Indicators	Challenges reported	Progress reported: trends and examples
Indicator 4 A countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.	1. Increased awareness does not necessarily lead to a reduction in disaster risks. For instance, poor rural and urban households are faced with severe livelihood and environmental constraints on their ability to reduce risk that cannot be addressed by awareness alone.	1. Tools and guidelines include RiskPlan[19] in Switzerland, to learn about and implement disaster risk reduction, and EconoMe[20], to justify investments in risk reduction. 2. In New Zealand, a long-term public education programme and social marketing campaign, 'Get Ready, get Thru', was launched in 2006, aimed at greater individual and community preparedness for disasters[21]. 3. In Africa, almost all reporting countries state that they have public awareness campaigns in place which cover national, regional and community levels. Many of the countries with awareness campaigns utilize media such as radio, newspapers and television, with Mauritius, Mozambique and Madagascar reporting a high level of public awareness for the main risks. 4. Examples of effective impacts from international campaigns include the Safe Hospitals Campaign, launched by the WHO, ISDR and the World Bank, to raise awareness that disaster damage to health systems can have an enormous impact on economic and human development. At the same time, even small investments in making health facilities safer can considerably reduce the impact of disasters. The campaign provides a platform for strengthening hospitals, health facilities and systems in the context of risk reduction and emergency preparedness and response.

5.2.4 Hyogo Framework Priority for Action 4: Reduce the underlying risk factors

Disaster risks related to changing social, economic and environmental conditions and land use, and the impact of hazards associated with geological events, weather, water, climate variability and climate change are addressed in sector development planning and programmes as well as in post-disaster situations. Figure 5.9 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 5.4 details the challenges and progress reported.

Figure 5.9: Average progress towards indicators for Priority for Action 4 by income class and region

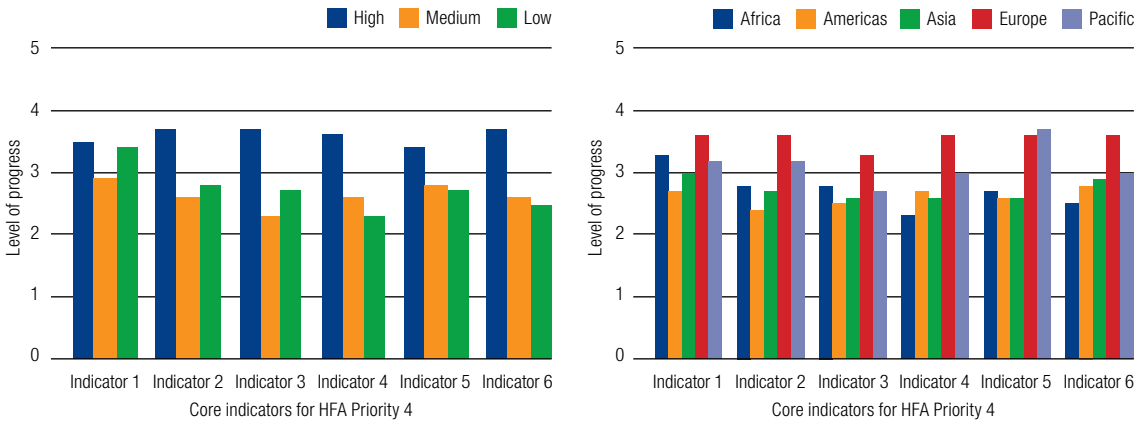

Table 5.4: Challenges and progress reported for HFA Priority for Action 4: Reduce the underlying risk factors

