

3.2. Regional cooperation, interaction and experience

Hazards, like social affinities, often reflect regional characteristics grounded in the predominant geographic conditions. Historic and common political features also contribute to shared experiences within different regions or sub-regions around the world. Regional dialogue gives added depth and force to combined national interests, as much as regional institutions can tap and channel broader international expressions of intent into coordinated and better-suited, practical activities.

While the impetus may vary in different regions, natural hazards and the risks they pose to people who share geographic attributes present opportunities for neighbours to multiply their efforts in risk reduction.

They do this by sharing skills and experiences, and by combining resources to develop resilience to disasters. As disaster risk management encompasses a wider range of interests and abilities, there is a growing requirement for more political and professional interaction through multiple and innovative forms of regional cooperation. Regional cooperation embodies sensibility as much as solidarity.

A review of some examples of regional cooperation will show the scope of organizational frameworks employed to galvanize cooperation in disaster risk reduction. The fact that only few of these examples display organizational developments created expressly for the purpose of disaster risk management, highlight the extent to which risk issues pervade multiple dimensions of society and rely upon the work of many people.

The Americas



A major shift is now taking place in many of the countries in the Americas with more attention being given to risk reduction. Triggered by several major disasters during the last decades and further motivated by promotional and technical cooperation efforts and networking carried out during the nineties by regional and international organizations in support of the IDNDR objectives, the region has been fortunate to develop relatively advanced concepts and understanding of risk management. This is the result of combined efforts of social research, practical experience widely shared, and frequent opportunities to engage an expanding range of professional interests.

There have been additional and mutually reinforcing efforts and long-standing involvement of such agencies as the PAHO, IFRC, and OFDA/USAID. More recently, UNDP and

UNICEF have joined in providing technical cooperation, training and more public awareness for vulnerability and risk reduction. Other organizations have encouraged the development of new capabilities over many years, frequently built around specific strategic program areas, and in some cases within national disaster management organizations. These have included decades of efforts by OAS, ten years of existence of the Network for Social Study of Disaster Prevention in Latin America (LA RED), and a number of individual academic interests or initiatives.

The probability of loss and damages associated with the presence and complex interaction between hazards and vulnerability is now a growing preoccupation throughout the region. Although it is not always explicit in government and societal discourse, most people now recognise the relationship between failed or inadequate development practices and the construction of social vulnerability and increased risk to disasters.

High level commitment

At the Third Summit of the Americas held in Quebec City, Canada in 2001, the assembled heads of state declared:

“We commit to strengthening hemispheric cooperation and national capacities to develop a more integrated approach to the management of natural disasters. We will continue to implement policies that enhance our ability to prevent, mitigate and respond to the consequences of natural disasters. We agree to study measures to facilitate timely access to financial resources to address emergency needs.”

A regional – hemispheric- conference focussing on risk reduction practices was held in Costa Rica in December 2001, as a follow up to this Summit.

Moreover, the relationship between environmental degradation and hazard incidence has been increasingly brought to the forefront by institutions such as the *Central American Commission for Environment and Development (CCAD)*, IUCN, IADB, CAF, the Caribbean Development Bank (CDB) and the World Bank. Climatic variabilities as manifested by El Niño/La Niña phenomenon has prompted the *World Meteorological Organization (WMO)* together with regional organizations to go beyond the scientific and technical research concerns and seek application of available information for early warning and institutional strengthening for risk reduction.

This commitment to a shift towards integrated risk management to reduce the impact of disasters has several times been re-affirmed at the level of heads of state.

● Central America

The impacts of consecutive major catastrophes between 1997 and 2001 have profoundly changed the way disasters are conceptualized in Central America (Panama, Costa Rica, Nicaragua, Honduras, El Salvador, Guatemala). The effects of the El Niño/La Niña episodes of 1997/98 were the most severe this century. Hurricanes Georges and Mitch in 1998 devastated the economies of the entire region, in addition to causing much damage to personal property from floods throughout the countryside. The El Salvador earthquakes of

2001 raised serious questions about the risk consequences of land use and inadequate environmental management practices. The fact that hurricane Mitch damaged the interests of both the poor population as well as the private commercial sector served to create a collective view of the need for change.

In addressing these conditions, the governments of the region, working together through the *Coordinating Centre for the Prevention of Natural Disasters in Central America (CEPRE-DENAC)*, have confirmed a political commitment to risk reduction and reconstruction processes through social transformation. Their experience is a valuable example for the world.

However, challenges still remain in successfully moving from the expression of political intentions to fundamentally changed policies and practices. Advances will require enormous efforts at all levels of activity, including greater social consciousness, legislative and institutional changes, modified social practices, the reduction of corruption, and the mobilization of private-sector and commercial interest groups. The objective is to instil a society-wide acceptance of sacrificing short-term gains in exchange for long-term sustained protection for social and environmental resources.

This advance in political will has been achieved through expanding regional integration. Governments and heads of state have shown a readiness to proceed jointly, working to achieve common purpose and through shared resources. This is reflected by the endorsement of a *Strategic Framework for the Reduction of Vulnerability and Disasters in Central America*, and the adoption of a *Five Year Plan for the Reduction of Vulnerability and Disaster Impacts (1999-2004)*.

The strategic framework identified six major work areas:

- Strengthening national disaster organizations.
- Developing early warning systems and strategic plans.
- Increasing research on hazards and vulnerability, including the promotion of information exchange.

- Formulating distinctive risk reduction strategies for specific sectors.
- Providing mutual assistance in case of disaster.
- Enhancing local level risk management.

There has been more collaboration with community and municipal based organisations such as *the Community Network for Risk Management*, the *Federation of Community Organisations* and the *Central American Municipal Federation*. There is a promising expansion of programmes dedicated to reducing vulnerability to natural hazards at local levels, building national capacities, and exchanging experience and information regionally.

Beginning in July 2001, UNDP launched a two-year *Regional Programme on Risk Management and Disaster Reduction*. This concentrates

Community - based regional initiative

Initial consideration given to community-based disaster reduction outlooks were boosted by a GTZ-inspired project for *Strengthening of Local Structures for Disaster Mitigation (FEMID)*. To undertake a regional approach for introducing risk reduction considerations within local development frameworks, it used pilot activities in all six Central American countries. Experience gained in the use of early warning in local communities was applied to floods in the project pilot zones. In the Masica area of northern Honduras it became a regional and international example of good practice. After early warning schemes had been consolidated in different areas, local committees – formed to promote this single activity – began to develop a broader interest in other primary risk reduction issues. This then led to some of the groups establishing new relationships with development agencies, as occurred in the Chepo area of Panama.

on improving local risk management practices, within the framework of CEPREDENAC's *Local Level Risk Management Programme*, and strengthening the capacities of national risk reduction systems. A new phase of the UNDP-coordinated inter-agency *Disaster Management Training Programme (DMTP)* is being designed to concentrate particularly on structuring national risk scenarios, identifying key actors and determining the priority research and training requirements of the region.



Coordinating Centre for the Prevention of Natural Disasters in Central America

CEPREDENAC has been key in realising these changes. Starting as an informal group of scientific and official response organizations in 1987, it has become the official *Central American Integration System's (SICA)* specialized organization for risk and disaster reduction strategies.

Following the coordination and operational demands imposed by the devastating disasters in the final years of the 1990s, it has proven crucial in tying together many professional abilities and regional political interests. Importantly, the regional strategy called for the updating and completion of *CEPREDENAC's Regional Plan for Disaster Reduction*. Since 1999, this has been the vehicle by which CEPREDENAC has promoted action identified by the governments and many other projects throughout the region.

CEPREDENAC has gained status through its work plans with other specialized agencies. It has undertaken risk reduction activities with PAHO in the health sector, the Housing and Human Settlements Coordinating Committee in the housing and human settlements area, the *Central American and Panamanian Institute for Nutrition* and the World Food Programme in food security matters, and the *Central American Transport Committee* in communications and transport. It has pursued additional endeavours to further risk reduction with other regional agencies in the fields of agriculture, water management, telecommunications, and electricity generation and distribution.

CEPREDENAC has moved toward broader regional programme development, encouraging projects to be implemented by national authorities or local groups. Recently, CEPREDENAC and the *Regional Unit for Technical Assistance (RUTA)* published guidelines for the introduction of risk management practices in rural development projects throughout the region. In a similar vein, CEPREDENAC is now addressing risk issues associated with the important *Puebla to Panama Logistical Corridor*, undertaking more work with the private sector, the regional and international banking community, and promoting risk reduction issues in Central American development agencies.

With IADB, World Bank and Japanese funds CEPREDENAC is financing a *Regional Prevention and Mitigation Programme* to finance projects favouring risk reduction proposed by national CEPREDENAC commissions. At the beginning of 2001 it created a *Local Level Risk Management Programme* with the support of IADB and UNDP. Initial activities have involved the establishment of a conceptual framework for risk management that will encourage programme activities, and the start of a systematic process of recording experiences in local level management in the region. A third initiative is the institution's *Regional Action Plan for Central America*, financed by UNESCO with Dutch, German and French support. This regional programme provides training for specialists in the use of technologies for analysing hazards, particularly the use of GIS applications.

Another programme for regional collaboration and capacity building was launched by the *Swiss Agency for Development and Cooperation* following hurricane Mitch. A *Disaster Prevention Programme (PREVAC)* is conceived to run from 1999-2003 with a budget of US\$ 5 million. Support is being offered to Honduras, Nicaragua and El Salvador responding to the proposals coming from the Strategic Framework for Vulnerability and Disaster Reduction. The programme concentrates on raising awareness of natural hazards, capacity building and institutional strengthening, and works with an array of institutional actors including ministries, national disaster organizations, scientific and technical institutions and universities.

● The Caribbean

The past decade, has seen an increase of multi-disciplinary discussions regarding disaster and risk management in the Caribbean. Since its establishment in 1991 by the *Caribbean Community (CARICOM)*, the *Caribbean Disaster Emergency Response Agency (CDERA)* has worked to create an expanding infrastructure for a methodical approach for developing disaster management programmes among member states, including multi-island projects.

