

Discussion

The prevalence rate cannot be reduced in animals already having slit nostrils. However, the incidence of fresh cases can be minimized with a series of focused awareness-raising interventions. Thus, the issue can be tackled in the long run by creating awareness in equine-owning communities of the cruelty of the practice. For this purpose, equine owners/users in communities, work places, and animal fairs were taken into account in order to design interventions to change their perceptions about the issue. Through pictorial banners, leaflets, demonstrations, and owners/users meetings, awareness on issue was aroused. The issue was treated with other welfare issues during walks and events arranged from time to time, for example World Animal Day – celebrated during the last 2 years in all 3 districts. Equine owners were educated on the importance of regularly giving fresh water, including normal saline, to their animals especially in summer. Owners/users awareness was raised on the prevention and management of heat stress in their animals. Thirteen water troughs and 14 shed/shelters were constructed in communities of the region through participatory action. More than 400 canvas water buckets were distributed amongst the communities at subsidized rates.

For short-term and immediate results, the source of the nostril-slitting practice was thought to be eliminated. The quacks of the area were educated about the facts of the issue and were motivated to stop this traditional practice and to join Brooke efforts of animal welfare through participation in CBAHW training arranged by Brooke South. Four practising quacks joined the training and became trained animal health workers. Initially they were given first aid kits and basic medicines used in veterinary practice. They were linked with equine owners/users and relevant stakeholders. Furthermore, 7 seven other slit nostril experts from the communities were identified and motivated enough to quit practising nostril slitting. They also actively supported Brooke teams in delivering and arranging awareness-raising camps and campaigns.

Welfare assessment data are being used for internal monitoring of the interventions. The results showed a reduction in the prevalence of the practice pointing to the right direction towards the goal. In future the same activities will be continued to cope with the issue in and around Brooke operational areas.

Acknowledgments

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References

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DISASTER RISK REDUCTION: THE BANGLADESH STORY

D. Haider

Bangladesh Disaster Preparedness Centre (BDPC), Dhaka, Bangladesh

Background

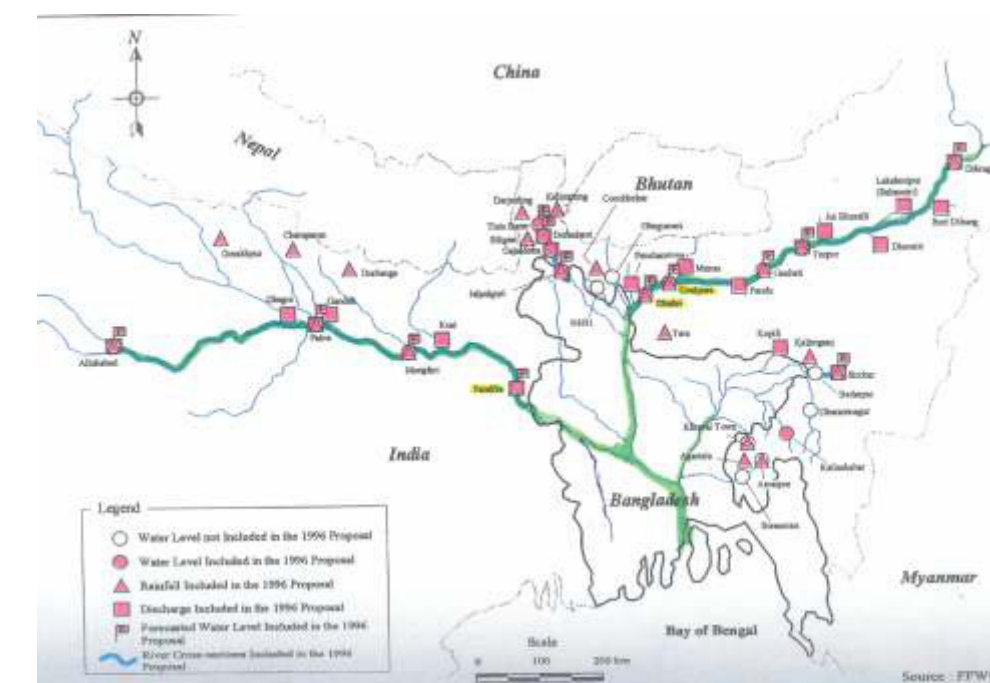
A country born out of a bloody freedom struggle in 1971 and currently home to 16.2 million people within a 145,570 sq km land area, Bangladesh is identified as a developing country. It is an agrarian economy; 41% of the population are literate, of which 31% are female. With a per capita income of \$520 (2008), the country has managed to continue an annual average growth of 5% since 1990 despite political unrest and repeated devastating disasters.

