

A digest of information on key aspects of Kavango's geography and sustainable development prospects

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The main aims of the material presented below are to:

1. Provide information on Kavango's comparative advantages and constraints, especially as they relate to decisions on land uses and development.
2. To raise awareness and levels of enquiry and debate concerning these issues in Kavango, and to encourage Land Boards to evaluate matters according to how they think about opportunities that provide for sustainable development.

For more information on the Kavango Region and Okavango River, consult the following books:

1. *Sand and Water: a profile of the Kavango region of Namibia*, published in 2001
2. *Okavango River: the flow of a lifeline*, published in 2004

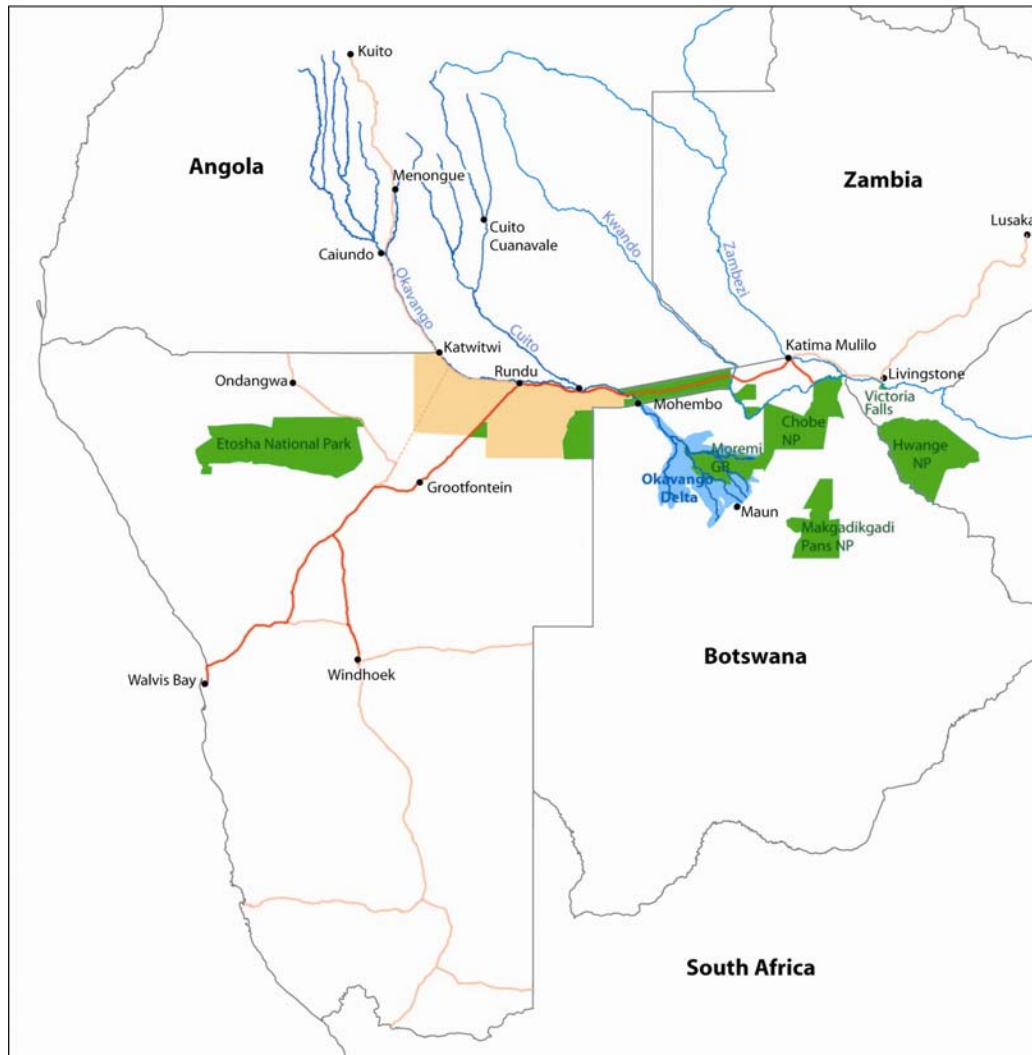
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1. Kavango's location in southern Africa

Opportunities: Kavango's central position in southern Africa presents the region with three main advantages from which substantial economic growth could be achieved:

- trading opportunities
- tourism
- custodianship over the central section of the Okavango River Basin.



Kavango lies adjacent to Angola and Botswana, placing it well for trade in goods, services and tourism

TRADE: Kavango is becoming a major trade partner and supplier to large areas in northern Namibia and south-eastern Angola. The region also occupies a central, strategic position along the Trans-Caprivi Highway trade route between Namibia and Zambia, Zimbabwe and Botswana. The same is true for its position along trade routes between Namibia and Angola. The route to Angola is will soon be improved by a major road linking Tsumeb to Katwitwi.

