

## 4. Research Methodology

### 4.1. Introduction

Poor results in livestock development were one group of negative experiences which led to a reassessment of top down technical approaches in less developed countries and prompted discussion on alternative, more people-centered ways of working. For example Chambers (1983) noted a professional fixation among livestock workers with the promotion of exotic cattle in tropical countries in preference to research on local breeds and other types of livestock. Other notable failures were attempts to develop animal-drawn wheeled tool-carriers (Starkey, 1988) or improve pastoral production systems in dryland areas of Africa by the introduction of ranching schemes as described by Scoones, (1994) (Catley, 1999).

Until the 1980's, many livestock development initiatives in pastoral areas were based on the notion that mobile and extensive livestock production systems were wasteful and environmentally unsound. Containment of livestock on ranches and fodder improvement schemes were typically attempts to improve livestock productivity. However, more recent research showed how the opportunistic and flexible systems used by many pastoral groups were well-adapted to dynamic ecosystems with highly variable rainfall. As Scoones (1994) found, comparisons of pastoral and ranching production systems from South Africa to Mali clearly showed how pastoralists were outperforming less adaptive systems (Catley, 1999).

Social anthropologists played an important role in showing other professionals that rural people had their own, complex knowledge which had developed over many years according to local environmental and socio-cultural conditions. Rather than seeing rural people as resistant to change and irrational because they rejected the inventions of technology transfer, research on local knowledge and skills demonstrated that these resources were valuable and could contribute towards development (Catley, 1999).

This insight resulted in frustration of professionals with formal survey methods. As a result experimentation began with less formal survey methods and development approaches. Experimentation began with less formal tools such as those used in social anthropology and experience of indigenous knowledge systems began to merge with the field testing of informal interviewing, visualization and other methods (Chambers, 1994). Adding to this is the rapid pace of change occurring in many communities, short budget cycles, and the lack of funding for development projects which require faster approaches than the more time-consuming anthropological field work methods. The search for cost-effective ways to learn about the situation, needs and initiatives of rural people and to collect data relevant for planning projects led to the development of Participatory Appraisal (PA). PA encompasses Participatory Rural Appraisal (PRA), Rapid Rural Appraisal (RRA) Participatory Learning and Action (PLA) and various similar approaches and methods.



Participatory Appraisals have become increasingly popular for assessing community situations. Anthropological methods still form the basis of these approaches; however, they are modified, combined, and applied by (ideally, multidisciplinary) teams rather than single researchers (Chambers quoted in Mathias 1995; 20).

There is no blue print for the recording of IK. Many different PA methods can be used to uncover local IK, depending on the subject matter. Methods that have been used include for example the school essay method and group interviews as used by Lans 2001 for her research on ethnoveterinary knowledge in Trinidad and Tobago, use of labor calendars by gender; illustrating the division of labor for livestock tasks by Cooper and Gelezhamstin (1994) in Mongolia, use of Venn diagrams to understand institutional links between communities and agencies involved in livestock by Braganca (1994) in Mozambique and use of participatory scoring tools including “before and after” scoring for program review/evaluation as used by ActionAid Somaliland (1994).

In veterinary medicine, questionnaire surveys have been widely used to collect information from livestock owners and veterinary workers. The important features to consider when using questionnaires can be summarized as follows (adopted and modified from Catley, 1999):

- Target population and sampling method: random and non-random sampling methods. Random sampling methods include simple random sampling, systematic sampling, stratified sampling and cluster sampling.
- Questionnaire design: this encompasses the choice of questions to be asked, the precise wording and ordering of questions and appearance of the questionnaire. Question types are usually categorized as open, closed and semi-open-ended depending on the level of freedom offered to the informant when responding.
- Administration: different ways of administering questionnaires, e.g. by mail and personal interviews.
- Quality control –reliability and validity: reliability in questionnaire design is defined as the ability of the questionnaire to produce consistent results on repeated trials. Validity is the extent to which answers reflect the true state of nature and consequently, could be checked by reference to an independent, reliable dataset.