Initiated to enable countries to cope more effectively in the aftermath of a disaster, increasingly, more emphasis has been given to disaster risk reduction as part of development and environmental concerns. The idea of disaster reduction has been introduced in most regional initiatives at policy level, including through the *Programme of Action for Small Island Developing States*, among the CARICOM priority areas for action, and the programmes of the *Association of Caribbean States (ACS)*.

These interests are consistently re-enforced on a sub-regional basis by the biennial *Caribbean Natural Hazards Conferences* organized by the primary regional disaster management stakeholders. These typically have included the *University of the West Indies (UWI)*, CDERA, USAID and UNDP. Furthermore, the issue of vulnerability assessment has become one of the key foreign policy areas of CARICOM, and it has been raised in several forums including the World Bank, IDB, OAS and the Com-

monwealth Secretariat. At the *Conference of Heads of Government of the Caribbean Community (COHG)*, the highest collective decision-making body in the region, the portfolio of disaster management and the environment has been declared a matter of cabinet level responsibility.

Other agencies have also contributed to capacity development in the Caribbean through funding of disaster management programmes implemented by government agencies and NGOs. In 1991, CARICOM committed itself to establishing a permanent agency with a focus on preparedness and response planning, supported by its member states. Since then CDERA has worked to broaden the disaster management agenda in the region.

It contributed to the development of disaster management among member states, as well as training and development of a core of professionals who are a valuable source of expertise for all countries. In partnership with a variety of donors, the agency has executed a number of projects aimed at building the capacity of member countries in disaster management.

● Andean countries of South America

The five countries of the Andean sub-region of South America – Bolivia, Colombia, Ecuador, Peru and Venezuela – live with a high level of risk and must often cope with disasters. These include the Huaraz Earthquake in Peru in 1970; El Niño/La Niña episodes in 1982-1983 and 1997-1998, the volcanic eruption of Nevado del Ruiz in Colombia in 1985; and the mudslides in Venezuela in 1999.

The most common types of disasters in the region are associated with earthquakes, volcanic eruptions, floods and droughts. From a socio-economic point of view, the highest impact is from hydrometeorological disasters.

Aside from the common historic and cultural roots shared by the countries, along with some topographic similarities, their institutional cooperation is enhanced through the Andean Integration System. Growing interest in collaboration was displayed when the *Andean Development Corporation (CAF/ADC)* estab-

PREANDINO

A regional cooperation programme

The overall objective of PREANDINO is to encourage and support the formulation of national and sectoral policies for risk reduction and disaster prevention and the development of models and forms of institutional organization that introduce a preventive approach into development planning (*see specific country information in the previous section on national institutional development*).

Its objectives at the regional level are:

- To promote, support and offer guidance on the organization of schemes and programmes for horizontal cooperation between equivalent institutions in the Andean countries, so as to strengthen their technical capacity for studying and adopting preventive policies and programmes;
- To promote region-wide risk prevention programmes, primarily those related to awareness of the threats to which there is the greatest vulnerability;
- To ensure the feasibility of, and to support and coordinate, technical cooperation initiatives among the Andean countries;
- To encourage supra-regional bodies and international organizations to propose and implement cooperation projects at the national and regional levels;
- To promote the institutionalization of prevention in the Andean region.



Strategic areas

To reach its above objectives, PREANDINO has defined a strategy designed primarily to:

- Incorporate risk prevention in State policy and in the institutional and civic culture in the Andean region;
- Emphasize three areas for action: the dissemination of information on risk, improved institutional management of risk reduction, and the inclusion of prevention in national, sectoral and territorial planning in the public and private sectors in each country;
- Attempt to ensure, from the very beginning, the strongest possible commitment to the objectives of the programme at the highest levels of decision-making in the public and private sectors;
- Create the best possible conditions for the exchange of information between the Andean countries on institutional developments, planning experience, and methodological and technological progress in identifying and evaluating threats, vulnerability and risk;
- Make ongoing efforts in the region and in each country to ensure that more is done to reduce the risks that affect people's quality of life;
- Create a favourable climate for international technical and financial cooperation in the countries of the Andean region, so that optimal, effective and coordinated use is made of the resources for risk reduction.

At the operational level, the key players in this initiative are the respective countries' national committees for risk reduction. These include representatives from the ministries of planning, science and technology, and the environment, as well as from national civil defence or disaster management agencies. All of these institutions are linked through a network that allows participants to share information about their activities and by so doing, to shape indicators that can gauge the effectiveness of disaster management. This cooperation is augmented by conferences and workshops, which facilitate the exchange of information and provide a common basis by which to conduct negotiations with financial bodies.



lished the *Regional Programme for Risk Prevention and Reduction (PREANDINO)* in late 2000, in accordance with the mandate entrusted to them by the Presidents of the five Andean countries in 1999. Under this mandate, CAF/ADC is coordinating the cooperation activities necessary to strengthen and develop risk prevention standards and institutions in each country and the principal regional projects that share those aims.

This mandate is rooted in an earlier one, under which CAF/ADC, on request of the Presidents of the region, made a study of the economic and social impact of El Niño on the countries of the region in 1997-1998 and an analysis of existing institutions dealing with disaster prevention. A one-year participatory study exercise was carried out engaging several institutions in each country. A detailed technical and institutional review of each country outlined, in particular, institutional weaknesses and the need for regional coherence, thus PREANDINO.

In the Andean countries, the use of disaster risk management as a public policy tool within development organizations is still in the early stages of development. A previous lack of focussed institutional frameworks explains the relatively limited degree of civil awareness about risk in all of the Andean countries. However, an emerging trend now recognises the need for concrete and determined action for the incorporation of disaster risk reduction into the broader context of development initiatives.

Information systems to support disaster risk management are scarce in these countries. There is a lack of consolidated information or channels for easy access to information about the different hazards. The information which is available is often highly technical and is not easily understood by a general audience.

To counter these types of problems, PREANDINO is supporting the construction of a network that will foster the exchange of experiences and contacts. Committees of knowledge are being established in each country to promote the creation of permanent channels of information exchange among research centres, producers of hazard-related information, and potential users within individual professional sectors.

Additionally, the civil defence organizations of the region have met several times since 2000 to consolidate a regional basis to improve coordination of response and preparedness activities. The southern command force of the USA has supported these efforts, among others. These activities have led to the formal establishment of an *Andean Committee for Disaster Prevention and Response (CAPRADE)* within the Andean Integration Community in July 2002. This important initiative is a sub-regional mechanism for improved and integrated risk management action. It was developed in accordance with the objectives of ISDR and supported by several regional institutions and bilateral actors.



Africa

Southern Africa



Extending south from the Democratic Republic of the Congo and Tanzania, the *Southern African Development Community (SADC)* comprises fourteen member states. With a population of approximately 200 million, SADC includes the following countries;

Angola, Botswana, Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

In general, Southern Africa has not been viewed as particularly prone to natural hazards, nor has it historically recorded massive losses from sudden-onset disasters. Primarily, the major risks that have affected the region have been slow-onset disasters related to drought, epidemic and food insecurity.

Until the early 1990s, perceptions of risk were shaped predominantly by armed conflicts and their destabilising consequences. In such a context, it is unsurprising that issues of natural disaster risk received little attention. To a significant extent, prevailing disaster management capabilities have typically been grounded in more narrowly focused efforts to monitor agricultural conditions and food availability, or to plan emergency relief contingency measures focussed almost exclusively on droughts.

There are a number of regional initiatives that are now contributing to the growth of disaster reduction in Southern Africa, but it is important to understand their antecedents. These date from the formation of the *Southern African Development Coordination Conference (SADCC)* in 1980, which had, as one of its priorities, the diversification of transportation and communications throughout the region. To reduce the dependence of landlocked countries on South African infrastructure, major investments to improve regional road and rail links was undertaken. These were considered vital to the growth of struggling economies, but to an even more immediate extent, such infrastructure was crucial for the movement of food and relief supplies across the region in times of drought, conflict or other emergencies.



By recognizing the strategic importance of food security, SADCC also made the subject a priority sector for regional coordination. To this end, it established the *Regional Early Warning Unit* which was tasked with consolidating crop information provided by national early warning units of the individual countries, and monitoring trends in regional food security. From their inception, these SADCC mechanisms played key roles in assessing and managing risks by establishing systems for the early detection and response to conditions of potential food shortages. Unlike institutional developments in other regions of the world, these first political engagements with disaster reduction in Southern Africa countries were driven by the protracted ravages of drought or other slow-onset emergencies.

Meanwhile, other political, social, economic and environmental changes have continued to shape the risk landscape in Southern Africa. With rapidly growing populations, many of which are without acceptable levels of social services or sufficient economic opportunities, and increasingly concentrated in urban areas, the countries of the region already know that they can expect to be exposed to more hazardous threats in the future. Since the floods that affected much of the region in 2000-2001, there is a growing recognition in official quarters of a much wider range of sudden threats.



There also continues to be the possibility of more intense examples of slow emerging conditions of drought and disease, exacerbated by variations in climate, increasingly fragile natural environments, and persistent impediments to national development that affect human livelihoods.

These concerns have provoked recognition at the highest political levels of the pressing need to focus on regional cooperation and to allocate more resources to risk reduction. This context has driven SADCC's successor organization, the *Southern African Development Community (SADC)*, to devote considerable attention to issues of public vulnerability, irrespective of whether potential disaster threats result from climatic hazards or conditions of poverty, and even more recently, disease. While SADC's technical engagement in disaster reduction has continued to evolve, it is important to note that the overall purpose of the reconfigured regional political community is to foster the economic integration and the promotion of peace and security among its 14 member countries.

SADC has taken an initiative to develop disaster management as a regional priority, with the establishment of an *Ad Hoc Working Group on Disaster Management* in 1999. An *Extraordinary Summit for SADC Heads of State and Government* was convened in Maputo, Mozambique in March 2000 to review the impacts caused by the floods across the region. At this summit, representatives of the SADC countries expressed the need for improved institutional arrangements for disaster preparedness and management of similar risks in the future.

