based natural resource management, capacity building and training.

The “Every River has its People Project” targets riparian communities along or near the Okavango River in Namibia, and those living within or around the periphery of the Okavango Delta in Botswana, and works on a project-by-project level. The project team undertakes extensive socio-ecological surveys, in partnership with local communities, regional and local authorities, line ministries, schools, traditional leaders and NGOs. In this process, the project team help to improve people’s understanding of the Okavango system as a whole and the management challenges faced by each country and the OKACOM commission. From these partnerships a basin wide community forum was established in 2001, which supports and liaises closely with OKACOM (Every River Has Its People, 2003).

This project has demonstrated very clearly that the active incorporation of all stakeholders, from international funding agencies down to local community members, is the key to ensuring the success of conservation and management initiatives in the Okavango basin.

CHALLENGES THAT HAVE TO BE FACED

The socio-economic conditions within each of the three basin states are quite different and this poses different scales of problems or challenges that must be overcome. In practical terms, this means that the priorities of each national government vary from that of its neighbours. In addition, government institutions tend to focus most of their attention on more strategic, national-scale issues whilst NGOs and Community Based Organizations (CBOs) provide a large measure of the technical and logistical support needed to promote local processes of public consultation and participation in decision-making. In contrast to the situation that prevails in Botswana and Namibia, the Angolan Government faces an enormous humanitarian crisis as it struggles to deal with the aftermath of a protracted civil war (Porto & Clover, 2003; Turton et al., 2003).

Following the signing of the peace accord between the Government of Angola and the leaders of the UNITA movement on 4 April 2002, a clearer picture is gradually beginning to emerge of the extent and nature of the tasks needed to rehabilitate, sustain and develop the country’s economy (Porto & Clover, 2003). The viciousness, severity and duration of armed conflict in Angola left a legacy of over one and a half million casualties, some four million internally displaced people (IDPs or “deslocados”, amounting to approximately one third of the population), and close to half a million refugees in neighbouring countries (Porto & Parsons, 2003). In addition, it has been estimated that between eight to ten million landmines, both anti-tank and anti-personnel, have been laid in mostly unmarked minefields across some 50% of Angola, making it one of the most heavily mined countries in the world (Porto & Clover, 2003). Angola’s challenges are therefore as great as they are varied. Importantly, most development priorities will have to wait until the Angolan authorities have addressed the critical issues of resettling internally displaced people, extending and consolidating government administration processes to areas previously controlled by UNITA, and the socio-economic reintegration of ex-combatants from both sides.

A peaceful Angola is often considered as having all the necessary resources and conditions to become an economic powerhouse in the southern African region (Porto & Clover, 2003). However, the rate of socio-economic development will be severely constrained for many years by present structural conditions, including the fragmentation and destruction of much of the country’s transport, communications, health, and administrative infrastructure. In fact, apart from the problems linked to the removal of landmines and the rehabilitation of ex-combatants and displaced persons, Angola faces enormous challenges of a social, economic and humanitarian nature. According to the United Nations common country assessment (UN 2002), some of the medium- to long-term challenges include:
• Reduction of urban and rural poverty through policies that promote improved access of the poor to employment and other resources;
• Adequate response to high levels of urbanisation and other demographic problems;
• Economic diversification, away from excessive dependence on oil revenues, through policies that promote development of the non-oil sectors;
• Rebuilding of social sectors, with particular emphasis on basic social services;
• Mounting of an effective national response to the HIV/AIDS pandemic;
• Development of political participation and democratic accountability; and
• Strengthening of public administration, including systems for ensuring rigour and transparency in the management of public resources.

The Angolan portion of the Okavango basin (see Figure 1) contains some of the most remote and sparsely populated portions of the country, which were referred to as “the lands at the end of the earth” during colonial times (Porto & Clover, 2003). However, this region was a UNITA stronghold and some of the most ferocious battles of the civil war were fought here. A large number of mines have been laid along all of the roads and encircling each urban centre, as well as along many parts of the border with Namibia and at all bridges and river crossing points. As a result, road travel and access to the towns in the catchment (Menongue, Longa, Cuito Canavale, Mavinga, Savata and Caiundo) is extremely dangerous and air transport to Menongue remains the most reliable means of access to the catchment (Dr Chris Brown, CEO: Namibia Nature Foundation, personal communication, 12 May 2003).

