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Implementation of the Hyogo Framework for Action

Integrating disaster risk reduction into socio-economic development policies in Asia and the Pacific

Note by the secretariat

Summary

The present document contains a discussion of the importance of mainstreaming the concept of disaster risk in the development process in order to address the challenges of disaster risks. It also contains an assessment of the prospects and constraints in mainstreaming disaster risk in the development process and a discussion on relevant strategy and policy options. The document puts forward the case for prioritizing social vulnerability to disasters and investing in social sectors as part of recovery and reconstruction efforts for long-term inclusive development. The outcomes of the Fourth Asian Ministerial Conference on Disaster Risk Reduction, which was held in Incheon, Republic of Korea, from 25 to 28 October 2010, are highlighted, and consideration is given to ways in which disaster risk reduction could be prioritized and mainstreamed in social and economic development planning processes.

The Committee may wish to review the document and provide the secretariat with guidance on its future strategic direction in promoting the integration of disaster risk reduction into socio-economic development policies in the Asia-Pacific region.

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I. Impact of disasters on inclusive and sustainable development

1. The number of disasters in the Asia-Pacific region is on the rise and a significant number of people remain at risk from them. In the past several years, the Asia-Pacific region has been affected by an increase in extreme weather events, such as tropical cyclones, intense rainfall and floods, prolonged drought and wildfires, as well as earthquakes and tsunamis. The Asia-Pacific region, which generates only one quarter of the world's gross domestic product (GDP), accounted for a staggering 85 per cent of deaths globally and 38 per cent of global economic losses due to disasters during the period 1980-2009.[1]

2. In 2010, Asia remained the continent most adversely affected by disasters: 89 per cent of all people distressed by disasters in 2010 were living in Asia. The number of reported disaster events amounted to 144 in the Asia-Pacific region. In terms of economic impacts, China, Pakistan, New Zealand and the Russian Federation figured among the 10 most severely affected countries, with the total damage in absolute terms being an estimated $35.9

[1] *Economic and Social Survey of Asia and the Pacific 2010* (United Nations publication, Sales No. E.10.II.F.2). Available from: www.unescap.org/survey2010.

billion.[2] The historic floods that swept across Pakistan in 2010 affected 20 million people, and caused the loss of nearly 2,000 lives. Those floods damaged the country's infrastructure, farms and homes, among other things; the direct and indirect losses caused by the floods were estimated at $9.7 billion.[3]

3. Starting in late 2010, several disasters struck in quick succession, first in Australia, then in New Zealand and finally in Japan. A series of floods, beginning in December 2010, severely affected three quarters of the state of Queensland, Australia. An earthquake struck New Zealand on 22 February 2011 and caused serious damage to the city of Christchurch; it had a magnitude of 6.3 on the Richter scale. That earthquake was part of seismic activity in that country that began on 4 September 2010 with an earthquake in Canterbury; that one had a magnitude of 7.1 on the Richter scale.[4] The 11 March 2011 earthquake off the coast of Japan, which registered a magnitude of 9.0 on the Richter scale, was the largest such disaster ever observed in that country; it generated a gigantic tsunami — as high as 20 metres in some parts of the country — and caused record damage and extensive loss of life. Various secondary disasters were associated with that earthquake and tsunami in the form of explosions at chemical plants, the outbreak of numerous fires and the leakage of radioactive material from damaged nuclear power reactors. While the detailed economic and social impacts of these disasters have yet to be published, it is important to emphasize that these countries were well prepared to deal with such extremes. Even in the best-case scenarios, however, their economic and social resilience did not match the scale of the impacts of the disasters.

4. One of the key findings of the *2009 Global Assessment Report on Disaster Risk Reduction*[5] was that large disasters destroy the economic and social infrastructure of small economies, derailing their economic development process, possibly for decades. In contrast, except for extreme disasters, the impact of such disasters on high-income countries is imperceptible. Countries with small and vulnerable economies have the highest ratio of economic loss to capital stock and often have very low national savings rates, a situation which constrains their capacity to absorb such impacts and begin efforts to recover. Small economies—especially least developed countries, landlocked developing countries and small island developing States—together comprise about two thirds of the countries with very high economic vulnerability to disasters, as measured by the above-mentioned variables. They also comprise about two thirds of all countries with extreme limitations on their ability to benefit from international trade, for example a very low participation rate in global export markets and a low level of export diversification.

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[2] Centre for Research on the Epidemiology of Disasters, "Disaster data: a balanced perspective", *CRED Crunch*, No. 23, February 2011.

[3] Asian Development Bank and World Bank, "ADB-World Bank assess Pakistan flood damage at $9.7 billion", News release, Brussels, 14 October 2010. Available from: www.adb.org/Media/Articles/2010/13363-pakistan-flooding-assesments/ADB-WB-pakistan-assessment.pdf.

[4] Malcolm Holland, "Christchurch: The ticking timebomb", *The Daily Telegraph* (Australia: News Limited), 25 February 2011. Available from: www.dailytelegraph.com.au/christchurch-the-ticking-timebomb/story-fn6b3v4f-1226011617484. Accessed on 25 February 2011.

[5] Inter-Agency Secretariat of the International Strategy for Disaster Reduction, *2009 Global Assessment Report on Disaster Risk Reduction: Risk and Poverty in a Changing Climate*, 2009. Available from: www.preventionweb.net/gar09.

