# Increasing the contribution that goats can make to the livelihoods of resource poor livestock keepers in Nepal

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**Introduction** Goats are an important component in the livelihoods of resource poor livestock keepers (RPLK) in Nepal, which is one of the poorest countries in the world. In Nepal, goats have the advantage that there are no cultural restrictions to goat-keeping, and they are a source of income for women (who take primary responsibility for their care) as well as being a valuable 'safety net' that can be sold to raise cash in times of need. There is a large demand for goats and goat products in Nepal currently not satisfied by local supply. It is estimated that some US$ 1.3m is spent each year on the import of goats from India, although informal trade is likely to make this amount much higher. This represents the import of approximately 67,000 head of goats, and it is estimated that this constitutes approximately 15% of the goat market. There is clearly an opportunity for RPLK in Nepal to produce goats for the local market and thereby improve the livelihoods of these keepers. The keeping of goats is a common practice, with 85% of rural households keeping at least one goat, but a number of constraints limit the contribution goats can make to improved well-being. The aim of this project is to work with RPLK to develop strategies to overcome some of these key constraints.

**Preliminary survey** To determine the key constraints to goat-keeping in Nepal, a combination of studies was used. Initially a participatory rapid appraisal (PRA) was conducted with four communities in each of three districts in Nepal (Kavrepolonchowk and Makawanpur in the hills and Dhanusha in the Terai). In each district one community was selected as a focus community based on information from local key informants. The aim was to select a range of communities that would represent social diversity and a variety of livelihoods' choices. Additional communities were then selected within the vicinity of the focus community. The PRA exercise employed two gender-balanced teams of four people (one team worked in the hill districts while the other worked in the Terai district). One person in each team was local to one of the project sites while the remaining team members were experienced PRA facilitators. The PRA exercise consisted of a short community meeting, social and resources mapping, the construction of a livelihoods strategies matrix, an interview on goat-keeping practices, an interview on the use, seasonality and preferences of forages used for goats, and the exercise then concluded with a wrap up session.

Following the PRA exercise, a more detailed longitudinal survey was conducted with two communities in Dhanusha in which 20 households (per community) were visited every month for six months. In each community, households were selected to cover an equal number of income groupings (poor versus less poor, based on information gathered from a wealth ranking exercise done during the PRA). Recording in the longitudinal survey was done using questionnaires and observation. Subjects that were covered included household and resources, the contribution of different activities to livelihoods' objectives, the structure of the goat population, management and feeding of the goats and cases of mortality, illness, sales and reproduction in the goat herd.

**Table 1** *Size of goat herd and losses due to disease in the wet season in villages in Dhanusha*

| Community | Mean size of goat herd | % losses from herd | |
|---|---|---|---|
| | | Death | Sale |
| Kemalipur | 5.1 | 21.8 | 7.6 |
| Jamunibas | 5.9 | 31.8 | 34.3 |

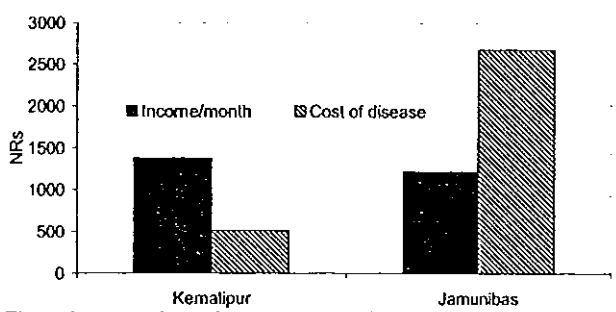


**Figure 1** *Impact of goat disease on RPLK's livelihoods*

Analysis of these exercises showed goats contribute up to 50% of the livelihoods of RPLK. Landless and near landless farmers are likely to own between five and six goats, which act as a safety net when other sources of income fail. However, a key constraint is the increased incidence of disease and death in goats during the wet season, and a farmer may expect

four of her goats to become sick in this period. Of these, between one and four may be lost from the herd, either through death or through an enforced sale because of disease. Such enforced sales are at a far lower price than would be achieved if the sale were by choice and of a healthy goat in good condition. The impact of these losses on the livelihoods of the poorest householders in Dhanusha district is summarised in Table 1 and Figure 1. The losses in Jamunibas are somewhat exaggerated because of the probable outbreak of an infectious disease (possibly PPR), and so the losses in Kemalipur may be more representative. Farmer income may also be underestimated, and the impact of the losses was more notable in this study because these data refer to only a part of the year. However, the losses do represent a significant proportion of the household's income in the early part of the wet season, and the experience in Jamunibas illustrates the fragility of the system and its inability to withstand major stresses.

**Proposed activities** A key constraint to goat-keeping by RPLK is clearly the incidence of disease in goats during the wet season. Studies by Thakurri *et al.* (1994) and Khakural (2001) show that nematode infection is the commonest cause of disease in goats in Nepal, particularly at this time of year. The focus of the project now is therefore to work with RPLK to develop management strategies to reduce the incidence of nematode infection in the wet season, and to determine the impact that the adoption of such measures would have on the livelihoods of RPLK. The most appropriate means of disseminating information on appropriate strategies will also be investigated. There are three key activities in the forthcoming phase of the project, and these are summarised below.

*Strategies to reduce the incidence of nematode infection in goats in the wet season.* Four communities in Dhanusha district will be selected. In each community, 20 households will be selected to be representative of the wealth rankings observed in that community. These households will then be divided into four groups, and assigned to one of five treatments. These treatments would consist of normal farm practice (Control); strategic treatment with anthelmintic and the confining of kids during the wet season (Vet); the supplementation of the diet with an increased supply of metabolisable protein that is readily available to RPLK (Nutrition); the supplementation of the diet with a mixture of vitamins and minerals (Mineral) and the combination of both Vet and Nutrition (Combination). Faecal egg counts in all goats will be measured at the beginning of the experiment and following the administration of anthelmintic to the Vet and Combination groups. The health, condition and liveweight of the goats will be monitored throughout the experiment. In addition, participatory budgets will be constructed with the farmers involved to determine the impact that the different treatments have had on livelihoods.

*Survey of goat markets.* The options available to goat keepers on the marketing of goats and goat products are to be investigated. It is assumed that preventing the losses of goats in the wet season, and thereby producing healthy goats in good condition for sale during the major festival of *Dashain* (at the beginning of the dry season), will result in the greatest improvement in RPLK livelihoods from goat-keeping. This is to be researched by structured interviews with RPLK, and with goat traders and butchers at the market nearest to the community, as well as the more major markets of Janakpur and Kathmandu. This information will assist in the development of strategies to optimise the management of goats to increase the contribution they can make to the livelihoods of RPLK.

*Identification of appropriate extension methodologies.* A number of different extension methodologies have been developed to assist in the up-scaling of technologies developed as a result of research projects. A series of semi-structured interviews with organisations that work with RPLK will be held to ascertain which extension methodologies have been observed to be most effective. This will be validated by interviews with farmers. Other objectives of the farmer interviews will be to determine which information sources and institutions are trusted by farmers, and where farmers go to in order to obtain information. Methodologies for disseminating information to other agencies, research institutions and policy makers will also be investigated. This information will be used in the selection of dissemination pathways for the extension activity that forms a key element to this project.

**Outcomes** The outcome of this project will be a selection of management strategies that can improve the livelihoods of resource poor goat keepers by reducing the losses of goats in the wet season. Appropriate means of disseminating this information to farmers in Nepal will also be identified, together with information as to where farmers acquire information that they trust. Using this information, the strategies that have been developed will be communicated to farmers throughout the goat keeping areas in south Asia.

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