

# Water resource use and management in the Okavango system of southern Africa: the political economy of state, community and private resource control

Robert K Hitchcock<sup>1</sup>

## Introduction

One of the most contentious issues in the political economy of southern Africa is that relating to the management and use of water resources. Some of the world's most water-scarce countries are in southern Africa, and there is increased competition for the waters of the region's major rivers. In 1996 tensions arose between the governments of Namibia and Botswana over the use of the waters of the Okavango River. This occurred when the government of Namibia proposed a scheme to transfer water from the river to Windhoek, the country's capital, via the Eastern National Water Carrier. The government and people of Botswana contended that the extraction of water from the river by Namibia would reduce flows into the Okavango Delta, a major wetland which supports sizable human and wildlife populations and which is an important tourist destination.<sup>2</sup> The result could potentially be disastrous, they say, for the delta and its inhabitants.

For its part, the government of Botswana had proposed the establishment of a major water project in the southern portion of the Okavango Delta, the Southern Okavango Integrated Water Development Project (SOI WDP) in the 1980s. This project was opposed strongly by local people, who were able to get the project shelved, at least temporarily, in 1991, arguing that it would have negative impacts both on the environment and on the livelihoods of the residents of the region.<sup>2</sup>

As this paper will attempt to demonstrate, these large-scale water development schemes, like others that have been implemented in southern Africa over the past forty years, may have benefits for some people, but they raise serious concerns when it comes to the issue of quality of life of the poor majority. I will propose that an approach that enhances the rights of local community access to and control over Okavango waters will have greater long-term benefits for conservation and sustainable development than with either state-controlled water development programs or private companies gaining *de jure* tenure rights over river front property.

## African river basin and delta ecosystems

African river basin and inland delta ecosystems are highly productive both in terms of biodiversity and the variety of populations and lifestyles that they support.<sup>3</sup> These basins and inland deltas generally contain rich soils, relatively abundant fish populations, and sufficient water to allow flood water farming and irrigation. As a result, they have been a source of intense interest to those who wish to enhance economic development opportunities.

Large dams were built on a number of African rivers, in some cases resulting in the creation of sizable reservoirs that displaced local populations (for some of these dams, see Table 1). This was done, for example, in southern Africa when the Kariba Dam was built on the Zambezi River between Zambia and Zimbabwe in the late 1950s, a project that displaced some 55,000 Tonga and other people.

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<sup>1</sup> Department of Anthropology, University of Nebraska-Lincoln

<sup>2</sup> For general information on the Okavango Delta, see information note on page 163

<sup>3</sup> For assessments of the diversity of river basins and deltas in Africa, see Scudder, Thayer (1980) River Basin Development and Local Initiative in African Savanna Environments. In *Human Ecology in Savanna Environments*, David R Harris, ed. Pp. 383-405. London: Academic Press. And McCarthy, T S (1993) The Great Inland Deltas of Africa. *Journal of African Earth Science* 17(3):275-291.

Efforts to drain or alter inland deltas have generally have proved problematic. The construction of the Jonglei Canal in southern Sudan, which was aimed at draining some of the waters of the Sudd Swamp, for example, was stopped because of local unrest in the region in the 1980s (Ellen Gruenbaum, personal communication).

**Table 1: African dam projects and their impacts**

Dam	River and country	Impacts
Akosombo	Volta, Ghana	bilharzia, river blindness, 70 000 dispossessed
Aswan	Nile River, Egypt	bilharzia, siltation, erosion, salinization of the soil
Kainji	Niger River, Nigeria	44 000 displaced, fishing effects; loss of biodiversity
Kariba	Zambezi River Zambia/Zimbabwe	flooding of lands, 50 000 people dispossessed salvinia weed infestation
Katse	Malibamatso River Lesotho	25 households displaced, 2 700 people lost arable land, 80% lost grazing land and a variety of natural resources
Kiambere	Tana River, Kenya	6 000 dispossessed, reduced incomes, livestock, land loss and loss of wildlife, including rare primates
Maguga	Komati River Swaziland	66 households displaced, loss of arable land grazing and valuable wood, river sand and other natural resources
Manatali	Senegal River, Mali	Health impacts such as malaria, social tensions interethnic conflict increased

The effects of compulsory relocation due to the construction of large-scale infrastructure projects have generally been negative.<sup>4</sup> In many cases, relocated people found themselves in places where the soils were less productive and the diversity of plant and animal species lower. The relocation process itself proved extremely stressful, and it often took years before satisfactory adjustments were made.