5. Disaster risk reduction could help countries in their efforts to achieve the Millennium Development Goals.[6] At its High-level Plenary Meeting on the Millennium Development Goals, held in September 2010, the General Assembly noted that disaster risk reduction and increasing resilience to all types of natural hazards in developing countries could have multiplier effects and accelerate achievement of the Goals.[7] One disaster in the Asia-Pacific region, an earthquake and tsunami in Samoa in 2009, hindered the graduation of Samoa from least developed country status to that of a middle-income country. Although the region has yet to recover fully from the external shocks caused by the recent global economic crisis, the increasing number of natural disasters is aggravating the distressing situation, undermining the region's efforts to achieve the Millennium Development Goals, eroding hard-earned development gains and derailing the region's efforts to achieve inclusive and sustainable development. It is therefore important that the region determine the best way forward in further reducing the adverse effects of disasters on countries and communities.

6. Disasters cause loss of human life and extensive injuries, together with physical damage to capital assets, such as houses, schools and hospitals, other infrastructure and livestock. The longer-term consequences of disasters can be far-reaching through their impacts on human capital, and hold implications for socio-economic growth and development. Such impacts reflect both loss of life and disruption to the process of education due to the damage done to school buildings and the lower rates of attendance by students, and longer-term negative impacts on public health. With 950 million people living in poverty and with wide development gaps, especially in the least developed countries and in the small island economies, vulnerable communities, such as women, children, the elderly and the disabled, are often particularly susceptible to natural hazards, a situation reflecting wider socio-economic and cultural inequalities.

II. Key issues for mainstreaming disaster risk reduction into development planning

A. Issues and challenges in addressing social vulnerability

7. Vulnerability refers to the susceptibility to harm of a society or a place owing to its exposure to a hazard, which affects the society's capacity to prepare for, respond to and recover from such hazards and disasters.[8] Social vulnerability refers to socio-economic and demographic factors that influence the level of harm affecting a local population. Priority action 4 of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters[9] addresses the reduction of underlying risk factors and social vulnerability to disasters. In this regard, focus is placed on indicator 4.2, that is, on implementing social development policies and plans in order to reduce the vulnerability of populations most at risk in this area.

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[6] Regional Consultative Committee on Disaster Management and others, "Disaster proofing the Millennium Development Goals", 2010. Available from: www.preventionweb.net/english/professional/publications/v.php?id=16098.

[7] See General Assembly resolution 65/1, para. 35.

[8] Economic and Social Commission for Asia and the Pacific and the Inter-Agency Secretariat of the International Strategy for Disaster Reduction, *Protecting Development Gains: Reducing Disaster Vulnerability and Building Resilience in Asia and the Pacific: Asia-Pacific Disaster Report, 2010*.

[9] A/CONF.206/6 and Corr.1, chap. I, resolution 2.

8. The Mid-term Review of the Hyogo Framework for Action[10] indicates continued difficulties in integrating risk reduction into public investment planning and urban development, making key social and economic development sectors risk-sensitive. Countries continue to report the lowest levels of progress in addressing underlying risk drivers under Priority 4.[11]

9. Priority 4 in many ways is the most challenging area under the framework, as it signifies a major departure from the previous emphasis upon response; instead, it depends upon the preceding priorities, namely solid risk assessments and information management systems, clear risk-reduction strategies, strong institutions, awareness of risks and risk-reduction options and the capacity to implement, enforce and evaluate. All responses illustrate a reasonable level of commitment, recognizing the need to integrate disaster risk reduction into environmental plans, land use and natural resource management, economic human settlement planning and major development projects, among others. Translating hazard and risk information into integrated policies across planning documents and undertaking coordinated and concerted actions are challenging tasks. The increasingly high losses and impacts from disasters are accounted for by the difficulties in addressing the underlying risk drivers embedded in the various development sectors. The draft 2011 global assessment report on disaster risk reduction points out that this unaccounted risk will translate into increased poverty and inequalities.[12]

10. With regard to gender, the overall performance record of countries continues to be weak. Although the issue of gender has been acknowledged and integrated into strategic and action plans and policy directives, very little is being done about it. Some responses reflect a perspective of gender that concentrates on vulnerability rather than on the capacities and complementary roles that women and men play in risk reduction. Several countries have reported a lack of disaggregated data on gender and the impact of disasters as factors complicating the design of comprehensive strategies. Policy directives that promote the participation of women in decision-making on disaster risk reduction may encounter resistance at the local level, particularly in multicultural societies.

11. Studies have found that women are more likely than men to die as a result of disasters in countries where their socio-economic status is low. For instance, in one eastern coastal district of Sri Lanka, female mortality rates following the 2004 tsunami were twice those of males; in Myanmar, in 2009 the majority (61 per cent) of the victims of Cyclone Nargis were female. Women are also at greater risk of sexual and domestic violence in a post-disaster context, reflecting heightened levels of psychological stress within households and the close proximity of large numbers of people in makeshift relief camps. Poor female-headed households can suffer particularly high loss of life and assets because they often exist in conditions of social exclusion, have less access to early warning information and seasonal weather forecasts and have difficulty in participating in training processes. Their access to

[10] Inter-Agency Secretariat of the International Strategy for Disaster Reduction, *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters: Mid-term Review 2010-2011*, 2011. Available from: www.unisdr.org/files/18197_midterm.pdf.

[11] Ibid., p. 28.

