Access to Services: Case of Marginal and Landless Livestock Farmers in Tamil Nadu of India

K. M. Sakthivel[1*], Prakash Khandekar[2], P. V. K. Sasidhar[3] and N. Narmatha[4]

[1]Department of Veterinary and Animal Husbandry Extension, Veterinary College and Research Institute, Namakkal, Tamil Nadu (637 002), India
[2]National Institute of Animal Physiology, Adugodi, Bangalore, Karnataka (560 030), India
[3]School of Extension and Development Studies, IGNOU, New Delhi (110 068), India
[4]Department of Veterinary and Animal Husbandry Extension, Veterinary College and Research Institute, Namakkal, Tamil Nadu (637 002), India

Article History

Manuscript No. 78
Received in 27th October, 2010
Received in revised form 31st January, 2011
Accepted in final form 21st February, 2011

Correspondence to

E-mail: sakthivelvet@gmail.com

Keywords

Rural household, livestock system, veterinary service, credit system

Abstract

A study was conducted among 200 households of marginal and landless livestock farmers in rural Tamil Nadu of India to determine the extent of their access to various support services and resources like animal health care, credit, education and common property resources (CPRs). Multistage sampling technique was used to select the respondents. Majority of the households (97.50%) contacted Veterinary Assistant Surgeon (VAS) when their animals fell sick, and 36.50% made 3-4 visits to veterinary dispensary. Nearly 87% households called VAS for home visit, and 57% paid INR 100-150 visit^{-1} for treatment. 56% households received credit in the past 3 years and not yet paid, while the remaining 44% were free from any debt. For majority of households (73.72%), the chief source of credit was money lenders. Though access to educational services has improved, much impact was not noticeable. CPRs are at the edge of extermination. Delivering the service of mobile veterinary clinics, encouraging veterinary graduates to start private veterinary clinics, conducting awareness campaign on common livestock ailments and management of CPRs, establishing community fodder farms, and improvement in formal credit system accessibility are recommended.

1. Introduction

Livestock production is a complex, multicomponent, interactive system dependent on land, water capital, human and organizational resources. Access to these and other support services like veterinary, marketing, transport, and educational facility determine the economic viability and sustainability of households involved in livestock production. In India, 70% of the small, marginal and landless households own livestock to whom livestock is an important source of livelihood (Natarajan, 2003). In most of the developing countries, poor have not been the primary clients of veterinary service (Heffernan and Sidahmed, 1998; LID, 1998). Poor households may face difficulties in acquiring livestock in the absence of effective credit mechanisms (Kinsey, 1994). To make livestock sector viable it is important to provide infrastructure facilities like animal health care, and feeding resources in the rural areas (Singh, 2004). Mechanisms are absent to identify the service needs of poor livestock keepers, and the ways and means to deliver them at minimum cost. Policy priorities for service delivery are often determined by the biases and beliefs of the decision makers (Ahuja and Redmond, 2004). It is estimated that INR 20,000 crores annually are lost on account of livestock diseases in India (GoI, 2009). The death of livestock due to disease causes not only economic loss but poses a serious threat to the livelihood security of the poor livestock keepers for the marginal farmers and the landless who derive 30 to 50% of income from livestock (Kurup, 2004). Understanding the extent of access to various services, and the way they cater to the need of poor livestock keepers is important to develop appropriate policies and programs for improving service availability and accessibility in rural areas. This study was taken up to assess marginal and landless livestock farmers' accessibility to various services and resources that determine the condition of livestock production in Tamil Nadu state of India. Various support services studied include access to veterinary services, credit services, educational facilities, and common property resources (grazing land and water bodies) assuming that they

play roles in conditioning the status of livestock production in the study area to a considerable extent.