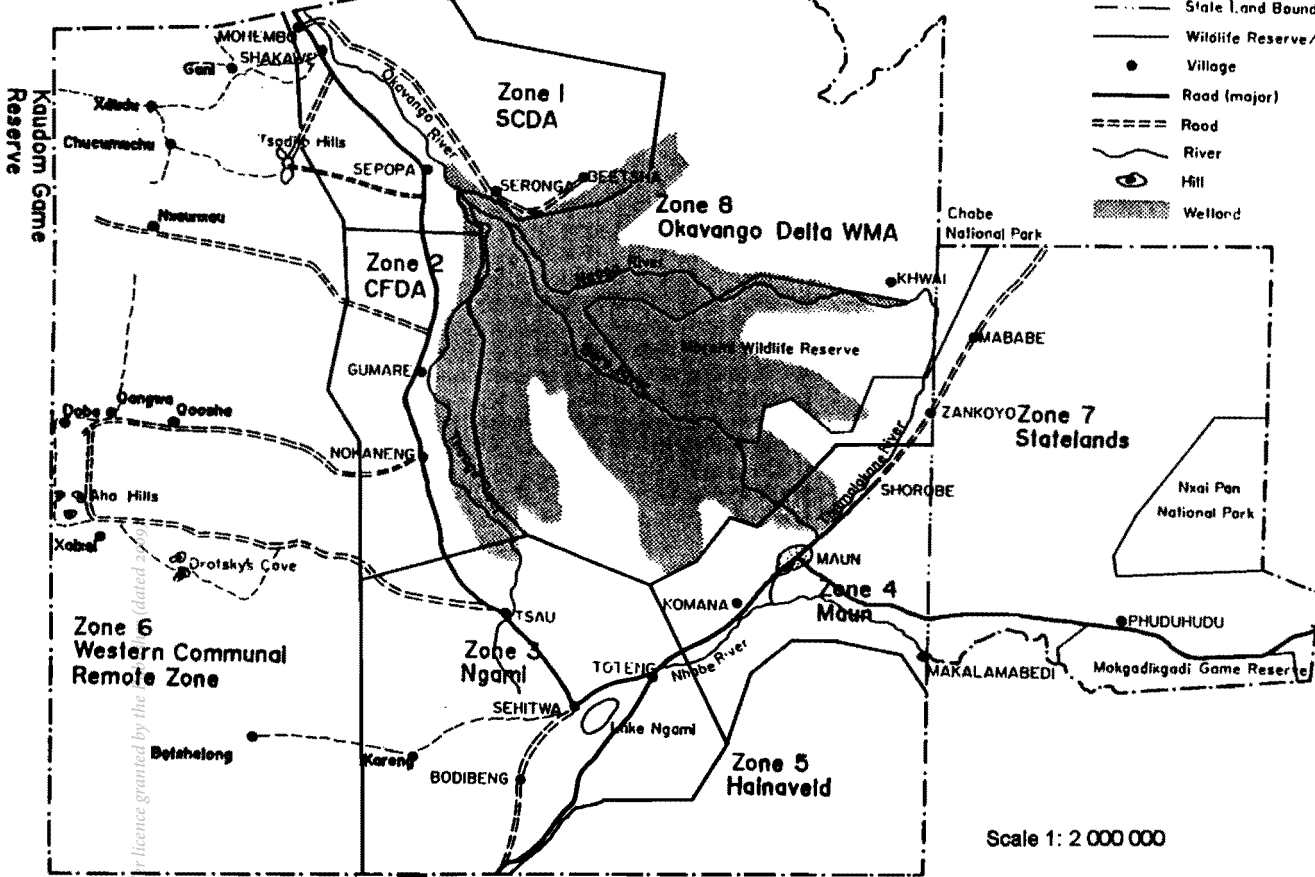
In spite of these difficulties, governments of some African states and international donors have continued to push for the development of large water projects that will have substantial impacts on the local populations. This is the case, for example, with the Republic of Namibia and the Swedish International Development Authority (SIDA), which have continued to plan for the construction of the Epupa Dam on the Cunene River between Namibia and Angola in the face of opposition from local Himba groups and various environmental and human rights organizations. Other dam projects have gone ahead, two examples being the Lesotho Highlands Water Project (LHWP), a hydroelectric project in the Maluti Mountains of the Kingdom of Lesotho that is transferring

