Role and Contribution of Livestock in the Livelihood of Marginal and Landless Livestock Farmers in Rural Tamil Nadu, India

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ABSTRACT

An exploratory study was conducted in Thiruvanamalai and Pudukkottai districts of Tamil Nadu with the objective of assessing the role and contribution of livestock in the livelihood of marginal and landless livestock farmers. Data were collected from 100 marginal farmers and 100 landless livestock farmers through a well-structured interview schedule following multistage sampling. The study revealed that the major livelihood activities of marginal farmers and landless livestock farmers were livestock farming, farm labour, non farm labour, agriculture and migration to urban areas. Income from livestock rearing was the major contributor to household's gross income accounting for more than 50 per cent of the gross income for more than 60 per cent of the households. Further, over a period of time, the contribution to total income from agriculture and farm labour had decreased while the contribution from livestock and non farm labour had increased. Though Livestock provided livelihood security, the households were in a stage of transition, as they are not able to cope with the existing situation. Although livestock has acted as a buffer in maintaining their status, lack of resources combined with drought and lack of labour has deprived them to lower economic strata. Thus immediate interventions are needed to protect these households from the trap of poverty.

Keywords: *Livestock; Livelihood; Marginal farmer; Landless livestock farmer;*

Most of the approximately 1 billion extremely poor people living in rural areas (*World Bank, 2008*) depend directly or indirectly on agriculture for their livelihoods. In economies that remain heavily dependent on agriculture, livestock form an integral part of predominantly smallholder diversified farming systems. In these settings – which remain the norm across the low-income world, especially where poverty rates are highest – the majority of rural households keep some farm animals, and poor households are even more likely to do so (*Pica-Ciamarra et al., 2011*). Nearly one billion head of livestock are believed to be held by more than 600 million poor smallholders. (*IFAD, 2004*)

The poverty dimension in Asia involves marginal / small farmers, the landless, tribal groups and displaced persons. Livestock are strongly associated with livelihood of all these groups. Livestock comprise one portion of overall livelihood strategies of rural households in India. To understand its true significance, the livestock sector needs to be viewed as a sector linked with the livelihood of millions of rural households (over 70%) of all rural households) who depend on livestock farming for supplementary income (*Kurup, 2002*). Livestock in India is kept mainly by the small landholders and the landless that constitute bulk of the rural population (*Birthal et al, 2002*). The ownership of livestock is more evenly distributed with landless labourers and marginal farmers in India. The progress in this sector will result in a more balanced development of rural economy (*Sharma et al, 2003*). To improve the livestock based livelihoods of the rural poor, it is essential to know the role and extent of contribution of livestock to their livelihoods. Thus, the study was taken up to understand the role and contribution of livestock in livelihood of marginal and landless livestock farmers in rural areas of Tamil Nadu.

METHODOLOGY

The study was conducted in Northwestern and southern Zones of Tamil Nadu to represent two diverse agro climatic zones. Multistage sampling procedure was used to select the respondents for the study. Based on high livestock density, two districts namely Thiruvannamalai and Pudukottai districts were selected from Northwestern and southern zone respectively. From each district, two blocks were randomly selected and from each block one village was randomly selected. From each of the selected villages, 25 households of marginal farmers and 25 households of landless livestock farmers were selected by applying quota sampling to constitute a sample size of 200 respondents.

RESULTS AND DISCUSSION

Livelihood portfolios of marginal and landless livestock farmers : A perusal of Table 1 and 2 indicates that 14 different portfolio combinations were undertaken by the households of marginal farmers and 20 different portfolio combinations were undertaken by households of landless livestock farmers. Except two households, the remaining 98 households of marginal farmers had undertaken at least three livelihood activities to support their livelihood. One marginal farmer household had taken up five activities. Livestock keeping along with agriculture and farm labour (25.00%)was the predominant livelihood portfolio combination among the households of marginal farmers, followed by livestock keeping with agriculture and non farm labour (17.00 per cent). For the households of marginal farmers, livestock keeping is complementary as the byproducts of agriculture viz. crop residues are used for feeding livestock. Further, land holding size of the marginal farmers are undersized than the small and large farmers, they work in the field of small farmers and large farmers during off seasons as labourers. Livestock keeping along with farm labour was the predominant combination (26.00%) for the landless livestock farmers, followed by livestock keeping along with farm labour and migration to urban areas (17.00% Working in the fields of other farmers and livestock rearing were the only options available for the households of landless livestock farmers in rural areas. Taking up of more number of livelihood activities viz. non-farm labour and migration in search of job in urban areas indicates that even in rural areas it is difficult for the households of marginal and landless livestock farmers to survive only on agriculture and allied activities.