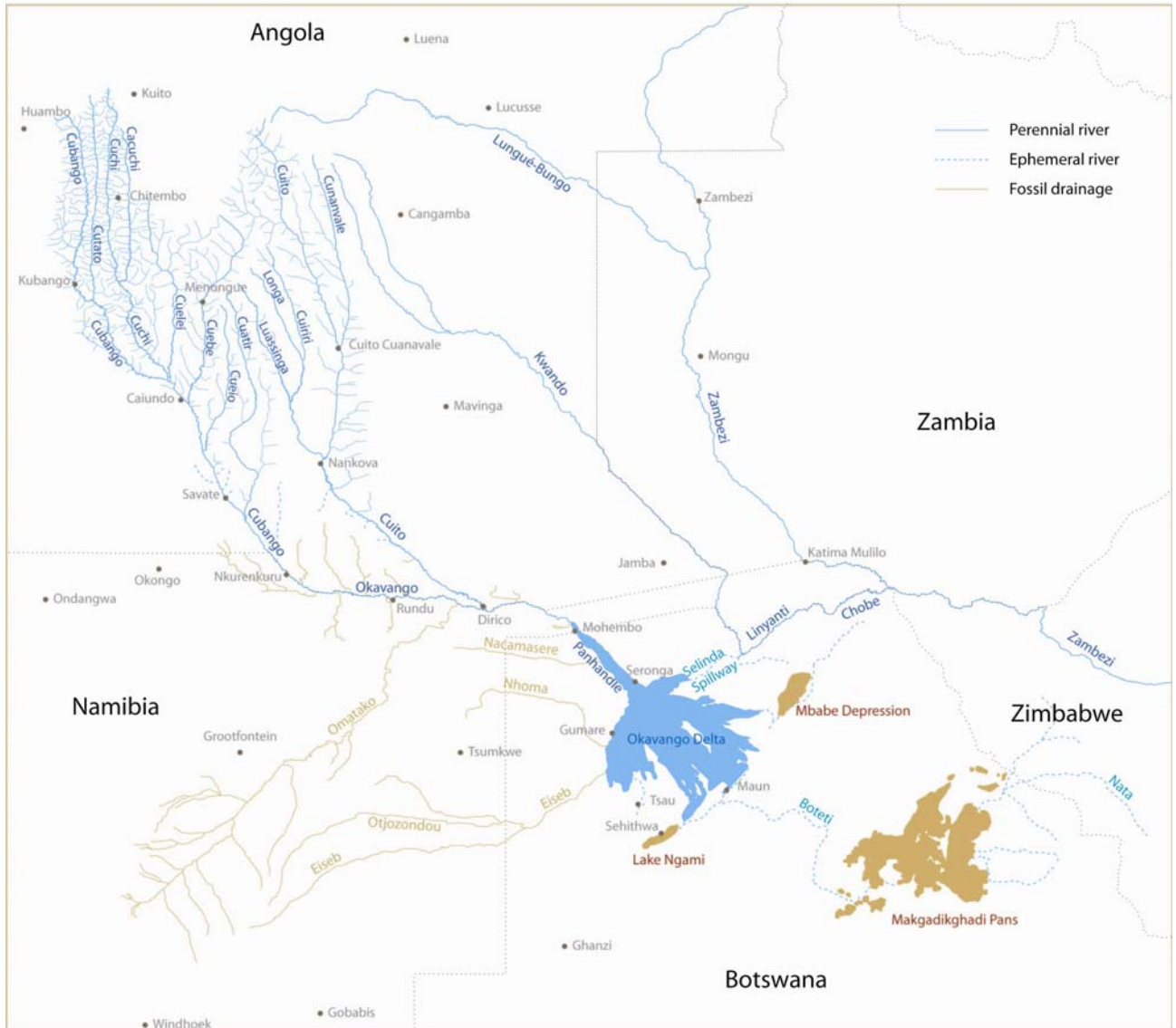
A key point is that Rundu is the only major urban area within a huge zone that stretches 900 km west to east from Ondangwa to Katima Mulilo, and about 1,000 km north to south from Menongue to Grootfontein and Maun. Rundu and the region as a whole are thus major suppliers, or potential suppliers to people living in a very large area.

TOURISM: While Kavango offers its own attractions (see **6. Natural resources**), the Region could benefit greatly by tourist routes that link major tourism areas in the west (Etosha, the Atlantic coast and Kunene Region) with those to the east (Caprivi, Victoria Falls, Hwange, Okavango Delta and Chobe). There is similar potential for developing Kavango as a springboard for tourism into southern Angola.

OKAVANGO BASIN: This is one of the most pristine river systems in Africa. Downstream in Botswana, the Okavango Delta is the world's biggest protected and proclaimed RAMSAR site. The Delta is also of strategic value since it provides the basis for most of Northern Botswana's economy. The challenge for Kavango and southern Angola is to expand and exploit the economic value of the Basin that is based on tourism.

2. The Okavango River

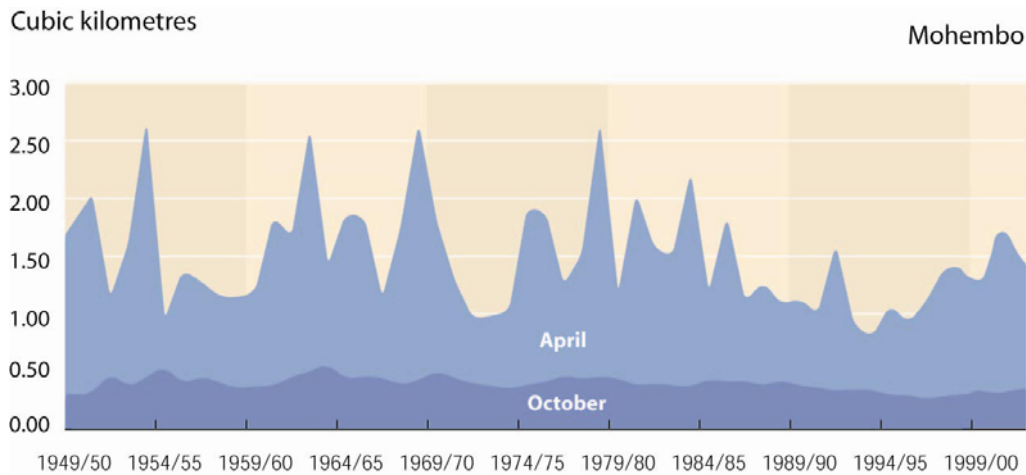
The Okavango River is not an ordinary river. It is one of very few rivers that do not flow to the sea, and its waters are unusually clean and clear. There are no dams of the river and it is much less polluted than most other rivers. The Delta downstream in Botswana is the largest RAMSAR wetland proclaimed as of international importance in the world. As an oasis of extreme beauty and home to a rich assemblage of wildlife, the Delta provides a tourism industry that forms the basis for a substantial part of Botswana's economy. Most formal employment in northern Botswana is based directly or indirectly on tourism to the Delta.



