

HEMNZ Bulletin

Issue 129

February 2008

Risk Reduction does make a difference

A more effective early warning response and better cooperation between governments in southern Africa led to a dramatically reduced death toll in the flooding that has hit the region this season, according to the UN regional humanitarian coordination office.

Unusually early and heavy rains have destroyed the homes and the livelihoods of nearly 450,000 people in Malawi, Mozambique, Zambia and Zimbabwe, and that number could rise to 1.3 million by April when the rain finally lets up.

That is not to say it was an easy ride. According to the Office for the Coordination of Humanitarian Affairs (OCHA), more than 680,000 Mozambicans are currently affected or at immediate risk from floodwaters and some 90,000 hectares of crops have been swamped, destroying the livelihoods of many subsistence farming families.. But the government had responded to the crisis with an evacuation plan, pre-positioned relief supplies and assistance to affected people, and was confident in its response. Whereas flooding in 2002 "killed hundreds, and in 2007 dozens, in 2008 only three people died," said Kelly David, head of OCHA for southern Africa.

The Zambezi, Africa's fourth largest river, rises in Zambia and flows along the borders of Namibia, Botswana and Zimbabwe to Mozambique, where it spills into the Indian Ocean. Torrential rains along almost the whole 2,574km length of the river, particularly in southern Zambia, northern Zimbabwe, and central and northern Mozambique, saturated the area. The Cahora Bassa Dam, built to generate electricity and regulate the flow of the river, overflowed and Mozambique had to keep releasing water to keep the dam wall safe, causing more flooding downstream.

Contingency planning in 2007 by nine countries in the region meant they were much better prepared for the floods. There was far greater cooperation between governments in managing the river system water levels, and local authorities proved effective in their response. "Lessons have been learnt; governments pre-positioned tents and non-food items, and there was a sense of pride that we can manage ourselves," said David.

Paulo Zucula, the director of Mozambique's Natural Disasters Institute (INGC), stressed that despite media reports, the situation was under control. "Our intention is to avoid making an international appeal ... If we do that, it will be because we have exhausted all our local possibilities, and it is too early to say that," he was quoted as saying.

"Unfortunately, there are some organisations that live off emergencies," Zucula added, "but internationally it is generally accepted that it is better to prevent than to cure. And that is our strategy."

Mozambique is not out of the woods. It is still relatively early in the rainy season, and Zucula warned that if the rising waters of the Limpopo and Licungo rivers led to flooding in those river basins,

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"then we could see worse floods than in 2000. However, with the plans that are being put into effect, we believe that the impact in terms of human lives will be much less."

There is also concern over the longer term food security impact in Mozambique, Zimbabwe and Zambia as a result of the inundation of agricultural land.

A personal story

Domingos Damião lost his crops and his house when the Zambezi River in central Mozambique flooded in 2007. He heeded government advice and began building a permanent home in the resettlement centre of Zona Verde, but sowed new crops in the fertile flood plain. This season's flooding has again robbed him of his food reserves, but his new house is safe.

"We were in the risk flood zone. It was always difficult but we got used to living there because in dry times, when there would be no water, we could still get something out of our farms. Then the 2007 flood appeared and we found ourselves victims. We carried our kids on our backs and sacrificed until we arrived here." "At the resettlement centre the government and organisations like Save the Children and the Red Cross gave help to people who had just arrived. They organised schools for the children, and gave the people food to eat. They distributed corn flour and school materials so some of the little children could still complete their studies."

"After the emergency the government encouraged people to live here permanently and only go to the low zone to farm. Some people couldn't do what the

government asked and returned to the risk zones. Then the floods came again, but our colleagues have been rescued and brought here." "So we are here permanently, it's just our farms that are down in the risk zones ... [In the resettlement camp] one can make a farm, but a the soil is sandy, which doesn't provide for permanent production; just one year, two years, then that fertility disappears. For this reason many people return to the risk zone, always to farm."

"The preference of everyone here is to live here permanently and secure a better house as the government has requested [and is offering help to build]. Besides that, we have observed that there is a risk living in [the flood] zone. We plan on staying here, but making our farms there".

But not everyone shared Mr Damião's view. The real challenge for authorities was convincing the defiant few to leave their possessions behind and head for higher ground, and keep those already rescued from returning before the water has subsided. According to Paulo Zucula, "Seventy percent of the people have been moved, but 30 percent are still missing, for two reasons: some are resisting moving - they want to stay; and a number of people have decided to move back to flooded areas." "We have to be more forceful because people can be reluctant. They will look at the sky and see its not raining, or look at the river and see it is still far away, but we deal with other information like forecasts and weather reports so we know what is coming; then we need to force them out," Zucula said.

"We don't handcuff or jail anyone, but we do need to convince them to go. First we visit and warn people, and tell them that this is their last chance to leave. We also offer to take people's children and wives for them - we have to convince them that it's now or never." Reluctance to leave and the desire to return arises from the evacuees' fear of losing what little livestock, crops and property they possess. Some 40 percent of Mozambique's population lives on

less than one US dollar a day.

"They risk everything to save what they have," Zucula commented, adding that the government had started positioning uniformed police officers in flooded areas to send people back and to reassure those who were afraid their possessions would be looted.



