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Resilience for Livestock by Displaced Farm Women in Hill Districts of Assam

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ABSTRACT

A study on resilience practiced in rearing livestock by the displaced tribal farm women in hill districts of Assam was carried out by selecting one hundred respondents each from two districts of Assam namely Dima Hasao and Karbi Anglong through stratified random sampling, making the total sample size of 200. A pre-tested, reliable and valid interview schedule encompassing a check list containing eighteen items was used for data collection. It was found that that the average resilience measures for livestock was 22.85 out of the total obtainable score of 54. As such, the resilience measures for livestock were more or less in the medium range. The mean differences test revealed no significant variations in measures of resilience for livestock between the two districts. Further majority of the respondents revealed that they "kept the animals together in safer place whenever required", "maintained regularity in free grazing", "provided supplementary feed when in scarcity", "took special care for pregnant animals in feeding and husbandry practices" and "largely interested in cross breeding and rearing of improved livestock".

1. Introduction

Livestock play a key role in the lives of poor, rural people in developing countries (Delgado *et al*., 1999; FAO, 2002). Livestock provide a safety net when crops fail but there are disease risks and capital or credit is required to start up enterprises (Dolberg, 2001). In fact livestock husbandry is regarded as a form of adaptation compared to crop agriculture because livestock are mobile and so can be moved to areas with available feed and water. So, they can be a boon and also a bane at the same time. Livestock producers have always used their knowledge of the environment and experiences to adapt to climatic changes but these traditional systems are proving insufficient to meet current challenges. Therefore the study was undertaken to know the status of resilience for livestock practised by displaced farm women in hill districts of Assam in terms of changing roles. As per 2011 report by the Norwegian Internal Displacement Monitoring centre stated that about 4,50,000 people were displaced in the North East, in that year with 1,70,000 displaced in Assam alone (A report from Times of India, 2014)

2. Materials and Method

The study was carried out in the two hill districts of Assam namely, the Karbi Anglong and the Dima Hasao where the migration of farm families is a common phenomenon because of dominating slash and burn method of agriculture in addition to many other factors. Therefore, the displacement of farmers is relatively more in number as compared to all other districts of the state. The study revolved around the women engaged in livestock farming, especially in the generally categorized remote, difficult and disturbed areas. This was again an outcome of a phenomenon where the migrated farmers used to go back to interior places in search of more amount of fertile land. Data were collected by personally interviewing the respondents selected through stratified random sampling with a specially designed check list in the form of a summated rating scale during the period from January 2016 to July 2016 after obtaining prior permission from them and their peers. The strata of the study were two districts, followed by two blocks from each district and then 50 each randomly selected displaced women from each of the blocks.

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For obtaining response the respondents were offered a check list of eighteen statements and they were asked to respond in either of the three degrees ranging from "mostly", "frequently" and "occasionally" with their corresponding values of 3, 2 and 1 respectively. As such the minimum and maximum obtainable scores for a respondent were 18 and 54 respectively as the incorporated statements were selected at 20 per cent confidence level. These eighteen statements were collected from most commonly featuring literatures, maximum mode obtained from the academic experts, administrators of the autonomous councils and the community leaders. Initially there were thirty two such statements. Pre-testing of the interview schedule was done in the nearby simulating pockets of Cachar district to see the reliability of the check list. Eight statements were removed after the pre-testing due to their coverage in other items included in the list or non-relevance of them in such areas. The reliability worked out was 0.89. As far as the validity was concerned, content validity was ensured in consultation with the help of the academic experts, administrators of the autonomous councils and the community leaders where each one of the items were individually checked for their relevance and then they were placed sensitively to maintain the flow of the items in the check list. Data as such collected from 200 livestock farm women from proportionate different ethnic (tribal) groups in a random manner were authenticated with the help of the peer groups and statutory village administrators, analyzed to find out the results, based on which conclusions were drawn and recommendations were put forwarded.

3. Result and Discussion

A perusal of the data presented in Table 1 indicated that the average scores of resilience measures for livestock adopted were 20.81, 24.90 and 22.85 in Dima Hasao, Karbi Anglong and pooled sample with their standard deviations as 4.59, 4.29 and 4.88 and ranges as 11-31, 15-33 and 11-33 respectively out of the total obtainable score of 54. So, as a whole the resilience measures for livestock were more or less mediocre

This was understandable because of the slash and burn method of agriculture was dominating the scenario. Similar views were also received from Albrechts (2015). Based on mean and standard deviation, the respondents were categorized into low, medium and high groups. Their distribution were 14.00 per cent, 78.00 per cent and 0.00 per cent in Dima Hasao, 14.00 per cent, 66.00 per cent and 20.00 per cent in Karbi Anglong whereas 10.50 per cent, 73.50 per cent and 16.00 per cent in pooled sample respectively. The mean scores showed no significant differences between the respondents of the districts..

The findings expressed that the displaced woman farmers in both the districts had been following the traditionally acquired knowledge and understanding in case of adopting measures of resilience for their livestock.

