

CONSTRAINTS FACING GOAT-KEEPERS IN SEMI-ARID INDIA: SUMMARY AND DISCUSSION

LES CONTRAINTES RECONTREES PAR LES ELEVEURS DES CAPRINS EN ZONES SEMI-ARIDES EN INDE: SOMMAIRE ET DISCUSSION

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Summary

A survey of goat-keeping constraints in semi-arid India found that they vary considerably from village to village, from one production system to another, and between men and women and different socio-economic groups. There are also differences in rankings between agro-ecological zones. The initial identification of livestock problems tends to be superficial, and the use of participatory problem tree analysis can provide a more in-depth understanding of how goat-keepers perceive constraints and their inter-relationships. The survey found that there are sometimes important human dimensions to goat-keeping problems, as well as the biophysical ones that livestock scientists tend to focus on. Conclusions are drawn about the implications of the survey findings for livestock service agencies and the way they operate.

Résumé

Une enquête de recherche sur les contraintes de l'élevage caprin en zones semi-arides en Inde a constaté que les contraintes varient considérablement entre villages, hommes et femmes, différents systèmes de production et catégories socio-économiques. Il y a aussi des différences dans la priorisation entre les zones agro-écologiques. Souvent l'identification initiale des contraintes concernant l'élevage est superficielle, et l'analyse participative de 'l'arbre des problèmes' peut fournir une meilleure compréhension comment les éleveurs des chèvres perçoivent les contraintes et les relations entre elles. La recherche a démontré qu'il y a parfois des dimensions humaines importantes, liées aux problèmes d'élevage caprin autant que des dimensions biophysiques sur lesquelles les chercheurs en sciences animales se concentrent d'habitude. En se basant sur les résultats de recherche, des conclusions sont tirées pour les services d'élevage et la façon dont ils fonctionnent.

Background

BAIF Development Research Foundation, an Indian rural development NGO, and the Natural Resources Institute (NRI) are collaborating on a research project concerned with easing seasonal fodder scarcity for goats in various parts of semi-arid India. In each district where it works the project begins by conducting surveys in a few villages in areas where BAIF has an operational presence. This paper summarises and discusses the information obtained about constraints.

Methods

The surveys use semi-structured group interviews, and rapid rural appraisal tools. They seek to obtain a general picture of people's livelihood systems; and to gain an understanding of goat production and feeding systems, and goat-keepers' problems. The researchers did not have a predetermined list of

problems. The goat-keepers were asked to list *any* problems they considered to be important: and rank them in terms of their relative importance (for example, water scarcity 1st, disease 2nd, feed scarcity 3rd). In villages where people from different castes keep goats for different reasons, or use different production practices, these groups were interviewed separately, as their ranking of problems could also differ. The results of the ranking were generally cross-checked with other survey findings. In some cases, problem ranking was followed by the use of participatory problem tree analysis to deepen understanding of the problems.

Results

Table 1 gives some information about rainfall and certain agro-ecological characteristics of the four survey districts that have a bearing on the nature of the constraints experienced by goat-keepers.

Tables 2-6 show the rankings of constraints that were given by male goat-keepers in 15 villages to members of the project team during 1997-1999. (Women were also interviewed, but it was sometimes more difficult to get rankings from them. Their answers are often, but not always, similar to men's.) Disease is an important constraint in all three districts, but otherwise there are some major differences. The overall results can be summarised as follows, although there may be exceptions.

In Bhavnagar, the relatively low rainfall is reflected in the fact that the most serious constraint is water scarcity: this is followed by feed scarcity, and then by disease. In Udaipur, disease is perceived as the main problem: water scarcity and feed scarcity are also serious constraints in some villages. In Bhilwara, water scarcity is seldom a priority issue, and feed scarcity has moved to the number one constraint. Lack of a breeding buck is the second most important constraint in the Bhilwara villages.

In Vidisha, the picture is different again, with theft the most serious problem: more goats are lost through theft than through disease. This is at least partly related to the cover afforded by the forests to the thieves. Theft is done by small organised groups (3-5) of men, who carry slings and wear masks, making it difficult for the goat-keepers to catch and identify them: the stolen goats are taken away in a motor vehicle. Predators (such as jackals and species of wild cats) are another new problem in Vidisha, which is again related to the relative abundance of forests. Feed scarcity in the dry season is not a constraint here, partly because of the feed available in the forest and partly because the goats graze on nutritious crop residues during the first two months of the dry season.

Marketing is hardly ever mentioned as a problem, but there is evidence that it is. BAIF's work in Bhilwara has shown that goat-keepers are often paid low prices by traders, and that once they know the weight of their animals and become more aware of market rates for goats they are able to negotiate higher prices. Nor is the availability of family labour for herding often mentioned as a constraint by goat-keepers. However, a regression analysis that tested the relationship between herd size and other variables showed that the availability of household labour is one factor that is "uniformly important in determining the herd size" (Sagar and Ahuja, 1993).

Gender differences in ranking of constraints

The different responsibilities of men and women in livestock production are liable to influence their perceptions of what are the main production constraints or problems. This is illustrated by men and women from scheduled castes in Kumbhan village, Gujarat. Men, who were responsible for disease management, identified disease as the only problem. By contrast, women, who were responsible for fetching drinking water from the village well for the goats (which were partly stall-fed), ranked water scarcity as the main constraint, and did not include disease as a constraint.