<sup>4</sup> See Scudder, Thayer and Colson, Elizabeth (1979) Long-Term Research in the Gwembe Valley, Zambia: In *Long-term Field Research in Social Anthropology*, George Foster, Thayer Scudder, Elizabeth Colson, and Robert V. Kemper, eds. Pp. 227-254. New York: Academic Press. And Scudder, Thayer (1997) Resettlement. In *Water Resources: Environmental Planning, Management- and Development*, Asit K Biswas, ed. Pp. 667-710. New York: McGraw-Hill; and Cernea, Michael (1997) The Risks and Reconstruction Model for Resettling Displaced Populations. *World Development* 25(10):1569-1587.

# Planning zones, Ngamiland District

NAMIBIA

- District Boundary
- - - State Land Boundary
- ▭ Wildlife Reserve/National Park
- Village
- Road (major)
- - - Road
- ~ River
- ⊕ Hill
- ▨ Wetland



Scale 1: 2 000 000

Drawn by Department of Town & Regional Planning

water to South Africa and producing power for use in Lesotho, and the Maguga Dam Project in Swaziland, which will provide water for Swaziland and South African agricultural purposes and for hydroelectric power.

### **Sustainable community-based development**

Numerous communities and individuals in Africa have called for a new approach to development – one which is not socially and environmentally destructive. They argue that they have a right to sustainable development, development which has been defined by the World Commission on Environment and Development as that which “. . . meets the needs and aspirations of the present without compromising the ability of future generations to meet their own needs.” This approach is seen by many individuals and groups in Africa as the only way to overcome the difficulties some people are experiencing, including poverty, social conflict, and environmental degradation.<sup>5</sup>

In order for people at the community level to be able to play a role in managing their own resources, states must devolve power and responsibility to local people. One way to do this is for states to give decision-making authority to decentralized units. The devolution of authority to the local level implies that the central agency recognizes local people's rights, responsibilities, and abilities to make their own rules. Decentralization and devolution of power and responsibility to local communities, however, is relatively rare in Africa. Where it does occur, the decentralisation process usually are to regional or district-level authorities.

Efforts have been made in Botswana, Namibia, and Zimbabwe to allow communities to assume control over natural resources, particularly wildlife.<sup>6</sup> In all three of these countries, however, local communities have yet to be able gain *de jure* rights over land tenure and resources in the areas where they reside. Instead, they have been granted rights over wildlife by the state through applying for those rights to the governments departments in each country that deal with wildlife, national parks, and environment matters. African governments generally have opted to privatise resources such as land, grazing, and water on the assumption that privatisation will have greater environmental and economic benefits over the long term. This assumption is what lies behind the Tribal Grazing Land Policy (TGLP) in Botswana, for example, a policy that resulted in the establishment of commercial livestock ranches that were leased out to individuals and small groups of cattle owners. It is also the assumption behind the Namibian Ministry of Environment and Tourism's plan to establish conservancies, areas in which groups of private land owners could collaborate in wildlife-related activities such as ecotourism. Many of the prime river front land along the Kwando and Linyanti Rivers in East Caprivi, for example, have been allocated to private safari operators.