[12] Inter-Agency Secretariat of the International Strategy for Disaster Reduction, *2011 Global Assessment Report on Disaster Risk Reduction: Revealing Risk, Redefining Development.*

financial resources is also more limited, which in turn affects other factors, such as the quality of housing and opportunities for livelihood diversification.

12. Disasters can produce long-term negative impacts on the health of the populations affected. In Nepal, for example, people living in areas frequently affected by floods are more likely to suffer from wasting and low weight. Similarly people living in areas affected by landslides have been associated with higher percentages of stunting.[5] Problems of water contamination are exacerbated in such areas, leading to increases in water-borne diseases, such as cholera and diarrhoea, and contributing to food insecurity by destroying crops and agricultural land.[13]

13. With regard to education in Nepal, disasters have been found to have a significant impact on children's attendance in school by physically preventing them from reaching school, as well as by reducing the capacity of households to pay school fees and cover other costs, such as stationery. Disasters also have a negative impact when parents are forced to place their children in income-generating activities to supplement household earnings. Further, as disasters result in increased (adult) male migration, children may be required to stay at home to help perform domestic and agricultural work.[14] The flooding in 2008 of the Koshi River in Nepal alone disrupted the education of some 23,000 students, including displaced students and the students of host schools where displaced persons were sheltered.[15] In Viet Nam, disaster-related damage to school buildings also disrupted the quality of schooling when students had to be temporarily relocated to schools in neighbouring localities, thereby increasing class sizes and forcing the students to study in shifts so that, instead of attending a full day of classes, the school day was cut by half or even two thirds, a situation that continued sometimes for periods of a year or more.

14. As the table shows, disasters significantly affect social sectors: housing, education and health subsectors. However, most of the needs assessments conducted show that relatively lower investment tended to be given to the social sectors for recovery and reconstruction. The previously mentioned Cyclone Nargis in Myanmar affords an example of a disaster where needs assessments placed particular importance on the social sector: while the social sector suffered 24.1 per cent of the damage and losses from the storm, the sector was accorded 85.7 per cent of the funds in the needs assessments. The lack of social safety nets in the country was reflected in the Post-Nargis Joint Assessment, a comprehensive multisectoral assessment of the situation coordinated jointly by the Association of Southeast Asian Nations (ASEAN), the United Nations and the Government of Myanmar, all three of which comprised the Tripartite Core Group.

15. As a result of these efforts, the ASEAN Humanitarian Task Force for the Victims of Cyclone Nargis concluded in its final report in March 2010 that significant progress had been made in housing, health and education. Through facilitation by the Tripartite Core Group, more than 17,000 new family shelters had been built, 31,000 shelters rehabilitated and 30,000 households provided with materials for building safer and more durable shelters. In the health sector, almost 10,000 children had been provided with therapeutic and supplementary

[13] Economic and Social Commission for Asia and the Pacific and the Inter-Agency Secretariat of the International Strategy for Disaster Reduction, *Protecting Development Gains: Reducing Disaster Vulnerability and Building Resilience in Asia and the Pacific: Asia-Pacific Disaster Report, 2010*, chap. 2.

[14] Ibid., p. 24.

[15] Ibid.

feeding, 45 rural health centres had been rehabilitated and 850 rural health centres were being regularly supplied with drugs. The Myanmar example illustrates that, with the commitment of the Tripartite Core Group, inclusive economic and social recovery is possible, paving the path towards long-term development of the country.

Table
Damage, loss and needs assessments in selected developing countries and least developed countries in Asia and the Pacific

Disaster	Sector	Damage and loss assessments				Needs assessment	
		Damage (millions of US dollars)	Losses (millions of US dollars)	Total (millions of US dollars)	Percentage by sector	Total (millions of US dollars)	Percentage by sector
Cyclone Sidr, Bangladesh, 2007	Social sectors	904.20	21.00	925.20	55.30	215.30	22.60
	Productive sectors	25.10	464.00	489.10	29.20	325.00	34.10
	Infrastructure	222.50	30.90	253.40	15.10	397.00	41.70
	Cross-sectoral	6.10	-	6.10	0.40	15.40	1.60
	Total	**1 157.90**	**515.90**	**1 673.80**		**952.70**	
Cyclone Nargis, Myanmar, 2008	Social sectors	937.54	30.00	967.70	24.10	859.00	85.70
	Productive sectors	669.00	2 138.00	2 806.80	69.80	51.00	5.10
	Infrastructure	132.26	58.00	189.00	4.70	88.00	8.80
	Cross-sectoral	15.20	42.00	57.20	1.40	4.00	0.40
	Total	**1 754.00**	**2 268.00**	**4 021.60**		**1 002.00**	
Tsunami, Samoa, 2009	Social sectors	15.78	10.51	26.29	11.20	70.16	19.30
	Productive sectors	39.45	76.33	115.78	49.50	192.11	52.80
	Infrastructure	81.68	9.78	91.46	39.10	101.24	27.80
	Cross-sectoral	-	0.32	0.32	0.10	0.64	0.20
	Total	**136.91**	**96.94**	**233.85**		**364.15**	
Typhoon Ketsana, Lao People's Democratic Republic, 2009	Social sectors	10.13	0.74	10.87	18.90	13.64	20.60
	Productive sectors	19.71	2.36	22.07	38.30	24.39	36.90
	Infrastructure	21.16	3.47	24.36	42.80	28.10	42.50
	Cross-sectoral				-		-
	Total	**51.00**	**6.57**	**57.30**			
Typhoon Ketsana, Cambodia, 2009	Social sectors	39.54	3.35	42.89	33.20	42.91	20.10
	Productive sectors	1.05	59.00	60.05	46.50	119.05	55.80
	Infrastructure	14.47	11.47	25.94	20.10	37.40	17.50
	Cross-sectoral	0.20	0.10	0.31	0.20	14.16	6.60
	Total	**55.26**	**73.91**	**129.18**		**213.52**	
Earthquake, Bhutan, 2009	Social sectors	13.50	52.00	65.50	100.00	41.70	95.30
	Productive sectors						
	Infrastructure						
	Cross-sectoral					2.04	4.70
	Total	**13.50**	**52.00**	**65.50**		**43.74**	
Pakistan floods, 2010	Social sectors	1 357.96	591.04	1,949.00	19.38	2 036.64	25.11
	Productive sectors	3 882.94	2 115.62	6 000.00	59.67	1 632.00	20.12
	Infrastructure	1 205.26	819.22	2 025.00	20.14	4 175.65	51.48
	Cross-sectoral	48.61	33.35	82.00	0.82	266.65	3.29
	Total	**6 494.78**	**3 559.22**	**10 056.00**		**8 110.94**	

