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**Herders' traditional knowledge and  
rangeland management as climate  
adaption strategy in the Enduimet Wildlife  
Management Area, Northern Tanzania**

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**Master-Thesis**

Submitted for the

M.Sc. degree in "Agricultural Sciences in the Tropics and Subtropics"

by

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Arusha, 29.08.2020

This work was financially supported by the Foundation fiat panis.

## ABSTRACT

Rangelands provide important natural resources for sustaining large numbers of livestock as well as maintaining ecological services. As a result, they contribute significantly to the food security of local pastoral communities. However, rangeland ecosystems are threatened by degradation and desertification processes due to land use changes, poor management decisions and climate change. For the development of sustainable rangeland management plans, seasonal and regional use of the environmental resources by pastoralists must be understood. This study addressed Maasai pastoralists' management and adaptation strategies in Enduimet, northern Tanzania, by using a participatory rural appraisal approach as well as the assessment of livestock movement patterns through GPS-tracking and the analysis of vegetation resources in the field. The traditional knowledge of the Maasai pastoralists on rangeland quality determination correlated highly with the results from scientific analysis. The pastoralists used the concept of grazing suitability by mainly using indicator plant species to determine the quality of their grasslands. Furthermore, the Maasai pastoralists adapted and counteracted to the overall reduced quality of their grazing areas by using their indigenous ecological knowledge and traditional movement practices. Adaptation strategies were diverse, including temporary movements to other areas of village land, while also restricting access to high-quality grazing areas during the wet season and changing herd composition from cattle to small livestock dominated groups. Our research provided a holistic picture of a complex ecological system with its human interactions and highlighted the importance to recognize the value of the pastoralists' indigenous knowledge and to integrate it in the decision-making progress for developing sustainable village rangeland management plans.

**Key words:** Pastoralists, rangeland degradation, GPS collars, livestock movements, Maasai