

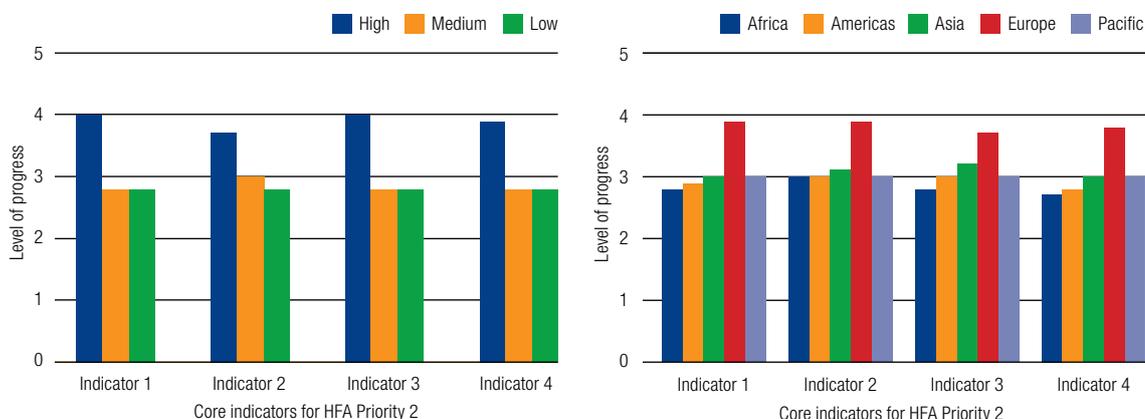
| Indicators  | Challenges reported  | Progress reported: trends and examples  |
|---|--|---|
| <b>Indicator 4</b><br>A national multisectoral platform for disaster risk reduction is functioning. | <ol style="list-style-type: none"> <li>Challenges exist in the creation of an integrated multi-sector institutional system for disaster risk reduction that could bring greater cohesion and synergy to ongoing sector-based approaches.</li> <li>Difficulties in gaining commitment to disaster risk reduction from development sectors and local governments, as well as other stakeholders such as the private sector or civil society, due to a lack of political authority and the necessary technical capacities.</li> </ol> | <ol style="list-style-type: none"> <li>Countries such as Egypt<sup>6</sup> have created national committees, while in other countries such as Colombia, Costa Rica, Panama and the United States of America, national platform mechanisms have been adopted.</li> <li>Central African states have addressed disaster risk management in a common strategy undertaken by the Economic Community of Central African States (ECCAS)<sup>7</sup>, which adopted an environment and natural resources policy with a sub-regional plan of action in October 2007. The strategy aims to build the capacity of national and sub-regional authorities; review and enforce legal frameworks and disaster risk reduction strategies within ECCAS and member states; and to formulate and implement national strategies for disaster risk reduction. This includes the establishment and reinforcement of national platforms, inter-ministerial committees and an intergovernmental committee for the ECCAS region.</li> <li>The National Controller's Office of Colombia carried out an audit of disaster risk reduction implementation across government, indicating a commitment by the state as a whole to ensure implementation across sectors and local governments.</li> </ol> |

### 5.2.2 Hyogo Framework Priority for Action 2: Identify, assess and monitor disaster risks and enhance early warning

The starting point for reducing disaster risk and for promoting a culture of disaster resilience lies in knowing the hazards and the physical, social, economic and environmental vulnerabilities to disasters that most societies face, and the

ways in which hazards and vulnerabilities are changing in the short- and long-term, followed by action taken on the basis of that knowledge. Figure 5.7 shows the average progress towards the four indicators for this priority for high-, medium- and low-income countries, and the average progress by region. Table 5.2 details the challenges and progress reported.