Indicators	Challenges reported	Progress reported: trends and examples
Indicator 1 Disaster risk reduction is an integral objective of environment related policies and plans, including for land use, natural resource management and adaptation to climate change.	1. There is a general lack of application and enforcement of environmental standards, norms and regulations. 2. There is little synergy between land-use planning, strategies to adapt to climate change, environmental protection laws, other similar instruments, and policy and legislation addressing disaster risk. 3. Organizations responsible for disaster reduction often have neither the political authority nor the technical capacity to intervene in environmental planning and regulation. While disaster risk reduction and environmental policy and legislative frameworks may acknowledge each other, real integration in practical terms is lacking.	1. Many countries in the Americas and Asia have established environment and climate change as national priorities and have developed relevant legislation, policy and institutional frameworks. 2. Environmental protection and adaptation to climate change have been established as priorities in all regions, and most countries have legislation, policies and institutional frameworks to address a range of environmental and natural resource management concerns. 3. Most countries are signatories to the United Nations Framework Convention on Climate Change (UNFCCC) and to the Kyoto Protocol, and are developing strategies and plans to address climate change, an issue that will be revisited later in this chapter. 4. The Marshall Islands report that the implementation of Environmental Impact Assessment (EIA) regulations started only in 2005, with a constantly increasing number of large projects complying with the requirements (up from five in 2005 to 40 in 2007). A test case for the EIA process was a dry dock project which was denied on the basis of the inappropriate nature of the site. 5. Other countries have adopted a regional, transboundary approach. For example, disaster risk reduction in East Africa[22] presents a good example of how East African countries are working together to tackle concerns emanating from climate change processes.
Indicator 2 Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.	1. While PRSPs and similar instruments mention disaster risk reduction, this may not reflect a real integration of poverty and disaster risk reduction policy frameworks and programme initiatives in practice. As with environment, the organizations responsible for disaster reduction may not have the political authority or the technical capacity to intervene in the design of social development and poverty reduction plans and programmes. It should be noted that very few countries report a substantial reliance on social equity considerations as a driver of progress.	1. A considerable number of countries report that social development plans to reduce the vulnerability of disaster risk prone communities are in place. 2. Many countries reporting from Africa have social development policies, plans or programmes that address vulnerability and poor living conditions through improving water supply, sanitation, food security, health and literacy. Some countries, such as Burkina Faso, Côte d'Ivoire, Guinea, Swaziland and Togo, report having integrated disaster risk concerns into their PRSPs. Mauritius and Tanzania have special emergency assistance funds in place, while Mozambique is working to create alternative income activities for vulnerable sectors and invest in drought resistant crops. 3. In the Americas, most countries report that commitments to the MDGs, poverty reduction and social inclusion are included in development plans and strategies as well as in institutional mechanisms. 4. Countries in Asia report the increasingly targeted action of national and local plans to reduce social and economic vulnerability. The Philippines reports the efforts of the National Poverty Commission, which has designed a poverty reduction strategy for people in hazard prone areas that incorporates interventions ranging from microfinance and insurance instruments to rice credits, cheap food and burial benefits.

Indicators	Challenges reported	Progress reported: trends and examples
Indicator 2 continued		5. Australia and New Zealand report that an explicit 'social inclusion agenda' must be incorporated into all national and local development policies and plans. 6. Bangladesh reports growing diversification of social safety net programmes, with an active role for NGOs. Some reports cite the need for detailed evaluations to identify the exact benefits for communities and to better understand the interrelation between microfinance and risk reduction.
Indicator 3 Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities.	1. The costs of disaster risk are not normally factored into public investment decisions. As a result, disaster risk reduction considerations become factored into economic and productive development on an ad hoc rather than a systematic basis. 2. Underlying problems include the difficulties surrounding economic development planning itself. African countries, for example, highlight political instability, poverty and weak governance as factors which endanger the implementation of economic development plans. 3. There is little systematic integration of economic development and disaster risk reduction policies and legislation. As in other sectors, it seems that in most countries disaster risk reduction organizations do no have the political authority or technical capacity to intervene in economic development planning.	1. In the Republic of Korea the Support for Enterprises Voluntary Disaster Mitigation Activities Act of 2007 provides small and medium businesses with guidelines and standards for disaster risk reduction. 2. Australia's Trusted Information Sharing Network provides a forum in which the owners and operators of critical infrastructure can work together by sharing information on security issues. 3. In Peru, the Ministry of Economy and Finance has fully incorporated disaster risk reduction into the National System for Public Investment[23], which requires a risk evaluation to improve all public investment across sectors and in both central and local government (see Box 5.3). 4. The Planning and Economic Policy Ministry in Costa Rica has recently added disaster risk evaluation to its requirements for approval of public investment projects.
Indicator 4 Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.	1. Weak implementation and enforcement mechanisms are common to all countries where most urbanization is informal. The lack of coverage of this issue in reports suggests that there is less activity now in introducing hazard resistant building into risk prone, informal urban and rural housing (for example, through mason training and the introduction of appropriate technologies) than there was in the 1970s and 1980s, with some notable exceptions such as Pakistan.	1. Senegal and Cape Verde report the inclusion of disaster risk reduction into their building codes. 2. Angola, Congo, Mozambique, and Togo report that risk considerations are factored into land-use planning and settlement siting decisions. 3. Algeria is involved in efforts to improve building codes and planning laws to reduce future risk. 4. A large number of cities, including Amman, Aqaba, Bogota, Caracas, Istanbul, Kathmandu, Kerman, La Paz, Lima, Manila, Mumbai, Quito and Tehran have developed a comprehensive understanding of their exposure to hazards and are in the process of taking steps to improve their capabilities to respond and reduce disaster risks. Some have done so under their own initiative – others with support from national governments; international organizations, such as the World Bank and UNDP; or NGOs such as EMI and Geo-hazards International. 5. Progress is also being made in some countries to ensure that public facilities such as schools or hospitals are either retrofitted or built to hazard resistant standards. Significant investments by Colombia and Iran to retrofit schools to seismic resistant standards are excellent examples of this kind of initiative. In 2007, Iran also initiated retrofitting residential buildings in rural areas, aiming to retrofit around 300,000 houses annually.