Farm and non-farm employment status of households: Table 3 depicts the farmer's perception of average number of days of farm labour availability in a year. Majority of the respondents (73.87%) had 50 to 100 man days of work in a year and while 15.32 per cent of the respondents had less than 50 man days of farm labour in a year. Only 10.81 per cent of respondents had 100-200 man days of work in a year.

With regard to non-farm work, it could be noted that majority (66.67%) of respondents had put 50-110 man days of work and another 21.74 per cent had put 100-200 days of labour work. About 9 per cent reported that they had less than 50 days of non-farm labour. The

Table 1: Different livelihood portfolio combination of marginal farmers

Portfolio combinations	No. of portfolios	No.	%
Livestock keeping alone	1	1	1.00
Livestock keeping + Agriculture	2	15	15.00
Livestock keeping + Agriculture + Farm labour	3	25	25.00
Livestock keeping + Agriculture + Non-farm labour	3	17	17.00
Livestock keeping + Agriculture + Migration	3	6	6.00
Livestock keeping + Agriculture + Others	3	6	6.00
Livestock keeping + Non-farm labour + Others	3	1	1.00
Livestock keeping + Agriculture + Farm labour + Migration	4	14	14.00
Livestock keeping + Agriculture + Non -farm labour + Migration	4	6	6.00
Livestock keeping + Agriculture + Migration + Others	4	3	3.00
Livestock keeping + Agriculture + Farm labour + Non farm labour	4	2	2.00
Livestock keeping + Agriculture + Non-farm labour + Others	4	1	1.00
Livestock keeping + Agriculture + Farm labor + Others	4	2	2.00
Livestock keeping + Agriculture + Non-farm labour + Migration + Others	5	1	1.00

Table 2: Different livelihood portfolio combination of landless livestock farmers

Portfolio combinations	No. of portfolios	No.	%
Livestock keeping alone	1	2	2.00
Livestock keeping + Farm labour	2	26	26.00
Livestock keeping + Non-Farm labour	2	9	9.00
Livestock keeping + Migration	2	5	5.00
Livestock keeping + Others	2	1	1.00
Livestock keeping + Farm labour + Migration	3	17	17.00
Livestock keeping + Farm labour + Non farm labour	3	10	10.00
Livestock keeping +Non-farm labour + Migration	3	8	8.00
Livestock keeping + Agriculture + Farm labour	3	3	3.00
Livestock keeping + Agriculture + Others	3	1	1.00
Livestock keeping + Agriculture + Non-farm labour	3	2	2.00
Livestock keeping +Non-farm labour + Others	3	1	1.00
Livestock keeping + Farm labor + Others	3	2	2.00
Livestock keeping + Agriculture + Farm labour + Migration	4	2	2.00
Livestock keeping + Agriculture + Non-farm labour + Migration	4	4	4.00
Livestock keeping + Farm labour + Non farm labour + Migration	4	3	3.00
Livestock keeping + Agriculture + Farm labour + Non farm labour	4	2	2.00
Livestock keeping +Non-farm labour + Migration + Others	4	1	1.00
Livestock keeping + Agriculture + Non-farm labour + Others	4	1	1.00

Table 3: Average number of farm and nonfarm labour available in a year

Category	Marginal farmers		Landless livestock farmers		Total households	
	No.	%	No.	%	No.	%
farm labour	(n=43)		(n=68)		(N=111)	
<50 days	11	25.58	6	8.82	17	15.32
50-100 days	27	62.80	55	80.89	82	73.87
100-200 days	5	11.52	7	10.29	12	10.81
Nonfarm labour	(n=28)		(n=41)		(N=69)	
<50 days	4	14.29	2	4.88	6	8.69
50-100 days	21	75.00	25	60.97	46	66.67
100-200 days	3	10.71	12	29.27	15	21.74
200-300 days	0	0.00	2	4.88	2	2.90

data indicates that the average number of days of non-farm labour availability was slightly higher than farm labour availability. Seasonality of agricultural operations combined with the severe drought in the past had completely reduced farm work in the study area. It was also reported that availability of farm work is less during summer season while availability of non-farm work is less during the rainy season. Majority of the respondents belonged to middle age group and they find it difficult to go for non-farm work to faraway places and this might be the preference for farm work than non -farm work.

Contribution of income from livestock to total income : A perusal of Table 4 reveals that the income from livestock accounts for 40 to 60 per cent of total income to 46.00 per cent of households. For another 29.50 per cent and 15.00 per cent of households, it was around 20 to 40 and 60 to 80 per cent respectively. For a lesser percentage (6.00%) of households it was less than 20 per cent. Only a meagre (3.50%) had 80 to 100 per cent income contribution from livestock income to gross income.