The Okavango River Basin stretches over an area of about 190,000 square kilometres in Angola, Namibia and Botswana. All its water originates in Angola and is deposited in the Delta in Botswana.

Approximately half the flow of the Okavango comes down the Cuito, while the other half is in the Cubango as it enters Kavango at Katwitwi. Flows along the Cuito are much more stable while those from the Kubango vary much more from season to season. The highest flows follow good summer

rain falls in the upper catchment of the Kubango. No rivers or water flows into the river from Namibia or Botswana, and so all the river water depends on Angola. Similarly, whatever Namibia does to the river affects the quality and quantity of water flowing into Botswana.



River flows vary substantially from year to year as a result of varying rainfall in the upper north-western catchment in Angola. The graph also shows that flows during the dry season (recorded in October) are much lower, and more stable than those in summer (April).

While the focus of Botswana's use of the Okavango has been on its tourism economy, Namibia has viewed the river more as a passing resource to be exploited before it leaves Kavango at Mohembo. Thus, the river is perceived as a source of water for irrigation and to provide water for domestic and industrial needs in the central regions. Other uses include supplying water to Rundu, fisheries and potential hydropower at Popa Falls. A number of lodges and camp sites have been developed by private individuals and companies, and by one conservancy, but the government has paid little attention to the creation of wealth and jobs through tourism to the Okavango River.

Challenging questions:

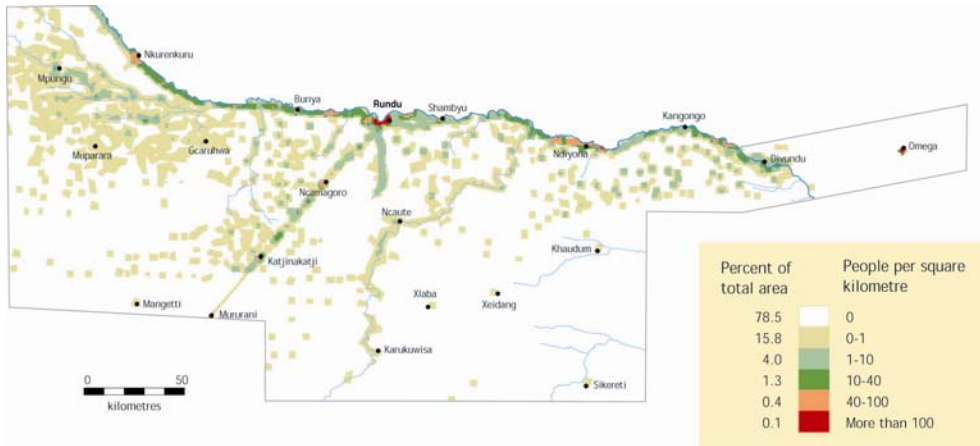
1. What can Namibia do to contribute to the overall value of this unique river basin?
2. What are the best economic uses that Namibia can make of the river as it flows past from Angola to Botswana?
3. Should Namibia be concerned that good flows of clean water continue to reach Botswana?
4. Should Namibia be concerned about exploitation of the river's water by Angola?
5. Is there a way, and a will, for Angola, Namibia and Botswana to develop the whole Okavango River Basin into the world's largest river tourist attraction?

3. The people of Kavango

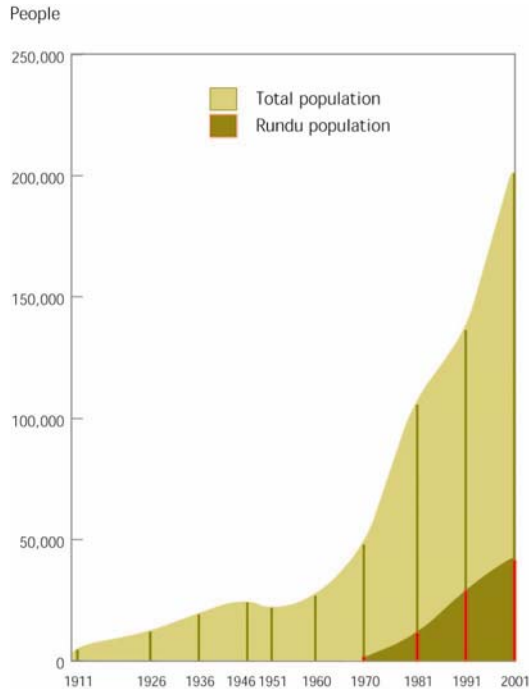
Historically, people are settled where water and soils were most suited to farming. That created a pattern of unevenly distributed settlements within the region. A ribbon along the river, approximately 10 kilometres wide, is densely populated, and approximately 70% of the whole population lives within this 10 kilometre zone. Settlements away from and to the south of the river developed for several reasons:

- A lack of open, arable land and grazing along the river led people to seek areas which they could farm
- The provision of water from boreholes
- The opening of roads allowed people easier access to unsettled areas
- Wealthier farmers with large cattle herds established cattle posts which later expanded into small villages

Living conditions in small, remote villages away from the river and main roads are difficult, however. The people are far from services and they have little chance of participating in Kavango's retail and cash economy. Land available for crop cultivation is often limited. As a result, many of the villages have shrunk, often causing local public services such as schools to become redundant or uneconomical.



