ABNORMAL ANIMAL BEHAVIORS CAN BE USED AS A TOOL FOR NATURAL EARLY WARNING SYSTEM FOR DISASTERS

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1. INTRODUCTION

It was only after the tsunami disaster in the Indian Ocean in 2004, it was realized the need for disaster management and early warning. But massive loss of life and economic damage could have been avoided if there had been adequate knowledge of those early warnings. Because of this, the government has installed high-tech disaster warning systems at massive economic cost. Apart from these, there are many ways to forecast disaster. One of these is the use of abnormal animal behaviors to prevent disasters. Unfortunately the fact that abnormal animal behaviors can be used as an early warning tool for disaster goes unnoticed and is little known. And economically it is very, very low-cost project.

2. RESULTS AND DISCUSSION

Tools for the Natural Early Warning System for Disasters:

The behaviours of animal was not considered for the disaster management system, Moreover, there is no study of animal behaviour related to natural disaster. However, strange animal behaviours can be observed before the disaster (Joseph et al., 2000).

Earthquake and fish, tigers, elephants and other animals:

Most animals have highly capable sense organs that can sense changes in sound, heat, touch, vibration, electrostatics, chemical activity, and the magnetic field. Pisces, for example, can detect earthquakes and tremors long before humans can feel them. Elephants and some animals have the ability to feel an earthquake even if it started at a great distance. A wide variety of bird species and animals, such as elephants and tigers, are capable of sensing down infra sound frequencies ranging from 1-3 Hertz. But in humans it is 100 - 200 Hertz.

Thousands of birds flocked to Indonesia before the tsunami, and Thousands of people have been killed by the tsunami in Sri Lanka, but not a single elephant or rabbit in the wild has been killed, according to research reports (Perera, 2008).

Earthquake and dogs, insects and small mammals:

A study in Japan reported that dogs' unusual behaviors such as excessive biting and barking predicted a magnitude 7.2 earthquake two months later (Associated press, Japan, 2003). Animals can sense changes that occur before an earthquake, such as ground tilting, humidity, electric currents, and magnetic fields. These have been proven by studies in countries such as China and Japan (Joseph et al., 2000). Spiders, and some insects, such as rats (burying seeds in dry soil), are examples of these moisture-sensitive animals (Sayeed and Benzer, 1996).

Earthquake and other animals:

Numerous studies in China have reported that dogs, foxes, bears, pigs, cows, horses, donkeys, locusts, tigers, etc., show abnormal behaviors before the earthquake, and that the sleep of long-sleeping snakes is disturbed and that they come out and freeze in the snow (Joseph et al., 2000).

Goats refuse to go into their pens, cats and pigs move to safer places with their cubs, the sound of chickens colliding with their nests in the middle of the night, the sound of fish colliding with a fish tank, the birds leaving their nests, the animals of the zoo refusing to go to their places at night, snakes, lizards, Small mammals (rats, terns) leaving their burrows, large swarms of insects along the coast, herds moving to higher ground, domestic animals refusing to work, wildlife birds leaving their habitat, etc., can all occur before the earthquake and other disasters (Perera, 2008).

Tsunami and, birds and other sea creatures:

Indigenous peoples in many parts of the world still use the sounds of birds and the changing directions of sea creatures to warn of natural disasters, such as tsunamis and storm surges.

Studies show that tens of thousands of birds migrated from Indonesia before the tsunami, and that when the tsunami killed tens of thousands of people in Sri Lanka, not a single elephant or rabbit in the wild was killed.

Tsunami and fish:

Ariyathirana, a Sri Lankan researcher, noted that before the tsunami, fish stocks migrated to Sri Lanka from the seas off Sumatra. Because the ability of fish to sense earthquakes is very, very immense. Pisces can sense earthquakes and tremors long before humans can feel them. Sharks, squirrels, and many other fish are sensitive to changes in the electric field (i.e., one part voltage per ten million). Whales (even birds) like dolphins can show abnormal behaviors due to changes in the magnetic field (Suryopratomo, 2005).

Tsunami and buffaloes:

Indonesia's Similu community of 80,500 people survived the 2004 tsunami disaster as a result of receiving natural early warning from buffaloes that moved to higher ground. It is noteworthy that of the Similu community, only seven were killed, leaving 170,000 killed across Indonesia's Aceh region.

Flood and birds:

Floods and subsequent droughts in Swaziland are among the worst disasters. The people who live there predict disasters by their nesting height of a bird called *emahlokohloko (Ploceus sp)* on trees and get the early warning of the disasters of floods. They take precautionary measures to prevent flooding if nests are built at high cause flooding and low risk of flooding if nests are built at low (UNEP, 2008).

Rainfall and birds:

Swasi predict the rain with crying of certain species of birds, and with the direction of the wind with unusual animal behaviors, and the patterns of the lunar crescents to warn of natural disasters.

Drought and goats:

In Tanzania the behavior of goats predicts drought and impending famine.

Disasters and other animals:

Hunter and gatherer of Russia's Kamsar Ork predict disasters by using the colors of the sky, dogs rolling their backs on snow, and crows hovering in the sky.

3. CONCLUSION

The use of abnormal animal behavior as a tool for disaster prevention is still seen as an underdeveloped, neglected field and an effective technique in many developed countries and developing countries such as Sri Lanka. So by observing the abnormal behaviors of animals on a daily basis and by using the abnormal behaviors of animals as a tool for disaster preparedness, we can save huge funds and avoid massive loss of life and property. Between the abnormal behaviour of animals and the early warning of natural disasters. But not all abnormal behaviours are early warning.

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