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Review Article

Care And Management of Livestock During Natural Disaster

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Introduction:

The WHO defines Disaster as 'any occurrence that causes damage, economic destruction, loss of human life and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area'. India is one of the top four most disaster-prone country in the world. India, being a vast country with a tropical climate, experiences all types of natural disaster. The frequency of various disaster like droughts, earthquakes, floods, and cyclones is increasing every year. Floods, Drought, earthquakes and cyclones devastate the country with grim regularity with worst affected are the poor and marginalized people of the India. Unfortunately, poverty is most widespread in regions that are more vulnerable to natural disasters - the flood-prone places of Uttar Pradesh, Bihar, North Bengal and North Eastern region etc. Small, marginal and landless farmers own 70% of the total livestock which produces 62% of total milk production in India. Natural disasters cause scarcity of livestock feeds, fodders and scenario becomes again worse due to inaccessibility and transportation difficulties of feeds and fodders.

Management of livestock during flood:

Floods are one of the most common natural disasters causing huge damage to property, livestock, crops and human population. But livestock are natural swimmers; therefore, can escape drowning if they are not tied or caged. During flood, the environment, drinking water and rivers become contaminated. The fear of outbreak of different infectious diseases like tetanus, dysentery, hepatitis and food poisoning etc. becomes prominent with poor management.

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- ✓ Evacuate the livestock rapidly to higher ground and check for injuries to be attended by a veterinarian
- ✓ Prevent the outflow of manure pits into drinking water source.
- ✓ All ponds and canals should be inspected for any obstruction
- ✓ Ensure that the animals are vaccinated against all infectious diseases
- ✓ The livestock 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 and fish farming.

Management of livestock during Drought:

Drought is a situation where there is shortage of precipitation for a sufficient longer period of time. The waters in rivers, ponds, streams and underground maybe lower than average causing hydrological imbalance. Drought causes in shortage of feeds and fodders and the animal may remain in stress hence reducing their productivity.

- ✓ Early warnings help better preparations against drought mitigation strategies
- ✓ Advance plans should involve veterinary health care institutions, water resources and disaster assistance to expand their services in times of required.
- ✓ Provision for additional water supply in times of water shortages through repair of tube wells, cleaning of tanks, preparing for harvesting rainwater in tanks or large ponds.
- ✓ Explore the use of conventional feed and fodder resources and encourage supply of molasses to livestock feed plants. Dry fodder reserves like hay, urea molasses licks, bricks made of fodder urea and molasses etc. can be part of the stock pile.
- ✓ Implementing measures to stabilize fodder resources by using seed reserves and growing alternative drought resistant fodder crops.
- ✓ Prevention of disease outbreak through better animal health management protocol

Management of livestock during an Earthquake:

Beyond the animal damage earthquake can cause damage to buildings, infrastructures of the animal farm. Beside the scarcity of feed and fodders, contamination of water through seepage of drainage water produces great discomfort to the people and livestock. In Indian scenario, the livestock 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.

- ✓ Firstly, identify the safest place for shelter so that the livestock can survive for 2-3 days without any assistance.
- ✓ Vaccinate the livestock against tetanus or against most prevailing infectious disease.

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- ✓ All the farm tool and equipment's and other objects that are heavy should be placed away from the wall and in rafters as they are likely to fall causing serious injury to animals.
- ✓ Persons taking care of the livestock who are indoors should take cover under a sturdy piece of furniture and should stay away from objects that shatter like windows etc.
- ✓ A bolt cutter should be present in order to open gates during emergency situation.
- ✓ Seek for veterinary and medical advice in case of any emergency.

Management of livestock during Cyclones:

In India, among the different countries, West Bengal, Orissa, Andhra Pradesh and Tamil Nadu along the Bay of Bengal are the most exposed to cyclone-related hazards, including strong winds, floods and storm surges. Along the Arabian Sea on the west coast, Gujarat and Maharashtra coasts are most vulnerable. On an average, about 5-6 tropical cyclones form in the Bay of Bengal and Arabian Sea every year, of which two to three may be severe. Cyclones are usually most deadly when crossing the coastal areas of Andhra Pradesh, Orissa, West Bengal and Bangladesh, mainly because of the serious storm surge problem in this area. Meteorologically, cyclone can be predicted with some accuracy. So, the loss can be reduced through better preparedness of an event:

- ✓ Cyclone shelters can be made to house livestock away from the cyclonic area
- ✓ Livestock should be shifter to higher grounds
- ✓ Stocking of concentrates feed and medicines
- ✓ Vaccination of livestock
- ✓ Make provisions for early disposal of carcasses

Water and feeding management during natural disaster:

Water management

During the flood, everywhere there will be plenty of water but it is not fit for the consumption purpose of the livestock. Flood may come with lots of problem for livestock specially. Flood water having much of unwanted ingredients that may cause harm for livestock livelihood if use for drinking. So, during this condition first priority is that livestock must have an adequate supply of fresh water to survive. Providing fresh water is the first priority. Use water tanks, and ask for help from neighbours and local fire departments for immediate water requirement. Livestock can survive for many days without food but cannot survive for more than 3 to 4 days without water.

Following points must be considered water management during disaster:

- ✓ Providing clean and safe water to the livestock
- ✓ Priority should be given to lactating and pregnant animals than nonproductive stocks,
- ✓ Water should be provided in small quantity and more frequently

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- ✓ Salt intake of the livestock should be restricted.