16. Some countries base their work on an explicit social inclusion agenda, although there is common recognition of the need to address the social vulnerability dimension of risk. In several countries, there is recognition in social policies and frameworks of the impact that disasters can have on the poor; however, instruments to address vulnerability often remain restricted to

conventional programmes, such as food aid. Protection of the population at risk can be ensured through the provision of better social safety nets, which involves investing in the social sector as part of the recovery and reconstruction processes.

17. There have been encouraging initiatives. In the Philippines, the National Anti-Poverty Commission 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. Bangladesh has reported growing diversification of social safety net programmes, with non-governmental organizations playing a very active role.

18. One challenge related to addressing social vulnerability is data constraints. Household-level data are particularly important in analysing the impacts of floods, which may create net winners and losers within the same community. However, few, if any, countries collate systematic longitudinal data on such impacts, and much of the limited snapshot information that is available, beyond initial assessments of physical damage to related infrastructure, remains unpublished. Moreover, there are issues of potential bias in measuring some impacts. For instance, as observed following the 2005 Kashmir earthquake, respondents of livelihood surveys in Pakistan may have underreported income and overreported expenses in the hope of securing more assistance.[5]

19. Countries face other challenges in reducing social vulnerability, including the lack of funding allocated to local authorities for implementing disaster risk reduction activities and undercapacity in human resources.

B. Strategic policy framework

20. In recognition of the close link between disaster and development, a strong commitment to mainstreaming disaster risk reduction into all developmental activities is necessary. Focusing solely on the recovery of the economic sector will not lead to inclusive growth; instead, the poorest and most vulnerable populations would descend deeper into poverty. This underlines the importance of dedicating more resources to the social sectors not only in the post-disaster recovery process but also, more importantly, in a country's long-term development strategy as an essential component.[8]

21. An enabling environment aimed at promoting the operationalization of mainstreaming disaster risk reduction in the development process would include establishing policy frameworks, financing, building institutional capacity and integrating disaster risk reduction into recovery and reconstruction. High-risk developing countries making efforts to mainstream disaster risk reduction in the development process have learned several key lessons, some of which are summarized below:

(a) *Primary role of Governments*: Governments have the primary responsibility for mainstreaming disaster risk reduction in the development process in their respective countries. Governments can promote and facilitate the process of mainstreaming by laying down general policy guidelines, developing sector-specific tools and methodologies and creating legal and institutional frameworks for mainstreaming;

(b) *General policy guidelines*: nodal agencies responsible for national development planning, such as national planning commissions and ministries, are the most appropriate institutions to develop general and specific guidelines on mainstreaming disaster risk reduction in the development process, as they

have the mandate to approve development schemes and allocate funds for existing and new schemes. The guidelines should cover both ongoing and new development schemes across sectors. Such guidelines should be developed in consultation with national focal points on disaster management, such as the national disaster management authority;

(c) *Integration of disaster risk reduction into poverty reduction strategies*: poverty reduction is the best entry point for mainstreaming disaster risk reduction in the development process, as all countries in the region are already implementing various programmes targeted at people living below the poverty line who always suffer the most in disasters. It is necessary to revisit such programmes to incorporate features that would protect the interests of poor people affected by disasters and reduce the risk of disasters by initiating innovative mechanisms, such as skills development for alternative livelihoods, microfinance and insurance;

(d) *Promoting the mainstreaming of disaster risk reduction in the development process in key sectors*: while disaster risk reduction should penetrate into all sectors of development, Governments need to identify key sectors that should receive priority. Some of those sectors, with some illustrative activities under each of them, include the following:

(i) *Agriculture and livelihood*: developing crop varieties that are resistant to drought and can withstand flooding and saline conditions; creating standby employment opportunities in non-farm sectors in hazard-prone areas; and providing insurance cover for crops and livestock;

(ii) *Education*: initiating school safety programmes; including disaster risk management in school curricula; conducting simulation drills and first-aid training for students; and preparing school-level disaster risk management plans;

(iii) *Environment*: integrating disaster impact assessments into environmental impact assessments; ensuring that the ecosystem is made a part of all developmental activities, particularly in environmentally sensitive areas, such as coastal areas and hilly land; and integrating disaster risk reduction into climate change adaptation programmes;

