

Partners in Action



Strategic planning for integrated risk reduction in the Municipality of Páez, Cauca, Colombia, in the context of sustainable local development and in response to the reactivation of the Nevado del Huila volcano: A perspective of the Nasa indigenous people

"From the viewpoint of the Nasa people, nothing is inert as Western science tells us. In the Nasa world, everything has life and the Nevado del Huila volcano is like a large house of the spirits, or of other very important and essential beings, such as water and fire, whose function is to regulate the harmony and balance between man and nature."

"The phenomenon of the Nevado volcano is in and of itself natural. Its way of life is to accompany the beings who surround it. Thus, it is not necessary to be alarmed or panic because of what is happening now. The purpose of these occurrences is for us to create and practice a culture of prevention, not to think that it is the end of the world. Regarding this hazard, let us think that the spirits of nature and men are bearing the fruit of life for the Nasa world. In this sense, it is important to take a look at our ancestors' footprints and ask ourselves how they survived, what memories of theirs are still alive in our environment, what were their prevention measures, and how the community relates to them. These are necessary questions for the vulnerable peoples who inhabit this territory to reflect on, analyze, and consider." (Taken from EL Sxúu Yu' [Refreshing our memory, in local language]—for prevention in the territory of the Nasa indigenous people).

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The Municipality of Páez is located in the northeastern part of the Department of Cauca, in the foothills of the Central Mountain Range, and borders the Departments of Huila and Tolima. Its area is approximately 185,204.4 hectares. Its political/administrative division is made up of the municipal capital, Belalcazar, the districts of Riochiquito and Itaibe, and 15 indigenous communities known as *resguardos*. Páez is part of the territory known as *Tierradentro* (land within). Its municipal capital, Belalcazar, is located at 2°40' latitude north and 75°59' longitude west of Greenwich. The population of the municipality is 40,643 inhabitants, of which 5,517 live in Belalcazar. The remaining 35,126 residents make up the municipality's rural population, of which 30,923 are indigenous and 4,203 are *mestizo* or Afro-Colombian.

The economy of the Nasa people in Páez is self-subsisting, and they use shared, collective and family production systems. The relationships of exchange, reciprocity, and giving help guarantee the availability of products in short supply, especially in times of hunger or famine. Traditional production systems in Páez revolve around corn crops, but other systems have been adapted according to the needs of the community, such as the use of cash crops like beans, sugar cane, coffee, livestock and others. These management systems—in addition to construction needs, the use of firewood, home-made production, the use of plants for traditional medicine, and spiritual aspects of territorial management such as sacred sites—determine both the vegetation areas established by humans and those that exist naturally. The topographical limitations of *Tierradentro* have always been a determining factor of the way of life of its population. Survival has never depended on conventional economic development, but on networks of socio-cultural relationships. The deep roots with their land and their identity have been a means for defending the right to their territory and for discovering the key strategies for cultural and material survival. Their territory is the geographic space where their culture – the social, economic and political organization – is shaped.

In the political and institutional contexts, the *Cabildo*, or community council, is the political institution that governs each of the 15 *reservations* that make up the municipality of Páez. The staff used by the governor is not only a symbol of power; it also possesses the spirit of the community and it transmits the ability to govern to the person who carries it. All members of the indigenous community must fulfill a number of duties for the *Cabildo*, including participation in community tasks. Some of them must also take on the responsibility of becoming part of the *Cabildo* itself. The territory also accommodates the *Asociación de Cabildos NASA ÇXHAÇXHA*, an association made up of traditional authorities organized in 15 indigenous reservations, which are recognized by the Constitution as territorial entities.

In terms of the environment, the Municipality of Páez makes up part of *Tierradentro*, which is one of the most mountainous and fragile ecosystems in southwestern Colombia. It has

diverse climates and microclimates, from moderate to the cold highlands. It also has strong winds determined by the orography of the area. The annual precipitation in Páez is 1,525 mm per year.

One of the risk scenarios (in terms of hazards and vulnerabilities) in the *Tierradentro* region is the reactivation of the Nevado del Huila volcano, due to the gases and volcanic ash it spews. Since it became active on February 18, 2007, there have been mudslides (February 19, 2007) as a result of the snowcaps melting, and an avalanche (April 18, 2007) due to a second, larger snow melt. These events have prompted the evacuation of the Nasa indigenous people and a retreat to higher and more distant areas. These actions were taken by themselves and in an organized manner, in response to the volcanic emergency at hand.

The current risk scenario in the territory is not only related to this volcanic hazard but also to existing vulnerability factors, such as: i) Physical: The location of housing, vital infrastructure and productive lands in low-lying areas with greater exposure to avalanches and mud and rock slides, due to changes in settlement patterns because of the lack or scarcity of adequate lands being made available by the State to indigenous communities. The acculturation of the production systems, and the lack of understanding by the Nasa community of the relationship between space, territory and time. Changes in the relational link between the family unit and the Nasa territorial context, which increases the population at risk and also generates more risk scenarios. ii) Economic: Direct impact on some plots, since the river valley is the area of greatest production. Disruption of communication routes, preventing prompt attention to agricultural lands in several reservations iii) Institutional: There are flawed interpretations and a lack of knowledge regarding the magnitude and dimensions of the volcanic process on the part of the State and the Nasa community, which leads to a disconnect between the local actors when it comes to taking action in the face of the volcanic phenomenon. There is also little appreciation for simple resilience measures. These have been developed with the community but are not taken into account by the government institutions (due to slowness, lack of knowledge, and discrimination). iv) Political: Difficulties with the national regulatory framework and failure to update statutes with respect to the indigenous *reservations*, which are defined by the Constitution as territorial entities but are not taken into consideration at the different decision-making levels, such as the Local Committee for Disaster Prevention and Response (CLOPAD), the Regional Committee for Disaster Prevention and Response (CREPAD), and the National Bureau for Disaster Preparedness and Response (DPAD). Furthermore, there is the influence of armed groups in the area and the permeability of the State political system that disconnects authority from the exercise of territorial control. v) Environmental: Air pollution, the burning of crops and vegetation due to gases and ashes, which has also polluted drinking water sources. Also, the obstruction



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of sewage and drainage systems in the indigenous *reservations* of Páez, as well as the areas where they have been relocated (shelters). Finally, the fragility of strategic ecosystems, such as the Nevado del Huila National Park, the high plains (*páramos*), and primary forests. vi) Social: The impact on communication networks (roads and bridges) has disrupted the social and cultural interaction of the communities located near the Nevado del Huila volcano. The erroneous vision and inoperative decisions made by the local institutions in charge have made it evident that there is discrimination against some segments of the population. This creates social resentment and further widens the gap between the different social actors who live in a multi-ethnic municipality like Páez.

The group of local actors involved in this process is made up of the Nasa Territory and Nature Team, supported by SIGNASA (both from the Nasa Çxhâçxha Community Council Association), relevant community groups from each of the 15 *reservations*, and the Cauca Regional Indigenous Council (CRIC). This strategic planning process has also been supported on different occasions and in different ways by 110 students in various fields (geography, topographical engineering and pre-hospital care) at the *Universidad del Valle*, under the supervision of Professor Andres A. Velásquez, as well as by the OSSO Corporation, the Colombian Mining and Geology Institute (INGEOMINAS), the Popayán Volcanological Observatory, the Pan-American Health Organization (PAHO), the Disaster Preparedness and Response Bureau (DPAD), the International Strategy for Disaster Reduction (ISDR), the Local Development Support Program (DELNET), the International Training Center of the ILO (ILO/ITC), UNOSAT, and the Matanzas Environmental Research Center, of the Cuban Ministry of Science and Technology, in cooperation with

the Colombian Institute for the Development of Science and Technology (COLCIENCIAS), among others.

This strategic planning exercise for risk reduction in the territory has: i) Protected the lives of more than 5,000 people living in low-lying areas along the Páez and Simbola river in the aftermath of the avalanche that took place on April 18, 2007, and improved community organization through the creation of a new early warning system with a pilot program in the *reservation* of Huila, *reservations* to then be rolled out to the remaining 14 *reservations*. ii) Generated new knowledge about the territory, based on the reading of physical and spiritual signals. Perceptive and cognitive maps of each of the 15 *reservations* have been developed at a scale of 1:5000 to identify hazards, vulnerabilities, and reduction measures (such as identifying evacuation routes to safer ground in case of avalanches). iii) Created spaces for dialogue and consensus, in order to make decisions regarding volcanic risk management through seminars and workshops to be used as input for developing the territorial prevention plan (in progress) of the Nasa Çxhâçxha's Association of Indigenous Cabildos, as well as life plans for the 15 *reservations* in the Municipality of Páez. iv) Built local capacity to support government institutions in monitoring volcanic activity with the technology available to the Nasa community, through an inter-agency pilot program to be implemented simultaneously in Páez (Colombia), the Telica River basin communities in Nicaragua, and the Municipality of Varadero in Cuba. This program is based on UNOSAT's extensive experience in the use of satellite technology, on the DELNET (ILO/ITC) program's expertise in sustainable local development, and on the UN International Strategy for Disaster Reduction (UNISDR). Additionally, proposals were submitted for economic and productive recovery of Páez after the current volcanic crisis,

through DELNET, the ILO Crisis Recovery and Reconstruction Program, and the ILO Convention 169 on Indigenous and Tribal Peoples, among others. v) Consolidated processes of information, education and communication at all levels and for all age groups in the Nasa community, for them to better understand the reactivation of the Nevado del Huila volcano and strategies for action by adapting the Riskland board game in the Nasa Yuwe language. vi.) permitted recovery of the individual and collective historical memory of the communities about their territory, by using educational exercises for the pre-school, primary, secondary, and university levels, in cooperation with the Autonomous Indigenous University (UAIN). vi) Introduced organic agriculture and agrobiodiversity to ensure food security through the management and recovery of wild species/varieties (native seeds, especially tubers and roots that are resistant to volcanic ash), grown at the Tull (wild orchard or garden), using micro-organisms.

This strategic planning has created a new territorial dynamic as a cross-cutting issue in all planning processes, because it integrates domestic local development, strategic planning as a process and a tool, risk reduction from an integrated development perspective and its related fields (economic, political-administrative, environmental, and socio-cultural), participation of the community and local stakeholders, and the strengthening of territorial authorities, among others.

The lessons generated thus far in this process can be categorized as follows: i) Feasibility, applicability, and replication. Since it was conceived as part of a participatory exercise, the process is feasible, applicable to, and concrete for a territorial reality that urgently needs coordinated action to reduce risks in the short, medium, and long terms. ii) Participation and consensus of the local actors by using the community's organizational potential for collective decision-making regarding their territory. Conceived and developed with the people and for the people, these exercises become a basic input for strengthening the development and application of the territorial prevention plan, which the community, on its own, had begun drafting a few months ago. iii) Strengthening of other community-based processes as a result of a participatory and coordinated integrated strategic planning exercise. From a methodological point of view, the process strengthens the organizational capacity within the indigenous communities, so that they are able to address the priority issues that the community faces today, such as watershed management, as well as life plans, which favors the inclusion of risk reduction as a key element for development planning. iv) Identification and use of internal resources. This will create a sense of ownership regarding the processes carried out over time, which will contribute to developing a new perception and a better understanding of the territory among the population. v) Ongoing capacity building (such as early warning committees) due to the inclusion of the indigenous community as a dynamic and active actor involved in observation and monitoring activities in their territory. vi) Appreciation and recovery of the individual and collective historical memory about the ancestral knowledge of their territory, which generates stronger roots and ownership of it, as well as a better understanding of natural and spiritual signals

that give timely notice to take action, by recovering the traditional knowledge related to understanding nature. vii) Exercises developed in a coordinated and participatory fashion, based on sustainable local development and the Nasa philosophy that takes into consideration the interrelationship between all economic, social, political and environmental factors present in the territory, for more adequate decision-making about risk reduction. viii) Inclusion of risk reduction in educational processes within the reservation, as a fundamental issue for the survival and resistance of the Nasa people. ix.) Promotion of social inclusion and equal opportunities for men, women, youth and the elderly among indigenous peoples in each of the *reservations*.

Strategic planning exercises bring the community together, so that they can also do an exercise of everyday prevention, in which each person has a defined role to play to contribute to the process, based on consensus and conflict resolution, and with the participation of the whole community to reconstruct the past, define the present, and plan the future. It is considered that communities are capable of shaping their own fate.

This strategic planning exercise fulfills four of the five priorities identified in the Hyogo Action Framework: 1) Identify, assess, and monitor disaster risk and enhance early warning; 2) Use knowledge, innovation and education to build a culture of safety and resilience at all levels; 3) Reduce the underlying risk factors; and, 4) Strengthen disaster preparedness for effective response at all levels.

This process of risk reduction has been developed and led by the Nasa Territory and Nature Team, of the NASA ÇXHAÇXHA Association of Cabildos, in the Municipality of Páez, Cauca, Colombia, which has been recognized by the Andean Committee for Disaster Response and Prevention (CAPRADE), the Andean Community's Project to Support Disaster Prevention (PREDECAN), the European Commission, the National Disaster Preparedness and Response System (SNPAD), and the Colombian Federation of Municipalities as one of Colombia's four winning experiences in the Andean regional competition titled "Development Practices and Policies for Confronting Disaster Risk: Identifying Significant Experiences in the Andean Subregion," for its contribution to the overall learning of local risk management.

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Building Paradigms for Recovery: A Contribution to the Reconstruction Process in Southern Peru



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On August 15, 2007, a seismic event measuring 7.9 occurred in southern Peru. More than 500 lives were lost and over 75,000 homes were destroyed in the departments of Ica, Lima and Huancavelica. The Peruvian government, through the Integral Fund for Reconstruction of the South (FORSUR), estimated that an investment of US\$756 million would be required for housing, water, sanitation, health, education, roads and production infrastructure.

Eight months later, an estimated 56,000 families, whose homes were destroyed, are still living in shelters, temporary housing, tents, and with relatives, while their living conditions have been complicated by the deterioration of the “emergency roofs,” insufficient drinking water, the lack of sanitation systems, and their corresponding effects on mental and physical health and on safety. At the same time, government permanent housing programs have found a number of constraints in their implementation, especially due to the existing complexity of the current land tenure system.

Compounding this is the earthquake’s impact on the technical and administrative capacity of local governments, as well as problems for coordinating efforts among the different government levels.

This scenario demonstrates the ongoing importance of appropriate management of a *transition to recovery or early*

recovery, so that people’s immediate and mid-term needs are addressed, as well as the key aspects for an agile and efficient recovery and reconstruction process. With this goal in mind—and with a focus on sustainable human development that emphasizes local capacity building, in accordance with priority one of the Hyogo Framework for Action: “ensure that disaster risk reduction is a national and a local priority” with a solid institutional base for its application—the United Nations Development Program (UNDP), jointly with the UNDP’s Bureau for Crisis Prevention and Recovery (BCPR), has delivered and continues providing technical assistance in the transition/early recovery process at three different levels, namely: (a) At the local level, with FORSUR and the ministries of the relevant sectors as reference points, (b) At the local level, interfacing with regional, provincial and district governments, and (c) At the international level, mainly interacting with the United Nations agencies and donors. There has also been an effort to include NGOs and organized civil groups.

The dynamics created—of close coordination and accompaniment of the government at the national and local levels, and by sector—has enabled UNDP and the BCPR to exercise a high degree of strategic influence at each of these levels and among the donor community, so as to facilitate better decisions and more appropriate actions. This level of influence and advocacy has been, and is, possible due to the strong commitment of the United Nations Resident Coordinator. The following are a few examples of this:

- In conjunction with UN HABITAT, support has been provided to the Ministry of Housing for the development of a national policy framework containing the conceptual, technical and operational guidelines needed to organize in a coherent fashion the transition and reconstruction processes in the field of housing. To support its practical application, projects have been profiled in order to manage government subsidies, design a technical and legal assistance system concerning ownership and construction, and implement a rural housing program.
- Support has been provided to FORSUR, as an agency created by the government, for the incorporation of the transition to recovery/early recovery into its organizational structure, coordination with other government sectors, and deployment to the affected areas.
- Particular emphasis has been placed on support for provincial, regional, and district governments, which have received direct technical assistance for coordination with government agencies and civil society, the planning of transition and reconstruction processes, the design of land use guidelines, the establishment of investment priorities, and the design of different projects.
- In an effort to develop practical criteria for the process, resources have been provided and leveraged for comprehensive attention to vulnerable populations. This entails following a complete transition and recovery process, deploying an array of government and private institutions to find permanent solutions to land, housing, health, education, sanitation, and social issues, while also putting in place temporary solutions for the transition period.

The positive evaluation of this technical assistance has led the Peruvian national government, as well as regional, provincial

and district authorities, and civil society organizations to request that this intervention strategy be ongoing at three levels (national, sector-specific, and local), with a solid local capacity-building vision. This requires the continued support from the United Nations to the overall process and approaching it as “a pilot intervention model” for the recovery of the affected areas. Nonetheless, given the current complexities involved in the reconstruction process, the prolonged transition period, the involvement of many different actors, and the deteriorating living conditions of displaced families, the need for ongoing and expanded support is substantial and will require increased technical and financial investments to consolidate what has been started and to provide new value added.

It is important to maintain the focus on local capacity-building, moving from assistance for planning and transition coordination to a more sustained effort for the recovery of productive and institutional capacity, social participation and public administration, based on an adequate legal framework for risk management. At the national level, it is important to continue devoting public policy-making efforts, but it is also necessary to move ahead with the design of programs and tools to put those policies into practice.

Finally, the continued support and commitment of UNDP and the BCPR will help translate this experience in Peru into a “good practice” for recovery assistance. In other words, it would be a practice from which lessons can and should be drawn in terms of knowledge, procedures and recommendations for future interventions in similar situations or in other contexts. It is possible that the future of how technical assistance can and should be provided in recovery processes is in the making in Peru.



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An International Meeting on Climate Change Adaptation and Integrated Risk Management at the Local Level

A Communication Strategy in Junín, Mendoza, Argentina



All over the world, there is an increasing interest and growing concern about the consequences of global climate variability and change. It is even beginning to be expressed in local areas where there was previously very little information about the origins of these processes. Our experience has shown that it is important to design communication strategies that help communities be better informed and prepared to mitigate the adverse effects of climate change. The work is based on the objectives and priorities stated in the Hyogo Framework for Action (HFA) and in the Millennium Development Goals (MDGs). It employs a holistic vision that considers the most common hazards in the region, in order to achieve efficient and integrated risk management within the context of local sustainable development.

In the province of Mendoza, a number of hydro-meteorological hazards have had a significant effect on the economy, which is based primarily on agro-industrial activities. These climate-related events, such as hailstorms, foehn winds (*zonda*), and frosts, are impacting the services infrastructure and producing other collateral damage. The costs of repairing, rebuilding, and rehabilitating such structures are growing considerably. These and others events must be approached based on the paradigm of integrated local risk management.

The idea for the meeting came up when a group of people from eastern Mendoza province decided they wanted to get involved and mobilize efforts to find the best way for all sectors of the local community, including the government, to learn about, understand, and take planned action to reduce vulnerability to disasters that could arise from climate-related and other natural, socio-natural, man-made and technological risks. It was decided that the best approach would be to organize a meeting to address this important issue in our region, beginning with the municipality of Junín. Various stages were established so that similar events could be held in the other municipalities in Mendoza province. The support of the International Strategy for Disaster Reduction (ISDR) added value to these activities, and the presence and participation of its Communications Officer, Ms. Margarita Villalobos, helped promote a greater understanding in our region about the work that the ISDR carries out in Latin America and the Caribbean.

This first call for the meeting with local participants and stakeholders was made by inviting experts, specialists, non-governmental organizations, universities, research centers, schools, representatives of the wine-producing industries, chambers of commerce, and consultants, among others, to participate in this effort. Special emphasis was placed on involving local residents.

Background information for this event included the proceedings, conclusions, and recommendations of the "Conference on Climate Variability, Change, Risk, and Management" and the "Science and Policy Forum on Climate-Related Risk Management" which took place in Panama City on November 19-24, 2006, and was organized by IAI, NSF, ISDR, FLACSO, CATHALAC, CRID, and ANAM. The results of the International Seminar on Integrated Risk and Vulnerability Management in Latin American and Caribbean Municipalities, and the regional workshop titled "Basis for Strengthening a Municipal Information Systems for Disaster Prevention in Latin America and the Caribbean" that took place in San José, Costa Rica on April 16-23, 2007 were also taken into account.

The meeting format included a communications strategy that made possible a more precise understanding of local natural hazards and helped participants understand that, while hazards may be inevitable, it is possible to foster a greater commitment to reducing existing vulnerabilities in the region. This message paved the way to begin addressing the issue with accessible language, educational presentations, spaces for reflection, and active participation of experts and attendees. It was also an effective communication channel with the local community, which generously offered its unconditional support.

The "Dueño del Sol" Park, (the place strategically selected to hold the meeting) was nice, functional, and accessible for the community. The experts' presentations took place inside a special "mobile structure" (a carpa (tent), or burbuja (bubble), as it is called in our province), which held up to 200 attendees in an environment surrounded by vineyards, and fruit and olive trees. Most of the participants said that future gatherings should be held in similar environments, in spaces surrounded by nature.

Summary of the strategy design

This first meeting was structured around a 2007-2015 timeline. 2015 is the key date by which we must meet our goals. This is also in line with the timeframe for achieving the Millennium Development Goals (MDGs). Our experience has helped us analyze our strengths and weaknesses, since one of the goals is "ongoing improvement" through the implementation of quality standards.

We wish to highlight the fact that a number of artistic and communications activities were planned to support this strategy. They were carried out in the framework of the "Worldwide Network for Protecting the Planet" campaign, (Red Mundial de Protección del Planeta) with the goal of fostering a commitment to a "culture of risk prevention." Risk prevention was discussed and activities were organized in two phases: a) reflection and public information activities through governmental channels and in schools throughout the department of Junín, and b) agreement on guidelines for the creation of a Red Mundial de Protección del Planeta, which was proposed after the conference. This network, whose initial effort began in Junín, can be consolidated through Internet-based exchanges with students from other regions and countries, in the context of "prevention and action" projects. Later, meetings will be organized with members of the network (students, teachers, and the educational community in general), in order to consolidate these virtual relationships and turn them into valuable human interactions of direct communication.

Tentative dates have been established for holding new meetings during 2008 and 2009. Other experts, specialists, and technical support staff from international, national, provincial, and especially local institutions will be invited to interact with the community in these new meetings.

A strong organizing team was established months before the conference was held. Leadership was shared, which contributed to effective decision-making and the smooth implementation of various activities. A very positive partnership was created between the private and public sectors, in this case between the municipality of Junín, the Junín Chamber of Tourism, TresArt (Communications and Design), and Bratschi Consulting, with the institutional support of the United Nations International Strategy for Disaster Reduction (UNISDR), which sent its Communications Officer, Ms. Margarita Villalobos, as their representative to the conference.

The authors of the initial project and idea—Gloria Bratschi and Marcelo Bartolomé, with the collaboration of Georgina Santinon—were strategic in creating an event that would be attractive, original, and held in a rural area that would "speak for itself." In this natural environment, people who attended the conference spoke about climate-related hazards and were able to combine daily-life observations with scientific knowledge, lessons learned, and experiences shared by the speakers during the three-day gathering.

As mentioned before, the activities took place under a large, specially conditioned tent that held up to 200 people. It was set up in the "Dueño del Sol" Park, just one kilometer from downtown Junín.

Several "rural inns" were used to house our national and international visitors. These places also helped visitors integrate themselves into the culture and have a direct experience with the local idiosyncrasy, scenery, and agro-industrial production. In addition, tours were organized to local industrial establishments (olive oil factories and wine cellars). This helped participants visualize other aspects that are directly related to an integrated type of local risk management aimed at protecting the population and the production that sustains the area.

Basic aspects of our vision

The philosophy that guided this project was based on the purest meaning of the word "encuentro" ("encounter"), in terms of the respect for various points of view, proactive communication, exchange of information and experiences, a gender focus, mutual learning, and the stimulation of human development.

All the presentations and working groups encouraged participants to learn more about the HFA, the MDGs, and the IPCC reports, and to better identify international organizations working on disaster risk reduction at the municipality level. In fact, all current local stakeholders now have a much clearer and more defined and participatory role to play. Those who rule, live, produce, trade, and educate others within the bounds of this municipality now understand more clearly, concretely, and visibly the hazards present in their immediate environment. An integrated local risk management can stimulate, nourish, and optimize prevention policies designed by central institutions to promote mitigation and "resilience at all levels" (HFA). Sustainable local development

must be approached in the same way, in the sense that every development plan, program, or investment project must include a risk reduction management component that will help guarantee the safety and sustainability of infrastructure projects, new technology, the expansion and/or reconversion of agricultural or livestock production, exports and imports, industrial development, and small and medium sized businesses, etc., while ensuring that they do not add more short- and long-term vulnerabilities.

While the conference focused on helping communities adapt to climate change, participants also looked at the most common risks in the region, in order to see how natural hazards can relate to inappropriate human action, and the lack of controls and sanctions on behaviors that can cause harm to life and property.

Conclusions and recommendations

The first key conclusion is that the municipalities, as governmental organizations, not only need to implement an integrated type of local risk management as part of their sustainable processes, but also need to strengthen their institutional capacities to plan and implement mitigation activities that will provide an optimum response to emergencies, and facilitate cost-effective repair, reconstruction, and rehabilitation processes after a disaster. All of municipal members should know and understand this new paradigm and be very clear about what to do before, during, and after an emergency situation or a disaster. As public officials, these are the people (from the mayor down to the lowest level employee) who are responsible for protecting human lives and property. This also means that governance and institutional integrity must be guaranteed in case of an emergency or a disaster.

It is important to highlight that the working groups, which were multidisciplinary and included the participation of the community, were a very positive mechanism that allowed people from diverse viewpoints and perspectives to reach consensus on conclusions and problem-solving proposals.

Special message

This conference was the first in a series of activities that we have undertaken together. Since we need to work more closely with each other in order to reduce our vulnerability to hazards of natural, socio-natural, man-made, and technological origin, we will continue to walk down this path. We trust that together and through local efforts we can build "a safer world for all."

Our deepest thanks to the UNISDR.

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The Knowledge Fair in El Salvador: “Reducing Disasters and Adapting to Climate Change”



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The Knowledge Fair titled “Reducing disasters and adapting to climate change: Transferring experiences and promoting cooperation among Caribbean countries”, held on May 22-23, 2008, gathered more than 250 people, including representatives and delegations from organizations and institutions that deal with risk reduction in Central America. The fair venue was the Central American University (UCA), in San Salvador, El Salvador.

In attendance of the opening ceremony, held in the Building D Auditorium at UCA, were Mr. Roberto Escalante, Vice-Minister of the Environment; Mr. David Smith, Executive Secretary of the Coordination Center for Natural Disaster Prevention in Central America (CEPREDENAC); Ms. Francesca Mosca, Ambassador and Head of the European Commission Delegation to Central America and Panama; and Mr. Richard Barathe, Deputy Resident Representative of the United Nations Development Program (UNDP) in El Salvador, among others.

The two days were full of activities aimed at sharing experiences, as well as presentations and demonstrations of what the region is doing and promoting in relation to risk reduction and climate change adaptation, particularly focusing on disaster preparedness and early warning systems (EWS) at national and community levels. All these activities were guided by one of the priorities established the Hyogo Framework for Action (HFA) to “use knowledge, innovation and education to build a culture of safety and resilience at all levels.”

Five thematic roundtables and discussion panels addressed current affairs in the region, giving the floor to some 28 panelists who represented regional agencies, ministries, municipalities, cooperation agencies, etc. The themes of these roundtables were: I) Recovery in the region: Ten years after Hurricane Mitch; II) Gender equality and risk management; III) Risk management and climate change adaptation; IV) Urban risk; and V) From the local to the regional level.

In addition, four presentation sessions on tools and experiences showcased a total of 16 tools and 10 cases related to disaster preparedness and local risk management experiences and practices. These were grouped based on four main themes: I) Infrastructure and small mitigation projects; II) Local disaster management; III) Information, education and communication; and IV) Institutional strengthening and advocacy. The fair also included the launching of the book titled “Superar la Desigualdad, Reducir el Riesgo” (Overcoming Inequality, Reducing Risk), which was presented by Mr. Arnaud Peral, UNDP Deputy Resident Representative in Mexico, where it was published.

The fair also hosted two workshops, two presentations and one training course. The first workshop was on “Sub-practices for risk reduction and recovery,” and was attended by 37 participants, including UNDP focal points, United Nations’ Volunteers (UNVs), national advisors, and staff from the Bureau for Crisis Prevention and Recovery (BCPR). The second workshop was titled “Linking risk management and climate change adaptation,” which was attended by 30 people, including those in charge of the National Communications on Climate Change (NCCCs), national coordinators of the UNDP Small Grants Program (SGP), and UNDP and BCPR focal points. The first presentation was on safe hospitals, delivered by the Pan-American Health Organization (PAHO). The second presentation was titled “The recovery process in Tabasco,” and was given by Mr. Gustavo Jasso Gutiérrez, Secretary of Planning for the government of the State of Tabasco. On the second day of the fair, Handicap International also taught a course on “How can we take disabilities into account in emergency preparedness and response?”

Needless to say, all the lectures, presentations and sessions were inspiring and instructive. We learned a great deal from our colleagues and we all left the fair quite eager to learn more and keep talking about these issues.

The fair was also a place to share and demonstrate practices, tools and products. There were 28 stands, where emergency and disaster prevention agencies, academic and research institutions, non-governmental organizations and cooperation agencies displayed their publications, outreach material, videos, and in general the work done, to participants, students and the public. Three thematic stands displayed a variety of materials on the following issues: I) Urban risk; II) Risk management and climate change adaptation; and III) Recovery processes.

Alongside these open activities, two halls were reserved for demonstrations and exhibits: a) the technical hall, where participants exhibited tools, construction modules, disaster inventory software, and community EWSs; and b) the education and health hall, reserved for a module on safe hospitals, the winners of a children's painting contest, an exhibition of educational materials, and for playing the "Riskland" game.

Finally, participants were very interested in following-up on cooperation and coordination efforts. To this end, a first step was taken to start a Registry of South-South Cooperation Initiatives, by asking agencies and institutions to voluntarily sign expressions of interest. The knowledge fair laid the groundwork for continuing South-South cooperation, and some 135 intention agreements were signed. Thus, the first actions were taken to establish collaboration, cooperation and exchange agreements among different countries, organizations and institutions of the Caribbean.

Fair participants

The fair was a meeting point for over one hundred renowned national, regional and international specialists from the following institutions: the Coordination Center for Natural Disaster Prevention in Central America (CEPREDENAC), the Federation of Municipalities in Central America (FEMICA), the Association of Caribbean States (ACS), the Network of Andean Cities, the gender equity website America Latina Genera, the OSSO Corporation, the Minister of the Ecuadorian Coasts, the Secretariat of Planning of the Government of Tabasco, the European Commission, the Japan International Cooperation Agency (JICA), the United States Office of Disaster Assistance (OFDA), the German Cooperation Agency (GTZ), the Swiss Agency for Development and Cooperation (COSUDE/SDC), the International Federation of the Red Cross (IFRC), the United Nations Volunteer Program (UNV), the Pan-American Health Organization/World Health Organization (PAHO/WHO), the Office of the United Nations Human Settlements Program (UN-Habitat), the United Nations Children's Fund (UNICEF), the International Strategy for Disaster Reduction (UNISDR), and the Bureau for Crisis Prevention and Recovery (BCPR) of the United Nations Development Program (UNDP).

Other participating agencies were: I) for Panama: the National Civil Protection System (SINAPROC), and the Panama City

Municipal Government; II) for Costa Rica: the National Emergency Commission (CNE), the Volcanological and Seismological Observatory of Costa Rica (OVSICORI); III) for Nicaragua: the National Disaster Response and Prevention System (SINAPRED), the National Institute of Territorial Studies (INETER), the Civil Defense Bureau of Nicaragua; IV) for Honduras: the Standing Committee on Contingencies (COPECO), the Institute of Earth Sciences (UNAH); V) for Guatemala: the National Coordinating Committee for Disaster Reduction (CONRED), the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH); VI) for El Salvador: the Civil Protection Bureau, the National System for Territorial Studies (SNET), the Planning Office for San Salvador Metropolitan Area (OPAMSS), the first responder group titled Comandos de Salvamento, the San Salvador Municipal Government, and the Salvadoran Red Cross, among others.

The fair also had the full and active participation and collaboration of a number of the European Commission's partner agencies for the implementation of the current DIPECHO action plan: CARE, the Spanish Red Cross, OIKOS, Oxfam Solidarité, ACH, the Dutch Red Cross, Oxfam UK, Trocaire, GOAL, DanChurchAid, the Italian Red Cross, German Agro Action (AAA), ACSUR, ACTED, Christian Aid, and GVC.

Holding knowledge fairs at universities fosters information sharing, cooperation and direct interaction among people working in this field. The events part of a whole series of activities aimed at disseminating information and practices—tools, methods and experiences— about disaster preparedness, local risk management and climate change adaptation in the countries of Latin America and the Caribbean.

The Regional Knowledge Fair "Reducing disasters and adapting to climate change," held in San Salvador, was the closing activity for the workshops held in Costa Rica on May 29, and the National Knowledge Fairs in Honduras on April 14-16, Nicaragua on April 17-18, Guatemala on April 23-24, and El Salvador on May 21, 2008. It was also the third activity of this type held in the region. The first and second Knowledge Transfer Fairs were held in the Caribbean: in Barbados, in December 2006 and in the Dominican Republic, in February 2007. These activities are all part of the project titled "Promoting knowledge transfer and replication of good practices in disaster preparedness and risk reduction in the Caribbean," co-funded by ECHO, through the DIPECHO Program, and UNDP/BCPR.

For further information, please visit our website, www.reddesastres.org, or contact Angeles Arenas (angeles.arenas@undp.org), Regional Advisor, Disaster Reduction, UNDP/BCPR-LAC, or Linda Zilbert (linda.zilbert@undp.org.pa), Project Coordinator.

The Second International Seminar on Risks Brings International Attention to Falcón

Organized by the University of Falcón



Photo: © Freddy Reyes

More than 300 participants representing universities, government organizations, and civic groups from all over Venezuela attended the *Second International Seminar to Involve the Community in Risk Reduction Programs*. The seminar was held in Coro and hosted by the University of Falcón (UDEFA) through its Risk Research Center. The activity is part of a series of events related to the work done by the United Nations in the field of risk management.

The Rector of the University of Falcón, Dr. Solano Calles Paz, welcomed the conference participants and presenters. He highlighted the importance of the event as one that brought together the efforts of a broad spectrum of organizations responsible for responding to disasters in Venezuela and the world, and he emphasized the particular work done by the Risk Research Center at this university.

Mr. Juan Murria, Director of the Risk Research Center (CIR- UDEFA), gave a brief summary of how the Center began its operations a little over three years ago and emphasized the importance of disaster risk reduction management. He also mentioned the UN Kobe Declaration (2005) as one of the international instruments that highlight this issue.

This outstanding conference was led by Mr. Tony Gibbs, a laureate of the 2007 UN Sasakawa Award for Disaster Reduction for his work in the field of risk reduction. In particular, Gibbs' presentation focused on "Participation of the Caribbean Community in Natural Disaster Preparedness," a topic on which Gibbs has developed extensive experience.

Dr. Gustavo Malavé, President of the Foundation for Seismological Research (FUNVISS), also participated as a special guest. He gave a presentation related to tsunamis and the possibility that one could hit the Venezuelan coasts. His presentation also included interesting simulations of earthquakes and other triggering events.

In attendance were various international participants, including María Asunción Avendaño and María del Rayo Campos from Mexico, both with interesting experiences with communities. Their presentations were titled "Reflections on a Risk Area: The Case of the Tornado Corridor in Mexico" and "La Junta de Arroyo Zarco, Puebla: The Configuration of a Disaster," respectively. In addition, Jorge Luis Chang from Cuba gave two presentations on "Geological Risks in the Communities" and "Geophysical Studies in the Multi-factor Analysis of the Geological Risk of Landslides."

Alfredo Cilento Sarli, from the Experimental Institute of Construction (IDEC), was among the Venezuelan specialists, as were Alejandro Linazo, Director of the Mérida Risk Management Research Center; Mercedes Marrero, Coordinator of the Commission for Risk Mitigation of the Central University of Venezuela (COMIR); Armando Lares, Deacon of UNEFA's Post-graduate Programs; and Luzmila Gómez, President of the Chacao Municipal Autonomous Institute for Civil Protection, among others.

The participation of youth from all over the country, especially those who are students of the Disaster Management degree program of the National University of the Armed Forces (UNEFA), was particularly notable in this international seminar organized by the University of Falcón.

In the closing ceremony, the chair of the organizing committee, Mr. Raul Amor, thanked the United Nations International Strategy for Disaster Reduction (UNISDR) and all of the sponsoring institutions and businesses for their support.

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More than 1.5 million people informed through an earthquake preparedness campaign titled “Bogotá on Solid Ground”



Photo: © IFRC

More than 300,000 people have participated directly, and 1.5 million indirectly, in the informative sessions of this educational campaign designed to prepare various groups of the population for the possibility of an earthquake in the Bogotá area.

A campaign that combines a dissemination process through the media with direct training in neighborhoods, businesses, and educational facilities. To date, this campaign is the largest of its kind in Latin America.

With a goal of reaching every community, Bogotá is at the forefront in the first and largest earthquake preparedness project of this kind in Latin America.

A media campaign and informational sessions on what to do before, during, and after a seismic event has equipped around 1.5 million residents of the capital city with basic information about how to act should an earthquake occur.

“Bogota on solid ground” [*“Bogota con los pies en la tierra”*] is a project that began 14 months ago under the leadership of the Bureau for Emergency Response and Prevention, part of the Government Secretariat, and the Bogotá Mayor’s Office.

So far, 4,000 awareness-raising sessions have been held in 832 neighborhoods, in the 20 local districts of Bogotá, as well as in 482 schools, 1,088 residential complexes, 1,007 businesses, 93 universities and technical/technological institutions, 432 government offices, 172 daycare centers, and 89 religious communities, among others.

Broad coverage

This is the first time that a risk management project has had such broad coverage in a Latin American city. Communities are requesting and receiving information, and are showing a great desire to learn by doing.

The program provides essential basic information through *seis jugadas maestras* [“six winning plays”] or six basic steps to prepare oneself ahead of time for an earthquake.

The workshops are held in neighborhoods, residential units, educational facilities (elementary and secondary schools and universities), and public and private enterprises (large, medium, and small). The workshops are led by a group of 25 promoters who were previously trained, and include more than 70 people at a time who gather to hold participatory and interactive sessions.

These awareness-raising sessions begin with a description of the current risk management plans in the city. The promoter, or trainer, and participants then discuss the structural problem related to the fact that 80 percent of Bogotá homes are not earthquake proof. Promoters also tell the community about the type of work institutions are already carrying out to prepare for a potential earthquake, and they invite all participants to take on joint responsibility towards that goal. Finally, the workshops provide information about and recommendations of what to do before, during, and after an earthquake at home, at work or at school. All these topics are covered in two and a half hours.

The Media campaign

The sessions have raised awareness and awakened the curiosity and interest of the residents of the Colombian capital. This work has been done hand in hand with a media information campaign that covers neighborhoods and districts throughout the entire city.

The media campaign includes activities on the radio, television, Internet, newspapers, and other printed materials. The target groups have been divided into three major groups: businesses, neighborhoods, and educational facilities.

The latter involves recreational activities, such as school contests and competitions. More than 400,000 students between the ages of 7 and 18 have participated in these activities.

In order to promote the project activities among children and youth, a cast of urban cartoon characters was created. The characters are led by a cartoon cockroach in what is called the "Prevention is Life" brigade.

A unique methodology

The purpose of this campaign is to provide neighborhoods, businesses and schools with the information they need to respond in a timely manner, protect and care for themselves in the event of a large earthquake in the city of Bogotá.

The hope is that these communities will create networks that replicate this information with their families, and in their neighborhoods and work environments. Impact studies have shown, in fact, that each person who attended the sessions has replicated the information with four or five other people.

A novel aspect of the methodology used has been the process of convening the communities to the meetings. Promoters do this directly in the neighborhoods, keeping three fundamental aspects in mind:

A. Through advertising: The sessions are advertised through the district and local media, and they are held directly in residential areas, educational facilities, and businesses of the different neighborhoods.

B. Chain reaction: It is the (joint) responsibility and commitment of everyone who attends these sessions to tell others about what they have learned. At a minimum, they should talk to their families about what they have learned, but they are also encouraged to spread the word in their social groups, work environments, and neighborhoods. Each participant also invites family members or friends to the next session being held in their area. This "chain reaction" technique is also used on the Internet in order to get information on risk management (related to earthquakes) out to a broader group of people.

C. Through neighborhoods: The presentations are made throughout the 20 districts of Bogotá, using a "sweep" method in order to reach the largest number of neighborhoods in each district. The

promoters "take over" one local district a day and get to the largest number of neighborhoods possible in one week.

Why is this campaign so important?

Although it is possible that an earthquake occurs in Bogotá, citizens are not well prepared for such an event. To a large extent, this is due to the lack of awareness about the possibility that this could actually happen. Taking into account the general rejection generated when mentioning the likelihood of an earthquake (although it is impossible to predict it with total accuracy), it is important to demystify this phenomenon and learn that, through effective prevention measures, one can remain calm during and after such an event, and control any situation that may lead to panic attacks.



The metaphor of the game

Undoubtedly, panic plays an important role during these events. Earthquakes are perhaps the natural phenomena feared the most by the population, since it is virtually impossible for any place to be completely immune from them. In contrast to other events, such as hurricanes, people cannot react ahead of time. Based on this reality, awareness-raising activities must first aim at helping people isolate their fear.

As stated before, a seism cannot be predicted accurately, making it impossible to say exactly when and where an earthquake will take place, as well as all the consequences it will bring about. For this reason, when addressing this issue through the media, the first thing to take into consideration is that the message to be conveyed should not include any information that might create panic among the population. If this happens, it is very likely that the message will be rejected. Drawing on this element, the concept that we are proposing is to develop a visual language, which is primarily figurative. The first phase of our campaign is aimed at raising awareness among the different communities in Bogotá about the likelihood of an earthquake but, at the same time, it is intended to demystify, without trivializing, the impact of a potential seism, and to learn how to "live" with this ongoing risk.

The concept of games, and particularly board games, is the tool that we propose to create a dynamic, simple and universal language, away from any alarmist interpretation. This language will be used to present the first phase of this campaign.

By using dominoes, playing cards and chess, a number of messages are conveyed to remind citizens of the importance of being prepared for an earthquake.

Your life at stake

In addition to the language that will be developed for each of the campaign's elements, the written material will be geared towards highlighting the value of risk prevention. With the phrase "Your life cannot be at stake..."—which is also the title of all the audiovisual materials developed for the campaign—we seek to create some expectations about the image and the meaning of the message, which also uses the phrase "An earthquake cannot be prevented, but you can be prepared." This phrase openly expresses the importance of being alert and prepared for a large event or an emergency situation. The second phase of the campaign will include more specific recommendations related to coping with this natural phenomenon.

The logotype

With the purpose of positioning this campaign in the long run, an additional element was developed, so that the campaign could be identified through its logotype. The logo, to be included in all visual materials, will be made up of a pictogram similar to a warning sign that will show an individual standing inside a square that rests against its own vertex, which represents instability. The image will also include the word "Bogotá" written in Helvetica black, with a "fracture" visual effect to represent the potential structural consequences of a seism. The idea is to integrate both human and urban elements into this logotype, accompanied by the other phrase that is part of the campaign's title: "con los pies en la tierra" (on solid ground). This phrase highlights the importance of being calm, serene and prudent. These three virtues are necessary when facing successfully such a difficult situation. Finally, the colors chosen are the ones used to identify the capital city (red and yellow), so that the campaign is recognized throughout the city.

The pieces... Dominoes

The first game used is dominoes. This simple game, which is well-known among different sectors of the population, will be used to explain that an earthquake is similar to a sequence of domino pieces which, with just a minor motion, one by one can generate a chain reaction, as described by the expression "domino effect."



This visual metaphor, represented by the urban environment, will help people better understand the context of a real seism.

As a game of chance, dominoes will also imply the unforeseen and random conditions of an earthquake, as well as its almost unpredictable and unanticipated consequences.

Chess

This millennial game, which is a little bit more elitist than dominoes, is characterized by the intelligence and the strategic vision of those who play it. The game will be used to approach higher-class segments of the population. The main image is composed of the four towers, and one of them collapsed on the board. This reflects our total vulnerability to earthquakes, regardless of our social or economic conditions. The image also highlights the importance of developing strategies before and after an earthquake, so that its effects and impacts are minimized in the context of prevention. People also need to learn to react promptly and intelligently to such an event.

Playing cards



Although playing cards are not used in the specific context of board games (51, continental, poker), we used them to refer to the concept of a “house of cards.” This reflects the fragility of our urban environment to an earthquake. Similarly to dominoes, playing cards are recognized universally as a synonym for game of chance, good or bad, unforeseen and uncertain, without turning to magic. We used



the French deck of cards because they are more common in our city and more related to board games than the Spanish deck of cards, since their use is more related to guessing games, which is far from what is accurate and scientific.

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Mitigation of volcanic risks in the district of Alto Selva Alegre



Photo: © INGEMMET

Using knowledge, innovation, and education to build a culture of safety and resilience at all levels

The Peruvian city of Arequipa has experienced rapid urban growth over the last 60 years. In 1940, the city's population was 112,306. By 2005, it had grown to 862,747 people. The Misti crater is located just 18 km from the center of the city, whose inhabitants are unprepared for a volcanic crisis, and are unaware of the potential volcanic hazards and their impact on the environment. The district of Alto Selva Alegre, where this project is being developed, is one of the districts closest to Misti, located just 15 km from the volcano's crater. The district has grown at an accelerated rate over the last 20 years, with little planning and without consideration of risk-management criteria, evidenced by the fact that settlements now occupy high-risk areas located in the streams along the sides of the volcano.

In recent years, and in response to a number of natural events that have caused disasters in different parts of the world, the study of geological hazards has become a priority for geological services. These studies constitute a basic foundation for developing emergency plans and land-use planning, and for implementing prevention and mitigation measures. Thanks to the support and philosophy of the Multinational Andean Program–Geosciences for the Andean Communities (MAP-GAC), the Geological, Mineral and Metallurgical Institute of Peru (INGEMMET) began developing the Misti Volcano hazard map in 2005. Later, the Project for Education,

Dissemination, and Awareness-Raising about Volcanic Hazards in Alto Selva Alegre, Arequipa began in 2006. A number of institutions are participating in this program, including INGEMMET, the Multinational Andean Project, the local government of Alto Selva Alegre, the local Civil Defense Committee, leaders and residents of the Bella Esperanza and Javier Heraud settlements, the Diego Thomson Educational Institute, the National Civil Defense Institute (INDECI), the Center for Disaster Studies and Prevention (PREDES), the provincial municipality of Arequipa, the regional government of Arequipa, the national police, and representatives of the healthcare sector, among others.

Project Goals

The primary goal of the project is to disseminate and use geoscientific knowledge, particularly as it relates to volcanic hazards, in development planning, land-use planning, and disaster prevention in the district of Alto Selva Alegre. It aims to promote greater awareness of prevention regarding natural phenomena that generate hazards, and contribute to the implementation of risk mitigation measures.

Methodology

The Misti Volcano hazard map identified various high-risk places in the urban areas of Arequipa. These areas are located along the Chili River basin and the streams of San Lazaro, Huarangal, and Pastores. The affected districts are mainly Alto Selva Alegre, Miraflores, Mariano Melgar, Paucarpata, and El Cercado.

The project chose to work in the district of Alto Selva Alegre, where it is working to educate and raise awareness among the authorities, teachers and students. The project began giving talks and holding workshops on the potential volcanic hazards that threaten the local population, as well as on the use of the Misti Volcano hazard map, with the goal of helping people better understand the environment in which they live. If the volcano becomes active again, it could create chaos and turn into a disaster. To prevent that from happening, we must work together with the authorities and the public at large to develop contingency plans.

Initial results of the project:

The main results to date have been greater awareness of volcanic risks among the authorities, and the inclusion of disaster planning and prevention measures in their work agendas. As a result, they are working to demarcate the urban expansion toward the Misti Volcano, an effort supported by the passage of a new municipal ordinance in Alto Selva Alegre (201/2007– MDASA) which was actually called upon by the local population. The authorities have defined the limits of the district's expansion using UTM coordinates, and these limits have been signposted. A local Civil Defense Committee has been set up in the district and is working on emergency and contingency plans in case the Misti Volcano becomes active. In addition, educational materials have been developed with the local population. Recently, illegal squatters have been evicted, in accordance with the municipal ordinance.

Within the education community, in particular at the Diego Thomson School, teachers and students have learned more about the environment in which they live, and now understand that Misti is not a "dead" volcano, a mere local symbol or a tourist attraction as some thought, but that it is an active volcano that could erupt again at any moment. Thus, they have learned about volcanic hazards, prevention-related issues, the civil defense system, rescue techniques, first aid, etc. A number of institutions have participated in these trainings, including the national police and

doctors from the district's health care sector, among others. After these trainings, the students organized and formed the Prevention Club, which supports the project by disseminating what they have learned throughout the district. Two drawing contests demonstrated the students' level of understanding about volcanic hazards, and shows that these issues are being incorporated in cross-cutting ways into their studies.

Next steps

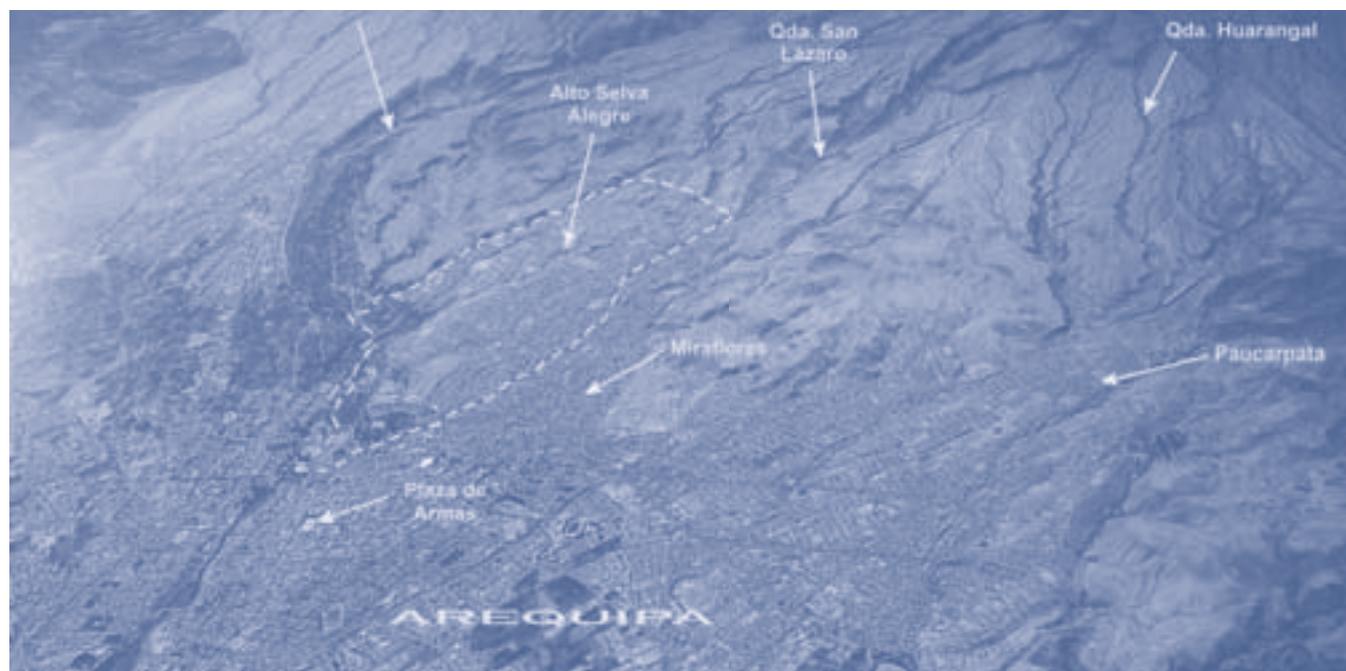
- Distribute the hazard map to all public agencies in the city.
- Incorporate the hazard map into the city's mid-term guiding plan.
- Pass a municipal ordinance for the entire Arequipa metropolitan area, following the example of Alto Selva Alegre.
- Organize drills for volcanic eruptions in Alto Selva Alegre.
- Create a protected area or ecological reserve in the area surrounding the Misti Volcano to ensure it remains off limits to development and settlements.
- Incorporate topics related to volcanic hazards into school curricula.
- Develop contingency plans for the entire Arequipa metropolitan area.

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Solidaridad Internacional in Northern Chinandega – Nicaragua



Photo: V. Ríos

Solidaridad Internacional began working in northern Chinandega in 1998, shortly before Hurricane Mitch. Responding to a request from the National Union of Farmers and Cattle Growers (UNAG), it developed a plan for mitigating the consequences of a drought caused by the “El Niño” phenomenon. That same year, Solidaridad Internacional (SI) established its permanent office in Somotillo, and thus far it is the only international organization based in the area.

SI's prior presence in the area enabled it to rapidly respond when Hurricane Mitch struck the six northern Chinandega municipalities. UNAG collaborated with the municipal governments in conducting the first census of victims and preparing, in conjunction with Solidaridad Internacional, the first requests for aid.

Disaster Prevention Projects in the European Union's Second and Third DIPECHO Action Plans. These actions enabled Solidaridad Internacional to achieve the following:

- Initiate, in collaboration with municipal governments and other agencies working in the region, a process to mitigate the impact of potential natural disasters and to prepare the population to prevent them, through the development of land-use and watershed management plans for the region (Estero Real and Negro River).
- Improve people's capacity to cope with potential natural disasters (earthquakes, landslides, floods, drought, and wildfires), which are very common in northern Chinandega, by strengthening community organization through the training of Local Emergency Committees that can operate within a network established with Municipal Emergency Committees, government institutions, and departmental and national civil defense authorities.
- Implement an early warning system (EWS) for the region, comprised of 27 radio-communication stations, 9 rain gauges, and 2 staff gauges installed on the two main rivers, in coordination with the Nicaraguan Institute for Territorial Studies (INETER); civil defense authorities; the National System for Disaster Prevention, Mitigation, and Response (SINAPRED); local government and

amateur radio organizations, all members of the regional and national civil defense system.

In 2003, SI designed a regional action plan, drawing on the basic concept of “integrated, consensus-based development.” Along these lines, the plan is established around a consensus-building, coordination, and planning approach to development, in order to manage interventions and optimize resources by focusing actions in those development areas where more experience has been acquired.

The component related to the strengthening of local institutions provides support for consensus-building, coordination, and planning mechanisms, so that the corresponding local bodies can effectively develop all sectors under their administration.

Using this concept, SI recently implemented two projects in the region: “Building democratic governance for the development of northern Chinandega” (2005-2007), funded by the Basque government; and “Improving people's skills for sustainable environmental resource management, with a gender perspective” (2006-2007), funded by the Biscay provincial government.

Solidaridad Internacional's approach encompasses the following areas of action:

- I) Integrated development;
- II) Subregional and municipal strategic planning;
- III) Reclaiming citizen rights and responsibilities, participation and good government;
- IV) Contributing to the achievement of the Millennium Development Goals (MDG);
- V) Sustained support;
- VI) Increased youth involvement; and
- VII) A gender equity perspective, facilitating access to social, economic, cultural and political resources and opportunities.

Regional project: “Increased impact: Harmonizing materials, methods and tools for community-based and institutional disaster management”



Photo: © IFRC/Krystell Santamaría

Carried out by the International Federation of Red Cross and Red Crescent Societies (IFRC), with financial support from the European Commission’s Humanitarian Aid Office (ECHO), and in the context of DIPECHO V, this project is intended to reduce disaster risk through better preparedness of vulnerable population in disaster-prone areas throughout Central America.

This is being done by strengthening the operational capacity and improving cooperation among Red Cross organizations and their partners, as a result of exchanging and applying experiences and best practices.

A number of tools and approaches in the field of disaster preparedness, at both institutional and community-based levels, have been harmonized, tested and validated, accompanied by a standard training program to ensure that the staff and volunteers of these organizations have the knowledge and skills required. The project also included transferring knowledge and experiences from both participating communities and institutions.

These actions have been made possible through the creation and efforts of two regional reference centers, which have been in service for some years now in Costa Rica and El Salvador. Both centers receive technical and financial support from the IFRC’s Regional Representation Office for Central America and Mexico.

1. The Regional Reference Center for Community-Based Education on Disaster Reduction (CRRED)

The Regional Reference Center for Community-Based Education on Disaster Reduction is a tool used by the IFRC to help build disaster risk reduction and preparedness capacities at the local level, by advancing the development of approaches, tools and harmonization processes, and by applying best practices and technical knowledge developed by different Red Cross chapters in the region.

All materials have been developed by applying a participatory education approach, which incorporates three key elements:

1. Practice as the starting point, since it includes the knowledge and experiences gained by people.
2. Theorization, which refers to building knowledge collectively.
3. Revisiting practice. This step refers to putting into practice the knowledge attained along the process.

To this end, the series titled “Better be Prepared” has been

developed and includes 14 modules of community-based education in the field of disaster risk reduction. The modules are:

1. Community-based education, organization and preparedness for risk reduction.
2. Prepared families.
3. Community first aid.
4. Protected schools
5. Temporary shelter management
6. Psychological first aid
7. Healthy homes
8. Community-based school maintenance
9. Floods
10. Disaster prevention in rural water lines
11. Early warning systems in minor watersheds
12. Community-based dialogue on water and climate
13. Social micro-projects
14. Community-based teams for disaster risk reduction.

2. The Regional Reference Center for Disaster Preparedness (CREPD)

The Regional Reference Center for Disaster Preparedness is used by the IFRC to help build disaster preparedness and response capacities at the national level, and reduce existing vulnerabilities.

This is achieved by advancing the development of approaches, tools and harmonization processes, and by applying best

practices and technical knowledge developed by different Red Cross chapters in the region.

The following are some of the training courses offered by the Center:

1. Basic Course for National Intervention Teams (NIT)
2. Emergency Operations Management and Control
3. Course for Planning Drills and Simulations
4. Course for Developing Response and Contingency Plans.

At the institutional level, some of the modules developed by the Regional Reference Center for Disaster Preparedness include:

1. Operations safety
2. Development of response and contingency plans
3. Planning of drills and simulations
4. Emergency operations management
5. Emergency assessment
6. Training material for National Intervention Teams (NIT).

Both reference centers also have internships available and promote the exchange of experiences among technical staff and volunteers from many different countries in the region. These centers devote efforts to producing training material for disaster risk reduction and preparedness, and develop a number of training courses.

For further information about the Regional Reference please visit: <http://www.cruzroja.org/desastres/redcamp/cenref.htm>

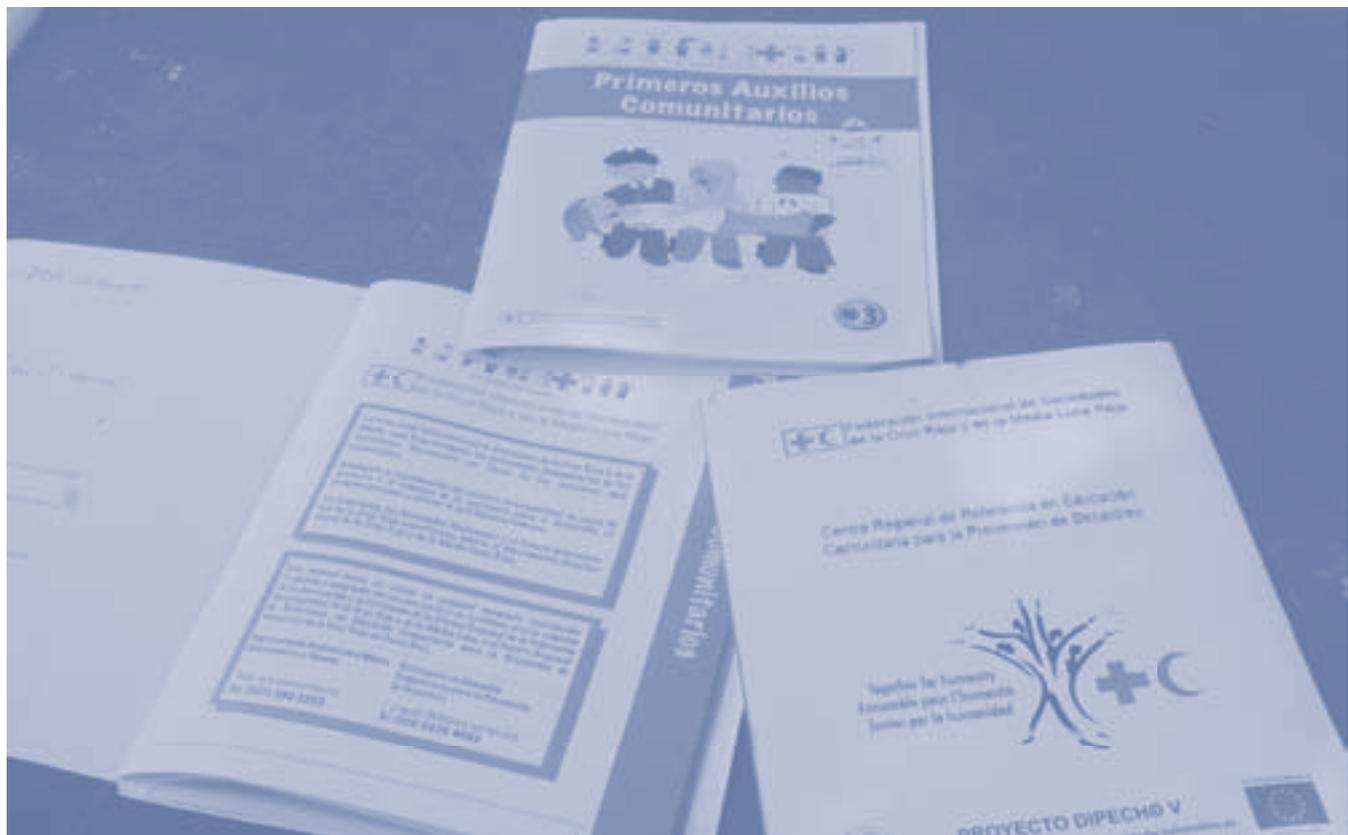


Photo: © IFRC/Krystell Santamaría

CAPRA Workshop 2008.



The Central American Probabilistic Risk Assessment (CAPRA) initiative was launched in Managua, Nicaragua on February 21-22, 2008. The occasion was a two day workshop on Probabilistic Disaster Risk Assessment and Financial Protection organized by the Center for Coordination of Prevention of Natural Disasters (CEPRENAC), the United Nations, secretariat for Disaster Risk Reduction (UNISDR) and the World Bank.

CAPRA seeks to develop tools for identifying and communicating the sources and concentrations of loss from adverse natural events on a community. Through a regional GIS platform with national chapters and national nodes, CAPRA will enable policymakers to take informed actions to reduce risks in the region.

In order to do so, CAPRA establishes appropriate standards and methodologies for probabilistic risk evaluation, and incorporates state of the art models into a geographic information platform. The applications that CAPRA will enable are designed as part of the Hyogo Framework of Action, and aim at strengthening the national and regional capacity on disaster risk management, with

an emphasis on enhancing risk mitigation strategies and financial strategies for disaster protection.

The first phase of the CAPRA initiative begins in Nicaragua and Costa Rica, with planned expansion to the rest of the region in following phases. As part of this work, consultants together with national governments and institutes will review existing information on hazards, exposure and vulnerability in order to establish the basis for the modeling platform, and to begin planning for the national repositories of such data. This phase will also involve ongoing capacity building and dialogue with countries for creating a flexible architecture for CAPRA that establishes regional standards and inter-operability whilst meeting the needs of individual countries.

The working parties at the workshop agreed to work together in developing CAPRA by establishing mechanisms to move forward operationally.

For more information please contact:
www.eird.org/capra

Stop the rain from falling!



Photo: © OXFAM

It rained nonstop last night. So it did the night before. The rain made some people sleepy: those with no concerns because their homes were safe. But undoubtedly, thousands of slum dwellers in Guatemala City could not sleep at all. The next day, they could only thank heavens that they were still in one piece. Despite the garbage and water that flooded the alleys of these informal settlements, they were alive and their hovels were still standing, hovering precariously on the edge of the ravines. They got up and, as usual, they went to work in factories and at the local market. They also sent their children to school but, when it became dark again, there was fear... What if it rains again? What if this time the soil cannot withstand so much rain? The dark night, the dogs barking, and the rain falling on the roofs, they all were the presage of a disaster that could occur at any moment.

Fortunately, if we know what to do in case of a potential disaster, we will also be able to cope with fear.

Humanitarian aid provided by the European Commission (EC) is guided by the fundamental principles of humanity, impartiality and neutrality. Based on these principles, the EC has lent support to the project titled "Strengthening Disaster Preparedness in Urban Settlements in the Department of Guatemala." The project is financed by the European Commission's Humanitarian Aid Office (ECHO) and implemented by Oxfam GB, in partnership with two local organizations: Fundación Esperanza y Fraternidad (Hope and Fraternity Foundation —ESFRA) and the Instituto para la Superación de la Miseria Urbana (Institute for Overcoming Urban Misery —ISMU).

The 15-month project began in February 2007, and it will benefit some 25,000 residents of the following urban settlements: Nuevo Amanecer, Arenera Alta and Arenera Baja, located in Zone 21; Las Joyas (1 to 5) in La Verbena, Zone 7; and Tierra Nueva II, in Chinautla.

Mr. Margarito Reynoso, resident of Arenera Alta, stated that, "When we created a committee, eight years ago, the streets were paved, an embankment was built, and a public lightning system was put in place... Before, there was nothing here, except for a public standpost. Later, with the committee, water was brought to our houses, and then a drainage system..." This substantiates the fact that local people are the ones who can make significant changes within their own communities. This is why the project is aimed at building people's capacity to respond to disasters, particularly because, since they live there, they can take immediate action to deal with any difficult situation.

Training sessions are held every other week with more than 20 community members. They have been able to organize themselves and create five brigades, each with its own area of expertise. Ms. Marta Julia Ocox Catalán, who has lived in La Verbena for about 27 years, stressed the following: "I am a representative of La Joya 3, and we are building our capacities, along with Mr. Luis, who is the coordinator. We received training so that we could establish five brigades and prevent disasters. These are the first aid, the rescue, the shelter, the evacuation and the damage assessment brigades."

Fortunately, local leaders who live in low-risk areas (their houses are not that close to the ravines) have also shown interest in participating. Marta, for example, participates because she knows what it is like to be at risk. When she first moved to this area, she had to live in a small, deteriorated house, but then she was granted a loan to make improvements. She now supports people who live in all the five sections of La Verbena called “Joyas”.

Humanitarian aid is an expression of support, in this case from Europe, targeting the most vulnerable groups worldwide. Their support has brought hope to these Guatemalan settlements, whose optimistic names are now making more sense: Milagro de Amor (love miracle) and Vida Nueva (new life) are some of the places where residents have made a broad-based commitment with their communities, and have teamed up around the possibility of being at risk. The neighbors committee walks up and down the streets, assessing houses that are about to collapse.

Some municipalities are also helping with infrastructure works, donating blocks and cement to build walls, and improving some roads and streets. Other projects are collaborating as well, such as the Oxfam-ESFRA-ISMU partnership, which offers wood and roof sheets to people who need to repair their houses. They also provided residents with a demonstration area, located in sectors 3 and 4 of Nuevo Amanecer, Zone 21. The demonstration area has a small paved street and a fluvial drainage system. It represents an example of adequate planning, in contrast to the slippery dirt road we had before. It is worth mentioning that the houses on each side of this new road will be more adequate, since most families are set out to rebuild them with blocks, instead of using traditional materials (carton and metal sheets).

Training is the most appropriate means for advancing change and improvement. To this end, the first outcome of the program is capacity-building by establishing and training the Local Coordinators for Disaster Reduction (COLRED), so that these communities are organized and able to respond to an emergency situation.

Mr. German Armira is an active member of COLRED. He is 71 years old and has lived in Joya 4, La Verbena for about 45 years. He stated that, “We were taken into account when these five groups (brigades) were created here in la Verbena. Our job is to raise awareness among those who live on the edge of the ravines. It is not an easy task to evacuate people, because they first must make that decision, and they don’t want to leave the neighborhood or the ravines. Besides, they have to go back because they have no other place to go to.”

A large number of people in these settlements have invaded these areas, despite the fact that they have been declared uninhabitable. Since they cannot find other places to live, they build their houses with hardly any material, hovering precariously over the hillsides. Every day, small children and elders walk up and down the steep, narrow streets. Even an elderly woman on a wheelchair is carried with difficulty by her family members. Their problems worsen when it starts to rain: from flooded houses and broken drainage pipes, to more dramatic stories, like the one Ms. Patty Baquiax, coordinator of Milagro de Amor, located in Tierra Nueva II, told us: “Other people are more affected by the water. Sometimes, you can even see the beds floating. The problem is not as bad up here, but it is down there, in La Joyita, where eight houses are completely



Photo: © OXFAM



Photo: © OXFAM

gone. We could get the people out of there, and there was a shelter here in Milagro de Amor. There were about 18 families. They lost everything. All their belongings were buried. People gave them clothes and utensils, and thank God they were finally relocated.”

People are excited because of what they have learned. They now understand that they must gain knowledge in order to prevent and reduce the impact of disasters. Along these lines, Ms. Aracely Bámaca explained that, “I liked what I learned about first aid because it gives you an idea of what to do to take care of someone. We cover a different topic every other week. I am from Milagro de Amor, and I have lived here for about 15 years now.”

As their first step in the process, all settlements have designated a place as temporary shelters in case of an evacuation. Some chose their community halls, while others preferred the dirt courts and playgrounds, where they would establish a campsite, if necessary.

The next step of the program is to design and implement monitoring and warning systems, to be managed by the communities themselves. Once they are put in place, coordinated efforts will be advanced with some institutions that deal with disaster reduction, especially the Ministries of Education and Health, the Red Cross and the fire department. It is expected that staff members of several institutions dealing with disaster reduction and risk management will be trained, and that school and health plans will be developed in all areas where the project is being implemented. Finally, it is expected that material and manuals will be reproduced, and that information and dissemination campaigns will be developed in these communities, in order to increase their knowledge about disaster risk and reduction, foster a new attitude, and develop practices that will help them be prepared to respond to a potential disaster.

This project may serve as an example to other communities at risk.

It is expected that project experiences and successful stories will be disseminated among the population at large and institutions related to disaster reduction at the national level.

The European Commission provides impartial humanitarian aid to people in need, without discrimination on the basis of race, ethnic group, gender, age, nationality or political affiliation. In Guatemala, this is being achieved with the financial support of the Disaster Preparedness ECHO Program (DIPECHO).

Ms. Jessica Morales, coordinator in La Joyita, Tierra Nueva II, shared her positive thoughts about the program: “We need a lot of training. What we learn is for the rest of our lives, and this applies to people who live on the edge of the ravines, and to us as well. Now we can help people. God forbid, but if something happens, we can help now. By contrast, if you don’t know what to do, you can’t do anything but watch.”

The most valuable element in the framework of the project is the social network that has been established to help people in need. This is a strong network aimed at working for vulnerable people, come rain or shine.

The project of disaster preparedness in urban settlements in the Department of Guatemala, implemented by the Oxfam GB – ESFRA – ISMU partnership, is primarily related to priority for action 5 of the Hyogo Framework, which highlights the importance of responding effectively to emergency situations. Some project components are also related to priority for action 2, in terms of identifying, assessing and monitoring disaster risks, and priority for action 3, on the use of innovative educational tools to build resilience at the community level.

Project implemented by the Oxfam GB – ESFRA – ISMU partnership, with the financial support of the European Commission

Building communities more resilient to disasters in Guatemala

Pedro Cancuc, a 45-year old community leader, lives in the small community of Chapín Arriba Las Machacas in Guatemala. He lives in this rural community with his wife and daughters and remembers when there was nothing 32 years ago when he first arrived.

“Our community is divided by a river’s channel. Before we did not have a bridge to cross the river, especially during the rainy season, and it was very dangerous for the children. It was difficult for them to go school. Therefore, the children missed classes in order to avoid drowning or being dragged by the river when crossing it swimming or walking, posing a serious security risk.”

“The Guatemalan Red Cross helped us to build a bridge that connects our community, they trained us in first aid and spoke us about the importance of hygiene care and how it can affect the health of the community as a whole” says Pedro Cancuc, community leader.

The integrated disaster risk reduction activities, implemented by the Guatemalan Red Cross, are supported by the *International Federation of the Red Cross and Red Crescent Societies* through the work developed by the *Federation’s Regional Reference Centres in Disaster Risk Reduction*, improving the quality of the topics carried at the community level.

“The use of the AVC methodology *Learning by Doing* has helped all of us by teaching the importance of using a participative approach in mapping resources and identifying community-based needs. This approach takes into account the opinions of community members from the beginning of the process, helping to organize the information and making it easier to take more realistic and viable decisions”, highlights Edy Leal, National DFID Project Coordinator and Guatemalan Red Cross volunteer.

The coordination with key partners was an important element in the implementation of the actions. Several partners were involved such as the Finnish Red Cross, providing both technical and financial support. Coordination with the local Municipality and the National Government was also established during the implementation process.

“An innovative and environmentally-friendly approach used was the installation of solar panels in the schools because many of them did not have energy. Now, there is light in the schools and the teachers, children and parents are very happy” says Rolando Gutiérrez, a volunteer from the Santo Tomas de Castilla Red Cross branch.

“The first to respond in a disaster is the community itself, therefore the success of the response to a disaster depends on the communities’ capacity and ability to coordinate effectively between the affected areas, the Red Cross, other institutions and local humanitarian actors” says Roy Venegas, Regional Disaster Risk Reduction Project Coordinator.

“Thanks to these mitigation and capacity building actions we feel safer, especially our children, and we can now cross the bridge without fear. The People can go to work, go to school and carry on with their daily lives, even during the rainy season when the river is full.”



Photo: © IFRC/Krystell Santamaria

“It has helped our community to be more organized and we feel better prepared in case of disaster. We trust the Guatemalan Red Cross because they promised to help us and they did. Hopefully, they will not leave us alone since we need to continue learning and strengthening our capacities in many other topics like how to prevent diseases and other health related issues” says Pedro Cancuc.

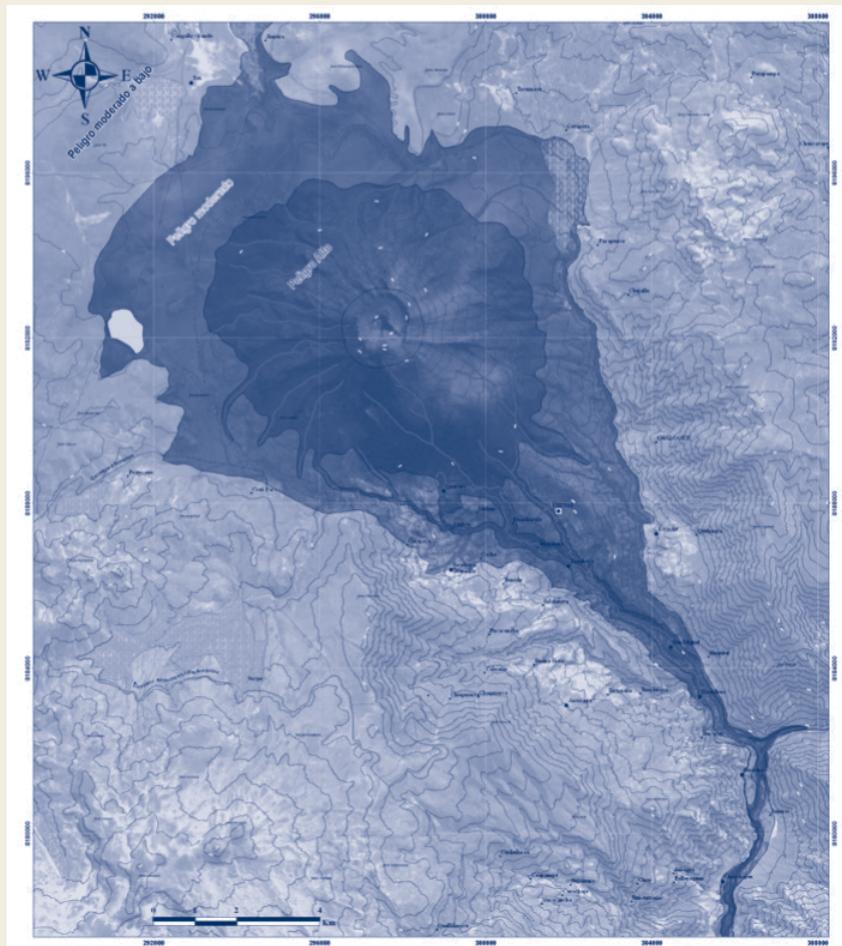
According to the 2007 World Disaster Report, thousands of lives and billions of dollars could be saved every year if a fraction of the funds spent on responding to catastrophes went towards minimizing the effects of natural disasters on vulnerable people. Studies by the World Bank, for example, have shown that every dollar invested in risk reduction can save between two and ten dollars in disaster response and recovery costs.

The financial contribution of the Department for International Development of the British Government (DFID) aims at strengthening capacities in disaster risk reduction at institutional and community level.

The Ubinas volcano hazard map: advances in disseminating geoscience information in Peru

Introduction

The Ubinas Volcano began its current phase of eruptive activity in March 2006. Shortly after the eruption began, Peru's Geological, Mining and Metallurgical Institute (INGEMMET) decided to map the existing hazards at the Ubinas Volcano. These maps could be used as a resource for crisis management. Geologists/volcanologists from the following institutions participated in developing the map: INGEMMET, the Blaise Pascal University (UBP) of France, the Development Research Institute (IRD) of France, the National Autonomous University of Mexico (UNAM), and the Multinational Andean Project: Geoscience for Andean Communities (MAP:GAC). The following organizations were also involved: the Moquegua and Arequipa offices of the National Civil Defense Institute, the Center for Disaster Studies and Prevention (PREDES), and the National Meteorological and Hydrological Service (SENAMHI). As it tends to happen in times of volcanic crisis, the map was prepared very quickly, making it impossible to get suggestions on its design from the authorities or from the people who were affected.



Ubinas Volcano hazard map.

A volcanic hazard map is cartographic information that shows the areas that could be affected by one or more potentially destructive volcanic processes. The areas are divided according to the different levels of hazard, which are determined by the frequency and type of events that have affected these areas in the past, their magnitude and the geomorphological characteristics of the region. In addition, a hazard map enables people to learn about the physical setting where risk-generating natural phenomena occur; thereby enabling them to be better prepared to cope with the hazards to which they are exposed. This type of map can also be utilized in land-use and development planning, and in prevention education strategies. However, it is important to bear in mind that most hazard maps are unfamiliar to the public and are not used for their original purpose. This happens, in part, because the institutions that produce this information have shown little interest in appropriately and opportunely distributing the maps and explaining them to the population.

The Ubinas volcano hazard map

The Ubinas Volcano hazard map (Figure 1) was developed by drawing on information about the volcano's history of activity during the last 500 years, which has been characterized by low to

moderate magnitude eruptions, ranging from 1 to 4 on the Volcanic Explosivity Index (VEI). The definition of hazard zones was based on the following: geological/volcanological studies, the frequency of eruptions, the areas affected in past eruptions, the current chemical composition of the magma, and the morphological characteristics of the area surrounding the volcano. The map is divided into three zones, according to the severity of the hazard: a) the high-hazard zone, which could be severely affected by several inches of ash, pumice and scoria; pyroclastic flows, lahars, debris avalanches, lava flows, and possibly volcanic gases; b) the medium-hazard zone, which could be affected by pyroclastic flows, lahars, debris avalanches, and by moderate ash, pumice lapilli and scoria falls; c) the low-hazard zone, which basically can be affected by ash, pumice lapilli and scoria falls, whose dispersion depends on the direction of the wind, which is quite variable.

Disseminating the hazard map

Contrary to what many geoscientists still think, hazard maps are prepared for the authorities and for the public, including people who generally do not have geoscientific training. For this reason, the Ubinas Volcano hazard map uses lay language and a simple design, to ensure that it can be easily understood by local residents

and by the people in charge of managing a volcanic crisis. In 2006, the contents and meaning of the hazard map were explained during a number of working meetings with government officials from the Moquegua region and the Ubinas municipal district, with teachers and students, and with people who live in the Ubinas Valley (Figure 2). Although the population in the affected area is small (around 3,500 inhabitants), the hazard map was not completely disseminated in 2006 and only a small percentage of local residents saw it.

However, with laudable effort and vision, several institutions, including Caritas Moquegua, Oxfam America, the Moquegua regional government, the Ubinas municipal district and INGEMMET, worked on the mass dissemination of the Ubinas Volcano hazard map in 2007, in all the locations affected by its eruption. This process was carried out as part of the project titled "Llusp'ly: Living with Risk, the Ubinas Volcano Eruption." As part of this effort, several hundred copies of the map were printed at approximate scales of 1/15,000 and 1/50,000. The map is now being displayed in strategic public locations in the area affected by the eruption (Figures 3 and 4), such as the municipal offices, community centers, schools, health clinics, restaurants and stores in Ubinas, Querapi, Anascapa, Sacoaya, Tonohaya, San Miguel, Huarina and Sacoaya, among other locations. Disseminating the map is very important because it will enable local residents to easily find information and learn more about their own environment.

Use of the hazard map

During the first stages of the current period of activity, the Ubinas Volcano hazard map was used by the people in charge of managing the volcanic crisis to develop contingency plans, map evacuation routes and set up shelters (Figures 5 and 6). These shelters are located in low-hazard areas (in yellow on the map) in Anascapa and Chacchagén. The residents of Querapi were evacuated to Anascapa on April 20, 2006, where they remained for over eight months. The people from Ubinas, Escacha, Tonohaya, San Miguel and Huarina were evacuated on June 9-11, 2006 to Chacchagén, where they spent nearly six months (Figure 7).

By issuing official notice No. 085-2006-P/RDC.MOQ, the Moquegua regional government requested that INGEMMET develop a technical report to support the permanent relocation of several communities repeatedly affected by the volcano's activity. In September 2006, INGEMMET submitted a technical report titled "Assessment of physical safety in influence areas of the Ubinas Volcano."

The report included an assessment of the hazards posed by the Ubinas Volcano and used the hazard map to recommend changing land-use patterns in the Ubinas Valley as a mid- and long-term risk prevention and mitigation measure. To this end, the report recommended permanently relocating those communities living in the high- and medium-hazard areas (in red and orange on the hazard map), which include the communities of Querapi, Ubinas, Huatahua, Tonohaya, San Miguel and Sacoaya. It

also recommended that large public works projects (water supply systems, reservoirs, roads, etc.) should not be built or developed inside high- and medium-hazard areas, and it called on the corresponding agencies to declare the Ubinas Volcano and its surroundings a conservation area or a protected nature reserve. In the past year, the Moquegua regional government has made progress regarding the relocation process. In addition, it has conducted a census of the people affected, and has been building a waterway to Hawaii (the relocation site), and it is developing a comprehensive project that takes into account people's social and economic adjustment to their new home. If nothing happens to stall or stop this work, the relocation process should be completed in four years.

At present, the Moquegua Regional Civil Defense Committee and the Ubinas District Civil Defense Committee are implementing prevention education activities, posting signs along evacuation routes and holding drills. Knowledge and understanding of the hazard map are an important component of all these activities.

New challenges for bringing volcano hazard maps to a wider audience in southern Peru

Recently, INGEMMET completed a hazard map for the Misti Volcano and will shortly be distributing 1,000 copies in the city of Arequipa. However, reaching people with this map will take a greater effort than in Ubinas, for two primary reasons: first, the metropolitan Arequipa population is around 830,000 people, far more than the 3,500 residents of the Ubinas Valley; and second, because the Misti Volcano is not currently erupting and therefore Arequipa's residents and authorities are not paying that much attention to it. INGEMMET needs to design an appropriate, efficient way to disseminate the Misti Volcano hazard map and get it into people's hands. In order to meet this goal, INGEMMET is carrying out the following activities: a) coordination with both the regional government and the provincial municipal government of Arequipa, for these entities to issue ordinances that make the map official and to recommend its use in development and land-use planning in Arequipa; b) coordination with the education authorities of the Arequipa regional government to include the hazard map in the primary and secondary school curricula. A training program for school teachers must be developed for this purpose; and c) print more copies of the map, with support from private companies, local institutions and NGOs.

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Education

A summer camp titled “Preparedness Saves Lives”



Photo © ACSUR

A participatory experience with children and adolescents from rural communities, drawing on the knowledge about disaster causes and the need to be prepared to face them.

Taking advantage of the school vacation, ACSUR-LAS SEGOVIAS decided to carry out a new initiative with four rural communities located in the municipality of San Fernando (Las Camelias, El Amparo, El Ural, and San Nicolás), in Northern Nicaragua. The primary goal was to foster insightful, critical and proactive participation of children and adolescents, in order to promote and apply risk management, especially in the context of participatory processes for developing school safety plans.

The effort was developed in the form of a summer camp called “Preparedness Saves Lives,” in the context of the project titled “Municipal and community-based capacity building for disaster preparedness in the municipality of San Fernando.” The project is part of the DIPECHO V Action Plan for Central America, funded by the European Commission’s Humanitarian Aid Office (ECHO).

With the purpose of contributing to the world campaign titled “Disaster Risk Reduction Begins at School,” launched by the secretariat of the UN International Strategy for Disaster Reduction (UNISDR) and its partner institutions (2006-2007), ACSUR joined this effort and trained teachers on how to conduct the summer camp, prepared plans and carried out drills, fostered knowledge about risk management, and built methodological capacities for

applying the “risk guides” of the Ministry of Education (MINED). The overall goal was to contribute to priority for action 3 of the Hyogo Framework for Action (HFA).

The summer camp was designed to raise awareness among children and adolescents about risk management, linking it to school safety and fostering their participation in the process of developing school safety plans.

The goal was for children to understand the causes of disasters in their environment, communities and schools, as well as the actions to be taken to prepare the education community in case of a disaster or an emergency situation. In addition, they would learn how disaster preparedness and response efforts are organized in their own communities.

Activities had a fun and educational format, and included games and non-formal motivational techniques, such as plays, group dynamics, stories, drawings, piñatas and songs, among others.

A total of 235 children and adolescents participated in the summer camp. They were grouped by age (6 to 8, 9 to 11 and 12 to 15 years of age) because the theoretical contents and tools had been adapted to each age group. There were many challenges, especially in terms of keeping the children’s interest in and attention to risk management issues during four days, without thinking that these were just like any other school activity. This is why games and outdoor activities were part of the program.

Education

A team made up of teachers and project technical staff was established to plan the summer camp. They developed the contents and chose the tools to be used with each group when presenting on the different topics. Some of the tools considered —developed by several institutions and agencies, such as MINED, UNICEF, the Red Cross, and CONRED in Guatemala— addressed risk management and education for school children. The same team was also in charge of leading the summer camp.

Some activities included the broad-based participation of parents and community leaders, who also contributed to preparing school plans for their respective communities.

The summer camp included a four-hour session daily during four days. Each day was devoted to addressing a particular topic, but all of them were interrelated so that certain continuity was maintained.

Topic 1: Climate change and disasters

The first session began with a worldwide issue, climate change, and its relation to disasters. Examples used referred to the children's own environments, communities and municipality.

Topic 2: Hazards, vulnerability, capacities and preparedness in schools and communities

During the second session, a number of concepts and terms were explained, such as hazards, vulnerabilities, and preparedness in schools and communities. This session prepared participants for topic 3, which addressed the importance of schools being prepared and protected.

Topic 3: Prepared and protected schools

During the third session, after a general presentation on the topic, the groups with older students identified existing hazards, vulnerabilities, capacities and risks in their schools, and developed risk maps for their school safety plans.

Topic 4: Participatory development of school safety plans

Based on the information gathered during module 3, the fourth session focused on developing school safety plans in a participatory manner.

This session may be revisited and improved by other institutions so that, through education, we all contribute to strengthening and disseminating knowledge among children and citizens, for them to be more aware and better prepared in case of a disaster.

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Photo: © ACSUR

Education

Riskland: A fun way to learn how to prevent disasters



Photo: © Fundación Naviomar

Developed by the Costa Rican regional office of the International Strategy for Disaster Reduction (UNISDR), jointly with the regional office of the United Nations Children's Fund (UNICEF) for Latin America and the Caribbean, with the financial support of UN/Habitat, this board game was adapted for Cozumel by the Aviomar Foundation and the Instituto Escultista Independiente [Independent Scouting Institute].

As many other countries, Mexico faces multiple and impending risks associated with natural disasters, which cause secondary emotional reactions among the population. As a result, between 50 and 75 percent of the Mexican population shows post-traumatic symptoms; between 12 and 25 percent reacts with panic attacks, and only between 12 and 25 percent respond effectively and in control (Mexican Post-Traumatic Stress Association). It is therefore vital that all citizens have an adequate level of preparedness and appropriate information to face both calculated and unforeseen risks. But, how do we explain to children what a catastrophe is, and how to protect themselves in emergency situations without heightened levels of fear or anxiety, when their own parents feel powerless in such situations?

These are definitely difficult circumstances, in particular because the fear experienced by children is even more anguishing than fear in adults. Moments of stress and/or emergency should not become long situations of panic or nervous tension. Gradually and with patience, parents, other family members and teachers can train children so that they have a certain level of preparedness to deal with natural disasters, thereby contributing to their protection. Teaching children how to protect themselves in an emergency situation is as vital as teaching them how to eat or to get dressed.

Children are one of the most vulnerable groups in emergency situations, but they also show significant potential to learn that with an adequate level of preparedness they will be able to protect themselves, as well as their families and their environment in general.

Riskland is a fun game that has been very successful throughout Latin America. Its goal is to teach and prepare children between 8 and 12 years of age, in order to reduce the psychological and emotional impact of natural hazards. To this end, it includes educational messages that help them understand some good practices that could reduce the impact of disasters on them, as well as bad practices that could increase their vulnerability. The game encourages children to take preventive measures while it at the same time it contributes to develop a real and long-lasting culture of protection and safety.

The advantage and unique feature of this game is that it is adaptable to any country or institution that may want to use it, since it includes a number of risk scenarios, such as earthquakes, tsunamis and hurricanes, among others. This allows us to address different phenomena, in line with the reality of those affected areas.

The island of Cozumel, in the Mexican Caribbean, is located in a high-risk hurricane and tropical storm area. In 2007, a number of forecasts predicted a very active hurricane season due to the

Education



Photo: © ACSUR

presence of the “La Niña” phenomenon, which brings warm water currents into this part of the Atlantic Ocean, increasing both the intensity and the number of potential storms.

A total of six tropical storms, three hurricanes of category 3 and three other phenomena of category +3 are expected throughout 2008. Taking into account that the maximum historical figure has been five storms and four minor hurricanes of categories 1 and 2, this number is above average. In addition, the historical average has been 2.4 hurricanes, which means that this number has doubled (*Hurricanes in Yucatán- The 2008 Hurricane Season (in Spanish)* <http://www.huracanesyucatan.com/pronostico2008.htm>)

In this context, the Aviomar Foundation and the *Instituto Escultista Independiente* (an independent scouts group) decided, for the second year in a row, to adapt Riskland to the needs of Cozumel. In 2006 and 2007, a total of 2,130 children benefitted from this initiative, and participants stated that they have learned to distinguish safe from dangerous places. They also learned about protection measures, in anticipation of a hurricane, as well as the implications of living near the ocean and rivers, how tropical storms are formed, and other related issues that will lead them to a safer future.

While other countries and institutions have used Riskland, the Aviomar Foundation and the Independent Scouting Institute also adapted and enriched the game by including a number of unique elements, such as the active involvement of a group of scouts, mainly made up of university students, which interact as facilitators with children. They hold three sessions with groups of some 35 children each, and include educational and fun games such as Riskland.

Methodology proposed for the use of Riskland in Cozumel

The first session aims at teaching children the main concepts associated with the identification and understanding of risky natural phenomena. During the second session, children learn to identify impending risks related to natural events to which they could be exposed, as well as their homes, neighborhoods and communities. Finally, the third session teaches children to implement basic practical measures in case of a hurricane, so that they can cope with it in a safe and efficient manner.

The results of an evaluation conducted at the end of the first year using Riskland showed that children learned to identify risks associated with natural phenomena, and to prepare in advance for risk and emergency situations, thereby decreasing their level of stress and vulnerability to natural disasters.

The success and the particular elements of this process aimed at educating children through a culture of prevention, allowed Riskland to be named one of the top 19 initiatives nominated for the prize titled “Local Government and Management, Mexico 2007”, as well as one of the 14 most outstanding projects for the “Habitat 2007” award.

There is an increasing number of children who are provided with information and hence are better prepared to cope with risk situations. Children from Cozumel can now face natural disasters with a heightened level of safety and calmness. Along these lines, the Riskland game will also benefit future generations.

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Disaster Risk Management Education in Central America: Historical Reference Information



Photo: © UNICEF-TACRO

A discussion of risk reduction and disaster in Central America should start with the Popol Vuh, the sacred book of the Quiché Maya, who spread throughout Mesoamerica, leaving their cultural stamp on the countries of the region. The Popol Vuh relates experiences with disasters and especially with planning to reduce risk.

In it, the hero twins Hunahpu and Xbalanque use a well-planned strategy to defeat Cabrakán, the spirit that “causes the mountains to tremble and quake” (Saravia E. Albertina, 1992), in reference to what we now know as tremors or earthquakes.

From more recent documentation, we know that when the Ministries of Education in Central American countries have faced the likelihood of adverse events such as hurricanes, bombings and armed attacks, and epidemics, among others, or during periods of high seismic activity, for example, they would issue recommendations and guidelines related to prevention and preparedness, using memoranda, decrees, ministerial resolutions, and other means.

Not until the late 1980s and early 1990s did each country individually and the region as a whole begin to engage in systematic risk management education.

In October 1990, Partners of the Americas held an international seminar in Costa Rica, which fostered what would become, a few months later, the programs for school preparedness and emergency in Guatemala and Honduras, as well as the Emergency Education Program of the Ministry of Public Education (PEEMEP) in Nicaragua. The seminar also represented an opportunity to strengthen the Emergency Education Program in Costa Rica, which had begun in 1986.

During the seminar, each country worked on its own plan, grounded in a regional strategy. This effort began with pilot plans for four schools in Guatemala, Honduras and Nicaragua, and the expansion of the program in Costa Rica.

Around this same time, El Salvador was also taking preliminary steps to institutionalize this issue as part of the school curriculum, with help from national and international institutions, including the Pan-American Health Organization (PAHO/WHO) and the Italian Health Cooperation Agency, among others.

Panama, in turn, had a School Civil Protection Program, under Law 22 of November 15, 1982, which trained teachers across the country in emergency preparedness.

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Basically, at this time Central American countries were focusing their efforts on pilot plans and preparedness training for teachers.

This focus can be seen in an agreement made in 1993 among representatives of the countries that participated in the Partners of the Americas program, during its annual meeting held in Antigua, Guatemala. They decided to begin designing the course titled School Safety in Case of Emergencies, which would systematize and standardize basic teacher training on organizing emergency plans in schools.

In 1994, in Cuenca, Ecuador, this same group validated the curriculum and course content. In July 1995, in Cartago, Costa Rica, the first trial course was held.

That same year, El Salvador and Panama joined the group of Central American countries working with Partners of the Americas, making it a more integrated effort.

This pioneer program continued providing support until 1998, when it decreased its regional activities, primarily for financial reasons, although the program still continues to operate.

Building upon this common foundation, the countries began innovating and moving into different areas of risk management education during the second half of the 1990s.

For example, Costa Rica added risk management to its primary school curriculum in 1992, and El Salvador held a workshop for the first time to discuss including risk reduction to its primary school curriculum.

In 1994, Nicaragua drafted a National Plan for School-Based Education on Emergencies, the first in the region, with the purpose of integrating interinstitutional efforts in this area across the country. Subsequently, Costa Rica, Honduras and Panama developed their own plans.

Also in 1994, in Nicaragua, Partners of the Americas Nicaragua/Wisconsin sponsored the development of a Methodological Guide for Teaching the Disaster Curriculum, as a classroom aid for teachers.

In 1995, Nicaragua and El Salvador, supported by the Organization of American States (OAS) and the European Commission's Humanitarian Aid Office (ECHO), began a pilot project aimed at reducing vulnerabilities to natural hazards in schools. In 1997, the program expanded to the rest of the region's countries.

The Coordination Center for Natural Disaster Prevention in Central America (CEPREDENAC), the OAS, and the Central American Educational and Cultural Coordination (CECC)

sponsored a document titled "*Anexo Institucional Estratégico en la Educación para Desastres y Reducción de Vulnerabilidad*," (Annex on Strategic Institutional Education on Disasters and Vulnerability Reduction), which was formally adopted in Antigua, Guatemala on 27 January 1996. This is the first regional output aimed at doing integrated work.

In Costa Rica, the document *Fenómenos Atmosféricos y Cambio Climático, Visión Centroamericana* (Weather and Climate Change: A Central American Perspective), was made available to teachers, for similar purposes.

In 1997, the Regional Disaster Information Center for Latin America and the Caribbean (CRID) published Biblio-Des, which focused on safer schools and education, and provided an extensive list of authors and documents pertaining to educational issues and disaster preparedness.

In October 1998, CECC, CEPREDENAC, OAS, and the Swedish International Development Cooperation Agency (SIDA) sponsored a workshop in Panama City for the specific purpose of reviewing and coming to agreement on the Central American Plan for Risk and Disaster Reduction.

The plan was not directly related to CEPREDENAC; however, several national and international organizations close to it did work on several specific components.

In 1998, Hurricane Mitch sparked a number of projects as part of the recovery efforts, particularly in the field of training.

Also in 1998, Costa Rica developed its National Plan for Risk Reduction Education.

There have been important initiatives in the area of Integrated Risk Management Education. The First Central American Workshop on Risk and Disaster Education for the Disabled was held in Panama City on March 17-19, 1999, sponsored by the National Civil Protection System (SINAPROC), the Panamanian Institute of Special Education (IPHE), the Swedish International Development Cooperation Agency (SIDA), and CEPREDENAC.

The goal of this workshop was to exchange information and evaluate experiences in this area and to develop a regional strategy, as part of the "Framework of the Annex on Strategic Institutional Education and the Central American Plan for Risk and Disaster Education" (Plan del Seminario, Panama, 1999). Five SINAPROC and 14 IPHE staff members, as well as 2 representatives from each Central American country participated.

Also in Panama, the Juan Demóstenes Arosemena Normal School developed its own Institutional Risk Management Plan,

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which determines how the school will ensure its internal safety, train students, and engage in community outreach. Every year the school graduates almost 350 new teachers, whose training includes this plan and who will teach in schools countrywide.

Likewise, two pioneering regional initiatives mark the beginning of risk management in higher education in the region.

First, with support from PAHO/WHO, a Central American Commission was created in medical schools. One of its goals is to include risk management in the training of health professionals.

Second, in December 1999, at the University of Chiriquí, Panama, in the context of a university risk management project by HealthNet International, the academic vice chancellors of the region's 16 public universities approved a project that allowed for the introduction of risk management into higher education.

Also in the area of higher education, the Guide for the Self-Evaluation of Academic Programs was amended to include risk management-related issues that will have a positive impact on the integrated preparation of future professionals, as part of the section on curriculum quality standards nos. 5 and 10. This was done by the Technical Evaluation Commission of the Central American Higher Education Evaluation and Accreditation System, part of the Central American Council for Higher Education—CSUCA (CSUCA, 2002).

Continuing with higher education, several graduate programs on risk management have been created, and a number of universities, such as the Universidad Pedagógica of Honduras, have included it as a cross-cutting issue in their curricula.

The Juan Demóstenes Arosemena Normal School in Panama has included risk management as a curriculum area and has developed a 52-hour compulsory seminar on this issue for students.

El Salvador has established a Forum for Education on Disaster and Emergency Risk Management, which brings together eight institutions, including education schools in universities and teacher training institutes, in order to promote the teaching of this issue in each of these schools, as well as in joint activities.

Supported by international assistance, CSUCA is advancing a program to promote research in risk management at the region's universities, in response to the urgent need to increase knowledge on this issue.

All these countries have prepared guidelines for developing school emergency plans. Some examples are the "School Protection Plan" in El Salvador; "How to Deal with an Earthquake: A Teachers' Manual" and a "Compendium of Disasters" (May 1992) in Costa Rica; and "Organizing a School Disaster Risk Reduction Committee" (2006) in Guatemala.

In the 1990s, ministries and other government agencies began developing guidelines for making people aware of the need to organize schools and education centers to deal with emergencies.

Along these lines, different government units, national agencies and international organizations developed inter-institutional agreements to commit themselves to join efforts to address education and school safety-related issues. One example of this collaboration is the agreement signed in Panama between the Ministry of Education and the General Directorate of the National Civil Protection System, called Agreement on Technical, Scientific, Educational and Cooperation Assistance, which was revised in 2006.

All these countries have integrated this issue into their curricula for early childhood and primary education.

With regards to educational infrastructure, the countries of the region are reviewing their school vulnerability reduction programs, with support from the Organization of American States (OAS) and the Canadian International Cooperation Agency (CIDA).

Also, two important field initiatives are currently underway. CEPREDENAC, UNICEF, the UNISDR, CECC, the OAS, and the European Union are sponsoring the updating of the Central American Disaster Risk Reduction Plan, in order to strengthen it and develop strategies for its implementation.

The most recent educational activity in disaster risk management in Central America is a training of trainers workshop to be held in Panama City on August 28-31 2008, which will mark the beginning of schools becoming newly engaged in and committed to dealing with emergencies and crises in their communities.

Finally, Honduras designed a Methodological Guide to Risk Management (2006) and Panama prepared a Teachers' Manual for Risk Reduction (2007).

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Community-Based Methodologies for Risk Identification and Education: An Opportunity for Risk Management and Local Development



Photo: © OXFAM/David Vinyuales

The impacts of natural disasters on economic and social infrastructure are well demonstrated and documented. But, in many cases, events of lesser scale that occur in isolated communities are not taken into account in any registry or in activities aimed at reducing risk. Sometimes they even go by unnoticed by the local authorities themselves. Because of this, promoting and developing participatory technical, economic and administrative actions regarding risk management at the community level could be a tool that allows communities themselves to lead efforts, in coordination with local authorities, to reduce existing risks in their respective areas. The Hyogo Framework for Action 2005–2015, which establishes guidelines for reducing the impact of natural disasters by increasing the resilience of vulnerable communities to natural hazards, considers and promotes decentralization of natural disaster risk management: “Many activities for managing disaster risks should be implemented at provincial, municipal, and local levels, since the risks that populations face are specific to each particular geographic area.”

For that reason, several regional aid organizations and government institutions have been working on a number of actions at the

community level. Among these actions, it is important to highlight the development of methodologies that advance education for risk management and identification at the community level, especially in the areas of health and education, based on the premise that education is one of the most effective ways to reduce risk on a regional scale. The hope is that what children and young students learn at school will be applied in their homes and communities, substantiating the fact that a well-prepared school is one of the foundations for a well-prepared community. In this context, the UN International Strategy for Disaster Reduction (UN/ISDR), UNICEF, the International Federation of Red Cross and Red Crescent Societies (IFRC), Plan International, and the European Commission’s Humanitarian Aid Office (ECHO) developed an educational toolkit aimed at providing communities in Latin America and the Caribbean with support material that can be used by teachers, specialists, and community leaders, among others. The toolkit mainly serves to spread the message about the importance of integrating risk management into everyday activities in a community, by including this issue in school curricula, building capacity, and increasing the physical resilience of houses and social infrastructure.

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Some examples of the tools developed in this process, and perhaps the most representative, are the series of modules titled "It is better to prevent," and the Analysis of Vulnerabilities and Capacities (AVC), developed between 2005 and 2007 by the IFRC, with the support of ECHO, the OAS Department of Sustainable Development (OAS/DDS), and the ProVention Consortium. These are valuable community-based risk management tools that support communities in identifying and developing activities aimed at reducing risks and building their capacity. The tools generate added value regarding other actions underway because, due to their participatory and consultative methodological approach, they create a space of trust and commitment within the communities involved, as well as among other stakeholders.

Process of formulating and applying the methodologies

The process of formulating and applying these methodologies dates back to 2004 and 2005, when the International Federation of Red Cross and Red Crescent Societies (IFRC) and the General Secretariat of the OAS, through its Department of Sustainable Development (DSD), with the financial support of the ProVention Consortium, developed the AVC as a community-based educational tool for natural disaster risk reduction, and carried out participatory assessments in selected communities in Belize, Costa Rica, Guatemala, and Honduras. In 2008, the OAS/DSD, the IFRC, and the ProVention Consortium took up this work again to develop the second phase of the initiative. This new stage drew on the earlier assessments and sought to build the capacity of the National Red Cross Societies, government authorities, and local communities. This phase included two new communities in Rio de Janeiro, Brazil. Based on the participatory assessments, 16 communities were selected from the 4 aforementioned Central American countries and, in coordination with the respective National Red Cross Societies, one micro-project was developed in each participating community.

Public and private participation: Towards Public-Private partnerships

The IFRC and the OAS Department of Sustainable Development carried out a process for exchanging and sharing experiences through the holding of national forums in these four Central American countries. Although some important actors were absent, there was a balanced representation of all sectors, including government institutions, chambers of commerce, private companies, aid organizations, and the communities themselves.

One of the main conclusions of this process was the need for greater, more effective, and more committed involvement of the different government levels in this initiative, starting from the initial phase, which focuses on applying the methodologies. Evidently, there is the need for active participation by local municipal governments in order to provide advice and technical assistance to these communities. Participation of relevant national institutions, such as national emergency systems and technical institutes responsible for hydro-meteorological and seismological monitoring, has also proven to be a determining factor for a successful application of these tools. Participation of local and central governments is a

sine qua non condition for the technical, financial, and institutional viability of the mitigation projects and measures identified through the use of these tools.

For example, in the case of the micro-projects developed in the communities of *Puerta del Jardín* and *Nuestra Señora del Carmen* in Guatemala, we see the pivotal role played by local and national governments, and the need to integrate them into these processes. In *Puerta del Jardín*, participation of the municipality of Guatemala City resulted in a technical report that it issued to designate the area where the community settles as uninhabitable. Additionally, it recommended that all infrastructure projects be suspended, so as not to encourage settlers to stay in this high-risk area or to generate greater secondary risks. In the community of *Nuestra Señora del Carmen*, the micro-project proposed by the community was reviewed by specialists and a technical file was created to detail the work to be carried out, the cost of materials, and the labor required, which will be performed by members of the community itself. As a result, the project is technically and financially viable and has the endorsement of the municipality and all corresponding permits, which will allow it to move forward with greater diligence.

On the other hand, we have seen that the lack of institutional capacity in the area of risk management, the lack of coordination among the different government levels, the lack of follow-up regarding existing inter-institutional agreements, and the lack of knowledge about the law make it difficult to implement coordinated actions and ensure continuity from one initiative to the next. We have also observed that local governments show a great deal of willingness and interest, often times through the personal efforts of officials who go above and beyond their own duties, sacrificing their family time and rest. However, social urgencies do not allow them to step back from a "state of emergency" in order to focus on strategic planning to address the full dimensions of existing risks.

Participation of the private sector is equally necessary to ensure the financial and economic viability of the mitigation measures proposed. In some cases, companies have plenty of technical information and capacity to support studies and project designs. We have seen great interest on the part of the private sector to participate in developing initiatives related to risk management. Many companies and unions are working to establish specialized units within their organization structures, and to carry out training and monitoring activities. Nevertheless, such initiatives are directed, above all, towards disaster response and preparedness. And there is still reluctance on the part of some chambers of commerce and private companies to participate in these projects because risk management is still not one of their main priorities.

To a large extent, the differences related to the level of participation of the private sector and the government also reflect differences in the level of development of each participating country. In cases such as the communities in Costa Rica there is greater integration of the private sector and local governments in the process of evaluating and mitigating risk, in comparison to the case of Guatemala, where participation of the private sector is still incipient.

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There is a clear need to advance public-private partnerships, ensure transparency in public administration and, consequently, generate greater trust in the private sector, as well as to make more rational use of existing resources, and thus achieve greater participation and investment in vulnerability reduction and disaster mitigation. While corporate social responsibility is viewed as an important driving force for the private sector, a public policy that includes a number of economic incentives, such as tax deductions and protection of workers integrity and that of their families –in order to ensure the normal continuity of their activities (business continuity)– is another sine qua non condition for applying these tools, as well as for the financial and economic viability of mitigation projects. This is also essential for formulating local cooperation strategies in which there is real and broad-based participation of the different sectors in decision-making processes advanced by all relevant institutions.

A Process of harmonization and institutionalization

Finally, the main obstacle to implementing these initiatives at the regional level lies in the absence of regulations and their official recognition by the States, which ultimately are responsible for

guaranteeing the safety and well-being of the communities. Also, the lack of indicators makes it impossible to monitor and evaluate the measures developed by States to reduce vulnerability, which in turn makes it difficult to implement them.

Experience in applying different types of methodologies, whether developed by aid organizations or States, demonstrates the need to begin a process of harmonization and institutionalization of their structure and content. Such a process would contribute to developing indicators and would guarantee equitable benefits based on the characteristics of each community where these methodologies are applied.

The aforementioned process can only be achieved through dialogue with decision makers and policymakers about risk management to discuss technical, political, economic and social aspects; identify best practices, and prepare agreements and work plans for the short and medium term, in coordination with countries involved and cooperation agencies, such as UNICEF, the UN/ISDR, OFDA, the IFCR, and the OAS Department of Sustainable Development.



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