



## **MPhil. research opportunities in the Okavango Delta, Botswana**

### **Enhanced Livelihoods and Natural Resource Management under Accelerated Climate Change (ELNAC): a large landscape social-ecological systems approach**

#### **Background**

Conservation in African savannas has a colonial legacy that is based on state-led protected areas and wildlife management areas that provide benefits mainly to external stakeholders (the state and tourism companies), who suffer few of the costs, whereas the benefits of conservation trickle down weakly to local communities, who suffer most of the costs in the form of lost access to land and resources with associated lost decision-making rights (opportunity costs) and human-wildlife conflict (HWC). This inequitable situation results in resentment of conservation and associated resistance, especially through poaching. Moreover, protected area management suffers from a mismatch in the scale at which decisions are made and the scale at which management is implemented because centralized (state-led) conservation agencies lack the funding, manpower and access to local social networks to implement effective management at every local scale. Consequently, state-led conservation agencies have rarely been able to effectively control poaching (which is currently at a high in the Okavango Delta), whereas, through their social networks and local manpower base, local communities have been very successful at controlling poaching, but only when devolved appropriate decision-making rights over, and benefits from conservation. The implications are that local communities need to play a much greater role in conservation, which can be achieved through devolution of ownership and decision-making rights over wildlife management areas and the formation of community conservancies. Most of the Okavango Delta falls within wildlife management areas but many of these are controlled by the state with no access rights, nor benefits, for local communities, who suffer the opportunity costs of lost access to and HWC from these areas.



## Study details

This transdisciplinary project is based on the social-ecological systems framework (McGinnis and Ostrom 2014) incorporating the resource system (woodlands and wetlands of the Okavango Delta), the resource units (forage, forest products, fish and wildlife), the actors (local communities and external users), governance systems (centralized versus local institutions) and focal action situations (resource collection, livestock grazing, tourism, fishing and conservation). The project will, therefore, make a detailed study of the resource system and resource units in selected WMAs of the Okavango Delta, the associated local communities, and the governance systems and access rights determining access to land and resources and benefits from conservation. The project will also examine the outcome for peoples' livelihoods and conservation as determined by governance systems and how local communities benefit from conservation.

## Project structure

The broader project is made up of nine work packages (WPs), which will make use of seven MPhil projects examining different aspects of the social-ecological system of the Okavango Delta. **WP3** (ecosystem characteristics and mapping) and **WP4** (ecosystem services) will characterise the resource system by quantifying and mapping the distribution of important natural resources and ecosystem services (resource units). The interlinked and inter-dependent **WP5**, **WP6** and **WP7** deal with local communities (actors in the resource system) and evaluate how they access and sustainably manage resources through local institutions and IKS. These studies will enable us to produce a policy document that will inform KAZA management and the government of Botswana on how to develop national conservation strategies, which will be dealt with in **WP8** (participatory communication strategy). The participatory communication strategy will guide and inform stakeholder mobilization and communication planning and programming within the project area for wider influence and project impact.



## Funding

The project is funded by SASSCAL ([Southern African Science Service Centre for Climate Change and Adaptive Land Management \(sasscal.org\)](http://sasscal.org)), which is a research funding institution supported by the BMBF in Germany. The value of the bursary per student is 7,296 Euro per year for three years. In Botswana currency this translates to a monthly stipend of 7891 Pula.

## We invite applications for the following MPhil studies:

### MPhil 1 and 2 (WP 3)

#### *Ecosystem characterization:*

WP 3 focuses on the ecological resources (plants and animals) of the social-ecological system. Two MPhil students will work on quantifying and mapping various aspects of these resources in the study sites, which will provide key data for planning and management of local community conservation programs (CBNRM), as well as data for the ecosystem services and CBNRM work packages of this project. Work will include classifying and mapping vegetation types and water resources in the study sites, as well as quantifying the functional heterogeneity of habitats for herbivores (wild and domestic) and people in terms of forage biomass and quality (temporal patterns of greenness, N, P, Ca, Na concentrations), thatching grass patches, and reeds (*Phragmites* spp). The students will therefore need to spend much time in the field ground truthing locations of vegetation types and sampling species composition and forage characteristics (biomass, greenness and quality). In addition, data on wildlife abundances and locations will be obtained during field visits, as well as from various existing data sets. The students will also need to work in the lab to conduct forage quality analyses. In addition, the students will need to work with remote-sensing and GIS experts in WP 2 for the mapping of vegetation and other resources so strong GIS skills will be an added advantage.





