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Oral Presentation

Problems and solutions for rehabilitation of degraded by overgrazing lands in mountainous countries (case study of Armenia)

Special Session: Theory-based habitat conservation and restoration

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The biodiversity of Armenia is rich and has a global importance, but many species and the proper functioning of the ecosystems are under the threat. There is considerable pressure on them from the exploitation of natural resources. Pastures in Armenia are in different altitudinal belts – from semi-desert to alpine meadows. Livestock grazing and overgrazing, have tangible effects on soil and vegetation. As result of long time of unsustainable using the most part of pastures are trampled, eroded down, has low productivity (40-70%). In a place of fodder plants with high productivity, we have lots of invasive, inedible plants with low nutrition value, which interfere others growth and promote erosion processes.

In a frame of programs “Sustainable Management of Biodiversity, South Caucasus” and “Integrated Erosion Control in Mountainous Areas, South Caucasus” (implemented by the GIZ GmbH on behalf of BMZ with co-funding from ADC) vegetation monitoring in fenced territories in 6 villages of 2 regions of Armenia was carried out. In total data from 96 permanent plots was collected for describing current conditions and status of ecosystems and make visible changes after fencing and prohibition of grazing.

To exclude external factors the methodology (developed by Etzold & Neudert (2013) and Tovmasyan et al. (2015)) includes monitoring inside and outside of the fence, to compare the development of vegetation under the same conditions, the fence being the only changing parameter. The monitoring took place in July 2016 in order to assess changes regarding signs for ongoing erosion, composition of vegetation cover and floristic diversity.

The results of the data analysis show that even after a short period of exclusion from grazing vegetation cover increased up to 50% and an increase of species numbers of up to 35% on selected sites (with a max 40 different species) and a linear relation between species number and vegetation cover (although R² is quite low with 0,15). Irrespective of site conditions, results indicate a high regenerative potential of overgrazed sites and a rather quick promotion of grazing sensitive species and a rapid shift of species composition.

The results show that low to medium overgrazed areas have a certain ability to regenerate within a rather short period of time. For future restoration and enhancement of fodder quality should be done special detailed research of species composition of pastures.