

What the RC/RC Climate centre can do for the RC/RC Partners

The Red Cross/Red Crescent Climate Centre (RCCC) is a reference centre of the Red Cross Red Crescent family. Established in 2002 and based at the Netherlands Red Cross headquarters in The Hague, it helps the Red Cross Red Crescent Movement to understand and address the humanitarian consequences of climate change. Based on experiences in now more than 50 countries the RCCC can contribute in the following way to the national program development by RC/RC Partners.

The Hague, May 2010

1. Getting started

1.1. Supporting the local partners in-country to identify past, ongoing, or planned programs on climate change adaptation in the country that are of relevance to the RC/RC. This could also include former programs like the RC Climate Centre's Preparedness for Climate Change program (PfCC), but also governmental programs, International programs from bilateral or multilateral donors and other Civil Society Organisations (CSO).

1.2. Assisting with the development of an initial workshop with all climate related stakeholders (RC/RC and CSO partners, national/local climate knowledge centres, climate policy makers). In this workshop key issues for the programs are identified and a process towards more cooperation and enhanced action is identified.

Elements of the workshop:

—*By climate knowledge centre:* Identify the key climate related risks for the country/region through sharing the state of knowledge on climate change trends for the program country/region and existing tools for seasonal and weather forecasts.

—*By RC/RC partners (and governmental representatives):* sharing the identified vulnerabilities in the program areas, including geographical, social and institutional vulnerabilities. This includes sharing current RC/RC and CSO approaches to addressing these vulnerabilities and current use of early warning systems.

—Identification of areas where cooperation can be improved, in particular in developing synergy between ongoing approaches like Early Warning/Early Action ecosystem based climate adaptation etc.

2. Capacity building and advocacy

2.1. At national level

Dialogue with knowledge centres

From past experiences we know that cooperation between knowledge centres and operational field staff is not easy. There is a mismatch between scientific knowledge and the operational use of it. For example, if we know climate change is going to increase risks of droughts and floods in a region, we may look to climate information

providers to help anticipate these events. However, these forecasts often require careful interpretation for effective use in operations and programmes. The Climate Centre can assist in communicating with climate service providers, and can also provide guidance on developing materials about regional risks related to climate change.

See also the annex to this document: Towards forecast-based humanitarian decisions: Innovation to foster dialogue between disaster managers and scientists.

In the 'Partnership to Save Lives' between the IFRC and the International Research Institute for Climate and Society (IRI) at Columbia University, a successful internship program has been developed through which RC National Societies can strengthen their capacities to better understand and use seasonal forecasts and other early warning information. There is also a special helpdesk for RC questions related to seasonal and weather predictions and longer-term climate related influences. This capacity is available for the PfR.

Dialogue with policymakers

The Climate Centre is well connected to the global, regional and national policy developments related to DRR/CCA. In the last few years, notably since 2007, there is lot of action at the policy front to develop policies and programmes to address the unavoidable impacts of climate change.

All governments are now in a process to develop climate change adaptation strategies. Some move faster than others, depending on a range of factors, among them the level of support they receive from donors and UN agencies. Likewise there is more and more progress in addressing Disaster Risk Reduction in national policies and programs. Synergy between the two processes makes a lot of sense, is acknowledged at the UN level and can be enhanced at the national level. The RC/RC can contribute to this policy dialogue, in particular by bringing the experiences of community based programmes to the table and highlighting the possibilities of DRR/CCA.

The Climate Centre will provide relevant information on national policy developments and related DRR/CCA programs to the RC/RC, and update regularly as new developments take place.

Furthermore the Climate centre can support the RC/RC and partners with trainings and online support for policy dialogues.

2.2 At community level

Over 50 RC/RC National Societies have now undertaken work on climate change through the PfCC program (see www.climatecentre.org). Based on their experiences, the Climate Centre can help share approaches to integrating climate risks in community-based programs, including by integrating climate change into community-based assessments.

