



### 3.3 Regional cooperation, interaction and experience

*Hazards often reflect regional characteristics grounded in the predominant geographical conditions. Historic events and common political features also contribute to shared experiences within different regions around the world.*

*While the impetus may vary in different regions, natural hazards and the risks they pose to people present opportunities for neighbours to strengthen 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 wide range of interests and abilities, there is a growing requirement for more political and professional interaction through regional cooperation.*

*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.*

*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 a few of these examples display organizational developments created expressly for the purpose of disaster risk management highlights 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 taking place in many countries in the Americas with greater attention given to risk reduction. Triggered by several major disasters during the last decades and further motivated by promotional efforts and technical cooperation during the 1990s, the region has been fortunate to develop relatively advanced concepts of risk management. This has brought together the combined efforts of social research, practical experience and frequent opportunities to engage an expanding range of professional interests.



There have been additional mutually reinforcing efforts and long-standing involvement of such regional and international organizations as the Pan-American Health Organization (PAHO), the International Federation of Red Cross and Red Crescent Societies (IFRC), and the Office for Foreign Disaster Assistance/USAID (OFDA/USAID).

Since 1973 the UN Economic Commission for Latin America and the Caribbean (ECLAC) has promoted the ideas that risk management and vulnerability reduction are fundamental to development policies in any systemic view of competition, equity, sustainability and governance issues. These views were initially publicized in ECLAC's first manual on the subject in 1991, and they were more recently expressed in an updated version in 2002.

More recently, UNDP and UNICEF have joined in providing technical cooperation, training and public awareness for vulnerability and risk reduction. Other organizations have encouraged the development of new capabilities over many years, often built around strategic programmes in social sectors such as health and education. These include efforts by the Organization of American States (OAS) and the Network for Social Study of Disaster Prevention in Latin America (LA RED).

Although it is not always explicit in government and society discourse, more people now recognize

**Box 3.10****High level commitment**

At the Third Summit of the Americas, held in 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.”

the relationship between inadequate development practices and the development of social vulnerability that contributes to increased disaster risk.

Moreover, the relationship between environmental degradation and hazard incidence increasingly has been brought to the forefront by institutions such as the Central American Commission for Environment and Development (CCAD), the World Conservation Union (IUCN), the Inter-American Development Bank (IADB), Corporación Andina de Fomento (CAF), the Caribbean Development Bank (CDB) and the World Bank.

Climatic variability, as perhaps manifested most readily to the general public by the El Niño/La Niña phenomenon, has prompted the World Meteorological Organization (WMO) and regional organizations to proceed beyond areas of scientific concern and technical research. More programmes are focusing on means by which available information can more readily be applied for early warning and institutional strengthening for risk reduction.

**Central America**

The impact of consecutive catastrophes from 1997-2001 has been important in changing the way disasters are conceptualized in Central America. As mentioned in chapter 3.1, Hurricanes Georges and Mitch devastated the economies throughout the region and caused much damage to personal property from floods across the countryside.

An economic assessment undertaken by ECLAC with the involvement of UNDP and other

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

In addressing these conditions, the governments of the region, working together through the Coordinating Centre for the Prevention of Natural Disasters in Central America (CEPRENAC), have confirmed a political commitment to risk reduction and reconstruction processes through social transformation. CEPREDENAC also involves many women at all levels and has promoted gender-sensitive social audits of disasters as well as gender-inclusive mitigation strategies. Their experience is a valuable example for the world.

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 through shared resources. This is reflected by their 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 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; and
- enhancing risk management at local levels.

There has been more collaboration with community and municipal organizations such as the Community Network for Risk Management, the Federation of Community Organizations and the Central American Municipal Federation.



There is a promising expansion of programmes dedicated to reducing vulnerability to natural hazards at local levels, and building national capacities and exchanging experience and information regionally.

Beginning in July 2001, UNDP launched a two-year Regional Programme for Risk Management and Disaster Reduction. This concentrates 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 focus on national risk scenarios and the identification of priority research and training requirements of the region.

However, challenges still remain in moving successfully from the expression of political intentions to fundamentally changed policies and

practices. Advances will require enormous efforts including greater social consciousness, legislative and institutional changes, modified social practices, the reduction of corruption, and the mobilization of the private commercial sector. 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.