Assessments and surveys conducted in the Angolan sector of the Okavango basin have revealed high levels of malnutrition and pervasive poverty, as well as extremely poor health status due to widespread incidence of malaria, diarrhoea, anaemia and tuberculosis (UN, 2002; Porto & Clover, 2003). Population estimates vary widely and, since the cessation of hostilities, large numbers of people have migrated out of the area (Dr Chris Brown, CEO: Namibia Nature Foundation, personal communication, 12 May 2003).

In the process of restructuring and rehabilitating the national economy, the Angolan government will probably need to initiate hydropower and irrigation development projects on some of the catchment’s river systems so that the local population can be fed and provided with basic services. Inevitably, this development scenario will require the construction of new water management infrastructure (dams, pipelines, irrigation schemes, water treatment plants). Ironically, any concerted attempt to alleviate the humanitarian crisis in this region by improving people’s access to food, shelter, energy and wholesome water supplies in the basin could pose potential problems for the water resources of the lower Okavango basin (Porto & Clover, 2003; Turton et al., 2003).

The situation in the catchment is compounded by the difficulty in accessing communities and the almost total lack of telecommunications infrastructure in the region. A brief summary of typical statistics that compare the relative ease of access, state of health, and availability of infrastructure for the Angolan, Botswana and Namibia in shown in Table 4. It is also important to understand that whilst government authorities and NGOs in the catchment may have reasonable access to the communications infrastructure, very few of the local residents enjoy such access. Against this backdrop, it is clear that it will not be an easy task to ensure that effective processes of consultation and public participation in decision-making are able to take place in the Angolan sector of the catchment.

In comparison to Angola, the situation in the Namibian and Botswana sectors of the Okavango catchment is far more stable, and the communities in each country are able to actively participate in decisions that affect the ways in which they exploit the water and other natural resources available to them (Turton et al., 2003). Each country faces a range of challenges though these are expressed as site-specific issues in different parts of the
catchment. The Namibian and Botswana sectors of the Okavango catchment represent a relatively arid environment and most communities tend to be located close to the available water resources. This concentration of human activities in close proximity to the water resources of the Okavango River and the Okavango Delta represents a growing dependency on these resources and could represent a potential threat to the ecological integrity of these systems if resource exploitation patterns are not carefully balanced by resource protection (Ashton & Neal, 2003; Turton et al., 2003).

Table 4: Comparison of some socio-economic characteristics for Angola, Botswana and Namibia that illustrate potential challenges to attaining effective public participation. (Data sourced from CIA, 2000; FAO, 2000; UNAIDS, 2002).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Angola</th>
<th>Botswana</th>
<th>Namibia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population in catchment (No.)</td>
<td>850,000</td>
<td>135,000</td>
<td>150,000</td>
</tr>
<tr>
<td>No. of languages spoken in catchment (Indigenous + official)</td>
<td>8 (+2)</td>
<td>5 (+2)</td>
<td>8 (+2)</td>
</tr>
<tr>
<td>Per capita GDP (PPP $ in 2000)</td>
<td>1,031</td>
<td>7,566</td>
<td>4,661</td>
</tr>
<tr>
<td>Population proportion below poverty line (PPP US$2/Person/day)</td>
<td>75</td>
<td>50</td>
<td>56</td>
</tr>
<tr>
<td>Malaria prevalence per 1,000 people</td>
<td>288</td>
<td>49</td>
<td>265</td>
</tr>
<tr>
<td>Adults with HIV/Aids (%)</td>
<td>5.5</td>
<td>35.2</td>
<td>20.5</td>
</tr>
<tr>
<td>Telephones and cellular phones per 1,000 people</td>
<td>6</td>
<td>240</td>
<td>85</td>
</tr>
<tr>
<td>Radios and TV per 1,000 people</td>
<td>60</td>
<td>175</td>
<td>140</td>
</tr>
<tr>
<td>Internet users per 1,000 people</td>
<td>0.5</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Paved roads (km / 1,000 people)</td>
<td>0.6</td>
<td>4.9</td>
<td>5.7</td>
</tr>
</tbody>
</table>

