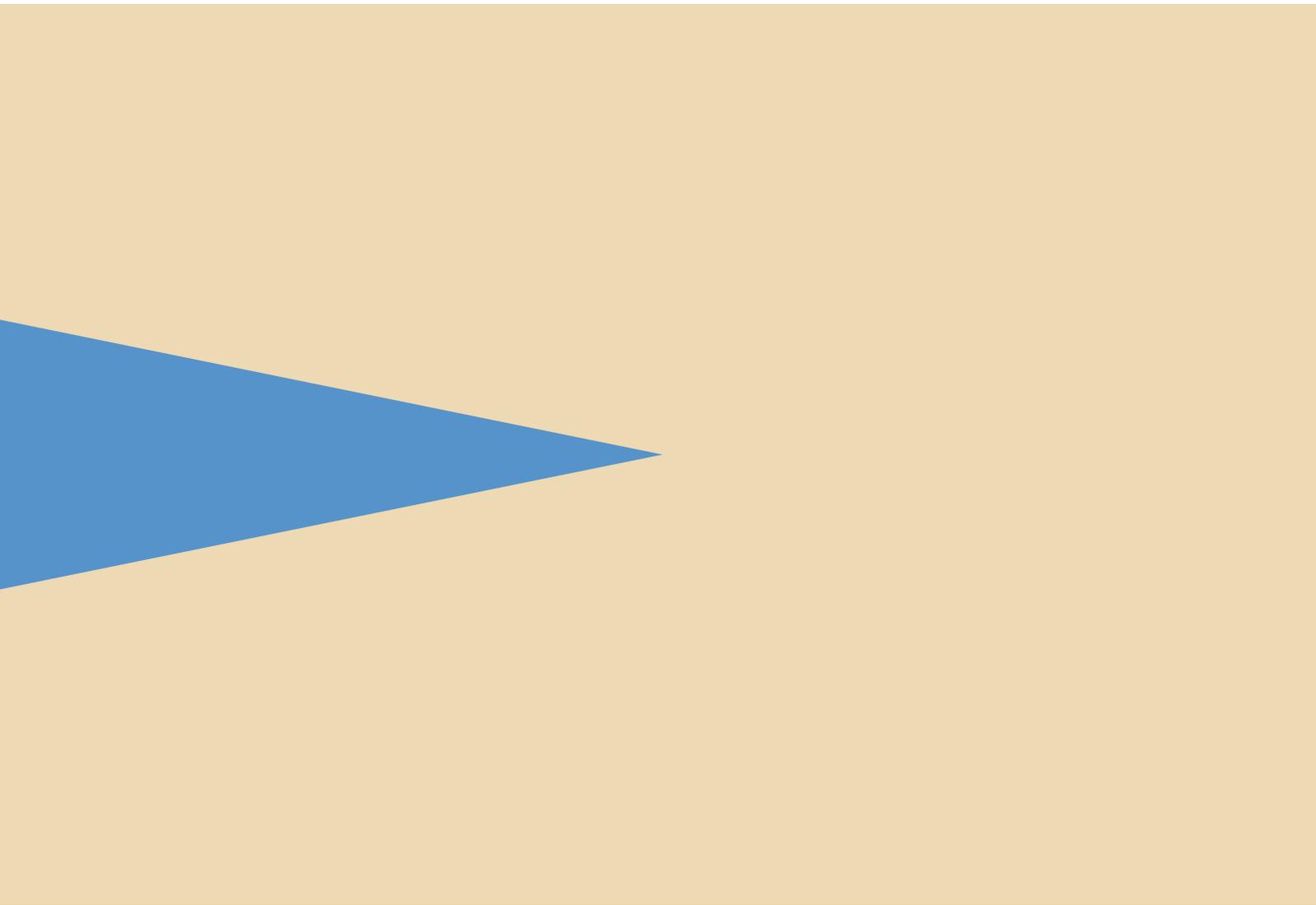


LEAST DEVELOPED COUNTRIES

REDUCING VULNERABILITY

to climate change, climate variability and extremes,
land degradation and loss of biodiversity:

Environmental and Developmental
Challenges and Opportunities



UNFCCC

United Nations Framework Convention on Climate Change

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May 2011





TABLE OF CONTENTS

PREFACE	7
ACKNOWLEDGEMENTS	9
I. EXECUTIVE SUMMARY	10
II. INTRODUCTION	12
III. THE LEAST DEVELOPED COUNTRIES AND THEIR VULNERABILITY TO NATURAL SHOCKS	15
3.1. Factors contributing to vulnerability in the least developed countries	15
3.2. Assessing vulnerability in the least developed countries	16
IV. KEY MEASURES TO ADDRESS VULNERABILITY IN THE LEAST DEVELOPED COUNTRIES UNDER THE RIO CONVENTIONS AND THE WORLD METEOROLOGICAL ORGANIZATION	22
4.1. Focus on the least developed countries in the Rio Conventions and by the World Meteorological Organization	22
4.2. Building resilience and strengthening adaptive capacities	23
4.3. Creating more meaningful participation in multilateral debates and programmes	26
4.4. Support through regional and global programmes	27
4.5. Promoting public-private partnerships in addressing environmental problems	27
4.6. Promoting synergies in implementing the Rio Conventions	27
4.7. Maintaining global momentum to support the least developed countries	28
4.8. Timeline of major events for the least developed countries	30
V. CHALLENGES AND GAPS	36
5.1. Human and institutional capacities	36
5.2. Financial resources	36
5.3. Access to technology	36
5.4. Limitations in language diversity	36
VI. PRIORITIES FOR CREATING OPPORTUNITIES FOR THE LEAST DEVELOPED COUNTRIES IN THE NEW PROGRAMME OF ACTION	39
6.1. Strengthening the human and institutional capacities and resources of the least developed countries	39
6.2. Providing large-scale opportunities for low-carbon development and technology innovation and transfer to address social and environmental goals	42
6.3. Establishing a global framework that ensures that forests are conserved and benefits are captured by marginal groups	42
6.4. Addressing enduring inequalities in global economic relations between countries	42
6.5. Strengthening the participation of the least developed countries in the Rio Conventions	43
6.6. Strengthening synergistic relationships between the Rio Conventions and other international programmes	44
VII. OVERALL INDICATORS OF SUCCESS	47



PREFACE

The challenge of adapting to climate change, particularly in the context of vulnerable and least developed countries (LDCs), is an issue that has been well recognized in the UNFCCC process. The establishment of an LDC work programme in 2001 embodies this by recognizing the urgent and immediate needs of LDCs to adapt to climate change. The work programme focuses, among others, on supporting LDCs in planning and implementing urgent and immediate adaptation actions, capacity building and increasing awareness on climate change through the national adaptation programmes of action (NAPAs). The projects identified in the NAPAs are funded through the Least Developed Countries Fund. LDCs have now prepared their NAPAs, and most have embarked on the implementation of the identified projects.

Governments at the sixteenth session of the Conference of the Parties held in Cancún, Mexico, in December 2010, further recognized that adaptation to climate change urgently requires enhanced action and international cooperation to enable and support adaptation actions aimed at reducing vulnerability and building resilience in developing countries, taking into account the urgent and immediate needs of those that are particularly vulnerable. They adopted the Cancún Agreements which comprise the Cancún Adaptation Framework. The Framework lays out important areas of cooperation between developing and developed countries for the implementation of adaptation actions. It contains provisions for support to LDCs in their transition to medium- and long-term planning and implementation of adaptation actions, building upon the experiences gained from the NAPAs.

Given the role of the UNFCCC process in providing special support to address vulnerability to climate change in LDCs, the UNFCCC secretariat took the lead in UN organizations pre-conference consultations on the theme on *addressing vulnerability and protecting the environment in LDCs*, as a contribution to the preparatory process for the Fourth United Nations Conference on LDCs. This publication is a result of the consultations, and provides information on support to LDCs in reducing their vulnerability to climate change, and in protecting the environment over the last decade 2001–2010. It further provides options for priorities on cooperation between development partners, UN agencies, multilateral development and financial institutions, and international organizations in coming up with specific proposals and deliverables in a renewed partnership for LDCs for the next decade.

I trust that this publication will enrich the substantive consultations leading to and during the Conference in Istanbul.

A handwritten signature in blue ink, which appears to be 'Christiana Figueres'. The signature is stylized and written in a cursive-like font.

Christiana Figueres, Executive Secretary,
United Nations Framework Convention on Climate Change
May 2011



ACKNOWLEDGEMENTS

This paper has been prepared by the secretariat of the UNFCCC. It benefited from inputs from several intergovernmental and civil society organizations, including the United Nations Convention on Biological Diversity, the United Nations Convention to Combat Desertification, the United Nations Educational, Scientific and Cultural Organization, the United Nations Population Fund, the World Food Programme, the World Meteorological Organization and the International Institute for Environment and Development. It also benefited from inputs from a pre-conference event entitled “Reducing vulnerability due to Climate Change, Climate Variability and Extremes, Land Degradation and Biodiversity Loss: Environmental and Developmental Challenges and Opportunities for LDCs” held in New York, the United States of America, on 28 February 2011.