Another programme of regional collaboration and capacity-building was launched by the Swiss Agency for Development and Cooperation following Hurricane Mitch. The Disaster Prevention Programme was conceived to run from 1999-2003 with a budget of US\$ 5 million. Support was offered to El Salvador, Honduras and Nicaragua. The programme concentrates on raising awareness of natural hazards, capacity-building and institutional strengthening. It works with an array of institutional actors including national government agencies, municipalities, scientific and technical institutions and universities.

#### Box 3.11

##### Coordinating Centre for the Prevention of Natural Disasters in Central America

The Coordinating Centre for the Prevention of Natural Disasters in Central America (CEPREDENAC) has been key in realizing change. 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 WFP in food security matters; and the Central American Transport Committee in communications and transport. It has pursued additional endeavours to further risk reduction in 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.

**Box 3.12****Community-based regional initiative**

Initial consideration given to community-based disaster reduction outlooks was boosted by a German Agency for Technical Cooperation (GTZ) inspired project called 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.

The Masica area of northern Honduras became a regional and international example of good practice. After early warning schemes had been consolidated in different areas, local communities – 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.

**The Caribbean**

Since its establishment in 1991 by the Caribbean Community (CARICOM), the Caribbean Disaster Emergency Response Agency (CDERA) has worked to create a methodical approach for developing disaster management programmes among its member states, including inter-island projects.

Originally initiated to help countries cope after a disaster, increasingly, more emphasis has been given to disaster risk reduction as part of development and environmental concerns. Disaster reduction has been introduced in most regional initiatives at policy level, including through the Programme of Action for Small Island Developing States, as a priority area of action in CARICOM, and through the programmes of the Association of Caribbean States.

These interests are reinforced through the biennial Caribbean Natural Hazards Conferences organized by the primary regional disaster management stakeholders. These have included the University of the West Indies, CDERA, USAID and UNDP.

Furthermore, the assessment of vulnerability has become a key policy area for CARICOM. It has been raised in several forums including those of

the World Bank, IADB, OAS and the Commonwealth Secretariat.

At the Conference of Heads of Government of the Caribbean Community, the highest collective decision-making body in the region, the relationship between disaster management and the environment has been declared a matter of cabinet level responsibility.

Other agencies have also contributed to the development of capacities by supporting 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, giving particular attention to training and creating a core of professionals as a source of regional expertise.

**Andean countries of South America**

Five countries which share Andean topography and are exposed to a high level of risk often must cope with disasters. Bolivia, Colombia, Ecuador, Peru and Venezuela all experience earthquakes, volcanic eruptions, floods and droughts. From a socio-economic point of view, the greatest impact is felt from hydrometeorological disasters.

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

In these Andean countries, the use of disaster risk management as a public policy tool within development organizations is still in the early stages of consolidation. A lack of official institutional frameworks explains the relatively limited public awareness about risk in each of these countries.

However, there has been a growing recognition of the need to incorporate disaster risk reduction into



### Box 3.13

#### Andean Regional Programme for Risk Prevention and Reduction

The overall objective of the Andean Regional Programme for Risk Prevention and Reduction (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 for development planning.

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;
- promote region-wide risk prevention programmes, primarily those related to awareness of the threats to which there is the greatest vulnerability;
- ensure the feasibility of, and to support and coordinate technical cooperation initiatives among the Andean countries;
- encourage supra-regional bodies and international organizations to propose and implement cooperation projects at the national and regional levels; and
- promote the institutionalization of prevention in the Andean region.

