

## Meeting the challenge of **climate impacts**: IFRC case studies in climate-related risk reduction

*The Working Group II contribution to the IPCC Fifth Assessment Report presents the current state of knowledge on climate impacts, adaptation and vulnerability. Compared to the Fourth Assessment Report in 2007, “AR5” has a much stronger focus on risks. It presents a cold, realistic assessment of how risks are already changing and are bound to keep rising, and will affect especially the most vulnerable groups. But now we know much better what we can do to manage these rising risks.*

*The case studies here highlight the work of Red Cross Red Crescent National Societies around the world, illustrating a key IPCC finding that we can build on many of the tools and approaches developed for managing climate variability and extremes, but need go beyond “business as usual” to address rising risks.*



### **‘Forecast-based financing’**: Togo and Uganda

Around the world there are many systems for early warning of temporarily increased likelihood of disaster, such as forecasts of storm tracks or weekly rainfall. Looking at rainfall upstream in a river basin, seasonal forecasts, and possibly even decadal variability, we can get such early warnings weeks, months and even longer in advance. They provide a crucial window *before* a potential disaster occurs in which local

communities and organizations such as National Societies helping them can take action. This is becoming even more important in a more uncertain and variable climate.

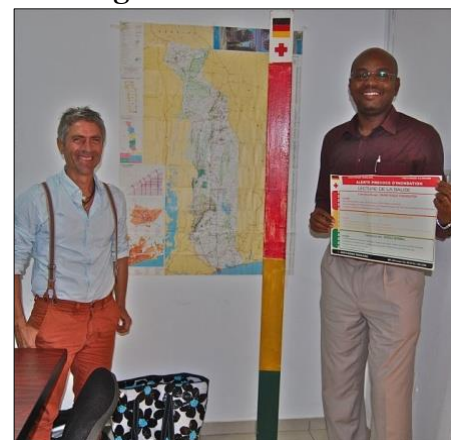
But in most humanitarian organizations there are no funding mechanisms that facilitate such early action, except when an imminent disaster is virtually certain. This is a well-known bottleneck in enabling action ahead of disasters. Money often only becomes available once a disaster has already occurred, or it is given for long-term projects based just on average levels of risk.

Now it's hoped that a new mechanism called "forecast-based financing" will plug this gap, and could eventually also be integrated into global mechanisms such as the IFRC's Disaster Relief Emergency Fund (DREF). Red Cross Red Crescent disaster managers will select activities based on the level of warning, aware that they may "act in vain" since forecasts indicate heightened *risk*, not certainty. Actions are encoded in standard operating procedures that marry packages of measures with specific alerts and assign responsibilities. Each action is costed, with money coming from an established preparedness fund.

### **'The poles have been saving lives since 2009'**

Enter the Togo and Uganda Red Cross. A project for forecast-based funding was designed for these National Societies in 2012 and funded by the German Federal Ministry for Economic Cooperation and Development through the German Red Cross.

A nationwide system of river-depth early-warning poles already established by the Togo Red Cross (TRC) will become a cornerstone of the project in Togo (*see photos, this section*). "The poles have been saving lives since 2009," says Dak Martin Doleagbenou, National Coordinator of the TRC's programme for disaster risk reduction (DRR) and climate change adaptation, "especially in September 2010 when 3120 people were evacuated 20 hours ahead of floods in Mono river basin."



This early-warning network will now be expanded through the installation by the TRC of rain gauges in Togo's river basins, from which volunteers will send data to the national hydrological service, also project partners. And their efforts are now coupled to national planning.

"The Togo Red Cross has good pre-existing connections to the national platform for DRR and the environment ministry," says Thorsten Klose, Senior Adviser for Disaster Risk Reduction and Climate Change Adaptation at the German Red Cross in Berlin.

In Uganda, forecast-based financing – there part of the *Integrated Climate Change Adaptation Project* – will support the long-term reduction of disaster risk based on climate change projections, such as elevating houses to reduce waterlogging from heavy rainfall. Vulnerability and capacity assessments (VCA) will gather detailed information

for the new standard operating procedures.