Bangladesh is distinctly identified as a high-risk country on the world map. Its vulnerability to natural disasters is rooted in its geographic location in the world's largest delta compounded with a series of hydro-meteorological and geo-physical factors, including huge inflow of monsoon water from upper riparian countries, a low floodplain, and storm surges across the long funnel-shaped coastline with tropical climate.

Topography

Bangladesh, in the low-lying Ganges–Brahmaputra River Delta or Ganges Delta, practically provides the drainage for the mighty rivers of the South Asian region (see Figure 1). This delta is formed by the confluence of the Ganges (local name Padma or Pôdda), Brahmaputra (Jamuna or Jomuna), and Meghna rivers and their respective tributaries. The Ganges unites with the Jamuna (main channel of the Brahmaputra) and later joins the Meghna to eventually gush into the Bay of Bengal. There are 232 rivers and rivulets. The alluvial soil deposited by these rivers has created some of the most fertile plains in the world. Bangladesh has 58 trans-boundary rivers, making water issues politically complicated to resolve. The country has 700 km of coastline. Most parts of Bangladesh are less than 12 m above sea level.

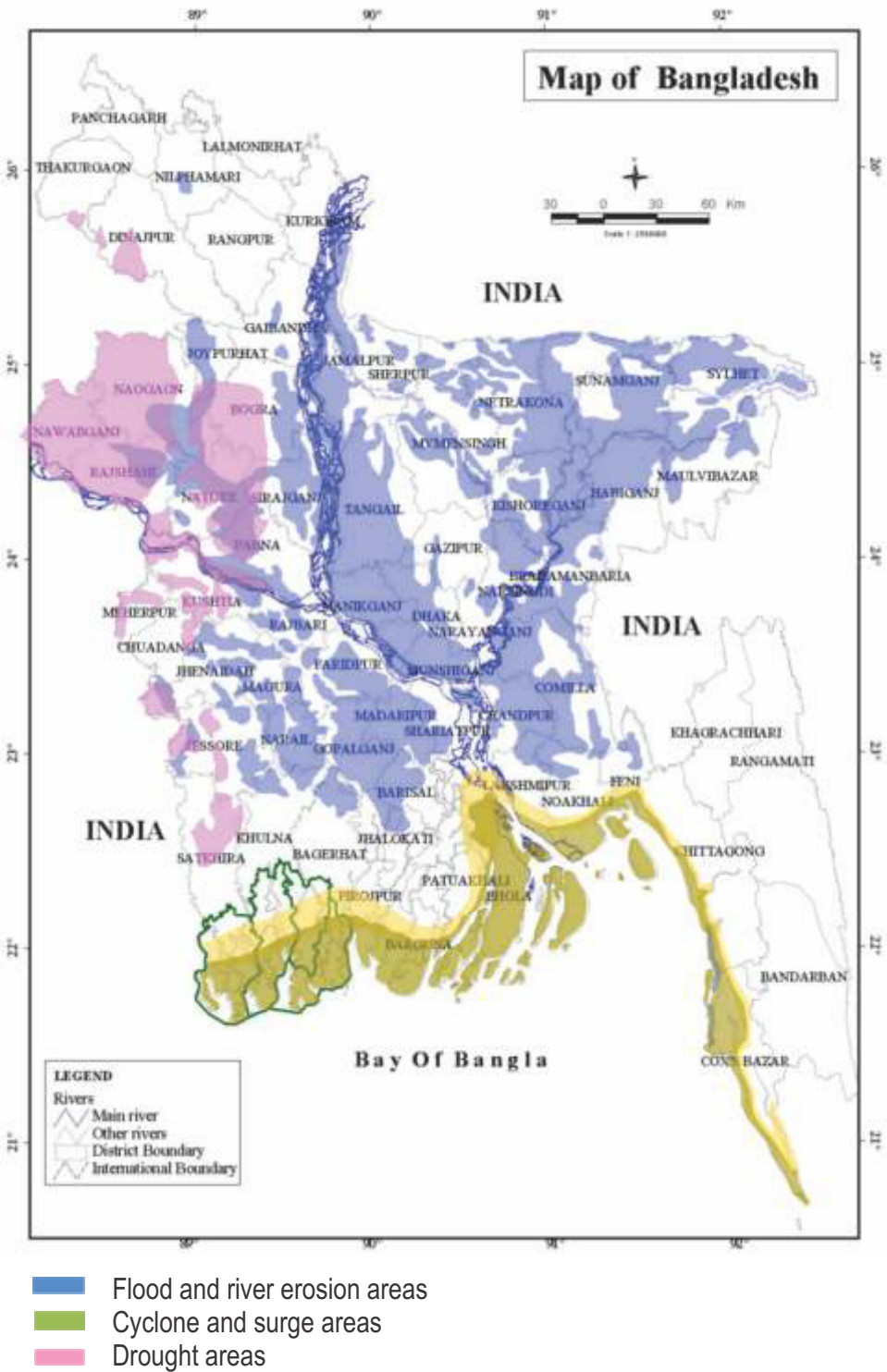
Figure 1. Regional view: Bangladesh, the drainage system of the mighty rivers