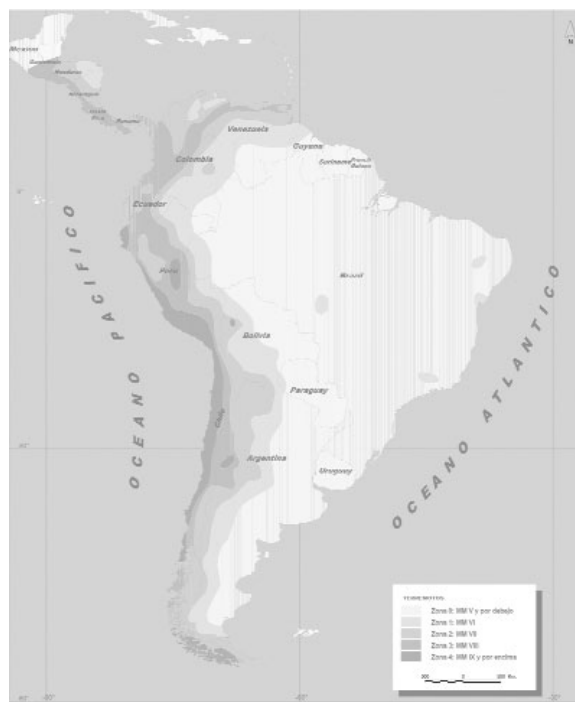
#### Strategic areas

To reach its objectives, PREANDINO has defined a strategy 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;
- 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 technical 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; and
- 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 and risk 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.



the broader context of development initiatives. The common historical and cultural roots of these countries further encouraged their institutional cooperation, which has been enhanced through the Andean Integration System.

In 1997-1998, the presidents of these five Andean countries requested the Andean Development Corporation (ADC) to conduct a study of the economic and social impact of El Niño on their countries, and to analyse the existing institutions dealing with disaster prevention. This resulted in an institutional and technical review of each country, highlighting institutional weaknesses and a particular need for greater regional coherence in risk reduction matters.

Subsequently, in 1999, the presidents provided ADC with a mandate to coordinate activities necessary to strengthen risk prevention standards and institutions of each country and to develop principal regional projects that share those aims. To pursue these objectives, ADC established the Andean Regional Programme for Risk Prevention and Reduction (PREANDINO) in late 2000 to support the creation of a network that will foster the exchange of experience and contacts. Resource capabilities are being established in each country to promote permanent channels to exchange information among research centres, producers of hazard-related information, and potential users within various professional disciplines.

In parallel developments, representatives of the national civil defence organizations of the Andean countries have met several times since 2000 to consolidate a regional basis to improve coordination of their response and preparedness activities. The Southern Command of the United States Army has supported these efforts, among others.

All of these activities led to the establishment of an Andean Committee for Disaster Prevention and Response within the Andean Integration Community in July 2002. It was developed in accordance with the objectives of ISDR and supported by several regional institutions and bilateral development agencies in order to promote improved and better integrated risk management activities in the area.

## Africa

The African continent is very vulnerable to disasters from natural causes, particularly from hydrometeorological hazards. The vulnerability of people and their livelihoods remains high and is rising, influenced by endemic poverty, with dire consequences for the vulnerability of the entire continent. Tragically, there is a vicious cycle of disasters devastating the economic base, thus worsening poverty, while high poverty levels diminish the ability to avoid, reduce or mitigate risks or to recover socio-economic productive capacity.



Other negative factors contribute to the high and increasing vulnerability in much of Africa. A rapid growth in population often exceeds resources available to provide adequate essential social services, or to ensure economic well-being. The devastating social and economic consequences of prevalent infectious diseases, the high rate of urbanization, and too often troubled or problematic elements of governance all frustrate sustained commitments to managing risk in many African countries.

Both the prevalence and the persistence of these conditions command the attention of many African leaders, and warrant increased regional collaboration. There have been several expressions of concern at the many and accumulating consequences of natural disasters comprising some of the major constraints to sustainable development. African leaders have identified disaster reduction as a priority area of action crucial for both economic and sustainable national development for upcoming years.

This was the case in two annual meetings of the African Ministerial Conference on the Environment held in conjunction with preparation for the World Summit for Sustainable Development (WSSD) held in Johannesburg, South Africa in 2002. The recommendations of the WSSD further amplified these concerns and the unavoidable relationships between the consequences of disasters and national development.

