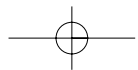
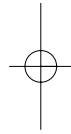
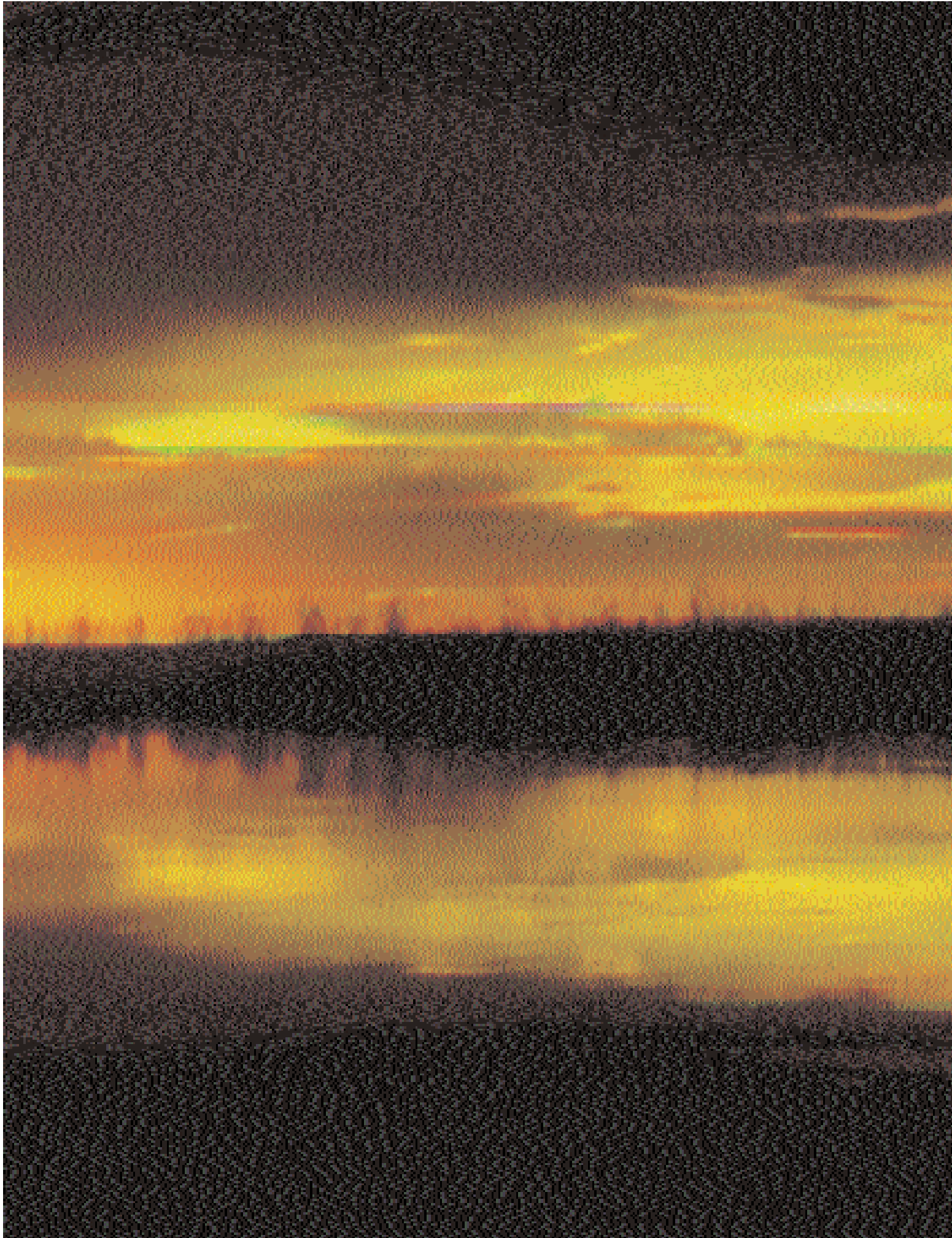


SAND AND WATER
—
A profile of
the Kavango Region



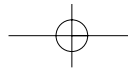


SAND AND WATER

A profile of
the Kavango Region



John Mendelsohn *and* Selma el Obeid



PREFACE

The few special places in the world where a large permanent river intersects a dry landscape are mostly in Africa. Contrasts between life along and away from the river are stark. Natural resources close to the water are plentiful and life is comparatively easy, while the absence of water in the surrounding countryside presents challenges that far fewer plants, animals and humans can meet.

Kavango is just such a place, and this is the region in Namibia where the Okavango River navigates its course from a catchment rich in water in Angola to a large wetland in water-deprived Botswana. *Sand and water: a profile of the Kavango Region* presents a summary of facts and figures most important to the region's geography. The book also draws out key processes to help provide an understanding of constraints and opportunities in Kavango.