Strengthening community resilience to climate risks typically has two components:

1. the software: Such as improved early warning systems, through better links between climate information, community organisations, awareness raising efforts, community and household risk reduction plans, simulations, etc.
2. the hardware: encouraging risk reduction measures that are specific to the local context, like building or strengthening community shelters, clearing of drains to redirect excess water, planting trees to prevent landslides, planting mangroves to mitigate storm surges, harvesting rainwater to reduce drought impacts, or many other practical actions.

3. Documenting Experiences and Sharing Best Practices

Bringing local and national experiences to the regional and global level

It is crucial to monitor and document advances made and lessons learned, to strengthen RC/RC approaches to addressing climate change risks and scale up successful approaches in other regions and countries. The climate centre can assist in this process, to assure mainstreaming of methodologies.

Not only within the RC/RC methodologies and tools will be developed to address the impacts of climate change, other civil society organisations, government institutions and multilateral organisations are doing the same.

The Climate Centre will coordinate with the RC/RC partners to facilitate regional and global interactions with these actors on ecosystem services, climate change and disaster risk reduction, including work conferences, to take stock of lessons learned and progress. The Climate Centre will also continue to assist in international advocacy efforts that bring local experiences to the global arena by advocating for the needs and voices of the most vulnerable to be heard.

May 2010, The Hague

Towards forecast-based humanitarian decisions: Innovation to foster dialogue between disaster managers and scientists

By Pablo Suarez and Arame Tall (*DRAFT*)

Too many people suffer and die nowadays due to entirely predictable natural hazards, despite the remarkable progress in our ability to anticipate and address the potential occurrence of extreme events. The number of people killed by disasters had been decreasing since the 1970s, mostly due to risk management tools developed in recent decades. These tools continue to improve, yet in the past years the decrease in disaster casualties has been tapering off and even reversing, and the number of people reported affected is rising rapidly (Red Cross / Red Crescent Climate Centre 2007). As a result, many humanitarian practitioners are experiencing excessive workloads - precisely when they should be thinking about how to better prepare for changing risks. The combined negative effects of stressors like climate change, urbanization and environmental degradation might be counterbalanced by emerging opportunities (Suarez 2009).

When it comes to health, shelter, water, food security, conflict and other areas of humanitarian work, many future decisions and their outcomes will be affected by climate-related events that, in many cases, can be forecasted with reasonable levels of skill. The temporal and spatial scales of improved forecasts range from localized tornado alerts and short-term tropical cyclone tracks to seasonal rainfall predictions based on El Niño and long-term sea level rise caused by global warming¹. Three key questions emerge:

- Will humanitarian staff, volunteers and people at risk be able to access, understand and trust forecasts about impending hazards?
- Will individuals, communities, civil society, private sector and government agencies know what the risks are and what can be done before, during and after a predicted event in order to reduce losses?
- Will human and financial resources be available in a timely, appropriate and sufficiently generous manner to avert predictable and potentially catastrophic outcomes?

It is difficult to answer these questions with optimism given the impacts of disasters as diverse as cyclone Nargis in Myanmar, the 2005 famine in Niger, and hurricane Katrina in the United States, all anticipated by science-based early warning systems. There are numerous reasons why some decision makers fail to do what it takes between the time of the forecast and the actual event in order to avoid losses. It is reasonable to assume that these obstacles, and many others, will continue to stand in the way between science-based forecasts and humanitarian action –unless we innovate.

