STUDIES ON MANAGEMENT OF LIVESTOCK DURING AND AFTER DISASTER IN INDIA

K. S. MANE, M. F. SIDDIQUI, V. S. INGLE, M. D. KHARWADKAR, M. B. WAKCHAURE, N. P. TELANGE

Abstract: India is highly vulnerable to natural hazards especially earthquakes, floods, drought, cyclones and landslides. Natural disasters affects human as well as animals activities. Natural calamities are common every year in India. Livestock population is the first to be affected in the precarious situations due to natural disasters. Indian sub-continent is the worst affected region of the world. On an average, 5 to 6 tropical cyclones from the Bay of Bengal and Arabian Sea every year; 2 to 3 of them are being very severe. In mitigation strategies, Pre disasters(Registration of all livestock farms & Single Window system in relief distribution), During disasters(Disposal of carcass, community management, Hygienic measures, segregation of ill animals), post disaster management is necessary in group from the department dealing with Animal Husbandry and Veterinary service with specially trained staff, epidemiological data & communication facilities. Preventive actions taken or preparedness should be constantly monitored and lacunae thereof be frankly reported and corrected for future use.

Keywords: Livestock, Natural disasters, Management, Post and Pre-disaster, Preparedness.

Introduction: Disaster is defined as 'Catastrophic situation in which the normal pattern of life or ecosystem has been disrupted and extra ordinary emergency interventions are required to save and preserve lives and or the environment'. (Mathialagan.P *et al*, 2012).

India is highly vulnerable to natural hazards especially earthquakes, floods, drought, cyclones and landslides. Natural disasters affects human as well as animals activities. India is ranked 11th among 15 countries facing "extreme risk" from natural disasters. Disaster is a sudden, calamitous event bringing great damage, loss, and destruction and devastation to life and property. The damage caused by disasters is immeasurable and varies with the geographical location, climate and the type of the earth surface/degree of vulnerability. (Shankar, 2011).

Natural calamities are common every year in India. Livestock population is the first to be affected in the precarious situations due to natural disasters. Transportation of feed and fodder for animals becomes more difficult to the affected areas. However, for human beings, supplies of essential commodities are maintained even with great difficulty. In such situations saving of human life is considered on top priority basis and thus rescue, relief and rehabilitation is more directed for the people of affected areas with meager attention to livestock and their sufferings. (Pyne *et al*, 2009).

Types of disasters: Disasters can be categorised, according to what causes them, as natural disasters, i.e. the result of natural phenomena, or manmade disasters, i.e. the result of man's intervention or non intervention. Natural disasters account for nearly 80% of all disasters that occur in the world. Disasters can also be classified, according to their impact, as localised, widespread, predictable or unpredictable, and also, major or minor. (Sen *et al*, 2003)

The natural disasters experienced by India are Earthquake, Floods, Tsunami, Landslide, Drought, Cyclonic storms, Volcanic eruptions, Heat and cold waves whereas manmade disasters i.e. Fire, Road/Train accidents, Poisoning, Nuclear, Water pollution.

India is vast country, tropical climate experiencing all types of disaster except volcanic activity with 60% earthquakes, 68% drought (40 million Hectares), 12% floods and 8% cyclones (3 lakh sq. km). Indian sub-continent is the worst affected region of the world. The Indian coast is well-known for suffering severe cyclones and induced surges. At least one major tropical cyclone strikes India each year with powerful tidal surge that affect hundreds of thousands of lives. (Shankar, 2011)

There is hardly a year when some part of the country or other does not face the spectre of either drought or flood due to either the failure or the abundance of monsoons in vulnerable areas. The area liable to floods is more than 40 million hectares. The average area affected by floods annually is about 8 million hectares. Due to the erratic behaviour of the monsoon, low and medium rainfall regions consists 68% of the country's total area vulnerable to periodical droughts. India has a long coastline of 8041kms.On an average, 5 to 6 tropical cyclones from the Bay of Bengal and Arabian Sea every year; 2 to 3 of them are being very severe. (Singh, 2016)

Impact of disasters

Direct impact	Indirect impact	Tertiary impact
Human lives	Agricultural output	Health hazards
Livestock and other animals	Industry/services output	Long term development plans
Private property	Remittance income	Overall inclement climate
Municipal infrastructure	Fall in earning potential (due to disability, trauma, etc)	Funds reallocations
Power/telecommunications infrastructure	Unemployment	Community migration/relocation
Health/education assets	Export/imports	

(Sen *et al*, 2003)

Some of major disasters in India according to NDMA (National Disasters Management Authority, Government of India)