Children can make the best of the worst of times

A hard lesson, but being learnt

Chris Mclvor, Programme Director of Save the Children UK in Mozambique, said: "No one likes being flooded out every second or third year. People have a good reason to be there - its economics: they get good produce there, so if you want people to move out of harm's way we need to provide an economic alternative that will allow them the same income."

Three issues were essential in getting people to stay in relocation areas, Mclvor said: infrastructure - including education, health centres, water and sanitation; a means of making a living, and their willing consent. Mclvor noted that some communities had become dependent on aid and opted to stay in flood-prone areas because they knew that government aid agencies would come to their rescue if the rivers burst their banks, but asked, "What is the longer-term strategy?" This would need to be explored, and a long-term solution identified. #



Not only water—there are crocodiles in there too

Floodwater with nowhere to go

While flood risk reduction in Mozambique has been a relative success story, the flooding in Zambia illustrates what might have been. The reason why Zambia's urban poor have had to wade through ankle-deep water for weeks on end is as much down to human error as the torrential rain that has hammered the country: in a word, or put in one word—drainage.

According to Douglas Katengo, former president of the Zambia Institute of Architectures, the floods [in the capital, Lusaka] were a clear indication of a weak urban planning system, because there was no way water should fail to sink away over a period of three weeks if the drainage system was properly done," "All the affected areas are informal settlements, and if proper planning had been done for their existence, there would have been proper services," said Katengo

Like much of south eastern Africa, Zambia has been soaked by heavy downpours since the last week of November 2007. In rural Southern and Eastern provinces, flooding has displaced thousands and drowned crops. In Lusaka, it has also brought misery: schools and clinics have been affected, homes stay waterlogged, and there is fear of an outbreak of cholera - all too common in the city, even during a normal raining season.

"Although no serious disease outbreak has been recorded, the situation is still bad," a public service nurse said. Her clinic was running at half capacity because staff had problems getting to work. "Sometimes I am forced to pay a [errand] 'boy' 1,000 kwacha [US\$0.25] to carry me on his back through the floodwaters, otherwise I can take almost an hour to go round [the water], a distance that normally takes five minutes."

Holland Mulenga, a property consultant, said, "This is more about lack of proper forward planning which takes into consideration the expanding towns. If we had proper planning and a planning authority in the first place, the law

should have been enforced to ensure social services were properly provided and these floods wouldn't be as bad as they are now."

Most residential areas in Lusaka developed haphazardly from unplanned informal settlements before the government finally recognised them. But critics say recognition does not automatically mean the delivery of social services.

Unplanned

"We need to introduce a system where upgrading of informal settlements is done before they are recognised; not the way things are at the moment, where recognition is done first before upgrading, which leaves the settlements with perpetual sanitary problems," commented Mulenga.

Zambia's formal sector generates only 400,000 jobs, and all most three-quarters of its people subsist on US\$1 or less a day, according to the government's Central Statistical Office. Informal settlements provide the only accommodation Zambia's urban poor can afford.

Zambia's vice-president, Rupiah Banda, told local media the government had earmarked US\$4 million to mitigate the impact of the floods in the capital. "[It] is worse than earlier estimated ... I just want to say that this is a tragedy that has hit us, and let us all forget our political differences and fight this problem together."

And in Malawi

Across the border in Malawi, where according to the government 152,000 people are affected, over 700 cholera cases have been reported and the number is expected to rise. Lillian Ng'oma, Secretary and Commissioner for Relief and Disaster Preparedness in the Office of the President, said her department had so far spent US\$340,000. to assist flood victims. "We are likely to deplete our resources if none of our partners will come on board to assist," said Ng'oma.

Last year Malawi's Meteorological Department predicted flooding as a result of the La Nina phenomenon, in which

cooler water wells up to the surface of the eastern Pacific Ocean, an event strongly associated with heavy rainfall across southern Africa.



Wading to the shops

Ng'oma said her department had advised people in flood-prone areas to evacuate their homes and move to higher ground, but many were reluctant to go. Chief Tengani, a traditional leader in Nsanje, one of the affected districts in southern Malawi, said it was not easy to convince people to abandon their land. "They have lived all their life cultivating along the Shire River."

Solomon Tobby, District Commissioner for Nsanje, said this reluctance had cost 7,617 households either their homes or crops. "At the moment we are asking for a helicopter to airlift drugs and other items to areas in dire need."

Around 2,500 flood-hit Mozambicans have also crossed into Malawi seeking shelter, food and medical care, said Ng'oma. "The situation is worse in Mozambique, where crocodiles are attacking people, and the safest place to run to is Malawi." #

Cyclone shelters save lives, but more needed

When last November's Cyclone Sidr struck the village of Angul Kata in Barguna District along the banks of the River Paira, residents had just seconds to flee. "It all happened so fast. I grabbed my children and ran," one woman said outside the collapsed remains of her tin shack. "The warning came too late. We barely got out alive," another chimed in, recalling in vivid detail the cyclone's devastating force as it unleashed itself on the largely agricultural community of 2,000 inhabitants - one of many badly affected across southwestern Bangladesh.

