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Potential risks and their management strategies adopted by livestock owners during natural calamity in Jammu and Kashmir, India

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Abstract

Livestock population is the first to be affected in any precarious situation caused due to any natural calamity like earthquake, floods, volcanoes etc. and is the second most affected subsector after crops accounting for USD 11 billion or 36 percent of all the damages and losses reported. The main target of rescue, relief and rehabilitation is directed towards the Human population as a result the livestock sector gets meager or no help at all. The present study was purposively carried out in Kashmir Division of Jammu and Kashmir state that was severely hit by a devastating floods in September 2014. This study elaborates the perceived potential risks, needs and risk management strategies adopted by livestock owners during the floods of 2014. Majority of the respondents perceived that scarcity of potable water was the major risk associated when disaster like floods strike a particular area followed by effect on livestock marketing. Since the focus of Government and various organizations is on the people itself, majority of the livestock owners expected Government and Vet officials to visit the villages during disasters. The second important perceived need of majority of respondents included building of common shelter houses for livestock. Amongst the various risk cover and managerial strategies adopted by livestock farmers post floods, of which looking for Government relief/NGO/Organizational help turned out to be the most adopted practices.

Keywords: Livestock, natural calamity, perceived need, risk, strategy

Introduction

Livestock in particular have remained highly vulnerable to almost all sorts of natural disasters but the most frequent and vulnerable of all types is the occurrence of flood (Shah *et al.*, 2017) [6]. The principle reason for flood lies in natural ecological system which includes monsoons, highly silted river systems and steep and highly erodible mountains particularly seen in northern regions (NDMA, 2011) [5]. The other attributed reasons of flood include increase in population, rapid urbanization, enormous pressure on rural land, increasing developmental activities in flood plains and global warming (Agarwal *et al.*, 2014) [1]. The animal health is deteriorated after floods by various diseases like Black leg, Leptospira, Clostridial infections, Anthrax, Foot rot, Mastitis, Oedema, Bovine ephemeral fever, Infectious anaemia in horses, Lumpy wool in sheep, Botulism and other vector borne diseases (Department of Agriculture and Fisheries, Queensland, 2011) [3]. The animal and public health concerns that result from post natural disasters like floods in developing countries include diseases and infections ranging from epizootics to parasitosis (internal and external), besides the outbreak of other bacterial and vector born diseases. These post disaster consequences can be attributed to the physical and mental stress, scarcity of healthy food and potable water, environmental damage resulting in unhygienic surroundings, etc. (FAO, 2015) [4].

Disasters like floods have always brought miseries to numerous people, especially in rural areas across the country and the state of Jammu and Kashmir being no exception to it. The state had experienced its worst flood since 60 years during the first week of September 2014 which was mainly due to unprecedented and intense rains. Among the various districts Baramulla, Anantnag and Pulwama were worst affected. Several major and minor roads were cut off and about 30 bridges were broken, thereby hindering the relief and rescue operations. Thousands of villages and many urban areas were submerged into 10 to 30 feet of water causing loss of life, livestock and destruction of houses, public infrastructure, lifeline structures and loss of business (Anonymous, 2014a) [2].

The devastating floods left a major impact on livestock, with the losses of Cattle, Sheep and Goats thereby hindering the state's economy.

Materials and Methods

The present study was purposively carried out in Kashmir Division of Jammu and Kashmir state that was severely hit by a devastating flood in September 2014. Among the various flood affected districts of Kashmir Division, the three districts namely Bandipora, Srinagar and Pulwama were purposively selected based on the highest inundation levels reported in these areas. The Kashmir Division of Jammu and Kashmir State consists of 10 districts. The present study was purposively carried out in three severely flood affected districts viz Pulwama in south, Srinagar in central and Bandipora in north of Kashmir. From each selected district two (2) flood affected blocks were purposively selected based on their livestock population for data collection from affected farmers. Further from each selected block four (4) affected villages were randomly selected for questioning of

respondents. Finally ten (10) affected farmers were randomly selected from each of the selected village making a total of two hundred and forty respondents.

Results and Discussion

Perceived potential risks

A number of potential risks were perceived to be associated with disaster like floods as given in table 1. Majority of respondents (table 1) perceived that scarcity of potable water was the major risk associated with the floods, followed by effect on livestock marketing. The most probable reason was that most of the animals had to drink flood water because of which their health got deteriorated as other sources of water were not available. Any eventuality like floods always have a negative impact on marketing of perishable products like livestock, same is reflected in this study. The respondents perceived lower reproductive rate in animals as least important risks associated with floods. This was probably due to less tangible results in this regard.