Innovative dialogue between forecasters, humanitarian workers and people at risk

During December 1-4, 2009, the IFRC West and central Africa Zone organized a workshop that convened about 40 people who would not normally talk with each other:

- Red Cross staff members covering Senegal from global, continental, regional, national, provincial, district and village level, as well as Red Cross colleagues from Mali, Togo, Benin and Burkina Faso
- Fishermen and community leaders from the vulnerable community of Doun Baba Dièye
- Scientists from Pan-African, Regional, National and Provincial entities who research and make predictions on climate change, meteorology, hydrology, fisheries and other fields

This workshop, unprecedented in the context of Senegal, had as main objective the exploration of options for using science to support people at risk. The event was carefully designed to create an atmosphere of collaboration without hierarchies - as opposed to the usual sequence of unidirectional presentations from decision-averse scientists to decision-oriented practitioners (this powerpoint-based approach to workshops often leads to a very frustrating experience for both sides, in part because of the excessive reliance on complex graphs and text-packed slides that can cause utter confusion or simple boredom among non-expert audiences. For a useful review of why bad presentations happen to good causes, and what can be done about this, see Goodman 2006).

The workshop used innovative ways to enhance fruitful collaboration, such as:

- *Small dialogue tables* of about 4-6 people where first an expert would explain, in simple language and without a computer, what a certain prediction tool can and cannot do, and why it is important for decision-makers; then practitioners and community members would have time to ask questions, and finally all together explore options for turning plausible predictions into concrete action
- *Video-mediated approaches* to community-level climate risk management (Suarez et al. 2009)
- *Participatory games*ⁱⁱ specifically designed to (a) broker a constructive dialogue without hierarchies, (b) reveal key insights about obstacles to forecast communication and use in a changing climate, and (c) elicit concrete ideas for forecast use.
- *Visit to Doun Baba Dièye*, hosted by over a hundred community members who shared their experiences, insights and questions with humanitarian staff and scientists (who in turn shared with the vulnerable community the main ideas derived from the previous three days of the workshop). Games, video tools and facilitated discussions with islanders resulted in two main requests from the community to the visitors: (a) a science-based warning to alert them of incoming coastal or riverine flooding, and (b) a place to go to when they have to evacuate the island.

As a result of this workshop, the Red Cross and partners from knowledge centers are now beginning to formulate concrete ideas for science-based action at different time scales: from evacuation based on flood forecasts, to mangrove planting in the coast, to collaboration with Mali Red Cross for afforestation in the upper Senegal River Basin to reduce peak flow downstream, and a follow-up workshop is being planned for July 2010. A similar workshop convened Central American representatives in El Salvador in early 2010, and more are scheduled in West and Central Africa. Unfortunately these dialogue processes take time and perseverance, while risks keep rising (six residents of Doune Baba Dièye died during a storm in late February 2010, less than three months after the workshop participants' visit). It is imperative to accelerate the connection between those who know climate science and those who can act to save lives.

At a fundamental level, for any given event, science-based forecasts can be boiled down to four attributes: **location** (where is the event likely to happen?), **magnitude** (how big is the event that scientists say may occur? This is usually defined by a physical variable such as millimeters of rain, kilometers per hour of wind, or river elevation in meters), **lead time** (how many hours/days/weeks/years expected to elapse between issuance of the forecast and occurrence of the event?), and **probability** (what are the chances of the event happening?)ⁱⁱⁱ. Each of these four forecast attributes can be linked to an aspect of reality that can help determine whether or not it is desirable to trigger humanitarian actions:

- The vulnerability of those at risk of suffering from the event can be derived from the *location* of the predicted event
- The expected loss caused by the event can be estimated based on the forecasted

magnitude

- The range of decisions that could be taken to reduce losses is determined not only by the available resources but also by the *lead time*, which needs to be longer than the time it takes to carry out loss-reduction measures under consideration (including time needed to make decision through proper institutional channels plus time to mobilize people and materials and get things done)
- The decision of whether or not to act will necessarily be a subjective call, and should be based on the *probability* of the event's occurrence, and an analysis and comparison of the four possible outcomes:
 - (a) *worthy action*: decide to act, then event materializes and losses are avoided;
 - (b) *worthy inaction*: decide to not act, then event does not materialize;
 - (c) *failure to prevent losses*: decide to not act, then event materializes leading to avoidable losses;
 - (d) *false alarm*: decide to act, then event does not materialize, often resulting in perceived waste of resources and loss of trust in forecast.