The distribution of people in Kavango



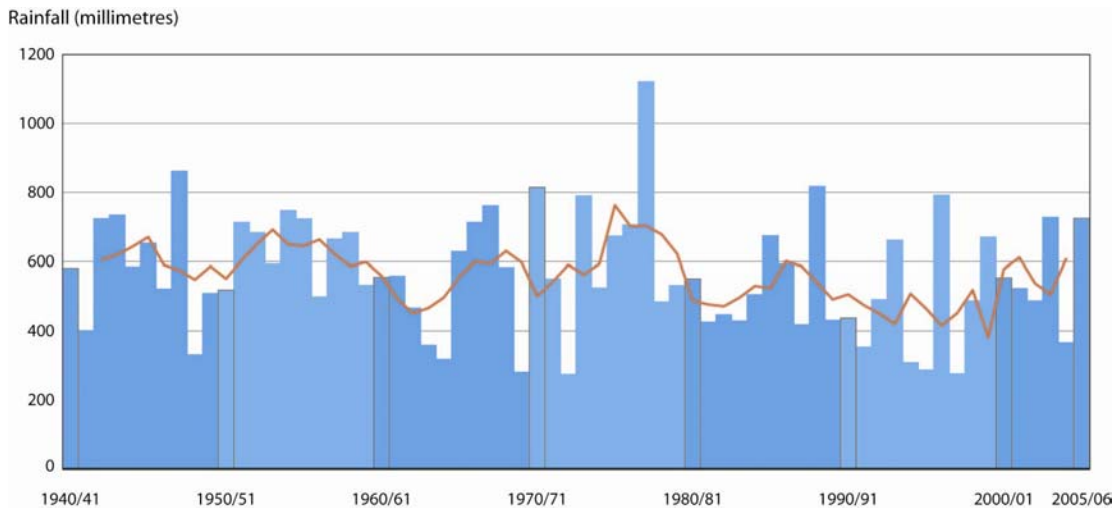
Population growth in Kavango over the past 65 years

CHANGES: The expansion of settlement away from the river is one major change to have occurred to the population of Kavango over the past 40 years. Another substantial change has been the very rapid growth of the population, much of this being due to the many immigrants from Angola, especially during the 1970s and 1990s. As a result, more than half of all people in Kavango are immigrants or children of recent immigrants. Immigration has largely stopped as a result of the peaceful conditions in Angola. The population of Kavango amounted to 201,093 during the last census in 2001. At an annual growth rate of 3%, the population in 2006 probably totals about 233,000 people.

A third major and on-going change to the population of Kavango is urbanization, which has led to the very rapid growth, expansion and development of Rundu. It is said that Rundu is the fastest growing town in Namibia. In 1971, the whole of Rundu consisted of less than 2,000 people, whereas its population now in 2006 probably numbers about 53,000. Over one quarter of all people in Kavango live in Rundu and other emerging urban areas, such as Divundu, Nkurenkuru, Ncamagoro and Ndiyona. In summary, the character of the population is changing from one that was completely rural to one in which urban residence is substantial. The importance of urban areas is even greater from an economic point of view. Similarly, the urban, cash economy is becoming much more important and attractive than traditional, subsistence economies based on farming. That shift may accelerate dramatically if the planned large-scale production of jatropha materializes.

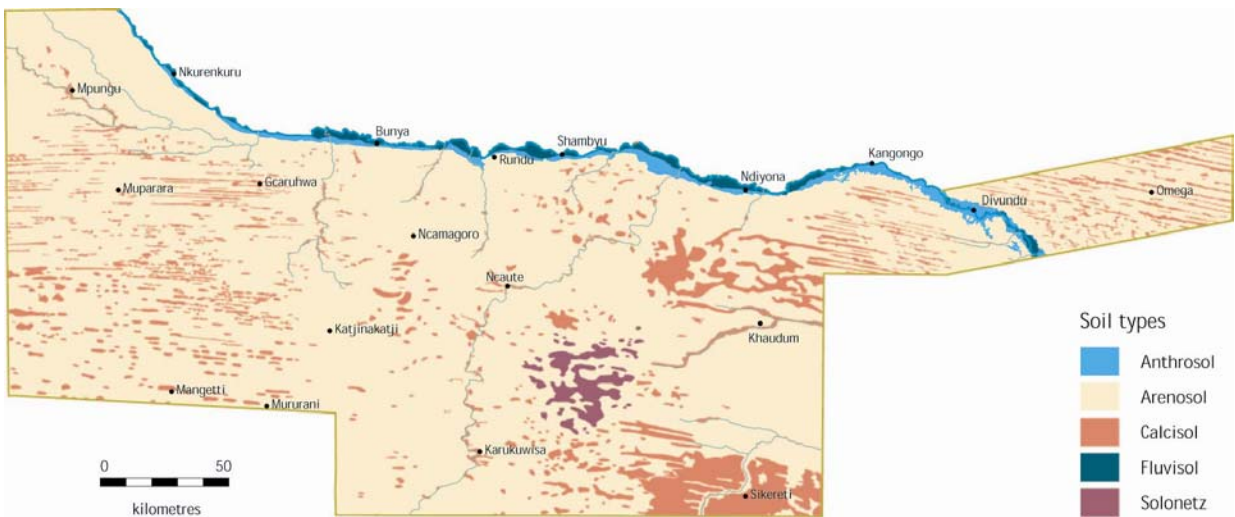
4. Agriculture

The majority, or 80% of all land in the Kavango region is used for farming. Small-scale farming on a few hectares of mahangu with small numbers of goats and cattle is dominant, but most of the southern and western parts of the region have recently been divided into large farms, each covering between 2,500 and 5,000 hectares. It is widely assumed that (a) farming is the dominant income for people in Kavango and (b) that the region is well-suited to agricultural production. These assumptions may not always be valid, however.

