

Managing disaster and building safer communities

by Bob Hansford, Disaster Risk Management Advisor at Tearfund



Flooding in Pakistan in 2010 affected 20 million people.

Disasters are part of everyday life for a large part of the world's population. Every year, between 600 and 800 natural disasters occur, some small and localized, others affecting several countries and many thousands of people.

According to the World Disasters Report 2010, over 304 million people were affected by natural disasters during that year alone and nearly 300,000 lost their lives. Severe floods in China affected 134 million people, whilst 20 million suffered in flooding in the Indus valley of Pakistan. Natural hazards in themselves may be difficult, if not impossible, to prevent. For example, an earthquake involves massive, uncontrollable underground forces. However, a hazard by itself does not always cause a disaster. If there are weaknesses – or vulnerabilities – in a community, the hazard can cause damage and death; a disaster is then the result. The process of

reducing those vulnerabilities is known as Disaster Risk Reduction. Vulnerability is created by a variety of factors, for example:

- Lack of warnings and preparation for natural hazards.
- Poor quality housing in exposed locations.
- Dependency on a single source of income, which may be cut by the hazard.
- Inadequate or unprotected water supply.

Poverty is also a key factor, forcing many to exist in makeshift houses, located in unsafe places, often with unreliable sources of income, poor services and weak infrastructure.

For this reason, in 2010, 97% of the people affected by disaster and 80% of those killed lived in countries which would be considered middle-income or less developed.

In recent years climate change has increased the frequency and intensity of some weather-related hazards. Faster snow melt, rising sea levels and unpredictable weather patterns have increased flooding and droughts. Communities are being exposed to extreme hazards which are new to them. Human activity, such as forest clearance or farming on steep slopes, can cause degradation of the environment and increase the risk of floods or landslides.

Whilst the situation may appear gloomy, there is much that can be done to reduce risk and create safer, less vulnerable communities. In 2005, the 168 Member

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Footsteps is a paper linking health and development workers worldwide. Tearfund, publisher of *Footsteps*, hopes that it will provide a stimulus for new ideas and enthusiasm. It is a way of encouraging Christians of all nations as they work together towards creating wholeness in our communities.

Footsteps is free of charge to grassroots development workers and church leaders. Those who are able to pay can buy a subscription by contacting the Editor. This enables us to continue providing free copies to those most in need.

Readers are invited to contribute views, articles, letters and photos.

Editor Alice Keen

Tearfund, 100 Church Road, Teddington, TW11 8QE, UK

Tel: +44 20 8977 9144

Fax: +44 20 8943 3594

Email: footsteps@tearfund.org

Website: www.tearfund.org/tilz

Language Editor Helen Machin

Editorial Committee, Babatope Akinwande, Ann Ashworth, Sally Best, Mike Clifford, Steve Collins, Paul Dean, Mark Greenwood, Martin Jennings, Ted Lankester, Melissa Lawson, Mary Morgan, Nigel Poole, Clinton Robinson, Naomi Sosa, Shannon Thomson

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Tearfund is a Christian relief and development agency building a global network of local churches to help eradicate poverty.

Tearfund, 100 Church Road, Teddington, TW11 8QE, UK.

Tel: +44 20 8977 9144

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States of the UN committed to reduce disaster losses through a plan called the Hyogo Framework for Action. It also suggests best practice for any project which seeks to build safer communities. Good projects should:

- Give a higher priority to pre-disaster activities, not rely on response alone.
- Identify, assess and monitor the risks and develop good early warning systems.
- Develop safer communities through education, awareness and training.
- Reduce the risk factors which make people more vulnerable – eg improve housing, diversify livelihoods or protect water supplies.
- Increase preparation for disasters so that response is faster and more effective.

Some progress has been made, especially at a community level. Local Disaster Management Committees have been formed; risk assessments have been carried out; government offices have been lobbied for change in disaster policy; volunteer teams have been trained and early warning systems set up. In some places, a whole set of activities has been planned, which will be done when there is risk from a specific hazard. This is known as a contingency plan.

There is still a lot which needs to be done to reduce the number of deaths and other losses in natural disasters. It is important to make sure both national and local governments have their own contingency plans. Preparation needs to be flexible to meet new or more extreme hazards, caused by climate change. In 2009, a group of agencies published a resource called *Characteristics of a Disaster-Resilient Community*. It outlines what we might find if we visited a community that could quickly respond to, and recover from, a disaster. These characteristics include:

- Good leadership – usually a local committee devoted to building a safer community.
- Risk assessments – using both traditional knowledge and scientific information.
- People with good knowledge about disasters who pass it on to young people at school as well as through less formal channels.
- Good agricultural methods and crops which are strong enough to cope with floods or drought.
- Suitable structures that have been built to resist hazards eg water-harvesting tanks, flood embankments, grain stores or irrigation channels.
- People-centred early warning system.



Residents of Port-au-Prince, Haiti, work together to clear the rubble following a major earthquake in 2010.

EDITORIAL



Alice Keen
Editor

Disasters bring with them great challenges. Rescue, response and recovery are followed by reconstruction and rebuilding lives. But the work doesn't stop there. Reducing the risk of future disasters is key to preventing the loss of more lives. For some of us, natural disasters such as earthquakes, floods or droughts are something we hear about in far-off places. For others, they may be part of the life of our community. As usual, we

have focused on practical examples and guidance, with features on early warning systems (page 10), working with displaced people (page 6) and preparing for disasters (page 8–9). Organisations from India and Niger have also shared their work on Disaster Risk Reduction. Whether or not you have experienced a disaster first-hand, I hope you will be inspired by the story of Leon, an earthquake survivor from Haiti, who reminds us that life after a disaster can still be lived to the full (page 16).

Here at *Footsteps*, we have recently been reviewing our mailing list and were

delighted to find that we now have readers in over 160 countries! It is so encouraging to know that there are like-minded people across the world who are seeking to be informed and inspired to make a difference in their communities. Thank you to all those of you who have joined our *Footsteps* Feedback Group. You will receive your first questionnaire with this issue and we look forward to hearing from you soon. As ever, we continue to pray that God will bless the work of your hands.

Alice

- Contingency plans for communities and families – including evacuation to safer areas and trained volunteer teams.

With strong community participation and a good combination of activities, it is possible to realise the dream of becoming a safer place. The local church, or other community-based groups, can help to mobilise and equip the community to take action using their own resources. Communities can be built up to resist today's hazards and prepare for those which climate change may bring in the future.

The disaster cycle

Disasters often recur in the same place – annually or with a gap of some years. Once the immediate needs in a disaster area have been met, the work of reconstruction begins. This is accompanied by learning from the experience of the disaster and planning to reduce the risk of future disasters. This 'disaster cycle' is illustrated on the right.

