DISASTER PLAN: LOCAL KNOWLEDGE, THE LATEST SCIENCE

EARTHQUAKE, DROUGHT, CLIMATE CHANGE – IS THERE A BLUEPRINT FOR POLICYMAKERS TO FOLLOW BEFORE DISASTER STRIKES? THE CATALYST PROJECT HAS ANSWERS.

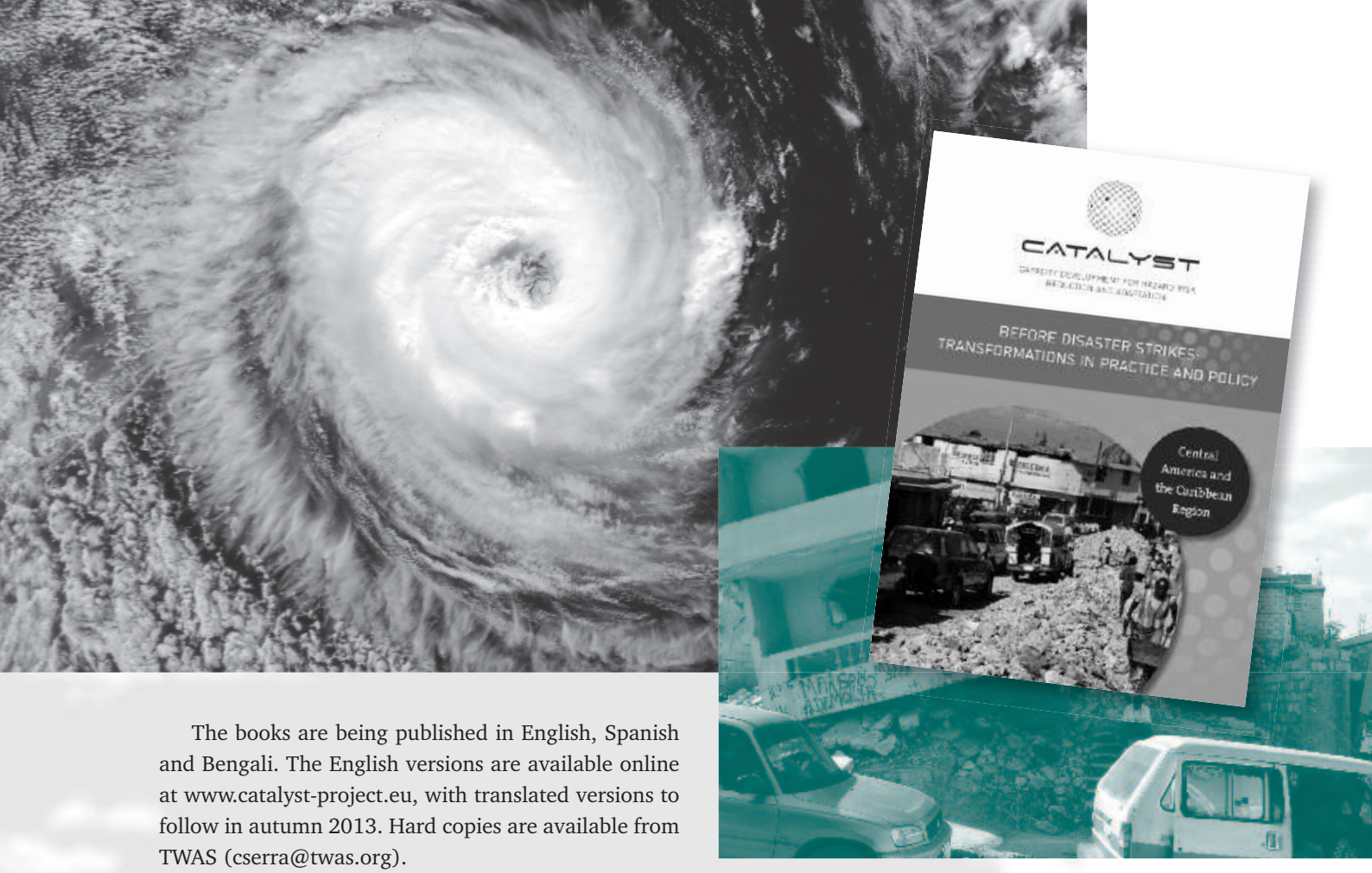
What to do with coconut husks? In many developing nations, the custom often is just to dump them, with little concern for the impact on the local environment.