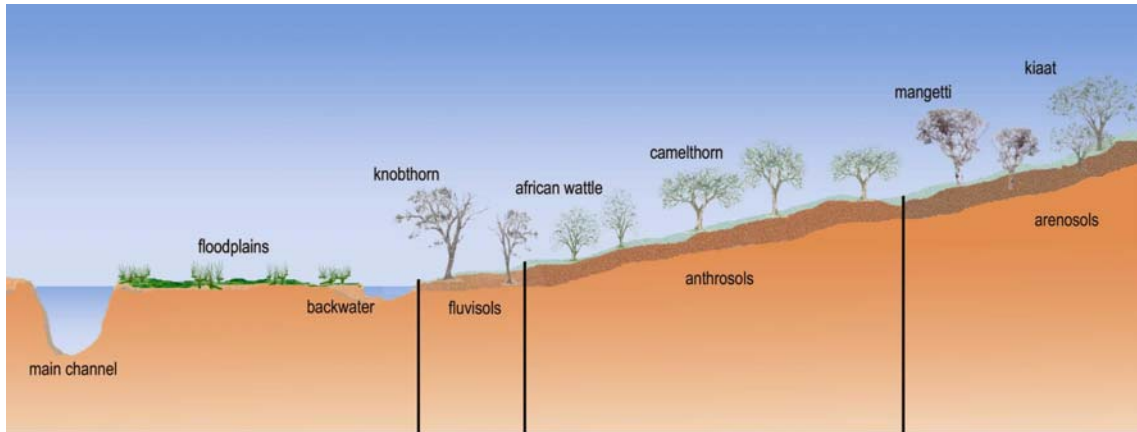


Rainfall recorded each year over the past 65 years at Rundu, showing how falls vary unpredictably.

Farm production depends very strongly on two factors: rainfall and soil quality. About 80% of all rain falls between December and April, but the amount, timing and effectiveness of rainfall vary greatly from year to year and also within any one rainfall season. Crops do well when good and regular falls are received, but fail when little or no rain falls. Harvests are therefore variable. Similarly, livestock suffer substantial mortality when conditions are very dry, as happened in 1994 and 1995.



Without very intense management and the application of fertilizers, crops cannot be grown on the sandy arenosol soils that cover most of Kavango. Soils suited to crop growth are concentrated in small areas along the Okavango River, omurambas and in long valleys between old sand dunes.



A cross-section showing different soils (fluvisols on the flood plains and anthrosols on higher ground) between the main Okavango River channel and the woodlands growing on sand (arenosols).

Small-scale farming, as practiced by the great majority of households is a low input - low output activity that generates little income because:

- fields are small
- soils have limited fertility
- yields are low
- labour is often limited
- surplus harvests are rare, and
- markets are small.

Thus, most rural households obtain much more income from the wages, business incomes, remittances and pensions of family members than from farming. Likewise, any real improvement in economies of rural households must depend on them earning incomes from activities that are much more productive than mahangu and a few goats and cattle. Small-scale mahangu farms provide some food security, but few or no opportunities for economic development or poverty reduction. *The idea that most rural households are farming households that depend on agriculture for most of their income is largely a myth.*

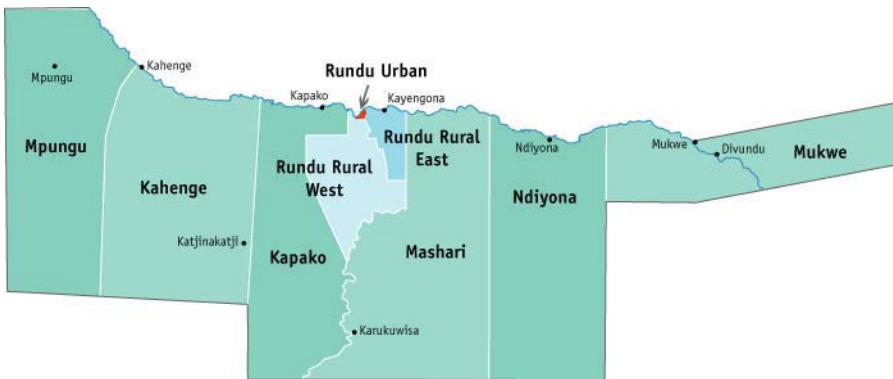
The development of more larger, irrigated farms – such as those at Vungu Vungu, Shitemo, Musese and Shadikongoro – is often perceived as a solution to Namibia’s food self-sufficiency needs. However, these farms may have significant detrimental effects on the environment, and they are uneconomical for purposes of producing cereals, such as maize and wheat. Better alternatives might be to develop and use smaller irrigation schemes to produce high-value crops and fish on a commercial basis.

Although there are more than 65,000 goats and 150,000 cattle in Kavango, traditionally few of these animals have been slaughtered for commercial sale. The development of new large-scale farms in the south and west of the region offers an important opportunity to boost the economy of Kavango if the farms can be used to produce and sell cattle. In addition to perhaps shifting the red-line veterinary cordon fence north, other development measures that will be needed include the provision of water for livestock and training and incentives to ensure that the farms are managed productively. There is also a good potential for livestock production in feedlots.

5. Land uses and controls

Land in Kavango is traditionally viewed as communal land. This means that land is formally owned by the state, but many organisations exercise control over land to a greater or lesser degree. The most important organisations are:

- Tribal authorities (Village Headmen, Senior Headmen, Traditional Councils and Chiefs)
- Regional Councillors
- The Ministry of Land & Resettlement
- other ministries that control certain areas (for example, the national parks that are managed by the Ministry of Environment & Tourism),
- Individual farmers: both small-scale and those on large farms that are soon to be leasehold
- Village Development Councils (VDCs) and Constituency Development Councils (CDCs)
- Land Boards



Kavango is divided into six tribal authorities (Kwangali, Shamyu, Mbunza, Gciriku, Mbukushu and Kxoe) and nine constituencies, each represented by a Regional Councillor. The boundaries of the constituencies and tribal representatives differ in many areas.