2. Materials and Methods

An exploratory and descriptive research design was used in this study. Field study was conducted in Tamil Nadu, the southernmost state of the Indian peninsula, during 2004-2005. Two districts, namely Thiruvannamalai and Pudukkottai, were selected from north-eastern and southern region of the state, respectively. The rationale behind the selection of districts was high livestock density. A multistage random sampling procedure was followed. Two blocks were randomly selected from each of the two selected districts. They were Polur and Chetpet from Thiruvannamalai, and Arantangi and Thiruvarankulam from Pudukkottai districts. One *gram panchayat* (village council) was randomly selected from each of the four selected blocks. They were Athuvampadi (Polur), Mattaperiyur (Chetpet), Mookkudy (Aranthangi) and Kulamangalam (Thiruvarankulam). From each of the four *gram panchayats*, 25 marginal (landholding of less than 2.5 acres with at least one species of livestock) and 25 landless (landless laborers rearing at least one species of livestock.) households were selected employing quota sampling method. Thus total sample constituted 200 households of marginal and landless livestock farmers. Interview schedule, group discussion and observation were used for data collection. Frequencies and percentages were used for interpretation of quantitative data. Access to veterinary services was analyzed in terms of affordability and willingness to pay for veterinary services. Qualitative information was analyzed in terms of their content with reference to the concepts and relations they represent.

3. Results and Discussion

3.1. Access to veterinary services

Observations on access to veterinary services by the households of marginal and landless livestock farmers are presented in Table 1.

Overwhelming majority of the households (97%) contacted veterinary assistant surgeon (VAS) when their animals fall sick, and almost all reported that they were satisfied with the service of the VAS. 36.50% households made 3-4 visits, 31.50% made 1-2 visits, and 17% made more than 9 visits in a year to the nearby veterinary dispensary. Only a negligible 2% did not visit the veterinary dispensary during past one year. Almost all households visited veterinary dispensary for treatment or artificial insemination, not for seeking any advice from the VAS. Animal health care services are rendered by state department of animal husbandry and delivered at grassroot levels by VAS (in-charge of veterinary dispensary) and livestock inspector (in-charge of livestock sub-centers). Usually there is one veterinary dispensary for a cluster of around 8-10 villages. None of the study villages has its own veterinary dispensary. Hence villagers need to travel 3-5 km to reach veterinary dispensary. Dispensary for Athuvampadi village is situated at Kelur (5 km away from the village), for Mattaperaiyur at Mudaiyur (4 km away), for Mookkudy at Arantangi (3 km away), and for Kulamangalam it is located at Kothamangalam (3 km away). When sick animals are able to walk they take their animals walking to the dispensary; otherwise call VAS to home. Almost all households (97.50%) made at least a single visit to veterinary dispensary walking 3-4 km implies that households had utilized veterinary health services, though they had to walk for long.

Majority (86.50%) of the households reported that they called local VAS; while another 8.50% informed that they did not call VAS so far for home visit. Another 5% called livestock inspector/animal health assistant for home visits. Regarding fees paid for home visit, most of the households (56.65 %) paid INR 100-150 visit^{-1}, and perceived (56.07%) that fees charged by the VAS for home visit is reasonable. Medicines were also not purchased by most of the households since VAS brings medicines with him. An appreciable 22.54% paid less than INR 100, 15.03% paid INR 150-200, and a lesser percentage (5.78%) paid more than INR 200 home^{-1} visit. However, there is no much variation in fees charged to both categories of farmers by the VAS. Almost all of the studied households (96%) purchased drugs only on the prescription of VAS, while a few (4%) purchased directly from the stores without prescription. Table 2 reveals that diarrhea, indigestion, fever, repeat breeding and mastitis were the common disease conditions/ailments in the study area as reported by the households.

The highest mortality was observed in kids, followed by sheep, poultry and goats. Also some households lost all kids together during the past three years (Table 3 and 4).