I. EXECUTIVE SUMMARY

1. As the countries with the lowest indicators of socio-economic development, the least developed countries (LDCs) lack many of the key elements of the adaptive capacity to respond to climate change and other environmental crises, including a stable and prosperous economy, a high degree of access to technology, clearly delineated roles and responsibilities for the implementation of adaptation activities, robust information dissemination systems and equitable access to resources.¹ On top of this, they continue to face increasing environmental pressures and depletion of scarce natural resources, while they struggle with efforts to fight poverty and improve living standards. These efforts require higher levels of consumption and production, and this in turn would exacerbate the impacts of climate change, and lead to growth in greenhouse gas (GHG) emissions.

2. With a view to formulating and adopting policies and measures for the sustainable development of the LDCs and their progressive integration into the world economy, the Third United Nations Conference on the LDCs adopted the Brussels Programme of Action for the Least Developed Countries for the Decade 2001–2010 (BPoA).² Commitment six of the BPoA framework calls for reducing vulnerability to natural shocks and protecting the environment. This had been essential, given that LDCs are disproportionately exposed to the adverse effects of climate change, loss of biodiversity, desertification and other forms of environmental degradation.

3. However, progress over the last decade in reducing vulnerability and protecting the environment in the LDCs has been limited. Despite achieving the economic growth targets in the LDCs established in the BPoA, the number of people living on less than USD 1.25 a day in the LDCs actually increased by over 3 million per year from 2001 to 2007.³ This period also saw a declining share of manufacturing in 27 LDCs, limited transfers of technology, and increased dependence on food imports and on the export of primary commodities.⁴ In addition, minimal progress has been made towards achieving the United Nations Millennium Development Goals (MDGs) in the LDCs, on such issues as universal primary education, reducing child mortality and reducing hunger.⁵

4. On the other hand, programmes for reducing vulnerability that are specific to the three Rio Conventions, such as the least developed countries work programme (LDC work programme) under the UNFCCC, have produced some positive outcomes. However, obstacles related to the lack of financial and institutional capacity in the LDCs has made progress in increasing adaptive capacity and reducing vulnerability slow.

5. Reducing vulnerability to climate change and environmental challenges in the LDCs over the next decade would therefore require development initiatives that are attuned to social and economic needs, and environmental sustainability. In a world constrained by ecological limits, new opportunities and technologies must be made available to the LDCs in order to achieve the goals of environmental sustainability and economic development. This will require innovative practices that depart from business-as-usual economic growth models and include strong international financial and institutional support, a shift to valuing local knowledge systems more highly, the strengthening of civil society groups, and major efforts to meet social goals in the LDCs, such as the MDGs.

6. The nature and scale support to LDCs will have vast implications for the ability of LDCs to reduce their vulnerability to environmental crises. As an example, in terms of financial support for meeting adaptation needs, recent studies point to amounts of financing required in the range of hundreds of billions of United States dollars.⁶ This reality contrasts sharply with the amount of funds that has been made available for adaptation to climate change in developing countries. Of a total USD 30 billion pledged to developing countries as fast-start finance for the 2010–2012 period under climate change, only between 11 and 16 per cent of the funds have been designated for adaptation. This amounts to a meagre USD 3 billion for the entire period.⁷

7. Upon this background, the UNFCCC coordinated United Nations system preparations for the Fourth United Nations Conference on LDCs on the theme on addressing vulnerability and protecting the environment in LDCs. The preparations looked at environmental and developmental challenges and opportunities for the LDCs in reducing vulnerability due to climate change, climate variability and extremes, land degradation and loss of biodiversity. A pre-conference event on “Reducing vulnerability due to Climate Change, Climate Variability and Extremes, Land Degradation and Biodiversity Loss: Environmental and Developmental

Challenges and Opportunities for LDCs” was held in New York, the United States of America, on 28 February 2011. The event reviewed the progress made in achieving Commitment 6 in the BPoA of reducing vulnerability and protecting the environment, and identified emerging priorities for the New Programme of Action. This publication presents a summary of the preparatory process, and contains priorities for creating opportunities for the least developed countries in the new programme of action on addressing vulnerability to climate and environmental challenges.

8. The publication presents that actions to support the LDCs to reduce vulnerability and improve adaptive capacity, need to be geared towards the following goals:

- (a) Strengthening human and institutional capacities, and providing adequate and predictable resources to the LDCs for reducing vulnerability to climate change and environmental degradation, and mainstreaming resilience in development planning;
- (b) Providing large-scale opportunities for low-carbon development and technology innovation and transfer to address social and environmental goals;
- (c) Establishing a framework that ensures that forests are conserved and benefits are captured by marginal groups;
- (d) Addressing enduring inequalities in global economic relations between countries;
- (e) Strengthening LDC participation in the Rio Conventions and the Group of 77 and China;
- (f) Strengthening synergistic relationships between the Rio Conventions and other international programmes.

9. Related to the above mentioned goals, the publication presents the following indicators that could be used to assess the efforts of the LDCs and their development partners in addressing vulnerability of the LDCs to the impacts of climate change and environmental degradation over the next decade:

- (a) Processes are established to mainstream resilience to climate change in development planning and policies, and the LDCs have developed flexible national development plans that include detailed measures to reduce their vulnerability to climate change environmental degradation;
- (b) Funding provided to the LDCs is predictable, equitably distributed and adequate to meet the needs of vulnerable populations and systems as determined by science;

- (c) Access to funding in relation to climate change and the environment is facilitated, and the capacity to absorb funding has been built;
- (d) A global framework is established that ensures that forests are conserved and benefits are captured by marginal groups, including indigenous peoples, women and forest peoples;
- (e) The objectives of the Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disaster (HFA) are met by 2015 in coordination with the three Rio Conventions;
- (f) A global green new deal is established that complements economic growth and employment in the LDCs, protects vulnerable groups, reduces carbon dependency and ecosystem degradation, paves the way for sustainable and inclusive growth and contributes to the achievement of the MDGs.

¹ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC). 2001. *Climate Change 2001: Impacts, Adaptation and Vulnerability*.

² UNITED NATIONS GENERAL ASSEMBLY. 2001. *Brussels Programme of Action for the Least Developed Countries for the Decade 2001–2010*.

³ UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD). 2010. *The Least Developed Countries Report 2010: Towards a New International Development Architecture for LDCs*. Available at <http://www.unctad.org/en/docs/lcdc2010_embargo_en.pdf>. p. 31.

⁴ As footnote 2 above. p. 11.

⁵ UNITED NATIONS. 2010. *The Millennium Development Goals Report*. Available at <<http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20low%20res%2020100615%20.pdf>>.

⁶ WORLD BANK. 2009. *The Costs to Developing Countries of Adapting to Climate Change. New Methods and Estimates. The Global Report of the Economics of Adaptation to Climate Change Study*; and PARRY *et al.* 2009. *Assessing the costs of adaptation to climate change: A review of the UNFCCC and other recent estimates*.

⁷ CIPLET *et al.* 2010. *Fast-start adaptation funding: keeping promises from Copenhagen*. Available at <<http://pubs.iied.org/17088IIED.html?a=D%20Ciplet>>.

II. INTRODUCTION

10. The LDCs are acutely vulnerable to a variety of external shocks, including natural disasters. They are susceptible to global environmental challenges such as climate change, climate variability and extreme events, which, inter alia, exacerbate desertification and loss of biological diversity. Climate change is the world's greatest environmental challenge – its impacts go beyond what individual states have the capacity to deal with, and the LDCs are the most exposed to these impacts. It brings heightened occurrences of extreme events such as floods, tropical cyclones, tornados, storm surges, landslides, droughts, heat stress, disease epidemics and sea level rise. The particular hazards brought about by these events are often not new; however, their intensity, magnitude and the unpredictability of their impacts have increased significantly in the recent past.⁸

11. One of the commitments of the BPoA calls for reducing vulnerability (to natural shocks) and protecting the environment. The BPoA was adopted at the Third United Nations Conference on the LDCs, which took place in May 2001. It aims at improving the human conditions of the populations of the LDCs and provides a framework for partnership between the LDCs and their development partners in order to accelerate sustained economic growth and sustainable development in the LDCs, end marginalization by eradicating poverty, inequality and deprivation in these countries, and enable them to integrate beneficially into the global economy.

12. Actions proposed in the BPoA for reducing vulnerability and protecting the environment in the LDCs include strengthening national strategies for sustainable development and disaster preparedness and prevention, building institutional and technological capacity, encouraging greater reliance on local knowledge systems, strengthening gender equality and integrating adaptation strategies into national development programmes. For development partners, proposed actions include providing adequate financial resources, facilitating the implementation of multilateral agreements, granting special priority to the LDCs in areas such as technology transfer, information systems and capacity-building efforts, strengthening the ability of the LDCs to participate equitably in international negotiations, and providing support for the LDCs to develop and implement national strategies for sustainable development and disaster mitigation.⁹

13. Even though the BPoA did not set quantifiable goals and targets in relation to the commitment of reducing vulnerability and protecting the environment, reports on the regional review processes from Africa and Asia-Pacific LDCs on progress in implementing the BPoA indicate that climate change is a serious challenge that threatens to wipe out development gains in many LDCs, in a number of cases posing a threat to their physical existence.¹⁰ The reports note that the economies of most LDCs rely heavily on climate-sensitive sectors such as agriculture, fisheries, forestry, other natural resources and tourism. They indicate that the impacts of climate change on these sectors are particularly high for the poor, who tend to live in environments that are most susceptible to droughts, floods and other extreme weather events.

