6. Conclusion

Raikas rely on self treatment and traditional healers and will rarely avail to Governmental veterinary hospitals and veterinarians. This is partly due to the inconvenience of bringing animals to the hospital but the most important reason seems to be the communication problems and lack of respect on both sides. Raikas are highly dependent on their own skills and knowledge for the treatment of their sheep due to the migratory live of some and general lack of trust in governmental Institutions and veterinarians. Typically, veterinarians who are posted to remote areas are not from pastoral groups and they have different moral and social values and their language often differs from that of the Raikas, especially locally used names for diseases are often not understood or known by western trained veterinarians for reasons already mentioned in paragraph 5.11.2.

Some beliefs by the Raikas about disease etiology, epidemiology or an animals biology are not always scientifically correct. But as McCorkle (1989) emphasizes, the issue is not how closely folk knowledge and practice parallel western veterinary medicine or whether indigenous beliefs and practices are “right” or “wrong”. Rather, what is important is “…the extent to which they promote productive animal management given the resources actually or potentially and realistically available to farmers.

Most of the plants and other healing practices such as cauterization and praying used by the Raikas are also extensively used in other countries and although these are mostly frowned upon in the western world the fact remains that millions of people rely on them for their own and for their animals health.

Validation of ethnoveterinary knowledge and practices is important because it cannot be assumed that all of the practices are effective. A method of validation could for example be laboratory analysis of active ingredients. But it should be noted that this method may not be always appropriate since some plants “work” because of their synergistic effects (active ingredients working together) so plants seemingly ineffective in laboratory trials may work in the field. Another approach to evaluate medicinal plants and practices is “the workshop approach” as discussed in paragraph 5.9. to identify “best bets” (those plants that appear most promising).

This research found that the amount of ethnoveterinary knowledge differ greatly between different Raikas, certain individuals have more extensive knowledge than others. This could possible depend on herd size (the bigger the more practice and experience with diseases and generation of sheep breeders (the more generations, the more knowledge and experience is build up and past down to the next generation).

The Raikas are capable to distinguish between the different symptoms through careful observation. Their careful observations also results in a considerable good analysis as to what could be the etiology of some –not all- diseases (such as "bad" air causing FMD and the eating of "dirty grass and drinking dirty water" causing bottle-neck), especially taking into account that the bacteria and viruses causing these diseases can not be seen with the naked eye. Although most Raikas possess considerable knowledge and are skillful in the preparation and application of home-made remedies the fact is that they still have to cope with high mortality rates in their herd, especially sheep pox and liver fluke cause considerable losses. The solution partly lays in a better delivery of the sheep pox vaccine, in many cases the vaccine was applied to late or not applied at all because the person specialized in the application of the vaccine could not be found. Another problem is the inadequacy of most Raikas to deal with modern drugs. They perceive oxy-tetracycline as a cure all, resulting in over use of the medicine. The dosages used are often inappropriate resulting in resistance to antibiotics and the needles used are often dirty or bend.

Because of their illiteracy, healers and livestock keepers are not able to distinguish between the various types of industrial medicines. These medicines are regarded as a cure-all. (Köhler-Rollefson in Mathias *et al*,1999). The same basically applies to the use of anthelmintics.

Governmental health care institutions and veterinarians have the potential to assist the Raikas on these matters e.g. giving workshops and village training in the use and application of these drugs. This would certainly prevent or save a lot of sheep from death. Local NGO's such as LPPS would also be very appropriate to assist and sensitize the Raikas on the use of modern drugs, since they have already established contact and are socially more accepted by the Raika community. In the short term they seemingly would yield more promising results then Governmental healthcare services and veterinarians.

Considering their migratory and independent lives and limited resources to purchase drugs or make use of veterinary services their ethnoveterinary knowledge and practices –if effective- should be promoted and disseminated among other Raikas and "only those disease eventualities that are beyond the reach of local expertise should be combated by other means. Such a strategy is ambitious and demands a lot of thinking and research from NGO's. But it is a effort that is well worth it, because it contributes to empowerment instead of creating dependence among local people and thereby supports endogenous development" (LPPS 1999).

Summarizing, the research objective as posed in paragraph 1.3.1. could better be rephrased to "what are strong and weak points of both traditional and conventional healthcare practices and how can both be optimally used to improve the health care status of traditionally kept sheep in Godwar area".

The reliance on sheep husbandry of the Raikas coupled with their mobile lifestyle makes that planning in pastoral settings for e.g. animal healthcare projects differs from that in other agricultural development projects for the following reasons (adopted from Waters-Bayer *et al,* 1995):

 pastoralists' main assets (livestock) are mobile rather than stationary;

☐ land use in pastoral systems is large-scale so as to incorporate wet- and dry season grazing and emergency reserve areas, and it tends to be without fixed boundaries;

☐ tenure institutions for resources used by pastoralists tend toward common property regimes rather than plots and farms clearly defined for individual use;

☐ pastoralists often use resources that are used simultaneously or during other seasons or years by other groups, for farming as well as grazing; pastoralists therefore need to negotiate with other groups to gain access to resources, to manage their use and to improve them;

☐ to allow for mobility and flexibility of decision making, pastoral households or informal groups of households are the basic operational units. In general, collaboration between households or groups is not rigorously institutionalized.

The results of this study suggest that future development projects should give more careful consideration to the livestock-related role of pastoral women and to their indigenous knowledge. The sheep husbandry system of the Raikas is a family enterprise and if NGO's and GO's are to collect valuable indigenous knowledge about this system they should collect gender disaggregated data. Far to often women's role in animal husbandry and healthcare is underestimated and undervalued and as a result (paravet)training and information is only directed to men. However women represent important actors in livestock keeping. They can play a crucial role in influencing the productivity of their animals (Rangnekar, 1999).

An important body of knowledge is being missed if no effort is made to collect women's knowledge. Collecting gender disaggregated data however poses a problem since there is a lack of female staff in NGO"s and GO's, and often women are reluctant to speak to male researchers for religious and/or socio-cultural reasons.

Improving female participation in animal health training may not be easy. There are some cultural and dominant gender ideologies which make women's participation difficult:

Gendered norms which limit women's range of movement and may thereby restrict their participation in management activities.