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"Resilience of agricultural systems against crises"

Increased Climate Change Resilience of Semi-Arid Regions Based on Collective Environmental Governance with Landscape Approach

Stefanie Christmann, Aden Aw-Hassan

International Centre for Agricultural Research in the Dry Areas (ICARDA), Syria

Abstract

For 20 years seasonal grazing has been discontinued in semi-desert areas of Uzbekistan. As a result the region faces significant loss of important perennial shrubs and forage plants. Rangeland degradation puts livelihoods at risk. Additionally climate change 40 % above global average indicates rapid governance changes. Current production systems are already and will be even more threatened by water scarcity, increasing number of days with very high temperature causing partial crop failure, hails and strong rains effecting devastating mudflows from eroded foothills. Present coping strategies are commuting of men in labour age and out migration of youth, as an individual adaptation is hardly possible.

Facilitated by participatory research, local communities in three villages overcame their deep rooted fatalistic acquiescence in the tragedy of the commons leading foreseeable to an environment that cannot sustain livelihoods anymore. Local population is now ready to introduce new collective governance systems including share of tasks and benefits, enforcement of rules and management tools in common rangelands and on foothills. Villages developed a common purpose to collectively rehabilitate their ecosystems. Results from two participatory socio-economic research projects in different areas of Uzbekistan are presented. One village decided to introduce spatial planning, reforest foothills, stop free grazing, start collective forage production on rangelands based on social fencing and start alternative income options. Two other villages decided to establish pastoral user groups, fenced seed isles and seasonal grazing on limited rangelands based on strictly prohibited free grazing. In these two villages during last 15 years rangeland degradation had induced a shift from collective use of rangelands for small ruminants towards individual cattle rearing based on forage production on up to 80 % of the household plot. This will be terminated by climate change induced severe future water scarcity. Now villagers try to shift back to collective rangeland use for sheep and towards diversification on their household plots.

The findings show (1) critical importance of an integrated ecosystems research and development approach with clear focus on collective landscape governance, (2) remarkable self-help-potential of local communities if it is addressed adequately, (3) importance of a process of social learning over some period.

Keywords: Climate change adaptation, fenced seed isles, pastoral user group

Contact Address: Stefanie Christmann, International Center for Agricultural Research in the Dry Areas (ICARDA), ICARDA-CAC (Regional Program for Central Asia and the Caucasus), Tashkent, Uzbekistan, e-mail: s.christmann@cgiar.org