
Sheep husbandry and Ethnoveterinary knowledge of Raika sheep pastoralists in Rajasthan, India

**Thesis submitted for partial fulfillment of the MSc degree in:
Environmental Sciences.**

**Author: Ellen Christina Louisa Geerlings
Supervisor: Prof. Dr. Akke van der Zijpp
(Animal production systems group)
Credit points: 27
Code: E300-763**

**Deventer, The Netherlands
August 2001**



Abstract

This thesis describes the sheep husbandry and healthcare system of the Raikas in south-central Rajasthan. Aspects such as sheep breed diversity, fodder availability, disease prevalence and gender labor division are discussed. Special attention has been paid to traditional and conventional interventions and actors in sheep healthcare. Ethnoveterinary knowledge and practices are described as well as weak and strong points of both conventional and traditional institutions and actors.

Key-words: Raika, sheep husbandry, pastoralism, sheep breed diversity, gender labor division, ethnoveterinary knowledge, ethnoveterinary practices, traditional and conventional healthcare actors and institutions, medicinal plants.



Table of Contents

Acknowledgements

List of Abbreviations

1 Introduction	1
1.1 Background and motivation for the study	1
1.2 Animal healthcare interventions	3
1.3 Focus and main purpose of the study	5
1.3.1 Research objectives	5
1.3.2 Problem statement	5
1.3.3 Research question	6
2 Background information on research subjects	7
2.1 Ethnoveterinary research	7
2.2 Gender bias in livestock research	9
2.3 Governmental animal healthcare services	10
2.4 Domestic animal diversity	12
3 Background information on study area	14
3.1 Rajasthan	14
3.2 Animal husbandry in Rajasthan	15
3.2.1 Raikas	15
3.3 NGO's activities in the research area	16
3.3.1 Lokhit Pashu-Palak Sansthan and League for Pastoral People	17
3.4 Research location	17
4 Research methods	19
4.1 Introduction	19
4.2 Methods of data collection	20
4.2.1 Workplan	21
4.2.2 Sampling	22
5 Results and discussion	23
5.1 Bias and problems in data collection	23
5.2 Flow diagram of Raika agro-pastoral system	25
5.3 Landownership and crop production	26



5.4	Local breeds and their qualities	26
5.4.1	Breed diversity within herds	32
5.5	Herd size and composition	34
5.6	Grazing systems and feeding management	36
5.6.1	Migration	36
5.6.2	Fodder scarcity	37
5.7	Breeding	38
5.8	Returns from sheep rearing	40
5.8.1	Milk	40
5.8.2	Wool	40
5.8.3	Meat	41
5.8.4	Dung	42
5.9	Women in livestock production	43
5.9.1	Introduction	43
5.9.2	Gender-based labor division of Raika sheep pastoralists	45
5.9.3	Perception of labor division	49
5.10	Animal health: Actors and Institutions	50
5.11	Raika concepts of ovine diseases	54
5.11.1	Introduction	54
5.11.2	Ethnosemantics and ethnotaxonomy	55
5.11.3	Ethnoveterinary practices and pharmacology	65
5.12	Concluding remarks on ethnoveterinary knowledge and pharmacology	72
6	Conclusions	74
	Summary	77
	Bibliography	79
	Appendixes	
Appendix 2A	Global breed data	
Appendix 5A	List of respondents	
Appendix 5B	Interview guide	
Appendix 5C	Sheep breeds in Rajasthan	
Appendix 5D	Distribution of rainfall in Rajasthan	
Appendix 5E	Age of first service of rams and ewes	
Appendix 5F	Returns from sheep rearing	
Appendix 5G	Disease characteristics as cited by respondents	
Appendix 5H	Ethnoveterinary practices for most common sheep diseases	
Appendix 5I	Land Degradation	
	Glossary of ethnominerals	
	Glossary of ethno-animal products	



List of figures

Figure 5.1	Breeds per herd (n=43)	32
Figure 5.2	Breed diversity in herds (n=43)	32
Figure 5.3	Sheep herd size (n=55)	34
Figure 5.4	Mixed herd composition (n=32)	35

List of maps

Map 3.1	Location of Rajasthan, India	14
Map 3.2	Location of Pali district in Rajasthan	18
Map 3.3	Location of Research area in Pali district	18