While land in Kavango is controlled by many organisations, it is also used for many different purposes, the most important of which are:

| Land use ownerhip | Square kilometres | Percentage of Kavango |
|------------------------------|-------------------|-----------------------|
| Communal grazing | 22,477 | 46.4% |
| Private large farms | 14,529 | 30.0% |
| Conservation areas | 7,534 | 15.5% |
| NDC farm | 1,689 | 3.5% |
| Small-scale fields | 750 | 1.5% |
| Namibia Defence Force | 537 | 1.1% |
| Quarantine farms | 280 | 0.6% |
| Resettlement farms | 200 | 0.4% |
| Urban area | 162 | 0.3% |
| Government farms | 112 | 0.2% |
| Forestry area | 101 | 0.2% |
| Rehabilitation farms | 62 | 0.1% |
| Leased farms | 23 | 0.0% |
| Total area of Kavango | 48,456 | 100% |

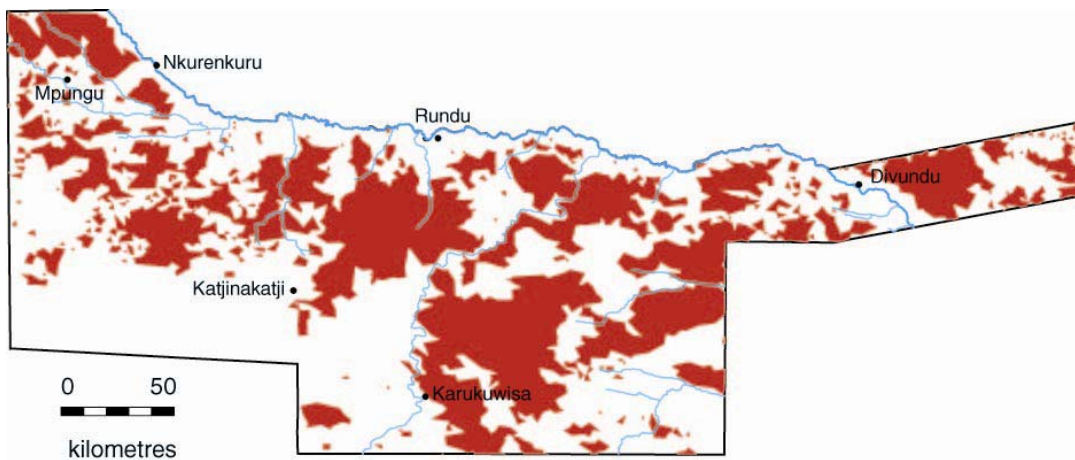


Just less than half of Kavango consists of communal land. The remaining areas are used for a variety of purposes, in particular for large-scale private farming and conservation.

Each of these different uses of land offers different opportunities (and constraints) for the social and economic development of the Region. It will be the task of the Regional Land Board to assess these potentials and to make recommendations for the most appropriate uses, whether these are for agriculture, tourism, conservation, forestry or any other use. The Land Board also needs to consider the role of land in providing residents with a secure future. There is an increasing trend and recognition that people should have leaseholds over their land. This will provide both small-scale and large-scale farmers with much greater security, the ability to borrow money using their farms as collateral, and to develop capital assets and investments.

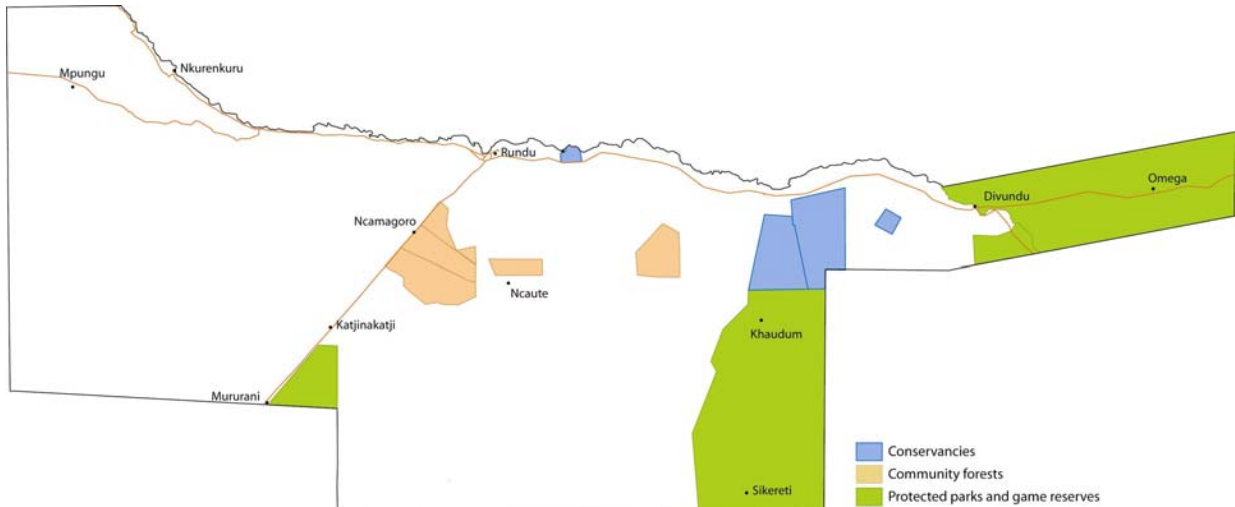
6. Natural resources

Kavango's great variety of wildlife and natural vegetation resources are most simply divided between those that live along the Okavango River and those inland and to the south in the woodlands that grow on sandy soils. These woodlands are dominated by a variety of tree species. The best-known tree is kiat from which large quantities of timber were harvested over the past 50 years. However, few kiat trees large enough to be harvested now remain, and the timber industry has been stopped as a result. Much of the profitable craft industry in Kavango depends on the use of kiat. There are many other valuable plants, such as false mopane or ushivi (also used for timber), mangetti (for kashipembe liquor) and thatching grass. Many of Kavango's plant species have potential commercial values which could be substantial once developed. Examples are oils for the international cosmetics market from blue sourplum, mangetti, bird plum and baobabs, and liquors from mangetti, jackal berry, and monkey oranges.