(iv) *Housing and preservation of cultural monuments*: developing disaster-resistant land-use plans and building codes; enforcing zoning and building regulations; and protecting cultural monuments and heritage sites with appropriate building codes;

(v) *Health*: initiating hospital safety measures; encouraging hospital emergency preparedness plans; making available risk transfer and risk insurance; promoting social insurance and publicly funded insurance schemes; and developing innovative microinsurance services and products;

(vi) *Critical infrastructure*: ensuring that all new critical infrastructure projects, such as those for roads, bridges, energy, water and communications, comply with the safety standards for disaster reduction; and ensuring that all existing infrastructure projects are retrofitted, to the extent possible, with a view to reducing the adverse effects of future disasters;

(e) *Disaster impact assessment*: Governments should develop the necessary frameworks, guidelines and institutional mechanisms for disaster impact assessments of all new development projects at the national, provincial and local levels;

(f) *Governance*: the implementation of the guidelines for mainstreaming disaster risk reduction in the development process requires capacity-building of the institutions and the key officials at all levels and sectors of governance. It is necessary to take systematic measures for streamlining governance systems to make them efficient, accountable, transparent and sensitive to the tasks of disaster risk reduction;

(g) *Monitoring and evaluation*: develop mechanisms for periodic monitoring and evaluation of the implementation of the guidelines for mainstreaming disaster risk reduction in all sectors of development.

C. Cost of mainstreaming disaster risk reduction

22. Investments in disaster risk reduction pay dividends. The cost and the process of integrating disaster risk reduction, however, have yet to be fully understood in different contexts. Many developing countries have adopted development patterns which incorporate resilience. Mainstreaming disaster risk reduction is efficient if public investment programmes are strategically coupled with resilience-building approaches. For example, Bangladesh has a food security programme embedded into flood control, cyclone preparedness and coastal zone management.[16] What is needed, therefore, is to have multisectoral programmes to reduce disaster risks and to enhance adaptive capacity at the cost of development itself — the so-called no regret approach, which is highly context-specific.

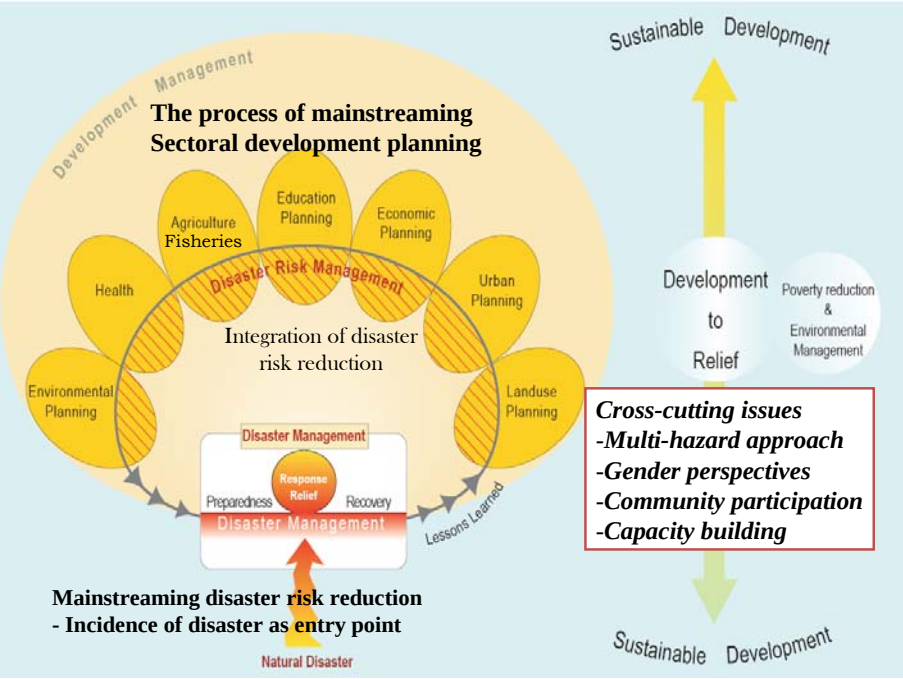
23. The resilience-building components in the social, productive, infrastructure and cross-cutting sectors have been specifically identified and assessed, and they could be factored into sectoral development planning or recovery and reconstruction investments in post-disaster scenarios (see figure). The introduction of risk resilience components involves additional costs and thus requires not only financial resources but also knowledge and institutional capacity for implementation. For example, in Cambodia, repairing the damage done by Typhoon Ketsana was estimated to cost $131 million, while the cost of meeting the country's recovery and reconstruction needs was estimated at $191 million. The additional $60 million was needed for mainstreaming disaster risk reduction in order to build resilient infrastructure and productive, social and cross-cutting sectors.[17] The box below presents a matrix for mainstreaming disaster risk reduction by sector. Integration of the various components for mainstreaming disaster risk reduction shown in the box below is important regardless of the point of entry. For example, under the social sector, awareness-raising campaigns would be necessary in hazard-prone countries to ensure the political will needed to allocate budgets for assessing the value of constructing electricity-generating plants, under the infrastructure sector. Similarly, integrating programmes for dealing with emergencies into those designed to help alleviate poverty, under the productive sector, could be linked with activities in the cross-cutting sectors, such as reducing the vulnerability to

[16] Bangladesh, Ministry of Food and Disaster Management, "Food Security and Disaster Management Programme of Bangladesh", undated. Available from: www.dmic.org.bd/dmin/?q=system/files/FS%26DMP_DG_DMB_paper.pdf.

