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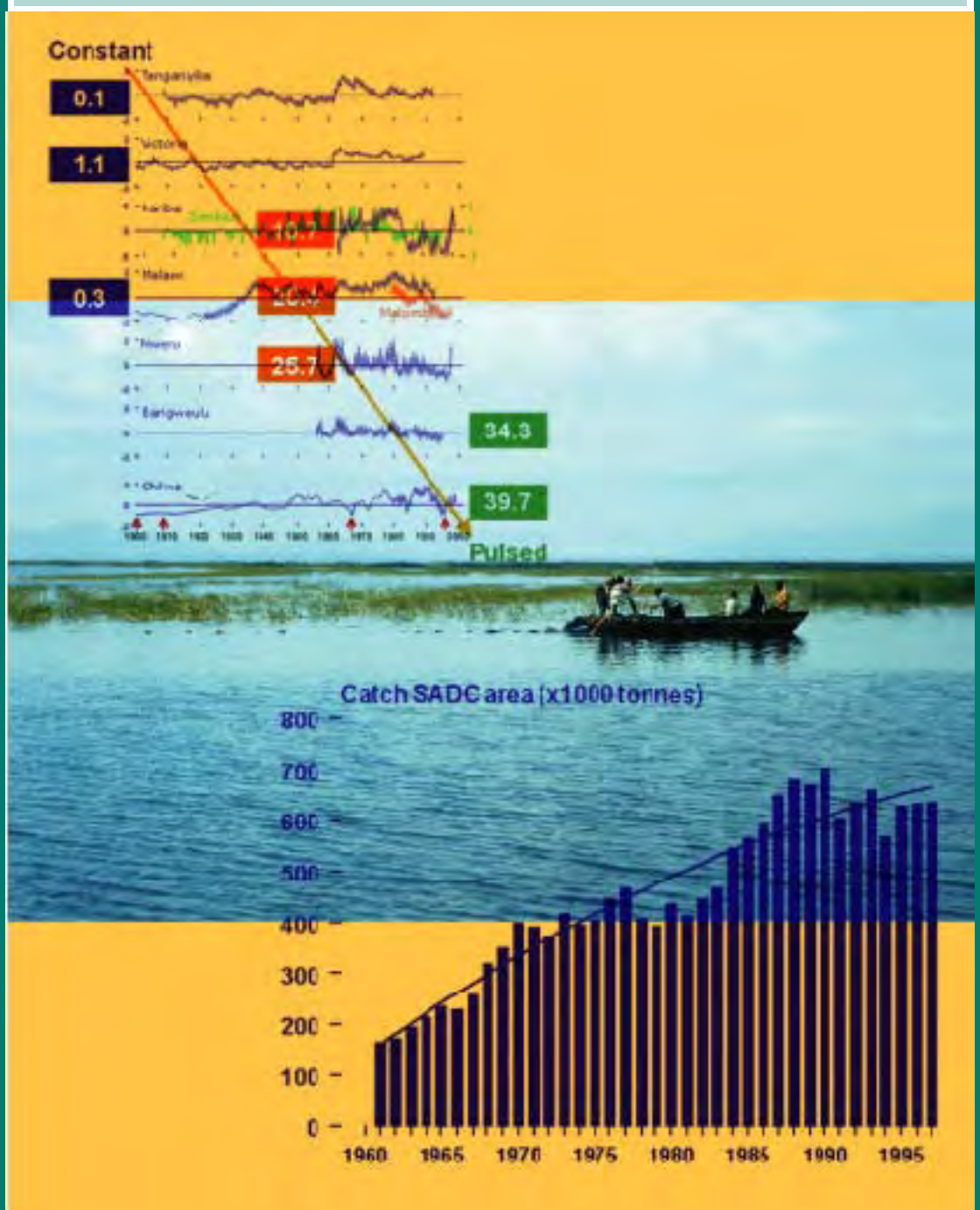
Management, co-management or no management?