Over 3,000 people were killed and millions more made homeless by the storm described as the most powerful cyclone to have ravaged Bangladesh in over 15 years. But despite the odds, most residents survived the disaster unscathed, a fact largely credited to the village's sole cyclone shelter - a simple three-storey building which also serves as the village primary school and accommodates 250 students.

Within 30 minutes of the cyclone striking, over 1,500 people had clambered up the central stairs of the school, which sits upon eight reinforced concrete pillars - to escape the five-metre-high tidal surge and 220kph winds that followed. Had the shelter not existed, the death toll could easily have been in

the hundreds, experts say.

Vital first line of defence

Such shelters provide a vital first line of defence against cyclones, alongside early warning preparedness, megaphones, and Bangladesh's intricate polder network which protects much of the country's coastal belt and behind which the vast majority of the population lives.

After Cyclone Bhola in 1970, which claimed over half a million lives, Bangladesh moved to build shelters throughout the region, particularly in densely populated coastal areas. However, many of the 1,800 cyclone shelters - some of which also accommodate schools - have been neglected and fallen into disrepair; while others have been abandoned altogether. The Angul Kata shelter, built in 2004, has a leaking roof and residents are in a quandary over what to do.

Two thousand new shelters

"We need more cyclone shelters," said 72-year-old farmer Mohamad Azharullah Howlader, noting that the nearest shelter to theirs was over 8km away.

Local officials, too, have acknowledged this: Moshir Alam, deputy commissioner of Bangladesh's cyclone-affected Patuakhali District said "The number of shelters is insufficient; the district cur-

rently had 220 cyclone shelters, but at least 200 more were needed;" adding that there was only limited funding to maintain those already in existence.

The government appears to be listening: Earlier this month, plans were announced to build 2,000 additional shelters in 2008. "Some 2,000 new cyclone shelters will be built in 15 low-lying coastal districts, which had been trampled by the 15 November cyclone," Food and Disaster Management Secretary Mohammad Ayub Miah, was quoted as saying. With an increasing population and around 800 people per square kilometre, cyclone-prone Bangladesh may need to build even more. #



Mohamad Azharullah Howlader says there are simply not enough cyclone shelters to go around



Elevated on pillars, the shelters are designed to withstand major cyclonic tidal surges



Iron shutters protected against the 220kph winds outside

Influenza vaccine mismatch

The vaccine mismatch and the appearance of oseltamivir-resistant H1N1 virus in both Europe and North America are novel features of the epidemiology of the 2007/2008 influenza season.

The US Centers for Disease Control and Prevention (CDC) says that most circulating influenza B viruses tested so far this northern season don't match this year's vaccine, signalling that 2 of the 3 vaccine components are off-target. Joe Bresee, chief of epidemiology and prevention in the CDC's Influenza Division, told reporters at a briefing that 93 percent of the circulating influenza B viruses analyzed so far belong to the Yamagata lineage, which doesn't match the influenza B component of this year's vaccine. The B component is a B/Malaysia/2506/2004-like virus, which belongs to the Victoria lineage. Because the Yamagata and Victoria lineages are distinct, the vaccine provides little cross-protection for influenza B, he said.

The news of the mismatch between the influenza B strains closely follows recent indications that a circulating influenza A/H3N2 subtype, A/Brisbane/10/2007-like, doesn't match the vaccine. However, the CDC said the Brisbane strain is a recent antigenic variant of the A/Wisconsin/67/2005-like virus, a component of this year's flu vaccine. Consequently, CDC director Julie Gerberding said this year's vaccine should provide some cross-protection against the Brisbane strain. "Even when there is less than an ideal match, there is still some cross-protection," Bresee said. "This is especially true for high-risk populations. Getting a flu vaccine may reduce the risk of death or hospitalization from the disease."

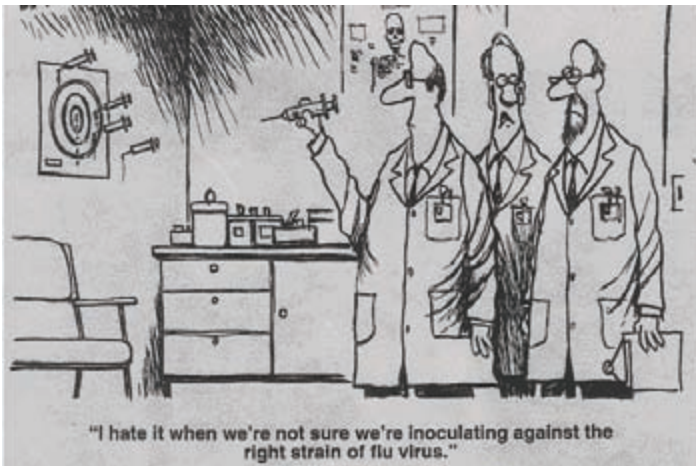
According to the CDC's most recent weekly flu report, for the week ending 26 Jan 2008, US laboratories have characterized 197 flu viruses so far this season. Of 43 influenza B viruses, 40 (93 percent) belonged to the Yamagata lineage. And, 3 (7 percent) belonged to the Victoria lineage. Of the other viruses analyzed so far, 53 were A/H3N2 and 101 were A/H1N1. H1N1 is the 3rd subtype included in the seasonal vaccine. So

far, the H1N1 component in this year's vaccine seems well-matched to circulating H1N1 viruses, health agencies have reported.