14. In line with the aforementioned commitment of the BPoA, various organizations undertook some initiatives with a specific focus on or of specific relevance to the LDCs in reducing vulnerability and increasing their adaptive capacities. For example, the Rio Conventions undertook various efforts to support countries in reducing their vulnerability to natural disasters and in protecting the environment. The UNFCCC established a special programme that focuses on implementing adaptation, capacity-building and awareness-raising in the LDCs. It also provided special support to the LDCs for them to engage in a wide range of regional and global intergovernmental initiatives to tackle climate change.

15. The United Nations Convention on Biological Diversity (CBD) places special attention to LDCs, given that many of the LDCs are home to the world's biodiversity hotspots. In addition, most LDCs are in Africa, a region most affected by, and most vulnerable to desertification, land degradation and droughts. The United Nations Convention to Combat Desertification (UNCCD) places special focus on LDCs and in Africa on its operations. The World Meteorological Organization (WMO, in 2003, established its Programme for the LDCs, with the objective of enhancing the capabilities of national institutions to provide relevant and timely weather, water and climate information and services to decision makers and all other users concerned.

16. However, despite these efforts, the LDCs continue to be increasingly exposed to environmental shocks. There is, therefore, a need for renewed partnerships between the LDCs and their development partners, in order to reduce poverty and safeguard sustainable development in the LDCs.

17. In preparation for the Fourth United Nations Conference on the LDCs, to take place in Istanbul, Turkey, in May 2011, this publication assesses the efforts made through the United Nations system, in particular through the Rio Conventions and by the WMO, to address environmental vulnerability in the LDCs over the last decade. Further, it makes recommendations for the next decade of 2011–2020. In addition, the paper touches on vulnerability and how the consideration of vulnerability could be improved in defining the criteria for the graduation from LDC status.

⁸ BANGLADESH CENTRE FOR ADVANCED STUDIES. 2010. *A Review and Synthesis of National Adaptation Programmes of Action prepared by LDCs*. p. 2.

⁹ As footnote 8 above. pp. 45–48.

¹⁰ Outcomes of the regional review meetings for Africa and Asia-Pacific. Available at <<http://www.un.org/wcm/content/site/ldc/home/pid/13103>>.



III. THE LEAST DEVELOPED COUNTRIES AND THEIR VULNERABILITY TO NATURAL SHOCKS

3.1. FACTORS CONTRIBUTING TO VULNERABILITY IN THE LEAST DEVELOPED COUNTRIES

18. The impacts of climate change, climate variability and extreme events, land degradation and loss of biological diversity are experienced in multiple ways: in loss of human lives; as threats to livelihoods; in increases in the prevalence and severity of diseases; as constraints on and shocks to economic development; in increases in the magnitude and frequency of floods, droughts and other disasters; as recurring or persistent famine; as human displacement; and as disruptions to social and political systems. The LDCs are extremely vulnerable to these impacts and their consequences and have little or no means of coping with them given their structural handicaps.

19. The LDCs lack many of the key elements of the adaptive capacity to respond to climate change and other environmental crises, including a stable and prosperous economy, a high degree of access to technology, clearly delineated roles and responsibilities for the implementation of adaptation activities, robust information dissemination systems and equitable access to resources.¹¹ Currently, the LDCs account for 11 per cent of the world's population but only 0.6 per cent of global gross domestic product.¹²

20. In addition, the combination of environmental effects and population growth has strongly undermined the capacity of the LDCs to catch up with the income levels of the more advanced developing countries. Between 2000 and 2008 real economic growth in the LDCs was almost as high as in other developing countries, 6.6 per cent per annum on average, but, adjusted for environmental effects and population growth, the real rate of economic growth in the LDCs was only about half of what it was in other developing countries.

21. The LDCs have experienced minimal progress towards the achievement of the MDGs on such issues as universal primary education, reducing child mortality and reducing hunger.¹³ Despite achieving the economic growth targets established in the BPOA, the number of people living on less than USD 1.25 a day in the LDCs actually increased by over three million per year from 2001 to 2007.¹⁴ This period also saw a declining share of manufacturing in 27 LDCs, limited transfers of technology, and increased dependence on food imports and on the export of primary commodities.¹⁵

22. Progress in strengthening adaptive capacity and reducing vulnerability in the LDCs has also been weak, and they continue to be disproportionately exposed to the adverse effects of climate change and interrelated issues of drought, desertification, land degradation and loss of biological diversity. A 2010 report from the United Nations Conference on Trade and Development (UNCTAD) found that the frequency and intensity of extreme weather events in the LDCs (e.g. droughts, extreme temperatures and floods) have been increasing, with five times as many such incidents occurring during the period 2000–2010 as during the period 1970–1979. The number of people in the LDCs affected by these extreme events has almost doubled, rising from 100 million during the period 1970–1979 to 193 million over the period 2000–2010.¹⁶

23. The LDCs have the largest existing burdens of climate-sensitive diseases and the least effective public-health systems. They suffer 34 per cent of the global human deaths linked to climate change, the largest causes being the spread of malaria and waterborne diseases, and this number is expected to rise to 41 per cent by 2030.¹⁷

¹¹ IPCC. 2001. *Climate Change 2001: Impacts, Adaptation and Vulnerability*.

¹² UNCTAD. 2005. *Statistical Profiles of the Least Developed Countries 2005*. Available at <<http://www.unctad.org/Templates/Page.asp?intItemID=3713&lang=1>>.

¹³ UNITED NATIONS. 2010. *The Millennium Development Goals Report*. Available at <<http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20low%20res%2020100615%20.pdf>>.

¹⁴ UNCTAD. 2010. *The Least Developed Countries Report 2010: Towards a New International Development Architecture for LDCs*. Available at <http://www.unctad.org/en/docs/ldc2010_embargo_en.pdf>. p. 31.

¹⁵ As footnote 14 above. p. 11.

¹⁶ As footnote 14 above. p. IX.

¹⁷ DARA. 2010. *Climate Vulnerability Monitor 2010*. p. 16.

24. In addition to fatalities, disasters such as floods, excessive rainfall, droughts and cyclones cause considerable economic loss and disruption of livelihoods. In the context of a globalized economy, a lack of economic diversity and a reliance on climate-sensitive commodities for export, such as agricultural products, expose the LDCs to the double threat of economic and environmental shocks.¹⁸ It is estimated, for example, that, for every 1 °C rise in average global temperatures, average annual growth in poor countries could drop by 2 to 3 percentage points, with no change in the growth performance of the developed countries.¹⁹

25. Given that many LDCs depend primarily on agricultural activities for both economic development and the subsistence of local populations, disasters can trap them in a cycle of economic and environmental crises. Losses in crop production can exacerbate livelihood insecurity and, in turn, reduce the capacity to prepare for and respond to future disasters. A report from the Global Humanitarian Forum, led by former United Nations Secretary-General Kofi Annan, found that climate change already delivers economic losses of USD 125 billion a year, with 90 per cent of the burden experienced by developing countries.²⁰

26. In addition to facing disproportionate exposure to the impacts of climate change and environmental degradation, the LDCs are the least capable of preparing for and recovering from the impacts – what is known as adaptive capacity. As measured by the United Nations, the LDCs have the lowest indicators of socio-economic development, including income, human resources such as nutrition, health, education and adult literacy, and economic vulnerability.²¹

27. Many of the impacts of climate change, land degradation and loss of biodiversity over the next few decades are unavoidable. GHG emissions that have already been released into the atmosphere will continue to warm the planet regardless of the changes that we make today. And, while a high level of harm to human populations in the LDCs is inevitable, the scale of this harm will be influenced by measures taken to build adaptive capacity in the LDCs, taking into account their vulnerability.

3.2. ASSESSING VULNERABILITY IN THE LEAST DEVELOPED COUNTRIES

28. Certain groups of people may be more or less geographically exposed to physical environmental threats, such as sea level rise, droughts, floods and diseases, than others. Various characteristics of a group of people and their context can make them more or less likely to be able to prepare for, cope with or adapt to such impacts. Characteristics that typically enable a group to have adaptive capacity, and thus be less vulnerable to adverse effects related to environmental change, include a stable and prosperous economy, a high degree of access to technology, clearly delineated roles and responsibilities for the implementation of adaptation activities, robust information dissemination systems and equitable access to resources.²² These are all characteristics that the LDCs, by consequence of having the lowest socio-economic indicators of development, often lack. Thus, adaptive capacity among the LDCs is generally weak.

29. The Intergovernmental Panel on Climate Change (IPCC) defines vulnerability as the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes.²³ The vulnerability of a group of people depends on the extent to which it is exposed to external change, including environmental or socio-political stress, its sensitivity or the degree to which it is affected due to exposure, and its adaptive capacity or ability to make changes necessary to avoid adverse consequences.

30. Vulnerability assessments are a useful tool for planning local, national and global actions to respond to the impacts of climate change, climate variability and extreme events, desertification and loss of biological diversity. In the context of climate change, for instance, vulnerability assessments are used for adaptation interventions, such as for the national adaptation programmes of action (NAPAs). Vulnerability assessments may also be used to influence policymaking and the allocation of financial resources among countries or regions. They will also be an important component of the review of progress in the implementation of commitments that are aiming to reduce vulnerability. At the time of its adoption, the BPoA did not set any quantifiable goals or targets for reducing vulnerability and protecting the environment, but instead insisted that the LDC-specific objectives defined in Agenda 21 and Rio + 5, as well as commitments resulting from multilateral environmental agreements, must be the basis for actions.