Disasters

Flood, tropical cyclone, tornado, tidal surge, drought, and large-scale riverbank erosion are regular phenomena in Bangladesh, creating repeated havoc and disrupting the lives and livelihoods of the disaster vulnerable people in most parts of the country (see Figure 2). Since independence in 1971, the country has endured approximately 200 disaster events causing the loss of more than 600,000 human lives and destroying years of development gains.

Figure 2. Disaster areas of Bangladesh



The cyclone that hit the country in 1970 and killed about half a million people was the worst in the recorded history of the world. The severe blow to the economy wrecked by the floods of 1987, 1988, and 1998 took a long time to recover from. The floods of 2004 affected over 34 million people and caused a loss of over US\$3.2 billion in infrastructure, crops, and properties. Riverbank erosion, on the other hand, is a slow onset and silent disaster in this land of mighty rivers, leaving over 10,000 people (on average) homeless and destitute every year. Category 4 cyclone Sidr in 2007 claimed 3,447 lives, injured 55,282 people, and affected 9 million people in 30 districts. A total of 2 million people had to take refuge in the emergency shelters. About a quarter of the world heritage site Sundarbans (a tropical mangrove forest) was damaged and it will take 40 years to recover from the catastrophe. The loss was estimated to be around \$1.7 billion. Before the country could recover from the onslaught of Sidr, it was hit by cyclone Aila in May 2009. The death toll from the cyclone rose to 121; at least 58,450 domestic animals were killed [1].

Records of the last 200 years show that at least 70 major cyclones have hit the coastal belt region of our country. Examples of severe tropical cyclones are the Barisal cyclone of 1584, the Bakerganj cyclone of 1876, the Urir Char cyclone of May 1985, the November 1970 cyclone, the great cyclone of 1991, and of course Sidr of 2007.

When disasters strike, the poor suffer disproportionately. Disasters destroy the meagre physical assets that they have, and severely affect their livelihoods including their precious asset: livestock. Disasters thus further entrench poverty and inequalities. Hazards such as floods, cyclones, and droughts are noted for aggravating poverty in 2 ways: through destruction of food stocks and the scanty assets, including livestock, crops, and houses, of the poorer households; and through making employment opportunities scarce, leading to food insecurity, malnutrition, disintegration of families, and social unrest.

To make conditions worse, Bangladesh is identified as one of the countries most vulnerable to climate change impact: 70 million people are estimated to be affected annually by floods, and 8 million by drought; up to 8% of the low-lying lands may become permanently inundated due to sea level rise; salinity ingress is threatening food security – all by 2050.

The total population in the 19 districts of the coastal zone amounts to 35.08 million, the male population being 17.9 million and female 17.1 million [2]. Agricultural labourers, small farmers, fishermen, and the urban poor make up 70% of the 6.85 million households on the coast and the coastal population is projected to grow to about 41.8 million in 2015, and 57.9 million in 2050. The extent of poverty is relatively high compared with the remaining part of Bangladesh: 52% are poor and 24% are extremely poor. Climate change is threatening huge problems for this large and growing population.