Bresee said it's difficult for global health officials to predict what strains will be prevalent in the next influenza season, because the selection must allow enough time for vaccine production. World Health Organization (WHO) officials meet next week to advise what 3 components should be included in the northern hemisphere's 2008-09 seasonal flu vaccine. Despite the difficulties, he said the seasonal flu vaccine has been well matched to the circulating strains in 16 of the last 19 seasons.

The US flu season started out slowly, but activity has increased sharply, which is typical, Bresee told reporters. All states are now reporting influenza activity, and 31 are reporting widespread outbreaks. So far, one flu-related death in a child has been recorded, but it is likely that 5 additional deaths will be added to the CDC tally within the next few days, Bresee said. He said the CDC doesn't know yet if any of the children who died of flu this year were co-infected with methicillin-resistant *Staphylococcus aureus* (MRSA). The CDC

recently urged clinicians to be alert for co-infections, particularly with MRSA. In the last flu season the number of paediatric flu deaths was moderately higher than the previous season; 15 of 73 deaths involved MRSA co-infections. "This reminds us all that influenza is a common disease and can be a severe disease," he said.



The news about the influenza B mismatch is the latest in a string of unusual findings about circulating flu viruses. In late January, the European Centre for Disease Prevention and Control sounded a warning that some H1N1 influenza viruses in Europe were showing signs of oseltamivir (Tamiflu) resistance. The WHO reports that resistance has been found in 14 countries, 10 of them in Europe. According to a WHO table of 7 Feb, 8.4 percent (15 of 179) of the H1N1 viruses analyzed in the United States so far had the resistance mutation, and 6.3 percent (8 of 128) Canadian isolates showed signs of oseltamivir resistance.

Bresee said the CDC is watching the oseltamivir-resistant viruses very closely and that investigators still don't know what caused the mutation. #



And she used to tell her kids that it was just a little prick!!

Cost-effectiveness of Antiviral Stockpiling

New Zealand, like many countries has a stockpile of antiviral (AV) drugs for use in a potential influenza pandemic. The United Kingdom recently announced the procurement of 14.6 million courses of oseltamivir (Tamiflu), enough for almost 25% of the population; and there, as elsewhere, the cost effectiveness of that stockpile has been questioned. Ruby Siddiqu and John Edmunds, from the UK Health Protection Agency, set out to answer that question. The results of their study, ***Cost-effectiveness of Antiviral Stockpiling and Near-Patient Testing for Potential Influenza Pandemic*** are published in the February edition of [Emerging Infectious Diseases](#).

This study assessed the cost-effectiveness of stockpiling AV drugs for a potential influenza pandemic and notes that their limited shelf-life and the long-term maintenance of stockpiles may constitute a significant cost. It also assessed the use of near-patient testing (rapid diagnostic tests at the point of care) in the management of AV drugs in the event of a pandemic.

A decision analytical model was constructed to compare the costs and quality-adjusted life year (QALY) loss associated with 3 potential strategies for the management of patients with ILI in the United Kingdom:

1. do not treat with AV drugs and manage complications if they arise (no intervention);
2. treat all patients with AV drugs (treat only); or
3. test then treat those who test positive for influenza with AV drugs (test-treat).

Baseline epidemiologic scenarios were based on the UK Department of Health Pandemic Contingency Plan, which assumes a cumulative Clinical Attack Rate of 25% over 1 wave lasting 15 weeks. Patients with ILI were assumed to have received AV drug therapy by visiting teams or call-in centres (Our CBACs). Of these, because of secondary complications, 5% were assumed to have consulted further with a GP and 5% with A&E departments. Also,

among ILI patients, 0.55% were expected to be hospitalized.

The authors assumed that for both the treat-only and test-treat strategies all qualifying patients were given AV drugs and were tested until the stockpile ran out. No epidemiologic differences were assumed between those who received AV drugs and those who did not because the stockpile was depleted.

As neuraminidase inhibitors are only recommended for use within 48 hours of symptom onset, they assumed that the efficiency of AV drug distribution would be such that 70% of ILI patients would receive timely AV drugs and those receiving AV drugs after 48 hours would derive no benefit.



Results

Assuming that AV drugs provide some protection against death, the study found that stockpiling AV drugs for a treat-only program is likely to be a cost-effective strategy in preparation for a potential influenza pandemic, even if the pandemic occurs many years from now.

However, under current UK planning assumptions (with a 25% clinical attack rate), the AV stockpile would be too small (at 14.6 million courses) to treat all cases of ILI. Near-patient testing is unlikely to be a cost-effective approach to conserving AV stocks but might be considered early in a pandemic.

A more cost-effective strategy would be to increase the stockpile of AV drugs. Indeed, expanding the stockpile of AV drugs to encompass the whole UK population (≈ 60 million) might even be acceptable.