The greatest threats to the woodlands are the annual fires that burn between two-fifths and a half of Kavango each year. The fires kill mature trees, stop the growth of young trees, and destroy large areas of grazing. Can the Land Board play a role in the control of fires? The map shows the extent of fires during 2003. Fires are most frequent in the eastern parts of Kavango.

Much of the wildlife that used to occur along the Okavango River has now disappeared because so much natural vegetation has been cleared by the many people that live along its banks. Most remaining wildlife is now concentrated in the Mahango Game Reserve, Caprivi Game Park and Khaudum Game Park. In fact, Mahango has the highest concentration of large mammals in Namibia, and also boasts the greatest diversity of birds in the country. These animals are important attractions for tourists to that area of the Region and who bring income by staying in nearby lodges and campsites. Many jobs are also created by the tourism industry.



Five community forests and four conservancies have been gazetted in Kavango, while others are in the process of development.

In recent years Namibia has been developing new ways of using natural resources commercially, especially in communal areas. The most important mechanisms are conservancies and community forests in which residents obtain rights to use and sell wildlife and plant products. In addition, residents have rights over tourism. Some community-owned tourism enterprises have been developed, while others have created through joint ventures with tourism companies. Similar joint ventures have been developed with trophy hunting companies, all of which may earn substantial revenues. Several additional benefits stem from community forests and conservancies. For example, residents gain greater security over communal land and its resources. Wildlife and plant resources are managed more effectively because they now have substantial economic value. In the case of Kavango, the greatest values to be obtained from natural resources are likely to be through tourism along the Okavango River.

FISHERIES: Fish populations in the Okavango River have always been low because the river is naturally very low in nutrients. However, it is widely agreed that fish populations have dropped to even lower levels because of over-fishing. In essence, there is no scope for harvesting more fish for food from the river. Three fish farms have been established in Kavango. However, these are poorly managed as co-operatives and have failed to produce useful yields of fish.

For future economic development, there is indeed scope for fish farming, but the farms need to be run as commercial enterprises by private entrepreneurs, if need be using the Green Scheme formula.

Questions:

1. What can the Land Board do to support the value of natural resource production, especially through conservancies, community forests and tourism?
2. Can pressures along the river be reduced, perhaps by restricting livestock to areas south of the river?
3. What other areas of Kavango rich in natural resources can be developed for the economic gain of residents?

7. Services in Kavango

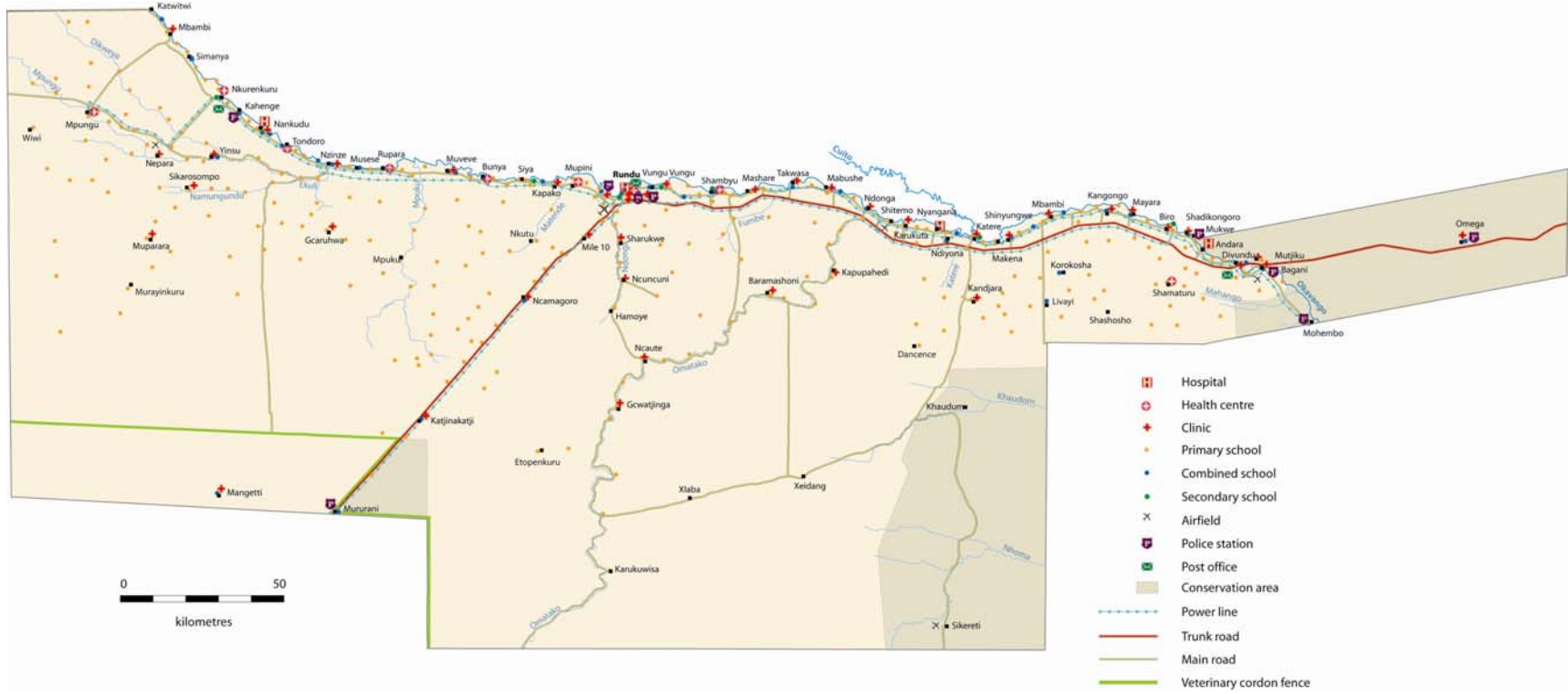
The provision of services, such as water, transport networks, telephones, education and health, has improved significantly during the past 15 years. There are now about 335 schools in the Region, and 42 clinics, 9 health centres and 4 hospitals. Roads have been upgraded and tarred, cell phone coverage is available in most densely populated areas, electricity supplies have been expanded greatly, and retail services are much more widely available than before. Of course, all these services help to improve the livelihoods of people in the region, and further development is needed in many areas. From a planning point of view, however, it is important to recognize that availability of services has a major impact on land uses. This is especially true for roads and water supply.