Because of the probabilistic nature of weather and climate predictions and related forecasts (hydrological, food production, etc), there is no way of knowing with certainty, ahead of time, whether deciding to act will avoid losses or waste scarce resources. Therefore, it is not fair to accuse a forecast-based decision of being wrong: If there's a 50% chance of thousands of people dying within 24 hours due to a hurricane hitting a small island, it is advisable to persuade people to seek shelter, even if one out of two times the hurricane changes trajectory and people act in vain. For longer-range forecasts however, with higher levels of uncertainty, the opportunity cost of the preventive action may weigh more heavily than the potential of avoided losses in case the event materializes.

The humanitarian sector, in collaboration with the scientific community, donors, governments and people at risk, needs to establish processes of dialogue that can help not only understand predictions at different timescales, but also establish criteria for smart forecast-based decisions that can save lives and livelihoods by linking early warning with early actions.^{iv}.

In order for the outputs of their computer models to be translated into simple decision-based forecasts, scientists also need to better understand (a) the thresholds in physical systems, such as natural hazards big enough to cause significant but avoidable damage, as opposed to the relatively irrelevant thresholds (such as the probability terciles in seasonal rainfall forecasts), (b) the thresholds in humanitarian decision-making (e.g. the time it takes to carry out certain loss-reduction measures).

More agile, flexible and tailor-made approaches are needed for humanitarian decisions. Information about a possibly harmful event in the future can and must serve both for preparing to cope with the hazard and to identify the constellation of means, relationships, and processes that enable the relevant actors to derive benefits from climate-related predictions at all timescales.

ⁱ It should be noted that, for some variables, predictability may decrease if technological and scientific advances are outpaced by unpredictable effects of climate change

ⁱⁱ See 4-minute video about the "Early warning → early action" game at http://www.youtube.com/watch?v=Mpj_EbKdwEo, and rules of a simple game to explain probability-based decisions and climate change at <http://petlab.parsons.edu/redcross/2009/12/a-simple-card-game-illustrating-probability-climate-change>. These games were created in collaboration with the Parsons School of Design, see <http://petlab.parsons.edu>.

ⁱⁱⁱ Note that there are other forecast attributes such as source, skill, geographic scale of applicability, comparison to average conditions, and even graphic design, that may deserve attention at a finer level of early action design

^{iv} Advanced university students can be invited to align their academic requirements with humanitarian needs to help set the foundations of science-based risk management. See for example the "Young Scholars for Humanitarian Work" program at <http://www.climatecentre.org/site/young-scholars>

References

- Goodman, A. (2006) Why bad presentations happen to good causes. Casue Communications. Online at <http://www.agoodmanonline.com/publications>
- IFRC – International Federation of Red Cross and Red Crescent Societies (2008b). Early Warning > Early Action. Online at: www.ifrc.org/Docs/pubs/helpnow/early-warning-early-action.pdf
- IRI – International Research Institute for Climate and Society (2008). IRI multimodel probability forecast of extreme precipitation for June-July-August 2008, issued May 15, 2008. Online at http://iri.columbia.edu/climate/forecast/net_asmt/2008/may2008/JJA08_WorldExtr_pcp.html
- Red Cross / Red Crescent Climate Centre (2007). Red Cross / Red Crescent Climate Guide. Geneva: International Federation of Red Cross and Red Crescent Societies. Online at <http://www.climatecentre.org/site/publications/85>
- Suarez, P. (2009). Linking Climate Knowledge and Decisions: Humanitarian Challenges. Boston University Frederick S. Pardee Center for the Study of the Longer-Range Future. Boston, USA. Online at <http://www.bu.edu/pardee/publications/pardee-paper-007-climate>.
- Suarez, P., Ching, F., Ziervogel, G., Lemaire, I., Turnquest, D., Mendler de Suarez, J., and Wisner, B. (2008). Video-mediated approaches for community-level climate adaptation. *IDS Bulletin* 39(4): 96-104.