Stockpiling AVs is seen as a cost-effective option, even though some

benefits have been ignored (e.g., possible reduction in CAR if widespread and prompt treatment is offered). Furthermore, additional benefits could be derived from using AV drug stockpiles close to their expiration dates to treat epidemic influenza patients. Finally, the reduction in illness and death that may result from widespread AV drug use is likely to bring benefits to more persons and other sectors of the economy.

This study focused on mass treatment strategies because this is the policy of the United Kingdom and other countries. However, strategies targeting those at higher risk of complications or death would be more cost-effective provided the delivery costs are similar and AV drugs are as effective in these groups.

The main caveat to an AV drug stockpiling strategy is the uncertainty concerning the efficacy of AV drugs against the next strain of pandemic influenza, particularly influenza-related deaths. Clearly, estimation of this important parameter should be a priority if governments are to commit large resources to mitigating the effect of an uncertain pandemic occurring at an unknown point in the future.

The authors acknowledge that the use of AV drugs on the scale anticipated may create a selective pressure for the emergence of flu viruses that are resistant to AVs. While studies indicate that resistance to Tamiflu in influenza virus strains occur rarely, recent reports suggest reduced susceptibility to Tamiflu in some currently circulating strains of avian influenza (H5N1) with pandemic potential. Should this come to pass the effectiveness of an oseltamivir stockpiling program will be reduced, although AV drugs might still delay pandemic spread to allow vaccine development.

Therefore, further epidemiologic and modelling studies of the potential effect of oseltamivir resistance on viral fitness and drug effectiveness are still required.

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LifeStraw water purifier grows into family size

LifeStraw began when a young Danish graduate, whose family owned a small textile company, took a trip in the 1990s around Africa, where contaminated water claims hundreds of thousands of lives each year. Mikkel Vestergaard Frandsen started to think how he could put the family company to good use for the people of Africa. The result was LifeStraw, a cheap, portable personal water purifier, cited by Forbes Magazine in 2006 as "one of the 10 things that will change the way we live".

Made of polystyrene, the 31cm long, 2.9cm diameter, 150g tube, which looks like a flute and can be hung around the neck, uses filters to kill or remove 99.9 percent of waterborne bacteria and 98.7 percent of waterborne viruses. Powered by sucking alone, it requires no electricity or spare parts during its year-long lifetime. It costs about US\$4 and has a purification volume of 700 litres.

Today, LifeStraw units are in use in dozens of countries in Africa, the Middle East and Asia, purchased and distributed by partner groups such as the Red Cross, the UN Children's Fund (UNICEF), Rotary International and IMA World Health, a Protestant Christian organisation. According to Vestergaard Frandsen spokesman Peter Cleary, "It turned out to be a giant hit and we ended up selling 23 million of these pipe filters to the Carter Center."

Now the Vestergaard Frandsen Group will start rolling out a LifeStraw Family version that will provide clean drinking water for up to 18 months

Long-term limits

However, its long-term potential is limited, according to some. Paul Hetherington, a spokesman for the charity WaterAid UK, said: "It is something that may well have very useful applications in an emergency scenario. But it's not a development tool, it doesn't really solve the problem of getting water to people. "This is a good interim stopgap in an emergency where there's plenty of water but it's contaminated, but it's not a

long-term solution," he added, saying there is still a need for digging boreholes and tapping springs.

Sarah Dobsevage, programme development officer of WaterAid America, also took the longer-term view. She commented, "It is not a sustainable option for poor communities in developing countries to attempt to treat and purify water". "Sustainable activities relating to water quality that communities can carry out are the prevention of pollution of their water resources by fencing off catchments, preventing agricultural activities, keeping animals and children away from sources," she said. "It is more sustainable to prevent pollution than it is to treat polluted water."

IMA began distributing LifeStraws on an acceptance test basis in the eastern Democratic Republic of Congo (DRC), where cholera is endemic, with a consignment of 250 in 2005, reporting that 95 percent of recipients said they liked them and hoped they would become available. IMA is now scaling up its activities with LifeStraw.



The original LifeStraw

But IMA project chief Larry Sthresley cautioned: "The individual LifeStraws have only a limited role in solving Africa's drinking water problem. It takes a fair amount of sucking power to use the straws so it is not appropriate for small children." He also pointed out that LifeStraw was unable to filter out amoebas and giardia, a debilitating intestinal parasite, saying that this limited its usefulness and appeal.



Collecting water in a Nairobi slum

Fighting parasites

Cleary said the company was working on the giardia problem, which is very complex because the parasites are microscopic. "Our product is not successful against that but we are hopeful that future generations of the product will be able to filter out giardia. It is a great technological challenge for us and I would not like to put a timeline on it." As for the question of children, he said that when LifeStraw is first used the filters are dry and it takes significant sucking power to draw water through, but once the parts become moist, it flows very easily. So parents should use the device first to get the water flowing and then get the children drawing from it.

IMA is already looking to the next generation. "We are most excited about the LifeStraw Family product," Sthresley said. "It protects against viruses, bacteria and cysts, and is cheaper to use. I think there will be a big demand for this product once it goes into production."

