



Farming practices and local perception of soils on the highlands of Ethiopia

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Introduction

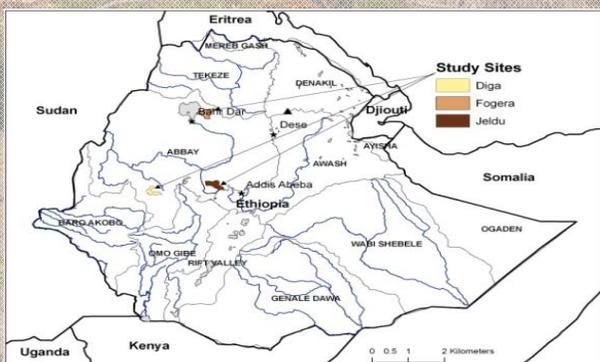
The Ethiopian Highlands are vital to the country's strive for food security. Land use is governed by small holder agriculture. Continuing traditional cultivation in the Highlands is causing continuous degradation of the soil resource. Soil degradation is the main factor for low crop yields. Understanding current farming practices and farmers' perception of soil and its functions is vital for practice-change towards effective sustainable soil management strategies. This study describes the current farming practices and determines farmers' perception to soil functions and productivity through use of local focus group discussions and structured questionnaires.

Accelerated erosion, as an example of soil degradation, fast taking over agricultural lands on the highlands of Ethiopia



Where a farmer indicated that he/she can differentiate a productive from a non-productive soil, we follow them to the field to see and take samples as he/she defines his local indicators for assessment.

Three watershed sites were identified and sampled viz : R. Meja at Jeldu, R. Dapo at Dapo-Diga and R. Mizewa at Fogera. (Figure below indicate the locations of these sites on the map. Of Ethiopia.

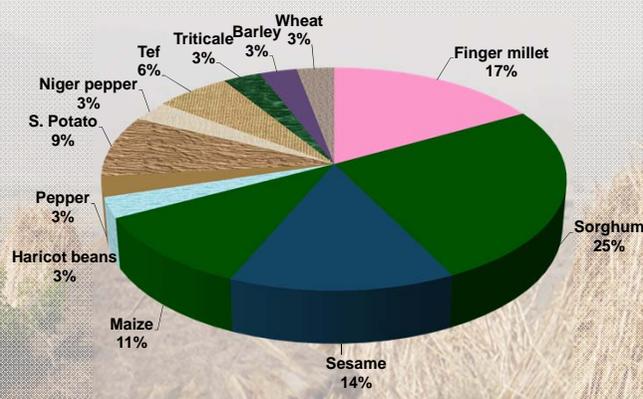


Group discussion with male farmers (left) and female ones (right) at Jeldu

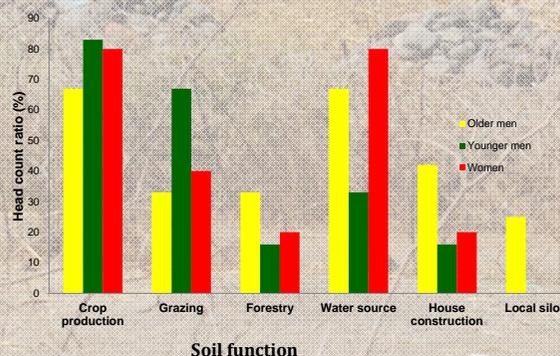


Sampling to verify farmers' claim of productive and non-productive soils on the highland

Results



Pie chart showing crop types cultivated by farmers at Dapo



Bar Chart displaying local perception for importance of soil function measured as % of responses for different groups at Jeldu



Stone bunds are common soil erosion control measures at Fogera

- Cereal were the predominant crops cultivated: In Jeldu, it was mainly, wheat and maize while at Dapo, sorghum and finger millet predominated. Tef and finger millet were the main cultivated cereal at Fogera.
- Very limited legume-based rotation was found practiced on the highlands, One reason maybe connected to the cultural value attached to Faba beans where passersby are deemed free to harvest some from the field to eat as they move on.
- Perception of soil function varied with age and gender. For instance, at Jeldu, older men scored crop production and water source equally followed by material for house construction. For the younger men, it was crop production, grazing and water source while the women opted for crop production, water source and source of fuel wood.
- Indicators for determining productive soils amongst older men included crop yield trend, grass biomass yield, weed type and soil depth. Among the younger men; yield, stoniness and ease of cultivation were the prime indicators and for women, colour, yield trend, sloppiness and level of erosion hazard were the main indicators.
- Farmers tilled field 4-6 times before sowing and this was done using animal traction.
- Fertilizer use ranged from zero to 120 kg/ha at Jeldu and Fogera while, fertilizer use at Dapo was nil.
- Farmyard manure was the mode of soil fertility replenishment and crop residues were mainly used as fodder for livestock and building materials.

Conclusion

As crop production is seen as the primary basis for soil, management strategies that enhance yield while conserving the soil may easily find high level of adoption among farmers of the sites. Extension support is needed to disseminate Integrated soil fertility management (ISFM) approach at these sites. Further, Conservation agriculture should be packaged for farmers cultivating steep slopes on the highlands.

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