The majority of households and villages settlements away from the Okavango River are clustered in areas where major roads have been built. The best examples are along the road from Mururani to Rundu, and along the new tar road from Rundu to Divundu. Large areas of woodland have been cleared along these roads as a result. What is regrettable is that many of those cleared areas were soon abandoned, and now serve little productive use. Likewise, many small villages inland and far to the south of the river have grown following the provision of borehole water. Livestock numbers have increased as a consequence.

Neighbouring areas in Angola lack many services, and there are opportunities for the Kavango Region to assist, and to benefit from providing services to Angola. This is already being done with the supply of electricity to such towns as Dirico and Calai.

The Okavango River is the main source of water for the people living along the river and for their livestock. Of approximately 22 million cubic meters of water extracted from the river every year, 15% is used by rural people and their livestock, 11% is used to supply the town of Rundu, and 74% is used for irrigation on large agricultural schemes. Inland villages depend entirely on ground water.

ELECTRICITY: Electrical power is now mainly supplied from the Namibian electricity grid or from private generators. Plans to build a hydro-electrical scheme at Popa Falls are in limbo. Among various environmental concerns about the Popa hydro-power plant is the idea that the scheme will further spoil the pristine character and concentration of tourism attractions in that area of the Mukwe constituency.



8. Summary and synthesis

From the material presented above, several constraints and comparative advantages for the development of Kavango should be clear.

Among the most important constraints are:

1. The concentration of people, livestock and clearing along the Okavango River.
2. The resulting degradation of the zone along the Okavango River, which reduces the beauty and appeal of the river, results in a loss of wildlife, forest and fish, and lowers the value of the river as an economically valuable tourist attraction.
3. Poor soil and climate conditions for agriculture, especially for cereal (mahangu, maize etc) production. Kavango is thus not the breadbasket of Namibia, as is often suggested.
4. Difficulties in marketing within Kavango as a result of the scattered population, and problems in exporting goods to distant markets.
5. The nature of communal land which offers limited security to residents and poor incentives to investors.

But Kavango offers several comparative advantages:

1. The region, and especially Rundu, is well-placed to export services and goods to neighbouring areas in Namibia, Zambia, Botswana and southern Angola.
2. The Okavango River offers great potential for tourism, as a result of its close links with the Okavango Delta and the potential for expanding tourism into southern Angola so as to develop the whole Okavango Basin as tourist attraction. This would be unique in the world since there is no other such pristine river system that could be marketed in this way.
3. Commercial livestock production in the newly established farms in the southern and western areas offers good potential.
4. Selective and intensive farming of high value products on a commercial basis along the Okavango River also offers potential. Such products as fresh fish, beef (from cattle in feedlots) avocados, mangos and paprika should be investigated and developed where possible.
5. Natural resources in the form of valuable plant resources and wildlife can be used to economic advantage through tourism, trophy hunting and the sale of plant products.

Development prospects

Here follows some ideas on areas and aspects that might be developed in Kavango. The numbered bullets refer to the numbers on the map.

1. With the emergence of over 500 large commercial farms in the south and west, consideration needs to be given to shifting the veterinary cordon fence (red line) north of the farms so that beef from the farms can be exported to foreign markets.
2. Since areas north of the veterinary fence would remain exposed to the possible spread of lung sickness and foot-and-mouth disease from the north, further thought should be given to creating a livestock free zone between the river and veterinary fence if it was moved north. The creation of a livestock free zone would help reduce degradation of the river zone and thus add value to its attractiveness for tourism.
3. Although most areas along the river are densely settled, there are pockets of forest and unspoilt areas that should be preserved and developed for tourism.

4. The Mukwe Constituency should be targeted and developed as a zone of special tourist appeal. It already has several attractions (Popa Falls, Mahango and several lodges). However, other attractions should be promoted and developed, for example the Mbukushu burial islands, the Caprivi Strip and Andara Mission).
5. Trophy hunting and tourism can be further developed in the broad zone of commercial farms, community forests and conservancies north and west of the Khaudum.
6. There is a need to develop tourism attractions and facilities in the Mangetti Game Reserve.
7. Every effort should be made to develop and benefit from trade, tourism and export opportunities to the east, west, north and south.



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