LifeStraw Family is designed to filter 10,000 litres of water in the home, enough for 18 months. Based on the same principle as LifeStraw Personal, it works by pouring water into a bucket, from which it flows through a small hose into the LifeStraw filter device, which is fitted with a small tap. Price will depend on how many are bought by the humanitarian partners - \$20 apiece for up to 500 sold, and \$17 each for a purchase of between 500 and 3,000. #

Madagascar: Picking up after Cyclone Fame

The authorities and aid agencies in Madagascar are coming to grips with the destruction left by cyclone Fame; although there is room for improvement, the response so far has shown that the 2007 cyclone season taught valuable lessons.

In late December tropical cyclone Fame made landfall in the northwest of the island "as a category one, meaning winds of 120 to 150 kilometres per hour," said Edouard Libeau, Emergency Specialist at the UN's Children Fund (UNICEF) in Madagascar. Fame tore through the centre of the island and then slowly dissipated as it moved east towards the Indian Ocean. "Accompanying the cyclone was a lot of rain. So, besides the damage caused by the winds, there was heavy flooding in the northwest and centre of the country," Libeau added.

Dia Styvanley Soa, spokeswoman for the National Office for Natural Disasters Preparedness (BNGRC), said, "Twelve people have been killed; and every day we get new information coming in from the districts. So far 8,613 affected people have been registered, of which 3,156 have lost their shelters. At the moment, people without shelters are most in need of assistance because they have lost everything: their house, food, materials ... there are others with needs too, but the priority now is to help the unsheltered people."

The Information Officer at the UN World Food Programme in Madagascar, Volana Rarivoson, said representatives of the government, UN agencies and non-governmental organisations (NGOs) had carried out two assessments by air, with a third mission to assess the situation in the severely affected north western district of Mampikony.

Concerns have been raised over the longer-term effects the damage might have on food security in some areas, particularly rice, the staple food. "In total, 350ha of agricultural areas are flooded; of those, 320ha are rice fields," said Rarivoson.

Natural disaster-prone island

Madagascar faced a string of calamities in 2007: cyclones, tropical storms and unprecedented flooding in the northern and central regions contrasted with chronic drought in the south, making it an unusually severe year, even for this natural-disaster-prone island.

The combined effects of the disasters left nearly half a million people in need of humanitarian assistance by the end of March 2007. The 2006/07 cyclone season, which runs from December through March, peaked when cyclone Indlala struck the northeast and northwest, caused widespread damage and left 88 people dead.



Hard lessons

"Madagascar is learning from its experience with cyclones," said the Styvanley Soa. "The first thing the BNGRC did [in October 2007] to prepare itself for the cyclone season was to organise a meeting with all the stakeholders in emergencies, with the help of OCHA [the UN Office for the Coordination of Humanitarian Affairs] and UNICEF [the UN Children's Fund], to improve coordination with partners.

A cyclone simulation exercise conducted with the government, NGOs and UN agencies in November 2007 also contributed greatly to a more rapid and coordinated response, and helped "to iden-

tify strengths and weakness in an intervention," Rarivoson said.

Libeau noted that better pre-positioning of food and non-food items throughout the country had been invaluable. "The government and humanitarian partners have learned to decentralise stocks. In Madagascar logistics is a crucial issue - if you pre-position stock you can be much faster in responding."

Rarivoson felt that "Certain aspects have been better managed than previous years, but other issues remain to be improved. On the outskirts of Antananarivo [the capital], where the majority of the homes are located close to rivers, the people affected by floods are used to

returning to their homes as soon as the [flood] alert is lifted," but this did not always mean it was safe to do so.

Styvanley Soa agreed. "Our main problem is that many people live near rivers, despite the authorities prohibiting this in certain areas. Even if they know the threat they expose themselves to, they still remain in those places." Poor construction standards in Madagascar also presented a severe risk. "People may be buried under houses; rain and wind can easily destroy them." #

Campaign launched to make hospitals safe from disasters

Hundreds of hospitals and health facilities are destroyed or damaged every year by disasters caused by natural hazards such as earthquakes, hurricanes and floods. Millions of people are left without emergency care during and after disasters when hospitals and health facilities fail to function.

On 5 August, 2007 in just two minutes, the city of Pisco, Peru lost 97% of its hospital beds to an 8.0 magnitude earthquake. In the October 2005 earthquake in Pakistan, 50% of the health facilities in affected areas were completely destroyed. In December 2004, the tsunami in the Indian Ocean destroyed 61% of the health facilities in Banda Aceh, Indonesia.

Field hospitals are not necessarily the best solution to compensate for the loss of a hospital or health facility. Field hospitals have been used successfully in complex disasters (civil conflicts and wars), but experience in the aftermath of disasters caused by natural hazards in developing countries has shown these extremely expensive solutions to be not satisfactorily cost-effective.

"Hospitals Safe from Disasters" is a global campaign launched this January in Davos, Switzerland, by the secretariat of the International Strategy for Disaster Reduction (UN/ISDR) and the World Health Organization (WHO), with support from the Global Facility for Disaster Reduction and Recovery (GFDRR) of the World Bank.

"The price we pay for the failure of hospitals when disasters happen is too high. In comparison, the cost of making hospitals safe is tiny," says Salvano Briceño, Director of the UN ISDR secretariat. "The most expensive hospital is the one that fails." Incorporating mitigation measures into the design and construction of a new hospital is estimated to account for less than 4% of the total initial investment. Retrofitting hospital's contents costs only 1% but this small investment protects up to 90% of the value of a hospital.