The book was produced as part of the Ministry of Environment and Tourism's continuing programme of compiling profiles for all regions in Namibia. The broader goal of this endeavour is to have information available to better integrate and execute developmental and environmental planning. Funds for the project covering Kavango were generously provided by the Governments of France and the United States of America, as well as by the Ministry of Environment and Tourism. Many people and organisations gave their support, and it is a particular pleasure to acknowledge the substantial contributions made by Reino Aisindi, Yves Baudot, Chris Brown, Antje Burke, Marina Coetzee, Kathi Damon, Tristan de Lafond, Katharina Dierkes, Maria Fisch, Clinton Hay, Werner Hillebrecht, Piet Horn, John Kinahan, Johan le Roux, Uzo Okafor, John Pallett, Charlie Paxton, Vilho Shikukumwa, Flip Stander, Roger Swart, and Alex Verlinden.

The project also benefitted from help by the Central Statistics Office, Directorate of Surveys and Mapping, Directorate of Veterinary Services in Rundu, Lux Development, Ministry of Agriculture, Water and Rural Development, Ministry of Environment and Tourism, Namibia Nature Foundation, Namibia Scientific Society, National Archives of Namibia, National Library of Namibia, National

Museum of Namibia, World Wildlife Fund, Paul Amweelo, Helmut Angula, Chris Appleton, Peter Bateman, Ben Beytel, Dudley Biggs, Arnold Bittner, Patricia Blom, Moses Chakanga, Dave Cole, Pieter de Wet, Stefan de Wet, Helge Denker, Fritz Dittmar, Hansman du Toit, Antje Eggars, Alex Endunde, Ian Galloway, Manie Grobler, Goodman Gwasira, Klemens Hatutale, Leon Hugo, Peter Hutchinson, Brian Jones, Lina Kafidi, Boni Kahare, Levi Kamalanga, Klaus Kazumba, Mbaye Kébé, Werner Killian, John Liebenberg, Michel Mallet, Jack Matanyire, Joseph Minnaar, Christian Mundinda, Sepiso Mwangala, Elias Nambase, Pelad Namfua, Teo Nghitila, Lindsay Norman, Nils

Odendaal, Mark Paxton, Pippa Parker, Sevelinus Rengura, Bernd Rothkegel, Ted Rudd, Bernard Schurz, Linda Sheehan, Colgar Sikopo, Alfons Siyere, Jannie Swartz, Sophia Swiegers, Tom Tolmay, Alexander Toto, Fiona Trewby, Loffie van Landsberg, Gunter Von Schumann, Vesna Vukovic and Wolfgang Werner.

The book has been designed in a style that we hope will stimulate the interest of a wide audience: teachers and their pupils, political leaders and senior government civil servants, planners, decision-makers, business

people, and the general public. A wide variety of statistical data and geographical information was assembled during the compilation of the book. For those who can make further use of this information, it can all be downloaded from www.dea.met.gov.na

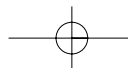
We trust that the information will be of use, and also hope that those who assemble new or updated sets of data will add these to the web to make good information on Kavango and Namibia freely available.