[17] Cambodia, *Comprehensive Post-Disaster Needs Assessment: Ketsana Recovery and Reconstruction in Cambodia*, March 2010.

disaster of female-headed households. Critical challenges are to build collaboration between stakeholders and ensure that the various components in the box become part of national development plans, or of reconstruction programmes after a disaster.

Figure 1
Various components for building disaster resilience into sectoral development planning



Box
Components for mainstreaming disaster risk reduction

Infrastructure sector	Productive sector
• Introducing disaster risk reduction assessments for the construction of new roads, bridges and other major infrastructure • Integrating hazard awareness into land-use planning • Ensuring that building codes integrate disaster risk reduction and compliance, and the enforcement of building codes • Promoting the increased use of hazard-resilient designs, such as flood-proofing and seismic safety, in housing programmes in hazard-prone areas	• Promoting diversified income-generating opportunities and supplementary income generation in high-risk areas • Promoting effective programmes of crop diversification, including the use of hazard-resistant crops • Integrating programmes for dealing with emergencies, food security, poverty alleviation and rural development
Social sector	**Cross-cutting sectors**
• Promoting hazard-resilient construction for new schools and hospitals • Incorporating disaster risk reduction into the school curriculum. • Implementing disaster preparedness plans in schools and hospitals • Conducting public awareness campaigns that can change individual behaviour and encourage the reduction of household risk	• Strengthening capacities to protect ecosystems that can help reduce disaster risk • Combating types of environmental degradation that enhance disaster risks, such as deforestation • Reducing the vulnerability to disaster of female-headed households

D. Financing disaster risk reduction

24. At the Fourth Asian Ministerial Conference on Disaster Risk Reduction, which was held in Incheon, Republic of Korea, from 25 to 28 October 2010, the Conference called on various disaster risk reduction stakeholders to apportion at least 10 per cent of humanitarian assistance and 2 per cent of development assistance for disaster risk reduction by 2015.[18]

25. The financing of policies and programmes which could effectively translate knowledge and commitments into comprehensive actions to reduce hazard-related losses is of considerable significance. There are gaps in the understanding of what constitutes effective investments in disaster risk reduction. Knowing what constitutes disaster risk reduction is essential in guiding the process of prioritizing investments and decisions by Governments and the international donor community. In practice, it appears that disaster risk reduction has evolved into a series of investment streams:[19]

(a) Stand-alone sectoral disaster risk reduction investments include the building of awareness, the development of capacity for emergency management and for early warning and disaster preparedness and the retrofitting of infrastructure;

(b) Vulnerability-reducing investments, which may not bear the label of "disaster risk reduction investments", cover multifaceted development initiatives, investment in the social and cross-cutting sectors as well as the sectors related to the Millennium Development Goals, insurance and microcredit;

(c) Disaster risk reduction mainstreaming can constitute a third distinct category, which does not necessarily imply additional investment for disaster risk reduction; instead, it may involve acknowledgement of the disaster risk reduction implications of any development investment, such as risk-resilient investments in infrastructure and productive sectors.

26. The major share of investment in disaster risk reduction needs to take place in the context of sustainable development by making risk-sensitive investments in all sectors.

E. Disaster risk reduction in recovery and reconstruction opportunities

27. For many developing countries in the region, disaster risk reduction is initiated with an assessment of the impacts of major disasters. Such assessments enable the integration of risk reduction into development strategies and policy formulation for the purposes of recovery and reconstruction. Some post-disaster interventions have resulted in long-term solutions, for example the development of financial instruments to facilitate risk transfer mechanisms through insurance facilities and government catastrophe bonds that use the economic figures of past assessments as a starting point to establish coverage.

[18] Inter-Agency Secretariat of the International Strategy for Disaster Reduction, 2010. Available from: http://unisdr-apps.net/confluence/download/attachments/9110019/Summary+of+4h+AMCDRR.pdf?version=1.

[19] For more details, see "Increasing investment for disaster risk reduction", a concept note presented at the High-level Plenary Panel 1 of the Global Platform for Disaster Risk Reduction, Geneva, 16-19 June 2009. Available from: www.preventionweb.net/files/globalplatform/entry_bg_paper~HLP1conceptnotefinal.pdf.

28. Post-disaster assessment of the economic, social and environmental impacts of disasters for recovery and reconstruction provide an entry point to mainstream risk reduction strategies in the various development sectors. The damage and loss assessment methodology, which was developed by the Economic Commission for Latin America and the Caribbean, has been used operationally in making assessments after almost all the major disasters affecting the Asia-Pacific region in recent years: the Bhuj earthquake in India in 2001; the tsunami in the Indian Ocean in 2004; the Kashmir earthquake in Muzaffarabad, Pakistan, in 2005; Cyclone Sidr in Bangladesh in 2007; Cyclone Nargis in Myanmar in 2008; the tsunami in Samoa and other Pacific islands in 2009; Typhoon Ketsana in several South-East Asian countries in 2009; and the flooding in Pakistan in 2010. The methodology helps in identifying the sectoral needs for investment in the recovery and reconstruction processes, as well as in integrating disaster risk reduction measures to "build back better" through strategic recovery planning.