Table 1: Distribution of respondents according to the potential risks perceived to be associated with disaster like floods N=240

Perceived potential risks associated with disasters	Perceived rate			Average score	Rank
	High	Moderate	Low		
Scarcity of fodder	133(55.42)	61(25.42)	46(19.17)	2.36	III
Scarcity of potable water	165(68.75)	53(22.08)	22(9.17)	2.59	I
Disease outbreak	37(15.42)	58(24.17)	145(60.42)	1.55	V
Increased susceptibility to disease	46(19.17)	75(31.25)	119(49.58)	1.69	IV
Reduced reproductive rate	3(1.25)	18(7.50)	219(91.25)	1.10	VII
Effect on livestock marketing	138(57.50)	64(26.67)	38(15.83)	2.41	II
Increase in feed prices	22(9.17)	53(22.08)	165(68.75)	1.40	VI

(Figures in parenthesis indicate percentage)

Perceived need of livestock farmer with respect to natural calamities, flood

Among the different perceived needs of the respondents, majority (Table 2) expected Government and Vet officials to visit the villages during disasters. The second important perceived need of majority of respondents included building

of common shelter houses for livestock. The reason was the less role and higher expectations from Government agencies/private agencies with respect to livestock disaster management and non availability of special type of house in their villages where they could keep their animals during any natural calamity.

Table 2: Distribution of respondents with respect to their perceived needs in terms of livestock based information and services required to be delivered during the disasters N=240

Perceived needs	Need intensity			Average score	Rank
	High	Medium	Low		
Vets/Govt officials should visit the affected village at the time of disaster	167(69.58)	61(25.42)	12(5.00)	2.64	I
Feed and fodder need to be provided free of cost/reasonable prices among the livestock owners during disasters	103(42.92)	77(32.08)	60(25.00)	2.17	III
Fodder banks need to be established by the government to help the feed scarcity	78(32.50)	66(27.50)	96(40.00)	1.92	IV
Essential prescribed veterinary medicines should always be kept available for use of farmers	85(35.42)	88(36.67)	67(27.92)	1.70	VII
Cost effective livestock insurance cover should be made available to farmers	72(30.00)	54(22.50)	114(47.50)	1.82	V
Common livestock shelter house used in disasters should be built by Govt. for masses.	117(48.75)	78(32.50)	45(18.75)	2.30	II
More coverage to programmes related to livestock disasters management need to be broadcasted on Radio/TV	114(47.50)	58(24.17)	68(28.33)	1.71	VI

(Figures in parenthesis indicate percentage)

Risk management strategies with respect to natural calamities, floods

Results in table 3 depicts the different risk cover and managerial strategies adopted by livestock farmers post floods, of which looking for Government relief/NGO/Organizational help turned out to be the most adopted practices. The reason for the above observations is the fact that it seems to be quite easy to rely on these agencies without any self assistance. People are always after the relief

and other helps from various donor agencies as a simple means of recovery.

The next major strategy adopted was distress sale of livestock during disasters. Since majority of the livestock farmers fall in the low income zone and livestock provide the readily available assets for the distress sale under these circumstances. However, the respondents may not be in a position to bargain much during these crises period.

Table 3: Distribution of respondents according to risk cover and managerial strategies adopted by livestock farmers to mitigate the effect of flood post 2014 N=240

Strategies adopted	Extent			Average score	Rank
	Always	Sometimes	Never		
Distress sale of livestock / related assets	36(15.00)	49(20.42)	155(64.58)	1.50	II
Loan from friends /relatives/bank/ money lenders to manage livestock	19(7.92)	53(22.08)	168(70.00)	1.37	III
Look for Govt. relief/ NGO /other organizational help	131(54.58)	88(36.67)	21(8.75)	2.45	I
Prepare the disaster management kit in advance	0(0.00)	2(0.83)	238(99.17)	1.00	IV

(Figures in parenthesis indicate percentage)

Conclusion

The findings of the study revealed that that scarcity of potable water was the major risk associated when disaster like floods strike a particular area followed by effect on livestock marketing. Amongst the various perceived needs in terms of livestock based information and services required to be delivered during the disasters like floods, majority of the livestock owners expected Government and Vet officials to visit the villages during disasters followed by building of common shelter houses for livestock. Out of the various risk cover and managerial strategies adopted by livestock farmers post floods, of which looking for Government relief/NGO/Organizational help turned out to be the most adopted practices. It is concluded based on the findings that despite of the fact that livestock sector plays a central role in natural resource based livelihood of the vast majority of population and its versatile role in contributing towards local and nationaleconomy, the sector is totally neglected when a disaster like situation arises. Therefore, the preparedness, relief, rehabilitation and needs of the livestock owners should be taken into consideration both by Government and NGO in order to minimize the social, psychosocial and economic losses to livestock owners due to natural disasters and also the Government and other veterinary officials should come forward with better managerial strategies so that the livestock farmer is better able to cope up with such calamities.

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