

LAND EVALUATION OF VELLAMADAI VILLAGE IN COIMBATORE DISTRICT FOR SUSTAINABLE LAND USE PLANNING

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Abstract: A study was undertaken to evaluate four soil series belonging to Vellamadai village of Coimbatore district, Tamil Nadu for sustainable land use planning. Four soil series were tentatively identified and mapped into seven mapping units using GIS technique. These mapping units were grouped in to land capability class III and IV with limitations of soil texture and cation exchange capacity. Soil-site suitability evaluation for sorghum, cotton, sugarcane, maize and pearl millet showed that clay soils were highly suitable (S1) for Sugarcane, moderately suitable (S2) for cotton, sorghum, sugarcane and pearl millet, marginally suitable (S3) for sorghum and maize. The loamy sand soils were moderately suitable (S2) for pearl millet, marginally suitable (S3) for sorghum and not suitable for cotton, sugarcane and maize.

Keywords: land evaluation, GIS, soil suitability

REFERENCES

Saxena, R.K. (2003). Applications of remote sensing in soils and agriculture. *Journal of Indian Society of Soil Science*, **51**: 431-437.

Kharche, V.K.; Sehgal, J. and Challa, O. (2000). Characterisation of coffee growing soils in Karnataka. *Agropedology* **10**: 59-66.

Manchanda, M.L.; Kudrat, M. And Tiwari, A.K. (2002). Soil survey and mapping using remote sensing. *Tropical Ecology*, **43**: 61-74.

Patil, R.B. and Jagdish Prasad. (2004). Characteristics and classification of some sal (*Shorea robusta*) supporting soils in Dindori district of Madhya Pradesh. *Journal of Indian Society of Soil Science*, **52**: 119-125.

Saha, A.K.; Saha, N. and Pal, S.K. (2000). Distribution of organic carbon and nitrogen in some tarai soils of West Bengal, *Agropedology*, **10**: 132-138.

Sahu, G.C. and Mishra, K.N. (1997). Morphology and characteristics of soils of an irrigated river flood plain soils of eastern coastal region. *Journal of Indian Society of Soil Science*, **45**: 152-156.

Sehgal, J.L. (1991). Soil-site suitability evaluation for cotton. *Agropedology* **1**: 49-63.

Sehgal, J.L. (1996). *Pedology – concepts and applications*, Kalyani Publishers, New Delhi. pp 488.

Srivastava, R. and Saxena, R.K. (2004). Technique of large scale soil mapping using remote sensing. *International Journal of Remote sensing*, **25**: 674-688.

Soil Survey Staff. (2006). *Keys to Soil Taxonomy*, USDA, Natural Resource Conservation Service, Washington, D.C. U.S.A

Van Wambeke, A. and Rossiter, D. (1987). Automated land evaluation systems as a focus for soil research. *IBSRAM Newsletter* 6, October, 1987.

Velmurugan, V and Carlos, G.G. (2009). Soil resource assessment and mapping using remote sensing and GIS. *Journal of Indian Society of Remote Sensing*, **37**: 511-525.

Walia, C.S. and Rao, Y.S. (1997). Characteristics and classification of some soils of Trans-Yamuna plains. *Journal of Indian Society of Soil Science*, **45**: 156-162.