<<http://www.unisdr.org/eng/risk-reduction/wssd/>>

While hydrometeorological hazards represent recurrent risks to African countries, they also



provide an important context to marshal professional resources and to motivate institutional commitments to risk management on a regional or subregional basis. Extended droughts in the Sudan-Sahel region in 1970-1974 led directly to the formation of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) in West Africa, in 1974. The 1984-1985 drought that caused acute food insecurity and famine that devastated the livelihoods of more than eight million people in the Greater Horn of Africa directly influenced the creation of the Intergovernmental Authority on Drought and Development (IGADD) in 1986. This institution led to the development of the present Intergovernmental Authority on Development (IGAD) to address broader environmental and developmental issues.

Other specialized technical institutions have been created to address the consequences of hydrometeorological hazards in Africa through various forms of regional and subregional cooperation. Often with the support of UN agencies such as WMO, UNDP, FAO and UNEP, technical institutions have been created to share information and limited professional resources to best effect. These include the activities of the Africa Centre for Meteorological Applications to Development (ACMAD) located in Niamey, Niger; the Regional Centre for Training and Application in Agrometeorology and Operational Hydrology (AGRHYMET) that is linked to CILSS also in Niger; and the Drought Monitoring Centres, located in Harare and Nairobi where they are linked to IGAD and SADC, respectively.

In Eastern, Central and Southern Africa, major shifts are taking place to revise and expand the roles of IGAD and SADC institutions to identify and manage risks on a regional basis. Initiatives have been taken in both regions to strengthen the exchange of information, to recognize the need for more operational cooperation among countries, and to adopt broader political and technical commitments to risk management policies. Challenges remain though to move national policies beyond under-resourced and often uncoordinated emergency relief assistance functions.

To support this emerging process of regional and subregional cooperation, the ISDR Secretariat and

the Disaster Reduction Programme of UNDP's Bureau of Crisis Prevention and Recovery have both opened African regional offices based in Nairobi, Kenya. A review of the current institutional status and related governmental views pertaining to disaster risk reduction has been conducted, and a regional conference on early warning was held in June 2003. By recognizing achievements, identifying constraints and gaining commitments for further development, this latter meeting prepared a joint African input for the global conference on early warning held in Bonn, Germany in 2003.

## East Africa

### Intergovernmental Authority on Development

The Intergovernmental Authority on Development (IGAD) is a subregional authority composed of seven member states in East Africa. Together, the countries of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, and Uganda occupy over 5 million square kilometres, and have a combined population of more than 154 million people.

More than 70 per cent of the inhabitants live in rural settings where poverty is acute. Many of them migrate and pursue their livelihoods over considerable distances. Social services are often few, and the environment is both fragile and subject to serious degradation. Throughout the region, the economy depends largely on agriculture, including livestock production, and is heavily influenced by climatic and geographical conditions. When drought occurs in the region, the impact often lingers and is widespread and severe. Floods also have proven to be destructive.

The basis for IGAD was created in 1986 by the expression of a common objective among the member states to work together to mitigate the effects of drought in the region and to address more generally the problems associated with desertification and food insecurity. The authority originally contained two technical departments: agriculture and food security; and the environment and natural resources.

From 1986-1995, the agriculture department initiated programmes including a food security

strategy and an early warning system for drought. The environment department outlined several programmes to combat land degradation and desertification, planned an integrated information system, conceived a disaster management strategy, and promoted environmental education and awareness programmes. However, progress was very limited as most of the strategies were not fully implemented; the disaster management strategy conceived in 1990 remained dormant for six years.

In taking account of these difficulties, in 1996 the mandate of IGAD was expanded, adopting a broader approach to developmental objectives. A department of political and humanitarian affairs and a department of economic affairs and infrastructure were added. Disaster management was highlighted and placed under a revised humanitarian and conflict resolution department, responding to important subregional conditions at the time.

More importantly, the understanding of what constitutes possible hazards and the conceptual framework of disaster management systems has continued to evolve. As part of this revised IGAD strategy, national officials ranked hazards in the region in three categories based on a combination of past consequences, but also by taking account of other criteria that previewed a subregional disaster risk assessment. These include such parameters as considerations about the pace of hazard onset, potential magnitudes or severities that could be expected, frequency of occurrence, and most importantly the anticipated possible impacts of a hazard on the society and the environment. Potential risks have grown to include pandemic and epidemic diseases, environmental hazards and industrial accidents.