Efforts have now been initiated to develop greater cooperation within the region to reduce risk generally, and to focus more attention specifically on anticipating, mitigating and responding to sudden-onset natural hazards, such as cyclone-triggered trans-boundary floods. Moreover, some of the national governments in the region are in the process of amending their own disaster legislation to place greater emphasis on the anticipation and reduction of natural and other related risks.

In May 2000, the *SADC Sub-Sectoral Committee on Meteorology Meeting* was convened. There, the Directors of National Meteorological and Hydrological Services (NMHS) in the SADC countries recommended that a regional project

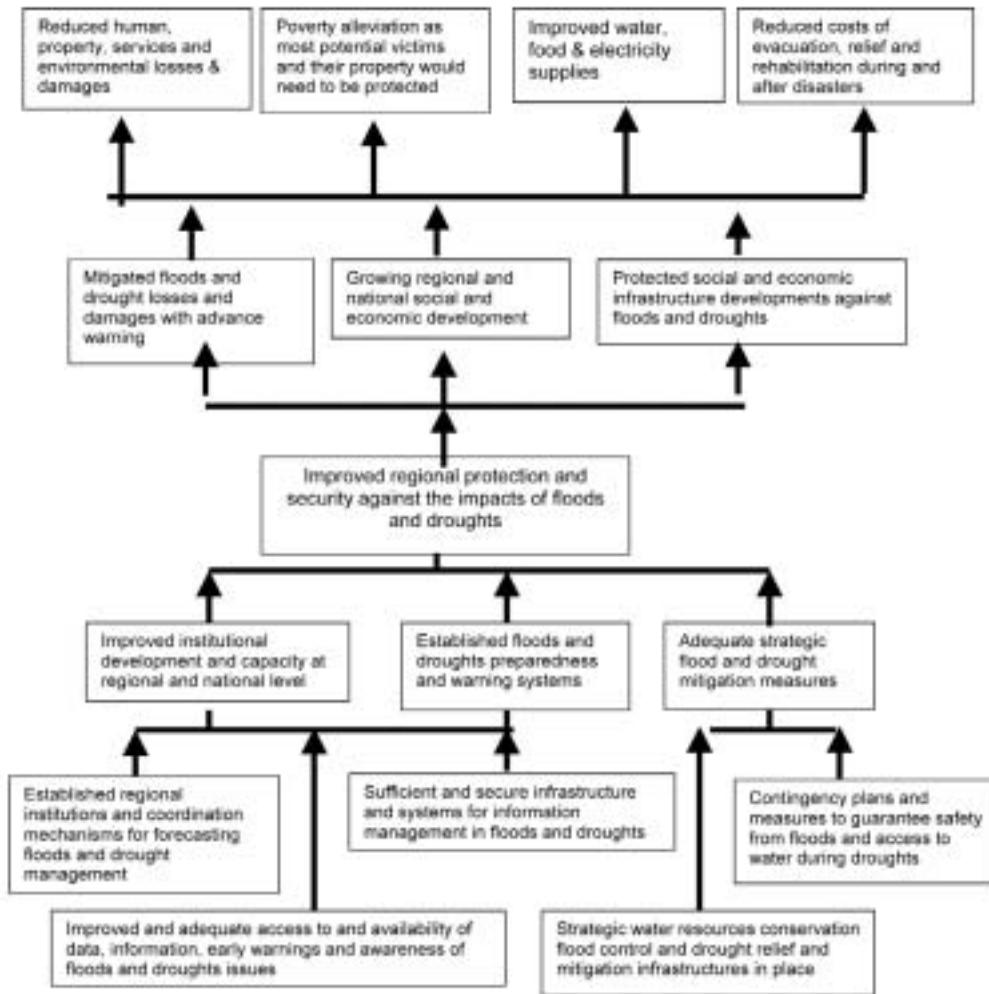
be formulated to address and strengthen the local capacities of national meteorological and hydrological services for early warning and disaster preparedness. A month later, the *SADC Committee of Ministers for Water* recommended that a strategic and coordinated approach be developed to manage floods and droughts within the region. These decisions underlined the particular importance attributed to coordination of the technical abilities required to contribute to the early warning of natural disasters and to ensure the effective implementation of related preparedness and mitigation activities. By August 2000, the SADC Council of Ministers approved an overarching *SADC Disaster Management Framework* for an integrated regional approach to disaster management and established a full *Technical Steering Committee on Disaster Management*. By the end of 2001, SADC had developed and approved a multi-sectoral disaster management strategy for the region, and the *SADC Water Sector Coordination Unit* had drafted a *Strategy for Floods and Drought Management in the SADC Region*.

The SADC's secretariat is in Gaborone, Botswana. It is responsible for developing an integrated disaster management strategy and for coordinating the efforts of other SADC technical sectors whose work directly relates to disaster reduction. Several of SADC's key technical units play critical roles in disaster reduction.

The *SADC Food, Agriculture and Natural Resources (FANR)* sector gives specific attention to the protection of regional food security. Its *Regional Early Warning Unit (REWU)* provides member states and the international community with advance information on food security prospects in the region. This includes providing information about food crop performance, alerts of possible crop failure and other factors affecting food supplies.

The unit also conducts assessments covering food supply and demand, and makes projections on related matters such as food imports and exports, the identification of areas or affected populations threatened by food insecurity, as well as threatening climate conditions that could trigger food insecurity. The FAO has long supported FANR with, among other information, data from its *Global Information Early Warning System (GIEWS)*.

Objectives of the SADC strategy for floods and drought management in the region



Source: SADC Water Sector Coordination Unit, 2001

The *Regional Remote Sensing Unit (RRSU)* of FANR collaborates closely with the Regional Early Warning Unit by working to strengthen national and regional capabilities in the area of remote sensing and GIS applications. It offers a range of specialized services for use in early warning for food security and natural resources management, including training agro-meteorologists in the use of satellite imagery products.

It processes and disseminates a variety of satellite information pertaining to meteorological conditions, vegetation distribution, crop outlooks and other development indicators. It is also used to monitor and map land use patterns, land degradation and desertification conditions. The resulting information is distributed to a wide-range of users throughout Southern Africa, including government ministries, private trading and industrial sectors, banking and finance groups, farming organi-

zations, NGOs, and international development assistance organizations.

While the RRSU has already provided important data related to seasonal flood and drought risk, it anticipates being able to strengthen its capacities in disaster reduction by generating an integrated flood and drought risk profile for Southern Africa in cooperation with the US Geological Survey. In a more general sense, RRSU can assume even wider importance to regional cooperation in disaster reduction as the combined effects of climate variation and the needs for monitoring environmental conditions become more integrated into future risk management practices.

Despite the specific nature of its name, the SADC *Drought Monitoring Centre (DMC)* located at the Zimbabwe Meteorological Service has a primary responsibility to monitor climate extremes, especially as they relate to



droughts and floods. By working closely with all of the national meteorological and hydrological services in the region, and with technical support provided by the WMO, the centre generates highly-regarded seasonal rainfall forecasts and provides additional climate analysis and information. It also produces regional climate data, synoptic reviews and weather outlooks, semi-processed global ocean-atmospheric data, monthly and seasonal forecast updates, and a ten-day drought watch for the SADC region. The centre provides opportunities to develop the technical and analytical abilities of staff, drawn from national meteorological and hydrological services in the region, through a secondment programme. It also manages meteorological and climate data-banks for the region.

Every year, the DMC coordinates the *Southern Africa Region Climate Outlook Forum (SARCOF)*. Beyond playing a crucial role in forecasting seasonal rainfall, SARCOF has proven to be a useful process that extends climate analysis and training practices to an expanding range of multi-sectoral users in Southern Africa. As the awareness of risk reduction becomes a matter of pressing national and regional concerns, and the consequences of changing climatic conditions are more apparent on both environmental and water-related issues, the compilation and dissemination of multi-sectoral information by regional mechanisms such as SARCOF will assume even greater future importance.

Both the *SADC Water Resources Sector* and the *SADC Environment and Land Management Sector (ELMS)* have crucial roles to play in developing policies and strategies for water resources and environment and land management issues in all SADC countries. The water sector has long given attention to the development of cooperative agreements on shared river basins, but the floods of 2000 and 2001 underlined the need for greater attention to regional flood risk, in addition to recurrent drought. The need for interstate cooperation associated with water-related hazards in Southern Africa is particularly acute as there are more than ten shared watercourses in the region, with the largest, the Zambesi River flowing through nine different countries.

The successful implementation of this disaster reduction strategy rests on interaction between

different technical and administrative networks across Southern Africa. In May 2001, an integrated *Strategy for Flood and Drought Management in the SADC Region* was approved for implementation over a four year period. The strategy focuses on preparedness and contingency planning, early warning and vulnerability information systems, mitigation measures, response activities and recovery strategies.

The process involves regular consultations through which the heads of disaster management, early warning, meteorology and water authorities from individual countries in Southern Africa will meet with SADC technical counterparts in order to monitor progress and address impediments to reduce drought and flood-related disasters. This process has been complemented by the US Geological Survey's support for the development of flood and drought maps for the region.

Fifty real-time and coordinated data collection stations are currently being installed in eleven Southern African countries under the *SADC Hydrological Cycle Observing System (SADCHYCOS)*. These stations and the information that they gather are expected to make major improvements in the timely availability of data and to provide more real-time data transmission and the dissemination of essential transboundary hydrological information for flood forecasting. This EU-funded project is being implemented by the SADC Water Sector Resources in association with the national hydrological services of the participating countries.

In addition, the Zambesi River Authority (ZRA) was established by Zambia and Zimbabwe in 1998 to coordinate their decisions on water use, power generation, and upstream and downstream risk consequences of their water management policies. Following the 2000 floods, the ZRA formed a Joint Operations Technical Committee with Hidroeléctrica de Cabora Bassa in Mozambique to share data and technical information about the operations of their respective Kariba and Cabora Bassa reservoirs. Their collaboration is an important example of shared institutional efforts by neighbouring countries to provide early warning for floods and to monitor water levels for power generation. This regional cooperation is furthered by the weekly exchange of data and

by the conduct of monthly meetings during the critical rainy season.