**Figure 5.7:**  
Average progress towards indicators for Priority for Action 2 by income class and region



| <p><b>Table 5.2:</b><br/><b>Challenges and progress reported for HFA Priority for Action 2: Identify, assess and monitor disaster risks and enhance early warning</b></p> | <b>Indicators</b>  | <b>Challenges reported</b>   | <b>Progress reported: trends and examples</b>  |
|---|--|--|--|
|   | <p><b>Indicator 1</b><br/>National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.</p> | <ol style="list-style-type: none"> <li>1. Most reports acknowledge that national and sector emergency plans are not based on risk assessments. Challenges include a generalized absence of sub-national or local data, particularly for new or less frequent hazards; weak or non-existent specialized institutions; financial constraints and a dependency on external partners that sometimes do not respond to national priorities.</li> <li>2. While progress is being made in single hazard, sector and territory specific assessments, there is far less progress in achieving comprehensive national multi-risk assessments.</li> <li>3. Experiences of institutionalization and application of such assessments in development and territorial planning, or for the design of building codes, is rarer still.</li> <li>4. Responsibilities for both hazard monitoring and risk assessment are split between multiple institutions in most countries. Multi-risk assessment has no institutional 'home'.</li> <li>5. Lack of standardized data sources and methodologies is a challenge reported, for example, by Indonesia that makes it difficult for results to be applied systematically across sectors.</li> </ol> | <ol style="list-style-type: none"> <li>1. Australia and New Zealand report a comprehensive, integrated, multi-hazard approach to risk assessment. Other examples include the state Government of Gujarat in India and the Cayman Islands.</li> <li>2. Switzerland aims to cover the entire country with hazard maps and assessments by 2011, for both geological and hydrological hazards, and have them applied in land-use planning and building regulation by municipalities.</li> <li>3. In Bangladesh progress has been made in the agriculture sector, while hospitals, schools, water and sanitation have been identified as urgent priorities.</li> <li>4. Progress in community-level risk assessment is also reported, for example in the Philippines through the Hazards Mapping and Assessment for Effective Community-based Disaster Risk Management project<sup>8</sup>.</li> <li>5. The IADB (Inter-American Development Bank)<sup>9</sup> is enabling the development of indicators for disaster risk management for 12 countries in the Americas. The Central American Probabilistic Risk Assessment<sup>10</sup> is another ongoing initiative which is a comprehensive disaster risk assessment for Central America.</li> <li>6. In Africa, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Madagascar, Malawi, Mauritius, Mozambique, Seychelles, South Africa and Tanzania, all report undertaking disaster risk assessments for specific sectors and hazards.</li> </ol> |
|   | <p><b>Indicator 2</b><br/>Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities.</p>  | <ol style="list-style-type: none"> <li>1. Difficulties occur in coordination, sharing information and adopting common data standards and methodologies, when hazard monitoring is spread across many specialized institutions.</li> <li>2. Lack of resources to acquire and maintain equipment and the general lack of human technical capacities is reported as a constraint.</li> <li>3. Governmental responsibilities for hazard monitoring often rest with a wide range of scientific and technical bodies responsible for meteorology, geology, seismology, oceanography etc.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Hazard monitoring is recognized as a key activity that underpins both risk assessment and early warning.</li> <li>2. Development of a seismic monitoring network in Tajikistan<sup>11</sup> is illustrative of the progress being made by many countries in improving hazard monitoring.</li> <li>3. The National Service of Territorial Studies, El Salvador<sup>12</sup> has created a single institutional platform that brings together all the specialized scientific organizations under one framework and integrates hazard information to feed into risk assessments. Other countries are considering similar initiatives.</li> </ol>  |
|   | <p><b>Indicator 3</b><br/>Early warning systems are in place for all major hazards, with outreach to communities.</p>  | <ol style="list-style-type: none"> <li>1. There is a lack of technical capacities, equipment, human and financial resources.</li> <li>2. Difficulties occur in communicating early warning information to poor and vulnerable communities. Coordination is lacking between the institutions responsible for disaster preparedness and those responsible for hazard monitoring.</li> <li>3. Strengthening of local capacities and the linking of hazard monitoring to disaster preparedness systems is reported as a common challenge.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Institutional commitment to developing end-to-end early warning systems for major and frequent hazards has been secured in all reporting countries in Asia.</li> <li>2. Good progress has been reported in the use of both technology and local capacity to develop effective early warning systems for frequent hazards, such as cyclones and floods, in Lao People's Democratic Republic, Sri Lanka and Bangladesh.</li> <li>3. Italy reports that early warning has been improved since the National Warning System has been in place. Information is compiled by a Central Functional Centre and Regional Functional Centres, and is circulated daily among decision makers of the National Civil Protection System.</li> </ol>  |

