

Agroecology as solution to land degradation: vulnerability and resilience in far North region of Cameroon

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Introduction

- About 80% of the working population is employed in agriculture.
- More than 80% of land is degraded in the far north region of Cameroon.
- The main cause of land degradation in northern Cameroon is the intensive land use, uncontrolled and inappropriate use of chemical fertilisers.
- Soil fertility is low and declining and farmers do not have access to manure
- Unsustainable natural resource management is a major problem which is hindering agricultural growth, food security, and poverty reduction.
- Because of the impacts of agriculture on natural resources, agro-ecological practices are important for sustainable natural resource management in the context of sustainable development.
- Poor resources farmers farmers in the semi-arid zone of North Cameroon have implemented several practices and techniques to cope with land degradation in order to restore farmland.
- In this study we identify and highlight the agro-ecological techniques that have been implemented by farmers to foster land restoration.

Study area

- The study was conducted in the Far North region of Cameroon(Tokombéré council).
- Type of climate: Sudano-Sahelian type of dry tropical climate with a long dry season of about eight (8) months (October-May) and a short rainy season spread over four (4) months (June to September).
- This climate is characterized by recurring pockets of drought and annual average rainfall that decreases over time.

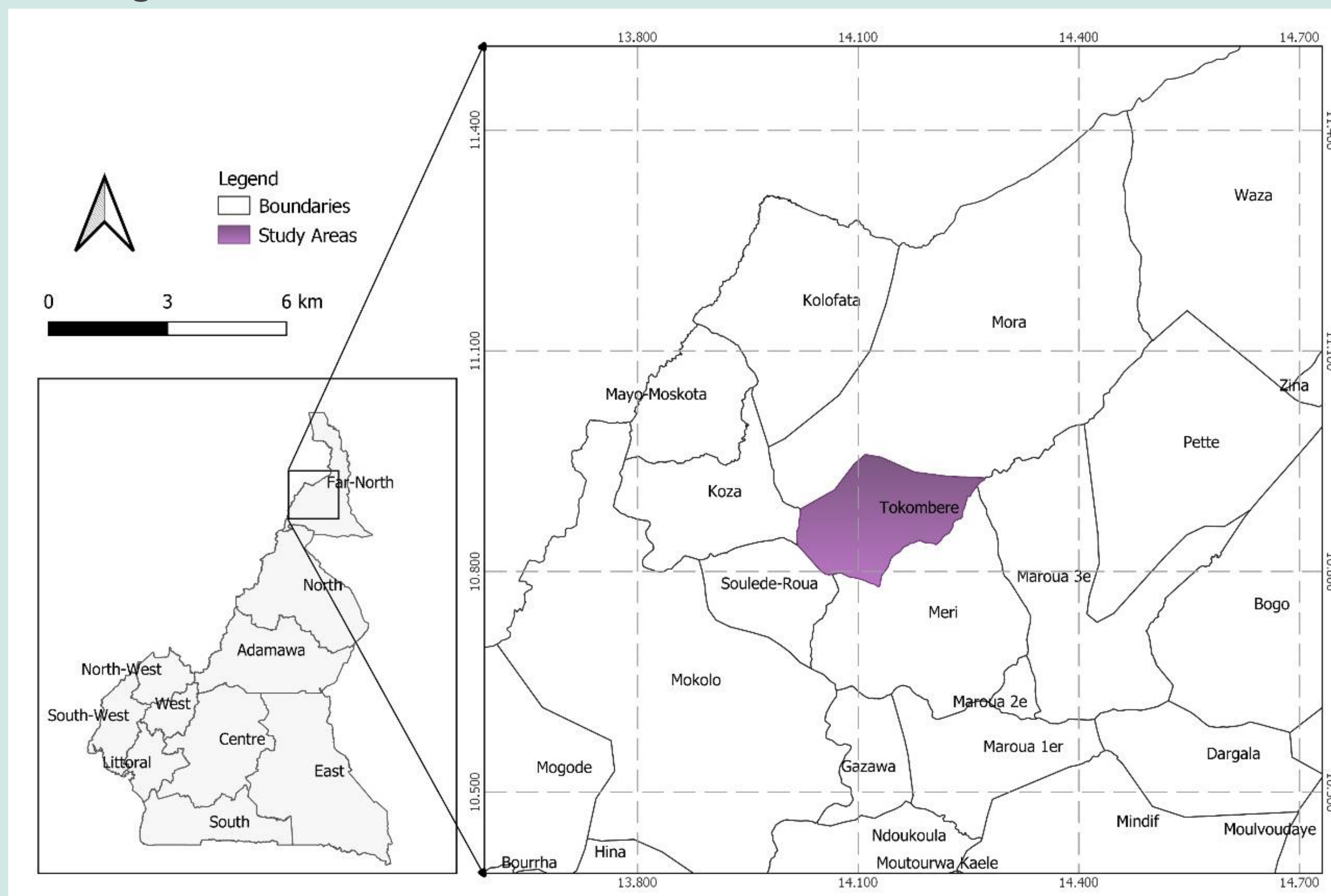


Fig1. Study area

Methods

- Household survey (N=160)
