Adaptive Management of Agrobiodiversity in Biocultural Landscapes: Experiences from the Field

Agrobiodiversity is an expression of relations between people, plants, animals, other organisms and their environment. It encompasses the variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries. Agrobiodiversity with associated knowledge and cultural systems make up part of the adaptive capacity and resilience of biocultural landscapes by allowing continued innovation and evolution in the face of environmental and social change.

Adaptive Management

Farmers and local communities, consciously or unconsciously, shape agrobiodiversity and guide evolutionary and ecological processes through various management practices e.g. seed selection. Under multiple and accelerated pressures these practices are changing precipitously, resulting in loss of agrobiodiversity. To maintain or enhance resilience in the context of increasing uncertainty and rapid transmission of shocks, we are confronted with a challenge of promoting adaptive strategies of diversification, conservation and restoration to maintain agrobiodiversity and ecosystem services while meeting livelihood and other goals. Adaptive management involves continued improvement of management practices e.g. seed selection. Under multiple and accelerated pressures these practices are changing precipitously, resulting in loss of agrobiodiversity.

Methodology

In this study, we combine social-ecological systems thinking and agrobiodiversity conservation approaches to explore adaptive management of agrobiodiversity in eight distinct biocultural landscapes around the world, including pastoral, agroforestry and high mountain sites. Data on crop and livestock diversity and on access to and use of ecosystem services were collected in household surveys, focus group discussions, resilience self-assessments and participatory mapping.

Key results

Adaptive management involves collective engagement of community members through local institutions, in ways that vary from social norms and beliefs to specific management plans e.g. grazing schemes, community-seed banks, and sacred sites. The roles of social and cultural institutions in conferring resilience are:

i) protecting traditional knowledge while facilitating continuous improvement of management practices and use of new materials
ii) facilitating participatory decision making
iii) ensuring social cohesion and equitable sharing of resources.

Local institutions are changing and new ones emerging as illustrated by a collectively owned rice granary in Pgaz K’Nyau, which was created after several years of drought to prevent the loss of local seeds. The most successful examples of resilience-strengthening initiatives involved traditional and novel strategies (e.g. forest restoration through maintenance of sacred sites and new sustainable use schemes), and both formal and informal conservation mechanisms.