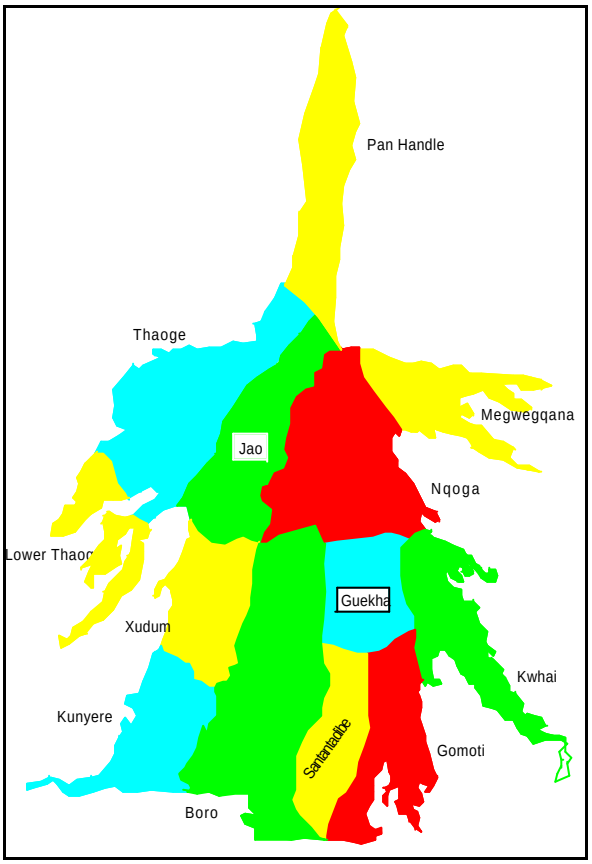
Water Resource Associates

A network of consultants in hydraulics, hydrology, groundwater & environmental issues

Project title: **Hydrological study of the Okavango Delta, Botswana.**

Summary: The Namibian government was proposing emergency abstractions from the River Okavango upstream of the Okavango Delta, one of the world's most precious wetlands.

Client: Namur City Council	**Financed by:** Government of Namibia
Period of assignment: 1997	**Location**: Namibia, Botswana, Republic of South Africa
Project Value: Unknown	**WRA services**: £ 6,000
In co-operation with: CSIR, South Africa	



Division of delta into cells

Background

The Okavango river rises in the humid mountains of Angola. From there it flows through Namibia and into Botswana where it forms an inland delta. The Okavango Delta is an internationally recognised wetland and home of a wide variety of wild life. Due to a persistent drought the Government of Namibia was considering abstractions from the Okavango river as an emergency measure.

Scope of work by Water Resource Associates Ltd

As part of the study of the possible abstraction a number of complementary studies were undertaken including one on the downstream environmental effects. This study was co-ordinated by the South Africa CSIR and WRA was brought in as a specialist consultant to study the possible hydrological effects on the delta. The wetland model used was a development of a model developed earlier by a WRA Directory which took account of the losses from open water and vegetated land around the delta. The model divided the delta into 12 cells and simulated flows and areas in each cell.

Results

The model was able to simulate the pattern of flooding in the cells with a high degree of accuracy. In particular the variation of flooded area and outflow from the delta corresponded with historical observations. By superimposing the effects of the proposed abstraction on natural flows the effect of the abstraction on the delta was calculated. The model also was used to study different patterns of seasonal pumping, some of which were shown to have less effect on the delta than others.

Project Number 000014

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