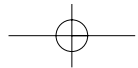
John Mendelsohn

John Mendelsohn

Selma el Obeid

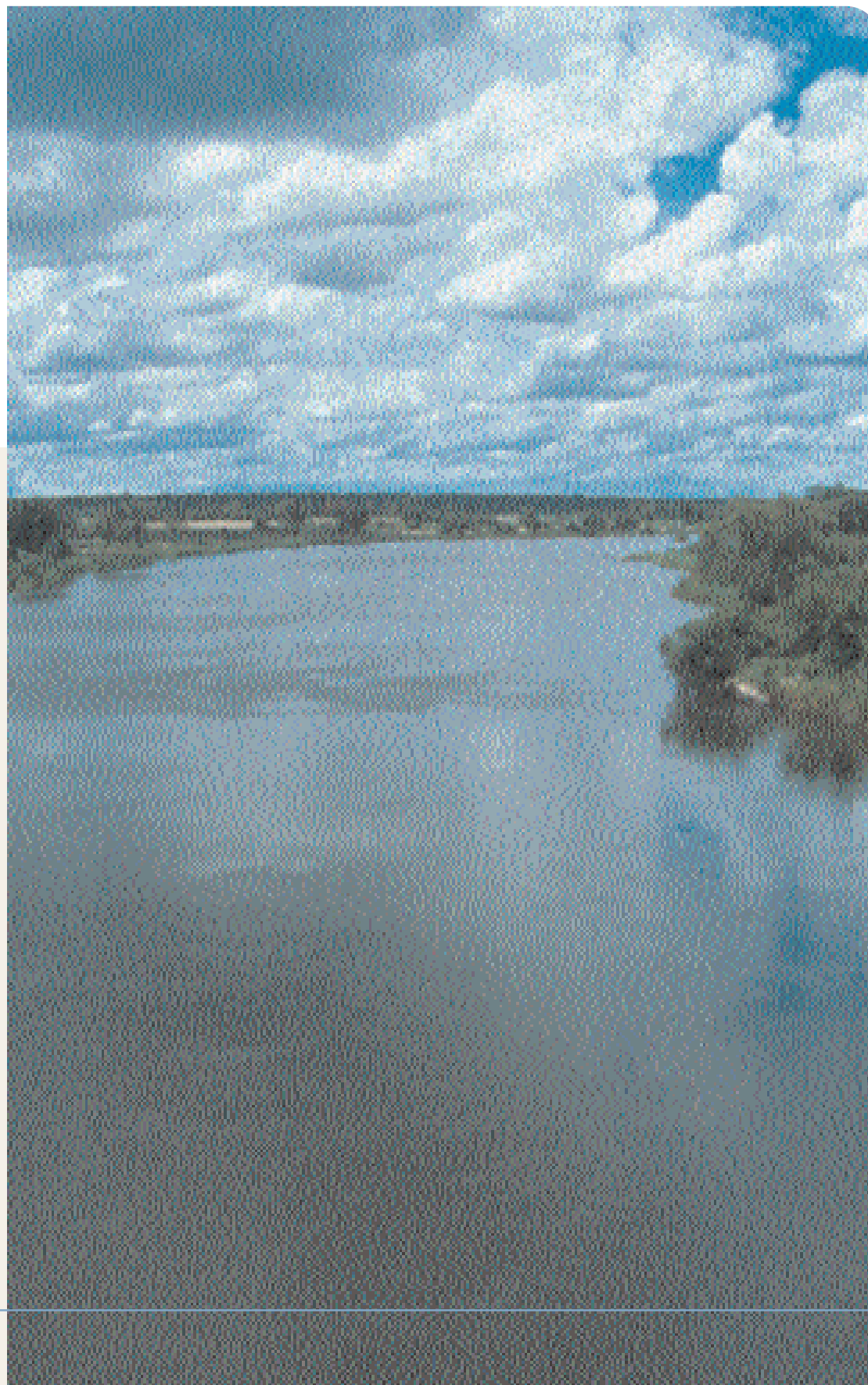
Selma el Obeid





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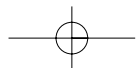
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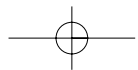
