

M.Sc. Integrated Natural Resource Management  
Module: Ecosystems of Agricultural Landscapes and Sustainable Land Use:  
Livestock Systems  
Winter Semester 2016/17

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**03 Livestock Ecology: Lecture Review**

03-1 Abiotic environmental factors

- Origin of environmental influences
- Bio-climatology
- Animal performance and environmental temperature
- Short, medium and long term animal responses to heat stress

03-2 Biotic environmental factors

- Life forms
- Domestication
- Interactions between species
- Food chains, food nets and food pyramids
- Ecological efficiency

03-3 Trophic environmental factors

- Generalists and specialists
- Ecological potential of organisms
- The ecological 'niche' concept
- Parallel evolution in corresponding but isolated niches
- Herbivore adaptation to plant defences and vice versa
- Application of the niche concept to livestock production
- Adaptation of livestock to seasonal nutritional stress

**Study questions**

1. Why are ecosystems so difficult to analyse?
2. Discuss the various sources of environmental influences within livestock systems.
3. Describe the ecological niche as a multi-dimensional space.
4. Why are most livestock species ecological generalists?