31. There is no right or objective method to measure vulnerability. However, various decisions must be made in any vulnerability assessment, and much depends on the criteria, methods and data available. Decisions must be made on criteria such as: the entity or system assessed (for example, a country population distribution, a community or a forest ecosystem); the threat and its relationship to climate change (for example, sea level rise or disease); the notion of 'worse' or 'better' with respect to the entity and the threat (for example, the number of people made homeless or the cost in USD); the time frame used for the assessment (for example, 10 as compared to 50 years); and the ability of a given entity to react in response to a threat, or adaptive capacity, and how this should be measured.²⁴

32. The most useful vulnerability models for informing concrete actions on the ground consider local, social and ecological systems and needs, local cultures, politics, values and knowledge systems. Such approaches actively engage various stakeholders, particularly those that are considered vulnerable. This is particularly important when vulnerability assessments are used to design interventions to increase adaptive capacity and reduce vulnerability in a particular locality.

33. Noting that vulnerability assessments play an important role in guiding policy action and prioritizing the flow of financial resources, it is important that whatever criteria are used, they are clear about the assumptions and decisions that have been made, and that there is a strong rationale to support the decisions.²⁵ Most importantly, vulnerable groups must be adequately involved in the processes of developing assessment criteria and designing and implementing plans to mitigate problems and strengthen adaptive capacity. TABLE III-1 provides descriptions of selected frameworks available for assessing vulnerability and strengthening adaptive capacity.

¹⁸ O'BRIEN KL AND LEICHENKO RM. 2000. Double exposure: assessing the impacts of climate change within the context of economic globalization. *Global Environmental Change*. 10: pp. 221–232.

¹⁹ UNCTAD. 2010. *The Least Developed Countries Report 2010: Towards a New International Development Architecture for LDCs*. Available at <http://www.unctad.org/en/docs/lcdc2010_embargo_en.pdf>. p. IX.

²⁰ THE GLOBAL HUMANITARIAN FORUM. 2010. *The Anatomy of A Silent Crisis*. Available at <<http://www.eird.org/publicaciones/humanimpactreport.pdf>>.

²¹ UNITED NATIONS OFFICE OF THE HIGH REPRESENTATIVE FOR THE LEAST DEVELOPED COUNTRIES, LANDLOCKED DEVELOPING COUNTRIES AND SMALL ISLAND DEVELOPING STATES. 2011. *The Criteria for the identification of the LDCs*. Available at <<http://www.un.org/special-rep/ohrls/lcdc/lcdc%20criteria.htm>>.

²² IPCC. 2001. *Climate Change 2001: Impacts, Adaptation and Vulnerability*.

²³ IPCC. 2007. *Climate Change 2007: Impacts, Adaptation and Vulnerability*.

²⁴ FÜSSEL HM. 2007. Adaptation planning for climate change: Concepts, assessment approaches, and key lessons. *Sustainability Science* 2(2): p. 265; FÜSSEL HM. 2006. Climate change vulnerability assessments: An evolution of conceptual thinking. *Climatic Change*. 75(3): p. 301; and IONESCU C. 2009. Towards a formal framework of vulnerability to climate change. *Environmental Modelling Assessment*. 14(1): p. 1.

²⁵ O'BRIEN KL, ERIKSEN S, SCHJOLDEN A AND LYGAARD L. 2005. What's in a word? Interpretations of vulnerability in climate change research. *Climate Policy*. (submitted for publication). p. 12.

Table III-1. Frameworks for assessing vulnerability and strengthening adaptive capacity^a

Framework	Description
Intergovernmental Panel on Climate Change Technical Guidelines for Assessing Climate Change Impacts and Adaptations	<p>A set of technical guidelines for the scientists to assess the impacts of potential climate change and evaluate appropriate adaptations. The guidelines outline a seven-step process:</p> <ol style="list-style-type: none"> (1) Definition of the problem; (2) Selection of the methods; (3) Testing of the methods; (4) Selection of the scenarios; (5) Assessment of biophysical and socio-economic impacts; (6) Assessment of autonomous adjustments; (7) Evaluation of adaptation strategies. <p>A range of methods is identified at each step.</p>
United Nations Development Programme Adaptation Policy Framework	<p>The framework provides guidance on designing and implementing projects that reduce vulnerability to climate change, by both reducing potential negative impacts and enhancing any beneficial consequences of a changing climate. It emphasizes five major principles: assessing adaptation policies and measures in a developmental context; explicitly including adaptation to short-term climate variability and extreme events as a step towards reducing vulnerability to long-term change; recognizing that adaptation occurs at different levels of society, including the local level; recognizing that the adaptation strategy and the process by which it is implemented are equally important; and building adaptive capacity to cope with the current climate is one way of preparing society to better cope with the future climate.</p>
Assessments of Impacts and Adaptations to Climate Change in Multiple Regions and Sectors (AIACC)	<p>AIACC aims to fill gaps in the current understanding of vulnerability and create opportunities for adaptation by funding, training, and mentoring developing country scientists to undertake multi-sector and multi-country research of priority to developing countries. While an explicit framework for undertaking vulnerability and adaptation assessments is not prescribed, a toolkit for researchers, including tools that are useful in the design of projects as well as the tenets of a general approach, is provided. The AIACC regional studies are diverse in their objectives, scientific methods, and the sectors and systems to be investigated, but they share a common assessment approach that places understanding vulnerability at the centre of the assessment, engages stakeholders in the assessment process and gives priority to strengthening the information base for making decisions about adaptation to climate change.</p>
Guidelines for the preparation of national adaptation programmes of action (NAPAs)	<p>NAPAs provide a process for the least developed countries (LDCs) to address their current and urgent adaptation needs. Countries are required to rank adaptation measures for funding on the basis of such criteria as urgency and cost-effectiveness. The NAPA guidelines provide some guidance on the process of compiling a document that specifies priority adaptation actions in the LDCs; however, they do not provide a structured framework. The guiding elements emphasize:</p> <ol style="list-style-type: none"> (1) A participatory approach involving stakeholders; (2) A multidisciplinary approach; (3) A complementary approach that builds on existing plans and programmes; (4) Sustainable development; (5) Gender equity; (6) A country-driven approach; (7) Sound environmental management; (8) Cost-effectiveness; (9) Simplicity; (10) Flexibility based on country-specific circumstances.

Table III-1. Frameworks for assessing vulnerability and strengthening adaptive capacity^a (continued)

Framework	Description
United Kingdom Climate Impacts Programme Climate Adaptation: Risk, Uncertainty and Decision Making	<p>The framework and guidance aim to help decision makers and their advisors in identifying important risk factors and to describe the uncertainty associated with each. The report identifies methods and techniques for risk assessment and forecasting, appraising options and analysing decisions. There are eight stages in the framework:</p> <ol style="list-style-type: none"> (1) Identify problem and objectives; (2) Establish decision-making criteria; (3) Assess risk; (4) Identify options; (5) Appraise options; (6) Make decision; (7) Implement decision; (8) Monitor, evaluate and review. <p>It prescribes a circular process in which feedback and iteration are encouraged, and emphasizes a sequential implementation of adaptation measures. There is also an 'adaptation wizard', which can be used to identify, assess and implement adaptation options.</p>
DARA Climate Vulnerability Monitor (CVM)	<p>The CVM assesses vulnerability in relation to four main areas: health impacts, weather disasters, loss of habitat and economic stress. In order to establish a scale of climate-sensitive vulnerabilities across countries, the CVM uses historical records and satellite observations of phenomena that are influenced by climate change. Each measure represents a distinct set of stressors that can be analysed in isolation from the other measures. The CVM provides key practical actions that can be taken to reduce the impacts identified in a given area. It assesses impacts over a 20-year horizon, but it does not take into account the level of domestic/international resources available to a country to respond to climate-related challenges.</p>
The World Resources Report	<p>The report provides policymakers, governments, civil society and the private sector with analysis of and insight into major environmental and development issues. It is the product of a 20-year partnership between the United Nations Environment Programme, UNDP, the World Bank and the World Resources Institute. The 2010 report focuses on adapting to climate change and includes expert perspectives on key adaptation issues, national case studies, in-country scenarios, and emerging models for decision-making and coordination in a changing climate.</p>
The World Resources Institute National Adaptive Capacity (NAC) Framework	<p>The NAC Framework articulates a fundamental set of national-level functions that all countries will need to perform if they are to adapt effectively to climate change over time. These functions include assessment, prioritization, information management, coordination and risk reduction. The capacities to perform these functions can be thought of as elements of a national 'adaptation system' that can support and facilitate adaptation action by governments, communities, businesses and others. The NAC Framework can be used to assess by whom and how well functions are being performed, in order to identify opportunities and priorities for building adaptive capacity and implementing key activities. After a period of time, it can be used again to evaluate progress. Planners, evaluators and civil society advocates may find it useful in their adaptation efforts.</p>

^a The descriptions of the first five listed frameworks have been adapted from those available at <<http://unfccc.int/2674.php>>.

Box III-1. A closer look at climate impacts in Bangladesh

The climate impacts in the least developed countries (LDCs) are quite diverse. However, to give a sense of some of the challenges that are being faced by the LDCs, the following is a short case study of climate impacts in Bangladesh, based on the information included in its national adaptation programme of action.^a Bangladesh has a population of about 131 million people, with 36 per cent of the people living on less than a dollar a day. Most people in Bangladesh live in rural areas and the main industry is agriculture. However, the proportion of people living in urban areas is growing. The geographical setting of Bangladesh makes the country vulnerable to natural disasters, the most common and severe of which are related to water, including floods and cyclonic storms. In 2004, floods inundated 38 per cent of the country.