29. For example, the Post-Nargis Joint Assessment by the Tripartite Core Group attached high priority to the social sector for the purpose of recovery. More than half the post-disaster financial needs, namely $859 million of the total $1,002 million, were earmarked for the social sector based on a thorough analysis of needs during the recovery phase. The *Post-Nargis Social Impacts Monitoring* report examined the impact of various post-disaster interventions, especially in the social sector.[20] The social dimensions of the impacts of Cyclone Nargis were analysed in terms of aid effectiveness, the socio-economic impacts of the disaster and the impacts on social relations within and between communities. The interventions were targeted in a way that the people's livelihoods and village economies could begin to recover rapidly in order to prevent profound longer-term impacts, such as migration out of villages in the Ayeyarwady delta and a tearing of the social fabric.

III. Regional cooperation in support of mainstreaming disaster risk reduction

A. Outcomes of the Fourth Asian Ministerial Conference on Disaster Risk Reduction

30. The previously mentioned Fourth Asian Ministerial Conference on Disaster Risk Reduction adopted the Incheon Declaration on Disaster Risk Reduction in Asia and the Pacific 2010. That declaration, with a regional road map and action plan,[21] focused on: (a) raising awareness and building capacity for disaster risk reduction and climate change adaptation; (b) developing and sharing information, technology, sound practices and lessons learned in climate and disaster risk management; and (c) promoting the integration of disaster risk reduction and climate change adaptation into sustainable development.

31. The ministers urged the countries of the Asia-Pacific region to consider implementing the recommendations contained in the Declaration, where appropriate, within existing policies, strategies and action plans for effectively

[20] Tripartite Core Group, *Post-Nargis Social Impacts Monitoring: November 2008*, January 2009. Available from: www.asean.org/CN-SocialImpactMonitoring-November08.pdf.

[21] For details of the Incheon Regional Roadmap and Action Plan on Disaster Risk Reduction through Climate Change Adaptation in Asia and the Pacific, see www.preventionweb.net/files/16210_roadmapfinalversion.pdf.

mainstreaming disaster risk reduction and climate change adaptation into development, and report on their implementation of these recommendations, as well as those of earlier declarations, at the Fifth Asian Ministerial Conference on Disaster Risk Reduction when it is convened in 2012. In the Declaration, international organizations and regional institutions were called on to provide countries in the region with technical, operational and programmatic support to accelerate the implementation of the previously mentioned Hyogo Framework for Action, especially national action plans on disaster risk reduction.

32. ESCAP furnished technical assistance in the overall process of organizing the Fourth Asian Ministerial Conference on Disaster Risk Reduction and led the technical session on the integration of disaster risk reduction and climate change adaptation into sustainable development.

33. With regard to promoting investments in disaster risk reduction and climate change adaptation, the Declaration called for: building capacities to track disaster risk reduction investments; evaluating the financial and economic costs and benefits of disaster risk reduction to promote greater investments in reducing disasters in the region; promoting comprehensive preparedness planning to mitigate the impacts of disasters; strengthening governance structures and advocating the international donor community to increase its funding support for regional and national activities for disaster risk reduction and for implementation of the Hyogo Framework for Action; and apportioning at least 10 per cent of humanitarian assistance and 2 per cent of development assistance for disaster risk reduction by 2015; as well as for developed countries to offer support to developing countries in terms of financial resources, technology transfer and capacity-building.

34. ESCAP stands committed to integrating disaster risk reduction, including that related to climate change adaptation, into the framework for inclusive and sustainable development in the region. In this respect, the scope of an activity administered by ESCAP was expanded recently to cover overall disaster and climate preparedness in countries near the Indian Ocean and in parts of South-East Asia in the light of the increased number of extreme weather events that have been experienced in the area, as well as the continuing need in the region to strengthen early warning systems. The activity has thus been renamed the ESCAP Multi-Donor Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian Countries.

B. Strategizing regional cooperation

35. The Hyogo Framework for Action envisages integrating risk reduction into development policies and plans at all levels of Government, including poverty reduction strategies and multisectoral policies and plans. The Incheon Declaration recommended, among other things, promoting the integration of disaster risk reduction and climate change adaptation as part of sustainable development policies.

36. Regional cooperation through the sharing of information and knowledge that can facilitate the process of mainstreaming disaster risk reduction in development in the region could be carried out by:[22]

[22] SAARC Disaster Management Centre, *Mainstreaming Disaster Risk Reduction in Development: 14-15 November 2008, Colombo, Sri Lanka*, 2008. Available from: http://saarc-sdmc.nic.in/DRR_p.asp.

(a) Building awareness, collecting basic data on disaster risk and developing planning tools to track the changing relationship between development policy and disaster risk levels through a series of simulation and real-world studies;

(b) Developing simple tools and methodologies for integrating disaster risk reduction in specific sectors of development, such as poverty reduction, health, education, infrastructure development, rural and urban development and coastal zone management;

(c) Developing standard process guidelines for disaster impact assessments that can be applied to development projects to ensure that disasters do not create further disasters;

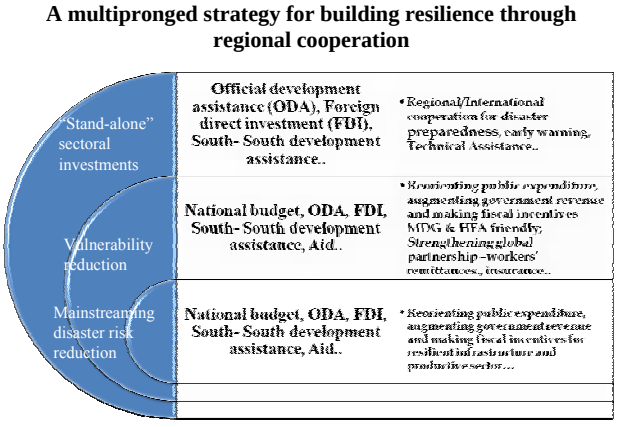
(d) Developing training modules on mainstreaming disaster risk reduction in the development process and helping member countries conduct training programmes;

(e) Documenting and disseminating information on best practices in mainstreaming disaster risk reduction in general and in specific sectors of development planning and practices;

(f) Reviewing the progress made by countries in mainstreaming disaster risk reduction in the development process.