Sr.no	Name of Disaster	Month and Year	State and area	Economic loss	Deaths in humans and animals
1	Cyclone Vardah	06-Dec-16	Tamil Nadu	Rs 6,749 crore	18 died and 77 cows died
2	Floods	Jan-16	Chennai, A.P	Rs 200 billions	421 people died and 98,000 livestock animals and poultry had died
3	Floods	June and July 2015	Gujarat	Rs 2,000 crore	83 people died and 81,000 animals found death
4	Floods	Sep-14	J&K (Srinagar)	Rs 5,700 crore	260 people dead and Livestock losses not know
5	Cyclone HudHud	Sep-14	Andhra Pradesh	Rs 21,908 crore	3 people were died and Livestock losses not know
6	Floods/landslides	Jun-13	Uttarakand and Himachal Pradesh	Rs 810 millions	4,094 people died and Livestock losses not know
7	Cyclone Thane	Dec-11	Tamil Nadu, Pondicherry	Rs 150 crore	47 people died and 271 cattle died
8	Sikkim earthquake	2011	Sikkim and north eastern India	Rs 1,000 billion	97 people died(75 in Sikkim) and Livestock losses not know
9	Cloud burst	2010	Leh ,Ladakh in J&K	Rs 1.33 billions	257 people died and Livestock losses not know
10	Tsunami	2004	Coastline of South India	Rs 8200 crore	10,749 people died and 3lakh fisher folk lost their livelihood. and Livestock losses not know
11	Earthquake	2001	Gujarat	Rs 12,000 crore	20,023 died and Livestock losses not know

Disaster Mitigation Strategies: Pre disasters- Reporting system to be stream lined. Livestock owners are ignorant about the system. Registration of all livestock farms in which registration of livestock farms must made mandatory and the livestock farmers must be informed to register their farms with local VAS. Single Window system in relief distribution. It is very much necessary to formulate a single institute or official set up for relief distribution including the NGOs. Scope of Intervention in which the farmers suggestions to help them come out of the damage caused by the disaster. (Mathialagan *et.al*, 2015)

During disasters- The following steps should be considered: i) **Disposal of carcass**: Animal carcasses during calamities cause environmental pollution resulting in human health hazards and spread of different epidemic diseases. Thus, proper steps should be taken for disposal of carcasses by suitable measures. ii) **Community management**: It is always advisable to rear the animals in post-calamity period by community management as stated below: a) Working bullocks, cows and calves should be kept in separate enclosure. b) The animals should be provided with clean water ad libitum near their housing place. c) Weak cows with calf and newly-born calves should be housed separately and cheap sheds should be provided. d) In flood affected areas, the animal enclosures are to be made on high lands. iii) **Hygienic measures**: Animal enclosures have to be cleaned properly and suitable disinfectants should be applied time to time. iv) **Segregation of ill**

animals: During calamities, diseased or ill animals are to be segregated separately and suitable treatments are to be provided. (Pyne *et.al*, 2009)

Post disasters- Disasters shelters are to be specifically devised for animals in disasters prone areas of the country. Each state should organise a disaster management group in the department dealing with Animal Husbandry and Veterinary service with specially trained staff, epidemiological data & communication facilities. During lean period, the team should undertake preparedness and relief exercise to test their efficacy and preparedness. This will help develop a well oiled working system. There has to be a separate control cell attached to the Central Control Room dealing with National Animal Disaster Management. The epidemiological and statistical information collected before, during and after disaster should be compiled and discussed among the States of each zone on a scheduled timetable. Preventive actions taken or preparedness should be constantly monitored and lacunae thereof be frankly reported and corrected for future use. (Ramakumar .V, 2012)

References:

1. Disaster Management in India (2004) Government of India, Ministry of Home Affairs, National Disaster Management Division -A Status Report
2. Mathialagan. P and Rajkumar. N. V(2015) Livestock Disaster Management in Tamil Nadu - An analysis.
3. National Disaster Management Authority (2016), Major disasters in India on www.ndma.gov.in/stasticaldata.pdf reported
4. Pyne S.K and Samanta G.(2009) Livestock management at different levels of disaster strategy and execution in Institute of Agriculture ,India in Indian J. Anim. Res., **43** (2) : 99-102
5. Ramakumar .V (2012) Role of Livestock and other animals in Disaster Management in Animal Welfare, Disaster and Emerging issues vol-**1** : 35-39
6. Sen A, Chander .M(2003) Disaster management in India: the case of livestock and poultry Rev.sci.tech.Off.int.Epiz., **22**(3): 915-930
7. Sastry N.S, Thomas C K (2005) Livestock Production Management in Kalyani Publisher, New Delhi vol-**5**: 632
8. Shankar .G (2012) Disaster Management. Journal Disaster Advances **5**: 974
9. Vinod K.S and Kaushik .A.D (2012), An Overview of Natural Disaster Management in India, YOJANA, pp30 -36.

***

K. S. Mane

MVSc Scholar, Department of Livestock Production and Management, College of Veterinary and Animal Sciences, Parbhani, Maharashtra, India-431402.

M. F.Siddiqui

Professor and Head, Department of Livestock Production and Management, College of Veterinary and Animal Sciences, Parbhani, Maharashtra, India-431402