The *ELMS* has undertaken a number of projects related to land use practices as well as the conservation of environmental conditions which can reduce both flood and drought-prone conditions. *ELMS* has also been designated as the coordinating authority within *SADC* for all matters related to climate change, which places it in the forefront of inter-agency cooperation and collaboration to reduce the risk of future hydro-meteorological hazards.

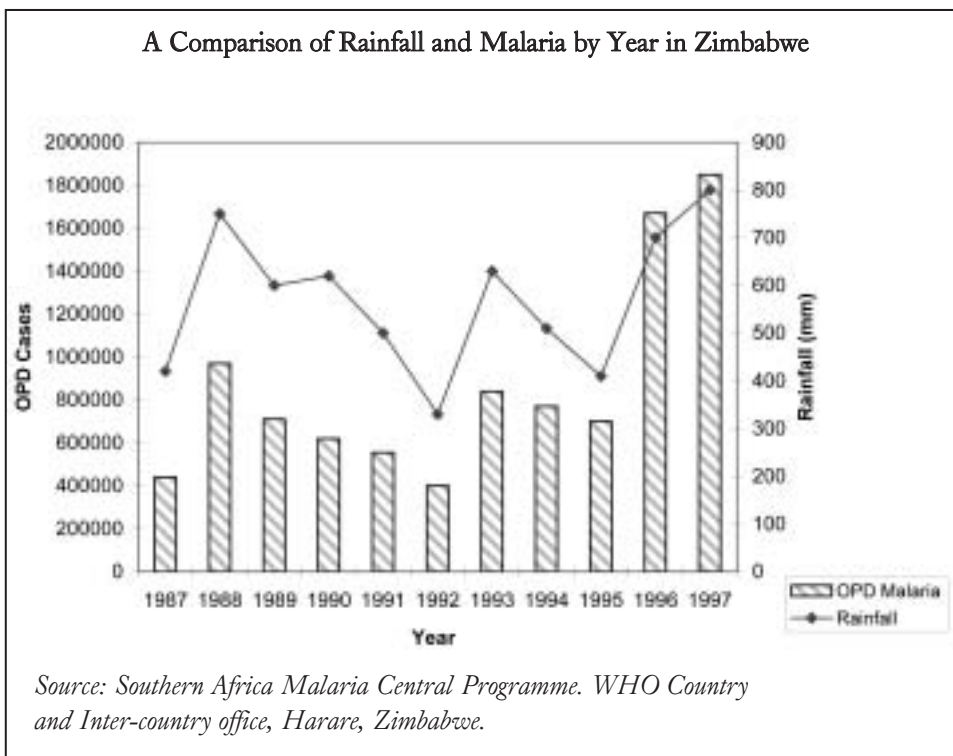
The *SADC's Health Sector* works closely with the *WHO's Inter-Country Office for Southern Africa*, having long recognized the public health aspects of disasters. Programmes such as the *WHO-Southern Africa Malarial Control Programme* address the causative factors of hazards in creating epidemics. The very close correlation that exists between temperature, precipitation and the incidence of malaria in specific locations underlines the essential cooperation between all of these various sectors relating to water, climate, land, environment, health and disaster risk management practices.

While not specifically a *SADC* institution, but sharing a common interest in furthering multi-

disciplinary collaboration, through expanded information exchange, the *Southern Africa Research and Documentation Centre* in Harare, Zimbabwe has published many professional papers and books that demonstrate both the breadth and depth of related interests in the region.

One of the most pressing challenges in implementing progressive disaster risk management laws and policies is the region's pervasive socio-economic and environmental vulnerabilities. When they are combined with the consequences of increased climate variability, such as more intense drought events, as well as cyclones and heavier rainfall, the urgency to position disaster risk reduction becomes an important development priority.

The disaster reduction challenge at the beginning of the 21st century is to link creative and coordinated strategies such as those outlined above that can reduce the impact of future uncertain risks, with ongoing development efforts that can minimize prevailing vulnerabilities and hardships. If risks remain unchecked, they will accelerate an already spiralling trend toward greater disaster-related losses, human inequities, and weakened societies.



Asia



There has been a discernible growth in the attention to policy frameworks and structures for regional collaboration in disaster risk reduction throughout Asia.

In contrast to some other geographic regions, such as Latin America and the Caribbean, the regional collaboration in Asia appears to stem less from the consequences of a single devastating disaster. Rather it appears to result more from shared outlooks emerging from different professional interests. In many of the examples reviewed here, a growing awareness and involvement with broader risk issues is becoming evident in regional forums that previously adopted more narrow concepts of crisis and emergency, or in some cases may not have previously anticipated risk in explicit terms.

It may be difficult at the present time to identify a clear and unambiguous approach to disaster risk reduction among the many cultural, social, and political distinctions in Asian societies, but there is nonetheless a clear movement to identify, and begin to address disaster risks. While disaster management agencies are grappling with the changing world before them, people devoted to other features of national socio-economic development are emerging as potential allies in reducing disaster risk. These include policy-makers and practitioners involved in such areas as environmental management, climate variation, natural resource utilization, regional planning, the construction or protection of infrastructure, education and public communications, and public administration.

Over the past two years, a *Regional Consultative Committee on Regional Cooperation in Disaster Management (RCC)* has been convened by the *Asian Disaster Preparedness Center (ADPC)* with AusAid's support, comprising heads of national disaster management authorities or offices from 24 countries in Asia. Members have endorsed the importance of the RCC as a forum to exchange information and experience regarding national disaster risk management systems. Annual meetings held in 2000 and 2001 have addressed capacity building and reviewed experiences of new legislation, policy and institutional reform, and related planning

processes. Both meetings recommended the wider sharing of experiences to enable countries developing new or modified legislation or institutional arrangements, to learn from the experiences of others in the region, as well as to develop disaster risk management plans at national, provincial and local levels. Through these actions, the RCC has served to consolidate and strengthen regional and sub-regional cooperative initiatives, even though the various priorities and interests of the countries may vary.

Specifically, the second of these meetings urged all RCC member countries to adopt a *Total Disaster Risk Management Strategy* that would represent "a comprehensive approach to multi-hazard disaster risk management and reduction, which includes prevention, mitigation and preparedness in addition to response and recovery." Several primary areas of action were identified to advance this approach in coming years:

- Developing community level programmes for preparedness and mitigation.
- Building capacity within national disaster management systems.
- Promoting cooperation and enhancing the mutual effectiveness of programmes of sub-regional mechanisms such as those of ASEAN, SAARC, SOPAC, ICIMOD and MRC.
- Creating awareness and promoting political commitment through regional initiatives.

The third RCC meeting, to be co-hosted by the Government of India in New Delhi in November 2002, will review the progress made throughout the region.

Information on these initiatives and the experiences of several countries in the Asian region were shared in a regional workshop on legal and institutional frameworks, and planning for disaster risk management held in April 2002 in Bangkok. The workshop, organized by ADPC with funding provided by the ECHO, OFDA/USAID and ADB, provided a venue to share experiences and discuss issues about what is working, and what needs to be improved in the institutionalisation of risk reduction efforts. This workshop provided another opportunity to establish links and to

develop closer working relationships among individuals and institutions involved in disaster management policy and planning in the region. At the next phase, projects will be identified which can assist countries in documenting the processes involved, as well as highlighting best practices to disseminate for the benefit of a wider audience.

In a similar fashion, the *Asian Disaster Reduction Center (ADRC)* has worked to foster cooperation among countries in Asia. A multi-lateral organization for disaster reduction based in Kobe, Japan, ADRC is composed of 23 Asian Member Countries plus four additional Advisory Countries.

By networking with focal points in each government and by facilitating the exchange of disaster risk management information among them, it strives to identify their acute needs and contributes towards the further development of human resources dedicated to the subject in Asia. Beyond its immediate Member Countries, ADRC also works to strengthen networking among other relevant organizations working with disaster risk management in Asia, such as UN-OCHA, UNCRD, ADPC, CRED and OFDA/USAID. It conducts studies and encourages research that will contribute to putting disaster management technologies to practical use. This includes coverage about the use of geographic information systems and satellite information systems, as well as the introduction on its website of new products and techniques that are useful for disaster reduction such as anti-earthquake reinforcement, and methods for preventing landslides.

ADRC has launched cooperative projects to develop the disaster management capacities of Member Countries, based on their respective requests. It provides financial and technical support for selected activities, and then disseminates the outcomes and lessons from the projects among its Member Countries and to other nations around the world. These programmes include the promotion of educational programmes to develop disaster reduction capacities, (community-based flood disaster mitigation project in Indonesia, school educational programme for disaster reduction in the Philippines); activities that increase professional skills for emergency search and rescue

(urban search and rescue training programme in Singapore); furthering the development and dissemination of technical knowledge by inviting visiting researchers from Member Countries to ADRC, and by conducting short-term visitor training programmes.

Regional cooperation is promoted by ADRC's management of an information database on natural disaster reduction in Asia. With a particular focus on matters of legislation, disaster management, training and country reports, their website shares lessons for disaster reduction among Asian countries. ADRC also organizes international conferences and workshops to discuss the status of disaster reduction activities in Asia. In 2002, it held the Fourth ADRC International Meeting in New Delhi, co-organized by the governments of India and Japan, followed immediately by a second meeting of the same regional participants to discuss ISDR involvement in Asia. Later in the year, ADRC and OCHA jointly conducted the Regional Workshop on Networking and Collaboration among NGOs of Asian Countries in Disaster Reduction and Response in Kobe, Japan.

With common objectives but different emphasis, both ADPC and ADRC have cooperated with OCHA to organize consultative meetings of regional institutions, UN agencies and multilateral development assistance organizations. The first meeting was held in Kathmandu in 2001 and more recently in June 2002 another was conducted in Bangkok. This second consultative meeting focussed on the concepts of Total Disaster Risk Management and discussed emerging international partnerships for reduction of risk and vulnerability to natural hazards with additional partners in the region. These included the longstanding interaction with UNDP programmes and IFRC activities in South East Asia, as well as further collaboration with the USAID Regional Office in Manila and the European Commission's regional DIPECHO programmes based in Bangkok. Additional interests in regional cooperation for total disaster risk management strategy were expressed by the Asian Development Bank, the International Institute of Disaster Risk Management (IDRM), Emergency Management Australia, ICIMOD, and ASEAN.