Disaster management capacity

Over the years the government and NGOs in Bangladesh have developed expertise in post-disaster relief and rehabilitation operations as a result of managing big disasters repeatedly and by disaster management capacity-building initiatives undertaken since 1992.

Bangladesh is considered a world leader in disaster management. The death toll of category 4 cyclone of 1970 was 500,000 while in the same category cyclone in 2007 the figure was 3,447. This is indicative of a marked improvement in the disaster management capacity of the country. Bangladesh has an elaborate system, from national to local level, for disaster management. There are Disaster Management Committees (DMCs) at all levels. However, the area where the country is still limping is saving the livelihoods of the people, i.e. saving their assets of crops, fish stock, livestock, and houses. The damage estimates of each disaster reach billions due to this loss of livelihoods and infrastructure.

Since independence, huge funds have been spent in Bangladesh on disaster management: relief, rehabilitation,

and disaster preparedness. After the cyclone in 1991, over US\$1 billion was spent. The government and donors spent over \$290 million on the emergency relief operation after the floods in 2004. In addition, the government allocated more than 700,000 tonnes of food grain in 2004 under its normal relief programme in the form of Vulnerable Group Feeding (VGF), Food for Work, Test Relief, etc. After Sidr in 2007, more than \$500 million were allocated for response and recovery, including loans from the World Bank. On the other hand, the biggest programme to date in Bangladesh has been the CDMP (Comprehensive Disaster Management Programme), with a completed 1st phase of \$26 million and ongoing 2nd phase of \$50 million.

However, since the 1990s, it has been recognised that relief/rehabilitation support cannot ensure sustainable recovery, especially of the livelihoods of the poor and low-income groups; nor can it save them from the onslaughts of nature's fury. Instead the need of the hour is to invest in disaster risk reduction by capacity building and vulnerability reduction of the communities to shield them from the risks of these natural hazards.

Loss of livestock in disasters

The Bangladesh economy is still largely agrarian. Agriculture in this country has not yet been able to reap the benefit of technological advancements in this sector, and therefore livestock is still very crucial in agriculture in addition to being an important asset on its own. To a farmer his bull or cow is as precious as his own life! Studies show that people are often reluctant to leave their homes to take refuge in the cyclone shelters until the very last moment, at 'danger signal number 9' or '10', because they do not want to leave behind their livestock; and they cannot take the animals with them due to lack of provision for livestock in the shelters (see Table 1). This results in more casualties. Women are the main care takers of livestock. So, they are often the victims of such delays in evacuation to safety.

Table 1. Loss of livestock in some major disasters

Disaster	Cattle lost	Poultry lost
Sidr 2007	21,100	611,347
Tornado 2005 – 1 district only	35	
Flood 2004	1,451	2,54,488
Cyclone 1970	280,000	

Sources: [3] [4]

Bangladesh Disaster Preparedness Centre (BDPC)

Bangladesh Disaster Preparedness Centre (BDPC) has been working since 1992 to promote capacity building of all stakeholders in disaster risk management and to promote mainstreaming of disaster risk reduction (DRR) into development policies and planning and community empowerment for sustainable DRR and climate change adaptation.

BDPC believes that disaster risk is rooted in conditions of physical, social, economic, and environmental vulnerabilities that need to be assessed and managed on a continuing basis. People's livelihoods and their empowerment are critical elements for DRR. Although we do not directly get involved in relief operations, we facilitate coordination and advocate promoting the rights of the affected communities so that minimum

humanitarian standards are met during the relief and recovery process.

The field of disaster management has evolved considerably over time, particularly over the last 2 decades, to the point that today it can be considered a professional discipline, with its own fundamental principles, body of knowledge, and methods of practice.

Shelter-based community risk reduction project of BDPC

Figure 2. Frontal elevation of shelter at Morrelganj



BDPC is implementing a shelter-based community risk reduction project at the Sidr affected area in the southern part of the country: Morrelganj Upazila of Bagerhat District. The Swiss Agency for Development and Cooperation (SDC) is building 4 cyclone shelters at Morrelganj (see Figure 2). BDPC is working on social mobilisation among the target beneficiaries, namely all the people within a 1 km radius area around each shelter. The objective is to inculcate ownership within the community, so that they manage and utilise the shelter building before, during, and after the cyclone. As part of that process, we carried out extensive consultation with the community to assess their needs and views about the usage of the building. One of the points to come across strongly, quite understandably, is the need to shelter their livestock. BDPC carried out a livestock survey (see Table 2).