37. Financing and developing capacity for disaster risk reduction need to be strategic in order to benefit the least developed countries (see figure 2). Some important enabling processes in support of financing disaster risk reduction and bridging the capacity gaps in the region include setting up early warning systems and regional cooperative mechanisms for the sharing of data and information, and engaging disaster risk reduction and development experts in regional panels and platforms. In making vulnerability reduction investments and mainstreaming disaster risk reduction, there are several important aspects which need to be highlighted by sharing experiences and sound practices, namely reorienting public expenditures, augmenting government revenues and making fiscal incentives for resilient development. This strategy of multitier financing of disaster risk reduction demonstrates the central role that regional cooperation assumes in mainstreaming disaster risk reduction in development.

Figure 2
Strategizing regional cooperation for financing and for developing capacity for disaster risk reduction



C. Capacity development and knowledge-sharing mechanisms

38. A key outcome of the midterm review of the Hyogo Framework for Action in terms of implementation highlights a lack of institutional capacity as the main factor constraining the mainstreaming of disaster risk reduction. Sharing information and knowledge is an important aspect of capacity development. For example, the benefits of weather-related information and forecasts sometimes exceed costs by more than 10 times. Many high-risk developing countries are not able to take advantage of the technological improvements in early warning systems, weather and related forecasting primarily because of the lack of institutional capacity. Even modest increases in spending − if supplemented by international data sharing − can have enormous benefits, especially in warning people of impending hazards. Several countries, some of them very poor, have realized large and quick gains from such spending. Such gains can also spill beyond borders, thus enhancing regional cooperation.[23]

39. The challenges of addressing issues related to the mainstreaming of disaster risk reduction lie in building regional capacity. The key to meeting those challenges comprises regional cooperation, the exchange of information and the provision of technical assistance to high-risk developing countries. The strategic advantage of ESCAP is its function as a platform for regional cooperation and technical support for disaster risk reduction. In responding to the needs of member States, the ESCAP subprogramme on information and communications technology and disaster risk reduction has focused on mainstreaming disaster risk reduction into economic and social development processes and on ensuring that risk reduction strategies are integrated into development planning. In this respect, the secretariat has taken up the following activities:

(a) *Asia-Pacific Disaster Report*: published jointly by ESCAP and the Inter-Agency Secretariat of the International Strategy for Disaster Reduction, the report contains regional analysis, reviews of hazard trends and emerging issues, analysis of socio-economic aspects and implications for development. The report is brought out regularly as an analytical study that focuses on emerging issues of interest to the region, primarily through an economic and social lens;

(b) Asia-Pacific Gateway for Disaster Risk Reduction and Development: a web-based information-sharing tool to facilitate the exchange of information and good practices and to promote the mainstreaming of disaster risk reduction in development planning in the region;

(c) Promotion of existing regional cooperation mechanisms, which include the Typhoon Committee and the Panel on Tropical Cyclones, both of which are intergovernmental bodies established under the auspices of ESCAP and the World Meteorological Organization in 1968, and the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific, in order to build institutional capacities and integrate economic and social dimensions into economic, social and ecological development in order to minimize the impacts of disasters;

[23] World Bank and United Nations, *Natural Hazards, UnNatural Disasters: The Economics of Effective Prevention* (World Bank, Washington, D.C., 2010). Available from: www.gfdrr.org/gfdrr/NHUD-home.

(d) Development by the Asian and Pacific Training Centre for Information and Communication Technology for Development of new modules on ICT for disaster risk management and ICT for climate change, as part of the Academy of ICT Essentials for Government Leaders;

(e) Capacity development for ESCAP member States in terms of socio-economic damage and loss assessment and in the integration of disaster risk reduction principles into recovery and reconstruction needs. The secretariat offered countries such technical assistance following the tsunami in Samoa in 2009 and Typhoon Ketsana in Cambodia in 2009. In collaboration with the Economic Commission for Latin America and the Caribbean and with the support of the Global Facility for Disaster Reduction and Recovery of the World Bank, the secretariat organized training workshops on damage and loss assessment for the subregions, initially for Pacific island developing countries;

(f) Extension of technical assistance on disaster risk reduction issues and the integration of disaster risk reduction into development planning, as a non-resident agency, to United Nations country teams in selected countries in connection with strategic formulations under the United Nations Development Assistance Framework and common country assessments.

IV. Issues for consideration by the Committee

40. In view of the concerted efforts of the secretariat to promote regional cooperation and enhance regional capacity for mainstreaming disaster risk reduction in the development process, the Committee may wish to provide information on any gaps and specific needs in countries of the region that could be addressed under the subprogramme on information and communications technology and disaster risk reduction. The Committee may wish to deliberate on the relevant issues and policies with a view to providing the secretariat with guidance concerning the future direction of the subprogramme.