Analysis of goat breeding strategies of farmers in Nepal

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Introduction I

- Goats integral part of mixed farming systems in Nepal (income, nutritional security) (Solaimann 2010)
- Climate change challenges for smallholders in the area (Heifer International Nepal 2012)
- Crossbreeding goats to mitigate negative climatic effects (diseases and heat tolerant breeds) (Porter 1996)

Introduction II

- Local Nepalese breeds crossed with exotic breeds to improve growth & milk production (Porter 1996)
- Herd managament and breeding decisions: mostly women (Heifer International Nepal 2012)
- No utilization of goat milk (yet)

Khari (Moser, 2014)

Jamunapari x Khari (Moser, 2014)

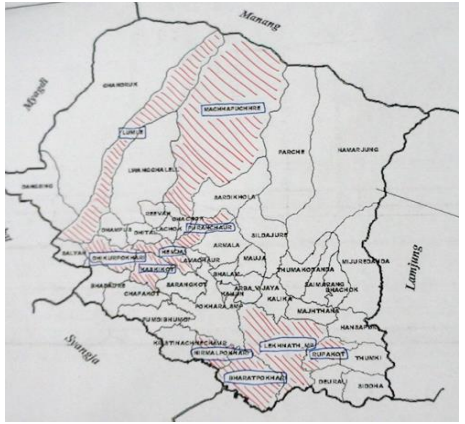
Research questions

- What are current breeding strategies, management and goals in Kaski, Nepal?
- What are farmers' perceptions regarding performance of local and crossbred goats?
- What are positive and negative effects of crossbreeding goats?
- Can this strategy help farmers to adapt to climate change?

Any differences with/without technical training?

Methodology I

- Literature research
- 2014: 3-month field study in Kaski, Nepal within SAF-BIN project
- Questionnaires for goat farmers (31 farmers in 4 project villages)
- Semi-structured interviews with experts (e.g. NARC, breeding associations)



study sites within **Kaski district**
(Moser 2014)

Methodology II

- Field-work diary
- Data analysis with *Statistical Analytical Software*
  - Procedure frequency
  - statistical differences farmers with/without technical training

recording goat weights (Moser 2014)

Selected Results – Crossbreeding Strategies

- On average 6 years experience
- Crossbreeding proposed and introduced by local NGOs or regional veterinary stations
- 50%: breeding support (technical trainings, breeding bucks)
- Breeding decisions mostly depend on buck availability (no control blood levels)

Selected Results – Selection Criteria

Breeding bucks (n=31)*	Breeding does (n=31)*
Physical appearance (30)	Physical appearance (28)
Health (16)	Health (12)
Fertility (4)	Maternal qualities (17)
Meat Yield (5)	Suitability (2)
Personality (3)	Growth (1)
Age, Suitability (2)	Personality (1)
Parentage (1)	

* multiple criteria possible

Selected Results – Crossbreed Performance

- Goats: mainly as a source of income (sale breeding does, meat, fertilizer)
- Crossbreds:
  - higher meat yield
  - fast growing kids
  - desired physical appearance
  - better marketability
  - better maternal traits of does
- 20% record the performance of breeding goats

Selected Results – Crossbreeding Impacts

+ 100% content with crossbreeding
+ 100% plan to continue crossbreeding in the future
+ Increased family income and nutritional security
- Higher workload and need for veterinary treatment for 1/3 of the farmers
- 30% face challenges with crossbreeding

Selected Results – Impacts of Technical Trainings

- Appropriate castration age
- Connect workload change to crossbreeding
- Husbandry exotic breeds
- Suitable housing (e.g. bigger shelters)
- Veterinary service more important
- New breeding strategies
  - community bucks
  - traditional breed conservation
  - artificial insemination

Selected Results – Climate Change

- 1/3 of farmers notice an influence of climate change on goat husbandry
  - New diseases, lower productivity
  - Water scarcity in summer
  - Changing growing seasons of fodder plants
- Adaptation by introducing exotic breeds (e.g. Jamunapari: tolerance for higher temperatures)

Conclusions

- Breeding decisions mainly due to buck availability
- Technical training important: improve breeding management and educate on selection criteria
- Farmers perceptions – crossbred advantages outweigh challenges:
  - suited to rising temperatures
  - enable higher income
  - improve family nutrition in the face of climate change

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Thank you!

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