Most householders were not able to report the disease name not even in local language. They just reported that kids died immediately after diarrhea, which might be the case of PPR (pestides petits ruminants). Death of livestock has an important bearing on their livelihood as well as livestock keeping in the future. Most households believe that if any goat or sheep dies, there is no luck for them, so they leave the occupation as such. Another reason reported by the VAS was that people never brought the animals immediately after they fall sick, rather they brought the animals in recumbent stage when chance of saving the animal is very less.

3.2. Access to credit services

Access to credit services and purpose of taking credit (loan) was found out and presented in Table 5. It reveals that 56% of the studied households received credit during past 3 years

Table 1: Access to veterinary services by the households of marginal and landless livestock farmers						
Who is contacted when animals fall sick						
Category	Marginal farmers (n=100)		Landless farmers (n=100)		Total households (N=200)	
	Frequency	%	Frequency	%	Frequency	%
VAS	96	96	99	99	195	97.50
Others	4	4	1	1	5	2.50
Number of visits made by households to veterinary dispensary during one year						
1-2	27	27	36	36	63	31.50
3-4	31	31	42	42	73	36.50
5-6	17	17	6	6	23	11.50
7-9	4	4	2	2	6	3
>9	21	21	13	13	34	17
No visit	0	0	4	4	4	2
Who is contacted for home visit						
VAS	85	85	88	88	173	86.50
Others	8	8	2	2	10	5
None	7	7	10	10	17	8.50
Fees paid to VAS during home visit (INR)						
<100	16	18.82	23	26.14	39	22.54
100-150	45	52.95	53	60.23	98	56.65
150-200	16	18.82	10	11.36	26	15.03
>200	8	9.41	2	2.23	10	5.78
Perception regarding fees paid to VAS for home visit						
Charging high	28	32.94	33	37.50	61	35.26
Reasonable	44	51.76	53	60.23	97	56.07
Charging less	13	16.30	2	2.27	5	8.67
Do they purchase drugs directly from stores?						
Yes	7	7	1	1	8	4
No	93	93	99	99	192	96
VAS=Veterinary assistant surgeon						

but not yet paid, while the remaining 44% were free from any debt during the said period. However, figures were less as compared to national (60.40 %) and state (74.50 %) figures of indebted households (GoI, 2005). Nevertheless, average debt amount household^{-1} accounts to INR 25,245 in the study area. Regarding the source of credit, majority (73.22%) obtained credit from money lenders, while a lesser percentage of 14.28% and 9.82% received from commercial banks and friends/relatives, respectively. Only a meager 2.68% obtained credit from self-help groups. Householders obtained credit for purposes like social function (19.64%), medical expenses (15.18%), marriage (14.29%), purchase of food grains (11.61%), education (11.61%) and purchase of agricultural inputs (9.82%). Credit was also obtained for the purpose of migration to foreign countries (6.25%) and housing (4.46%). A negligible number of respondents obtained credit for the purpose of getting electricity for their houses (1.79%), crop loan payment (1.79%), purchase of animals (1.79%), debt payment (0.89%), and cart purchase (0.89%). It is evident that both marginal and landless livestock farmers do not have much access to formal credit system, and social function, medical expenses and marriages were found to be the most important reasons that make them to be indebted. Therefore, formal credit support system is essential to provide credit to the farmers to protect them from debt trap.

3.3. Access to educational facilities

There is only one government high school (up to 10th at

Table 2: Common diseases/ailments affecting livestock						
Conditions/ Diseases	Marginal farmers (n=100)		Landless farmers (n=100)		Total households (N=200)	
	Frequency	%	Frequency	%	Frequency	%
Diarrhea	58	29	74	37	132	66
Indigestion	57	28.50	38	19	95	47.50
Fever	50	25	43	21.50	93	46.50
Repeat breeding	28	14	19	9.50	47	23.50
Mastitis	16	8	24	12	40	20
Respiratory problem	16	8	22	11	38	19
Foot and mouth disease	24	12	13	6.50	37	18.50
Retained placenta	15	7.50	21	10.50	36	18
Dystocia	8	4	10	5	18	9
Sheep pox	0	0	14	7	14	7
Worm infestation	1	0.50	8	4	9	4.50
Skin infection	9	4.50	0	0	9	4.50
Abortion	2	1	7	3.50	9	4.50
Blue tongue	2	1	2	1	4	2
Trypanosomiasis	1	0.50	3	1.50	4	2
Hemorrhagic septicemia	0	0	3	1.50	3	1.50
Bloat	1	0.50	2	1	3	1.50