The pattern and behaviour of the climate and weather play a significant role in relation to freshwater availability, agriculture, economic growth and performance, and livelihoods. Climate change induced challenges in Bangladesh include: scarcity of freshwater due to less rain and higher evapo-transpiration in the dry season; drainage congestion due to higher water levels in conjunction with the rise in sea level; river bank erosion; frequent floods and prolonged and widespread drought; and higher salinity on the surface and in the ground and soil in the coastal zones. The population living in the coastal areas is more vulnerable to climate change impacts than the population in other areas.

The overall trend in the annual mean maximum temperature showed a significant increase over the period 1961 – 1990. In addition, the adverse effects of the erratic nature of rainfall and temperature on agricultural productivity and availability

of freshwater are already quite evident in many areas. Further, the rate of sea level rise in recent years is many times higher than the mean rate of global sea level rise over 100 years, although some of this change is likely due to tectonic activity. In addition, there is clear evidence of increased saline intrusion in the coastal zones, making access to freshwater a problem.

Much of the future vulnerability due to climate change will not necessarily involve the addition of any new climate-related hazards to the already well-known ones of floods, droughts and cyclones, but both the frequency and the intensity of such climatic events will increase in the future. In particular, the size of the areas prone to floods, cyclones and salinity intrusion may all increase in the future. Biodiversity will also be affected, with the most pronounced impact on the Sundarbans mangrove forest. The degradation of forest quality may cause a gradual depletion of the rich diversity in the forest flora and fauna of the Sundarbans ecosystem.

The ultimate key impacts of climate change and variability on people in Bangladesh will be on the livelihoods of the peoples depending on the natural resource base and the services of other sectors, including infrastructure and industries. Many anticipated adverse impacts of climate change, including sea level rise, higher temperatures, enhanced monsoon precipitation and run-off, potentially reduced precipitation in the dry season and an increase in cyclone intensity, would in fact aggravate many of the existing stresses that already pose a serious impediment to the process of economic development in Bangladesh. The most damaging effects of climate change are floods, salinity intrusion and droughts, which are found to drastically affect crop productivity almost every year.

^a Available at <<http://unfccc.int/resource/docs/napa/ban01.pdf>>.



IV. KEY MEASURES TO ADDRESS VULNERABILITY IN THE LEAST DEVELOPED COUNTRIES UNDER THE RIO CONVENTIONS AND THE WORLD METEOROLOGICAL ORGANIZATION

4.1. FOCUS ON THE LEAST DEVELOPED COUNTRIES IN THE RIO CONVENTIONS AND BY THE WORLD METEOROLOGICAL ORGANIZATION

34. The Earth Summit that was held in Rio de Janeiro, Brazil, in 1992 culminated in the establishment of three Rio Conventions, the UNFCCC, UNCCD and CBD, to support specific environmental aspects for the implementation of Agenda 21 and the principles contained in the Rio Declaration on Environment and Development and the Statement of Principles for the Sustainable Management of Forests.²⁶ Agenda 21 is a comprehensive plan of actions to be undertaken globally, nationally and locally by organizations of the United Nations System, governments and major groups in every area in which humans impact on the environment. The Rio Declaration on Environment and Sustainable Development consists of 27 principles intended to guide future sustainable development around the world. Principle 6 of the declaration specifically states that “the special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority” and that “international actions in the field of environment and development should also address the interests and needs of all countries”. The UNFCCC and CBD were adopted in 1992, while UNCCD was adopted in 1994.

35. WMO originated from the International Meteorological Organization, which was founded in 1873. Established in 1950, WMO became the specialized agency of the United Nations for weather and climate, hydrology and related geophysical sciences. In collaboration with other United Nations agencies and the national meteorological and hydrological services (NMHSs), WMO supports the implementation of a number of environmental conventions and is instrumental in providing advice and assistance to governments on related matters. Its activities contribute towards ensuring the sustainable development and well-being of nations.²⁷

36. The three Rio Conventions and WMO have individually and jointly, and in collaboration with other development partners, contributed towards achieving the goal of reducing vulnerability and protecting the environment in the LDCs over the last decade by recognizing the special situations of the LDCs in their work.

37. The UNFCCC recognizes the specific needs and special situations of the LDCs under Article 4, paragraph 9, of the Convention. In 2001, in implementing Article 4, paragraph 9, the UNFCCC established the LDC work programme, containing actions to support the LDCs in dealing with the adverse effects of climate change. These included:

- (a) Strengthening existing and, where needed, establishing national climate change secretariats and/or focal points;
- (b) Providing training, on an ongoing basis, in negotiating skills and language;
- (c) Supporting the preparation and implementation of NAPAs;
- (d) Promotion of public awareness programmes;
- (e) Development and transfer of technology, particularly adaptation technology;
- (f) Strengthening the capacity of meteorological and hydrological services.

38. The LDC work programme was established together with the Least Developed Countries Fund (LDC Fund) to support its implementation, and the Least Developed Countries Expert Group (LEG) to provide advice and technical guidance on NAPAs. The UNFCCC has therefore, in the last decade, focused its support for the LDCs on the LDC work programme and, in addition, on integrating the special needs of the LDCs into all areas of its work.²⁸

39. Many LDCs are home to the world's biodiversity 'hotspots' (see [FIGURE IV-3](#)). As a result, CBD, in its work, recognizes the special conditions of the LDCs and has made a number of decisions that call for addressing issues that are pertinent and related to the LDCs. These decisions prioritize support for the LDCs in the administration of the Convention and the budget for its programme of work, which provides funding to the LDCs for them to attend relevant meetings and capacity-building workshops.

40. UNCCD has a special focus on the LDCs and the African region. Most of the world's LDCs are in Africa (see [FIGURE IV-5](#)), which is also the region most affected by, and vulnerable to, desertification, land degradation and drought. As recognized in the Convention, desertification, land degradation and drought are key issues in many LDCs. The situation is expected to worsen due to climate change, with profound effects on water stress and food security. UNCCD has therefore taken steps to address the specific needs and challenges in the LDCs when addressing desertification, land degradation and drought.

41. Under WMO, in 2003 a special programme for the LDCs was established as a contribution to the implementation of the BPoA. The WMO Programme for the LDCs aims to enhance the capacity of NMHSs to contribute effectively to the socio-economic development of these countries. This includes continually reviewing the needs of the NMHSs of the LDCs and concentrating efforts on securing funding for a number of countries at a time, in order to produce tangible and lasting results. A special WMO Trust Fund for the LDCs was also established to support the implementation of the programme.²⁹

42. The three Rio Conventions and WMO have provided support to the LDCs with a view to building their resilience and strengthening their adaptive capacities to deal with climate change, climate variability and extreme events, desertification and loss of biological diversity. Their activities have supported strengthening human and institutional capacities, strengthening data- and information-related capacities, formulating national environmental plans, developing strategies for implementing the plans, accessing financial and technical support for implementing the plans, and strengthening and supporting participation in relevant intergovernmental and multilateral processes relating to the environment. They have also supported the promotion of public-private partnerships in addressing environmental problems.

4.2. BUILDING RESILIENCE AND STRENGTHENING ADAPTIVE CAPACITIES

4.2.1. STRENGTHENING HUMAN AND INSTITUTIONAL CAPACITIES

43. The need for capacity-building to assist countries, especially the LDCs, to respond to environmental challenges has been recognized throughout the Rio Conventions and by WMO. The UNFCCC, in establishing the LDC work programme, also established an expert group, the LEG, with a mandate to, among other things, advise on capacity-building needs for the LDCs in implementing the work programme. The result has been the formulation and implementation of specific activities and programmes in the form of training, guidelines and customized workshops targeted at addressing the specific needs of the LDCs by the LEG in partnership with various development partners and organizations.

44. As an example, in 2003, the United Nations Institute for Training and Research, in partnership with the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP), implemented a project for building the human and institutional capacities of the climate change focal points in 46 LDC Parties. The aim of the project was to equip and train, with information and communication technologies, LDC UNFCCC focal points, and to assist them in planning sustained activities to enhance their negotiating and language skills in the context of the UNFCCC. An immediate result expected from this project was improved communication between the LDC Parties and the secretariats of the UNFCCC and the GEF, and for the LDCs to have a better understanding of GEF interventions. In addition, the project aimed to improve the understanding of the secretariats of the UNFCCC and the GEF and of other involved agencies of the needs of the LDCs.

²⁶ <<http://www.un.org/geninfo/bp/enviro.html>>.

²⁷ <<http://www.wmo.int>>.

²⁸ UNFCCC decision 5/CP.7. Available at <<http://unfccc.int/resource/docs/cop7/13a01.pdf>>.

²⁹ WMO. 2003. *Fourteenth World Meteorological Congress – Proceedings*. WMO-No. 972, Geneva. p. 101.

45. WMO has developed and implemented programmes that have directly benefited the LDCs with respect to human and institutional capacities, in areas where the LDCs themselves would not have acquired the resources do so. It has helped set up a global hydrological network, the World Hydrological Cycle Observing System, for monitoring water quality and assessing water resources, an abiding prerequisite for sustainable development and for reducing water-related hazards such as floods and droughts. It has coordinated the active promotion of a consensus approach and regional networking for the development and application of climate information services and products, through Regional Climate Outlook Forums, El Niño and La Niña updates, and regional showcase projects. It has developed global- and regional-scale climate prediction infrastructure and support for capacity-building in climate information and prediction services to assist the LDCs effectively incorporate climate issues into national sustainable development agendas. The WMO Disaster Risk Reduction (DRR) Programme has assisted the LDCs to improve their understanding and assessment of impacts, vulnerability and adaptation, and to make informed decisions on practical adaptation actions and measures to respond to climate change on a sound, scientific, technical basis.