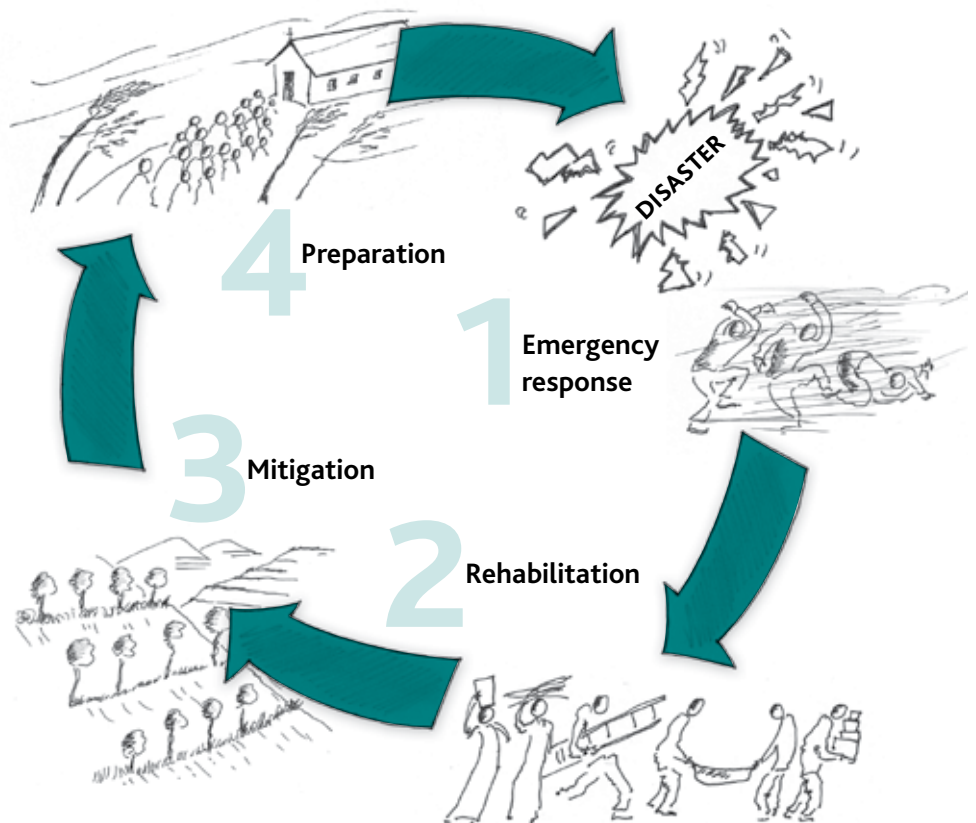
EMERGENCY RESPONSE In the first few days and weeks after a disaster, there is a need for search and rescue, medical care, food, water, sanitation and shelter, as well as emotional support.

REHABILITATION As the weeks pass, houses need to be repaired, water supplies restored and livelihoods re-instated. Rehabilitation is often called recovery.

MITIGATION These activities help to 'build back better', making the community more resistant to future hazards. Mitigation is closely linked to rehabilitation – for example, stronger or raised houses, water pumps on raised platforms, alternative crops to cope better with flood or drought.

PREPARATION This means preparing for the next storm or flood, for example, by establishing a warning system, setting aside food or water stocks, making ready an evacuation centre or training volunteers.

Characteristics of a Disaster-Resilient Community can be downloaded from TILZ www.tearfund.org/tilz or you can request a copy by writing to the Editor.



Combating drought in the Sahel

by Jeff Woodke



Tribesmen in the Sahel take action to protect their land by building low walls.

The people of Abrik, a small community in the grasslands of north central Niger, West Africa, waited patiently for the rains to fall in 2008. They were disappointed. In 2009 the people again waited patiently for the rains to fall, and were disappointed again. This time, the drought was more widespread and hit the entire country. The northern Sahel is always dry, getting only 250 to 300 mm of rain per year. Yet the people of Abrik, and of the wider Abalak Department where they live, had seen no significant rainfall since 2007! How could they survive until the rains of 2010? How could these semi-nomadic pastoralists keep their children and their animals alive through what would be two years of drought?

An integrated approach

Jeunesse En Mission Entraide et Développement (JEMED), a small Christian NGO, has been working with the Tuareg and Fulani pastoralists in the Abalak Department since 1990, helping to build drought-resistant communities. Currently they serve communities totalling over 25,000 individuals, both Muslim and Christian. JEMED takes an integrated approach to the problems of development among the pastoralists. It combines

elements of climate change adaptation, Disaster Risk Reduction, natural resource management and community development into a single programme now referred to as "Resilient Development", a name developed by Tearfund. In 2009, JEMED won a Sasakawa award from the United Nations Secretariat for International Strategy for Disaster Reduction (UNISDR) for its work in Disaster Risk Reduction.

Frequent droughts

The idea of drought or climate proof solutions is central to JEMED's strategy. This idea came from the pastoralists themselves, who told JEMED in 1990 that "everything done must take into account the droughts, or it is of no interest to us". This is because the great droughts are becoming more frequent, probably due to climate change. Between 1973 and 2000 only two major droughts occurred. Since the year 2000, three major droughts have occurred nationally as well as one local drought. Droughts have devastating effects on the people and their environment and have forced the pastoralists to adapt. Practices once unthinkable for a pastoralist such as destocking (selling cattle before a drought) have become accepted and widespread.

Fixation points

The solution the pastoralists proposed in 1990 has become the model for all of JEMED's work in the area and has been adopted widely in the Abalak Department. It involves the establishment of a 'fixation point' in the group's dry-season territory. This is an adaptation of a pre-existing practice of having a dry-season watering point. The 'fixation point' starts with the development of a water source which becomes the hub in the group's territory. Usually this is a hand-dug well, up to 130 metres deep. Animals are used to draw the water. The fact that the pastoralists make regular visits there makes the fixation point the ideal spot for the development of other physical and social structures such as healthcare, grain banks and education.

Resilient development

Resilience is the ability to survive, recover and adapt to shocks and stresses which might affect your community. These can be sudden disasters (eg earthquakes, extreme weather events) or changes which happen more slowly (eg changes in climate, HIV, price inflation etc). A community that can learn and adjust to these changing conditions is a resilient community. It is important that all development is resilient.

The pastoralists can either continue living their traditional semi-nomadic lifestyle, accessing the fixation point as they need, or build a fixed house there if they wish.