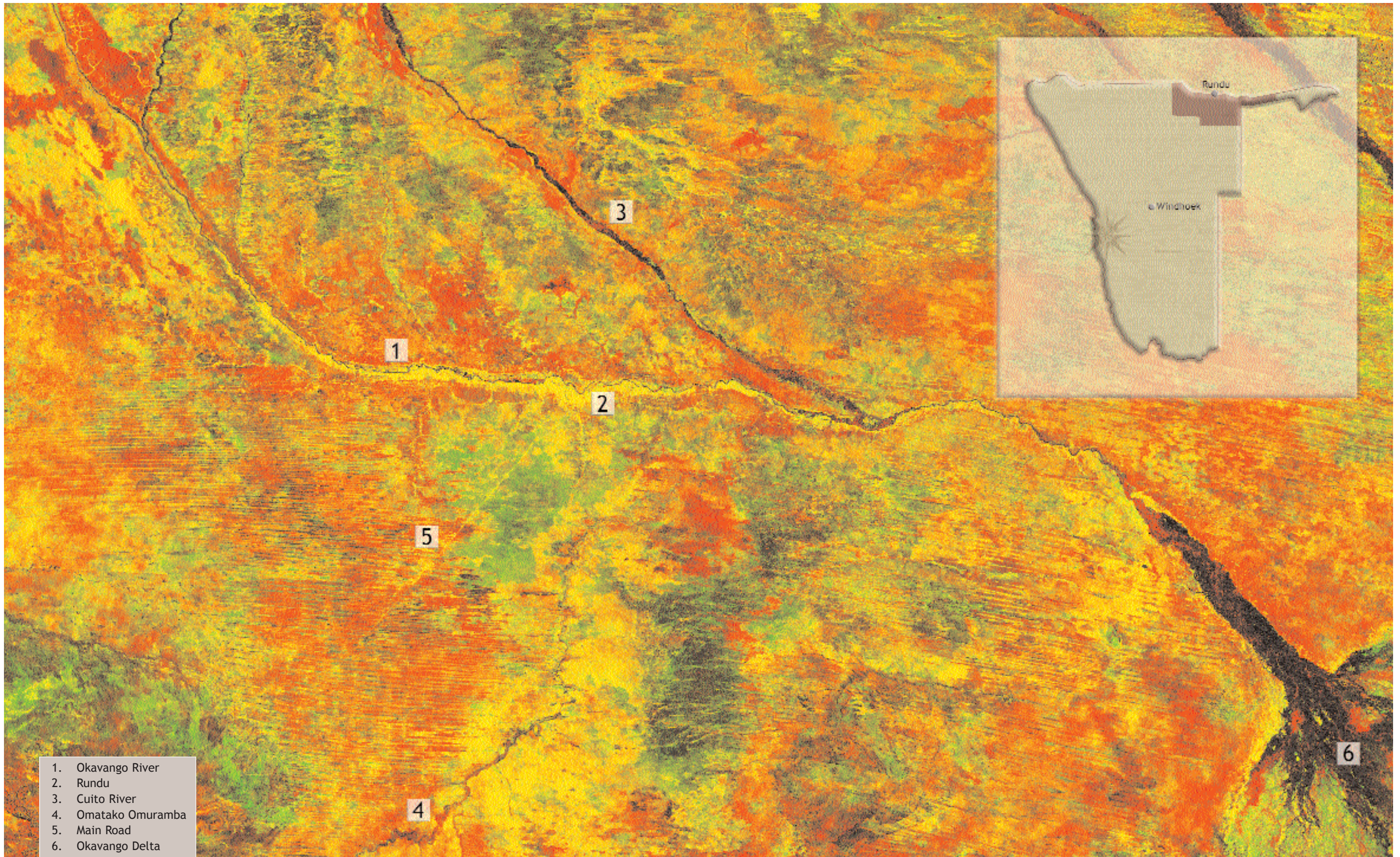
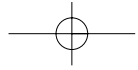
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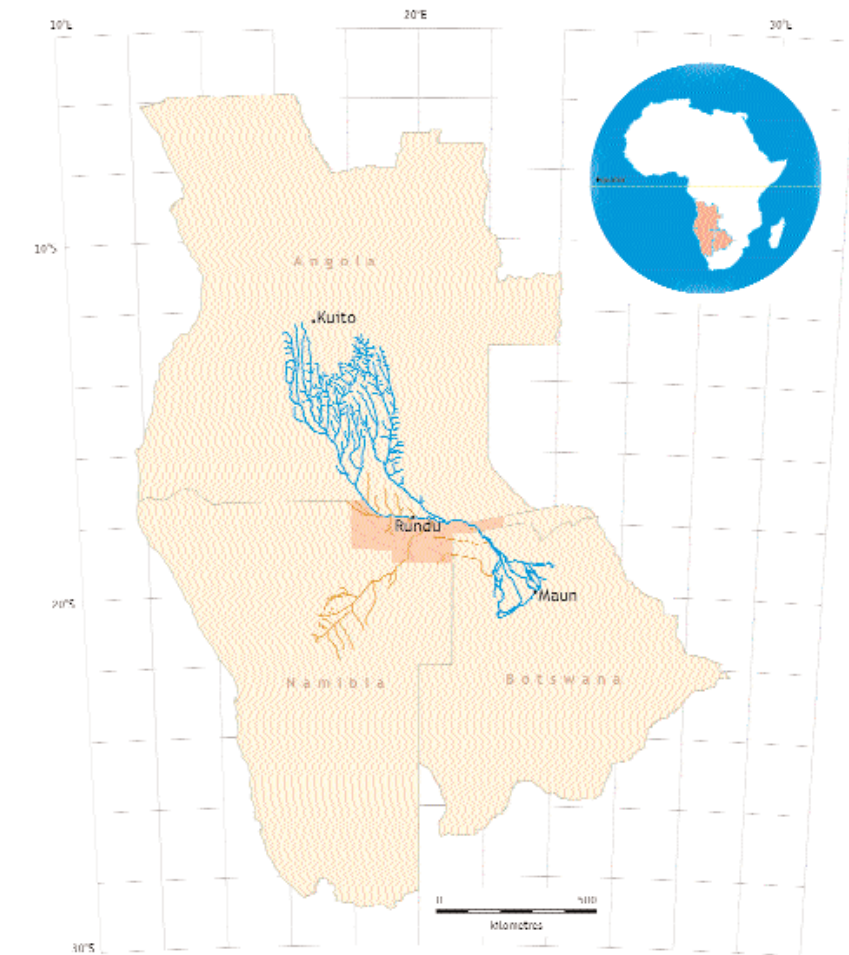
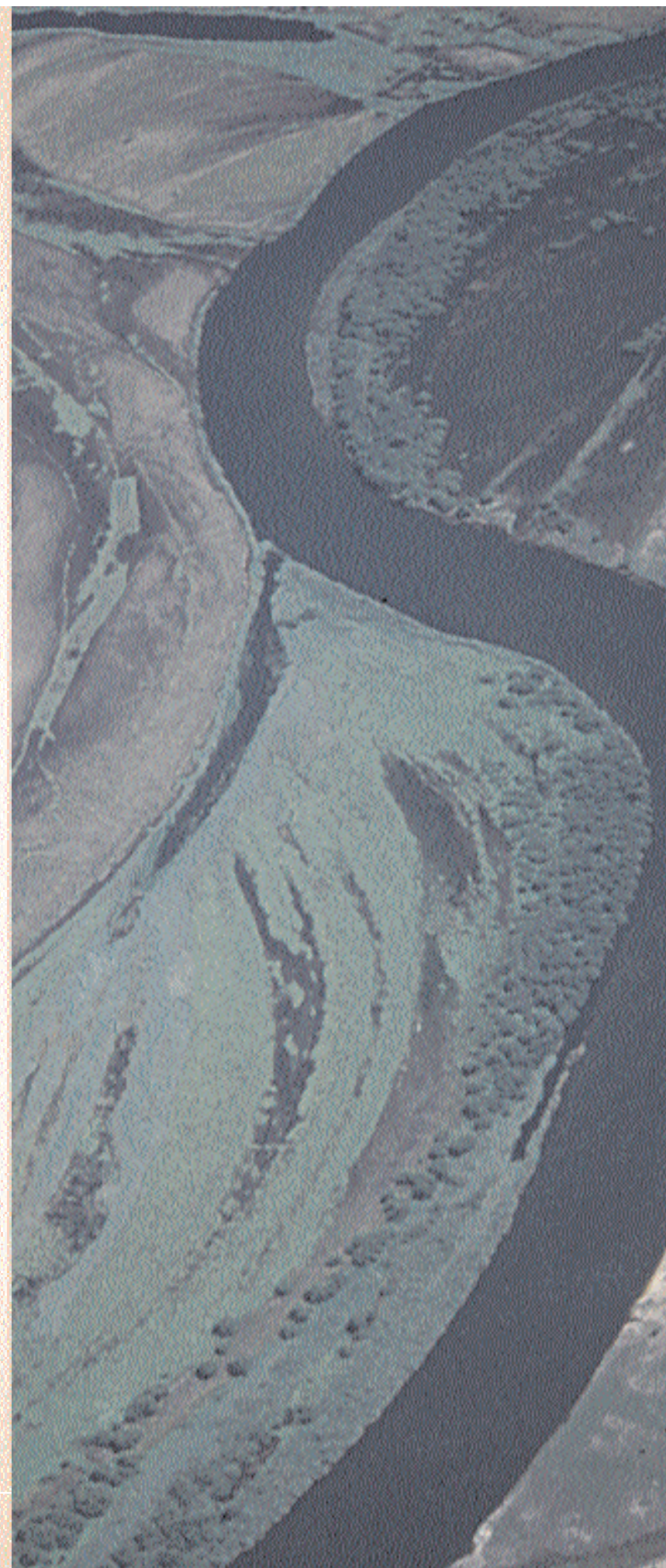
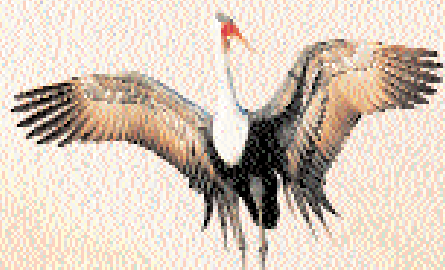


