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Assessing land cover change trajectories in Olomouc, Czech Republic

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Olomouc is a unique complex of landmarks with widespread deforestation and land use change. This research work was conducted to assess important complex land use change trajectories in Olomouc region. Multi-temporal satellite data from 1991, 2001 and 2013 were used to extract land use/cover types by object oriented classification method. To achieve the objectives three different aspects were used, that is: (1) Calculate the quantity of each transition; (2) Allocate location based landscape pattern (3) Compare land use/cover evaluation procedure. Land cover change trajectories show that 16.69% agriculture, 54.33% forest and 21.98% other areas (settlement, pasture and water-body) were stable in all three decade. Approximately 30% of the study area maintained as a same land cover type from 1991 to 2013. Here broad scale of political and socioeconomic factors also affects the rate and direction of landscape changes. Distance from the settlements was the most important predictor of land cover change trajectories. This showed that most of landscape trajectories were caused by socioeconomic activities and mainly led to virtuous change on the ecological environments.

Biography

Mukesh Singh Boori is involved in European Union Project as well as is a Visiting Assistant Professor in Palacky University Olomouc, Czech Republic Europe since 04/2013. He was Scientist in Satellite Climate Studies Branch (NOAA/NASA), selected by National Research Council (NRC), Central Government of USA, Washington DC. At the same time he completed his Postdoc from University of Maryland USA. He has done PhD (EIA & Management of Natural Resources) from Federal University – RN (UFRN), Natal –RN Brazil, funded by Brazil-Italy Government fellowship. He has done Predoc (Earth & Environmental Science) from Katholieke University Leuven Belgium, selected by Ministry of Human Resource Development (MHRD) New Delhi India. He has done MSc (Remote sensing & GIS) from MDS University Ajmer (2004) and BSc (Bio-group) from Uni. of Rajasthan, Jaipur, India (2002). He has international awards/fellowships from USA, Brazil, Italy, Indonesia, Belgium, Czech Republic and India. He is editor as well as member of International Journals/Scientific Societies/Committees related to Earth Science. His prime research interest is "EIA and Management of Natural Resources through Remote Sensing and GIS Technology". He has more than 25 international publications including books on Vulnerability, Risk Assessment and Climate Change.

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Impact of land cover change on soil hydraulic properties: A case study of coastal Karnataka of India

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The flow of water in the unsaturated zone has been described as a complex phenomenon involving movement of water, air, vapour and solutes through a dynamic flow path under the influence of temperature, density and osmotic gradients in a compressible porous medium. Such complex and often site-specific nature of the hydrologic processes taking place in the soil plant atmospheric continuum requires the use of indirect methods of analysis based on approximation. The essential parameters in studying the unsaturated flow are infiltration, hydraulic conductivity and soil water retention curves. Hydraulic properties of soils play an important role in the movement of soil moisture from the ground surface to the water table through the unsaturated zone, and therefore affect the runoff and groundwater recharge processes. This work examines the soil hydrological properties characterised by different land covers. Impact of land covers on hydrological characteristics such as infiltration and moisture content has been obtained by using advanced field and laboratory techniques.

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