Feeding management for farm animals during disaster:

During flood, feeding to animals is the immediate concern after water. Supply of feed is very important, particularly when they have had to swim to save themselves, and have expended a huge amount of energy doing so. Many of these animals will have no reserves left, and pregnant animals in particular will quickly develop metabolic problems and die if not adequately fed.

- ❖ **Complete feed block (CFB):** CFB is a complete feed system for feeding concentrates and roughages together in a combined form. It is made of fodder, concentrate and other additional nutrients in the required amounts to meet the animal's nutritional requirement. Reducing the cost of supply and labour costs and increasing productivity is time consuming and can be achieved through a complete supply system. Blocks can be repaired during the remainder and can be fed during scarcity and or easily moved to a deficient district to feed animals to save significant livestock loss.
- ❖ **Urea molasses multi-nutrient blocks (UMMBs):** UMMSs is a combination of energy, protein and minerals that strategically adds to the level of regenerative animals so that the animals can survive until the veld conditions improve during natural disasters. UMMB is a simple and inexpensive way to provide a variety of nutrients to animals. It can improve the use of low-quality roughages by fulfilling the nutritional needs of small rumen elements, creating a better environment for the fermentation of fiber and increasing the production of less protein and fatty acid. Powerful block making machines for 2-8 UMMB at once are available in the market.
- ❖ **Uromin lick:** The "uromin" lick also called as "Pashu Chaat" contains besides urea, molasses and minerals, certain fillers like de- oiled rice bran, maida (sieved flour), mustard cake, common salt and a feed binder (bentonite).
- ❖ **Urea treated straws/stovers blocks/bales:** The fodder grass is moistened to 40% humidity by adding a 3.5% solution of urea. This is packaged in an open stack continuously for 9 days. For each 400 kg batch, 14 kg of urea dissolved in 200 L water was sprayed with 386 kg thick grass and placed in the open for 9 days.
- ❖ **Silage:** Silage making is another important method of conserving green fodder by converting it into silage. The crops can be harvested and stored at the time of its development when it has the maximum nutritive value. This method consists of green forage and storing it in specially designed underground or above ground structures ensuring that no air or moisture enters these structures. The green fodder thus stored

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ferments under anaerobic conditions without appreciable loss to nutritive value of the material preserved.

- **Hay:** Good quality hay is the preferred feed, as digestion of roughage produces heat that will help to keep the animals warm, particularly if they are still standing in water. Hypothermia can develop rapidly in the entire area of livestock standing in water, even in summer. Every effort should be made to move stock to an area which is high and dry.
- During disaster moldy feeding to livestock should be avoided. Hay & pasture exposed to the elements or completely submerged will spoil rapidly if not fed immediately. Uncovered pasture or hay is most likely a loss unless it can be easily rewrapped. Make sure feed is not contaminated by different chemicals as a result of the storm.
- Freshly planted grass contains high nitrite and nitrate and should be fed in small amounts with dry roughages such as paddy straw and straw. The leaves of various new medicine contain high levels of hydrocyanic acid. Because of their weakness, livestock eat too much and sometimes suffer from poisoning. The leaves of such trees should not be eaten as a single piece and should be placed in containers to obtain low nutrients.

Composition of UMMB		**Composition of Uromin lick**	
Molasses	45	Molasses	30
Urea	15	Urea	10
Mineral mixture	15	Deoiled mustard cake	10
Salt	8	Deoiled rice bran	10
Calcite powder	4	Common salt	10
Bentonite	3	Mineral mix	15
Any vegetable oil cake	1	Maida	15
		Bentonite	3

Health Care and Management

It is important to resume a herd health program in consultation with a veterinarian to address possible disease concerns after flood or another strong storm. All livestock are required to be observed individually for injuries. Appropriate treatments are required to be initiated as determined by acceptable animal husbandry practices and with the guidance of a licensed veterinarian. The low supply of electricity caused by a flood can result in a loss of refrigeration for cattle vaccines stored at home or at working facilities. Most livestock vaccines have a very limited shelf life when left unrefrigerated. This means it will not be effective in boosting cattle immunity when administered. One has to carefully read product details and discard unused or

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unrefrigerated products as mentioned. It has been found that there is Increase in parasitic infestation in a post flood period because post flood favours the survival of worm eggs and larvae. So, anti-helminthic should be given to the animals. Also take care about external parasitic infestation. All the animals should be observed properly for any types of injury.

Disposal of carcass:

If flood-related livestock death losses are experienced, those carcasses should be disposed of within 24 hours of death. Burial is the most often utilized method of disposal of dead animals. The lowest point in the burial pit should not be more than 6 feet deep in a moderately well drained to excessively well-drained soil. Groundwater should not be able to enter into the burial pit. Avoid wetlands, floodplains. The burial pit should be minimum 100 feet from any well and surface water. Also, livestock carcasses should be initially covered with at least 6 inches of soil and ultimately with at least 30 inches of soil. Different organic waste material should be added to accelerate the decomposition process.

Conclusion:

Different Natural disaster causes a high mortality as well as the reduction in the productivity of the livestock. Disasters cause severe shortages of food, feed and drinking water and damage healthy food and livestock. Proper preparation before the arrival of the disaster is very important to safeguard the livestock. To maintain the production performance of the animal just after disaster safe and good quality balanced diet is very important for the livestock. Quality food management in times of crisis should be given greater attention to prevent starvation. Feeding strategies such as UMMB in addition to roughages, complete block feed, rea treatment of rea, limited feeding, feeding hays and other stored fodder can meet the challenge. Once the situation is under control and food security develops after a natural disaster, affected animals should be provided with weight loss and productivity compensation. Proper health care and disposal of the dead carcass should be there to arrest the spread of disease.

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