Table 4: Distribution of households according to percent share of income from livestock to total income

% share	Marginal (n=100)		Landless (n=100)		Total (N=200)	
	No`	%	No.	%	No.	%
<20%	7	7.00	5	5.00	12	6.00
20-40%	37	37.00	22	22.00	59	29.50
40-60%	46	46.00	46	46.00	92	46.00
60-80%	8	8.00	22	22.00	30	15.00
80-100%	2	2.00	5	5.00	7	3.50

The data also reveals that for more than 60 per cent of the households income from livestock was the major contributor to gross income accounting for more than 50 per cent of the gross income. The contribution was higher for landless livestock farmers than marginal farmers indicating that more dependency of landless livestock farmers on livestock to secure their livelihood. The contribution of livestock was relatively higher to the total income although all the households had undertaken two or three livelihood activities implies that the principal source of income for both the marginal and landless livestock farmers in the study area was livestock keeping. Diversification into livestock and increasing livestock productivity should form part of strategies for poverty reduction in developing countries, because a large share of the rural poor keeps livestock as contributors to their livelihoods (*FAO, 2009*).Thus, livestock keeping being the principal source of income for both the marginal and landless livestock farmers implies that there is an urgent need to create policies, regulations, institutions and functional services not only for sustaining the productivity of livestock of marginal and landless livestock farmers but to get a fair price for their produce.

Households' perception of overtime change in income contribution from different livelihood portfolios: Table 5 depicts the household's perception of overtime change in income contribution from different livelihood portfolios. It could be noted that nearly half (48%)of households perceived that their income from livestock keeping had increased overtime. However an appreciable per cent (36.50%) of households felt no change and for around 12 per cent of the households it had declined overtime. The increase in income was found to be more for the landless livestock farmers when compared to the marginal farmers. Majority of the households (72.00%) of marginal farmers perceived that their income from agriculture had decreased overtime while 22.00 per cent of the households reported no change overtime. This indicates the declining trend in income from agriculture over a period of time. For about 58 per cent of the households; the contribution of farm labour to their livelihood has remained same overtime. An appreciable 36.06 per cent of the households opined that their income from farm labour has decreased and none reported that their income from farm labour had increased over time. As far as non-farm labour was concerned, an overwhelming majority (78.26%) of the households reported that the contribution of non-farm labour to gross income has remained unchanged over a period of time. Only a few households (15.94%) reported that there was an increase in income from non-farm labour overtime. A meagre 2.00 per cent of the households felt that their income share from non farm labour has decreased overtime.

Table 5: Households perception of overtime change in income contributions from different livelihood portfolios

Category	Marginal (n=100)		Landless (n=100)		Total (N=200)	
	No.	%	No.	%	No.	%
Livestock						
Increased	38	38.00	57	57.00	95	47.50
Decreased	17	17.00	6	6.00	23	11.50
Remains same	40	40.00	33	33.00	73	36.50
Can't say	5	5.00	4	4.00	9	4.50
*Agriculture**						
Increased	0	0.00	0	0.00	0	0.00
Decreased	72	72.00	0	0.00	72	72.00
Remains same	22	22.00	0	0.00	22	22.00
Can't say	6	6.00	0	0.00	6	6.00
Farm labour	n=43		n=68		N=111	
Increased	0	0.00	0	0.00	0	0.00
Decreased	14	32.56	26	38.24	40	36.06
Remains same	25	58.14	39	57.35	64	57.64
Can't say	4	9.30	3	4.41	7	6.30
Non-Farm labour	n=28		n=41		N=69	
Increased	6	21.43	5	12.20	11	15.94
Decreased	2	7.14	0	0.00	2	2.90
Remains same	18	64.29	36	87.80	54	78.26
Can't say	2	7.14	0	0.00	2	2.90

*only marginal farmers

The results also reveal that among the major four portfolios, the income contribution from agriculture and farm labour to total income had decreased over time, while the income contribution from livestock and non-farm labour to the total income had increased overtime. The increase in share of livestock to livelihood was more when compared to non-farm income as felt by majority of the respondents. The continuous drought over the years might be the reason for decrease in agricultural and farm labour income, making households to depend more on livestock for their livelihood. It was also observed that even after decreasing the herd size, livestock continues to be the single largest contributor in the livelihood of the people in the study area overtime.

Table 6: Households perception for overtime increase in expenditure pattern

Expenditure category	Marginal (n=100)		Landless (n=100)		Total (N=200)	
	No.	%	No.	%	No.	%
Food grains	53	53.00	60	60.00	113	56.50
Medical	24	24.00	28	28.00	52	26.00
Education	7	7.00	10	10.00	17	8.50
Livestock feed	4	4.00	2	2.00	6	3.00
Agriculture input	5	5.00	–	–	5	2.50
Education & medical	2	2.00	–	–	2	1.00
Veterinary aid	1	1.00	–	–	1	0.50
Social function	1	1.00	–	–	1	0.50
Marriage	1	1.00	–	–	1	0.50
Entertainment	1	1.00	–	–	1	0.50
Food and social	1	1.00	–	–	1	0.50

Over time increase in expenditure pattern of households : The households were asked to mention which category of expenditure has increased overtime and the responses from the households fitted into 11 categories and were tabulated in Table 6.