SAND AND WATER

OVERVIEW

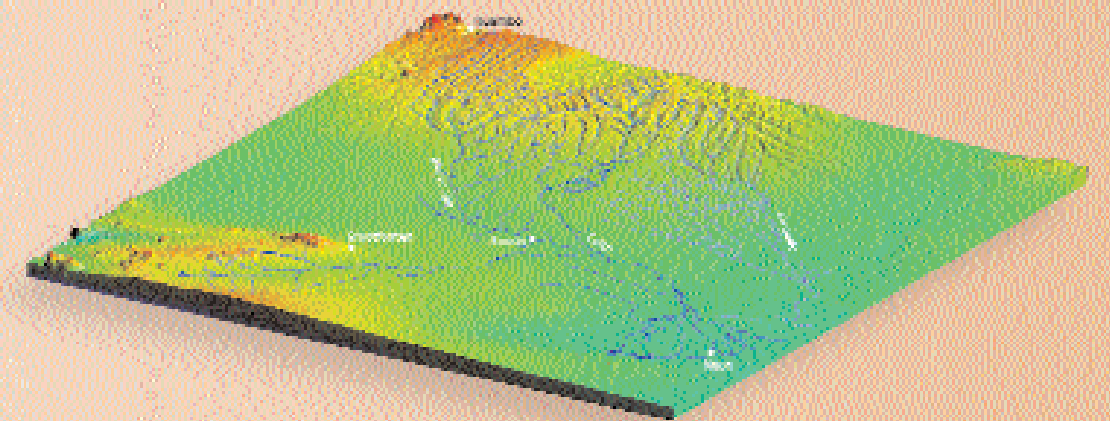
Kavango has

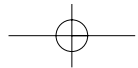
- About 201,000 people, comprising 11% of Namibia's population
- 80% of its people living in rural areas and 20% in the only urban area, Rundu
- Approximately 150,000 cattle (about 5% of Namibia's cattle)
- 71 primary, 47 combined and 12 secondary schools
- 42 clinics, 9 health centres and 4 hospitals
- An area of 48,456 square kilometres (5.5% of Namibia) of which:
 - 55% is communal land
 - 23% consists of large, private farms
 - 15% is conservation area



