



Geomorpho-edaphic mapping of Atécuaro catchment (Michoacan, Mexico) and indigenous soil classification

N Alanís González (1,2), M Alcalá de Jesús (1), A Arellano Reyes (3), A Jordán (2), and LM Zavala (2)

(1) Laboratory of Soil Science. Universidad Michoacana de San Nicolás de Hidalgo, Morelia (Mich.), Mexico, (2) MED_Soil Research Group. Department of Crystallography, Mineralogy and Agricultural Chemistry, University of Sevilla, Sevilla, Spain, (3) GEOIKOS, SC. Morelia (Mich.), Mexico

The needs of management and conservation of land involve the study of natural resources and their internal relationships. Over time, these resources, including soil, have been used in an uncontrolled manner, resulting in species extinction and environmental degradation processes. The main reason for this in developing areas is the lack of soil and geomorphological information for an adequate land use planning. Often, ethnopedological knowledge and the inclusion of indigenous communities as beneficiaries of the agricultural technology are indispensable premises to make a better use of soil.

A geomorphology and soil survey was conducted in the Atécuaro catchment (4591 ha), in the municipality of Morelia (Michoacan, Mexico). The Atécuaro catchment is located in the Mil Cumbres area, and is characterized by an irregular relief and a diversity of landforms and substrates (andesite, rhyolite, basalt, tuff and Quaternary sediments). The main land uses are oak and pine forest, shrubland, grassland and dryland farming.

Results of the soil survey and the analysis of geofoms were studied and incorporated in a geographical information system. Preliminary geofom and soil units maps were overlapped in order to get a map of geomorpho-edaphic units. Up to 30 different geomorpho-edaphic units were classified. Finally, map units were correlated with local indigenous soil classification.