



Deutscher Tropentag, October 8-10, 2003, Göttingen

“Technological and Institutional Innovations
for Sustainable Rural Development”

GIS-Landscape Modelling of a Regional Green Corridor in Tropical Argentina

AMALIA NAHÍR DÍAZ LACAVA, IRINA DIETER-GILLWALD

Humboldt-Universität zu Berlin, Development Planning and Project Management, Germany

Abstract

The landscape pattern of an agricultural area has been modelled. Landscape modelling is based on landscape theory. Land use is classified according to administrative, homogeneous and functional criteria. The farm area defines the minimal administrative unit. The landscape unit and the agricultural field defines the homogeneous land unit. A spatial functional hierarchy is established. The landscape pattern is modelled and analysed through the geographical information systems (GIS). Remote sensing and participatory information provide basic information. Spatial scale analysis ranges from field to regional level. The approach is validated through a study case.

In Misiones, Argentina a “Green Corridor” project was created by law in 1999. The corridor covers 20% of the provincial area. It should connect 15 of 48 protected areas, preserve natural ecosystems and increase tourism. The ecosystem potential for nature conservation is analysed in the Guacurá District, located in the Northeast of the Misiones Province. Ecological indicators (connectivity, fragmentation and variegation, among others) are calculated. The results show that connectivity between protected areas does not increase substantially. Natural ecosystems covers the area partially. The native forest is insular and variegated. It shows narrow interior space, high edge effect and partial corridor arrangement. Accordingly, more successful projects should concentrate on: designing and conserving local corridors, encouraging soil protection techniques and promoting individual “alternative activities” as well as nature conservation efforts.

The methodology allows ecological analysis of farming systems and land use down to the farm level. The relationship between agricultural and conservation land use is precisely quantified. The presentation of analysis and results is flexible and can be modified easily and without affecting accuracy. The methodology can be applied for regional land use evaluation with local accuracy and as a communication tool for participatory project analysis.

Keywords: Argentina, GIS, green corridor, landscape analysis, remote sensing