A place of opportunity

Climate change has caused the pastoralists to shift their staple food from milk to grain which has increased their water needs and decreased their mobility. The fixation point provides a permanent source of water. A grain bank at the site allows pastoralists to buy grain at prices lower than in the market. Small cooperative shops run by women also exist at the sites, as well as animal banks, selling animal fodder. This means that the people sell fewer animals to pay for the grain and other essential items. They also save money as they do not need to travel to market, which may be 100 kilometres away. Food security is improved, making the community more resilient in times of drought.

Women and men from the group are trained to provide basic healthcare at the site, further reducing the need for travel. Primary schools are set up, with a school canteen and a few host households who live at the site. In this way, children from nomadic households can stay at the site and get an education. Adult literacy classes are also run for both men and women.

Livestock

Protection and regeneration of natural resources can take place around the fixation point. These protected areas serve as drought or dry-season reserves for donkeys and milk animals. JEMED then works with the communities to secure legal recognition of their land management rights, an important part of climate change adaptation.

Small revolving loans of cash and animals within the community enable people to diversify their livelihoods. This allows the pastoralists to use the skills they already have with animals to gain profit and use it to fund other income-generating activities. A percentage of the loans are made to women to make sure that more of the population participate in income generation. Modern herding methods

have been introduced, such as vaccination, destocking, selective breeding and using supplemental fodder. These ideas seem simple, yet they represented great changes for the pastoralists. It was important that all the activities were integrated and that they were repeated at most sites with successive injections of capital which got smaller over time. Although this project cycle is prolonged, it allows communities to build up resilience and diversify their economies even under drought conditions.

Signs of change

The result is that after the crisis Abrik only lost 47 per cent of its livestock to drought, compared with 70 per cent at most other non-JEMED sites. Abrik requested only a small amount of relief aid in 2010, which was a year of severe food crisis in Niger. The school never closed and women and children had food, water and milk. Their

economy had been diversified so that although the loss of animals hurt the pastoralists, it did not destroy them. They were able to survive two years of drought with little outside assistance and rebuild with no assistance.

The people of Abrik are now resilient and no longer need JEMED. They have become an example to others who wish to copy them. The process took a long time, but it was worth it. JEMED is working to replicate this experience in other communities in the area. Niger is a country where success is hard to achieve. Yet, by God's grace, JEMED will continue to help communities realise the potential God has given them.

Jeff Woodke works with Jeunesse En Mission Entraide et Développement (JEMED) in Niger, West Africa. For more information on this project, please contact tamasheq@aol.com

BIBLE STUDY Preparing for Disasters

Adapted from Disasters and the Local Church by Bill Crooks and Jackie Mouradian

Read Genesis 41:25-40

God warned the Egyptian king through a dream that drought and famine were coming to his land. Joseph was called from his prison cell to interpret the dream (about cows and heads of corn!) and suggested some actions to cope with the disaster. The king appointed Joseph to carry out these actions.

Joseph set up administrators and buildings to store grain during the seven good years. Farmers had to hand over one fifth (20 per cent) of each year's harvest to the government so that it could be stored and then used during the seven years of famine (Genesis 41:33-36).

Key points

- *This story is about a hazard that was predicted, so that action could be taken before it happened. It emphasises the importance of early warning systems, whether they are divine or man-made! In today's world, early warning of drought, storms and floods can help reduce the impact of the hazard.*

- *Management responsibility was given to Joseph – he was trusted. In emergency situations there needs to be trust in the leadership.*
- *God used this project to save Joseph's whole family and secure the future of Israel. Disaster planning can be used by God to do good and achieve his purposes in the world.*

Questions

- *How did the dream change the way the people of Egypt responded to their situation?*
- *Joseph was given the role of coordinating Egypt's response. What qualities did he have that made him suitable for this job?*
- *What specific measures did Joseph put in place to help the nation (and its neighbours) survive the drought?*
- *Can you identify any natural leaders in your church and community who could help in an emergency situation and who would be trusted?*

Working with displaced people

Adapted from Disasters and the Local Church by Bill Crooks and Jackie Mouradian

Displaced people are those who have left their normal living area because their lives or their livelihoods were in danger. They have moved to a new area to avoid further losses of life and property, and because of the risk of further disaster. Natural disasters are one main cause of displacement. Hazards such as tsunamis, earthquakes, volcanic eruptions, floods, windstorms and droughts may destroy or damage homes and livelihoods to such an extent that it is no longer safe or practical for people to remain at home.

Local communities and organisations, such as the local church or other faith groups, are often already in a position to respond immediately to the arrival of displaced people. The desire to help those in need is often strong but the practical aspects of dealing with the sudden arrival of a large group of people can be challenging.

Here are some of the problems that displaced people typically face:

- They may be in a poor state of nutrition or health.
- They may have been unable to bring essential household goods or food.
- They may have no assets because they have lost them in the disaster, have sold them to raise money or because of robbery.
- They may lack identity papers and/or travel documents.
- They may lack access to land and employment.
- They may have limited access to markets in their new area.
- They may not be able to access the health, education or other social services available to local residents.
- They may be traumatised and in need of social support and/or counselling.
- Families members may be separated, including children being separated from their parents.
- Women and children in particular may be vulnerable to sexual exploitation or violence.

- Local communities may be hostile to the arrival of the displaced people and may be unwilling to share resources, particularly if those resources are scarce.
- Local governments may perceive displaced people as a threat to peace and stability in the area and may seek to contain them in camps or other confined spaces.

How to respond

Responding to the needs of displaced people will require generosity and a desire to 'love your neighbour'. It is likely that your community already has significant resources to offer in response to the needs of displaced people, even if you cannot meet all their needs.

- Premises and equipment such as church buildings, a hall or a school can provide quick and accessible short-term shelter for traumatised people. The compound in which they are located offers added protection.
- Equipment and utensils (sometimes kept to feed large numbers at weddings or other celebrations) can now be used to feed the displaced families.
- Volunteers can cook local food that people will eat, and they can organise distributions within the camp.
- Community leaders are usually able to mobilise and motivate people into responding quickly.
- Local knowledge and language can help to guide displaced people in making key decisions whilst they are in a complex and unusual social environment.
- Faith communities can also offer emotional support and prayer for those who are bereaved or distressed.

For more practical guidance on how to respond to the needs of displaced people, read Chapter Four of Disasters and the Local Church by visiting the TILZ website or ordering a hard copy (for more details see page 11).



Layton Thompson / Tearfund

Conflict is also a major cause of displacement. Between January and October 2011, nearly 326,000 people were internally displaced by conflict incidents in South Sudan (UN South Sudan Consolidated Appeal 2012).

Children in post-disaster situations

Each year almost 750,000 children around the world are caught up in disasters and can be greatly upset by the experience of being displaced, losing loved ones and friends.