The Central American nation of Guatemala, among the world's hot spots for biodiversity, shares this kind of problem with other Latin American countries. In addition, it faces food insecurity and has to cope with inadequate agricultural policies and environmental degradation.

But Guatemalan leaders have recently conceived a productive use for the husks that can actually strengthen the environment, while creating jobs and artisanal products. Its experience is cited in a new report from CATALYST, an international initiative funded by the European Commission Seventh Framework Programme (FP7) that identifies knowledge about best practices in capacity development for hazard risk reduction and adaptation.

As the culmination of a two-year effort, CATALYST has released best practice papers focused on four hazard-prone regions: Central America and the Caribbean; South and South-East Asia; East and West Africa; and the European Mediterranean region. A practical summary is also being prepared, with all communication work being coordinated by the TWAS Public Information Office.

The best practice papers conclude a project involving seven European partners, under which CATALYST collected and evaluated the most successful strategies for disaster risk reduction and climate change adaptation. The information is now being used to strengthen disaster preparation and response by local policymakers, educators and non-governmental organizations.



The books are being published in English, Spanish and Bengali. The English versions are available online at www.catalyst-project.eu, with translated versions to follow in autumn 2013. Hard copies are available from TWAS (cserra@twas.org).

The CATALYST project has followed a participatory framework, featuring input from scientists, local experts, business leaders and others, in an intensive, highly collaborative process. CATALYST is led by seven European partners: seeconsult from Germany; Alterra from The Netherlands; Fondazione Eni Enrico Mattei from Italy; the Geological Survey of Denmark and Greenland, from Denmark; Helmholtz Centre for Environmental Research (UFZ) and the United Nations University, both from Germany; and TWAS from Italy. The partners have worked closely with CATALYST's Think Tank members, a multi-regional group of 130 experts, to compile and analyse the best available knowledge.

Caroline van Bers from seeconsult, a company that supports participatory planning for the environment, coordinated the project with colleague Matt Hare. "CATALYST does not create new knowledge", van Bers said. "Instead, it is responding to the latest Intergovernmental Panel on Climate Change (IPCC) report by collecting and synthesizing the knowledge that already exists and packaging it so it can be of further use for practitioners, before disaster strikes."

GOOD PRACTICES TO BEST PRACTICES

Imagine a community accustomed to recurring disasters, and to responding with homemade strategies. Then imagine scientists who provide this community with state-of-the-art knowledge and technology; their aim is not to override local knowledge, but to complement it. The result could be a shift in the way communities and countries deal with hazards that can save lives and reduce damage and costs.

That's the idea that underpins CATALYST's best practice papers. The team first focused on Central America and the Caribbean region, and identified a few best practices that could be improved to provide more consistent results in managing natural disasters.

Guatemala is a land of mountains cloaked in lush forests and jungles, deserts, hilly valleys and beautiful coastlines. But this is also hurricane country, where the stress of repeated disasters is intertwined with pervasive social, economic and political problems.

In the southern part of the country, the Christian Communities of Support (*Comunidades Cristianas de Apoyo*) – part of the wider Network for the Manage-

ment of Risk and Climate Change Adaptation – is finding that coconut husks can be part of the solution to environmental degradation, poverty, and social stress.

Unemployed youngsters collect discarded coconut husks and then grind them to extract the fibers. Women from the community use these fibers to produce sandals and vases which can be sold in local and foreign markets (see the Terra Coco Facebook page at http://goo.gl/IdqSu5). They can also be put to another use: Braided into long, tough nets that are then employed to stabilize the slopes of the hills nearby. These land nets additionally help to reduce soil erosion and retain soil moisture and fertility, thus reducing the risk of landslides.

Healthy ecosystems are crucial for healthy cultures.

"This kind of intervention also reflects the cultural heritage of a region, which must be kept in mind when devising strategic interventions for disaster reduction", points out Elisa Calliari, researcher at Fondazione Eni Enrico Mattei in Venice, one of the CATALYST's partners.

The unique features of this small community, as well as their indigenous knowledge, serve to strengthen the livelihood of many, often marginalized, families, youth and unemployed people.

USING ECOSYSTEMS TO LOWER DISASTER RISKS

Imagine a green meadow with lush trees with abundant fruits. Now think of the same meadow turned into a dumping ground for garbage. Especially in developing countries, impoverished people often feel they can't afford to care much about the environment.

But healthy ecosystems are crucial for healthy cultures. They can be a sustainable source of food, medicine, fuel, building materials and tourism revenue. They can act as natural barriers that help protect people from storms, floods, and droughts. Unfortunately, the importance of natural ecosystems tends to be underestimated by policy- and decision-makers, who pay little attention to the gains they could derive from these ecosystems.

