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Impact of Land Use on Vegetation Communities and their Floristic Composition in the Small Wetlands of East Africa

Neema Mogha, Bodo Maria Moeseler, Miguel Alvarez, Matthias Langensiepen

University of Bonn, Institute of Crop Science and Resource Conservation (INRES), Germany

Abstract

Demographic growth, degradation of upland soils and increasingly variable climatic conditions have resulted in an increased intensity of agricultural land use of small wetlands in East Africa. These practices have led to negative impacts on natural vegetation patterns and composition. Some wetlands are vulnerable to anthropogenic interventions and hence at risk in case of agricultural use. While abundant in East Africa, little work has been done on the vegetation communities and the distribution and the role of vegetation on small wetlands. Vegetation changes may provide an important tool to assess the potential and vulnerability of wetlands. We determined the relation between habitat factors and species composition, and the impact of land use changes and wetland disturbances on plant communities and their floristic composition. In addition, the origin and life forms of dominants species were documented.

Vegetation sampling was carried out based on land use and land cover changes in four representative wetland systems. Releve's were used during a reconnaissance survey to determine the minimal area required for detailed studies to capture the maximum number of species within the vegetation. Rapid Rural Appraisal was used to collect information from the local people about the characteristics vegetation types as well as past and current land use activities. Preferential and stratification methods were used to describe plant species composition in wetlands with different biophysical characteristics (climate, soil and hydrology). Floristic composition and species cover and abundance were assessed from 10 m×10 m. The vegetation was characterised and classified using statistical, syntaxonomical and ordination approaches to link species composition to environmental and land management factors. Effect of wetland use changes on species composition, the characterisation of wetlands plant communities and their floristic composition will be presented.

Keywords: Community analysis, floristic inventory, Kenya, Tanzania

Contact Address: Neema Mogha, University of Bonn, Instute of Crop Science and Resource Conservation (INRES) - Geobotany and Nature Conservation, Karlrobert-Kreiten-Str. 13, 53115 Bonn, Germany, e-mail: moghang@yahoo.com