The 11th ASEAN meeting was held in Chiang Rai, Thailand, in August 2000 and endorsed the urgent development of an *ASEAN Regional Programme on Disaster Management (ARPD)*. With technical assistance extended by ADPC and financial support provided by the European Union, the ASEAN secretariat and member countries have reached an advanced stage of planning. This new regional programme will guide cooperative action in ASEAN member countries in the following core areas of activity:

- Planning and conducting joint projects.
- Collaborating on research and encouraging networks among member countries.
- Building capacities and developing human resources in areas of priority concern.
- Sharing information, best practices, and disaster management resources.
- Promoting partnerships among various stakeholders including government authorities, NGOs, community and international organizations.
- Promoting advocacy, public awareness and education programmes related to disaster management.

The ASEAN Regional Forum (ARF) is another regional platform composed of the ASEAN countries and 13 additional dialogue partners (Australia, Canada, China, Eu, India, Japan Korea, Mongolia, New Zealand, Papua New Guinea, Russian Federation and USA). It is convened to develop mutual confidence-building measures and to promote dialogue on regional security concerns. Under its umbrella, several groups have been established to promote cooperation in specific areas including disaster relief and marine search and rescue. Four inter-sessional meetings on disaster relief have taken place in Wellington (1997), Bangkok (1998), Moscow (1999), and Hanoi (2000). These meetings have included delegations from ministries of foreign affairs, defence, and disaster management from all ARF member countries and have thus provided a unique platform for discussions at high levels focussed on multiple aspects of disaster management. In addition to these meetings, some specific achievements of ARF include a series of training activities, developing a matrix of past cooperation in disaster relief among member countries, conducting an inventory of early warning

systems and drafting guidelines for post-disaster responsibilities.

Among the seven countries which belong to the *South Asia Association for Regional Cooperation SAARC* (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka) issues of disaster risk management have been periodically touched upon by the *SAARC Technical Committee on Environment, Meteorology and Forestry*. A regional study was conducted on the *Consequences of Natural Disaster, and Protection and Preservation of the Environment* in 1992. Most recently at a meeting of the Technical Committee in January 2002 reference was made to “the need for mechanisms to promote capacity building and technology transfer to support natural disaster management”. It was further stressed that together with concerns about the negative impacts which climate change exerts in the region, a common South Asian position should be developed on these issues in international forums.

There have also been regular and continued endorsements of inter-state cooperation in natural disaster management and resulting declarations at SAARC Summit Meetings, even if they have seldom occupied primary attention among the many regional issues, typically on the agendas. However, at the most recent 11th Summit Meeting of SAARC held in January 2002 in Kathmandu, the view was more explicitly expressed as, “the Heads of State or Government felt a strong need to devise a mechanism for cooperation in the field of early warning, as well as preparedness and management of natural disasters, along with programmes to promote the conservation of land and water resources”.

As all SAARC member countries are exposed to similar hazards, they have much operational experience in disaster risk management that could be exchanged to a considerably greater extent than is currently the case. Important areas that could benefit from cooperation include training, the exchange of both operational and technical professional information, the exchange of government officials, and coordination in policy formulation and implementation, especially in the case of disasters affecting neighbouring countries. The reduction of risks associated with transboundary hazards is a particularly urgent area in which to expand formal

mechanisms among SAARC countries for cooperation and improved coordination.

There are other technical frameworks in Asia that focus increasing attention on the consequences of natural hazards. The application of seasonal climate prediction and forecasting as an integral part of comprehensive risk management is one such example. The unprecedented breadth of impacts associated with the El Niño/La Niña events during 1997-99 across many sectors in South East Asian countries underlined the need for effective, and continuing, risk assessments. As climate became accepted as a major determinant in contributing to recurrent risks, the meteorological services of the region have worked in close partnership with an increasingly wide range of sectoral agencies.

Regional institutions such as ADPC have also become more involved in working with national agencies and technical institutions to study the impacts of past extreme climate events in order to anticipate and mitigate the impacts of future occurrences. Innovative capacity-building activities have brought together specialists from a variety of resource management responsibilities to assess and manage the common risks posed by climate variability. In May 2002, a two-week workshop on the applications of climate information was organized jointly by ADPC and the Thai Meteorological Department. It brought together, for the first time, meteorological forecasters, water resource managers, agriculture sector managers and food logisticians. By working together and blending their respective professional talents, the participants assessed the risks posed by climate variability in the region and worked to develop strategies to minimize or reduce those risks. Such activities illustrate a gradual movement towards the introduction of risk management concepts in other resource management sectors beyond traditional or singular disaster management organizations.

International relationships at the regional level are a key requirement in the development of effective flood early warning systems as rivers pass from one country to another. The development of expanded institutional capacities of the Mekong River Commission over the years is a fine example of good regional cooperation among countries in the Mekong River Basin in Southeast Asia.

The *Asian Urban Disaster Mitigation Programme (AUDMP)* is being implemented by ADPC with core funding provided by OFDA/USAID. It is founded on the overarching belief that loss of life and property from disasters hinder sustainable development, and that such losses can be reduced if appropriate methodologies are introduced through different aspects of city administration. With a concentration of both risks and resources, cities can represent a crucial focus to reduce vulnerability.

Early warning in Cambodia

Although there is a system for tracking river levels, there is still no proper early warning system that will provide information to disaster-prone populations, and there is no centralized information centre. To address this and other issues, the UN Disaster Management Team in Cambodia is currently supporting the development of a regional network for disaster management and mitigation in the Mekong countries. This is to reduce the vulnerability of the poorest residents to the negative impacts of disasters and to protect broad based development gains.

Response to ISDR questionnaire from Cambodia, 2001.

The programme's goal is to reduce disaster vulnerability of urban populations, infrastructure, lifeline facilities and shelter in Asia by establishing sustainable public and private sector mechanisms for disaster mitigation. As good governance and decentralization of governing responsibilities are high on most countries' political agenda, AUDMP promotes country initiatives that can demonstrate the worthwhile value of strategic approaches to urban risk reduction as part of urban development planning processes.

Working to common standards in association with partner organizations in 10 Asian countries, AUDMP works to build the capacities of local authorities, national governments, NGOs, businesses and others institutions that can contribute to urban disaster mitigation. Primary tools employed are facilitating organizational networks, sharing knowledge and successful experiences and promoting dialogue among key stakeholders. By these means, it is anticipated that successful mitigation approaches can be replicated in other cities and countries worldwide.

Risk reduction practices employed include physical measures such as flood protection embankments or safe building designs, but they also include the promotion of other practical measures ranging from legislation, training, public awareness and advocacy that further risk reduction. AUDMP support activities ranging from hazard mapping to creating improved policy environments in disaster-prone countries.

Information on these initiatives and the experiences of several countries in the Asian

region have been shared further in a Regional Workshop on Legal and Institutional Frameworks, and Planning for Disaster Management held in April 2002 in Bangkok, Thailand. The workshop provided a venue for sharing experiences and discussing crucial issues about the development of disaster risk management policies, legal and institutional frameworks, and the development of specific plans. The next phase of the projects initiated by ADPC will assist the countries to document the process as well as best practices, which can be disseminated for

Demonstration projects undertaken by AUDMP partner organizations in 10 Asian countries vary widely in accordance with local priorities.

In Bangladesh, Cambodia, and Thailand the focus is on floods, while India, Indonesia and Nepal concentrate on earthquakes. The Philippines and Sri Lanka address multiple hazards. Laos is concerned with urban fire, and Viet Nam pursues housing requirements in flood-prone areas. Some of the specific project activities and lessons include the following:

- Hazard mapping and risk assessment: Projects in Sri Lanka and Philippines have demonstrated methodology for development of urban land use plans through integration of risk reduction measures. Projects in Bangladesh and Cambodia demonstrate community-based approaches.
- Mitigation planning and implementation: Lessons learned from AUDMP initiatives demonstrate that the planning and implementation of disaster risk reduction practices should involve government officials, community organizations, and NGOs working in partnership.
- Public awareness and education: Different approaches, tools and products have been used in public awareness campaigns for different audiences in Bangladesh, Indonesia, Nepal and Sri Lanka.
- Capacity building: AUDMP's approach to training, resource materials and continuing education is to develop generic curricula on urban disaster mitigation, which are then adapted and institutionalized at the national and local levels through national partner training institutes.
- Safer building construction: Country projects have carried out detailed analysis of existing building construction practices and the condition of existing building codes, acts, bylaws and/or construction guidelines to find ways to increase the effectiveness. Different initiatives have promoted safer construction in India, Indonesia, Nepal and Sri Lanka.
- Community based approaches to disaster mitigation: As the community is where physical, social and economic risks can be most adequately assessed and managed, community-based disaster risk reduction involves public participation in assessment, planning and implementation activities which take full account of a community's vulnerabilities and capacities. The country projects in Bangladesh and Cambodia specifically focus on the importance of people's perception of flood risks, the purpose and tools of community flood risk assessment, and the strategies for community organizing, resource mobilization and capacity building.
- Policy, legal and institutional arrangements: Sound policies and legislation for disaster mitigation, as well as institutional arrangements that have clear lines of responsibilities need to be in place. AUDMP's project partners in Indonesia and Sri Lanka have taken the initiative to review country policies related to disaster management.