Damage to primary health care centres during disasters can deal serious blows to public health infrastructure and national health systems, sometimes leaving entire populations without adequate access to crucial primary health care or health facilities

months after the tragedy. This could mean disruption of essential health interventions such as routine immunization or maternal and child health care, as well as an increased risk of epidemics.

The WHO and UN/ISDR led campaign has three main objectives:

- To better protect the lives of patients, the health staff and the public by reinforcing the structural resilience of health facilities;
- To ensure that health facilities and services continue to function in the aftermath of disasters; and
- To better prepare and train health workers on preparedness plans that will keep health systems operational when disasters strike.

"The most expensive hospital is the one that fails"

Hammurabi's Code2: 232: "... he [the builder] shall make compensation for all that has been ruined, and inasmuch as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means."

"With current knowledge and strong political commitment it is possible to protect health facilities from disasters, even with the limited resources available in developing countries," says Dr Ala Alwan, Assistant Director-General for Health Action in Crises at WHO. WHO is working to technically support countries mitigate the effects of disasters on existing and new health facilities, which will help protect the health of the population in areas affected by disaster. WHO actions include the production of building and vulnerability reduction guidelines, conducting health facility risk assessments, convening regional advisory teams and publishing lessons learned from previous disasters.

The campaign will encourage all those responsible for hospital safety such as decision makers, politicians, architects, engineers, public health professionals, development banks and donors to take action and make hospitals and health facilities safe from disasters.

"Disaster damage to health systems can have an enormous impact on economic and human development" said Richard Newfarmer, the World Bank's Special Representative to the World Trade Organization and United Nations. "When an earthquake, flood, or cyclone strikes, victims need immediate assistance and if their health infrastructure collapses, their suffering is magnified. Most often, it is the poorest who suffer the most."

The World Bank is the largest provider of development assistance for disaster reduction and risk mitigation. Natural hazard assistance has accounted for nearly 10% of total World Bank commitments since 1984. Increasingly, the Bank through the GFDRR is focusing its investments on disaster risk prevention and long-term recovery efforts.

In earthquake prone countries such as Turkey, Romania, India, and Colombia, the World Bank is supporting the reconstruction and retrofitting of hospitals and health facilities to meet strict seismic safety standards. In the Eastern Caribbean islands of Grenada and St. Lucia, heavily damaged by hurricanes in 2004 and 2007, respectively, the World Bank is helping to rehabilitate and retrofit health clinics so they can withstand future emergencies.

And in case you think this is just about third world or developing countries, "natural disasters" in the USA and Japan provide ample evidence for a contrary view. The campaign notes that building codes are of utmost importance and quotes with approval the building codes found in Hammurabi's Code2: 232: "... he [the builder] shall make compensation for all that has been ruined, and inasmuch as he did not construct properly this house which he built and it fell, he shall re-erect the house from his own means."

As some may know, Hammurabi was the ruler who chiefly established the greatness of Babylon, the world's first metropolis. Many relics of Hammurabi's reign (1795-1750 BC) have been preserved, and this king is recognized as a wise law-giver in his celebrated code of laws. It is a pity his building code was not adopted by New Zealand lawmakers. #

Swaziland: Preparing for disaster

Swaziland's increasing vulnerability to a seemingly endless string of manmade and natural disasters has prompted a new approach to improving the speed and effectiveness of the response. "We are really suffering. We are trying everything we can but we need help - it [disaster] seems permanent," said Dr Ben Nsibandze, Chairman of the National Disaster Management Authority.

After a devastating drought hit all four of the country's regions last year, withering up to 80 percent of crops in some areas, 2008 started with extremely heavy rains, hailstorms and wildfires.

"Disaster risk levels are spiralling up due to extreme vulnerability to increasing hazards such as droughts, environmental degradation, windstorms, floods and hailstorms," said Tendai Makanza, Disaster Risk Reduction (DRR) focal point at the UN Development Programme in Swaziland.

The mountain kingdom has been working on DRR for some years now. "We have made some progress," Nsibandze said, but pointed out that resource constraints, caused partially by the need for continuous response to calamity, had held back the implementation of a 2006 plan. "Almost half the population was affected by drought in that year," he said.

Efforts to address HIV/AIDS - another "continuous disaster" - meant that any resources available were spread very thin, Nsibandze said. With HIV prevalence of 33.4 percent among people aged between 15 and 49, the country has the world's highest infection rate; life expectancy has dropped from nearly 60 years in the 1990s to just over 30 years at present.

No time to catch your breath

According to the UN Environment Programme and the UN International Strategy for Disaster Reduction, Swaziland was hit by drought in 1981, '82, '91 to '96 and 2001 to 2007. Other notable disasters in recent years include incessant

lightning, hailstorms and strong winds during rainy seasons, a cholera outbreak in 1982, cyclone Dominia in 1984, periodic earth tremors in 1999 and 2000, and torrential rains and floods in 2000.