CENTRE STAGE IN THE OKAVANGO BASIN

Kavango lies in the middle of the Okavango Basin, which straddles the borders of three countries: Namibia, Angola and Botswana. Water flowing in from highland and higher rainfall areas in Angola passes through the Kavango into Botswana's Okavango Delta where rainfall is lower than anywhere else in the Basin. The two main Angolan rivers carrying water into the Okavango River are the Cubango and Cuito rivers. Drainage lines that are now dry – such as the Omatoko Omuramba – carried water into the Okavango during much wetter times long ago.

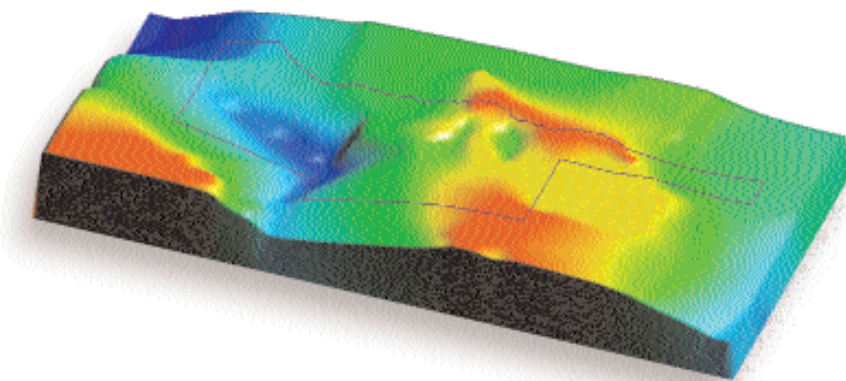




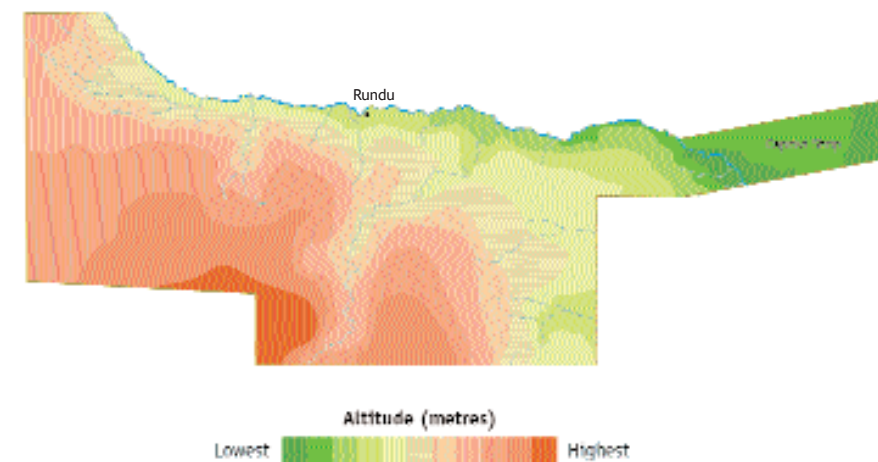
SAND AND WATER

AN EVEN LANDSCAPE

Although Kavango is very flat, altitudes drop gradually from over 1,100 metres above sea level in the west and south-west to less than 1,000 metres in the Caprivi Strip. If the mantle of recent sediments that covers the region were stripped away, the surface of Kavango would look quite different. The foundation of basement rocks forms a valley several hundred metres deep from the western border south-eastwards towards and beyond Mururani. Deep areas in the far north-west form part of the Owambo Basin, while the highest foundation rocks are in south-eastern Khaudum and along the Okavango between Shambyu and Bagani.