Table: Sample criteria for accomplished disaster reduction. AUDMP

Basic Principles	Factor Components	Level of Impact	Description
Enactment and Modification of Disaster Reduction Policies	National Level	High	<ul style="list-style-type: none"> The programmes has directly or indirectly influenced national level policies in more than ten countries of Asia. Policy modified or established to facilitate action: at least four
	City Municipal Level	Medium	<ul style="list-style-type: none"> At least eight municipal plans written or revised during the programme period Municipal bylaws modified Municipality level Disaster Management Units established
	Community Level	High	<ul style="list-style-type: none"> The Cambodian project under AUDMP (Flood hazard mitigation programme) is basically a community-based programme. It also influenced the community level. Several community-based initiatives were implemented (e.g., DMC ward No. 34 in Kathmandu Metropolitan City)
Assistance in Integrating Disaster Risk Reduction in Governance	Disaster Reduction incorporated in national plan and policies	Medium	<ul style="list-style-type: none"> Background work done for incorporation in several countries Municipalities in the process of incorporating disaster reduction in their agenda
	Poverty Alleviation and Disaster Reduction	Low	<ul style="list-style-type: none"> Background works done for incorporation in several countries
	State Commitments for Disaster Free Environment	Low	<ul style="list-style-type: none"> Active participation in AUDMP national project by national and municipal governments Indirect commitment expressed by government ministers, secretaries National Committee for Earthquake Safety Day established in Nepal Additional investment of 5% of AUDMP budget from non-AUDMP sources In-kind contribution additional
	Enactment of Regulations for Disaster Reduction	Medium	<ul style="list-style-type: none"> This is found to be a slow and complex process. AUDMP, together with other programmes, has influenced the process in some of the partnering countries
	Creation of Implementation Mechanisms	Medium	<ul style="list-style-type: none"> This is found to be a slow and complex process. AUDMP, together with other programmes, has influenced the process in some of the partnering countries
	Awareness-Raising	Awareness-raising programmes	High
	Awareness-raising materials	High	<ul style="list-style-type: none"> Posters, pamphlets, handbooks, fliers prepared and distributed in project cities Other materials in the process of being prepared
	Institutionalization of Awareness-raising programmes	High	<ul style="list-style-type: none"> Earthquake Safety Day observed in Nepal on an annual basis since 1999. Disaster reduction days observed annually in Sri Lanka and Bangladesh



Basic Principles	Factor Components	Level of Impact	Description
Training	Training curricula and materials	High	<ul style="list-style-type: none"> Improved access to hazard mitigation techniques and skills More than 5% of public and private sector professionals trained in disaster management Number of trained professionals: 150+ Twelve institutions in the region conduct training programmes regularly, based on the training curricula developed under AUDMP
	Training institutionalization	High	<ul style="list-style-type: none"> A network of Asian disaster management training institutions (ADMIT) established 30% annual increase in AUDMP network First year baseline: 25 institutions
Promotion of Public Commitments	Creation and updating of Disaster Mitigation Acts and Regulations	Medium	<ul style="list-style-type: none"> AUDMP process has greatly influenced the process of writing new or revising existing legal process SOP for municipalities written in Bandung
	Creation and Reforming of Disaster Management Councils and Committees	Low	<ul style="list-style-type: none"> Background work done by respective partnering institutions in AUDMP countries and cities leading to realization of needs Disaster management committee(s) created at central, municipal and community levels in Nepal and Sri Lanka.
	Preparation of Disaster Risk	Medium	<ul style="list-style-type: none"> Action Plans created and in the process of implementation in partnering cities Number of operational plans developed: ten
	Reduction Plans and Programmes	Medium	<ul style="list-style-type: none"> This is found to be a slow and complex process. AUDMP, together with other programmes, has influenced the process in some of the partnering countries
	Public Commitments in Action	Low	<ul style="list-style-type: none"> Community participation in the development process has been a recognized method by countries of the region. AUDMP process has developed it further by implementing community-based disaster risk reduction process in the partner cities
Community Participation	National Commitment	Medium	<ul style="list-style-type: none"> All the demonstration projects in AUDMP have developed mechanisms for community participation in disaster mitigation work as appropriate to the countries
	Setting up of mechanisms of community participation	Low	<ul style="list-style-type: none"> Need for improvements realized in countries where it was lacking, but there has not been significant progress in legal status of NGOs in those countries.
Enhancing Role of NGO	Improved legal status	High	<ul style="list-style-type: none"> Partnership mechanism established, but need to make sustainable
	Mechanism of Partnership	Low-Medium	<ul style="list-style-type: none"> Tremendous increase in the responsibilities. A successful NGO working in Disaster Risk Reduction is overwhelmed by the increase in its responsibilities as perceived by the government, the community and even by the private sector. This is expected to create the demand for improved legal status in countries where it is yet lacking.
Internalizing disaster reduction as a way of life and culture	Responsibility enhancement	Medium	<ul style="list-style-type: none"> Demands for improved safety started being expressed from the population Fatalism greatly reduced in project influence areas and zones, but need to sustain the efforts: Examples are: <ul style="list-style-type: none"> - People bought in, even in Bandung where there was no earthquake during the past several hundred years. - Success in Kathmandu Valley, Nepal; Bandung, Indonesia; Ratnapura and Nawalpitiya in Sri Lanka

Challenges for regional interaction in Asia

The following issues have been cited by Asian practitioners as contributing to either sporadic or inconsistent attention being accorded to disaster risk reduction in international exchanges or regionally-based endeavours:

- ✓ Tunnel vision that relegates risk awareness to marginal consideration in contrast to predominant political visibility in responding to disasters that have occurred.
- ✓ Different constituencies and mandates pertaining to various sectors of disaster risk management.
- ✓ Scarcity of resource allocations for risk reduction, in contrast to emergency response.
- ✓ Weak or inconsistent reliance on dynamic risk assessments in national development strategies.
- ✓ No single umbrella organization representative of regional interests and priorities related to disaster risks.
- ✓ Lack of awareness, policy or economic motivation to include disaster risk impact analysis in project design.
- ✓ Different, over-lapping or over-looked, geographical coverage of countries' or donor's interests and project distribution.
- ✓ Lack of programmatic mechanisms for matching regional providers with local needs – decisions often influenced more by political affinities than potential disaster risks.
- ✓ Nationalist motivations, or competing initiatives and duplication among donor interests.
- ✓ Bilateral versus multilateral initiatives, donor, or supply-side influenced projects.
- ✓ National policy objectives contrasting with broader regional collaboration.
- ✓ Insufficient working-level cooperation and knowledge transfer, duplication of information collection and dissemination.
- ✓ Limited opportunities for dialogue on a regional level. Lack of structured communication and knowledge of other agencies' programmes.

the benefit of a wider audience. The following table gives an indication of criteria being considered as suitable measures to gauge accomplishment in selected areas of responsibility across the region.

From the AUDMP experience, the following conditions highlight current constraints which remain to be addressed:

- Lack of interest and willingness of governments and organizations to take responsibility.
- Other political preoccupations or institutional impediments.
- Scarcity or non-allocation of funds and human resources.
- Lack of awareness of roles of other agencies.
- Lack of recognized mechanisms for information sharing and coordination.
- Lack of consistent donor policies or limited donor collaboration.
- Cooperation not sufficiently institutionalised within countries, so that if a key individual leaves, cooperation and collaboration may lapse.

- Different, overlapping concepts of sub-regions, or even definitions of the Asian region.

The extent of cultural variation and political diversity across Asia works against regional cooperation. However, at least some of these limitations could be overcome, or measures taken to resolve them if the international donor community and regional organizations alike could work towards a more consistent and focussed approach to accord disaster risk reduction a more distinctive and visible role in development strategies.

Pacific small island developing states

Pacific small island developing states and territories quite diverse in their physical and economic characteristics and exemplify many different cultures, languages and traditional practices. Most of these island countries comprise tiny areas of land widely dispersed throughout the Pacific Ocean, so that even within single countries, the distance between islands can be enormous.



The scattered distribution of these island states, together with their small size and relative isolation, makes development activity distinctive from other parts of the world and quite costly. Human settlements range from traditional rural villages where most people live, to rapidly growing modern, commercial cities. There are many forms of land tenure throughout the region, but most are based on communal land ownership through which a large amount of joint community control is retained over the use of land and the exploitation of natural resources.

Despite a popular portrayal of the South Pacific as a region of islands with serene beaches, blue lagoons, and an idyllic lifestyle, SIDS have very fragile ecosystems. At the beginning of the 21st century there is now a greater concern growing about the longer term consequences of climate change and rising sea levels.

For this reason, Pacific SIDS have been committed to the implementation of development projects to reduce risks to people and property, and have worked continually to strengthen their national and regional resilience to hazard impacts. The historical record of specific disaster reduction initiatives, albeit quite short, also

shows that Pacific SIDS have taken a very positive approach both in traditional and more contemporary ways to enable Pacific islanders to maintain their way of life.

The management of disasters is widely recognized in the Pacific as a national concern, although it is equally understood that strengthening regional linkages and fostering a sense of common purpose improves overall disaster and risk management capabilities. The similarity of hazards that Pacific SIDS face, the shared problems they experience, and a generally common approach adopted in their institutional arrangements all provide a fruitful basis for regional cooperation.

However, as some types of disaster occur only rarely, governments and communities find it difficult to maintain a high level of awareness and preparedness. The resources available for disaster mitigation also have changed over time. Governments became involved in disaster assistance early in the colonial era, taking over responsibilities at independence, often by providing considerable assistance for immediate relief or to assist in rehabilitation after a disaster. Later, such aid came to be understood by both donors and recip-

Progress in the Pacific

There has been admirable progress of well-structured programmes for disaster risk management in the Pacific, all guided by regional consensus, and with each one championed by respected regional organizations:

- From 1990-1999, the IDNDR provided a common purpose and an international structure to address a shared need of disaster reduction across Pacific SIDS.
- In 1993-94, Pacific SIDS developed a common programme on Natural Disaster Reduction in Pacific Islands Countries, presented at the World Conference on Disaster Reduction in Yokohama, Japan, 1994.
- From 1994-2000, the UNDP South Pacific Office supported the *South Pacific Disaster Reduction Programme (SPDRP)*, which proceeded in two phases: 1994-1997 and 1998-2000.
- A Tripartite Review conducted by UNDHA-SPPO-SPDRP in 1996, led to a *Regional Disaster Management Framework* being formulated in September, 1997.
- Widespread discussion ensued about the best way to institutionalise a collective regional strategy for disaster reduction, with direction being provided by the *Alafua Declaration* adopted by the Pacific Island Forum in September, 1999.
- UN-ISDR in 2000, coincided with plans to conclude the SPDRP and to constitute its successor, the *South Pacific Applied Geoscience Commission – Disaster Management Unit (SOPAC-DMU)*, from July 2000.
- With the design and official endorsement of a Regional Programme Plan, SOPAC-DMU embarked on an implementation process for the next three years from 2001-2004.
- Future directions will be guided by the innovative *Comprehensive Hazard and Risk Management Project (CHARM)*, an integrated risk management framework and practice to manage unacceptable risks in the Pacific SIDS, in the context of national development planning, encompassing both regional and individual country initiatives.

ients as unencumbered assistance. As the amount of disaster assistance has increased sharply over recent years, with the expanded involvement of bilateral and international assistance agencies as well as private voluntary groups, so too has been the consequence of community dependency.

