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## Effect of sedentarisation on pastoral management in four Fulani villages in northern Benin

SÈWANOU FRIMENCE ALLOGBÈNOU TOSSOU<sup>1</sup>, RODRIGUE V. CAO DIOGO<sup>1</sup>, EVA SCHLECHT<sup>2</sup>

<sup>1</sup>University of Parakou, Dep. of Sci. and Techn. of Animal Prod. and Fisheries, Benin

<sup>2</sup>University of Kassel / University of Goettingen, Animal Husbandry in the Tropics and Subtropics, Germany

### Abstract

As cattle herd management practices change in the context of sedentarisation, this study, conducted within the DeclaRe project (<https://www.uni-kassel.de/forschung/declare/home>), aimed to determine the impact on herd mobility in northern Benin. To do so, eighty cattlemen from four Fulani villages in the region of Parakou were interviewed individually using semi-structured questionnaires. Questions addressed socio-demographic household characteristics, herd size and structure, livestock management, and cropping practices. Livestock production systems were classified using categorical principal components analysis and two-step cluster analysis. Important distinguishing factors of the two main pastoral systems were geographic location, number of animals and livestock species kept, daily travel distance for grazing (0–10 km or 10–20 km), and ownership of fodder cultivation plots. Two levels of herd mobility were identified, namely (i) sedentary management (n=53, 66.3%), where herders graze their animals within a 10 km radius of their settlement and cultivate fodder, and (ii) semi-sedentary management (n=27, 33.7%), where herders keep only cattle and graze beyond their village territory. No significant difference was found ( $p = 0.09$ ) in the number of cattle kept by sedentary ( $64 \pm 29.9$ ) and semi-sedentary ( $55 \pm 27.5$ ) herders. Semi-sedentary pastoralists migrate with part of their herd to the Kara region in northern Togo (n=10, 37%) or to the Gogounou forest area in northern Benin (n=17, 63%) to access vast grazing areas and water sources during the second half of the dry season until the beginning of the rainy season (March-May). These movements reduce grazing pressure on the pastures of their residential villages for approximately three months, ensuring better forage access for the remaining animals. Village-based land access or ownership rights enable sedentary pastoralists to cultivate *Panicum maximum* (n=35, 43.8%) for their sheep and cattle. However, the local land tenure system is challenged by competing land uses, land fragmentation, and cropland expansion. In particular, the latter two trends may restrict the mobility patterns of semi-sedentary herds in the future. To reduce grazing pressure on natural rangelands under such a scenario, forage cultivation and village-level rangeland management arrangements need to be established, expanded and secured by sedentary and semi-sedentary livestock keepers together.

**Keywords:** Forage cultivation, grazing lands, northern Benin, rangeland management, sedentarisation