It could be noted that 56.50 per cent of households reported that the overtime increase in expenditure was for food grains followed by medical (26%) and education (8.50%). A few have mentioned items like livestock feed (3.00%), input for agriculture (2.50%), education and medical treatment (1.00%). Less than one per cent of the household mentioned that the expenses for veterinary aid, social function, marriage, entertainment, food and social function had increased overtime. Inflation along with the monsoon failure has triggered the prices of food grains must be the reason.

Perceptions of economic status by the farmers and reasons for overtime change in economic status: A perusal of Table 7 reveals that 44.00 per cent of the households reported no change in their economic status overtime. About 41.50 per cent of the households however, reported an upward economic mobility while a 14.50 per cent of households reported a downward economic mobility. Lack of resources (62.07%), drought (17.24%), human diseases (13.70%), Lack of labour and animal diseases (3.44%) were the reasons reported by households for decline in economic status. Improvement in livelihood was largely by livestock although earning from migration and nonfarm income was also cited by few households. The livelihoods of the households were in a stage of transition, as they are not able to cope with the existing situation. Although livestock has acted as a buffer in maintaining their status, lack of resources combined with drought and lack of labour has deprived them to lower economic strata. Thus immediate interventions are needed to protect these households from the trap of poverty.

Role of livestock in livelihood : To understand the role of livestock in their livelihoods, households were asked to rank order how they spend their income earned exclusively from livestock. Households were able to rank maximum four items. So the first rank was given maximum 4 points followed by three points for each second rank and so on. Finally the last rank was accorded the least (1 point) and for each category the total points were calculated. Highest share of income from livestock goes to purchase of food grains (783 points), followed by purchase of animal feed (371 points), human health (201 points), repay loans (131 points), social function (129 points), children's education (119 points), clothing (50 points), marriage expenses (22 points) and reinvest in livestock (18 points).

It could be concluded from the above findings that

Table 7: Households perceived change in economic status

Expenditure category	Marginal (n=100)		Landless (n=100)		Total (N=200)	
	No.	%	No.	%	No.	%
Better now	41	41.00	42	42.00	83	41.50
Poorer now	14	14.00	15	15.00	29	14.50
No change	45	45.00	43	43.00	88	44.00
Households perception of reasons for decline in economic status	No.	%	No.	%	No.	%
Lack of resources	5	35.71	13	86.67	18	62.07
Drought	5	35.71	–	–	5	17.24
Human diseases	2	14.30	2	13.33	4	13.79
Non availability of labour	1	7.14	–	–	1	3.44
Animal diseases	1	7.14	–	–	1	3.44
Households perception of reasons for improvement in economic status						
Category	No.	%	No.	%	No.	%
Income from livestock	37	90.26	33	78.57	70	84.31
Migration to urban areas	2	4.87	3	7.14	5	6.02
Non farm income	2	4.87	2	4.76	4	4.82
Hard work	–	–	2	4.76	2	2.41
Government sector	–	–	2	4.76	2	2.41

livestock keeping has been the bread earner for most of the households of marginal and landless livestock farmers as the income generated by livestock keeping was used for purchase of food grains. In case of households with dairy animals a portion of income from livestock keeping goes for the purchase of feed. An observation of payments made in a milk society revealed that most of the members, after receiving payment for milk, went to shops to repay the amount for feed that was purchased through loan. It was also observed for the households of Pudukkottai district, the third highest priority was social functions, while it was human health care in case of Thiruvannamalai district. The income from livestock helps to participate more in social functions called "Thevai" in Pudukkottai district. Thus in addition to the household food security, human health and economic roles, livestock has important social and cultural roles in rural societies.

CONCLUSION

For the poor, illiterate rural work force, with the failure of agriculture in the absence of regular monsoon and decrease in availability of farm labour, livestock keeping is a boon to rescue and secure their livelihood particularly for the marginal and landless livestock farmers of rural Tamil Nadu. The highest share of income from livestock keeping goes to purchase of food grains and livestock had been the bread earner for most of the households of marginal and landless livestock farmers. Though Livestock provided livelihood security, the households were in a stage of transition, as they are not able to cope with the existing situation. Although livestock has acted as a buffer in maintaining their status, lack of resources combined with drought and lack of labour has deprived them to lower economic strata. Thus immediate interventions are needed to protect these households from the trap of poverty.

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