In order to know more details about the measures of resilience for livestock, frequencies obtained in different areas of resilience for livestock were presented in Table 2. The table showed that the highest number of 88.00 per cent followed by 65.00 per cent, 52.00 per cent, 51.00 per cent, 50.00 per cent, 27.00 per cent, 18.00 per cent, 15.00 per cent, 13.00 per cent, 9.00 per cent, 3.00 per cent, 2.00 per cent, 2.00 per cent ,0.00 per cent, 0.00 per cent, 0.00 per cent, 0.00 per cent and 0.00 per cent of the respondents attached their "mostly degree" of association to "Keeping the animals together in safer place whenever required", "Maintaining regularity in free grazing", "Providing supplementary feed when in scarcity", "Taking special care for pregnant animals in feeding and husbandry practices", "Largely interested in cross breeding and rearing of improved livestock", "Early treatment of animals whenever sick", "Selling off the livestock at the time of crisis and again rearing afresh", "Allowing more areas to the animals for grazing and exercise","Constantly supervising and regularly checking health of livestock", "Attending training and bringing training knowledge to utility", "Bringing feed from distant places and feeding the animals","Proper disposal of dung, urine and sewage", "Regular cleaning of the animal shed", "Timely vaccination", "Supplying additional feed regularly", "Working more time with animals for their comfort and production",

In order to know more details about the animal resilience, scores were obtained in a relative score card and the results were presented in Table 2. The Table showed that as many as eighteen statements were forwarded to the respondents for their agreement in either of the degrees ranging from mostly, frequently and occasionally. It could be seen from the Table 2 that the highest number of 71.50 per cent followed by 69.50 per cent, 63.00 per cent, 56.00 per cent and 51.50 per cent of the respondents attached their "mostly degree" of association with "Taking special care for pregnant animals in feeding and husbandry practices", "Keeping the animals together in safer place whenever required", Providing supplementary feed when in scarcity", Largely adopting cross breeding and rearing of improved livestock" and "Maintaining regularity in free grazing". It gave a clear indication that displaced women had not taken any additional step for livestock; all these activities were performed as a part of their traditional belief and understanding.

Table 1. Profile of the respondents on the basis of animal resilience

Variables	District	Mean	SD	Range	Low	Medium	High	't' value
Animal resilience	D H	20.81	4.59	11-31	14(14.00)	78(78.00)	0(0.00)	0.71^{NS}
	K A	24.90	4.29	15-33	14(14.00)	66(66.00)	20(20.00)	
	Pooled	22.85	4.88	11-33	21(10.50)	147(73.50)	32(16.00)	

^{NS} Non significant

*, Significant at 0.05 level of probability

**, Significant at 0.01 level of probability

Figures in parenthesis indicate percentage, DH=Dima Hasao, KA= Karbi Anglong

"Developing a market for livestock and their products" and "Taking Government help as and when required" respectively in Dima Hasao whereas in Karbi Anglong the correspondent figures were 51.00 per cent, 38.00 per cent, 74.00 per cent, 92.00 per cent, 62.00 per cent, 72.00 per cent, 69.00 per cent, 0.00 per cent, 46.00 per cent, 22.00 per cent, 12.00 per cent, 0.00 per cent, 0.00 per cent, 1.00 per cent, 0.00 per cent, 0.00 per cent, 0.00 per cent and 0.00 per cent. And in pooled sample 69.50 per cent, 51.50 per cent, 63.00 per cent, 71.50 per cent, 56.00 per cent, 49.50 per cent, 43.50 per cent, 7.50 per cent, 29.50 per cent, 15.50 per cent, 7.50 per cent, 1.00 per cent, 1.00 per cent, 0.50 per cent, 0.00 per cent, 0.00 per cent, 0.00 per cent and 0.00 per cent. It gave an indication that displaced women had not taken any additional step for livestock as far as the resilience was concerned.From the results it was evident that the displaced women of both the hilly districts of Karbi Anglong and Dima Hasao of Assam were concerned about their livestock only on traditional grounds and performed such activities in such manner which were traditionally known to them. No much advancement in livestock enterprise was observed. However, because of some traditionally backed mental makeup, they were concerned about the free grazing, nutrition and care to pregnant livestock, care of the animal when it was sick and of course vaccination. By and large, it could be said that the management part of livestock among the displaced women was a bit leisurely. Similar observations were also reported by (Dercon, 2009 and Ravallion *et. al.,* 2007).

