

Assessment of Degradation Status of Soil in Selected Areas of Benue State Southern Guinea Savanna of Nigeria

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Abstract

The assessment of degradation status of soils in selected areas of Benue state was carried out in 2009. The physical and chemical properties of these soils were evaluated in the laboratory and the results obtained were compared with the standard indicators and criteria for land degradation assessment according to (FAO 1979). The results showed that most of the cultivated parts of the study areas were highly degraded compared to the soils under vegetative fallow which were moderately degraded. The textural composition of the soil ranged from loamy sand to sandy loam to clay loam. Saturated Hydraulic conductivity ranged from 0.31 to 0.74 cmh⁻¹ corresponding to slow and moderate permeability. The pH ranged from slightly to moderately acidic condition in some locations and strongly acidic in the eroded parts. The organic matter was very low in all the study areas. Available phosphorus was low in all the locations. Total Nitrogen was predominantly very low in most of the cultivated areas to low in the fallow soils. Cation Exchange capacity (CEC) also ranged from very low to low. The soils were classified as follows: SIWES Farm Typic ustochrepts, Obarike Oju, Vertic tropaquept and Otobi Typic Kandiaqualf. NYSC farm, Typic Kandiustalf; Adum-Ito, Typic Kandiustalf; and Otukpa, Oxic Ustrophept. It is recommended that soil conservation practice should be intensified in these areas. The practice should include the use of organic manure such as cow dung and poultry droppings for the fertilization of the fragile low fertility soils. There should also a programme for periodic monitoring the fertility status of the soil from the time the soil is first cultivated.

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