### **The Okavango river water extraction project and the Botswana fencing programme**

In June 1996 the government of the Republic of Namibia (GRN) decided to extract water from the Okavango River and to transfer the water by pipeline to the Eastern National Water Carrier at Grootfontein which would, in turn, transfer water to the Windhoek area in central Namibia. Windhoek had less than an 18-month water supply and was facing a continuation of the serious drought that had affected much of southern Africa. The initial proposal of the Namibian government was to do an Environmental Impact Assessment (EIA) only in Namibia. It was pointed out by the government of Botswana and various environmental organizations, however, that the EIA should examine downstream impacts of the water extraction project as well. Botswana criticised Namibia for its failure to consult the other countries that share the Okavango basin (Angola and Botswana). In September 1994 Botswana, Angola, and Namibia had signed an agreement to create the Okavango River Basin Water Commission (OKACOM), but the Namibian Okavango water extraction plan was developed outside of the framework of this commission. Botswana protested the Namibian plan for its potential impacts on the Okavango Delta ecosystem and the needs of the residents of the region.

Tensions increased in Botswana with the outbreak of Contagious Bovine Pleuropneumonia (CBPP), or lungsickness, among cattle in western Ngamiland in February 1995. The Botswana government decided to erect a series of cordon fences, including a game and livestock proof fence immediately south of the West Caprivi Game Reserve in northeastern Namibia. Namibia argued that the construction of this barrier would have severe negative impacts on the region's wildlife and environmental resource base and would have negative impacts on some community-based natural resource management projects (CBNRMPs) that were on-going in the West Caprivi region.

The West Caprivi Game Reserve contains a number of rare or endangered species, including elephant, sable antelope, roan and lechwe as well as more common species such as wildebeest, zebra, and impala. Some of these animals move back and forth across the border of Namibia and Botswana, depending on climatic and vegetation conditions. During the dry season, animals tend to congregate along the Okavango and Kwando Rivers. The West Caprivi Game Reserve is also one of the few game reserves in southern Africa in which people are allowed to reside and to exploit local resources.

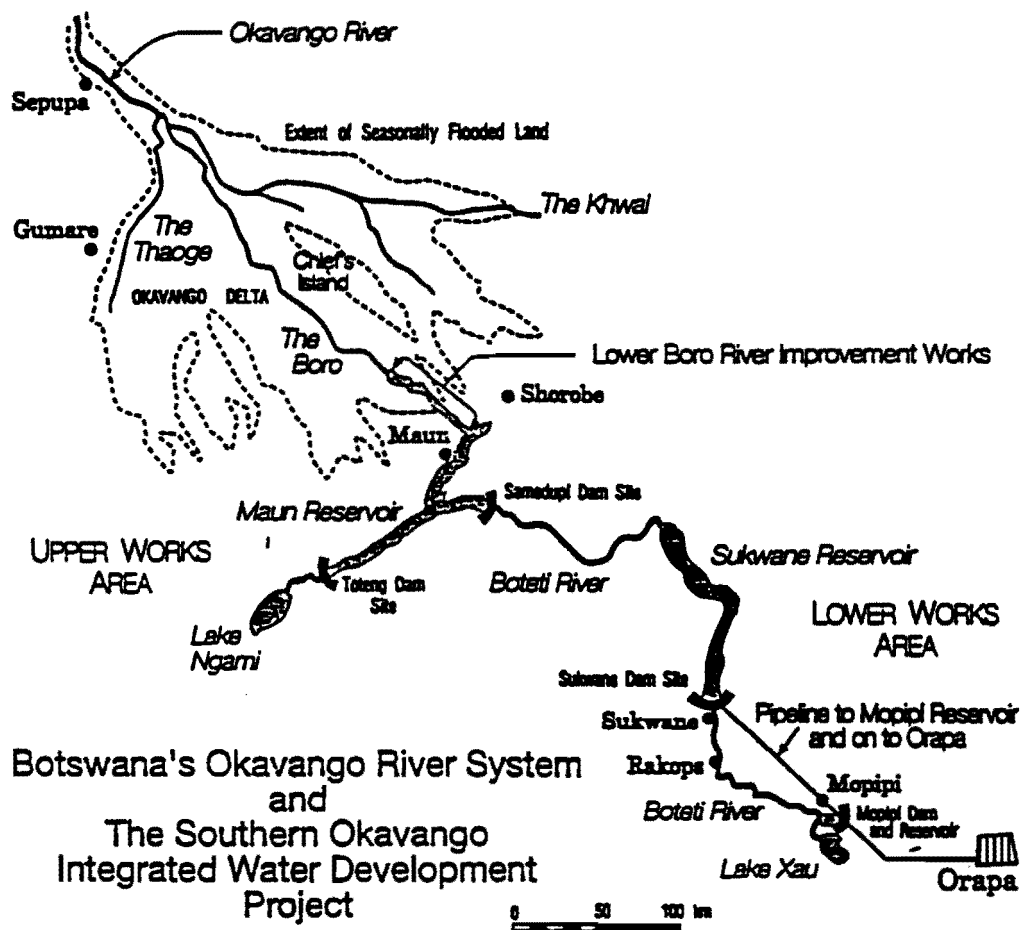
Over the past several years, a series of meetings were held between Botswana and Namibia over the issues of water extraction and veterinary cordon fences. Botswana requested a detailed Environmental Impact Assessment of the Namibian Okavango water extraction project, while Namibia wanted Botswana to find alternatives to the construction of cordon fences that would cut off wildlife movements. In 1997 over fifty chiefs and community leaders from the Okavango Delta called on the government of Botswana and environmental non-government organizations to help them stop the proposed Namibian water pipeline project. This effort was similar to that mounted by local communities to the Southern Okavango Integrated Water Development Project in the early 1990s, which had led to the Botswana government putting the project on hold. The government of Botswana agreed to an independent review of the project, something that set a major precedent, since it was the first time that a national government had asked an outside agency to conduct a review of a major water development project.