Dominia affected up to two-thirds of Swaziland's declining population of less than a million. After that, "the worst storm in 20 years hit the country in January 2005, affecting about 100,000 people, causing widespread damage and killing about 30 people," Makanza said.



Once fertile land turned barren - climate change the culprit say experts

Changing the response

Nsibandze said government agencies, UN organisations and NGOs were currently discussing Swaziland's DRR approach and looking for the necessary funding to implement projects, and Makanza noted that "The Government of Swaziland embraced the need for a paradigm shift from a mere focus on emergency response/relief to identification of root causes of risks - hence the DRR approach also within the context of climate risk management."

According to her, "We are redefining disaster. We believe that disasters should not be limited to drought; they are much more comprehensive than that. We have included floods, fires, HIV/AIDS, rising poverty levels, declining national capacities and institutions to provide social services and safety nets, and of course climate change re-

lated issues."

She noted that "We feel that in order for communities to better manage disaster, they should be able to look at all their vulnerabilities against their abilities to be able to mitigate, eliminate and respond better to all their potential risks."

Continuous flows of assistance meant that Swaziland's history of disaster had not made communities as resilient as many had hoped. "Most of the national partners who work daily with the local communities, especially under the food aid programmes, seem to feel that communities have increasingly become dependent on aid," Makanza explained.

Communities should not wait for handouts or for policy frameworks to change and deliver, especially when a disaster occurs. Experience has shown that these wheels tend to move slowly. We are trying to ensure that communities protect themselves independently and reliably."

A long road ahead

The DRR road ahead was not without substantial challenges: poor legislative frameworks, poor comprehension and appreciation of DRR issues by policy makers, poor technical capacities, limited financial resources, a lack of a unified approach by stakeholders and a non-comprehensive approach to DRR could undermine the full potential of effective DRR.

Getting communities to change their ways presented a major obstacle. "They need to need to be informed about it [climate change]. However, it should be acknowledged that Swaziland has very traditional communities, and changing their perception, though possible, will take a lot of investment, strategic lobbying and advocacy, Makanza said.

Until that perception changes or alternatives present themselves, Swazis will continue to brave the weather. With a reality of 40 percent unemployment, they have little option. #

HEMNZ Bulletin

The HEMNZ Bulletin is published monthly by the St John Emergency Management Unit for all those interested in emergency management in health care settings. Articles and comment on emergency management issues are welcomed.

Editor: Bruce Parkes
bruce.parkes@stjohn.org.nz

Check out our Web site at
www.hemnz.org.nz

Editor's soapbox



The theme of this Bulletin is on reduction and readiness—the never ending and expensive elements of the constant cycle of treating risk.

Yet this is what we as emergency planners and planning sponsors do. The stories may not be from “first world” countries but that is because we have fewer disasters. Of course when we do, they are far more expensive.

It is no accident that those organisations working hardest to prepare for an emergency are those that have experienced one in the recent past. All of us who have experienced an earthquake will have wished they had done a bit more to prepare. And having survived, we have a heightened interest in getting things right for next time.

Climate change is going to present hazards we have not even thought about. The Y²K, SARS and Avian Flu alerts and exercises like Capital Quake and Ruaumoko have been opportunities to get our procedures right. For those taken away from their day jobs to engage in Ruaumoko activity in March, thank you for your commitment. Those of us planning the exercise can say with considerable certainty that the scenario is real and will happen one day. We can't say when; but we can say that we will all be better prepared for when it does happen.

bruce parkes

Up coming Events

27 - 28 February 2008

Emergency Management and Business Continuity Conferences

Duxton Hotel, Wellington

Cost \$3195 + GST

Conferences can be booked separately

More information from

www.conferenz.co.nz

27 - 28 March 2008

6th Annual Bird Flu Summit

Bali, Indonesia

Cost US\$1995

More information from

www.new-fields.com/birdflu6

Emergency Preparedness and Disaster Health Graduate Courses

Melbourne is rated as one of the top ten holiday destinations in the world and according to some of my female friends, “the shopping destination”. (Males seldom get past the Melbourne Cricket Ground) Now, there is an opportunity for combining a holiday and shopping spree with your professional development.

The [Department of Community Emergency Health and Paramedic Practice](#) at Monash University is offering health professionals an opportunity to undertake graduate studies in the emergency and disaster preparedness discipline in an inter professional learning environment. Each unit can be undertaken either as a short course professional development unit or as a unit for credit within the Graduate Certificate/ Graduate Diploma/ Masters in Emergency Health.

Papers offered in 2008 are:

MDM4010 Introduction to principles of emergency preparedness and disaster health

MDM4020 Emergency preparedness

MDM4030 Major incident management

MDM4040 Disaster recovery

For 2008 On-campus intensives will be held during the following weeks:

Semester 1: MDM4010: 10 March 2008

MDM4020: 21 April 2008

Semester 2: MDM4030: 4 August 2008

MDM4040: 8 September 2008

The short course option is ideal for professionals of any discipline who are interested or involved in contributing to the multi disciplinary health response to major events.

Fees are \$1467.50 per enrolled unit, or \$950 per stand alone short course, which stacks up very well against a common conference fee.

Closing dates for stand alone short courses are the week before the on-campus intensive. #