Indicators	Challenges reported	Progress reported: trends and examples
Indicator 4 continued		6. Disaster resilient schools and health facilities are being built in cooperation with the World Bank in Madagascar, while in the Americas increasing concern for the safety of schools and hospitals and critical infrastructure is also reported. 7. The priority given to emergency preparedness and risk reduction by national governments and communities in Latin America and the Caribbean has reduced vulnerabilities and risks, and turned previously frequent hazardous impacts with disaster potential into more manageable events. This has been achieved with strong and sustained support by the WHO/Pan American Health Organization, multilateral and non-governmental organizations.
Indicator 5 Disaster risk reduction measures are integrated into post-disaster recovery and rehabilitation processes.	1. Overall, most counties report that there has been much discussion around this issue in past years, in the aftermath of recent, large-scale disasters. However, thorough and consistent implementation of these recovery principles is yet to be seen. 2. Recovery and reconstruction projects and programmes are generally stand-alone initiatives with clearly bounded limits. Therefore, even when disaster risk is effectively incorporated, it does not necessarily lead to a more mainstream adoption of disaster risk considerations into ongoing planning and regulation systems. 3. Lack of political will and initiative to recognize disaster risk, the pressure to rebuild quickly and the absence of pre-existing mechanisms and capacities to support hazard resistant, owner-driven housing, are all obstacles that inhibit the use of reconstruction as a window of opportunity for disaster risk reduction. It is found that even if hazard resistant construction is promoted and achieved, this does not always address the needs of poor urban and rural households, nor of specific social groups such as women headed households.	1. The reconstruction of Bam, Iran, following the 2003 earthquake is a good example of how reconstruction processes have provided good entry points for the introduction of hazard resistant construction if the necessary political will and institutional commitment are present[24]. 2. The early recovery model in Mozambique[25] shows that it is possible to integrate disaster risk reduction into post disaster recovery and reconstruction, provided that this is factored into the design of recovery plans and strategies from the beginning. 3. A number of initiatives are now beginning to address the issue, through mechanisms such as IRP and the Cluster Working Group on Early Recovery[26]. For example, the IRP is promoting an Earthquake Risk Reduction Preparedness and Recovery Programme[27], through UNDP. This aims to promote regional partnerships and enable appropriate and fast implementation of recovery activities with SAARC, including Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.
Indicator 6 Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.	1. While environmental impact assessments of major development projects are carried out, these do not necessarily include disaster risk considerations. 2. Procedures and regulations may be in place but insufficient technical and human resources exist to evaluate and approve projects or for enforcement. Only 35% of African countries state that they conduct impact assessments and, again, these mainly focus on environmental impact. 3. Awareness of the role that inappropriate development projects may have in increasing disaster risk is very low (except in the case of some infrastructure projects, such as dams) while the political and economic interests at stake may be very high. It is still rare for the opportunity costs and co-benefits of alternative ways of providing infrastructure to be identified in a way that reduces the disaster risk faced by poor urban and rural households.	1. In Peru, mandatory evaluations of disaster risk reduction have been incorporated into the National System for Public Investment.

Box 5.3: Investing in disaster risk reduction, the case of Peru

Table 5.5 shows detailed estimates of the cost of factoring disaster risk reduction considerations into public sector investments in Peru (prepared by the Ministry of Economy and Finance)[28] in comparison with the avoided losses and reconstruction costs over a period of ten years for different probabilities of disaster occurrence, ranging from a 25% to 100% probability of a disaster occurring in ten years.

This indicates that at a 75% probability of disaster loss in 10 years, all the investments in disaster risk reduction were cost-effective. At a 25% probability four of the six investments were cost-effective. Furthermore at the 75% probability level, the ratio of benefits to costs ranged from 1 to 37.5. This indicates that the much quoted estimate that investments in disaster risk reduction produce benefits of seven times the cost needs to be nuanced, according to the kind of investment and the probability of loss. The key point is that most disaster reduction investment should be viewed as a very effective way of reducing the real costs of addressing the underlying risk factors.

Table 5.5: Cost–benefit analysis of public investment projects in Peru[29]

Note: Shaded cells indicate that value of avoided losses exceeds additional costs of disaster risk reduction investment

		Estimated value of avoided losses and reconstruction costs			
Public investment project	**Additional cost of disaster risk reduction (US$)**	**25% probability of disaster in 10 years**	**50% probability of disaster in 10 years**	**75% probability of disaster in 10 years**	**100% probability of disaster in 10 years**
Reconstruction of housing and water infrastructure following the 23 June, 2001 earthquake in Castilla Province	382,788	132,601	265,202	397,802 Benefit / cost ratio = 1	530,403
Prevention and preparedness for mudslides and floods in the upper Rimac Valley	95,616	330,986	661,971	992,957 Benefit / cost ratio = 10	1,323,942
Extension of the Pampacolca health centre (module to attend pregnant women)	15,570	6,789	13,579	20,368 Benefit / cost ratio = 1.3	27,158
Rehabilitation and construction of dykes in the Cansas Valley	1,958,539	24,441,946	48,883,891	73,325,837 Benefit / cost ratio = 37.5	97,767,783
Rehabilitation of the Machupicchu hydroelectric plant	9,276,153	57,452,287	114,904,573	172,356,860 Benefit / cost ratio = 19	229,809,147