

Wetland Change Dynamics in Etawah District of Uttar Pradesh

Rausan Kumar
Water Resources Division, IIRS

Guide
Dr.V.Hari Prasad, Water Resources Division, IIRS

ABSTRACT

Drastic changes in land use land cover are reported by several authors and monitoring has been done using satellite remote sensing since the evolution of space science and technology. Using different models change rate are calculated and spatial extent of land features are estimated. It is wise to monitor land features and find out the rate of land use land cover dynamics. This approach will give a strategic vision to monitor the land features over certain time period and also focus on the preventative and rehabilitative measures to be taken for future sustainable development. Since wetlands are well known for its productive capacity in terms of supporting wide variety of flora and fauna, it is necessary to monitor and conserve this natural resource to maintain the food web. Predicting rate of change will not only provide the information of loss or gain but also give information about which land use land cover class is converting to what. This provide the information about "from" and "to" during a specific time interval. Predictive modelling provides strategic actions to be taken to prevent the loss or to rehabilitate the lost land features. In order to estimate the rate of change and forecast the wetland change (loss), Markov-chain method was used to predict the land. Increasing population pressure on wetland and other natural resources are clearly indicated by the census report 1991 which has indicated approximately 2.93 times increase in population from 1971 to year 1991. This clearly shows that increasing population pressure is an important factor to be considered. Apart from this excessive Irrigation is also potential threat which converts agriculture land to saline soil and indirectly building pressure on wetlands for the fulfilments of requirement of community. Sarsainawar, Raan, Hardoi, are potential wetlands which are very much threatened. Sarsainawar comes under nearly 32.5 km range and is directly connected the district headquarter. For conservation point of view it is a most important site. If ecological importance will be integrated with hydrological properties and community benefits of wetlands, it would be easier to convey the local mass for conservation. Other land use classes like agriculture (68%) and settlement (83%) classes have maximum tendency to remain in the same class. Wetland and forest have the least probability to be remain in the same class. On the other hand agriculture land has got 30% probability to get degraded and on the contrary degraded land has 53% probability to become agriculture land. Wetland is likely to be converted into agriculture by 61% probability. This clearly shows the dynamism of wetlands to agriculture and further to degraded land. The process seems cyclic because degraded land has got 53% probability to become agriculture land. In this study it was found that change is progressive because in case of wetlands it has got least probability to be remain same in its own class. On the other hand there is no probability of other five classes probability to become wetland, e.g. agriculture land (0%), degraded land (0%), forest (0%), river (0%), settlement (0%).