At an inception meeting last year, the Climate Centre modelled forecast-based financing in its popular educational game *Paying for Predictions*, in which players take action based on forecast information about a likely flood – a risk that rises as the game unfolds.

## **After Haiyan, building resilient communities in the Philippines**

The year 2013 was overshadowed by the tragic losses inflicted on the Philippines by Typhoon Haiyan, which took the lives of nearly 7,000 people, though hundreds of thousands were evacuated ahead of the storm. Still somewhat unusually for a single extreme-weather event, a finger *was* pointed by an authoritative source squarely at climate change for having made these losses worse. “Although individual tropical cyclones cannot be directly attributed to climate change, higher sea levels are already making coastal populations more vulnerable to storm surges,” said WMO Secretary General Michel Jarraud, ahead of the COP 19 UN climate talks in Warsaw. “We saw this with tragic consequences in the Philippines.”

Now the “overarching goal” of the IFRC recovery programme – embedded in its January 2014 emergency appeal for 126.2m Swiss francs to assist half a million people – is to “build more resilient communities and an even stronger National Society” in the Philippine Red Cross (PRC), including climate resilience. According to the IFRC appeal: “Assessments show that in some areas up to 80 per cent of trees and vegetation were uprooted by the typhoon, posing a new threat of landslides during the annual rainy season...people residing in makeshift shelters are exposed to the full force of future storms. Mitigating new risks like this will be addressed as the operation progresses.”

### **‘An even stronger National Society’**

But the real risk reduction goes much deeper, as reflected in the PRC framework for building the capacity of staff and volunteers to support community-based risk reduction. Volunteers will conduct public awareness and public education sessions on DRR and climate change with at-risk communities and schools, and plans to assess and reduce risk will take future climate change into consideration, and build on VCA and community-based DRR training in the context of climate change.





The Red Cross Red Crescent Movement is aiming support at Philippine families rebuilding their homes after Haiyan, like here in Tanuan , Eastern Leyte, or making temporary shelters, by providing toolkits, materials and technical advice on how to build back safer. The IFRC heldesk at the International Research Institute for Climate and Society at Columbia University in New York, has been advising shelter specialists on building safer, taking climate projections into account. (Photo: Patrick Fuller/IFRC)

## Anticipating changing risks in the Pacific

Despite the increasing interest in climate services across timescales, there is a shortage of guidance on how to link information about climate *variability* – such as El Niño and La Niña – and climate *change*. To fill this gap in the Pacific region, climate scientists, humanitarians, technical experts, artists and film-makers teamed up to produce humorous educational shorts, together with toolkits for better decision-making and action on the ground.



Two entertaining and accessible animations were made available for download last year, along with a range of educational materials in English, French and regional languages.

*Cloud Nasara* centred on the impacts of El Niño and La Niña on the small island nation of Vanuatu and encouraged people to take early action to prepare for extreme weather. The islands of Vanuatu can experience very dry or very wet conditions as a result of El Niño and La Niña events. Along

with extreme events like cyclones, they can have serious impacts on water quality, food security, infrastructure, houses, livelihoods and health.

Climate and weather information, warnings and forecasts “can help us anticipate and prepare for changing risks,” according to the Australian government’s Pacific climate change science website. *Cloud Nasara’s* story features a mythical village meeting-place in the sky above the Pacific, and a cast of characters that includes a “reggae parrot”.

It followed the July premiere of *The Pacific Adventures of the Climate Crab* (see image), an animation that focused on simple and low-cost preparedness measures, like water conservation ahead of droughts and trench-digging ahead of floods to improve drainage and protect houses and crops.<sup>1</sup>

## **‘6 days to 4 hours’: early warning, early action in Belarus slashes response times**

Spring floods caused by melting snow are a regular occurrence in Belarus, where thaws can be sudden, and again the risk is rising. The Belarus Red Cross (BRC) and the government have experience of working together to respond to flooding, and last year highlighted the value of taking early action when forecasts indicate a particularly high risk of flooding. The IFRC handbook on early warning early action defines it as “routinely taking humanitarian action before a disaster or health emergency happens, making full use of scientific information on all timescales.”

