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Soil indigenous knowledge in North Central Namibia

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Mapping and classifying soils is part of an important learning process to improve soil management practices, soil quality and increase productivity. In order to assess soil quality improvement related to an ongoing land reform in North-Central Namibia, the characteristics that determine soil quality in the local land use context were determined in this study.
To do so, we collated the indigenous soil knowledge in North-Central Namibia where the Ovakwanyama cultivate pearl millet for centuries. Local soil groups are defined mostly based on their productivity potential, which varies depending on the rainfall pattern. The morphological criteria used by the farmers to differentiate the soil groups (colour, consistence) were supported by a conventional analysis of soil physical and chemical properties. Now, they can be used to develop a soil quality assessment toolbox adapted to the regional use. The characteristics of the tool box do not directly indicate soil quality, but refer to local soils groups. The quality of these groups is relatively homogenous at the local scale.
Our results show that understanding of indigenous soil knowledge has great potential to improve soil quality assessment with regards to land use. The integration of this knowledge with the conventional soil analysis improves the local meaning of such a “scientific” assessment and thus facilitates dialog between farmers and agronomists, but also scientists working in different regions of the world, but in similar conditions. Overall, the integration of indigenous knowledge in international classification systems (e.g. WRB) as attempted in this study has thus a major potential to improve soil mapping in the local context.