Efforts for sustainable pasture management in Kyrgyzstan high mountains

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Introduction

- About 86,5% agricultural area of Kyrgyzstan is natural grasland, predominant in high mountains
- Overgrazing results in serious degradation of vegetation and soil
- The Kyrgyz government issued a law on pasture (2009) which shifted the responsibility for managing pasture to community based user unions (PUU)
- The PUUs create and implement grazing plans to allocate livestock on the pasture plots
- The aim of this study was to analyse the effect of the new law regarding the use of natural resources
Materials and Methods

• The study was carried out from October 2012 until August 2014
• The study area is located in the province Naryn (2525-3008m a.s.l.)
• Three species (19 adult horses, 8 foals; 7 dairy cows, 16 young cattle, 200 ewes and lambs) where included in the investigation
• All herds grazed freely around the farmers home, during July and August the herders families moves to the summer pasture with all the animals
• A sample of every species (marked animals) where weighed before and after winter and summer respectively
• One adult, female, healthy animal of each species was equipped with a GPS tracking collar (Vectronic aerospace) to analyse the home ranges
• Tracking points where assigned to „summer pasture“, „winter pasture“ and „outside allocated pasture“ with ArcGIS 10.2.
Pasture land in the study area

Winter pasture, 300-700kg DM/ha and year

Summer pasture, 800-950kg DM/ha and year

2500 m a.s.l.

3000 m a.s.l.
Regeneration of body condition within a vegetation period
Regeneration of body condition within a vegetation period
Effects of seasons on body weight change of dairy cows (n=7)
Effects of seasons on body weight change of mares (n=10)
Effects of seasons on body weight change of ewes (n=19)
Use of pastures during the observation period
June 13 - August 14
Conclusions:

- The new law and the implementation of PUU has not yet led to significant improvements
  - the animals lose a lot of body substance in winter, the mortality rate is very high
  - the use of pasture is unorganized

- The PUU should estimate more precise the yield of pasture and allocate an adequate number of animal units per ha

- The knowledge of the herders about the interdependency within the pasture ecosystem should be improved, „Less is more“ should become a guiding principle

- The PUU should develop a supply chain to improve her market power