Table 2. Frequency distribution of respondents on different areas of measures of resilience for livestock

Sl. No	Resilience	District	Degrees of information		
			Mostly	Frequently	Occasionally
1.	Early treatment of animals whenever sick	DH	27(27.00)	57(57.00)	17(17.00)
		KA	72(72.00)	27(27.00)	1(1.00)
		Pooled	99(49.50)	84(42.00)	18(9.00)
2.	Timely vaccination	DH	0(0.00)	1(1.00)	29(29.00)
		KA	1(1.00)	6(6.00)	20(20.00)
		Pooled	1(0.50)	7(3.50)	49(24.50)
3.	Maintaining regularity in free grazing	DH	65(65.00)	0(0.00)	0(0.00)
		KA	38(38.00)	9(9.00)	0(0.00)
		Pooled	103(51.50)	9(4.50)	0(0.00)
4.	Supplying additional feed regularly	DH	0(0.00)	8(8.00)	77(77.00)
		KA	0(0.00)	4(4.00)	91(91.00)
		Pooled	0(0.00)	12(6.00)	168(84.00)
5.	Taking special care for pregnant animals in feeding and husbandry practices	DH	51(51.00)	0(0.00)	21(21.00)
		KA	92(92.00)	5(5.00)	2(2.00)
		Pooled	143(71.50)	5(2.50)	23(11.50)
6.	Proper disposal of dung, urine and sewage	DH	2(2.00)	3(3.00)	86(86.00)
		KA	0(0.00)	4(4.00)	91(91.00)

		Pooled	2(1.00)	7(3.50)	177(88.50)
7.	Regular cleaning of the animal shed	DH	2(2.00)	3(3.00)	88(88.00)
		KA	0(0.00)	4(4.00)	85(85.00)
		Pooled	2(1.00)	7(3.50)	173(86.50)
8.	Working more time with animals for their comfort and production	DH	0(0.00)	5(5.00)	45(45.00)
		KA	0(0.00)	9(9.00)	82(82.00)
		Pooled	0(0.00)	14(7.00)	127(63.50)
9.	Bringing feed from distant places and feeding the animals	DH	3(3.00)	8(8.00)	52(52.00)
		KA	12(12.00)	2(2.00)	46(46.00)
		Pooled	15(7.50)	10(5.00)	98(49.00)
10.	Providing supplementary feed when in scarcity	DH	52(52.00)	6(6.00)	33(33.00)
		KA	74(74.00)	10(10.00)	16(16.00)
		Pooled	126(63.00)	16(8.00)	49(24.50)
11.	Attending training and bringing training knowledge to utility	DH	9(9.00)	2(2.00)	4(4.00)
		KA	22(22.00)	32(32.00)	1(1.00)
		Pooled	31(15.50)	34(17.00)	5(2.50)
12.	Keeping the animals together in safer place whenever required.	DH	88(88.00)	6(6.00)	4(4.00)
		KA	51(51.00)	4(4.00)	1(1.00)
		Pooled	139(69.50)	10(5.00)	5(2.50)
13.	Allowing more areas to the animals for grazing and exercise	DH	15(15.00)	15(15.00)	3(3.00)
		KA	0(0.00)	10(10.00)	1(1.00)
		Pooled	15(7.50)	25(12.50)	4(2.00)
14.	Developing a market for livestock and their products	DH	0(0.00)	3(3.00)	0(0.00)
		KA	0(0.00)	0(0.00)	0(0.00)
		Pooled	0(0.00)	3(1.50)	0(0.00)
15.	Largely interested in cross breeding and rearing of improved livestock	DH	50(50.00)	12(12.00)	4(4.00)
		KA	62(62.00)	28(28.00)	4(4.00)
		Pooled	112(56.00)	40(20.00)	8(4.00)
16.	Constantly supervising and regularly checking health of livestock	DH	13(13.00)	26(26.00)	33(33.00)
		KA	46(46.00)	35(35.00)	18(18.00)
		Pooled	59(29.50)	61(30.50)	51(25.50)
17.	Selling off the livestock at the time of crisis and again rearing afresh	DH	18(18.00)	3(3.00)	76(76.00)
		KA	69(69.00)	0(0.00)	31(31.00)
		Pooled	87(43.50)	3(1.50)	107(53.50)
18.	Taking Government help as and when required	DH	0(0.00)	5(5.00)	4(4.00)
		KA	0(0.00)	0(0.00)	5(5.00)
		Pooled	0(0.00)	5(2.50)	9(4.50)

Figures in the parenthesis indicate percentage.

DH=Dima Hasao, KA= Karbi Anglong

Conclusions

The finding revealedthat the average score on measures of resilience for livestock was 22.85 out of the total obtainable score of 54. It was enough to indicate that the measures were mediocre. Further majority of the respondents revealed that they “kept the animals together in safer place whenever required”, “maintained regularity in free grazing”, “provided supplementary feed when in scarcity”, “took special care for pregnant animals in feeding and husbandry practices”, “largely interested in cross breeding and rearing of improved livestock”. All these revealed that the displaced farm women in Dima Hasao and Karbi Anglong districts of Assam were still rearing their livestock based on traditional knowledge and understanding. There was no statistically significant mean difference on the measures of resilience for livestock between the districts. This was a challenge for the livestock stakeholders including the Government officials in higher positions in the state to provide a boost to the sector.

It can be concluded that livestock were reared traditionally, on zero inputs, with no special care unless diseased and women were the sole activists in livestock rearing. The application of advanced measures in livestock rearing was simply missing.

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