

Simulation modelling for assessment of status of rural knowledge pertains with provisioning ecosystem services

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Received March 20, 2016 and Accepted June 11, 2016

ABSTRACT : Ecosystem services are the benefits humans derive either directly or indirectly from ecosystems. People are entirely dependent on ecosystem services for their wellbeing and economies and indeed survival. Ecosystem services can be divided into provisioning services, regulation services, supporting services and cultural services. The simulation modelling of cultural transmission (particularly horizontal) is a useful tool to identify the spread of cultural traits. In present investigation autocorrelation indices (*Moran's I* and *Geary C*), variogram and kriging simulation techniques were utilized first time to identify the present strength of horizontal transmission of cultural information (medicinal values) and for their future scope. Present simulation approaches increased the sampling efforts 10 and 5 times more from original sampling ($n = 120$) for central nervous disorders and male infertility, respectively. Autocorrelation simulation study has suggested the lack of horizontal transmission of cultural information. Further for identification of future potential for spreading the cultural information's (at horizontal level), data's regarding different pharmacological properties (30) and for different body systems (12) were treated with simulation approaches like variogram and kriging. Both these techniques simulated the sampling efforts at 5000 iteration and suggested the greater diversity of the traditional knowledge that may be spread in between and among communities with proper planning's.

Key Words: Cultural transmission, ecosystem services, horizontal level and simulation modelling.