During the 1980s, the UN Coordinator for Disaster Relief Operations supported disaster preparedness and response activities in the Pacific by providing technical and financial assistance for disaster management seminars, workshops, and planning exercises. In October 1990, a *South Pacific Programme Office (SPPO)* was established in Suva, Fiji, to act as the coordination centre for these activities. During the past decade in particular, this proactive approach to disaster management has become more prominent in the evolution of a regional strategy and in the development of individual national plans.

Later, during much of the nineties, the overall objectives of SPDRP proceeded in both its first and second phases to:

- Strengthen human resources and institutional capacity to manage the effects of natural disasters effectively and rapidly.
- Provide appropriate technical support materials for disaster management at national, local and community levels.
- Establish a disaster management information system.
- Achieve an acceptable and sustainable level of regional cooperation and collaboration.
- Empower communities to reduce their vulnerability to natural disasters.
- Establish training capacities at regional and national levels.
- Increase national capabilities to reduce natural disaster risk through development and implementation of mitigation measures.
- Strengthen sustainability through improved regional and national coordination, including mutual support.

To achieve these objectives, activities were clustered under six key programme components:

- In-country training and technical assistance.

- Regional training.
- Disaster mitigation activities.
- Regional support materials.
- Information management.
- Regional cooperation and coordination.

Although SPDRP was planned and coordinated on a regional basis, a high level of support and activity was demonstrated by individual Pacific SIDS. The collective programme also provided a mechanism for international donors to target their assistance for the region as a whole, in a coordinated and focussed way that successfully avoided both duplication of effort and inter-agency competition on all sides. Financial, material and technical support for disaster reduction activities was channelled through SPDRP by Australia, China, Germany, Japan, Netherlands, New Zealand, UK, and US.

In the South Pacific, a risk assessment project, known as the Pacific City Project is being implemented by the South Pacific Applied Geoscience Commission (SOPAC) in the capitals of Pacific SIDS. The project was originally based on earthquake related hazards, but it will now be extended to include other hazards. A micro-zoning map is now in place for the seismic hazard maps.

Response to ISDR questionnaire from Tonga, 2001.

An integral part of the SPDRP was the Pacific Regional IDNDR programme, greatly facilitated by the interest and support of the Australian National Coordination Committee for IDNDR, which encouraged this coordinated regional approach by funding 31 country projects. It also supported several other regional projects, conducted both regional and international meetings, and maintained an active programme disseminating information.

A study by a Fijian, A. Kaloumaira (SOPAC-DMU, 1999a) highlights the state of capacity-building for Pacific SIDS in 1999 in terms that reflect the incorporation of mitigation strategies into national government and non-governmental systems. As the following excerpt points out, the relevance, and therefore the efficacy of disaster reduction is heavily dependent upon the extent that it reflects prevailing social, cultural, and environmental interests of the people it is intended to serve.

The *South Pacific Applied Geoscience Commission Disaster Management Unit (SOPAC-DMU)* was established in July 2000. It was created to provide an expanded approach to disaster risk management throughout the region while maintaining a positive relationship to the previous decade's UNDP-SPO SPDRP programme and its resulting partnerships.

The present goal of the SOPAC-DMU project is to strengthen national disaster management programming capacities and to integrate risk management practices within the economic strategies of countries in order to achieve long-term community resilience. This will be implemented through the CHARM programme, a comprehensive strategy based on sustainable hazard and risk management, but one that also seeks to achieve greater effectiveness in disaster response and recovery practices following disasters.

In addition to the annual Pacific Regional Disaster Management Meetings, other SPDRP-initiated activities are continuing in the SOPAC-DMU programme. Information is disseminated regularly through the publication of SOPAC-DMU quarterly reports and a newsletter. Other major efforts continue to

engage the commitment of international agencies and to develop expanded partner relationships through formal memorandums of understanding with foreign government agencies and international institutions.

The current strategy for improving Pacific regional collaboration rests on two primary objectives: to establish a highly functional coordinating body (SOPAC-DMU), and to strengthen the capacity of national risk officials to accomplish effective disaster management programmes domestically. As no formal institutional mechanisms existed to promote this type of regional collaboration in support of country programmes, this has become a priority. It is also expected that various CHARM strategies will lead to a redefinition of NDMO roles and responsibilities in a number of countries, as disaster risk management is integrated within mainstream government planning. Therefore, advocacy at senior levels of responsibility and appropriate professional development strategies will also receive priority attention.

Comprehensive Hazard And Risk Management (CHARM) programmes are keys to optimising the efficacy of donor aid and achieving sustain-

Pacific Islanders have inherited a resilient social system. The strength of this system is in its extended family values and communal mechanisms that link to national systems. It requires only a little bit of restructuring and advocacy to integrate these into a practical organizational framework that will foster ownership, and promote joint participatory approaches to mitigation management between government and other stakeholders.

The challenges on island nations arise from the expanding progress of development on an essentially limited volume of natural resources. This has forced development to encroach into adverse environments, rapidly increasing community vulnerability to natural disasters. Increasing awareness of mitigation measures through science and technology alone cannot foster preparedness. Strengthening the complementarity between science and the technological tools with the social and humanitarian aspects has to happen.

Mitigation for Pacific disaster managers is in effect being good facilitating managers. It calls for skills to build operational networks so as to entuse effective use of local resources. It requires forging collaborative efforts and technical competence. It needs building partnerships to equip stakeholders for effective field operation.

In the past years, island nations have each established a strong national coordination unit. Importantly, each nation has developed a national disaster management plan that establishes the management structures and allocates responsibilities to key organizations. The support plans and operational procedures are the critical forum that organizes the complexity of community involvement into a system that works in partnership with government.

Mitigation pilot projects through this facilitative management approach are providing the building blocks that successfully incorporate mitigation planning into national systems."

Source: A. Kaloumaira, SOPAC-DMU, 1999a

able outcomes within individual Pacific SIDS. While previous work was undertaken to enhance the existing national disaster management capacities and to strengthen institutional mechanisms, it was related primarily to achieving more effective coordination of emergency response activities. More recently, changing outlooks renewed efforts directed toward more comprehensive programming that placed disaster management responsibilities within a broader risk management framework. A knowledge base and institutional arrangements now exist within the Pacific region to commence individual country programmes and regional collaboration.

There are many government line ministries and departments, together with regional organisations, that are currently undertaking risk management projects. Many of these are undertaken in isolation, with very little information sharing or collaborating partnerships being established, which in turn leads to duplication of effort. In order for national officials to identify programming gaps, they must first have a big picture of all the hazards and the risks that exist, together with an overview of what projects are being undertaken or proposed.

Usually it is only the national planning offices that would have this information. However, research has found that there is not usually a matrix that shows all projects and their linkages. The development of the tool as well as its application, need to be supported with skills, training and advocacy programmes. Because of this, the CHARM approach integrates all disciplines from all sectors and allows the product to be assimilated into the national planning processes.

In order to institutionalise the principles on which CHARM is based, strategic approaches have been identified to translate the concepts into practical forms of activity. They are:

- Creating a regional CHARM development strategy: As a new concept, CHARM requires investment in the professional development of senior offices from stakeholders' agencies. It also requires close collaboration with the region's traditional donors and other regional organizations, as it is a tool envisioned to enhance sustainable development and its many subsequent benefits.
- Fostering national development strategies: CHARM involves creating a participatory inter-agency approach among government and non-government agencies. Its execution requires the involvement of key representatives in both individual and group consultations. The key elements of the CHARM process are:
 - Identifying known hazards.
 - Analysing each hazard against national development priorities.
 - Identifying vulnerable sectors in relation to hazards.
 - Identifying risks and determining the most appropriate ways to manage those

Disaster Management Project in the Pacific

"Disaster management is everyone's business. It is a fundamental component of individual, community, business, NGO and government safety and well-being. It is an essential prerequisite for the achievement of community resilience and sustainable development. [To] ensure an integrated and sustainable approach to comprehensive hazard and risk management is achieved, a major function of the Disaster Management Unit (DMU) will be to act as a coordinator to bring together major stakeholder groups representing regional, governmental, community, corporate and NGO interests. In this broker/facilitator role, the DMU will play a pivotal part in identifying, encouraging and assisting in disaster reduction and risk management activities throughout the region and within Pacific island countries."

The **SOPAC-DMU Disaster Management Project** has four key components:

- Establishment and effective management of the new DMU within SOPAC.
- Guidance of professional skill development among key disaster management officials.
- Technical support for the formulation and management of country programmes.
- Promotion of the benefits of risk management among politicians and policy makers.

The **CHARM programming approach** has been developed to:

- Intrinsically link together development priorities and programmes of individual countries.
- Clearly identify gaps within existing or proposed country project activities.
- Enable SOPAC to work closer with its regional partners and to develop the SOPAC-DMU annual work plan and activities schedule around clearly identified country needs and priorities.



risks within realistic time and resource frameworks.

- Identifying what activities or projects are already being implemented or proposed, both at the country level and by regional organizations.
- Identifying programming gaps.
- Identifying possible options for altered development priorities in light of impact scenarios.
- Determining lead responsibilities and agencies for managing the implementation of the risk reduction strategy.
- Training: As a new concept, the development of CHARM will require time and

the collaborative effort of all major stakeholders for it to be fully implemented. In-country training capacities need to be developed and strengthened to drive this process.

- **Strengthening Information Technology Capabilities:** A critical success factor will be to ensure that national disaster management offices throughout the region are equipped with human and technical capacities to manage multi-disciplinary information resources. This will require appropriate technological tools and computer-based information and communication systems.