Table 3: Mortality of livestock during last 3 years			
Conditions/ diseases	Number of animals lost by marginal farmers	Number of animals lost by landless farmers	Total animals died
Kid	127	160	287
Sheep	54	45	99
Desi poultry	28	22	50
Goat	7	39	46
Calf	17	13	30
Lamb	2	23	25
Crossbred cow	16	8	24

Table 4: Reasons for death as reported by the households		
Species	Thiruvannamalai district	Pudukkottai district
Kid	Diarrhea	Diarrhea, orf (scabby mouth)
Sheep	-	Diarrhea, pox, PPR, blue tongue
Poultry	-	Ranikhet disease
Goat	Diarrhea	Diarrhea, enterotoxemia, bloat
Calf	Diarrhea, bloat	Diarrhea
Lamb	Diarrhea	Diarrhea
Cow	Bloat, trypanosomiasis, HS	FMD, anthrax

Kulamangalam village of Pudukkottai district and one government middle school (up to 8th standard) at Mookkudy village of Pudukottai district. Remaining two villages of Thiruvannamalai district had only middle school. Group discussion with people of the studied villages revealed that educational standard is better as compared to past 10 years in all the four villages. With the central government project *Sarva Shiksha Abhiyan* (mission education for all), number of school drop-outs has been comparatively reduced as reported by the school headmasters. It is possible for the householders to provide education for their children only up to eighth standard, and probably since most of the parents were illiterate they don't motivate their children to continue their studies beyond middle school. Moreover, they need to go to nearby towns or big villages for high school education, but money is the major constraint in continuing higher education. Hence, most of the

Table 5: Households' access to credit services						
Category	Marginal farmers (n=100)		Landless farmers (n=100)		Total households (N=200)	
	Frequency	%	Frequency	%	Frequency	%
Households who received/not received credit over a period of 3 years						
Received credit	55	55	57	57	112	56
Not received credit	45	45	43	43	88	44
Sources of credit						
Money lenders	32	58.18	50	87.72	82	73.22
Commercial banks	14	25.45	2	3.51	16	14.28
Friends/relatives	8	14.55	3	5.26	11	9.82
Self-help groups	1	1.82	2	3.51	3	2.68
Average amount of debt household^{-1} (INR)	15290.91		34850.88		25245.54	
Purpose of taking credit						
Social function	8	14.55	14	24.56	22	19.64
Medical expenses	4	7.27	13	22.81	17	15.18
Marriage	12	21.82	4	7.02	16	14.29
Purchase of food grains	5	9.09	8	14.02	13	11.61
Education	3	5.45	10	17.54	13	11.61
Purchase of agricultural inputs	11	20	0	0	11	9.82
Migration to foreign countries	3	5.45	4	7.02	7	6.25
Housing	5	9.09	0	0	5	4.46
Electricity connection	1	1.82	1	1.75	2	1.79
Crop loan payment	2	3.64	0	0	2	1.79
Purchase of animals	0	0	2	3.51	2	1.79
Debt payment	0	0	1	1.75	1	0.89
Cart purchase	1	1.82	0	0	1	0.89

children lose their interest in studies, and are forced to go for work to earn money.

3.4. Access to common property resources

3.4.1. Grazing land/pasture

Except one village (Mookkudy in Pudukkottai district), other three study villages were devoid of permanent pasture/grazing land. Observation and discussion with the villagers revealed that grazing land is not taken care by the government or village council, and has become a common ground for festivals in many occasions. The vegetation is also very scarce. Marginal farmers usually graze their animals in their own fields, whereas the landless livestock farmers graze their animals at far away places where they find vegetation. The general opinion was that the quantity and quality of grazing lands in all the four villages had decreased considerably over time.

