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Research Article

Development of decision support system for land suitability evaluations for crops using ICT tools

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ABSTRACT

Agricultural sector is the most important sector for Indian economy, as majority of Indian population is engaged in agricultural occupation. The demand of food in India has increased because of rapid growth of population in recent. The land is either over used or under used without considering its potential and constraints for growing crops in India. This consequence brings a set of different problems like under agriculture production, land degradation, land use conflicts, etc. Population of the India is growing dramatically so farming community has to produce more in order to meet the growing demand of food under limited land recourses. Choosing the most suitable crop to be cultivated for high agricultural production is most difficult task for farmers. To produce more crop, selection of crop for particular land is very difficult task for farmers. Number of factors like climate, soil, topograpy, moisture and nutrient availability, rooting conditions and soil toxicity make farmer's task further tough. Therefore, an attempt has been made to develop a decision making tool for farmers to select the appropriate crop for their land. National Bureau of Soil Survey Land Use Planning (NBSS-LUP) Criteria and Analytical Hierarchy Process (AHP) technique is used to develop this tool. The interface engine of formulated tool has been developed using Microsoft Visual Basic.NET programming language. This tool helps in classifying crops in four suitability classes viz. highly suitable, moderately suitable, marginally suitable and not suitable according to NBSS-LUP criteria. The system covers 46 varieties of crops covering Cereals, Pulses, Oil seeds, Fibre crops, Commercial crops, Plantation crops, Fruit crops, Medicinal and Aromatic plants and Spices. It is proposed to facilitate farmers for selecting crops as per availability of local climatic condition and soil fertility.

KEY WORDS : Decision support system, Land suitability evaluations, Crops using, ICT tools

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