#### 4.2. Methods of data collection

Techniques that have been used for the present research include semi-structured open-ended interviews, observation, group interviews and talks with key informants. These techniques are widely used and are recognized as effective ways of getting valid, detailed information from "local experts." Discussions of these and other PA techniques can be found in Waters-Bayer (1994), IIRR (1996), Catley (1999) and RRA Notes (all issues). The



research design chosen was mostly qualitative but some quantitative data was also collected. Quantitative data was collected on respondent characteristics (gender, age, education), crop production, economic data of sheep production, herd size and herd composition, this was done by means of a standard questionnaire with open-ended questions. Qualitative data on ethnoveterinary knowledge, disease perceptions, breed diversity, gender-labor division and sheep management was collected by means of a question guide with open-ended questions, observation and interviews with key informants using a list of topics to be dealt with during the interview. The emphasis of qualitative research is not on proving a causal relationship between variables but on understanding how people perceive their situation (Maas, n.d). This design is chosen because its strength lies in the collection of a great deal of “rich” information about relatively few people.

#### 4.2.1 Workplan

Four weeks were spend on preparing the research proposal, meanwhile drafts of questionnaires for the open-ended interviews were made. The first two weeks in Pali-district were spend with a Raika family in Pachunda Kallan a village near Sojat road (see map 3.3.). This gave a good impression of day to day activities, activities relating to sheep husbandry and sheep management and women’s and men’s workload and responsibilities. Another advantage was that the head of the family is a governmental veterinarian. Dr. Dewasi has been working in the area for more than 10 years and his family is involved in sheep rearing. He was an important source of information during the stay in the village since he is locally known and respected, speaks Hindi and English and has both knowledge and experience with traditional and (modern)-governmental animal health services. After this stay I moved to the research area which was located approximately 100 km to the south in Desuri Tehsil of Pali-district (see map 3.3.). Eight weeks were spend on actual field research, interviewing sheep pastoralists, government vets and other key informants. A detailed outlay of the work plan for this research can be found in Table 4.1.

**Table 4.1. Outlay of workplan.**

WEEK	1*	2	3	4	5	6*	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Activity																				
Preparing research proposal	** **	** **	** **	** **																
Staying with Raika family						** **	** **													
Orientation on research area/Preparing field research				** **	** **	** **	** **	** **												
Conducting field research								** **	** **	** **	** **	** **	** **	** **						
Evaluation of field research												** **	** **	** **	** **					
Reporting													** **	** **	** **	** **	** **	** **	** **	** **

\*Week 1 starts at the first of January 2001 \* Week 6 till week 16 was spent in the research area (4 february-12 april)

#### 4.2.2. Sampling

To draw a fairly representative sample a list was made of all villages within a 25-30 km radius from L.P.P.S. training center located in Sadri. In map 3.3. this is the area between Bijapur, Bali, Rani and Desuri. 57 villages were identified in the research area using two maps and additional information of a key informant. This list was used as the sampling frame. Since very small villages were not present on the two maps and the key informant may not know all villages or may forgotten some I choose to add another extra 10% to this number. So the estimated number of villages in the research area is 63 (57+5.7). The research area consisted of approximately 1414 square kilometers.

From the sample frame 40 villages were selected by means of a random number table. Of these 40 villages 30 villages were visited. The last 10 villages could not be visited because of time constraints. An extra 4 villages were visited at the beginning of the research to pre-test the questionnaire. Later it was decided to include the results of these four interviews (one in each village) in the overall results since the questionnaire did not change a lot and the answers were very informative. So in total 34 villages were visited, see Appendix 5A for a list of villages visited and respondents interviewed. To estimate the population size of all sheep rearing Raikas within the research area rough estimates have to be used since data was not available. Because it was impossible to make a list of all Raika sheep rearing families within each village no further selection was made. Allocation of Raika families within the village was based on pure coincidence, e.g. asking people were Raika families could be found. The unit of study originally were individual Raikas within the household both male and female, young and old. But this was practically not always possible during the actual research (see paragraph 5.1. on bias and problems in data collection).

In total 59 interviews were conducted and a total of 34 villages were visited. Per village 1 to 5 interviews were conducted, depending on number of shepherding Raika families per village, whether or not people were willing to talk, distance to village and time of visit. For more detailed information on number of interviews per village see table 4.2.

**Table 4.2. Number of interviews per village**

NO. OF INTERVIEWS PER VILLAGE	NO. OF VILLAGES
1	19
2	9
3	3
4	2
5	1

Of the 59 interviewees 52 were men and 7 were women. The average age of the respondents was 42 years with the youngest respondent being 13 years and the oldest respondent being 80 years. Interviews took 15 minutes to up to 2,5 hours depending on the time and enthusiasm of respondents.