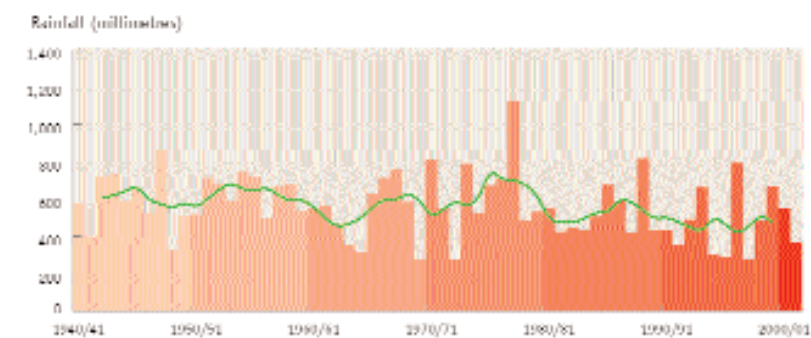
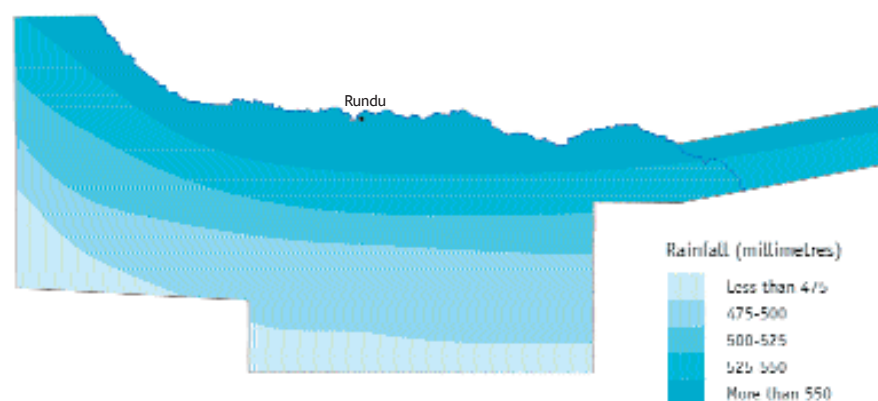


Elevations of the rock foundation.



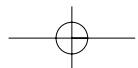
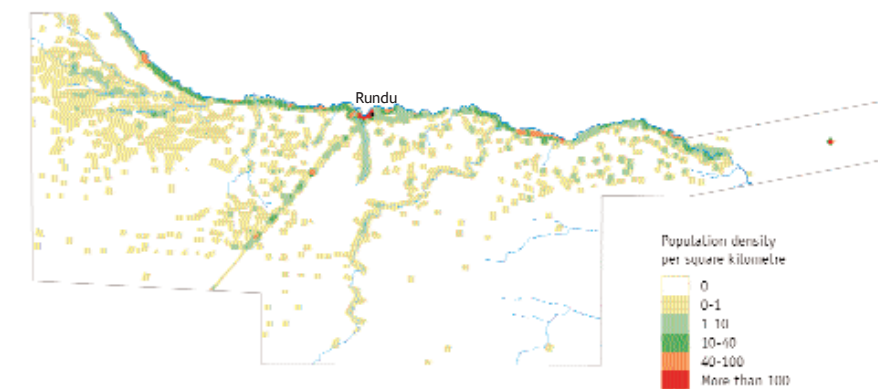
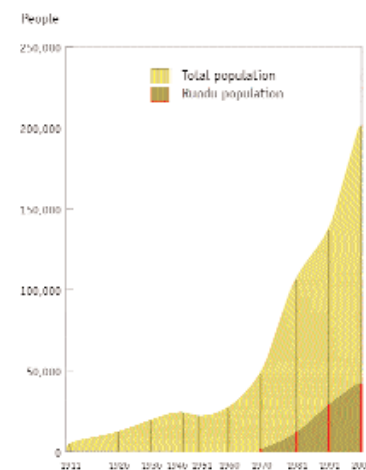
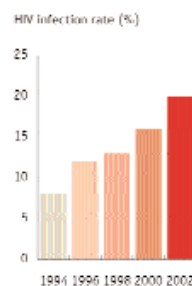
RAIN: SELDOM TOO MUCH!

Although Kavango gets more rain on average than most other regions in Namibia, rainfall fluctuates greatly from year to year. Almost every year differs from the one before and after it, but some cyclical changes are evident: the dry cycle during the 1960s, the wetter period during the 1970s, and then a long recent dry spell since the early 1980s. The highest falls are in the north where annual totals exceed 550 millimetres on average. About 80% of all rain falls between December and March. Almost two metres of water potentially evaporate each year, about four times more than the total rainfall.