The local community can act to ensure the safety of children, and to help them to come to terms with their experience. In order to restore some regularity to the lives of these children, churches or other community organisations can offer 'children's clubs'. These can include activities which help to rebuild their ability to play together, and to regain their sense of hope and social well-being. Clubs also provide them with an opportunity to learn, for example, about health. This will be especially important in situations where children have been separated from their families. In areas of frequent disaster, the church could consider having a small team of people trained to do counselling with children in a safe and supportive way.



Education Supervisor Tamara Olicœur teaches children in Siloye Village, Haiti, about hygiene and sanitation.

Richard Hanson / Tearfund

Children's clubs in Haiti

In the aftermath of the Haiti earthquake, Tearfund set up about 70 children's clubs around Léogâne, some in association with local churches. One of them was led by sisters Françoise and Monette. One hundred and thirty children, aged three to 14, attended two or three times a week. They learnt children's songs about healthcare and disease prevention and were provided with a safe place where children could be children again. Françoise and Monette's enthusiasm for the club and passion for children's education made an enormous difference; the club became one of the most exciting places to be for the children of the area. It helped them to cope with the trauma of the earthquake and to learn important messages about health.

Child protection

It is a sad reality that there are people who try to exploit and abuse children, often targeting those who are vulnerable after a disaster. Children separated from their families are at risk of being abducted, trafficked, exploited or harmed. Churches may be able to create 'safe places' for such children, in either urban or rural locations. They can ensure such children are looked after, given protection from people who wish to harm them, and where possible reunited with and reintegrated into their wider family. It is important that organisations and churches have child protection policies and procedures to make sure they create a safe place for vulnerable children.

Helping traumatised children to heal

Children who are severely traumatised may find it difficult to express – or even name – their feelings. The following activities may help:

- In some situations where children have lost parents or close relatives, it may be appropriate to assemble a 'memory box' of all the things they appreciated about the person they have lost. When a child misses that special person, they can feel close to them when they open the box.
- First ensure that there are trained counsellors ready to support the children who participate in this exercise.
 - 1 Give each child a large piece of paper and some coloured pencils.
 - 2 Invite them to draw a picture of their journey to where they are now and the experiences they had along the way, including times of fear.
 - 3 With the help of trained counsellors, take time with each child to talk about what they have drawn and what they felt in each situation. Discussion in a bigger, open group will be too distressing for many of the children, so small groups are best. Ensure that counsellors allow children to discuss deeper feelings at their own speed.

Preparing for disasters at a family level

Adapted from *Disasters and the Local Church* by Bill Crooks and Jackie Mouradian, See page 15 for more details on this publication. Illustrations by Bill Crooks.

Preparing for floods

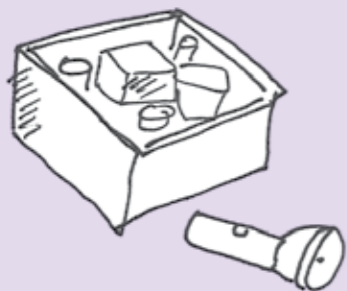
- Where possible, keep a small stock of dry food that requires no cooking or refrigeration – dry fuel and electricity may become unavailable.
- Fill water containers with clean drinking water and cover them.
- Learn to swim. Family members who cannot swim should be encouraged to keep things which will enable them to float eg banana tree trunks, plastic bottles or coconuts.
- Store some essential items (such as sandbags or plastic sheeting) to protect your house and to make emergency repairs. If money permits, some wooden

boards, a hammer and some nails would also be useful.

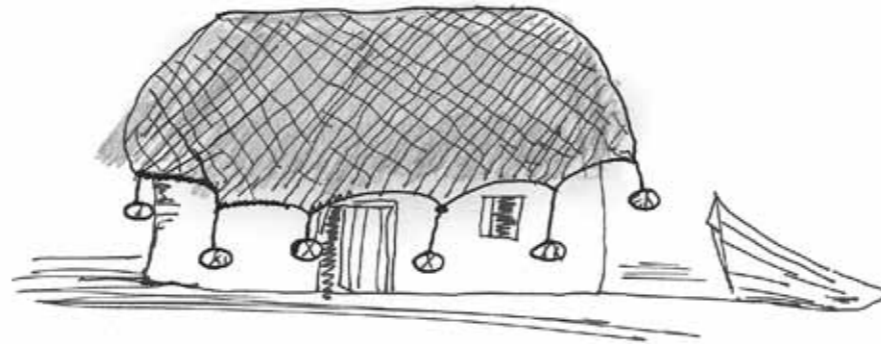
- Seeds should be double-wrapped in plastic bags or sealed in clay pots and buried in the ground, at a location which can be easily identified later.
- Prepare a family evacuation plan, taking special care of vulnerable members (see more in the box below).
- Consider how to alert others if you become trapped on a rooftop (eg tie coloured clothes to a stick and wave it as a flag).
- Put all electrical items in a higher place to avoid damage in flooding.

Preparing an emergency box

Keep and maintain a box of emergency supplies. It should include torch (flashlight), dry matches and candles, First Aid materials, a bar of soap, basic medicines, water and some dry food supplies. You might also want to store personal items such as passports, identity cards, certificates, land documents and cash in a safe place so that you can find them quickly in an emergency. In the case of flooding, it is wise to store these items in a waterproof bag. If you have a mobile phone, make sure it is charged and has key contact numbers on it (including the local government and emergency services where possible).



Preparing for windstorms



- If a windstorm is predicted, put together enough food to feed the family for five to seven days, and some containers of clean drinking water.
- Make sure the sick, elderly and most vulnerable people have access to safe, warm shelter and adequate food. They should be evacuated to safety as soon as warnings appear.
- Make sure all livestock are collected and placed somewhere safe on higher land. Animals are often left untied, so that they are free to save themselves.
- Wrap up seeds for planting in small plastic bags, then – if possible – in a large piece of plastic for protection.
- If you have electricity in your home, turn off all electrical supply points and unplug appliances. Also turn off gas appliances and shut the valve on gas cylinders: this reduces the risk of fire.
- To reduce damage to property in a windstorm, fishermen sometimes cover grass roofs with their nets weighed down with stones. Other communities who live on the coast have chosen to live in houses which can be easily dismantled. They simply pick up the building materials and carry them inland to a more sheltered area!

Evacuation

Shelter: Where there is a threat of windstorms and flooding, the community should choose a safe place where families can shelter for the duration of the storm. This needs to be on high ground and should have plenty of space for members of the community. In some countries, the government or NGOs have built strong cyclone shelters which are raised off the ground on pillars. Often schools, churches, mosques or government offices are used. They need to be cleared and prepared before the storm arrives.

Route: Next the community should mark out a series of evacuation routes to the shelter with clear signs, either on white-topped posts or painted on the walls of houses or on tree trunks. These white marks will help people to find their way to a place of shelter, even in darkness or in flooding.