This review, which was carried out by a group of highly qualified social and environmental scientists for the World Conservation Union (IUCN), concluded that the Southern Okavango Integrated Water Development Project would have an adverse impact on the environment, economies, and tourism potential of the Okavango region. A set of alternatives was provided by the IUCN consultants which emphasised the exploitation of groundwater, the diversification of local economies, capacity-building of local institutions, and community involvement in the management of the Kwando and Okavango Wildlife Management Areas.<sup>7</sup> As a result of the local opposition to the project, the conclusions of the IUCN study, and the potentially high economic and environmental costs of the Southern Okavango Integrated Water Development Project, the government of Botswana decided to shelve the project. There are also rumours to the effect that the government of Botswana was worried about a major international campaign by Greenpeace, which had recommended the cancellation of the SOIWDWP project in 1990. The proposed Greenpeace campaign had as its theme "Diamonds Are For Death", the argument being that the extraction of the waters of the Okavango was aimed at helping provide water to the mining giant Anglo American which has a large diamond facility at Orapa in central Botswana.

<sup>5</sup> World Commission on Environment and Development (1987) *Our Common Future*. New York: Oxford University Press, p.13

<sup>6</sup> For an assessment of community-based natural resource management projects in southern Africa, see Hitchcock, Robert K (1999) *Decentralization, Development, and Natural Resource Management in the Northwestern Kalahari Desert, Botswana*. In *Devolution of Authority, Responsibility, and Funding Capability: Links to Biodiversity Conservation*, Barbara Wyckoff-Baird, ed. Washington, D.C.: Biodiversity Support Program. And Hitchcock, Robert K and Murphree, Marshall W (1998) *The Kxoe of West Caprivi, Namibia: Conflicts Over Land, Resource Rights, and Development*. *Indigenous Affairs* 1998/4:46-51.

<sup>7</sup> Scudder, T, Manley, R E, Coley, R W, Davis, R K, Green, J, Howard, G W, Lawry, S W, Martz, D, Rogers, P P, Taylor, A R D, Turner, S D, White, G F & Wright, E P (1993) *The IUCN Review of the Southern Okavango Integrated Water Development Project*. Gland, Switzerland: IUCN - The World Conservation Union. See pp. 163-220.



