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## Summary

# Management of Small-Scale Fisheries in Developing Countries: The case of Elephant Marsh in Malawi

**Keywords:** sustainability, institutions, small-scale fisheries, Malawi, wetlands, Elephant Marsh governance.

Wetlands provide many ecosystem goods and services which include fish production. The sustainability of small-scale fisheries (SSF) has received considerable attention in recent years because fish is one of the major sources of animal protein to a considerable fraction of the global population which is estimated to increase to about 9.5 billion by 2050. Most of this attention has evolved around the pressures to which SSF are increasingly subjected, emanating particularly from population growth, rural poverty, weak institutional mechanisms, market forces, climate change among others.

This thesis focuses on designing a sustainable management institution for the Elephant Marsh Fishery in Southern Malawi. With fieldwork which started in May 2011 to June 2013, this PhD study uses empirical data to understand the socio-ecological system of the Elephant Marsh Fishery and propose an actor-based institutional design which would achieve long-term sustainability of the fishery.

After the introductory chapter 1, the second part of this thesis (Chapter 2) brings into perspective a clear understanding of the socio-ecological and land use setting of the Elephant Marsh as well as the ecosystem-based development potentials that exist at the wetland. The second chapter also highlights the actors and local institutions pertaining to the management of the wetland.

Just like many similar ecosystems across the globe, the Elephant Marsh has come under increasing pressure in recent years which threatens the future of the wetland. Currently, Malawi does not have either a national wetland policy or a climate change policy and wetland issues are only marginally present in the National Parks and Wildlife Policy of 2000 and National Fisheries and Aquaculture Policy of 2001. As a result, the country lacks a framework that could be strong enough to achieve balanced and sustainable wetland management for multiple resource users. Chapter 2 of this study reveals that there are

significant ecosystem-based development potentials at Elephant Marsh mainly in fisheries, recession agriculture, conservation, tourism and biomass for energy. Chapter 2 further shows that if these ecosystem-based development potentials are to be efficiently and effectively exploited at the Elephant Marsh, there is a need to rise above the institutional design principles of Ostrom which are based on nested enterprises and move towards real participatory approaches such as constitutionality (local people's sense of ownership in bottom-up institution building). Certainly, as the present thesis suggests, there will be need to strike a balance between the local wetland management system, where pressure on the Elephant Marsh emanates mainly from poverty, and the national and international interests of biodiversity conservation as advocated by the Ramsar convention. Although enhanced production and maximum benefits from ecosystem good and services are central to any management system of the Elephant Marsh, it is important to realize that there are always limits to growth. Any management program for the Elephant Marsh should therefore strive towards sustainable exploitation of the opportunities that lie in the wetland's goods and services.

Globally, institutions that manage small-scale fisheries can be locally based, state controlled or of a mixed, cross-scale nature. The latter arrangement, widely known as co-management, is generally believed to be the preferred approach for fishery sustainability.

In Africa, fisheries management faces many challenges due to unstable governance systems (weak states) whose role has evolved tremendously over the last century. The changes in the role of the state have mainly surfaced from a cautious realization that social actors (humans) respond to underlying incentives and are therefore central for any management system to work at all. With close reference to rich literature from across the globe, Chapter 3 of this thesis employs a crisp-set qualitative comparative analysis (csQCA) to examine cases of small-scale fisheries in several developing countries, in order to assess the degree of state involvement would be most relevant for designing a sustainable management for the Elephant Marsh Fishery. These degrees vary between: (a) strong top-down regulation irrespective of fishing community wishes, (b) a co-management mode of negotiation with fishing communities, (c) a merely supportive role of the state, or absence from the fishing scene. It was revealed that contrary to expectations, the sustainability of small-scale fisheries depended solely on the strength of collective social capital of the local communities at the resource scale. With weak local social capital, degrees of government involvement did not make any difference; the fisheries were unsustainable in all cases. The findings from this study have accentuated that the sustainability of SSF management in developing countries relies heavily on a strong collective social capital and a supportive

government. Future practice and policy directions on fisheries management should understand the relevance of concrete community trust, networks, norms and values and strive to incorporate these in decision making and policy formulation. Governments, especially in developing countries, and their agents should realize the need to rise above the theoretical principles of “impose and control” and begin to take a more passive, non-conflictive position in designing working solutions for the sustainability of common pool resources such as small-scale fisheries. This can be done for example by encouraging civil engagement in transformative learning to reduce disadvantageous power differentials that exist in many fishing communities in developing countries.

Chapter 4 uses the success and failure factors for SSF in developing countries which were identified in Chapter 3 to ascertain relevant factors for the sustainability of the Elephant Marsh Fishery. It is revealed that the Elephant Marsh Fishery sustainability depends on building strong local institutions with motivated leadership that can safeguard the interests of resource users. The present thesis therefore recommends that the government of Malawi should begin to take a more participatory position in designing locally crafted working institutions for the sustainability of common pool resources, such as small-scale fisheries at Elephant Marsh. In villages where fisheries fail due to weak local institutions or conflictive chiefs, the imposition of fishing rules is futile. The feasible government reaction then lies in (re)building collective social capital, especially the leadership of fisheries committees, and formally linking the established local institutions to the central government structure. In doing so an important inclusion would be the contextualization of key socio-causal dynamics of the management system at the Elephant Marsh.

Cognizant of the importance of the socio-causal dynamics, Chapter 5 of this study used an actor-based framework (known as Action-in-Context) to unveil the issues that are crucial in devising a sustainable governance system for the Elephant Marsh Fishery. It was established that the key social variables for the designing a proposed three-pillared (locally based, weak and amorphous) resilient institution for sustainability of the Elephant Marsh Fishery are (i) the social reputation of the leaders of local fishery institutions and (ii) the power dynamics between traditional chiefs and these local fishery leaders. It is clearly evident from the present study that an actor-based multi-level analysis of rules and other mechanisms prevailing in a fishery can be instrumental in designing a cost-effective institution for the near future. For the design of longer-term institutional options, the assumptions underlying the actors-based method (Action-in-Context in our case) become weaker, e.g. because new types of actors may move in or because actor capacities and motivations may change or become more intertwined. This then necessitates a stronger

reliance on both institutional theory and frameworks or (as has been my choice) the design of a flexible process of institutional development guided by an adaptive, learning organization.

The last section of thesis (Chapter 6) synthesizes the main findings and proposes what needs to be done in designing a resilient management system for the Elephant Marsh Fishery. This PhD thesis ends by stimulating a style of thinking that may be fruitful for institutional science in general.