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Do Communal Rangelands Meet the Requirements of Livestock in Namibia?

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Abstract

In communal areas little information exists about the quality and quantity of grazing and browsing resources and the intensity of land use. Spatial and temporal rainfall variability influences the net biomass production of Namibian drylands in an unpredictable way. The aim of this study is to compare the feed availability from communal rangelands vs. the requirements of current livestock densities in order to clarify whether the communal areas are over- or under stocked, and to which period of the year this applies.

Rangeland assessments in two semi-arid communal areas in north and central Namibia were carried out in October 2002 and in May 2003 along five transects. The estimated dry biomass of grazing (g m^{-2}) and browsing resources (leaf dry matter up to 1.50 m, on 10×20 m plots) were determined, and the content of crude protein and energy analysed. Requirements of mixed livestock herds were estimated based on maintenance levels adding 50 % energy for walking. In the community in northern Namibia (rainfall 500 mm a^{-1}), the rangeland resources met all requirements of mixed herds during the investigated periods. Livestock with a stocking density of 15 kg ha^{-1} used 17.3 % of total resources during the wet season of 8 months, giving scope for production development.

In central Namibia (rainfall 250 mm a^{-1}), estimated feed resources in October 2002 fully met the requirements of current livestock with a stocking density of 42 kg ha^{-1} until the first efficient rainfall in December 2002. However, consecutive dry weeks during rainy season caused a drought in 2003 although the rainfall sum was not extremely low. Consequently, the biomass supply was deficient during the most important period for livestock reproduction. Cattle were found in poor condition in May 2003, and farmers started to transfer their cattle to distant areas to prevent mortality.

The commonly mentioned inter-annual rainfall variability insufficiently explains changes in rangeland resource availability. Critical is the distribution within the rainy season, especially the wet-day persistence of rainfall. Flexible responses, such as tracking or modern ways of mobility by trucks, should be encouraged in order to sustain the range resources in case of erratic feed shortage.

Keywords: Browsing, communal natural resources, grazing, livestock requirements, Namibia

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