

## IMPACT OF NATURAL DISASTERS ON ANIMALS IN INDIA AND PLANNING FOR MITIGATION

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### ABSTRACT

*The type of natural disaster will vary depending on geographical location and can occur commonly in the form of wildfire, flooding, catastrophic windstorms or blizzards. The very thought of encountering such natural events certainly can be anxiety-inducing, especially when the management of livestock is considered. As with many things in life, the key to overcoming a challenging situation is through appropriate planning. According to the United Nations "A disaster is an event that is concentrated in space and time and that subject a society to severe danger and such serious losses of human life or major material damage that leads to break down of local social structure and the society is unable to perform any or some of its key functions. India is the worst-affected country of disaster in the South Asian region. Drought, floods, earthquakes and cyclones devastate the country with grim regularity with worst affected are the poor and marginalized sections of the India. Small, marginal and landless farmers own 70% of the total livestock which produce 62% of total milk production in India. These are the most affected population during natural disasters. Natural disasters cause scarcity of feeds, fodders and scenario becomes again worse due to inaccessibility and transportation difficulties of feeds and fodders. This article analyses the Impact of Natural Disasters on Animal and also suggest that how to prepare for and recover from such kind of natural disasters and what planning can be made to decrease the loss of Livestock.*

**KEYWORDS:** *Natural Disaster, Animals*

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### INTRODUCTION

Livestock plays an important role in Indian economy. About 20.5 million people depend upon animals for their livelihood. It contributed 16% to the income of small farm households as against an average of 14% for all rural households. Livestock provides livelihood to two-third of rural community. It also provides employment to about 8.8 % of the population in India. India has vast livestock resources. Livestock sector contributes 4.11% GDP and 25.6% of total Agriculture GDP. It accounts for 40% of the gross value of the agricultural production globally (FAO, 2000) and this figure is likely to go up, as the demand for livestock products is increasing rapidly with the increase in income and urbanization. Animals are the best insurance against the vagaries of nature due to drought, famine and other natural Disasters. But nature is not free of

calamities and affects both human as well as animal's life. Animals who survived from these calamities are threatened by non-availability of feed and shelter. Like other agricultural crops, fodder fields are also completely destroyed. These feed deprived and shelter less animals are stressed and immune-suppressed, thus become susceptible to contagious diseases. Outbreaks of fatal diseases such as Haemorrhagic Septicaemia (HS), Black Quarter (BQ) can occur which will further aggravate the death of animals. In India natural disasters challenge agricultural production every year. The impacts from natural events and disasters most commonly include: contamination of water bodies, loss of livestock, increased susceptibility to disease and destruction of irrigation systems and other agricultural infrastructure.

## **NATURAL DISASTERS IN INDIA**

As per India's National Policy on Disaster Management the natural disasters that India is prone to are earthquakes, floods, droughts, cyclones, tsunamis, landslips and avalanches. Almost 59% of India's landmass is prone to earthquakes over 12% of land is prone to floods about 76% of the coastline is prone to cyclones and tsunamis. 68% of the cultivable area is drought-prone and hilly areas are subjected to wet and dry landslides and avalanches. Most of the disasters which affect the animals very much in the country are floods and cyclones.

### **Floods**

Every year floods cause enormous damage all over the country. Nearly 75% of the total rainfall is concentrated over a short monsoon season of four months June to September. As a result the rivers witness a heavy discharge during these months, leading to widespread floods. The most flood-prone areas are the Brahmaputra and Gangetic basins in the Indo-Gangetic plains. Furthermore floods can have substantial impacts on public health, and indirectly lead to a decrease of socio-economic welfare. Floods are one of the most common natural disasters causing extensive damage to livestock. Animals are natural swimmers therefore can escape drowning if they are not tied or caged. The biggest floods in the country in which a lot of animals were died was as follows-

June 2013 North Indian floods: Heavy rain due to a burst of a cloud caused severe floods and landslides on the North Indian states, mainly Uttarakhand and nearby states. More than 2000 animals were presumed dead.

June 2015 Gujarat flood: Heavy rain in June 2015 resulted in widespread flood in Saurashtra region of Gujarat state resulting in more than 100 deaths of Animals. The wild life of Gir Forest National Park and adjoining area was also affected in this flood.

2016 Assam floods: Heavy rains in July–August resulted in floods affecting 1.8 million people and flooding the Kaziranga National Park killing around 200 wild animals during this hazard.

2017 Gujarat flood: Following heavy rain in July 2017, Gujarat state of India was affected by the severe flood resulting in more than 300 animal deaths.

August 2018 Kerala Flood: Following high rain in late August 2018 and heavy Monsoon rainfall from August 8, 2018, severe flooding affected the state Kerala.