A number of CATALYST's Think Tank members have discussed the role of ecosystems in reducing the risks resulting from natural disasters. They have also tried to quantify the value of these natural resources, focusing on Small Islands Developing States (SIDS): small states with a small population and often weak economies that are dramatically affected when natural disaster strikes.

RiVAMP, the Risk and Vulnerability Assessment Methodology Development Project, is a good example of a cooperative effort aimed at acknowledging the importance of ecosystems. First pilot-tested in 2009 in Whitehall and Little Bay on the west coast of Jamaica, RiVAMP has developed an operational protocol to help local and national decision-makers to identify the best available options for the wise management of ecosystems in order to reduce disaster risk and cope with climate change. RiVAMP is a joint initiative of the United

Nations Environment Programme, the Caribbean Environment Programme and the UN Regional Office for Latin America and the Caribbean.

Jamaica lies in the hurricane belt of the Atlantic Ocean and is highly vulnerable to tropical cyclones and sea-level rise. Residents, however, do not rely heavily on natural environments when they seek protection during hurricanes or storms.

The RiVAMP process is based upon consultations with residents, local authorities, businesses and other local groups, who were asked to gather information on public perception of the ecosystems' role and to spot major threats to the environment. This information was then coupled with satellite imagery analysis and remote-sensing techniques to triangulate the available data and draw a precise picture of the region.

In doing so, analysts spotted some of the major threats to this area, including overfishing, destructive human practices and marine pollution; the analysis further highlighted the importance of coral reefs, mangroves and beach vegetation as natural barriers against the effects of hurricanes and storms. These rich ecosystems, if properly managed, offer protection not only to biodiversity, but also to the region's human inhabitants.

THE CUBAN MODEL

With three laws, 13 decrees, 21 ministerial resolutions and one directive on disaster risk mitigation, Cuba stands out among many Latin American countries for the effectiveness of its efforts in managing the potentially deadly natural events that periodically hit the island.

METEORO, a national simulation exercise that mobilizes local resources to mitigate risks and reduce dangers, is an example of Cuba's ability to prepare for the fury of storms. Every year in May, a simulation drill tests the island's preparedness. It takes place over a two-day training period, carried out at the national, county, municipal and community levels. Day one is devoted to providing practical information to the public on how prepare for an emergency, and to carrying out disaster response simulations. Day two is for practical preparatory activities, like checking reservoir walls, cutting tree branches, and identifying places where evacuated animals can be housed and protected.

All these activities are intended to prepare Defense Councils, company managers, local authorities and the population for sudden or violent hazard events such as earthquakes, tsunamis, high-intensity hurricanes and fires.

"The Cuban experience", points out Calliari, "demonstrates that effective disaster risk reduction is possible even in countries with limited financial resources, provided that the political will is strong enough to foresee policy priorities and mobilize resources and actions."

SEND IN THE DATA

A critical element that can make the difference, turning homemade strategies into good preparedness for natural hazard events, is the circulation of information and data, both historical and recent. As CATALYST found out, in some countries like Jamaica, the Cayman Islands and El Salvador, data sharing is quite challenging even among government organizations. Saint Lucia, a sovereign island country in the eastern Caribbean Sea on the boundary with the Atlantic Ocean, launched its first data sharing and management platform in 2012, with the support of the World Bank.

Called Saint Lucia Integrated National GeoNode, it provides a medium for agencies and institutions for sharing the spatial data they use through open-source software. National ministries and agencies are then able to add, catalogue, view and share data on the platform, and thus inform planning and decision-making on the basis of more complete information.

Following this example, other Caribbean countries like Belize, Grenada and Saint Vincent and the Grenadines are now using GeoNode to create, share and exchange geospatial data for land management and risk assessment in the region.

AND THE REST OF THE WORLD?

The best practice papers for the four CATALYST regions around the world have described approaches that can reduce significantly the impacts of natural hazards and climate change that governments and other stakeholders can adopt.

"Each year natural disasters affect the lives and livelihoods of millions people around the globe", says van Bers. "In 2010, for example, floods, droughts, tornadoes, tsunamis, earthquakes and landslides caused nearly 300,000 deaths and more than EUR70 billion in damages worldwide. The aim of CATALYST is to help reduce these numbers. Through a collective effort by all those currently involved and getting more organisations and communities involved, we know this is achievable." ■

Cristina Serra