List of pictures

Picture 5.a)	Bhagli breed (left) and Boti breed (right), Datiwara village, Bali tehsil	28
Picture 5.b)	Dumi breed, Ghanerao village, Desuri tehsil	29
Picture 5.c)	Keri breed	30
Picture 5.d)	Black Tepli, Datiwara village, Bali tehsil	31
Picture 5.e)	Kajeli breed	31
Picture 5.f)	Kajeli ram with “devices” to control mating, Dungli village, Bali tehsil	39
Picture 5.g)	Baga Ram Dewasi from bagri Nagar showing firing Instruments	52
Picture 5.h)	Bottleneck in local Keri breed	58
Picture 5.i)	Sheep with “mata” (sheep pox)	59
Picture 5.j)	“Nimji”	65
Picture 5.k)	Ceremony Altar in sheep shed with image representing “Mataji”	66
Picture 5.l)	Manglaram, 13 years old with his sister and younger brother from the village of Wara Solenkian, Desuri tehsil.	73

List of tables

Table 1.1	Trends and projections in Food Production in developing countries	2
Table 4.1	Outlay of workplan	21
Table 4.2	Number of interviews per village	22
Table 5.1	Number and size of landholding in ownership (n=18)	26
Table 5.2	Classification and price of mutton	42
Table 5.3	Comparison of revenue per sheep in Jodhpur district and Godwar area	42



Table 5.4	Herding (n=54)	45
Table 5.5	Feeding; cutting fodder for stall feeding (n=45)	46
Table 5.6	Milking (n=50)	46
Table 5.7	Handling milk products (n=47)	47
Table 5.8	Assisting ewes in lamming (n=20)	47
Table 5.9	Care for newborn lambs (n=54)	47
Table 5.10	Care for sick sheep (n=53)	48
Table 5.11	Most common diseases among traditionally raised sheep in research area, as identified by raika shepherds (n=50)	56



Acknowledgements

I am very grateful to the following persons for making this thesis possible:

*Ilse Köhler-Rollefson of League for pastoral people for accepting me as a research student and arranging all the necessary things in Sadri. I would also like to thank her for all the help, enthusiasm and support in Sadri.

*Hanwant Sigh Rathore of Lokhit-Pashu Palak Sansthan for all the logistical support, arrangements made in Sadri and introducing me to the Raikas and translations.

*Dewaram Dewasi and Mooli Devi for having me in their home for two weeks, taking me on his rounds to treat animals in neighboring villages and for answering all my questions.

*All the Raika families for their patience, tea and kindness, especially to my friend in Bilhija

*Hitpal Singh for accompanying me to all the villages and for translating all the questions and answers, for his patience, good jokes and his friendship. I would also like to thank his family for their hospitality and friendship.

*Evelyn Mathias for her enthusiasm and contributions; reviewing my drafts, useful comments, literature, support and delicious bread recipes.

*Valaram Prajapat Karanawa for his delicious meals, tea and friendship

*Ramesh Kumar Bhatnagar for his assistance and friendship.

*Ramji and his family for their hospitality and good laughs.

*Dr. Purohit, veterinary officer at Sadri veterinary hospital and Dinesh Kumar Solanke, livestock assistant at veterinary hospital in Magartalab for their information.

*Purnima and Premalya Singh for their hospitality and assistance in Delhi.

*Prof. Dr. Akke van der Zijpp for her support and advice.

*Lenie Smits-Geerlings and Piet Geerlings for all their support and love during all my years of study.

*Tasso Hetterschijt for running back and forth to the copy shop, keeping me awake and taking care of me when I was sick during the last days of writing this thesis, and for all the other days..

*My friends who supported me one way or the other during my study and the writing of this thesis.



List of Abbreviations

AnGR	Animal Genetic Resources
BBC	British Broadcasting Corporation
CA	Contagious Agalactia
CBD	Convention on Biological Diversity
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
CE	Contagious Ecthyma
CHI P	Camel Husbandry Improvement Project
DAD-IS	Databank on Farm Animal Genetic Resources (FAO)
DGIS	Directoraat Generaal Internationale Samenwerking
FAO	Food and Agriculture Organization
FMD	Foot and Mouth Disease
GO	Governmental Organization
GTZ	German Agency for Cooperation
IIRR	International Institute Rural Reconstruction
IK	Indigenous Knowledge
IMF	International Monetary Fund
IUD	Intra uterine device
LPP	League for Pastoral People
LPPS	Lokhit Pashu-Palak Sansthan
NGO	Non-governmental Organization
PA	Participatory Appraisal
PLA	Participatory Learning and Action
PPR	Pests de Petit Ruminants
PRELUDE	Programme for REsearch and Link between Universities for DEvelopment
RRA	Rapid Rural Appraisal
UN	United Nations
UNEP	United Nations Environmental Program
USA	United States of America
WHO	World Health Organization
WTO	World Trade Organization