Major dilemmas in southern African freshwater fisheries
2. Case studies



Cover photograph: Lake Chilwa, Paul van Zwieten, Wageningen University, the Netherlands. The set-up is by van A tot Z.

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Management, co-management or no management?

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Edited by
Eyolf Jul-Larsen
Jeppe Kolding
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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2003

PREPARATION OF THIS DOCUMENT

The present report is the main result of a four-year research project on freshwater fisheries development in the Southern African Development Community (SADC) area funded by the Norwegian Research Council. It has involved a number of African and European researchers who have delivered written contributions. The report is divided into a synthesis part and ten case studies covering five important freshwater bodies in the Democratic Republic of Congo, Malawi, Zambia and Zimbabwe. Due to practical and financial constraints, it was unfortunately not possible to include all participants in the development of the synthesis but we hope that we have been able to reflect all the major findings which emerged from the case studies. The names of the editors appear in alphabetical order.

ACKNOWLEDGEMENTS

First of all we wish to thank the Norwegian Research Council as the main funding source; they have shown great interest in our work and have been very supportive. The fisheries authorities in Malawi, Zambia and Zimbabwe have provided very useful assistance by giving us access to all sorts of data and we thank them sincerely. We also wish to thank the Development Planning Service, Fisheries Policy and Planning Division of the Fisheries Department of FAO, for a close and very fruitful collaboration which has included several workshops and seminars and a six months stay as visiting scientist. We also thank the Norwegian Agency for International Development (NORAD) for financial support to the dissemination of results.

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ABSTRACT

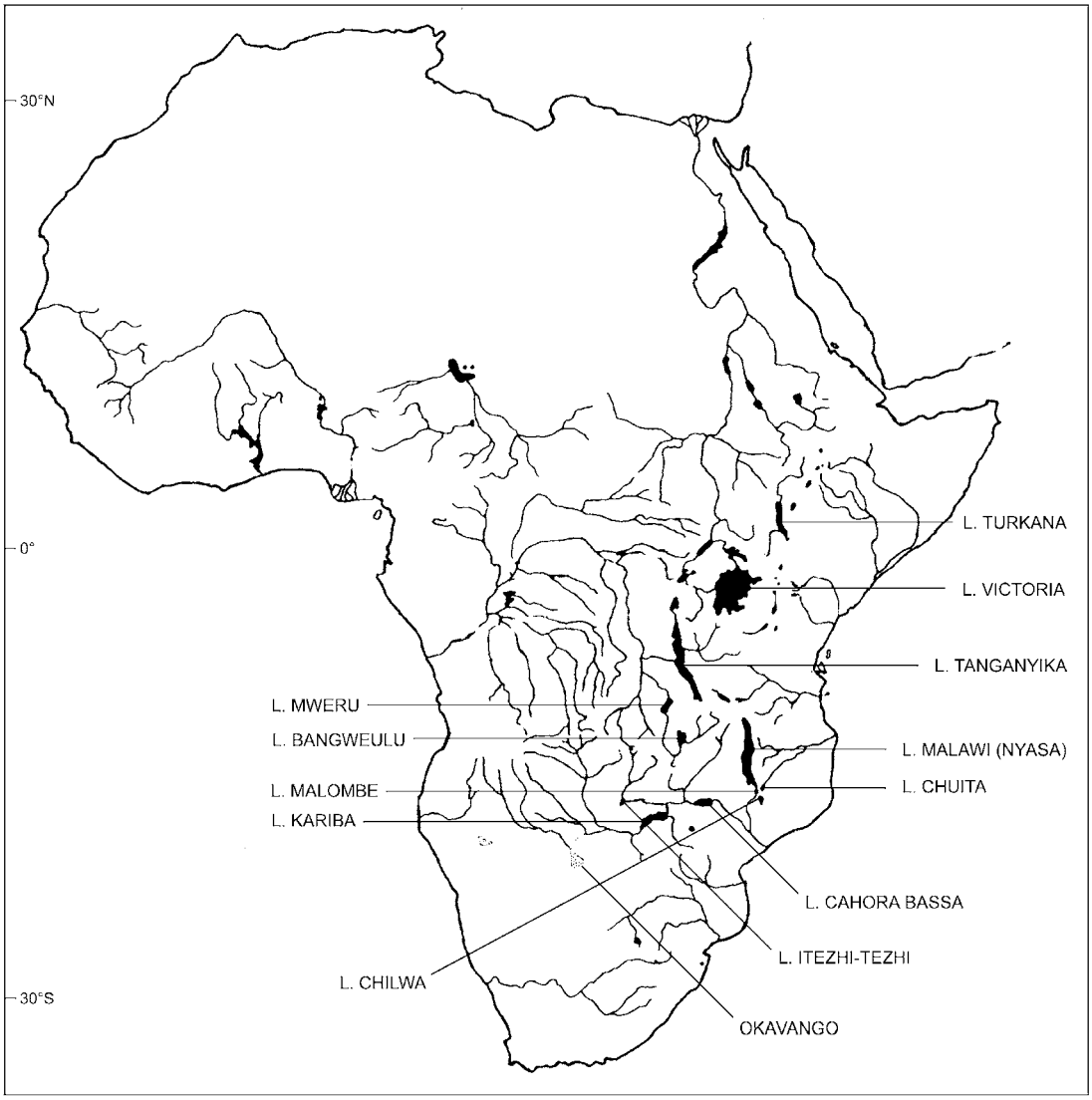
This report contains ten case studies which serve as background for a synthesis report published in FAO Fisheries Technical Paper 426/1. They have been conducted in five medium sized lakes in the Democratic Republic of Congo, Malawi, Zambia and Zimbabwe. Five of the case studies focus on biological and environmental effects while the remaining five are concerned with historical and sociological analysis. In different ways all the case studies focus on some of the following three features, relevant for the management of freshwater fisheries in the South Africa Development Community (SADC) region:

