



Tropentag, September 11-13, 2024, hybrid conference

“Exploring opportunities ...
for managing natural resources and a better life for all”

Biosphere learning laboratory Lake Bosomtwe: Biosphere reserve management in times of climate change

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Abstract

Lake Bosomtwe Biosphere Reserve (BR) is one of three UNESCO BR in Ghana located in the Ashanti Region and provides livelihood for about 70,000 people in 30 communities. Being the most recent BR of Ghana, the reserve hasn't been included in regional and national planning for future development, and the local and regional population is hardly aware of the status as a biosphere reserve and the related regularities.

The BR has been facing ever more challenges regarding carrying capacity, overuse of fish resources and increased extraction of forest stock leading to an overexploitation and degradation of the vulnerable ecosystem of the BR. Moreover, climate change increases the vulnerability of the ecosystem and local population.

The 'Biosphere Learning Laboratory Lake Bosomtwe', funded by DAAD, as an academic partnership among three Ghanaian universities and the University of Sustainable Development in Eberswalde (Germany) elaborates needs and demands for research and transfer in the BR, to foster a sustainable development of the BR and its natural resources as well as to improve the quality of life for all individuals and communities.

Based on comprehensive desktop research as well as consultations and workshops with all partner institutions and local inhabitants, a research outline with seven priority research and transfer subjects was elaborated, which touched upon the overarching topics of agroecology and sustainable resource management practices, sustainable water and fisheries management as well as forestry, environmental conservation and ecosystem services. The identified research needs were taken up in field work by six students from the University for Sustainable Development Eberswalde tackling topics such as "Participation of women in tourism", "Construction of floating sewage treatment plants", "Linking cultural heritage and environmental protection", "Fisheries management" and "Combining cocoa cultivation with agroforestry utilisation".

The research outcomes are of great interest for academia, the public institutions and local population aiming at the preservation of the vulnerable ecosystem of the BR Lake Bosomtwe. Based on the results of the project, systematic and well-structured research

activities can be implemented to support the local population in the biosphere reserve, facing severe challenges in times of climate change.

Keywords: Alternative livelihood, biosphere reserve, stakeholder participation, sustainable landuse management