August 2019 Indian floods: Following high rain in late July and early August 2019, series of floods that affected over nine states in India. Kerala, Madhya Pradesh, Karnataka, Maharashtra and Gujarat were the most severely affected.

2020 Assam floods: A total of 151 animals including 12 one-horned rhinos have died in Kaziranga National Park due to the flood in Assam state in May 2020.

## **Drought**

Drought in India has resulted in tens of millions of deaths over the 18th, 19th, and 20th centuries. In parts of India, failure of the monsoons causes water shortages, resulting in below-average crop yields. This is particularly true of major drought-prone regions such as southern and eastern Maharashtra, northern Karnataka, Andhra Pradesh, Odisha, Gujrat, Telangana and Rajasthan. In the past, droughts have periodically led to major Indian famines, including the Bengal famine of 1770, the 1876–1877 famine and the 1899 famine, in which over 4.5 million animals died. In the past, India has experienced twenty two large scale droughts from 1891 -2002 Drought's most severe effects on agriculture include water quality and quantity issues. Other impacts include decreased crop yields, impact to feed and forage and altered plant populations, thus leads to adverse impact on cattle health.

## **Earthquakes**

Earthquake can cause damage to buildings, infrastructures, bridges, dams, roads and railways. Beside the scarcity of feed and fodders, contamination of water through seepage of drainage water produces great discomfort to the people and animals. Since in Indian scenario, the animals are mostly tied outside or kept in thatched sheds where chances of physical injuries are low. But when the animals are tied or caged their chances of escape is reduced.

## **Cyclones**

The state's most exposed to cyclone-related hazards, including strong winds, floods and storm surges, are West Bengal, Orissa, Andhra Pradesh and Tamil Nadu along the Bay of Bengal. Along the Arabian Sea on the west coast, the Gujarat and Maharashtra coasts are most vulnerable. On an average, about five to six tropical cyclones form in the Bay of Bengal and Arabian Sea every year, of which two to three may be severe.

## **Difficulties for Disaster Management in Livestock**

- During the Disaster animal owners may see a behavioural pattern from their livestock that they are both unprepared and unable to handle. This is one reason of a failure disaster management. The local emergency system may have an organized predetermined group of volunteers who are trained, equipped and coordinated to move into disaster areas to deal with livestock evacuation.
- Access and transportation difficulties. Traditionally, livestock producers have the equipment, resources, experience and practice to move livestock under a variety of conditions. Newer rural residents may lack livestock movement equipment, or enough equipment to handle their livestock population.
- Equipment and facility design risks. Any livestock handler will tell you that when stress and an emergency combine while moving livestock is when you will find every hole in the fence, every sharp edge on the equipment and every loose board on the trailer. Having properly designed and effectively maintained equipment and facilities are critical during disasters.
- Losing focus on the disaster event. The large amounts of stimuli and tension generated during disasters affect both humans and animals. Because people get so focused on 1 to 3 objectives they often fail to look around and notice the other things that are going on around them. Emergency responders get better at avoiding this problem with experience and training.

## SUGGESTIVE MEASURES

There are numerous strategies that can help dairy us for managing the various disasters and reduce the death rate of animals in these conditions. Although every disaster has different conditions but the management strategies given below may assist during these untoward events.

- Different feeding technologies should be developed with the capacity to meet the challenge of feed scarcity or quality.
- Creation of feed and fodder bank, pasture improvement and application of fodder conservation techniques. It is an important asset to meet the needs of livestock during drought and floods.
- The animals should be brought to safer places if the forecast of a disaster is beforehand. In flooded areas where drainage is slow, can be used for duck rearing and fish farming.
- Make provisions for early disposal of carcasses during flood.
- Early plans should involve veterinary health care institutions, water resources and disaster assistance to expand their services in times of need.
- Professional approach of feed management.
- Coordination of Disaster Management Institutes with animal nutrition faculty.
- Promotion of seeds that flourish from the first irrigation and introduction of drought-resistant and water logging tolerant plants varieties.

## CONCLUSIONS

Study reveals that Natural disasters arrive on a regular interval in India. The Indian economy is Agriculture based because of this Livestock plays a significant role in Indian economy. Plenty of animals die due to natural Hazards and Disasters. Being proactive and seeking management strategies to help alleviate as many of the negative impacts of the calamities as possible will help compensate for limited forage supplies. Technologies applications like concentrate mixture, urea treatment, urea molasses liquid feeding, and urea molasses mineral block has the capacity to meet the challenge. Unconventional feeds and wastes also have the capacity to mitigate the challenge. Proper veterinary aid is necessary to prevent the spread of zoonotic diseases. In this regard, integration of work among veterinarians with state and central bodies necessary.

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