IGAD also revisited its disaster management strategy and redefined it to elaborate new programme approaches. The revised objectives establish capabilities needed to ensure the availability of minimum needs for food, water, shelter, health and security through assistance which is appropriate in terms of type, timing, location, method of provision and duration for this purpose.

This has been crucial for implementation especially at the national and sub-national levels where action eventually would need to take place so that lives, assets and the environment are safeguarded.

Importantly, the specific objectives that were outlined sought to promote the development and implementation of suitable national disaster preparedness strategies. These called for several related needs:

- a framework of principles, policies, legislation and agreements at regional and national levels which could enable disaster preparedness and response measures to be implemented by a variety of agencies;
- national, regional and international agencies that could collaborate effectively in disaster preparedness and response;
- capabilities to ensure that disaster management intervention could be based on adequate and timely information including early warning and vulnerability assessments;
- awareness of communities exposed to hazards so that they and their related institutions could act promptly and effectively when emergency conditions occurred;
- mechanisms and infrastructure for timely identification and mobilization of resources in times of threat; and
- appropriate mechanisms to target and implement timely assistance for those people most in need.

Overall, the IGAD strategy for disaster prevention and preparedness can be summarized as being shaped to tackle the root causes of disasters through long-term programmes for sustainable development. This needs to be based on an orientation that can identify vulnerable people within communities, and then to work to strengthen their own social coping mechanisms with particular attention given to community participation and decision-making. The revised programme was adopted by Heads of State of all seven IGAD countries in October 2003.

Accomplishment will depend on the extent that the following principles can be realized:

- strengthening essential policies, legal and institutional frameworks at national levels;
- improving early warning and information systems;
- building capacity and undertaking training in disaster management;
- increasing public education and raising awareness;





- establishing linkages between national systems and subregional capabilities;
- demonstrating functions that add value to subregional mechanisms; and
- integrating gender issues into subregional disaster management strategies.

From its inception, IGAD has recognized the importance of developing a viable early warning system. As efforts proceed, information is being consolidated to provide more dimensions to the social and economic consequences of risks. As the early warning information system is being strengthened, it currently includes a combination of market and food prices on the Internet, reports about food production prospects and requirements, as well as the use of remote sensing technology to monitor the behaviour and pattern of rainfall and biomass production in the region.

In order to strengthen sustainable institutional frameworks, the Drought Monitoring Centre in Nairobi (DMCN) has become an integral part of IGAD's subregional early warning system. Its work is supplemented by efforts of USAID's Famine Early Warning System Network (FEWSNET); FAO's Global International Early Warning System (GIEWS); WFP's Vulnerability Assessment and Monitoring programme (VAM); and the field work of the UN Office for the Coordination of Humanitarian Affairs (OCHA) in continuously assessing the food prospects and needs in the subregion.

In terms of regional cooperation in the meteorological data exchange and sharing, DMCN receives inputs from most of the global and subregional programmes. These are concerned primarily with seasonal rainfall forecasting, and the analysis is integrated into its own seasonal rainfall forecasts.

Such consensus seasonal rainfall forecasts are issued publicly in workshops, the Greater Horn of Africa Climate Outlook Forums, held on a rotating basis among the countries of the subregion. Participants include a variety of both technical and policy stakeholders and users of the information.

Climate specialists are drawn from the region as well as from other regional and international institutions, and participating hydrologists, water

managers and water users represent both governmental and private sector interests. Farmers, public health officials, disaster managers, and commercial representatives are included as primary users of the information, with members of the media participating as key communicators. External and technical agencies such as WMO, the US Geological Survey (USGS), US National Oceanic and Atmospheric Administration (NOAA), USAID, FAO, UNEP provide additional support to subregional programmes.

The dissemination of the forecasts is accompanied by a basic interpretation of the potential impacts of the seasonal outlook. While particular attention is given to the possibilities of drought and floods, the implications for public health, hydropower generation, communications and other sectors are also conveyed.

The workshops are generally preceded by a one or two day media and users workshop to increase the familiarity with meteorological terminology. National workshops with similar participation are conducted immediately after the subregional forums.