3.4.2. Water bodies

Tank water is the main source of irrigation for majority of marginal farmers in both the districts except for those who have own tube and bore wells. As tanks are dependent only on rain water, the absence of monsoon in the past four years had considerably reduced water levels in almost all tanks in the studied villages. Villagers informed that at present no one is using tank water for irrigation purpose. In Kulamangalam village, where more number of ponds were present than tanks, many ponds were completely dried off. Only some bushy vegetation was seen in the areas where ponds existed.

4. Conclusion

Service of government veterinary doctors (VAS) is important for marginal and landless livestock farmers in Tamil Nadu of

India. Since villagers are willing to pay for service at doorstep, service of government mobile veterinary clinics on payment basis is recommended for a cluster of 10-15 villages. These clinics should carry medicines for the identified important diseases apart from artificial insemination unit. Unemployed veterinary graduates may also be encouraged to establish private veterinary clinics, since villagers are willing to pay for quality and timely service. The rural poor are not fully aware of the common, specific and non-specific diseases in general and disease management in particular. Therefore, awareness campaign on identification of common livestock ailments and their management is required to be conducted. The absence of formal credit system has put majority of households in debt trap. Therefore, facility of formal credit system needs to be improved. Unemployed rural youths are to be encouraged and supported to establish community fodder farms on government wastelands. Besides, awareness campaign and training program may be conducted on management of common property resources to safeguard the interests of marginal and landless livestock farmers.

5. References

Ahuja, V., Redmond, E., 2004. Livestock services and the poor. Tropical Animal Health and Production 36(3), 247-268.

GoI (Government of India), 2005. Press note on indebtedness of farmer households (January-December 2003). National Sample Survey Organization, Ministry of Statistics and Program Implementation, New Delhi, (Available from http://www.mospi.nic.in/press_note_ifh_nss59.htm. Retrieved on December 2006).

GoI (Government of India), 2009. Centre to alleviate poverty through livestock centric employment agenda, Press Information Bureau, Press releases dated July 05, 2009 (Available from: http://pib.nic.in/release/release.asp?relid=49744 .Retrieved on April 2010).

Heffernan, C., Sidahmed, A., 1998. The delivery of veterinary services to the rural poor: a framework for analysis. In: Proceedings of the Development Studies Association Conference: Provision of Livestock Services, University of Reading, Reading, UK, 19.

Kurup, M.P.G., 2004. Production structure and cost competitiveness of livestock production in Asia. In: Ahuja, V. (Ed). Livestock and Livelihoods: Challenges and Opportunities for Asia in the Emerging Market Environment, National Dairy Development Board of India and Food and Agriculture Organization of the United Nations, 372.

Kinsey, E., 1994. Aspects of credit in dairy development: the Heifer Project International Tanzania experience, Tanzania Society of Animal Production Proceedings (1994), 21, 58-68.

LID (Livestock in Development), 1998. Strategies for improving DFID's impact on poverty reduction: a review of best practice in the livestock sector. Report for the Policy Research Program, DFID (Department for International Development) Natural Resources Policy and Advisory Department, as part of CNTR 97 4295A. LID, Crewkerne, Somerset, UK, 71.

Natarajan, C., 2003. Importance of information on diseases of cattle for the poor. In: Rao, S.V.N. and Ramkumar, S. (Eds). Workshop proceedings on Cattle health issues in the peri-urban regions: potentials of information in coping with poverty. Rajiv Gandhi College of Veterinary and Animal Sciences, Pondicherry, 7.

Singh, D., 2004. Livelihood concerns in water resources management regimes in scare conditions. Indian Journal of Agricultural Economics 59(1), 121-137.