The Botswana government was already committed to promoting community-based natural resource management, as was noted in its Wildlife Conservation Policy of 1986 and the *Nation Parks and Wildlife Act* of 1992. Botswana had been engaged in a wide-ranging land use planning exercise for nearly two decades. Under the Tribal Grazing Land Policy of 1975, Botswana had divided the communal areas of the country into various categories, including commercial leasehold land, communal land, which remains under customary forms of land tenure, and Wildlife Management Areas (WMAs). In 1989 the Ministry of Local Government, Lands, and Housing undertook a rezoning of all Controlled Hunting Areas (CHAs) in the country. The boundaries of these areas were brought into line with existing administrative units and forms of land use and land tenure. In order to promote the participation of local people in wildlife management and tourism, a number of the Controlled Hunting Areas were designated as Community-Controlled Hunting Areas (CCHAs), including over half a dozen in North West District (Ngamiland) and four each in Kgalagadi and Ghanzi Districts (for a breakdown of the various land categories in Ngamiland, see Table 2).

**Table 2: Land zoning categories in North West District, Botswana**

Land zoning category	Area (sq km)	Percentage
Communal Land	61,840	56.7
Commercial Land	6,950	6.4
Game Reserve	3,600	3.3
Wildlife Management Area (WMA)	19,100	17.5
Tribal Land (Sub-Total)	91,490	83.8
State Land (Sub-Total)	17,640	16.2
<b>Total</b>	<b>109,130</b>	<b>100.0</b>

Note: Data obtained from North West District Land Use Planning Unit (DLUPU), Maun, Botswana

Some communities, such as Kae Kae (/Xai/Xai) in western Ngamiland, have chosen to form local trusts so that they can receive the wildlife quota from the Department of Wildlife and National Parks and engage in community-based natural resource management and utilization activities. Others, such as Sankuyo, outside Moremi Game Reserve in the Okavango Delta, have chosen to enter into joint venture agreements with safari operators in exchange for an annual fee. Still others, such as Khwaai, just outside the north gate of Moremi Game Reserve, have opted to collaborate with local non-government organizations and University of Botswana personnel in carrying out land use planning and institutional capacity-building activities.

A major issue facing the people of rural Botswana is the 1991 National Policy on Agricultural Development, which states that "Farmers will be allowed, where feasible, to fence livestock farming land either as individuals, groups, or communities."<sup>8</sup> It goes on to say that individuals or groups in communal areas who have existing rights to water points will "automatically be allocated the ranches in which their boreholes are." The problem is, as the IUCN study on the Southern Okavango Integrated Water Development Project points out, fencing in communal areas will in all likelihood have largely negative impacts on smallholder livestock producers. These individuals, who make up the bulk of livestock owners, generally lack the capital to invest in water development or fence construction. Thus benefits are likely to accrue to wealthy cattle owners who will be able to take over larger portions of the land and grazing resources.

Livestock owners in Botswana realize the importance of high mobility and access to extensive areas of grazing, so they tend to be reluctant to fence. But there are indications that some farmers are planning to fence in the not-too-distant future in order to, as they put it, establish a greater degree of control over their areas. Fencing is a highly contentious issue in Botswana, and communities such as Kae in western Ngamiland have protested the establishment of cordon fences and have sought actively to have them removed or realigned. These actions underscore the degree to which people in the rural areas of Botswana wish to influence national-level policy decisions.

### **Development and resource management in the Okavango Delta**

The Okavango Delta of northwestern Botswana is a large inland delta or alluvial fan consisting of about 6,000 square kilometers of permanent swamp and between 7,000 and 12,000 square kilometers of seasonally inundated swampland. Sometimes referred to as "the jewel of the Kalahari," the Okavango is a vast flood plain that supports a rich variety of plant and animal life. The human inhabitants of the Okavango region support themselves through a combination of strategies, including foraging, fishing, agriculture, livestock-raising and wage labour. Substantial change

has occurred over time in the Okavango region, in part because of shifts in water flows and impacts of wildlife, livestock and human populations.