Comprehensive Hazard And Risk Management (CHARM)

Six underlying strategic principles to underpin the implementation of CHARM:

- Ensure ownership by the national countries.
- Ensure linkages with National Strategic Plans.
- Ensure linkages and harmonizing with existing systems.
- Ensure appropriate communication and consultation with communities, stakeholders, donors and development partners.
- Establish the principle that risk reduction is vital to national development and that CHARM is a powerful tool in the reduction of risk.
- Ensure CHARM is promoted as a public safety tool, a risk reduction change driver, as cost-effective and as part of an agreed regional programme with donor support.

Immediate challenges to CHARM include:

- Reaching agreement on the processes and means to guide a uniform approach among all participating countries.
- Establishing a regional implementation framework.
- Identifying training strategies and other essential implementation supports.
- Marketing CHARM effectively, with a view towards sustainability.
- Advocating for and gaining high level support for its adoption as a national initiative.



Europe



Western Europe

Research is one of the necessary and fundamental pillars of disaster reduction. *The European Commission (EC)* has promoted collaborative research between commercial interests, universities and research centres in the field of disaster reduction, with an increasing budget allocation for this purpose:

- *European Cooperation in the Field of Scientific and Technical Research (COST)*, which started in the 1960's and has the aim of supporting joint European research.
- *European Strategic Programme for Research and Information Technology (ESPRIT)*, which started in 1983.
- *Framework Programme*, started in 1984 as multi-annual research programmes, are summarized below:

Programme	Duration	EU contribution (Euros millions)
1st Framework Programme (FP1)	1984-8	73,750
2nd Framework Programme (FP2)	1987-91	5,396
3rd Framework Programme (FP3)	1990-94	6,600
4th Framework Programme (FP4)	1994-98	13,200
5th Framework Programme (FP5)	1998-02	14,960
6th Framework Programme (FP6)	2002-06	17,500

Source: *European Commission, Directorate General on Research*

In particular, the launch of the multi-annual research Framework Programme marked the move towards a more targeted collaboration between universities, research centres and private companies. Such strategic partnerships were created with the political intent to pro-

mote social unity in Europe's research community. European research in the field of disaster reduction can be traced back to the EPOCH Programme of 1987-89 and has continued through strengthened political support to the currently envisaged *European Research Area (ERA)* by bringing science closer to the needs of society. Almost 150 research projects have contributed to hazards studies and disaster risk reduction with the support of the EC over the past 18 years.

Another important initiative promoted by the EC is the Global Monitoring for the Environment and Security (GMES) that fills the need for independent information on key issues affecting the world's environment and the security of citizens. It focuses primarily on the use of earth observation techniques for maintaining an adequate long-term watch on key landscape parameters, such as vegetation cover, land use, resource degradation or depletion. It will also call for techniques to support the assessment of natural risks and the management of catastrophic events.

Under the framework of ERA, the EU aims to launch a concerted effort to face problems affecting the economy, society and citizens for which science

holds the key. Furthermore, as sustainable development is a major political objective in the EU's agenda, it demands specific research requiring interdisciplinary approaches. Disaster reduction is one of these areas. ERA can be schematically explained by the following figure:

ERA - background



ERA will work to foster closer collaboration and coordination of research and innovation activities at both the national and European levels by means of networking of key organizations, involvement of main actors, and project integration with EUREKA/“Innovation 2000 Initiative”. The initiative will strive to promote the coherent development of research and innovation policies in Europe by pursuing common targets, benchmarking RTD policies, mapping designated centres of excellence, employing scientific and technological foresight, statistics and indicators, and supporting the improvement of regulatory and administrative environments. Finally, it will strive to ensure the lasting effect of long-term programmes covering elements of variable scale.

Specific research priorities that are dedicated to disaster reduction include the following:

- Mechanisms of desertification and natural disasters where research will focus on large scale integrated assessment of land/soil degradation and desertification; long term forecasting of hydro-geological hazards monitoring; mapping and management strategies; improved disaster preparedness and mitigation.
- Impact of environmental issues on health, including methods for risk assessment and the mitigation of risks of natural disasters to people.

In addition, research will be geared to analysing links between climatic change and natural disasters by concentrating on the development of instruments that can identify and gauge hazards better, or by working to reduce the consequences

of natural hazards such as floods, storms, fires, avalanches and landslides.

Within the sixth framework programme, the *Directorate General Joint Research Centre (DG JRC)* has a key role of supporting policy development through applied research. The JRC will concentrate on issues of natural and technological hazards and will continue to support efforts which develop a European framework for forecasting, assessing, managing and reducing risks in the community. The JRC will carry on with institutional projects in the area of disaster risk reduction, including:

- *Natural and Environmental Disaster Information Exchange System (NEDIES)*
<http://nedies.jrc.it>
- *Natural Hazards*
<http://natural-hazards.aris.sai.jrc.it>
- *European Laboratory for Structural Assessment - Earthquake Engineering (ELSA)*
<http://structural-mechanics.jrc.it>

The JRC will further develop a system approach to the management of these hazards and efforts will be centred around its operation and improvement of harmonised European monitoring systems. A link to the GMES initiative will be developed. The JRC will focus particularly on the development of EU policy applications which contribute to the GMES concept in three areas of work: support to international environmental agreements, assessing risks and hazards, and evaluating environmental stress.

In parallel to the JRC projects, other EC Directorates General are supporting complementary initiatives in disaster risk management. In the DG Environment there are projects which supplement the research carried out in the EU. Some are linked to civil protection areas of cooperation such as:

- Major Project on Prevention
<http://europa.eu.int/comm/environment/civil/prote/cpactiv/cpmaj01.htm>
- Flood projects:
PREMO98'
<http://europa.eu.int/comm/environment/civil/prote/cpactiv/cpact05g.htm>
Reduce the Risk of Floods in the River Geul Catchment.

<http://europa.eu.int/comm/environment/civil/prote/cpactiv/cpact05c.htm>
Flood and Erosion Management in Alpine River Basins.

<http://europa.eu.int/comm/environment/civil/prote/cpactiv/cpact05e.htm>
Development of rescue actions based on dam-break flood analysis (RESCDAM).

<http://europa.eu.int/comm/environment/civil/prote/cpactiv/cpact05h.htm>
Analysis of the 1993/1995 Floods in Western Europe.

<http://europa.eu.int/comm/environment/civil/prote/cpactiv/cpact05a.htm>

The *European Environment Agency's (EEA)* core task is to provide decision-makers with the information needed for creating sound policies to protect the environment and support sustainable development. It carries out studies on issues such as the impact of extreme hydrological disasters in relation to Europe's water resources. It also supports the EC in diffusing information on the results of environmental-linked research. <http://org.eea.eu.int>

The *EUR-OPA Major Hazards Agreement* constitutes an open agreement on setting up cooperation in major natural and technological disasters. It has been signed by 23 Member States of the Council of Europe. Its aim is to carry out a multidisciplinary study of the cooperation methods through political, scientific and technical activities.
<http://www.europarisks.coe.int>

Central Europe

The *Central European Disaster Prevention Forum (CEUDIP)* was established in 1999 through the joint efforts of the National Committees for the IDNDR from the Czech

Republic, Germany, Hungary, Poland and Slovakia, to continue activities of the ISDR. The specific motivation was to formulate an institutional mechanism that could increase the collaboration in disaster reduction related to all types of hazards, and particularly floods, shared among these neighbouring countries.

Following the shared experience of the destructive Oder River floods early in 1999, the initial interest that stimulated the participating countries was a common desire to improve early warning capabilities both among and within the individual countries. Other issues have emerged subsequently, such as the role of the media in disaster reduction, national legislation about declared emergencies, the participation of civil society in disaster reduction activities, and the preparation of training materials.

The forum has conducted annual meetings since 1999 in Prague, Warsaw, Bratislava and Bonn. The members of CEUDIP agreed at their meeting in 2000 that closer cooperation would be required with EU policies related to civil protection and disaster reduction. As four of the CEUDIP countries are candidates for future membership in the EU, they have assigned particular relevance to assess their present capabilities.

In particular, they have recognized the growing importance of strong and active participation of the public, working through civic groups and other NGOs to supplement the efforts of government institutions and agencies. This approach to foster common and improved regional standards was augmented at CEUDIP's meeting in Bratislava in 2001 when it was agreed to develop a project of cooperation with the EU institutions involved with emergencies, risk and disaster reduction issues.



Future challenges and priorities

In reviewing the accomplishments of regional cooperation, interaction and experience for disaster risk reduction in different parts of the world, two success factors stand out: the sustained commitment of permanent facilities or institutions having the primary objective of promoting the multi-disciplinary aspects of disaster risk management, and an incontrovertible belief in the shared values of countries of the region concerned in their various forums and agendas.

It is clear that both policy interests and material resources must transcend strictly national outlooks. Mobilising regional or sub-regional efforts must support national institutional and capacity strengthening. The examples cited demonstrate that in some instances such awareness is thrust upon a region abruptly as through Hurricane Mitch in Central America, or it may evolve more methodically through shared orientations as is the case for Pacific SIDS.

In all cases there needs to be an established and consistently supported institutional hub that can both promote and respond to multi-disciplinary and inter-state issues related to disaster risk reduction.

The function which these institutions serve as a dissemination vehicle, acting as clearing houses for diverse material that merges political, professional and public interests, should not be overlooked as a critical contributor to building regional collaboration. There is little doubt that the momentum and resulting success that has been realized in terms of regional cooperation owe much to the efforts of both regional and international organizations such as PAHO, OCHA/UNDP, OAS, CEPRE-DENAC, PREANDINO in the Americas, ADPC and ADRC in Asia, and SOPAC in the Pacific.

While SADC and IGAD currently display some initial policy impetus for disaster risk awareness in Southern and Eastern Africa, the fuller realization of practical forms of institutional commitment remain a challenge in Africa. Throughout the Arabic-speaking world and among all European countries, there is an absence of consolidated recognition or material support for a sustained regional focus.

An international framework of regionally focussed institutions could be created that are dedicated to the various aspects of disaster risk management practice.