After the initial presentation of the seasonal forecasts at the forums, subsequent DMCN monthly bulletins update the seasonal outlooks. Together with regular WMO communications, the process associated with these climate outlook forums has proven to be very useful in raising the understanding and the anticipation of potentially hazardous flood and drought conditions in the region.

Additional work is anticipated to link warning capabilities to disaster management activities in the subregion, based on a network that can facilitate the collection, synthesis and dissemination of data and information between local, national and subregional levels of interest. Efforts will concentrate on the wider application of advanced technologies, using more Internet-based information sources including those drawing from remote sensing. It will be important to establish technical teams to integrate data for planning and decision-making, as well as building a more permanent basis for continuous learning and a viable operational network.

Parallel activities are envisaged within IGAD's agricultural production systems. The authority has

produced a scheme to manage crop production system zones. This valuable activity will conduct detailed evaluations of seasonal crop production estimates using satellite technology, used in conjunction with GIS technology.

### Southern Africa

Until the early 1990s, perceptions of risk in the region were shaped predominantly by armed conflicts and their destabilizing consequences. Unlike institutional developments in some other regions of the world, the first political engagements with natural disaster reduction in Southern African countries were driven by the protracted ravages of drought or the disruption of livelihoods caused by these other emergencies.

There are now a number of regional disaster reduction initiatives in place, with their antecedents dating back to the 1980s. Then, the Southern African Development Coordination Conference (SADCC) 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 were made to improve regional road and rail links. These were considered vital to the growth of struggling economies and 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 consolidated crop information provided by national early warning units of the countries and monitored trends in regional food security. SADCC mechanisms played key roles in assessing and managing risks by establishing systems for early detection and response to possible food shortages.

Other political, social, economic and environmental changes have continued to shape the risk landscape in Southern Africa. Many segments of the rapidly growing population remain without acceptable levels of social services or sufficient economic opportunities. These

conditions are compounded by the rapid and often insufficiently planned growth of African cities and their increasingly concentrated populations.

The countries of the region already know they can expect more hazards 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.

### Southern African Development Community

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. As SADCC's successor, the Southern African Development Community (SADC) comprises 14 member states extending south from the Democratic Republic of the Congo and Tanzania. With a collective population of approximately 200 million, SADC members are: Angola, Botswana, the Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe.

While the overall purpose of the regional political community is to foster the economic integration and the promotion of peace and security among member countries, SADC is devoting progressively more attention to issues of public vulnerability, regardless of whether potential disaster threats result from climatic hazards, conditions of poverty or disease.

As its technical engagement in disaster reduction has continued to evolve SADC has been working 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.

In May 2000, the SADC Sub-Sectoral Committee on Meteorology meeting was convened. There, the directors of the 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. By the end of 2001, SADC had developed and approved a multisector disaster management strategy for the region, and the SADC Water Coordination Sector drafted a Strategy for Floods and Drought Management in the SADC Region.

Meanwhile, SADC leaders were spurred on by the severity of the floods earlier in the year which revealed inadequate disaster management linkages among the nine countries affected. By August 2002, the SADC Council of Ministers approved an overarching SADC Disaster Management Framework. This called for an integrated regional approach to disaster management, and it established a full Technical Steering Committee on Disaster Management.

While the political process has since proven to be sporadic, there are some instances in which efforts are proceeding to reduce risk and to focus more attention on anticipating, mitigating and responding to sudden-onset hazards. Moreover, some of the governments in the region are proceeding to revise their own disaster legislation to place greater emphasis on natural disaster risk.

Several of SADC's key technical units play critical roles in disaster reduction. The SADC Food, Agriculture and Natural Resources directorate (FANR) oversees regional food security issues and several other programmes related to the management of natural resources. The Food Security Programme and related Regional Early Warning Programme provide 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 data from GIEWS, among other information.

The SADC Regional Remote Sensing Programme collaborates closely with the Regional Early Warning Programme 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 is also used to monitor and map land-use patterns, land degradation and desertification conditions.

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 the national meteorological and hydrological services in the region, and with technical support from WMO, the centre generates highly regarded seasonal rainfall forecasts.

It also produces climate analysis and information including 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.

DMC coordinates the Southern Africa Region Climate Outlook Forum (SARCOF) every year. 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 multisectoral users in Southern Africa.