PLEASE NOTE: Take special care of elderly people, disabled people, pregnant women, those with long-term sickness and young children. These people should be evacuated quickly and with support from family members or volunteers.



Preparing for earthquakes

Practise the earthquake procedure of 'drop, cover and hold on'.

- DROP** means sit down on the floor.
- COVER** means protect your head using a school-bag or cushion.
- HOLD ON** means grab hold of some solid furniture. If you do not have sturdy furniture, sit on the floor next to an interior wall and cover your head and neck with your arms.

You should take the following steps to protect yourself and others:

- Make sure you know about the fire evacuation procedures and any earthquake plans for all of the buildings you occupy regularly.
- Identify safe places in each room of your home, workplace or school. A safe place could be under a piece of heavy furniture or against an interior wall – away from windows, bookcases or tall furniture that could fall on you.
- Make sure everyone in your family knows the correct action to take, especially children.
- Keep a torch (or candles and matches) and shoes by each person's bed at night, plus a bottle of drinking water (changed regularly).

- Place all furniture at the sides of your room and store any heavy objects on the floor, not on high shelves. Consider ways of attaching heavy cupboards and bookshelves to the wall with hooks and brackets.
- Make sure that all high-up cupboards or cabinets are shut, and locked if possible, when not in use.
- Many fires result from leaking gas after a quake. If you have gas piped into your home, learn how to shut off the gas valves in your home and keep a spanner (wrench) handy for that purpose. It is a good idea to turn off gas at night, or if leaving the house.

PLEASE NOTE: Around the world, most buildings do not collapse in an earthquake. You are much more likely to be seriously injured by falling objects, breaking glass or falling down stairs exiting the building. However if you are in a particularly vulnerable building you should try to move outside to an open space as quickly as possible. These buildings include:

- an unreinforced building (eg mud-brick) with a heavy ceiling
- a building on a steep slope supported by pillars

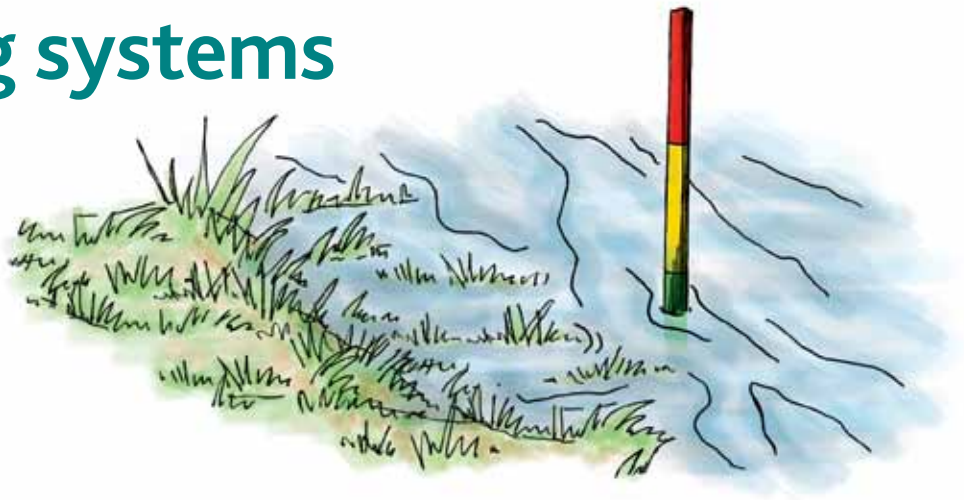
Drop! Cover! Hold on!



Early warning systems

Adapted from *Disasters and the Local Church* by Bill Crooks and Jackie Mouradian

In the event of a disaster, warning communities can make the difference between life and death. Below you will find some examples of early warning systems which are useful in areas at risk of flooding. It is important to establish a simple method of monitoring the increase in water depth, so there can be some warning of an approaching flood.



Depth marker posts

In some countries, communities place a series of bamboo poles in a river, with depth marks (as on a ruler) along the pole. Three colours are often used:

- green at the bottom, meaning 'safe'
- yellow in the middle, meaning 'be alert'
- red nearer the top, meaning 'danger'.

This gives an indication of how quickly the water is rising. During heavy rain, some

Community/Group Activity

Putting together an effective early warning system

PLEASE NOTE: this activity could relate to many different hazard types.

Draw a grid on a large sheet of paper or a blackboard.

Ask the group, "What features make an early warning system effective?" Write down all the brainstormed answers in the left hand column of the grid. Suggest any additional features the group may have missed.

Then discuss what kinds of early warning system are available or possible in the community. Write them across the top row of the grid.

For each of the possible early warning systems, go down the column and mark which of the effective features it has. For example, 'church bells' might be good at reaching the vulnerable, but people might not know what to do when they hear them. Mobile phones might be good at rapidly

spreading the word, but the most vulnerable households might not have a mobile phone.

The finished grid will help the community identify which options will be best in their context. It is rare for a single type of early warning system to be 100% effective. In most cases, some combination will be the best option. For example, a lookout with a mobile phone could call the church or mosque, which could then broadcast the warning so the whole community can hear it.

Types of Early Warning System

	Mobile phones	Church bells (or mosque loudspeaker)	Radio broadcast	Volunteer with megaphone		
Comes at the right time (relative to the speed of the disaster)						
Reaches all people (especially the most vulnerable)						
Accurate: communicates the right information						
Uses locally available resources and reliable, durable technology						
Incorporates traditional knowledge about early warning of disasters						
People know what it means, and they know what to do						
Not likely to give false alarms						
Practised in drills and changed based on feedback from the community						

Features of effective early warning systems

community members should be given the task of monitoring the water level and warning the community if the water reaches the danger level (marked in red).

Rope and bells

One community in the Philippines ties ropes over the rivers, with flags and small bells attached. If the river level rises, the bells ring, alerting people to the danger.

Lookouts

In some parts of Afghanistan, during the flash flood season a community will send young men to herd goats in the high hills and watch for surges of water in the stream bed. If the lookout sees the water rising quickly, he will alert the community through firing an air rifle, blowing a horn, or another signal that can be heard over long distances.

Raising the alarm

Once the water has risen above the danger level, all members of the community must be alerted, and those in danger must be asked to move to higher ground. Many communities have developed ways of passing on warnings including using church bells, mosque loudspeakers, mobile phones, gongs and megaphones (carried by volunteers on bicycles). In flash floods, the water rises very quickly. Where mobile phones are working, messages can be passed by mobile from upstream to downstream locations, alerting people to approaching floods.