Table 2. Livestock count in Morrelganj

SL No.	Shelter site	Cattle	Goats	Hens and ducks
01	Khawlia – 01	104	108	999
02	Khawlia – 02	173	128	1,758
03	Hogolpati - 01	174	265	1,333
	Hogolpati - 02	201	190	1,857
	Total	652	691	5,947

Morrelganj, being in the coastal belt, bears the brunt of climate change, salinity ingress. On top of this, indiscriminate shrimp cultivation over the last 15 years has almost destroyed the biodiversity of the area and there is very little green left in the area. Thus survival of livestock becomes a challenge in the absence of pasture.

There are some 1,334 households comprising 5,045 people in the target area. They still have some livestock, as revealed in the survey, for which they need shelters to protect them against tidal surge. Therefore, as per the demands of the community, all 4 shelters have the ground floor as open space, for sheltering the livestock. Guidelines for shelter management have been developed under this project, and they contain suggestions regarding the care of livestock in the shelter during the disaster period.

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SYNOVIAL SEPSIS IN WORKING EQUIDS: RESPONSE TO TREATMENT IN 57 CASES

H. S. Gamal, A. Aly, D. Micheal, D. I. Rendle, and V. Epstein

Animal Care in Egypt, El Habil Road, Luxor, Egypt
hanagv500@hotmail.com

Abstract

Relationships between historical and clinical factors and outcome were investigated in 57 cases of synovial sepsis presented to a charitable clinic. Cases were treated with synovial lavage combined with systemic, regional, and intra-articular antimicrobial administration. Cause of injury, time from injury to treatment, site of injury, and number of flushes required did not appear to affect outcome. A significant association was identified between degree of lameness at admission and degree of lameness at discharge (p=0.01). Equids presenting with a lameness of 9–10/10 were 11.3 times more likely to be lame at discharge than equids presenting with a lameness of 3–4/10.

Introduction

Synovial penetrations are common in working equids and result in severe lameness. The condition not only represents a major cause of morbidity but has significant economic implications for the human population.

Current evidence would indicate that the most effective treatment is lavage of the synovial structure with systemic and sometimes additional regional administration of broad-spectrum antimicrobial drugs [1, 2, 3, 4]. Arthroscopic examination in association with lavage of the affected synovial structure is considered by many to be the gold standard especially when treating chronic cases [1, 2, 3, 4]. Arthroscopic examination is expensive, labour intensive, and is not available in charitable clinics. Through-and-through lavage of the synovial cavity using large-gauge needles provides an effective substitute [5]. To the authors' knowledge there are no reports of the treatment of synovial sepsis in working equids. The following study aimed to investigate factors that might influence the success of treatment for synovial sepsis in a charitable clinic; specifically whether outcome could be predicted from the cause of injury, time from injury to treatment, the degree of lameness at admission, the synovial structure affected, and the number of times lavage was required.

Materials and methods

Study design

Case records for working equids presented to Animal Care in Egypt between July 2008 and December 2009 were reviewed. All animals in which synovial sepsis was diagnosed were considered for inclusion. If soft tissue or skeletal injuries that could potentially limit return to soundness were present concurrently the cases were excluded. Data were collated using Microsoft Excel [6] prior to analysis using Stata software [7]. Relationships between clinical and historical case data and degree of lameness at discharge were investigated using Fisher's exact test. Relationships between clinical and historical case data and duration of hospitalisation were investigated using a one-way ANOVA. Significant results were further investigated using univariable logistic regression. The significance level was set at $p \leq 0.05$ for all tests.

Diagnosis

In the majority of cases diagnosis was made by observation of saline exiting a wound following distension of the synovial cavity. Failing this synovial fluid was analysed visually, microscopically, and using a refractometer. Synovial sepsis was diagnosed if total protein concentration exceeded 40g/l and greater than 80% of the leucocytes within the sample were identified as polymorphonuclear cells [4]. In selected cases radiographic examination also facilitated diagnosis.

Treatment

Following diagnosis the affected structure was lavaged immediately via standard approaches [8] using 14–21