46. WMO has provided specialized training to technicians, weather forecasters and meteorologists from a large number of LDCs through its scientific and technical programmes and a network of regional training and specialized centres.

4.2.2. STRENGTHENING DATA- AND INFORMATION-RELATED CAPACITIES

47. NMHSs play an important role in empowering people by providing timely advice and early warnings on weather, climate and water, and information on tropical cyclones, floods, droughts, bush and forest fires, and heat waves and cold spells. This enables people to protect themselves by taking relevant preventive or mitigation measures.

48. Over the last decade, significant developments in monitoring, detecting, analyzing, forecasting and the warning of weather-, water- and climate-related hazards have led to significant opportunities for reducing the impacts of related disasters. For example, over the last 25 years there has been an almost four-fold increase in the number of climate-related disasters and a five-fold increase in the associated economic losses, whereas the loss of lives has in fact decreased to nearly one third of its previous

value.³⁰ This is due to several factors. A critical factor is the continuous development of natural-hazard monitoring and detection and the development of specific end-to-end early warning systems, such as those for tropical cyclones. The international movement in disaster risk management is supported by the HFA.

49. Under its Programme for the LDCs, WMO conducted capacity-building activities to promote the beneficial use of weather-, climate- and water-related information, products and services in various socio-economic sectors, such as agriculture and food security, health, DRR, transport, environment, water resource management, energy and tourism. Further, WMO contributed to global efforts to monitor the environment and address potential hazards such as global warming, climate change and sea level rise, and in assessing the predictability of climate on seasonal to inter-annual timescales. WMO contributed significantly to the development and use of modern Climate Data Management Systems in 40 LDCs and to the rescue of historical records at risk of deterioration in order to secure complete and safe long-term climate records. It supported the preparation and issuance of annual global statements on the state of the Earth's climate, paying particular attention to regional aspects, based on the regional information provided by the NMHSs and a worldwide network of experts.

50. So far, the WMO Programme for the LDCs is supported by the World Weather Watch, the World Climate Programme, the Atmospheric Research and Environment Programme, the Applications of Meteorology Programme, the Hydrology and Water Resources Programme, the Education and Training Programme, the Technical Cooperation Programme, the Regional Programme and two cross-cutting programmes: the Natural Disaster Prevention and Mitigation Programme and the WMO Space Programme.

51. WMO and the NMHSs are providing early warnings of extreme weather, climate or hydrological events, which are dispatched immediately to newspapers, radio and television stations, emergency services, decision makers and other users. Thanks to this information, many lives are saved through timely evacuations.

4.2.3. SUPPORTING THE DEVELOPMENT OF NATIONAL
ENVIRONMENTAL ACTION PLANS OR PROGRAMMES

52. Under each of the Rio Conventions, the LDCs have received financial and technical assistance to develop national strategies, plans or programmes for implementing specific measures aimed at reducing vulnerability and protecting the environment.

53. Under the UNFCCC, as at 12 November 2010 45 LDCs had prepared and submitted NAPAs to the secretariat in order to receive funding for identified projects from the LDC Fund.³¹ The NAPAs provide a process for the LDCs to identify urgent and immediate needs to respond to the adverse effects of climate change in relation to which further delay could increase vulnerability or increase costs at a later stage. They provide the main avenue for translating global commitments to vulnerability reduction under the UNFCCC into tangible planning and action on the ground in the LDCs. In the NAPA preparation process, the LDCs were supported by: the guidelines for the preparation of NAPAs;³² regional training workshops on the preparation of NAPAs; technical guidance and advice on the preparation of NAPAs from the LEG; and funding for the preparation of NAPAs through the LDC Fund. These NAPAs have identified that most adaptation measures are urgently needed in the sectors of agriculture and food security, water resources, and coastal and marine ecosystems, followed by the areas of terrestrial ecosystems, early warning and disaster management. The NAPAs also identify the need for urgent interventions in the areas of health, energy, education, capacity-building and public awareness.

54. At least 44 LDCs had also prepared national biodiversity strategies and action plans or equivalent instruments (NBSAPs) under CBD as at 31 December 2010.³³ These plans enable the identification of national strategies, plans or programmes for the conservation and sustainable use of biological diversity. CBD has supported countries in preparing these plans through guidelines³⁴ and online training modules,³⁵ and regional capacity-building workshops to strengthen national capacity for the development, implementation, review and update of NBSAPs and the integration of biodiversity-related concerns into relevant sectors and cross-sectoral strategies. These plans have been developed with funding from the GEF.

55. Under UNCCD, countries have prepared national action programmes (NAPs) to spell out practical steps and measures to be taken to combat desertification in specific ecosystems. As at 22 February 2011 23 LDCs in Africa and

five in Asia and the Pacific had prepared and submitted their NAPs.³⁶ These NAPs have been strengthened by the Action Programmes on Sub-regional and Regional levels.

56. Under its Programme for the LDCs, WMO assisted several LDCs (Comoros, Kiribati, Liberia and Vanuatu) to develop and modernize plans for their NMHSs in order to align them with national development frameworks, including NAPAs and the MDGs, and assisted them in their consultations with government officials, United Nations country teams, funding agencies and other stakeholders.

Box IV-2. Key markers for the least developed countries under the UNFCCC as at May 2011.

- (1) 48 countries had received funding to prepare national adaptation programmes of action (NAPAs).
- (2) 45 countries had submitted completed NAPAs.
- (3) 38 countries had submitted one or more NAPA project proposals to the Global Environment Facility (GEF).
- (4) 19 projects had been endorsed by the Chief Executive Officer (CEO) of the GEF.
- (5) 22 donors had pledged USD 290 million to the Least Developed Countries Fund (LDC Fund). Cumulative net funding allocated, committed or disbursed by the GEF Council and the CEO amounts to USD 135 million. The balance of these sums indicates the level of available funds in the LDC Fund is USD 155 million.
- (6) Analysis of the LDC Fund portfolio suggests that agriculture and water management have been, by far, the most important project components funded to date. Disaster preparedness, coastal zone management, health and infrastructure have also been targeted in the GEF adaptation portfolio.

³⁰ WMO. 2007. *Climate information for adaptation and development needs*. WMO-No. 1025. Geneva. p. 44. Available at <http://www.wmo.int/pages/publications/showcase/documents/WMO_1025_web_E.pdf>.

³¹ <<http://unfccc.int/resource/docs/2010/sbi/eng/17.pdf>>.

³² <http://unfccc.int/files/cooperation_and_support/lcdc/application/pdf/annguide.pdf>.

³³ <<http://www.cbd.int/doc/nbsap/nbsap-status.doc>>.

³⁴ <<http://www.cbd.int/nbsap/guidance-tools/guidelines.shtml>>.

³⁵ <<http://www.cbd.int/nbsap/training/>>.

³⁶ <<http://www.unccd.int/actionprogrammes/menu.php>>.

4.2.4. SUPPORTING THE IMPLEMENTATION OF NATIONAL
ENVIRONMENTAL PLANS AND THEIR INTEGRATION INTO
NATIONAL DEVELOPMENT POLICIES

57. The preparation of national environmental plans is not an end in itself. Under the Rio Conventions and WMO, the LDCs have been provided with further technical guidance and advice, including financial resources or strategies to mobilize resources, in order for them to implement the activities identified in their respective plans.

58. Under the UNFCCC, the LEG provides technical support and guidance to the LDCs for implementing their NAPAs. Funding is provided from the LDC Fund, which as at August 2010 had received pledges amounting to USD 290 million in total.³⁷ The LDCs were also supported through training workshops on the implementation of NAPAs, and a series of other reference resources. As at 15 October 2010 38 LDCs had officially submitted one or more NAPA projects to the GEF for funding under the LDC Fund. Of the projects submitted, 19 projects had received endorsement by the Chief Executive Officer of the GEF and were ready for implementation on the ground. At least 24 more projects were at various stages of approval and endorsement for implementation. The implementation of a number of projects, from more than 450 projects identified in the NAPAs, is yet to start.

59. The increasingly strong recognition of the need to address desertification, land degradation and drought in order to reduce vulnerability to climate change is likely to result in increased resources for implementing sustainable land management initiatives. The importance of synergies between desertification and climate change, particularly for the LDCs, has been discussed at length within the framework of the three Rio Conventions. UNCCD launched a National Synergies Workshop Programme in 2000 with the following objectives: to strengthen current coordination at the local level, including the exchange of information, in order to achieve optimal use of domestically available resources; to facilitate policy dialogue with key stakeholders, in particular with the donor community, in order to attract financial resources in support of concrete actions for effectively addressing the common objectives of the conventions; to catalyse local-level approaches to create synergies among stakeholders; and to help identify common threads in areas of issue covered in environment-related treaties to which the individual country is a signatory.

4.3. CREATING MORE MEANINGFUL PARTICIPATION IN
MULTILATERAL DEBATES AND PROGRAMMES

60. One of the only opportunities for the LDCs to influence the rules that govern international environmental and economic behaviour is by engaging in the negotiations under the three Rio Conventions. This is always a challenging area, as the LDCs often lack the means to attend all the negotiating meetings under all the Conventions given their financial and human-capacity constraints. The three Rio Conventions and WMO have, however, established support for the LDCs to participate in all relevant meetings, albeit with a limited number of representatives at times.