- A stratified random sampling technique (4 out of 6 cantons were selected. 2 villages from each of the selected cantons were randomly selected, making a total of 8 out of 35 villages. 20 household were selected in each of the 8 villages making a sample size 160 households).
- Focus group discussion (N=4)
- The field observations were used
- Content analysis was performed to analyse qualitative data.

Results

Agro-ecological techniques implemented in the mountains

- Terrace.
- Earth and stone bunds or anti-erosion bulges

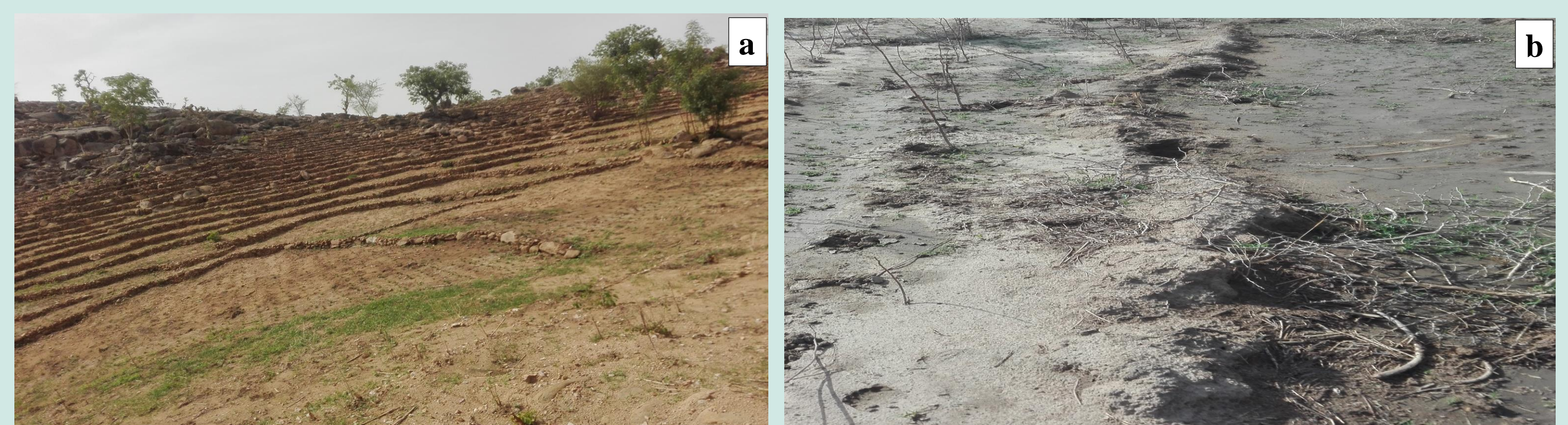


Fig2. Terrace (a) and Bund (b). Far north Cameroun 2020 © Hamza Moluh Njoya

Techniques implemented in the plains

- Half -moon, cultivation on ridges and beds.
- The zai,



Fig3. half-moon (a) and zai (b). Far north Cameroun 2020 © Hamza Moluh Njoya

Other agro-ecological techniques used in the locality

- crop associations, agroforestry, the use of human urine, the use of livestock waste.



Fig4. Human urine (a) and livestock waste (b). Far north Cameroun 2020 © Hamza Moluh Njoya

Conclusions

- Combating soil degradation is a significant contribution to food security.
- Urine contains the same nutrients that plants require for growth as chemical fertilizers and manure.
- The locker and ridges are the most effective techniques on the plains.
- Soils in the mountains are less degraded and more fertile than those located in the plains.
- The restoration techniques applied in the mountain are more likely to enhance resilience than those applied in the plain.
- The study recommends the development of technical, political, governance and financing frameworks that support agricultural farmers and resource managers engaged in a dynamic process of innovation.