Timely action by the BRC to prepare for spring floods made a significant difference. Money from the IFRC’s Disaster Relief Emergency Fund (DREF) – which provides rapid financial support for emergency operations by National Societies – enabled the BRC to sustain a more comprehensive emergency response.

After unusually heavy snowfall and cold weather in early 2013, the national meteorological agency forecast a greatly increased risk of flooding when the snow melted. In response to estimates that over 10,000 people could be affected, the emergencies ministry asked the BRC to assist in a national response effort.



### **‘Full use of scientific information on all timescales’**

The BRC applied for a DREF grant to enable it to scale-up preparedness ahead of the

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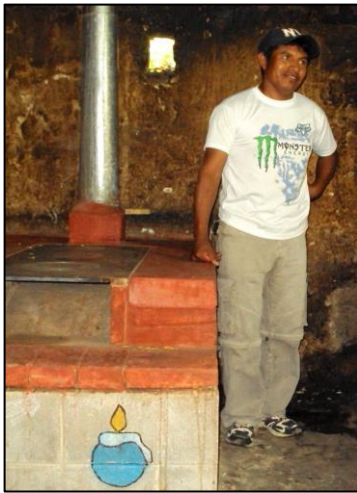
<sup>1</sup> Both animations were the product of collaboration between the Australian government and Red Cross. The project was implemented by the Red Cross regionwide – National Societies, IFRC and Climate Centre – the Australian Bureau of Meteorology, the Commonwealth Scientific and Industrial Research Organisation, the Vanuatu Meteorology and Geo-Hazards Department, and the SPC-GIZ Climate Change Programme.

floods; it also trained extra volunteers and practised search and rescue. The National Society procured inflatable dinghies (*see photo from April 2013, by Dmitry Rusakov*) and water pumps, and prepared food and non-food relief items that were all quickly brought to areas where flooding was expected. By the end of March, major rivers were beginning to rise and thousands of homes and businesses were eventually flooded.

Working closely with the government and the IFRC, 70 BRC staff and more than 350 volunteers evacuated people, helped pump out houses and vital infrastructure, and distributed blankets, food and hygiene kits. The extra preparedness allowed by DREF reduced the average time needed to bring assistance from six days to *four hours*. The volunteers also provided psychological support for those affected by the floods.

## In Guatemala, reducing **ecosystem-related** vulnerability with cleaner stoves

Assessments in communities in Guatemala that accounted especially for climate and ecosystem-related drivers of vulnerability revealed deforestation as a key problem contributing to increased vulnerability of numerous households as well as local ecosystems.



On a daily basis, families require large amounts of wood to fuel the open fires where they cook, resulting in alarming rates of deforestation. It's estimated that every year, an average family of six consumes at least 20 cubic metres of firewood. Open-fire cooking is considered by rural people to be versatile and inexpensive, but poses serious health and safety risks for them and for the ecosystems they depend on.

The burning of firewood releases toxins and carbon dioxide that contribute to pollution and global warming, and smoke can lead to respiratory illnesses in women and children as they spend a lot of their time around open fires.

At the end of 2011, the Guatemalan Red Cross developed a plan to distribute improved cooking stoves (*at left in photo*) to reduce deforestation and emissions, improve the health of those most seriously affected by smoke, and dramatically increase the efficiency of traditional cooking. The new stoves are just as simple but produce less smoke and require much less firewood, enabling householders to use the time they would have spent collecting firewood more productively.

The project has been implemented in communities near the Cucuba river at the head of the important watershed of the Motagua river that crosses Guatemala. As a result of these stoves, it's estimated that nearly 20 hectares of Cucuba microbasin forest will be saved every year.