

Characterization and Evaluation of Soil Resources for Sustainable Land Use Planning of Timatjatji Community Farm, Limpopo, South Africa

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Abstract : The decline of yields as a consequence of miss-informed land-use decisions poses a threat to sustainable agriculture in South Africa. The non-uniform growth pattern of wheat crop and the yields below expectations has been one of the main concerns for Timatjatji community farmers. This study was then conducted to characterize, classify, and evaluate soils of the farm for sustainable land use planning. A detailed free survey guided by surface features was conducted on a 25 ha farm to check soil variation. It was revealed that Sepane (25%), Bonheim (21%), Rensburg (18%), Katspruit (15%), Arcadia (12%) and Dundee (9%) were the dominant soil forms found across the farm. Field soil description was done to determine morphological characteristics of the soils which were matched with slope percentage and climate to assess the potential of the soils. The land capability results showed that soils were generally shallow due to high clay content in the B horizon. When the climate of the area was factored in (i.e. land potential), it further revealed that the area has low cropping potential due to heat, moisture stress and shallow soils. This implies that the farm is not suitable for annual cropping but can be highly suitable for planted pastures.

Keywords : characterization, land capability, land evaluation, land potential

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