61. The LDCs have benefited from measures such as dedicated travel funds to facilitate their participation in specific intergovernmental processes regarding the three Rio Conventions and WMO as well as in other important environment-related meetings. These benefits include, among other things, financial support for air travel and subsistence allowances for them to attend sessions of the subsidiary bodies of the Conventions and of the Conferences of the Parties, meetings under various commissions and programmes of WMO, and the WMO Congress, training and workshops.

62. In addition, since 2007 the United Nations Environment Programme has worked in collaboration with the UNFCCC to support the LDCs in holding preparatory workshops prior to the sessions of the Conference of the Parties and those of its subsidiary bodies. The workshops are attended by climate change negotiators from the LDCs, most of whom are national focal points and delegates who are new to the process, so that they can gain experience in negotiations. The results of this initiative, plus others implemented by other organizations, can be witnessed in the strong participation of the LDCs in the UNFCCC negotiations despite the limited delegation sizes. The UNFCCC also supports pre-session meetings for the LDCs in order for them to prepare themselves in conjunction with all other major meetings.

63. The technical assistance provided by the LEG has allowed the LDCs to strengthen their technical capacity and therefore articulate their needs and demands more effectively. Another improvement has been the increased use of live-stream video, so that individuals can follow the proceedings from afar. For example, the Adaptation Fund Board has streamed all of its major meetings for public viewing.

4.4. SUPPORT THROUGH REGIONAL AND GLOBAL PROGRAMMES

64. A series of 24 workshops was conducted between 2000 and 2004, primarily in the LDCs, to provide information on and experience in the development of synergistic activities in the implementation of the environmental conventions. The workshops resulted in a list of recommendations to promote synergies,³⁸ and found that, to improve the cooperative implementation of the conventions, there is a need to first strengthen local capacities and coordination among key actors at the national level and to elaborate on guidelines on methodological issues regarding synergy.³⁹

65. A pilot project is under way for the joint implementation of the NAPs prepared under UNCCD and the NAPAs prepared under the UNFCCC.⁴⁰ This project is a bilateral activity between UNCCD and the UNFCCC, and eight LDCs (Bhutan, Burundi, Guinea, Haiti, Lesotho, Malawi, Senegal and United Republic of Tanzania) have been selected. The pilot project will be implemented at the local level by establishing appropriate institutional arrangements and communication protocols with respect to sustainable land management activities identified in the NAPAs and NAPs.

4.5. PROMOTING PUBLIC-PRIVATE PARTNERSHIPS IN ADDRESSING ENVIRONMENTAL PROBLEMS

66. There have been no notable measures under the UNFCCC that have provided for technology transfer or low-carbon development in the LDCs. While this is a key aspect of the LDC work programme, it has yet to be addressed. One example of where LDC Parties have expressed frustration about being excluded from opportunities for low-carbon development is the clean development mechanism (CDM), a mechanism designed to offset emissions from the developed countries by investing in low-emission projects in the developing world. The top four host countries of CDM projects (Brazil, China, India and Mexico) have received approximately 76 per cent of the projects. Registered CDM projects in the LDCs accounted for only 25 out of more than 2,800 projects worldwide.⁴¹

67. Obstacles to the generation of projects in the LDCs include factors such as country risk as perceived by investors, the small size and low profitability of projects, the expensive, long and extensive CDM application processes, and the lack of the necessary data for project approval.⁴²

68. While procedural reforms to the CDM processes that are more favourable to the LDCs are needed, the transfer of technology and low-carbon development will require moving beyond the private sector and reliance on investors. Massive public investment in low-carbon technologies for the LDCs is necessary. Stringent international property rights may also inhibit the affordable and timely acquisition of innovative technologies in the LDCs.

4.6. PROMOTING SYNERGIES IN IMPLEMENTING THE RIO CONVENTIONS

69. The Conferences of the Parties to each of the Rio Conventions have underlined through numerous articles and decisions the need for enhanced collaboration among the Conventions, in order to enhance synergy and reduce the duplication of activities. In August 2001, the Conventions established a Joint Liaison Group as an informal forum for exchanging information, exploring opportunities for synergistic activities and increasing coordination at the national and international levels. So far, a number of options for collaboration have been explored and collaborative activities are already taking place.

70. A review of climate change projects submitted by countries for funding from the climate change funds managed by the GEF has found that co-benefits for biodiversity and combating desertification and land degradation exist in most climate change projects. Specific activities promoting co-benefits include the restoration of ecosystems (mangroves, coral reefs, pastures and wetlands), the conservation of ecosystems to reduce vulnerability to the negative impacts of climate change, the establishment of sustainable ecosystem management practices and the assessment of vulnerability to climate change among species and ecosystems.⁴³

³⁷ <<http://www.unfccc.int/resource/docs/2010/cop16/eng/05.pdf>>, Table A4.1.

³⁸ <<http://www.uncccd.int/publicinfo/publications/docs/synergy.pdf>>.

³⁹ <<http://unfccc.int/resource/docs/2005/tp/eng/03.pdf>>.

⁴⁰ <http://www.uncccd.int/actionprogrammes/docs/UNFCCC_UNCCD.pdf>.

⁴¹ UNFCCC. *CDM in Numbers* (as at February 2011). Available at <<http://cdm.unfccc.int/Statistics/Registration/NumOfRegisteredProjByHostPartiesPieChart.html>>.

⁴² JAPAN INTERNATIONAL COOPERATION AGENCY. 2009. *Practical Solutions for Promoting CDM in LDCs*. Available at <http://www.jica.go.jp/english/news/field/2009/pdf/20091201_01_02.pdf>.

⁴³ <<http://www.cbd.int/doc/meetings/cop/cop-10/official/cop-10-22-en.pdf>>.

4.7. MAINTAINING GLOBAL MOMENTUM TO SUPPORT THE LEAST DEVELOPED COUNTRIES

71. In maintaining the provision of specific support to the LDCs, the three Rio Conventions have set up future programmes that integrate the special needs of the LDCs. Under the UNFCCC, the mandate of the LEG was extended for a period of five years (2011–2015) in December 2010.⁴⁴ During this tenure, in addition to providing advice to the LDCs on the preparation and implementation of NAPAs, the LEG will also provide technical guidance and advice on the following:

- (a) The revision and update of NAPAs to further improve their quality, to facilitate the integration of adaptation actions of LDC Parties into development planning and to reflect increased adaptation knowledge and changed priorities in the countries, upon request by LDC Parties;
- (b) The identification of medium- and long-term adaptation needs, their integration into development planning and the implementation of identified adaptation activities;
- (c) Strengthening gender-related considerations and considerations regarding vulnerable communities within the LDCs;
- (d) The implementation of the elements of the LDC work programme other than the preparation and implementation of NAPAs that are relevant to the expertise of the LEG.

72. Several other important developments for the LDCs came out of the sixteenth Conference of the Parties that was held in December 2010. These include:

- (a) Creation of the Cancun Adaptation Framework, which has the objective of enhancing action on adaptation, including through international cooperation and coherent consideration of matters relating to adaptation under the Convention;
- (b) Establishment of a process for the LDCs to build upon the NAPA experience to identify medium- and long-term adaptation strategies and programmes;
- (c) Establishment of a work programme on loss and damage;⁴⁵
- (d) Establishment of the Green Climate Fund, with representatives of the LDCs and small island developing States (SIDS) on its Board as well as on the Transitional Committee tasked to design the Fund;
- (e) The provision to channel a significant portion of new long-term finance for adaptation through the Green Climate Fund.

73. Under the CBD, in 2010, Parties adopted the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets. The Strategic Plan includes 20 headline targets for 2015 or 2020 (the Aichi Biodiversity Targets), organized under five strategic goals. The goals and targets comprise both aspirations for achievements at the global level and a flexible framework for the establishment of national or regional targets. Countries are invited to set their own targets within this flexible framework, taking into account national needs and priorities. The Strategic Plan calls for the provision of adequate, predictable and timely financial support to developing country Parties, in particular the LDCs, SIDS and the most environmentally vulnerable countries, as well as countries with economies in transition, to enable the full implementation of the Strategic Plan. It reiterates that the extent to which developing country Parties are able to effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology.

74. The target of enhanced implementation of the Strategic Plan calls for the mobilization of financial resources from all sources, by 2020 at the latest, for effectively implementing the Strategic Plan. In addition, a number of support mechanisms have been identified, including:

- (a) Capacity-building activities, especially for developing countries, in particular the LDCs, SIDS and the most environmentally vulnerable countries, as well as countries with economies in transition;
- (b) Technology transfer, particularly through a biodiversity knowledge network, including a database and network of practitioners, to bring together this knowledge and experience and to make it available through a clearing-house mechanism;
- (c) Financial resources, through the strategy for resource mobilization, including the proposed concrete initiatives, targets and indicators to be developed, and processes for developing innovative mechanisms, which provides a road map for achieving the effective implementation of Article 20, paragraphs 2 and 4, of the Convention, in order to provide adequate, predictable and timely new and additional financial resources in support of the implementation of the Strategic Plan;

- (d) Partnerships and initiatives to enhance cooperation among, inter alia, the programmes, funds and specialized agencies of the United Nations system as well as conventions and other multilateral and bilateral agencies, foundations and non-governmental organizations and indigenous and local communities, to support the implementation of the Strategic Plan at the national level;
- (e) Support mechanisms for research, monitoring and assessment;
- (f) A mid-term review of progress towards achieving the Aichi Biodiversity Targets, which will be carried out for the fourth edition of the Global Biodiversity Outlook.

