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FELLOWSHIP

College for Life Sciences

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# Assessment and Economic Valuation of Ecosystem Services Provided by Forest-Agricultural Landscapes

With tropical landscapes becoming increasingly modified by human activities, especially agriculture, increased research to understand and mitigate biodiversity loss is paramount to manage and restore earth's ecosystems. My proposed research will investigate the biodiversity and ecosystem services in forest-agricultural landscapes. Ecosystem services benefit humans in many ways: food provisioning, climate regulation, water purification, oxygen production, recreation, and ecotourism. These services have societal and economic value.

There is a growing understanding of the true worth of nature, especially with the unprecedented increase in environmental degradation. Several studies have tried to assess and quantify the value of services provided by ecosystems. Only by placing the correct economic value on the benefits we derive from nature can we understand how important it is to conserve it.

My research aims at determining the ecosystem services provided by forest-agricultural landscapes in Nigeria.

The specific objectives are:

1. To assess the ecosystem services provided by these landscapes.
2. To identify the most valued ecosystem services provided by these landscapes to local communities.
3. To select and use suitable indicators to quantify the ecosystem services identified.

During my fellowship at the Wissenschaftskolleg, I will develop a methodology for this project and write a grant proposal.

Basically, the study will involve two methodological approaches:

- a participatory assessment (involving residents of the study area or local stakeholders) to assess the ecosystem services provided by montane forests and
- field measurements (observations and experiments) of some indicators/bioindicators of ecosystem services for example, carbon sequestration, water provisioning and assessment of non-timber forest products.

## Recommended Reading

Abiem, Iveren, Ian Dickie, David Kenfack, and Hazel Chapman (2021). "Conspecific Negative Density Dependence Does Not Explain Coexistence in a Tropical Afromontane Forest." *Journal of Vegetation Science* 32 (1): e12990. <https://doi.org/10.1111/jvs.12990>.

– (2023). "Factors Limiting Plant Recruitment in a Tropical Afromontane Forest." *Biotropica* 55 (1): 221–231. <https://doi.org/10.1111/btp.13179>.

Abiem, Iveren, David Kenfack, and Hazel Chapman (2023). "Assessing the Impact of Abiotic and Biotic Factors on Seedling Survival in an African Montane Forest." *Frontiers in Forests and Global Change* 6: 1108257. <https://doi.org/10.3389/ffgc.2023.1108257>.

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PUBLICATIONS FROM THE FELLOWS' LIBRARY

Abiem, Iveren (Lausann,2023)

Assessing the impact of abiotic and biotic factors on seedling survival in an African montane forest

<https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=1853060488>

Abiem, Iveren (Oxford,2022)

Factors limiting plant recruitment in a tropical Afromontane Forest

<https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=1853061794>

Abiem, Iveren (Malden, MA [u.a.],2021)

Conspecific negative density dependence does not explain coexistence in a tropical Afromontane forest

<https://kxp.k10plus.de/DB=9.663/PPNSET?PPN=1853063878>