Illustrations by Amy Levene

Motor-pump irrigation

I am the coordinator of a local organisation which works with small farmers on market gardening. For years we have been using watering cans to water our vegetables, although with some difficulty. Using watering cans means that our work is very limited, so my community and I have decided that we will soon buy a motor-pump.

I should be very grateful if any readers could be kind enough to explain to us how to use a motor-pump for watering. Then because the area we are cultivating is going to increase significantly, we will need more vegetable seeds.

If any *Footsteps* readers can help, please contact us.

Emery Lendo-Ngembo
 Coordinateur de l'ONGD APROMAT
 B.P 85 / TSHELA
 BAS-CONGO/ D.R CONGO
 Email: apromattshela@yahoo.fr

Good news from Benin



Finally we found the time to take a picture with our team. It is taken in front of the reading wall where we paste up the magazine called GOGU in the Anii language. The name is an abbreviation for 'new thinking', and we are training a whole team of young local people to produce the magazine. It is pasted up on such reading walls in every village where we work. We have a mixture of topics from development issues to entertainment and knowledge. You can have a look at the magazine itself online: www.revue-gugu.org

Your materials help to inspire our team, and we are planning to translate parts of your good materials into the local language. The translation training starts next week, and we will also try our hand on a couple of pages of your PILLARS Guides and see how difficult that is.

All the best for your work!

Stefanie Zaske
 Revue GuGu
 SIL
 B.P. 50
 Bassila
 Benin

Email: info@revue-gugu.org

Protecting seedlings from goats



As part of my job, I travel to countries in West Africa to work with local organisations to find out ways to better protect their environment. One of the activities undertaken by local people is planting trees to prevent soil erosion, create biodiversity, and generate income. In Nigeria, and other countries in the region, goats often stop tree seedlings from surviving. Goats obviously like the tender leaves of young seedlings. This is a constant challenge for tree plantation. I would love to hear your suggestions on ways to stop goats and other animals eating seedlings.

Liu Liu
 Disaster Management and Environmental Sustainability Officer
 Tearfund
 100 Church Road
 Teddington
 TW11 8QE
 UK

Email: liu.liu@tearfund.org

Working on disasters

A journey from relief to risk reduction and advocacy

by Kennedy Dhanabalan, Executive Director, EFICOR



A raised tube well on a platform allows communities to access safe drinking water during flooding.

In over 40 years of experience of disaster response, Evangelical Fellowship of India Commission on Relief (EFICOR) has evolved from being an organisation that just provides emergency relief to one that is actively involved in building the capacity of communities to advocate for people affected by disaster. EFICOR is involved in all aspects of disaster management: relief, rehabilitation, Disaster Risk Reduction (DRR), advocacy and networking.

From relief to Disaster Risk Reduction

In July 2004, Bihar State in India faced its worst floods in 50 years. The flooding affected 21 million people in 9,360 villages, spread over 20 districts. Recurring floods have made the population in these areas extremely vulnerable. Year after year, the Indian Government and humanitarian organisations carry out relief and rehabilitation activities after each emergency.

Through its experience in responding to relief situations, EFICOR realised that providing relief assistance would not encourage sustainability in a community which is faced with flooding almost every two years. They first introduced DRR in

January 2003 in an area of Andhra Pradesh, Southern India, which experiences many different hazards. Flooding and drought had affected the local community, devastating crops and destroying the local economy. EFICOR went beyond providing relief, by building the capacity of the local community and taking physical measures to reduce the effects of future hazards. EFICOR staff members were trained to do social and resource mapping, and risk assessments, using the Participatory Assessment of Disaster Risk (PADR) tool (*ROOTS 9 gives guidance on PADR. For more information on how to access this resource see page 15*). If crops were at risk, then analysis showed that factors such as land tenancy, cropping seasons, forming embankments along the river and the

unpredictable course of the rivers made these crops vulnerable to destruction.

Changed thinking

This participatory process revealed which factors could be addressed by the community itself and helped to identify what resources were needed from the government or other agencies. It also suggested where advocacy could be most effective. The process was key in changing attitudes in the community towards managing disasters. Instead of each person thinking about their own needs, they could now think about how the community as a whole might benefit. For example, instead of seeking to get the hand-pumps installed near their houses, villagers saw that locating the hand-pumps strategically could help more people during the floods. They could also identify their own resources which gave them a feeling of empowerment through the awareness that they need not be helplessly vulnerable to floods.

Disaster Management Committees in Bihar

Madhubani district in Bihar is a prime example of community engagement. The initial response to flooding led to work on reducing risk of future disasters, as well as advocacy at a national level. In order to make a high and sustainable impact, the project focused on building the capacity of the community to respond in a disaster. Disaster Management Committees (DMCs) were formed in each village with about 7–10 members (with at least a third of members being women). Training was given on DRR and members were linked up with the Gram Panchayat (local government) to advocate for their villages on various needs and to access government schemes.

The DMC serves as a decision-making and advisory body on disaster management issues in the community. It includes government representatives, Gram Sabha (Village Assembly) representatives and members from women's Self-Help Groups. Each village also has a Task Force of about 20–25 youths with sub-groups focusing on five different elements: Warning, Rescue, First Aid, Relief and Shelter. Training by experts and exposure trips are organised

so that the groups can be encouraged by success stories from other villages. Task Force members conduct demonstrations at village functions in order to raise awareness in the community and to display their skills.

Practical mitigation

Risk management plans were put in place to help the community prepare for and recover from natural hazards. Physical structures such as flood shelters and high raised tube wells for accessing safe drinking water during flooding were built to reduce the impacts of the floods. Evacuation routes, boats and culverts (devices used to channel water) were also provided. A Disaster Mitigation Fund was set up to pay for the maintenance of these physical structures. This money could also be used for relief operations. Farmers were encouraged to insure their crops and animals against disaster. Workshops on DRR were conducted in all the schools in the project area to raise awareness amongst children.

Advocating for change

The DRR intervention has also given EFICOR a voice at a higher political level. It has helped them to access policy-making bodies

like the National Disaster Management Authority of India. They were able to take part in an NGO task force which prepared flood guidelines to be implemented by the state government. The District Disaster Mitigation Plan for Madhubani has been developed by EFICOR in coordination with Sphere India, Bihar-Inter Agency Group, alongside the District Administration and the State Disaster Management Authority in Bihar.

Advocacy and networking at all levels (local, state, regional, national and international) helps to save lives and livelihoods threatened by hazards, bringing change in both policy and practice. In order to break the cycle of vulnerability, organisations need to be involved at all levels – from relief to advocacy. EFICOR's experience has shown that this is possible and can have long-lasting impact.