It is important to note that access to natural resources such as fish, thatching grass, palms (for baskets), and wildlife in the Okavango Delta region is not necessarily completely equitable. As Skjonesberg and Merafe note, "Generally fishing grounds are open to everybody, but territoriality seems to develop in areas that have been fished by certain groups or families".<sup>9</sup> Thus, while the productive resources (fish, water, vegetation) of the Okavango were considered common property resources, groups and communities did lay claim to specific areas where they foraged and carried out agricultural and other kinds of activities. In the past, local people engaged relatively extensively in hunting and they sold meat to people in Maun and other major villages. An important source of income for people in the Okavango region is the sale of firewood, thatching grass, poles, and palm leaves which are used for making baskets.

Shifts occurred in land use in the Okavango region over time, particularly with the imposition of wildlife conservation laws and the establishment of the Moremi Game Reserve by the Batawana Tribe, one of the first tribal game reserves in Africa. There were also changes in land management and administration patterns, especially after Botswana's independence in 1966. The powers of traditional authorities (chiefs and wardheads) over land allocation were transferred to government land boards under the *Tribal Land Act* of 1968. Vegetation resources are covered in part by the *Agricultural Resources Conservation Act* and the *Herbage Preservation (Prevention of Fires) Act*, and range conservation activities are promoted through the Agricultural Resources Board (ARB) of the government of Botswana. At the local level, there are conservation committees in some communities that engage in conservation and resource management activities. Some local groups, such as those around Etsha on the western side of the Okavango Delta, are involved actively in both the exploitation and conservation of palm trees (*Hyphaene ventricosa*) which are used for basket manufacture.

Fishing activities in the Okavango region are controlled to a limited extent by the Fisheries Unit in the Ministry of Agriculture, since the government provides financial aid, training, equipment (gillnets, boats, motors, etc.), salt and salting pans and a market for salted fish. The Forestry Unit in the Ministry of Agriculture engages in efforts to promote the sustainable use and conservation of timber resources, although some critics point out that much of the emphasis of the Unit, like that of the Forest Service in the United States Department of Agriculture (USDA) in the United States, is more on commercial timber exploitation. The concessions that have been granted over blocks of forest land have generally been to companies or well-to-do individuals rather than local communities. Some local groups, such as ones in the Chobe Enclave and in Ngamiland, have considered starting agroforestry projects, and they have received assistance from the Forestry Association of Botswana, Permaculture, and other non-government organizations.

### Community-based projects in the Okavango region

A prevailing assumption in some circles is that rural communities are incapable of managing projects on their own. The danger of such an assumption is that it could be used as an argument to deny people their rights to land and development assistance. Discussions with rural people reveals that virtually all communities had individuals whom they respected and whose suggestions they chose frequently to abide by. They also had community institutions which managed land and other resources. Individuals and groups made decisions, adjudicated disputes, and represented the community in discussions with outsiders. They initiated local projects, including the digging of wells, planting of gardens, and the production of handicrafts.

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<sup>8</sup> Republic of Botswana (1991) *National Policy on Agricultural Development*. Government White Paper No. 1 of 1991. Gaborone, Botswana: Government Printer. Pp. 11-12.

<sup>9</sup> See Skjonesberg, Ekse and Merafe, Yvonne (1987) *The Okavango Fisheries Socio-economic Study*. Oslo, Norway: Ministry of Development Cooperation. P. 56.



One of the trends in the Okavango region in Namibia and Botswana is toward greater privatisation. In Namibia private safari operators and tourism companies have been granted concessions over prime riverfront property along the Okavango River. Similar trends are seen in the Okavango Delta in Botswana, with literally dozens of new safari camps being established in the Delta and in the Savuti area in the past two decades and tourist visits increasing substantially. Along the Khwaai River on the northern boundary of Moremi Game Reserve there are a number of expensive tourist lodges. While people from the communities of Khwaai and Mababe do sometimes get jobs at these places, the trend has been toward hiring of people from outside of the area who have more training and skills.

