Goat feeding strategies of smallholders in Nepal in the context of climate change

Gerl, C.  
Roschinsky, R.  
Manandhar, C.  
Malla, M.  
Wurzinger, M.  
Zollitsch, W.

1 BOKU-University of Natural Resources and Life Sciences Vienna, Department of Sustainable Agricultural Systems, Division of Livestock Sciences  
2 BOKU-University of Natural Resources and Life Sciences Vienna, Centre for Development Research  
3 Caritas Nepal, Kathmandu, Nepal
Nepal & Goats

• Nepal:
  ➢ traditional agrarian country
  ➢ varying monsoon patterns
  ➢ increasing periods of drought

• Goats:
  ➢ Ensure food security for smallscale farmers
  ➢ Kept for sale, consumption & personal use e.g.: meat, fibre, fertilizer
  ➢ Resilient to drought & fast reproduction rate
Goats in Nepal - Housing
Goats in Nepal - Feeding
Aim of the study

- Documentation and analysis of the goat feeding system on Nepalese smallscale farms
  - **Feeding management**: feed scarcity, feeding calendar, climate change (changing monsoon, changing growth periods, less rainfall)
  - **Fodder plants**: availability, harvesting and conservation processes
  - **Nutritional value** of fodder plants
Material and Methods - Study site & Partners

- SAF- BIN project (Caritas, Boku,...)
- Nepal, mid- hill region of Kaski
  - Subtropical climate
  - ~700- 7000m a.s.l.
  - -2- 33°C
  - 18- 1000mm
- Mixed crop- livestock farming
Material and Methods-
Data collection & Analysis

• March- May 2014
• 8 expert interviews
• 31 smallholder farms, 4 villages:
  ➢ Participating in SAF- BIN
  ➢ Interviewed person responsible for goats
  ➢ Semi- structured questionnaire
  ➢ Individual feeding calenders
• 60 fodder samples collected & analysed
Material and Methods-
Data Analysis

- Proximate analysis (extended)- DM, ADF, NDF, CF, CP, t Ash
- Questionnaire and Feeding Calendar analysed with SAS- procedure frequency, procedure glm, procedure means
Results - Feeding Calendar

- 29 farms, 139 plants named
- 71% trees, shrubs & climbers
- Feed scarcity: Feb-Apr
  - e.g. „Pakhuri“

Most Common Plants

- Trees, shrubs & climbers
- Crop residues
- Legumes & grasses
Results - Fodder Analysis

- 60 samples, 36 plants
- 39 trees, shrubs & climbers
- Compared with data from the NARC Nepal
Results - Climate Change

• 54% recognized a change of feedstuff
• 45% the change is related to climate change
  ➢ decreasing availability of fodder
  ➢ lack of rainfall
  ➢ growing seasons change
Conclusion

• Farmers have a wide knowledge of fodder plants
• Fodder analysis is in line with previous data and enriches the data base of Nepalese fodder plants.
• Based on the available fodder plants, the rations for goats could be improved (meat yield)
• Majority thinks that climate change has an impact
Thank you!