

# Fodder Balance and New Approach for Management of Pastoral Ecosystems in North-Benin (West Africa)

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## Problems

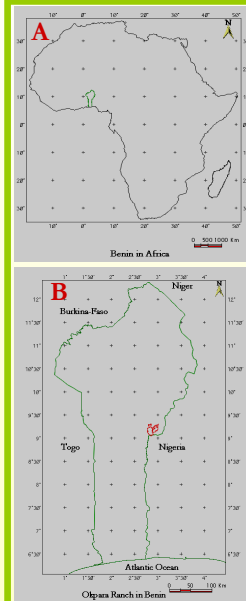
Seasonal shortages and poor quality of available fodder are sources of frequent conflicts between cattle breeders and farmers in Benin. This situation leads to severe pruning of woody species already in process of disappearance.

## Objectives

The aims of the study are:

- To determine periodic carrying capacities of various grassland types and to calculate their grazing values.
- To evaluate applied loads and to analyze the way of use of different plant communities.
- To propose adapted solutions.

## Study area



Geographically locatable by coordinates 9° 06' – 9° 20' North and 2° 42' – 2° 53' East, the Ranch of Okpara covers an area of 33000 ha. Climate is sudanian at unimodal rainfall pattern with 1200 mm of rain. Rainy season starts in April- May followed by a long dry season from November to March. Structure of the vegetation presents four great plant communities of variable importance:

- Riparian forests,
- Mosaic of savannas,
- Grassy depressions,
- Fields and fallow.

Fig 1 (A&B): Localization of Study area



Photo1: a) pruned *Afzelia africana* (O. Tekla); b) Herdsman around fields (O. Tekla); c) difficult conflict of interests (DED)

## Methods

Prospecting plant formations and use of landsat image. Establishment of 3 plots (10 m x 10 m) in each grassland type. Phytosociological surveys according to Braun-Blanquet (1932) in each plot. Performing of point quadrats (Daget & Poissonnet, 1990). Phytomass measurement according to Levang (1978). Enumeration of sedentarized livestock and follow-up of herds during the pasture. Evaluation of harvested residues.

## Results

Okpara Ranch counts 41 sedentarized Campings. Apart 2127 oxen of PDE the livestock counts on average 243 heads per camping.

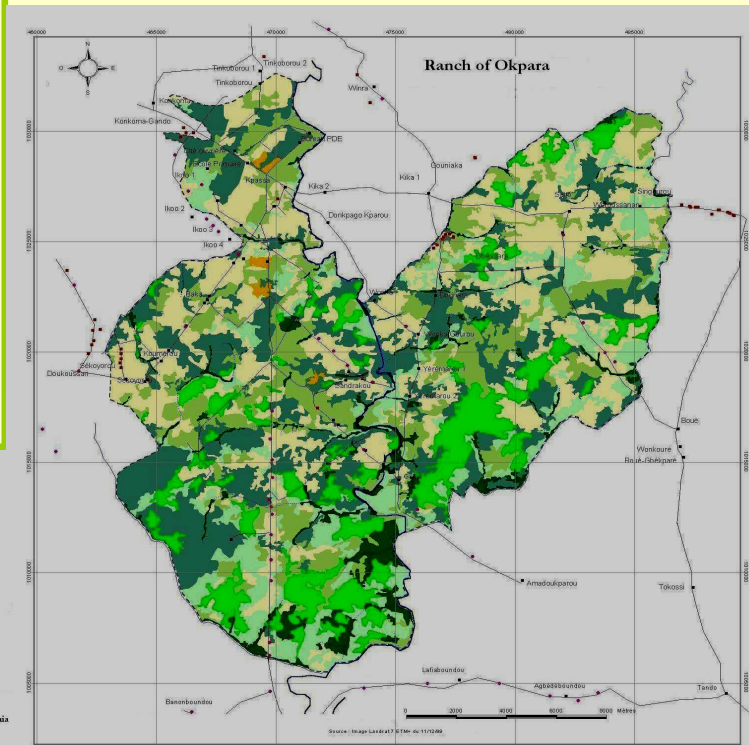


Fig 2: Fodder Balance of Okpara Ranch in Benin

## Discussion

Ecological conditions determine forage availability. Leading of herds and use of grasslands depend both on phytomass growing and water availability. This approach of landuse leads to periodical food scarcity and to degradation of ecosystems since harvested residues, even important supplied lessly forage needs. Viability of ecosystems imposes an adaptation of prescribed fires and ways of use (of plants communities) to periods and to types of grasslands.

## Approaches

As a disturber of vegetative cycle of grass, prescribed fires seem an effective tool for improvement of grasslands' quality and for facilitation of availability of fodder during different meadow periods.

Photo 2: Fire in grassland dominated by *Andropogon schirensis* (O. Tekla)



## References

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