| Indicators  | Challenges reported   | Progress reported: trends and examples  |
|---|---|---|
| <p><b>Indicator 4</b></p> <p>National and local risk assessments take account of regional/transboundary risks, with a view to regional cooperation on risk reduction.</p> | <ol style="list-style-type: none"> <li>1. Transboundary initiatives are mainly dependent on member states' contributions, which implies that the signing of cooperation agreements is not necessarily reflected in implementation, or incorporated into national disaster risk reduction planning.</li> <li>2. There is an absence of common databases and equipment to monitor and assess transboundary risks. Countries report unwillingness to share sensitive information with neighbours on particular hazards.</li> </ol> | <ol style="list-style-type: none"> <li>1. Germany is an active member of several transboundary international commissions for the protection of the Rhine, Danube, Elbe and Odra Rivers, which all carry out flood risk assessments.</li> <li>2. In September 2007 government representatives of Albania, Bulgaria, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro, Moldova, Romania, Slovenia and Turkey took an important step forward in their efforts to improve the region's disaster preparedness, prevention and response capability and coordination by signing a Memorandum of Understanding on the Institutional Framework of the Disaster Preparedness and Prevention Initiative for South Eastern Europe<sup>13</sup>.</li> <li>3. Armenia has signed an intergovernmental agreement on seismic risk reduction with the Islamic Republic of Iran and the Republic of Tajikistan; an international Armenian–Russian project on seismic hazard prediction in the Caucasus has been renewed between Armenia and the Russian Federation.</li> <li>4. Angola, Burkina Faso, Côte d'Ivoire, Ghana, Mauritius and Togo report substantial progress in cooperation with neighbouring countries to reduce transboundary risks, including flooding in shared watersheds, tsunami early warning systems, locust infestations and health-related risks.</li> <li>5. Collaboration on transboundary risk management is often institutionalized through Regional Economic Councils such as ECOWAS<sup>14</sup>, the Southern African Development Community (SADC) and the African Union (AU), as well as through regional meteorological services such as the Comité permanent inter-États de lutte contre la sécheresse dans le Sahel. However, it is recognized that a more prominent lead by the Regional Economic Councils would serve to enhance and regulate cooperation and information exchange amongst member countries.</li> <li>6. Progress has been possible in the Americas due to the large number of sub-regional and regional initiatives aimed at improved coordination, information sharing and collaboration. These include CDERA, Association of Caribbean States, CAPRADE, PREDECAN, and the regional programme of the European Union – Programma regionale di Programma regionale di riduzione della vulnerabilità e del degrado ambientale.</li> <li>7. Regional frameworks for disaster risk management in Asia to address transboundary risks for hazards across the Asian sub-regions are advancing through cooperation agreements in the context of ASEAN and SAARC.</li> </ol> |

**Box 5.2:  
Status of  
early warning  
systems<sup>15</sup>**

A global report on the status of early warning systems has been prepared, based on an extensive survey of national capacities for meteorological, hydrological and climate-related forecasting and warning services conducted by the WMO, and a survey carried out by the ISDR Platform for the Promotion of Early Warning and the United Nations University's Institute for Environment and Human Security, with input from international agencies that support the development of early warning systems.

The report presents a comprehensive analysis of capacities of national stakeholders with a focus on governance and organizational coordination; capacities for forecasting, detection and monitoring of hazards; international, regional and national dissemination and communication capacities; and capacities for linking warnings to emergency preparedness and response mechanisms at national to community levels. The report also examines the level of international and regional cooperation in support of strengthening national early warning systems.

The report states that while there has been some progress in strengthening early warning systems, greater commitment to addressing the development of these capacities is needed. Key issues highlighted in the report include:

1. Existing national and local emergency preparedness and response plans need to be re-evaluated, based on hazard and vulnerability mapping, and must be supported by enforceable legislation. These plans need to clearly indicate the line of command, roles and responsibilities of different agencies engaged in different components of early warning systems. They must also be aligned across community, provincial, and national levels, ensuring that financial and operational resources are routed to communities for improving preparedness and response operations on the ground.
2. There is a need for further strengthening of the monitoring and forecasting infrastructure and staff skills of technical agencies (for example, national meteorological, hydrological, geological, and ocean services) that are responsible for monitoring and forecasting of hazards. This needs to be further complemented by strengthened cooperation, coordination and knowledge-sharing among the technical agencies and with their disaster risk management counterparts.
3. National technical agencies could benefit from strengthened regional cooperation on access to data and the latest tools and technologies for monitoring and forecasting of hazards. Such cooperation has been demonstrated by a number of existing regional cooperation mechanisms such as the Pacific and the Indian Ocean Tsunami Warning System (coordinated by UNESCO Intergovernmental Oceanographic Commission) and the WMO Global Tropical Cyclone Programme, which provides tropical cyclone and storm surge forecasts and bulletins through six regional specialized centres to all countries at risk. Furthermore, strengthened cooperation is needed among neighbouring countries to establish standards, procedures and protocols for warnings on transboundary issues.
4. Standardized hazard and impact databases need to be established, and technical capacity needs to be built at the national level in the use of hazard and risk mapping tools to support emergency response and preparedness planning and the integration of risk information in warning messages.
5. In most countries, dissemination channels that link national warning systems to communities need to be significantly strengthened, taking into consideration cultural norms and communities' requirements, and the resources available. Feedback mechanisms to verify that warnings have reached the appropriate authorities and at-risk communities must be established. Furthermore, there is a need for training programmes targeted at the authorities, emergency response staff and the public to assist them to understand the source and content of warning messages, and to link this information to concrete actions on the ground, based on risk level (for example, the establishment of risk readiness levels).
6. Emergency preparedness and response plans need to be developed utilizing hazard and vulnerability maps. More drills and public awareness programmes are needed at the community level, particularly when the community does not experience hazards frequently.
7. Concept of operations and standard operational procedures need to be developed for early warning systems for different hazards, enabling effective coordination and cooperation across various components of the systems from national to local levels.
8. Early warning system programmes should be complemented by an effective regional–national–local, multi-agency operational evaluation and feedback mechanism to improve the systems over time.
9. Strengthened cooperation, coordination and strategic planning among international agencies could lead to a more effective approach for the development of national early warning system programmes.