

## **Supporting forest conservation through community-based land use planning and participatory GIS – lessons from Crocker Range Park, Malaysian Borneo**

### **ABSTRACT**

In tropical regions, expanding human activities have become increasingly threatening to the ecological integrity of protected areas. Shifting cultivation and other agricultural activities around the protected areas by rural communities often lead to increased carbon emissions, wildlife habitat destruction and increasing hunting pressure. Land use planning, with the participation of local communities in the buffer zones, is being considered to strengthen the implementation of the Man and the Biosphere Program at Crocker Range Park, Sabah, Malaysia. As part of the European Union's 'Tackling Climate Change Through Sustainable Forest Management and Community Development' program, we emphasized the participatory geographic information systems (PGIS) approach to support village-scale land use planning that considers the needs of multiple stakeholders in the community. The PGIS was applied within a multi-criteria framework to determine the location of a potential community conservation area (CCA) and to plan future land use activities in the village. Key informant interviews were followed by a participatory mapping workshop, attended by various stakeholders and experts, which was convened to discuss and elicit local knowledge to generate the environmental and resource indicators for determining potential land use activities within the village (e.g., agriculture, tourism and recreation, and forest restoration). Based on the discussions and spatial analyses, a land use zoning map with a potential CCA was presented at a follow-up land use decision making workshop. The villagers and external stakeholders reached a consensus on the land use zoning; leading to the designation process of the CCA. The PGIS-based land use planning has effectively supported the community forest conservation and is potentially applicable to other Southeast Asia regions with similar environmental and socio-economic settings.