An additional layer of complexity is added when attempts are made to communicate effectively with local stakeholders living in the Okavango basin. Catchment residents represent a wide variety of linguistic and cultural groupings to the extent that there are thirteen different indigenous languages in use, as well as five "official" languages (Summer Institute of Linguistics, 2002; Figure 2). This poses several practical problems to water resource managers in the three basin states, in terms of both communicating with individuals and the need to respect the various cultural norms and practices that prevail in different communities. To be fully effective, communication processes have to rely on the services of local translators, whilst the electronic media (e.g. radio programmes) are used to inform communities living in more remote regions. This process appears to work well in Namibia and Botswana, but is less effective in Angola due to the scarcity of effective communications media (see Table 4).

Externally, many international NGOs and interest groups that have a conservation agenda have focussed their attention on the unique Okavango Delta ecosystems and have expressed their opposition to any form of water resource development in the upper catchment within Namibia and Angola (e.g. Greenpeace, 1991). Whilst this interest and concern is understandable, it is not always helpful to the basin states that are trying their best
to reach agreement on equitable water sharing and joint management approaches in the basin. In addition, many of the press releases and articles written by these well-intentioned organizations and individuals contain factually incorrect information and personal perceptions that confuse local stakeholders, rather than clarifying the issues at stake. In particular, many of the articles create the impression that international interests can (and should) over-ride the priorities and decisions of national governments in the basin states (e.g. Greenpeace, 1991). At best this situation can be misleading; at worst it is counter-productive to effective public participation and decision-making processes.

![Sketch map of the Okavango basin](image)

**Fig. 2:** Sketch map of the Okavango basin, showing the spatial distribution of indigenous languages spoken by residents within the basin. (Map drawn from data taken from Summer Institute of Linguistics, 2002).

### THE ROAD AHEAD

The preceding discussion has highlighted a hierarchy of possible levels of participation in decision-making processes, ranging from the participation of state delegates in developing international conventions, to local community members working with NGOs to address issues pertaining to resource use within the Okavango basin. Although not all policy development and management decisions are open to all interested and affected parties due to the strategic nature of some decisions, there appear to be numerous mechanisms within the various institutional structures that encourage public participation in the Okavango basin. Whilst this hierarchy of decision making exists, local community support is critically important since it is the community members on the ground, rather than state ministries or institutions, which determine whether or not water resource management principles, policies and programmes are effective.
Some of the difficulties of attaining effective public participation within the Okavango basin include the fact that Angola, Botswana and Namibia are at different levels of social, political and economic development, and that each country has different priorities and objectives in terms of their future needs for water. The challenges facing Angola's need for post-war rehabilitation of the state and its people are entirely different from those of Namibia and Botswana. Although these differences are extreme in the case of the Okavango basin, it is not uncommon for riparian states that share water resources to have different national needs and priorities. In order to reconcile these differences and develop a common understanding in terms of water resource management it is essential that the states concerned adopt an approach that encourages wide public participation and transparency of decision-making. Integrated Water Resource Management (IWRM) approaches are based on these principles and have become widely accepted as offering the best way to achieve sustainable water resource management. In order to achieve these principles, the important roles played by NGOs should be recognised and encouraged since they provide a vital link between individual and community water users, central government ministries and institutions, and multi-lateral institutions.

In essence, the Okavango basin states have to reach consensus on how the water (and other) resources within the basin should be managed. This agreement should ensure that all the provisions and requirements of international treaties and accords, as well as regional (SADC) protocols are complied with, within the sovereign limits of each state (Ashton & Neal, 2003). Ideally, the basin states should work as partners to manage the resources of the Okavango basin; this could best be achieved by the creation of a formal management structure such as a River Basin Organization (RBO). This RBO should function independently, though within the agreed mandate set by the three states concerned, and any external attempts to interfere, control or direct the decisions and actions of the RBO should be resisted. Through concerted, joint decision-making, supported by effective processes of joint fact finding and public participation, it will be possible to ensure that the Okavango system continues to meet the (human) needs for water whilst sustaining its unique array of ecosystems and the socio-economic activities that depend on these systems.

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Citation for this paper: