Box 5.4

STRENGTHENING COMMUNITY AWARENESS AND PARTICIPATION

Photo Feyre

Neighbors identify and map potential hazards in their community in El Salvador

Risk Maps in El Salvador and Colombia. As a consequence of the El Salvador earthquake in 1986 which destroyed poor neighborhoods in San Salvador and left thousands of people dead, injured, or homeless, several agencies, such as the Ministries of Health and Education (with the support of the Italian Cooperation and PAHO/WHO), were assigned the task of developing a community infrastructure for better organization in future disasters

Community participation involved creating "risk and resource maps" to identify hazards in neighborhoods and resources available in the event of a disaster Through this process, participants learned about natural hazards and assumed responsibility for organizing prior to a disaster, responding in an emergency, and taking part in rehabilitation and reconstruction

This process was tested in a pilot rehabilitation and reconstruction project following the Nevado del Ruiz volcanic disaster in Colombia The project demonstrated that the organization and implementation of local emergency plans could be strengthened when they are included in sustainable local health services

Source PAHO/WHO

Community Preparedness in the Andean Highlands. In the early 1980s, the area surrounding Lake Titicaca along the border between Peru and Bolivia underwent an unprecedented drought caused by the natural phenomenon known as *El Niño* The drought resulted in serious crop losses, particularly of several species of tubers that had been cultivated for centuries, consequently, thousands of rural farmers moved to nearby cities in search of food In 1989 Peru initiated the Community Disaster Preparedness Project (PREDECO) to improve the rural economy in this area by reclaiming arable land, cultivating other land, and encouraging family participation in disaster reduction.

This project identified the greatest hazards facing the community, developed ways for detecting risks, formulated plans of action, and involved community organizations in disaster reduction and comprehensive socioeconomic development. Educational materials in both Quechua and Spanish were also produced

Source PREDECO

Box 5.5

FROM INTERAGENCY PROJECT TO REGIONAL ORGANIZATION IN THE CARIBBEAN

The Pan-Caribbean Disaster Preparedness Project (PCDPP) was established in 1981 to improve national and regional disaster management in the Caribbean Basin. With headquarters in Antigua, it was launched jointly by UNDRO, CARICOM PAHO/WHO, and the League of Red Cross Societies with the support of bilateral agencies (Canada, the United States, United Kingdom, and the European Economic Community). Although it was conceived as a short-term, 18-month project focused solely on preparedness, the PCDPP operated for almost ten years. In 1989, when the project extended its work to the prevention of disasters, its acronym was lengthened to PCDPPP to accommodate the term "prevention"

Recognizing the need to institutionalize the work begun by the PCDPPP in 1991 the heads of Government of the Caribbean Community established a regional agency to enable countries to cope more effectively both in the threat of and in the aftermath of a disaster The Caribbean Disaster Emergency Response Agency (CDERA) was formally established in September 1991 with its headquarters in Barbados. Its main objectives are to provide emergency relief to any affected Participating State; to provide reliable information to governmental and non-governmental organizations regarding the effects of a disaster, to mobilize and coordinate the supply and delivery of disaster relief to an affected country; to mitigate or eliminate the immediate consequences of natural disasters, and to promote and establish sustainable disaster response capabilities among countries

Sources UNDRO CDERA

addressing comprehensive socio-economic development as a whole.

Experience also demonstrates that disaster preparedness efforts should be multisectoral since it is impossible for one sector alone to be assigned the responsibility for community preparedness.

COLLABORATION BETWEEN COUNTRIES STRENGTHENS PREPAREDNESS

At the same time that disaster preparedness activities were being decentralized at the national level, countries sharing geographical areas were meeting to strengthen their collective disaster preparedness capabilities.

The Caribbean has made particular use of this approach. In 1979 numerous disasters occurred, including volcanic eruptions in Saint Vincent and the Grenadines, floods in Jamaica and Belize, and—most devastating of all—Hurricanes David and Frederick, which ravaged Dominica and the Dominican Republic. The small size of the countries of this subregion made the impact of natural disasters all the greater Although the 38 deaths in Dominica caused by Hurricane David may appear insignificant in overall terms, it affected the entire country, left 80% of the population homeless and destroyed the only hospital serving Dominica

Because of the vulnerability of the Caribbean islands and the interdependence of island-countries in disaster situations, agreements were signed and a subregional organization was established to improve national and regional capacities for managing emergencies This was the beginning of the Pan-Caribbean Disaster Preparedness and Prevention Project (PCDPPP), an external initiative that served as a precursor to a true regional approach—the Caribbean Disaster Emergency Response Agency (CDERA) (see Box 5 5)

Photo Gaggero PAHO/WHO

Countries that share a common language and cultural ties are in the best position to help neighbors following disaster, particularly when help can arrive quickly

Because of their small populations (for example, Montserrat has a population of 10,500; Antigua and Barbuda, 60,000; Saint Kitts and Nevis, 42,000), many Caribbean countries and territories had urgent, unmet needs in the wake of Hurricane Hugo in 1989, but the amounts needed were relatively modest. In most cases, relief could be supplied by neighboring countries. But situations arose where assistance destined for several stricken countries was shipped in large aircraft that were not able to land on smaller islands such as Nevis or Montserrat for lack of adequate airports. As a result, the supplies had to be distributed from another staging area.

The relatively short distances between many Caribbean islands and their cultural similarities enable them to help each other easily. Neighboring countries are in the best position to meet needs immediately after a disaster, while other regions can provide less urgently needed supplies for rehabilitation and reconstruction. The concept of "first responder" has been a topic for discussion among many neighboring countries (see Box 5.6).

One disaster can affect several neighboring territories, thus, disaster preparedness is often a matter of concern for an entire region. Countries are looking at intercountry collaboration, including joint planning and the shared use of human, material, and technological resources in developing national and intercountry policies for disaster preparedness and response.

In South America, several general technical and economic cooperation agreements have been drawn up between countries and subregions that share a

Box 5.6

THE FIRST TO RESPOND ARE NEIGHBORS

The concept of "first to respond" refers to identifying a single neighboring country that will respond and provide assistance immediately after a disaster. This concept was the subject of a meeting in 1987 attended by Caribbean health coordinators and representatives of donor countries and international agencies. Although much discussion took place at the political level, no formal agreements with budgets were signed to implement this policy of immediate assistance. At times, signs of political agreement appear, but they do not always parallel the technical priorities. Nevertheless, certain positive agreements have been reached, such as those between Saint Lucia and the French Department of Martinique. Other countries and territories—for example the British Virgin Islands, Dominica, Guadeloupe, and the U S. Virgin Islands—have made progress in this field.

Source PAHO/WHO

Box 5.7

CENTRAL AMERICAN PRESIDENTS STRENGTHEN DISASTER INSTITUTIONS

At their XIV Meeting in 1993, the Presidents of the countries of Central America adopted the following resolution. "We recognize the social and economic impact caused by the recurrence of natural disasters in the Region, and for this reason hereby agree to strengthen our national institutions to coordinate disaster prevention, management, and mitigation efforts with the support of the Centro de Coordinación para la Prevención de los Desastres Naturales en América Central (Center for Coordination for the Prevention of Natural Disasters in Central America—CEPREDENAC) We recommend the execution of a Regional Plan for Disaster Reduction in Central America."

As witnessed by this resolution, CEPREDENAC plays an important role in uniting the countries of Central America in disaster preparedness Established in 1988, with headquarters in Guatemala, CEPREDENAC is an association of technical and scientific centers, formal emergency organizations, and universities that evaluate and monitor natural phenomena, coordinate response in case of emergency and promote regional exchange of information The Regional Disaster Reduction Plan includes disaster reduction as a component in regional integration, promotes the participation of various sectors, and the interdependence of planning and administration in technical and scientific organizations.

Source CEPREDENAC S.CA

common vulnerability, such as Peru and Chile, and Ecuador and Colombia Formalizing a border agreement can be hindered more by requirements about customs procedures than by real questions about foreign affairs or civil defense. The number of agencies or institutions involved is great; the ability to meet and reach consensus takes patience. These considerations often do not coincide with the control mechanisms employed by the governments which customarily discourage direct and informal contacts between officials of cooperating countries. The outcome is that too often collaboration between countries remains at a solely technical and informal level without the backing of a formal cooperation agreement—although such an agreement is not a guarantee that action will occur either (see Boxes 5.7 and 5.8)

Box 5.8

NEIGHBORS AT RISK

Chile and Peru, located in what is known as the "ring of fire" along the Pacific Rim, are highly vulnerable to earthquakes. Both countries face the challenge of preparing communities along their shared border to deal with what could be a common disaster, until help arrives from their respective capitals. The border cities of Tacna (Peru) and Arica (Chile) had disaster plans, but neither country's central emergency organization coordinated their development. Finally, a border cooperation agreement was signed in 1993. This agreement will allow joint training of health personnel, the establishment of warehouses for disaster equipment, a relief coordination center in border areas, and the adoption of common measures to reduce the vulnerability of the localities involved. This agreement is an example of the decentralization of disaster management in each country.

Colombia and Ecuador share volcanic, seismic, tsunami, and hydrometeorologic risks. The Imbabura, Mojanda, and Cachimbiro volcanoes in Ecuador; the Cumbal, Azufral, and Galeras in Colombia; and the Cerro Negro volcano on the border can cause damage to both countries if they erupt. In April 1990, the Ministries of Foreign Affairs of both countries signed an agreement to coordinate activities and to carry out joint studies in border areas to identify natural hazards. In case of disaster, they will make available to each other their monitoring, communication, and warning networks, emergency management equipment, and basic health infrastructure.

Source: PAHO/WHO

TRAINING: A KEY TO PREPAREDNESS

People—administrators, physicians, engineers, logisticians, and other experts—manage disasters. Without well-trained professionals, the laws, emergency plans, and other efforts will be insufficient. Since the end of the 1970s, an entire educational discipline has been developed at the regional level and directed toward disaster management. One of the strengths of Latin America and the Caribbean is the Region's shared technical and managerial approach to disasters (see Box 5.9), which is the result of a variety of professionals being exposed to a closely coordinated regional training program, developed in the health sector by PAHO/WHO and in other sectors by OFDA/USAID and others.

Programs were adapted to different situations and expanded and enriched by including a country's own individual disaster experience in them. Since the beginning of the 1980s, the number of training courses, workshops, and seminars in Latin America and the Caribbean has dramatically increased. Simply maintaining a list of the most important ones has become a challenge, as more and more countries and institutions disseminate their knowledge to new groups. The Ministries of Foreign Affairs, for example, now carry out intercountry exchanges of professors for their regular courses. This dynamism in training is demonstrated by the fact that in the health sector alone, PAHO/WHO is able to maintain only a list of the events to which it offers its technical or material support.

In recent years, training has been extended to the universities in the Region, both public and private. In many institutions it has been possible to introduce disaster preparedness into the curriculum of public health, medicine, and nursing. Similar activities have been initiated in faculties of mass communication, education, and, more recently, engineering.

Box 5.9

STUDENTS OF DISASTER MANAGEMENT

Training of Trainers

The Office of U S. Foreign Disaster Assistance of the U.S. Agency for International Development (OFDA/USAID) launched in May 1988 a training program in which three types of courses were developed using interactive training methodologies: "Course for Instructors," "Disaster Management," and, more recently, "Evaluation of Damages and Analysis of Needs." More than 3,200 people in Latin America and the Caribbean have been trained in 139 courses. 104 courses at the national level and 35 at the regional or subregional level.

National level activities are carried out with funds allocated by each country, an indication of the country's interest and commitment. OFDA/USAID continues to finance activities at the regional and subregional levels. After six years, the program has developed a cadre of well-trained instructors and sound learning methodologies in the Region, as well as a network of managers for disaster situations.

Reaching Future Generations of Disaster Preparedness Professionals

The World Health Organization has established a multi-institution network of collaborating centers worldwide to support the Organization's technical cooperation activities. In 1988, the Faculty of Public Health of the University of Antioquia (Colombia) was designated as a WHO Collaborating Center in Emergency Preparedness to promote the teaching of emergency preparedness and disaster management activities at the undergraduate and graduate levels in universities in Latin America and the Caribbean

This recognized academic institution carries out training, research, and information dissemination within the framework of PAHO/WHO planned activities

United Nations Staff as Students of Disaster Management

Staff members of the United Nations along with officials from key national agencies are learning to provide organized and coordinated responses when they or their agencies are called on in emergencies and when humanitarian assistance is required The Disaster Management Training Program (DMTP) originated as a joint initiative between the United Nations Development Program (UNDP) and the UN Department of Humanitarian Affairs (DHA—formerly UNDRO) and was launched in 1990 to fulfill the goals of the IDNDR. The Disaster Management Center of the University of Wisconsin (U.S.A.) developed training materials for the program.

United Nations Offices and national institutions in 60 countries worldwide that are highly vulnerable to natural disasters are the venue for the courses. The program collaborates with regional and national agencies with experience in disaster management; in the Region of the Americas, PAHO/WHO and the OAS have worked together to develop courses both in individual countries, and at subregional levels for the Caribbean and South America. Training has taken place in Barbados, Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Peru.

The DMTP seeks to create awareness of the negative impact that disasters have on countries' efforts to achieve socioeconomic development It also promotes the development of case studies, research protocols, and projects for presentation to the UNDP for possible financing

Source OFDA/USAID, PAHO/WHO

Box 5.10

GETTING INFORMATION TO THE USERS: THE DISASTER DOCUMENTATION CENTER

In 1990 PAHO/WHO established a Disaster Documentation Center in San José, Costa Rica, with support of that country's National Emergency Commission (CNE). The Center was created to remedy a perceived shortage of scientific and technical documents and training material on disasters, particularly in Spanish, that was of particular relevance to the Region. One of the greatest challenges was finding what already existed, as it was (and still may be) common to find desks and offices flooded with valuable material which, in many cases, would be filed away and forgotten.

Today, professionals and students in Latin America and the Caribbean are tackling issues of disaster management from different perspectives. They not only need the most up-to-date information, they are also producing new studies that their counterparts in other countries should know about.

One of the Center's unique features is the importance given to distributing information, ensuring that users ultimately get what they need most: actual hard copies of the documents. To do this, they have used a combination of traditional procedures combined with new technologies available in the field of automated information. To catalogue the Center's collection, a database was created using MICROISIS, a U.N. standard software developed by UNESCO. In mid-1994, the database contained almost 5,000 records, and grows at the rate of approximately 1,500 documents per year. This disaster database is available in print form through DESINDEX, a chronological listing of the Center's holdings; BIBLIODES, a bibliographic index by subject, and on PAHO's CD-ROM LILACS which is distributed in Latin America and the Caribbean through BIREME, the Latin American and Caribbean Center on Health Sciences Information.

Disaster reduction is not only a health sector issue. It requires a multisector focus that covers topics from geology to economy; from the design of seismic-resistant housing and public works to the design of a disaster curriculum for faculties of civil engineering. Demands for non-health disaster reduction material are received by the Center and cannot be met at this time. To expand the scope of the Disaster Documentation Center to meet requests from users outside the health sector requires that the many institutions that research, legislate, and provide disaster assistance collect information from as many sources and disciplines as possible to integrate the various scientific fields, professions, and approaches that focus on preventing and mitigating disasters.

Source: PAHO/WHO

and architecture. A study carried out in 1991 by the WHO Collaborating Center in Medellín, Colombia, shows that approximately 80% of the faculties of public health in South America included the subject of health management as it relates to disasters in their curricula. Approximately 20% of the public health schools in the Caribbean have intensive short courses on health aspects of disasters in addition to the two-month course on disaster medicine taught in Barbados.

Having disaster management become a part of school curricula produces a common language among professionals. The technical and scientific development of the countries is generating a vast volume of information regarding disasters that should be made available and shared. The importance of a common terminology and common language should not be underestimated (see Box 5.10).

Communication and information sharing are essential for disaster management. In this area, Latin America and the Caribbean have achieved great success, even during such difficult circumstances as the civil conflicts in Central America and border disputes in South America. The success of this region in disaster

management may be credited to the periodic meetings that are organized subregionally to provide professionals with opportunities to examine and share accomplishments and identify solutions to common problems. These meetings, designed originally for those in charge of disaster programs in the Ministries of Health, now include the participation of other sectors such as civil defense, foreign affairs, and the Red Cross.

More recently, the initiative of the United Nations system to develop a disaster management training program (DMTP) at the global level has increased the collaboration of UN agencies with national institutions

THE CURRENT SITUATION: FROM PREPAREDNESS TO PREVENTION AND MITIGATION

The era of preparedness led to new thinking about disaster organization; countries began establishing national coordination bodies that adopted comprehensive approaches. Today, these civilian, scientific, and multidisciplinary bodies have received the mandate to guide, standardize, and coordinate policies for disaster prevention, mitigation, and preparedness. They leave the response mechanisms to the institutions that already exist for this purpose, such as the armed forces, the Red Cross, and fire departments.

The concept of civil defense is also adopting a more comprehensive approach to disaster reduction. Institutions such as Mexico's SINAPROC (Sistema Nacional de Protección Civil), established after the 1985 earthquake, and the institution of the same name in Panama, demonstrate civil protection systems that have replaced civil defense offices. These institutions not only respond to disasters but formulate policies for communities and their institutions at all levels. They encourage communities to protect themselves against natural and manmade hazards by learning about and organizing in the areas of disaster prevention, mitigation, and preparedness.

Photo Wash, PAHO/WHO

SPECIALIZED PREPAREDNESS INITIATIVES

The ongoing development of preparedness activities has led to specialized projects in which technology, local participation, self-management, and a multisector approach have been used to meet diverse needs. These initiatives have been developed in the following areas:

- Schools
- Mass media
- Early warning systems
- Water supply and sanitation services
- Management of relief supplies (SUMA)
- Hospital preparedness

Schools

Children are among the most vulnerable to disasters For many years, governments, national institutions, and international organizations have recognized the advantages of teaching the school-age population disaster preparedness. While the principal aim of this training is to teach young people to keep themselves safe in case of disaster, children are also a valuable resource for expanding a disaster preparedness "culture". Although Latin American and Caribbean schools have not yet achieved Japan's level of preparedness, the school programs launched in the 1980s have had positive results in countries such as Chile, Colombia, Costa Rica, and Venezuela.

School-based disaster training programs do not require large initial investments of time and money, since they are developed and integrated into the school curriculum.

Box 5.11

"STOP DISASTERS! FOCUS ON SCHOOLS AND HOSPITALS"

To promote the IDNDR, the United Nations has declared the second Wednesday of each October as the International Day for Natural Disaster Reduction. The slogan for the 1993 celebration, "Stop Disasters! Focus on Schools and Hospitals," increased awareness of how essential these facilities are in the day-to-day operation of communities and how critical they are in the event of natural disasters. This celebration advanced the placement of the study of natural disasters permanently in school curricula and the inclusion of disaster issues in the educational policies of the countries. It promoted the role that teachers, students, hospital personnel, national planners, and engineering, architecture and building professionals play as leaders in organizing and executing disaster plans in their communities.

Source: IDNDR

Box 5.12

COVERING WHAT IS IMPORTANT: DISASTERS AND THE PRESS

Photo Vivania PAHO/WHO

A study of eight newspapers carried out by the University of Costa Rica revealed that 56% of the coverage of the earthquake in Cóbano, Puntarenas, was sensationalistic and alarmist in nature—describing damaged areas, injuries suffered by the victims, the number of casualties and deaths, and the losses suffered in infrastructure and productive activities.

The study shows that although citizens have a right to this kind of information, emphasizing the sensational to sell newspapers excludes proper explanations, analysis, and education in general from the public. As a result, the public has limited knowledge and consequently is more fearful.

Following a disaster, explanations about the natural hazard appears infrequently—31% of the total space dedicated to disasters in daily newspapers—and usually these articles focus on the environment and the community. The weekly papers do a better job of providing explanations, devoting 57% of their space to articles, however, information about disaster mitigation and prevention is insufficient.

Generally speaking, the press devotes a minimum of space to earthquake mitigation and prevention measures. According to the study, although some advice on prevention is published, it only appears once in each daily newspaper in the days immediately following the event. The importance of prevention is, however, dealt with in editorials, which encourage the authorities and professionals to take decisive measures to promote preparedness and prevention. Part of the problem has been that the sensational material is easily available to journalists while sources for non-sensational explanations are harder to locate.

Source: M. Bermúdez, 1991

These countries have been able to implement their programs for several reasons. Their national institutions have demonstrated a political will to do so. Most importantly, they have succeeded because they have the support of educators in the country, the real decision-makers. One of the great advantages of school-based disaster training programs is that they do not require large initial investments of time and money, since they are developed and integrated into the school curriculum.

UNESCO supports emergency evacuation and preparedness programs in several countries in collaboration with the Ministries of Education and emergency organizations. National NGOs (such as FUNDAPRIS in Venezuela) and international NGOs (such as Partners of the Americas in Ecuador and Central America) help the Ministries of Education develop disaster preparedness programs in many schools.

Using school educational programs as instruments of change will reach a new generation sooner: the next generation of leaders, scientists, health workers and teachers will be better prepared to handle future disasters (see Box 5.11).

Mass Media

To a great extent the mass media determine the way people react to disasters: the community depends on the media for the information they need to make decisions during disasters. Therefore, many countries in the Region have initiated training campaigns for journalists on the importance of their role in preparing the community for disasters (see Box 5.12). Although Costa Rica, Honduras, and Colombia, among others, have had fruitful experiences in preparing seminars and workshops, experiences with the press and international television channels have been less successful. A more sustained, ambitious effort on the part of the entire Region, ideally supported by UN agencies, is needed to see that well-prepared information is distributed and used effectively by the media. This would also be an excellent theme for a future International Natural Disaster Reduction Day.

Early Warning Systems

Latin America and the Caribbean have made notable advances in the development of monitoring and early warning systems, both for geological and hydrometeorological phenomena (see Box 5.13). However, developing early warning systems serves little purpose unless there is a way to communicate the warning to the population.

Weather forecasting has improved from a technical standpoint and provides some certainty of locations where tropical storms will strike, for example. But accurate forecasting does not mean that enough time will be available to evacuate a threatened population. Ordering an evacuation when forecasting is imprecise may cause political problems and lead to a lack of credibility in the agency issuing the order.

In 1985, when the Nevado del Ruiz volcano in Colombia caused the death of almost 23,000 people, scientists had foreseen what might occur. The observatory in Manizales was on alert, and the map of potential volcanic threat had been designed and updated, indicating the places that would be affected in case of an eruption. The national authorities were aware of the problem, but when the local authorities in the areas likely to be affected received the warning, they didn't take it seriously. "People did not believe

(Nosotros la Gente del Volcán, 1988)

Photo: Cardona, ONPAD (Colombia)

The Galeras volcano in Colombia is one of seven volcanoes identified by the IDNDR as "high risk." While conducting research on the volcano in January 1993, six scientists were killed by an unexpected eruption.

that the volcano would erupt because it was an unknown and unpredictable phenomenon. They thought that the warnings were something invented by alarmists who wanted to create panic among the population." (*Nosotros la Gente del Volcán*, 1988).

As a result of this tragedy, Colombia developed warning and notification systems at the local and municipal levels in coordination with the scientific institutes at the national level.

The principal aim in obtaining information from early warning systems is to save lives (see Box 5.13). Now, when the hurricane season begins each year in the Caribbean, mass information campaigns on how to be prepared for hurricanes and how to respond to warnings also begin. This scientific knowledge reinforces a well-known Caribbean refrain:

"June's too soon,
July . . . stand by,
August . . . a must!
September . . . remember,
October... all over".

. . . Or is it? Several hurricanes have occurred in the month of October.

The UN's World Meteorological Organization (WMO) has provided assistance to many countries in the Region through technical cooperation to improve their meteorological services or flood control