– How has fishing effort developed in these lakes over the last 50 years?
Despite a considerable increase in the total fishing effort in the region, the report demonstrates great variation in effort dynamics both in time and place. Most papers distinguish between changes related to the number of people and changes in technology and investment patterns and show that most of the increases in effort have been population-driven. Only in the case of Lake Malombe have changes in effort mainly been investment-driven.

– What causes the changes in fishing effort?
The sociological papers show that the level of mobility among fishermen – into as well as out of the fisheries sector – is considerable and this mobility is strongly influenced by economic features external to the sector (such as changes in the Copperbelt economy for Lakes Mweru and Kariba or that of the South African mines for Lake Malombe). Changes in the number of fishermen also depend on the effectiveness of the local access regulating mechanisms found to exist in all the lakes. The moderate prevalence of investment-driven changes in these fisheries is analysed with reference to deficiencies in infrastructure, credit support and complex and often unclear social relations prevailing at the local level. When occurring, investment-driven increases are generally induced by access to external financial sources. Finally, one paper compares fisheries regulations in Zambia and Zimbabwe and shows how regulations in both countries – rather than being based on data from the fisheries development – seem to reflect certain historical concerns which have been important for the states with regard to fish.

– How do fishing effort and environmental factors compare in their effects on the regeneration of fish stocks?
The biological papers show that in the five lakes studied, environmental drivers are often more significant than fishing effort in explaining changes in fish production and the strong environmental influence is not only restricted to cases where environmental variability is very high (e.g. Lake Chilwa). Total yields in the multispecies and multigear fisheries are surprisingly stable over a large range of effort levels, but changes in species and size composition are considerable. So, in these fisheries with small-scale operations there is limited danger in increased diversification of fishing patterns and they are close to an overall unselective and ecologically sound fishing pattern, highly adaptive to changing conditions. The only case where fishing effort can be said arguably to have led to reduction in catches is on Lake Malombe and there it is found that increased gear efficiency is the probable cause for reduced fish stocks.

Map of study area



Map of Africa with the five study areas indicated on the left. Freshwater systems in Africa where the authors have additional research experience are indicated on the right. (Drawn by Elin Holm).

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