The land use plan for North West District designated only two Controlled Hunting Areas for communal wildlife utilization. The IUCN Study recommended that the number of community-controlled hunting areas be increased to at least seven. Local people have argued for communal rights to resources in the other controlled hunting areas which are zoned as either multi-purpose or photographic. Currently, there are a number of community-based natural resource management programs that are on-going in the Okavango Delta region. One of these is at Sankuyo, which is located to the south of Moremi in NG 34. This project, which was founded in 1995, is managed by the Sankuyo Tswaragano Management Trust (STMT) with assistance from the North West District Council, the Natural Resources Management Project, and the Department of Wildlife and National Parks.<sup>10</sup> A second project is at Khwaai, adjacent to the north gate of Moremi Game Reserve, a community located in NG 19 but with rights to obtain natural resources in NG 18, which together cover an area of 1,995 square kilometers.<sup>11</sup> The Khwaai community, which is made up largely of Bugakwe Basarwa, hopes to run its own program without having to resort to leasing out the rights over the resources to a private entrepreneur, something that was done by Sankuyo, which contracted with Rann Safaris. Final decisions had yet to be made about the rights of communities in these areas because there was opposition from some private safari companies who were concerned that tourists might be offended by the sight of people foraging or, worse yet, hunting the very animals that tourists have come to see.

On a larger scale, there are differences of opinion over the future of the Okavango Delta between non-government organizations, international agencies, and the governments of Botswana and Namibia as well as other governments in the southern African region. This struggle, in the eyes of some, is over conservation vs development. In the eyes of others, the struggle is for sustainable development that allows for use of resources by present-day generations, with an eye toward ensuring the viability of the ecosystems over the long term. It does appear at present that both Botswana and Namibia have tended to place state and private interests above those of local communities. This can be seen particularly in Namibia, where the state established a prison farm on the site of a community-based tourism project at Popa Falls on the Okavango River, and in eastern Caprivi, where the government is allowing private entrepreneurs to take over stretches of valuable river front property. It is also true in Botswana, where private safari companies and lodge operators have taken over a substantial proportion of the most productive land in the Okavango Delta and Chobe. Most of the financial benefits of safari hunting and ecotourism at present go to either the state or to private companies, with communities receiving only a small percentage of the economic returns.

<sup>10</sup> For an analysis of this project, see Maotonyane, Lucy (1996) *The Findings of Socioeconomic Baseline Study in Sankuyo Village, Ngamiland District*. Gaborone, Botswana: Department of Wildlife and National Parks and Natural Resource Management Project; and Painter, Michael (1997) *DWNP's Monitoring and Evaluation Experience with the Natural Resources Management Project: Lessons Learned and Priorities for the Future*. Gaborone, Botswana: Natural Resources Management Project.

<sup>11</sup> For a discussion of community based natural resource management at Khwaai, see Hitchcock, Robert K and Marks, Stuart (1991) *Traditional and Modern Systems of Land Use and Management and User Rights to Natural Resources in Rural Botswana, Part 1: Field Data and Analysis*. Gaborone, Botswana: Natural Resources Management Project and Gaborone, Samora (1994) *Land Use Planning in the Khwaai Area*. In *Indigenous People's Education and Research Papers*. Gaborone, Botswana: Center for Continuing Education, University of Botswana.

It is too early to say whether there will be major successes in the grassroots development movements and community-based resource management project initiatives among rural populations in Botswana and Namibia. There is no question, though, that some local communities have had some success in establishing local-level project activities, and they have been willing to challenge the governments of both Botswana and Namibia in an attempt to assert their rights and to obtain control over land and natural resources. The issue with which the people of southern Africa must continue to struggle is how they can ensure enhancement of their standards of living in the face of government and donor efforts to establish large-scale water projects and global trends toward greater privatisation of control over resources and trade.

**Table 3: Community-based natural resource management programmes in northwestern Botswana**

Community	District	Institution	Founding Date	Controlled Hunting Area
Chobe Enclave	Chobe	Chobe Enclave Community Trust (CECT)	1993	CH 1 (1 590 sq km tribal land, 1 400 sq km forest reserve)
Sankuyo	North West	Sankuyo Tshwaragano Management Trust (STMT)	1995	NG 34 (870 sq km)
/Xai/Xai	North West	Khwaai Tshwaragano Development Trust	1998	NG 18 (1 815 sq km) & NG 19 (180 sq km)

Note: Data obtained from the North West District Council and the Natural Resources Management Project (NRMP), Botswana

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