### **MPhil 3 (WP 4)**

#### *Ecosystem services:*

Ecosystems deliver a wide range of essential services (provisioning, cultural regulatory and supporting) to support human wellbeing. Many communities, especially in rural settings, have depended on these services. However, anthropogenic effects on various ecosystems have exerted tremendous pressures on these ecosystems reducing their ability to continue to deliver these services. The MPhil student in Workpackage 4 is expected to identify and characterise key multiple ecosystem services in the Delta, estimate their economic values and map their distribution. This information is critical for sustainable management and conservation of ecosystems. For example, mapping the distribution of ecosystem services will reveal information about which areas are key in supplying the services and therefore requiring maintenance or conservation. The selected candidate is expected to have knowledge of GIS and remote sensing and economics

### **MPhil 4 (WP 5)**

*Stakeholder Analysis/Actors and their action situations:* This component focuses on the analysis of stakeholders involved in the management and conservation of natural resources. The MPhil student will conduct research on issues relating to but not limited to community participation, stakeholder engagement, interactions and distribution of power to influence change in the management and conservation of natural resources. The student will also be required to interact with researchers in WP6 to fully assess action situations in the management and conservation of natural resources. Qualifications: bachelor's degree in environmental science, social sciences or any related field, with a minimum GPA of 3.6 on five-point scale.



### **MPhil 5 (WP 6)**

#### *Governance systems and CBNRM:*

In WP6, the potential student will investigate how integrating the key principles of the SES framework into community conservation programs through CBNRM affects compliance of LCs with conservation objectives in the selected study sites. The student will also assess how SES principles affect community attitude to conservation, levels of poaching, resistance of conservation objectives etc. Through such an investigation, the student would be able to identify where key principles of SESs framework are missing and work with LCs and government agencies to address these pertinent issues.

### **MPhil 6 (WP 7)**

#### *Land use planning:*

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The work package (WP7) will address land use issues and human-wildlife conflicts from an agroecological system's perspective. It will employ multi-stakeholder landscape approaches to initiate multi-stakeholder dialogues across landscapes by conducting role-playing games and anticipatory methodologies to enable all stakeholders to jointly discuss problems and envision strategies that might result in better outcomes for all at a landscape scale within the KAZA region. More importantly, emphasis will be placed on agroecological food system principles in relation to diversity, local markets, synergies, cultural and traditional aspects of nutrition within the role-playing for the purpose of enhancing food security and resilience in the context of climate change. Also, WP7 will employ workshop approaches to address the development of grazing plans for livestock of local communities (LCs) by using the vegetation, soils, forage resources and water data derived from other work packages such as **WP3** and **WP2**. It is, therefore, expected that the student will consistently work with remote-sensing and GIS experts in WP2 for the mapping of land use types in the KAZA region.



## **MPhil 7 (WP 8)**

### *Communication and knowledge translation:*

WP8 focuses on communication and knowledge translation and will intricately link with other project work packages. WP8 will investigate participatory communication approaches used in development initiatives within the project area and their potential to promote effective community conservation projects. The study will focus on people-centeredness in response to development initiatives, problem solving and the needs of different stakeholders. The student will identify participatory communication approaches employed by, among, and within stakeholders in the project area and the extent to which participatory communication is applied throughout the project cycle. The student will further examine information sharing and knowledge translation strategies and models and determine appropriate packaging for various stakeholder groups. The stakeholder perceptions towards different communication approaches used in the project area will be explored and how they contribute towards promoting stakeholder empowerment and collaborative engagements between different stakeholders in the development of conservation policies. While the student will interact with most of the work packages due to the cross-cutting nature of communication and knowledge translation, the student will work closely with WP 5 in activities such as stakeholder analysis to undertake stakeholder communication audit.

### **Requirements**

1. For ecology-based work packages (WP3) applicants should have a bachelor's degree in environmental science or a related 4-year degree
2. For economic-based work packages (WP4) applicants should have a bachelor's degree in economics or agricultural economics or related degree
3. For social science-based work packages (WP5, 6 and 7) applicants should have a bachelor's degree in social sciences or sociology



4. For the communication work package (WP8) applicants should have a bachelor's degree in communication studies and/or media studies

## How to apply

Applications should be sent by email to Prof. Richard Fynn at [rfynn@ub.ac.bw](mailto:rfynn@ub.ac.bw) before the 25<sup>th</sup> August 2022 and should include:

1. A detailed letter of motivation describing your research interests, prior research experience and its alignment to the work package you wish to pursue.
2. A comprehensive CV
3. At least two references (with reference contact details).

