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“Competition for Resources in a Changing World:
New Drive for Rural Development”

Dynamics of Traditional Ecological Knowledge, Local Use and Conservation of Native Trees and Shrubs in the Bolivian Andes

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Abstract

Native trees and shrubs are essential components of rural landscapes in the semi-arid inner-Andean valleys of Bolivia. They can be found as hedges and bushes in various agro-ecosystems such as terrace walls, slopes, field boundaries and fallow land. Their distribution and floristic composition are the result of dynamic spatial and temporal interactions between local farmers and the environment. Local uses of natural resources and biodiversity reflect the constantly evolving Andean culture, which can be generally characterised as an intertwining of the human, natural, and spiritual worlds.

The aim of the present ethnobotanical study was to analyse the dynamics of traditional ecological knowledge, to ascertain local farmers' perceptions and uses of native woody species in Andean communities and to associate the results with local conservation activities for the trees and shrubs concerned. Our case study was carried out within two communities of the Tunari National Park (Dept. Cochabamba) in Bolivia. For data collection, research methods from social science (semi-structured interviews, participative observation, participatory mapping) as well as vegetation surveys were combined. Local actors included women and men of all ages as well as families from different social categories and altitudinal levels of permanent residence.

Our study indicates that, due to a multitude of socio-economic pressures (*e.g.* migration of young people) as well as changes in use of biodiversity (*e.g.* replacement of native by exotic introduced species), the traditional ecological knowledge base of native trees and shrubs and their respective uses has become diminished over time. In many cases it has led to a decline in people's awareness of native species and as a consequence their practical, emotional and spiritual relationships with them have been lost. However, results also show that applied traditional ecological knowledge has led to local conservation strategies, which have succeeded in protecting those tree and shrub species which are most widely regarded for their multifunctional, constant and exclusive uses (*e.g.* *Schinus molle*, *Prosopis laevigata*, *Baccharis dracunculifolia*). The presentation will discuss the question if and how applied traditional ecological knowledge positively contributes to local initiatives of sustainable use and conservation of biodiversity in rural areas.

Keywords: Andean culture, biodiversity conservation, Bolivia, ethnobotany, multifunctional use, perception, rural landscape, shrubs, traditional ecological knowledge, trees