Deepening understanding of problems - scratching below the surface

The initial identification of problems, and discussions with livestock-keepers about them, are often superficial. For example, general discussions with Rabaris in Kumbhan and Valukad villages (Table 2) and Scheduled Caste women in Kumbhan (see Table above) identified water scarcity in the dry season as a constraint. However, more detailed discussions revealed that the nature of the water scarcity problem was different in each case.

For Rabari men in Kumbhan, for whom livestock is the main enterprise and who herd their animals several kilometres each day, a major dimension of the problem (reduced milk production was another important dimension) was the distance they have to walk with their animals to find water in the dry season. Whereas for the women belonging to scheduled castes, who mainly stall-feed their 1-2 goats, the problem was that they have to walk two kilometres to the village well to fetch water and bring it back to the home. In Valukad, water scarcity was so severe that people were dependent on tankers bringing water every day, from which they purchased it. It is important to elucidate differences in the nature of problems like water scarcity, as the required intervention may be different in each case.

Use of problem trees Problem trees are a very useful diagrammatic tool for analysing problems and gaining a more in-depth understanding of their nature (Peacock, 1996). They involve identifying a core problem, the factors causing it, and the effects that it has. The core problem is represented as the trunk of the tree, the causes as its roots and the effects as its branches. In the experience of the

BAIF/NRI project, *participatory* problem trees (i.e. ones constructed by livestock-keepers), also reveal how the latter perceive problems and relationships, which may be different from how outsiders see them. (For an example of one see Conroy and Rangnekar, 1999).

Human dimensions of livestock production problems

Studies of livestock problems and constraints usually describe problems as they affect the animals - for example, in terms of growth rates, mortality or milk production. However, there are often important human or socio-economic dimensions that need to be understood and taken into account. This is illustrated by the water scarcity examples given above, in which two of the groups described the problem in relation to demands on their labour, and the third in relation to expenditure. The Rabaris of Kumbhan also complained about how tired they were at the end of the day. A water infrastructure intervention by the BAIF/NRI project reduced their herding distances, and hence their fatigue. Their wives identified another human aspect of the problem: they observed that the reduction in fatigue had led to less arguments with their husbands and in disagreements being settled amicably (*ibid.*).

References

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Conclusions

The survey found that the ranking of constraints tends to vary from village to village, from one production system to another, and between men and women. There are also differences in both the ranking and the nature of constraints between agro-ecological zones. In addition, some of the constraints identified (e.g. theft, predators, water scarcity) are ones that are not conventionally addressed by livestock services agencies.

These findings point to the need for livestock service agencies in India to have broad mandates and to be flexible, if they are to be effective in helping goat-keepers address production problems. They also highlight the fact that the major constraints tend to be related to insufficient resources (feed, water, labour, cash etc.) rather than information needs *per se*. Thus, if the needs of poor goat-keepers are to be met, "there is a need either for appropriate messages based on an understanding of their objectives, options and constraints, or for complementary services to help address the constraints which currently prevent change" (Matthewman and Ashley, 1996).

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Table 1 Rainfall and Other Characteristics of the Four Districts Surveyed

District (State)	Mean annual rainfall (mm)	Other Characteristics
Bhavnagar (Gujarat)	550	Little forest. Some areas experiencing groundwater depletion and seawater ingress.
Udaipur (Rajasthan)	650	Hilly area. Some forest.
Bhilwara (Rajasthan)	700	Plains area. Little forest.
Vidisha (Madhya Pradesh)	1000-1200	Forest is relatively abundant

Table 2 Ranked constraints on goat production in three villages of Bhavnagar - Rabaris

Rank	Kumbhan	Valukad	Hanol
1	Water scarcity – summer	Water scarcity - all year	Disease
2	Forage scarcity – summer	Forage scarcity – summer	Quantity of crop residues in late winter/summer
3	Disease	Disease	Water scarcity

Table 3 Ranked constraints in five villages of Udaipur District - Tribals

Rank	Gopir	Jothana	Khakad	Kirat	Masinghpura
1	Disease	Fodder scarcity, water scarcity and disease*	Disease (diarrhoea)	Disease	Disease
2	-		Drinking water scarcity	Theft	-
3	-		Insufficient concentrates	Shortage of tree fodder	-

* The goat-keepers in Jothana saw these problems as inter-related.

Table 4 Ranked constraints in three villages of Bhilwara District (April 1999)

Rank	Iras	Laxmipura	Udaipura
1	Feed scarcity in summer season (lack of trees)	Feed scarcity in summer season (lack of trees)	Insufficient trees/shrubs for grazing
2	Lack of breeding buck	Lack of breeding buck	
3	Disease - mainly in rainy season	Disease - mainly in rainy season	

Table 5 Ranked constraints in two villages of Bhilwara District (November, 1997)

Rank	Patio ka khera (Bhils)	Patio ka khera (Gujars)	Indrapura (Gujars)
1	Shelter from rain (waterproof roof)	Disease (outbreak of E.T.)	Manpower for herding
2	Disease	Shelter from rain (waterproof roof)	Fodder scarcity, combined with cash constraint
3	Fodder scarcity in June	Fodder scarcity in June	

Table 6 Ranked constraints in two villages of Vidisha District (August 1999)

Rank	Navela	Mahavan
1	Theft	Theft
2	Disease	Predators
3	Predators	Diseases
4	Infected hoofs in rainy season	