Founded in 1967, the Evangelical Fellowship of India Commission on Relief (EFICOR) is a national Christian relief and development organisation based in New Delhi. It addresses issues of food security, local governance, disaster management, HIV and AIDS, health, nutrition and education. For more information visit www.eficor.org or write to EFICOR, 308, Mahatta Tower, B Block Community Centre, Janakpuri, New Delhi - 110058, India.



Task Force members practise rescue techniques.

EFICOR

Landslides

Landslides occur when the soil on a slope becomes unstable, and quantities of soil, mud and rock start to move down the slope. They can cause serious damage and are difficult to predict. Heavy rains and earthquakes are the main triggers for landslides.

Warning signs

Landslides may be preceded by soil cracking, by small discharges of stones, by water pipes breaking or by changes in the water flow from springs (which may suddenly become muddy or stop). Fences, walls or trees may start to lean over at an angle, indicating soil movement underneath. A hillside without trees, or an

area where landslides have occurred before, is especially at risk when it rains heavily.

Reducing risks

Slopes can be made safer in several ways:

- avoid cutting back into a slope to create space for housing or crops
- plant trees or soil-holding grasses along the line of the slope
- place a line of old car tyres along the contour of the slope, tie them together with wire and peg the wire firmly into the slope. Plant a tree in each tyre.
- avoid building houses on land around an earlier landslide.

Drainage

For hillside communities, drainage of water is the key to reduced risk. A good system of plastic or cement-lined drains should be built, with all rainwater from roofs and

waste-water from houses (not latrines) channelled into these drains. This requires agreement and joint action from the whole community. Extra drains can be cut across the slope above the uppermost houses. All drains, of course, must be kept clean especially during the rainy season.

Preparing for landslides

In high-risk areas, volunteer teams can check for earth movement during periods of heavy rainfall and be prepared to give warnings to people if a landslide is starting. Appropriate tools should be kept accessible to dig out casualties, plus First Aid materials. A school, church or other public building can become an evacuation centre – pre-equipped with clean water and latrines.

For more information see Disasters and the Local Church (Chapter 6) or read case studies by visiting www.mosaic.org

Protecting livelihoods, saving lives

by Joel Hafvenstein

Although protecting people's lives in disasters is top priority, protecting their livelihoods is nearly as important. If people lose the ability to feed themselves, their long-term survival is in question, and they will be much more vulnerable to the next disaster.

First we need to understand what people's livelihoods are – all the ways they produce food, earn an income and secure the necessities of life. Then in discussion with the community, we can look for ways to:

PROTECT VULNERABLE LIVELIHOODS

IN BANGLADESH, people who live on river islands have come up with many ingenious solutions to protect their livelihoods during floods. One is the “floating garden.” Instead of cultivating vegetables on the ground, they grow them on a platform made of water hyacinth plants stacked together and covered in dirt. During a flood, the platform floats on the water and the vegetables survive. You can read more about floating gardens in *Footsteps 77*.

IN MALAWI, small farmers are very vulnerable to drought. Tearfund partners

have taught them soil and water conservation, including applying manure, composting, water-harvesting, agro-forestry and building contour ridges across the slope to slow down water run-off. These techniques reduce erosion and help the soil hold more water, allowing more crops and farmland to survive dry spells.

IMPROVE DISASTER RESILIENCE

When we discuss disasters with communities, they will often be able to identify a particular livelihood that is less vulnerable to disaster than others. We can then try to help them to make that livelihood more productive.

IN NORTHERN AFGHANISTAN, two severe droughts in the past four years have hit farmers hard. But there was one important

local industry that did not depend on rainfall: carpet weaving. The yarn that goes into Afghan carpets is spun by local women from imported wool. Even in a drought year, wool spinning can provide significant income in these northern villages.

In this case, Tearfund looked for ways to strengthen that disaster-resilient livelihood and successfully introduced foot-pedalled spinning wheels in areas where the women had previously spun wool by hand. The wheels helped women produce four times as much yarn to sell to local vendors.

INTRODUCE ALTERNATIVE LIVELIHOODS

If people rely completely on one or two ways of making a living, they will be very vulnerable to disasters. It is important to help them experiment with new opportunities so that they will have diverse livelihoods.

IN BANGLADESH, Tearfund partners have encouraged people in flood-prone areas to start raising ducks (which swim) instead of chickens (which drown).

IN MALAWI, partners have introduced farmers to new crops that tolerate a wider range of climate and soil conditions: sweet potato, beans, cassava, groundnuts, soya and pigeon pea.

To get ideas for new livelihoods that might be appropriate to suggest to communities in your area, you can contact us at footsteps@tearfund.org.

Joel Hafvenstein is Disaster Risk Reduction and Environment Advisor at Tearfund.

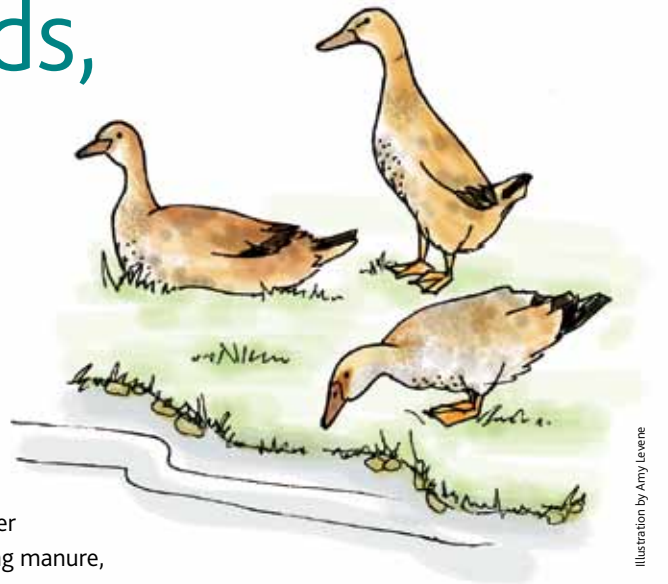


Illustration by Amy Levene



Marcus Perkins / Tearfund

Tearfund Partner, Eagles, works with local people in Malawi to improve farming practices.

TILZ website www.tearfund.org/tilz Tearfund's international publications can be downloaded **free of charge** from our website. Search for any topic to help in your work.



Disasters and the Local Church

This new Tearfund publication provides practical guidance for church leaders in disaster-prone areas of Asia, Africa, Latin America and the Caribbean. Disaster management is rarely taught in seminaries or Bible colleges. Yet in times of crisis, church members will often look to their spiritual leaders, as well as to local government, for help and direction. This book is written for church leaders who may find themselves in a crisis – be it flood or windstorm, famine or earthquake.