AN EXPANDING RURAL AND URBAN POPULATION

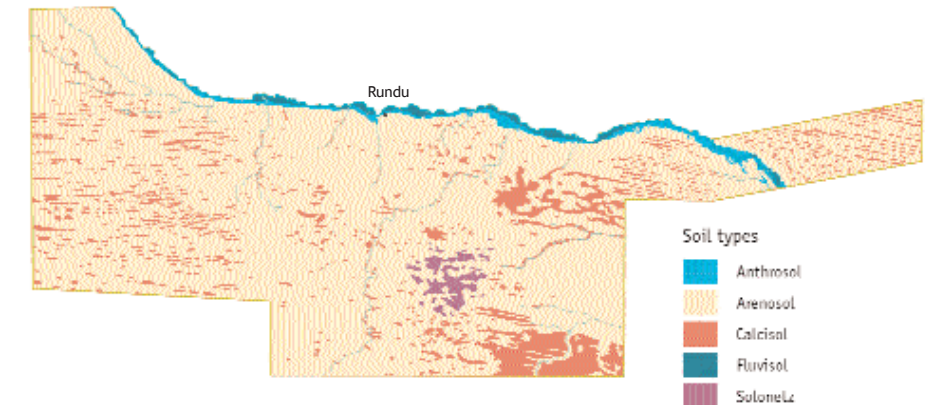
The population of 201,093 people counted in 2001 had grown more than 40 times from some 4,500 people reported about 90 years ago. Almost everyone then lived along the river and, although many people now live inland where water has been supplied, about 155,000 people still live within 10 kilometres of the river. This includes about 41,400 urban people in Rundu who make up 20% of the total population. A large proportion of Kavango's population consists of recent immigrants from Angola. Approximately 20% of all sexually active people are infected with HIV.



SAND AND WATER

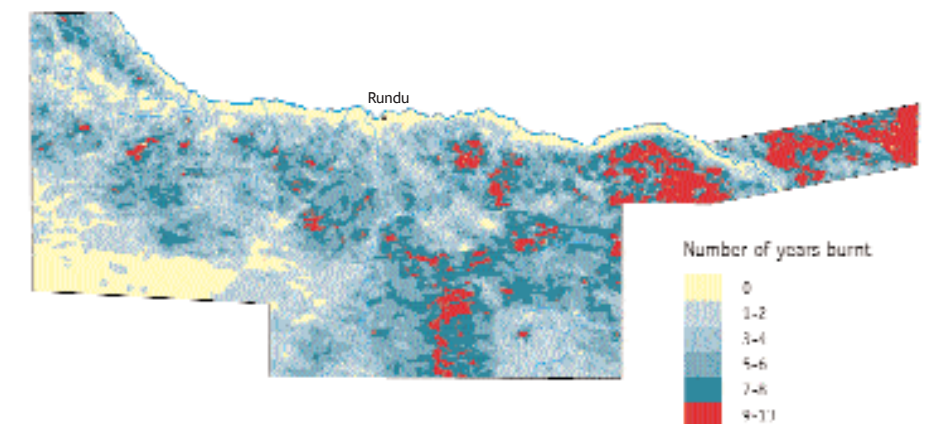
LARGELY SAND

Soils in Kavango are dominated by wind-blown sands deposited as a mantle across the landscape during much drier times long ago. The sandy, porous texture allows water to drain away rapidly, leaving little moisture in the soil and also holding very few nutrients. Crops do not grow well in these sands as a result. The loose structure of the sand means that there is little run-off or water erosion. Smaller areas of soils somewhat better suited to crops occur along the Okavango, omurambas (dry rivers) and inter-dune valleys.



A BURNING ISSUE

Large areas of Kavango are damaged each year by bush fires that sweep through the countryside. Such frequent and extensive fires – an average of about one-third of the region burns every year – cause many environmental problems, including shortages of grazing, the death of many trees and the loss of nutrients in the soil.

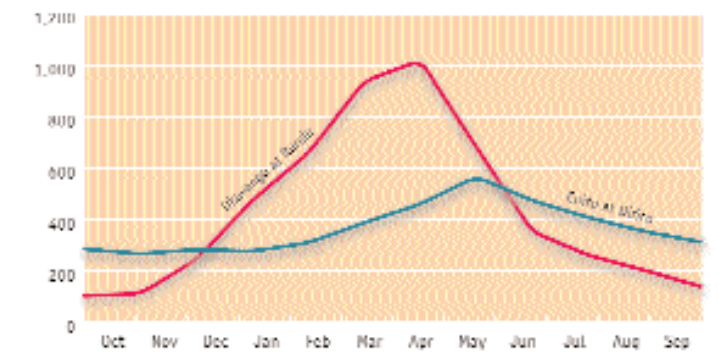


A LIFELINE IN MOTION

Of all the water (about 9,800 million cubic metres on average) that the Okavango carries out of the region and into Botswana every year, about 55% has come from the Cubango and 45% down the Cuito River. Flows in the Cubango change a great deal from season to season and year to year, depending on rainfall, while water levels in the Cuito are much more stable. Water coming down both rivers is very clear and clean.



Millions of cubic metres



MAKING A LIVING

Livelihoods have changed rapidly in recent decades. Much of the wild fruit, fish and wildlife that supplied people with food years ago has now gone, but many people now feed themselves by buying food using money earned from jobs and businesses. Although most rural households are engaged in subsistence farming, the value of farm produce is many times less than that of cash incomes. Mahangu yields are usually very low and little livestock is sold. Life in Kavango is not easy, and the chances of improving the quality of rural life are small.