Useful organisations and websites

The Global Network of Civil Society Organisations for Disaster Reduction is committed to working together to improve Disaster Risk Reduction policy and practice at every decision-making level. The network produces a series called 'Views from the Frontline' which brings the voices of those at a grassroots level into the heart of the debate, identifying key steps needed to make progress. Visit: www.globalnetwork-dr.org or write to: Marcus Oxley, 100 Church Road, Teddington, Middlesex, TW11 8QE, UK.

The International Federation of the Red Cross and Red Crescent Societies provides humanitarian assistance 'without discrimination as to nationality, race, religious beliefs, class or political opinions'. Each year it produces the World Disasters Report. The 2010 issue focuses on the growing crisis of hunger and malnutrition. You can download their reports from their website: www.ifrc.org or write to them at: The International Federation of Red Cross and Red Crescent Societies, P.O. Box 372, CH-1211 Geneva 19, Switzerland.

ROOTS 9 – Reducing risk of disaster in our communities – 2nd Edition

This book describes a methodology called Participatory Assessment of Disaster Risk. PADR enables communities to assess the factors that contribute to the size and scale of any potential disaster and to develop locally-owned plans to address those risks. It is a community-empowering process, helping people to realise their own capacity to reduce their vulnerability to hazards.



The second edition has recently been published, building on the original 2006 edition. Many improvements have been made in response to feedback over the last five years. New features include:

- improved methodology with new templates
- more examples of completed assessments
- sample questions for focus group discussions

- suggested risk-reducing activities for different types of hazard
- more emphasis on gender as a cross-cutting issue
- more consideration of climate change and its impacts on future hazards.

CEDRA (Climate change and Environmental Degradation Risk and Adaptation assessment) – 2nd Edition

CEDRA is a strategic-level environmental field tool for agencies working in developing countries. Using CEDRA, civil society organisations can prioritise which environmental hazards may be a risk to their existing project locations, enabling them to make decisions to adapt projects or start new ones. The tool discusses how to adapt and how to make decisions so that organisations can make their projects resilient to changes in the environment.



Organisations working in Disaster Risk Reduction (DRR) or general development will find CEDRA useful, particularly by people who are experienced in planning and managing development projects.

The second edition is now available.

PILLARS – Preparing for disaster

PILLARS Guides provide practical, discussion-based learning on community development. This guide aims to increase awareness of the need to prepare for a possible disaster and to reduce the impact of disasters by helping a community to work together more effectively, by considering their ability to respond to disaster. It contains information on basic emergency procedures and assessing a community's ability to respond to a disaster.



To order hard copies of any of these publications, visit the Tearfund webshop www.tearfund.org/publications. We remain committed to providing resources to those who cannot afford the full price of our publications. To make a request for a free copy, write to publications@tearfund.org or to our postal address: International Publications, 100 Church Road, Teddington, TW11 8QE, UK.

We love to see our publications translated into local languages so that they can reach more people, particularly those who lack information in their mother tongue. Whilst we cannot offer funding for local translations, we can send you guidance on the translation process. If you would like to translate one of our publications, please contact publications@tearfund.org

New life after disaster

In 2010 Leon Gaisli suffered a spinal cord injury during a major earthquake in his home country of Haiti. He lost the use of his legs, but after rehabilitation at Haitian Baptist Convention Hospital in Cap Haïtien, Leon has become a keen hand-cyclist.

Hand-cycling allows people to power a bicycle with their arms instead of their legs. This activity has given him a real hope and strength to overcome the challenges before him. As well as enjoying the personal fulfilment, Leon proudly cycles to challenge stigma within Haiti with hopes of representing Haiti at the London Paralympics in 2012 and beyond. He became the first Haitian hand-cyclist to participate in an international competition when he represented his country at the 2011 Parapan American Games in Mexico. He hopes his testimony will be an encouragement to everyone around the world, and that through his cycling, mindsets will be changed in Haiti and internationally. Below he shares some of his story:

CAN YOU DESCRIBE LIFE BEFORE THE EARTHQUAKE?

I used to work in a hospital as a community health worker, giving vaccinations to children, promoting breast feeding and giving advice about child nutrition. I also worked on a building site and helped my wife with our business, selling peas, garlic and chicken bought from a local town called Dajabon.

WHAT HAPPENED DURING THE EARTHQUAKE?

On the morning before the earthquake, I went to work at the hospital. I came home at four o'clock and was watching a movie with my family when I heard a loud noise on the street. I was about to go out to see what the matter was when the earth suddenly seemed to throw me upwards and I fell over. I saw the wall of my house

crashing into pieces and one big section fell on me while I was near the exit. I stayed under the rubble for three days, but when the rubble was removed to free me, I became unconscious.

CAN YOU TELL US ABOUT YOUR STORY SINCE THE EARTHQUAKE?

My cousin lives in the USA but she always stays with my family when she comes to Haiti. She came to visit two weeks after the earthquake and found that the whole building where I lived had fallen down. She thought she had lost the whole family. She found out I was alive when I called her from the Dominican Republic where I was recovering. She told me that my whole family had died. I had a wife and eight children.

WHAT HELPED YOU TO REBUILD YOUR LIFE SINCE THE EARTHQUAKE?

After the earthquake, I surrendered everything into the hands of God. I now live like a person who has risen from the dead. All that God gives me, I accept. He brought me to the hospital and thanks to being here I am alive.

WHAT ARE YOUR HOPES FOR 2012?

I would like to have a job again, even if I can't do the same kind of work as before. Because God has given me life, I want Him to give me skills in order to do whatever He wants. I want God to help me to be useful to myself and my remaining children [from a previous relationship], the same way I could when I was able to walk. I always have tears in my eyes when I know that my poor cousin is helping my two daughters.



Carwyn Hill / Haiti Hospital Appeal

Leon with his Swiss coach, Albert Marti.

I have taken up hand-cycling and was able to represent Haiti at the Parapan Games in Mexico. I would be so proud to be able to go to the Paralympics this year. I want to show people around the world what people with disabilities can achieve. In Haiti, life is difficult for us because we face discrimination every day. I want that to change.

WHAT MESSAGE WOULD YOU LIKE TO GIVE OUT TO THE WORLD?

God will care for both disabled and able-bodied people, God will always send a raven as He did for Elijah (1 Kings 17:2-6). Everyone has to praise God because we have the same value in God's eyes. We need to pray, because one day we can sleep hungry but the next day God can change things. Let's give God all the moments of our lives!

This interview was kindly arranged by the staff at the Haiti Hospital Appeal (HHA). You can find out more about their work by visiting www.haitihospitalappeal.org or by emailing info@haitihospitalappeal.org

HHA is also working, in partnership with others, to raise support for a team of disabled Haitian athletes seeking to qualify for, and participate in, the 2012 Paralympic Games in London. Visit www.haitidream.org for more information on this initiative.