75. UNCCD has put in place a 10-year strategic plan and framework to enhance the implementation of the Convention (2008–2018). The overall aim of the strategy is to forge a global partnership to reverse and prevent desertification and land degradation and to mitigate the effects of drought in affected areas, in order to support poverty reduction and environmental sustainability. It pursues the following strategic objectives:

- (a) To improve the living conditions of affected populations;
- (b) To improve the condition of affected ecosystems;
- (c) To generate global benefits through effective implementation of the Convention;
- (d) To mobilize resources to support the implementation of the Convention by building effective partnerships between national and international actors.

76. Finally, there are opportunities for WMO to contribute to overcoming data gaps in for climate change, biological diversity, desertification and deforestation in the LDCs.

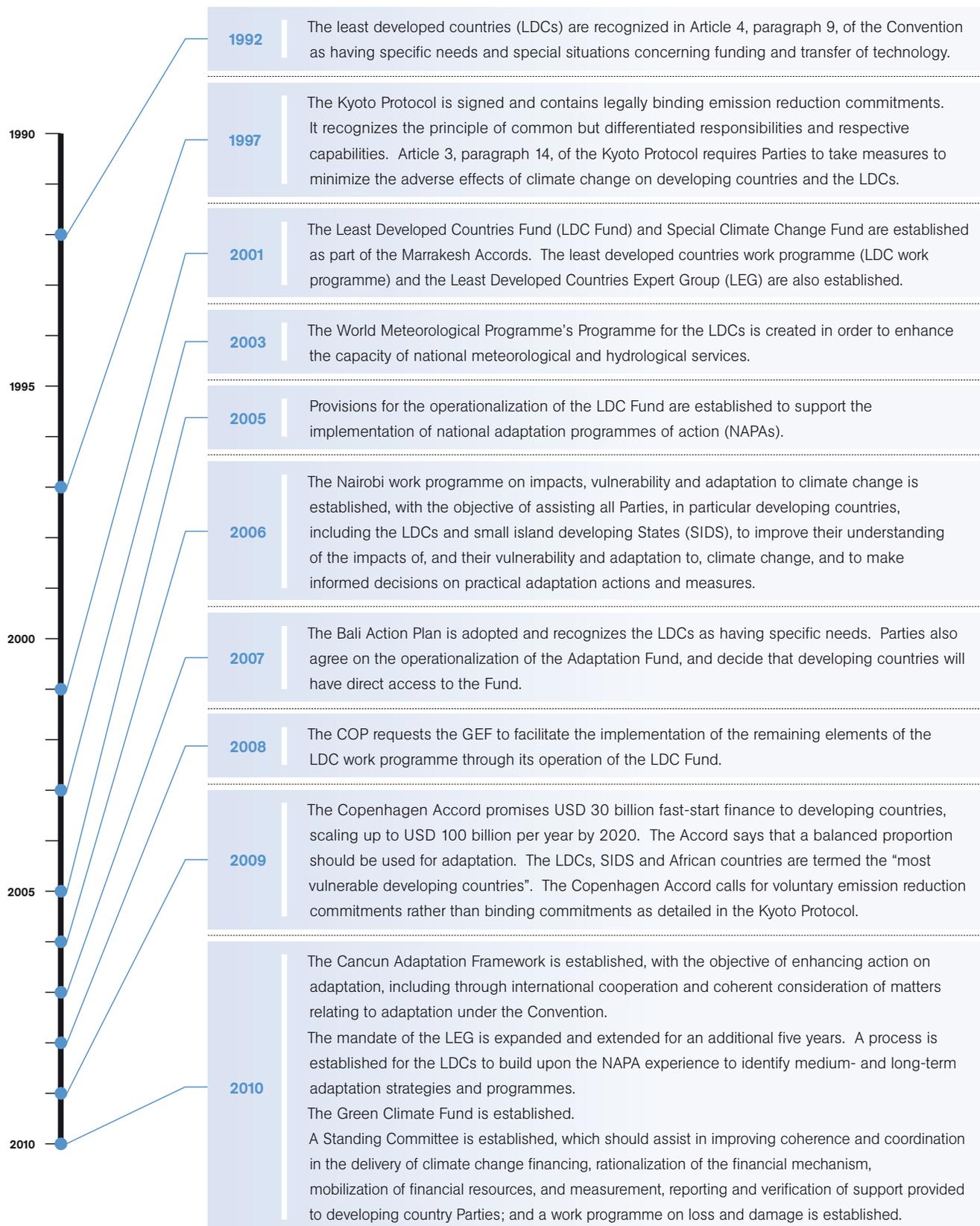
⁴⁴ UNFCCC decision 6/CP.16. Available at <http://unfccc.int/meetings/cop_16/items/5571.php>.

⁴⁵ UNFCCC decision 1/CP.16. Available at <http://unfccc.int/meetings/cop_16/items/5571.php>.

4.8. TIMELINE OF MAJOR EVENTS FOR THE LEAST DEVELOPED COUNTRIES

4.8.1. UNDER THE UNFCCC

Figure IV-1. Timeline of major events for the least developed countries under the UNFCCC



4.8.2. UNDER CONVENTION ON BIOLOGICAL DIVERSITY

Figure IV-2. Timeline of major events for the least developed countries under the Convention on Biological Diversity

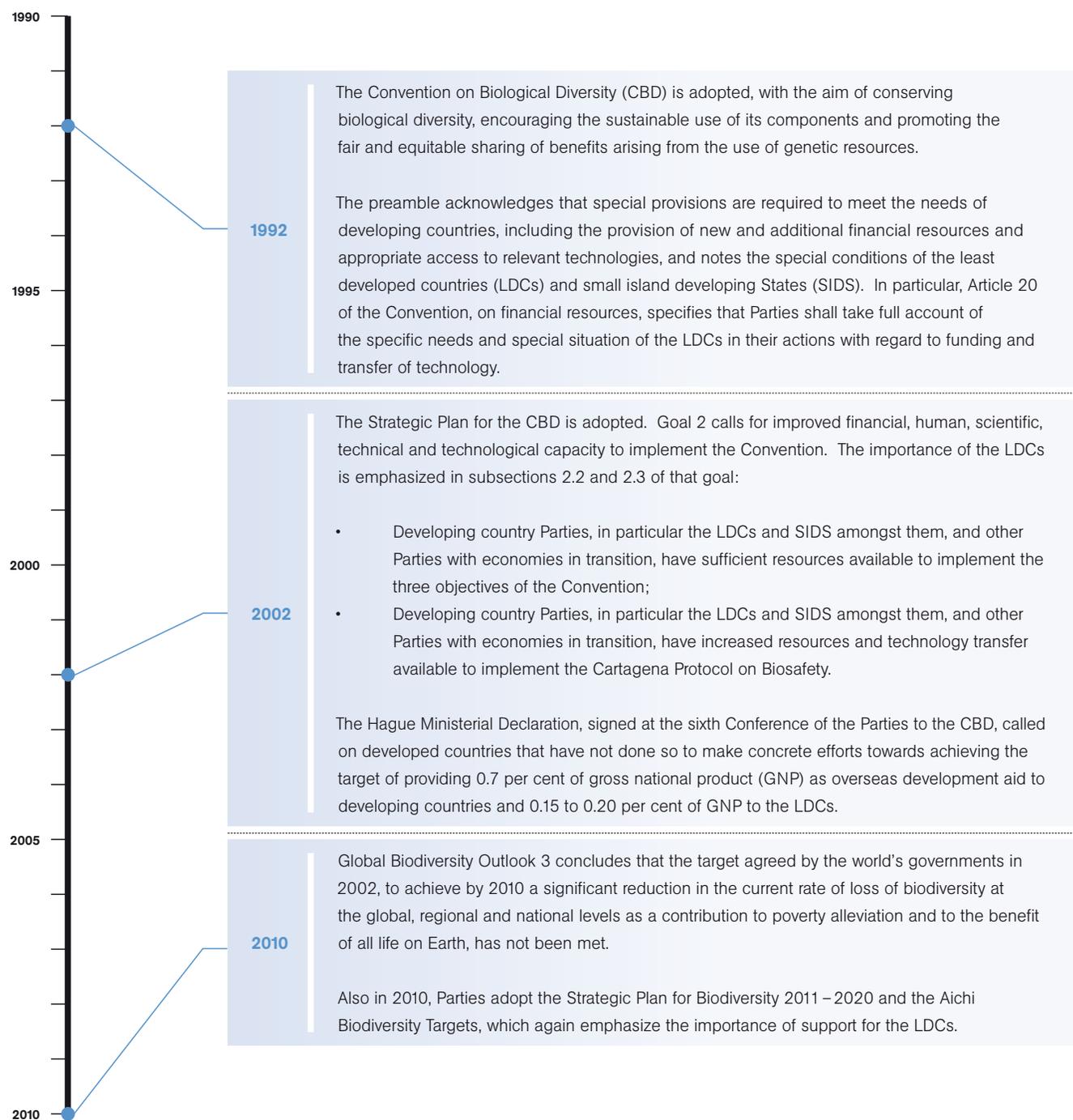
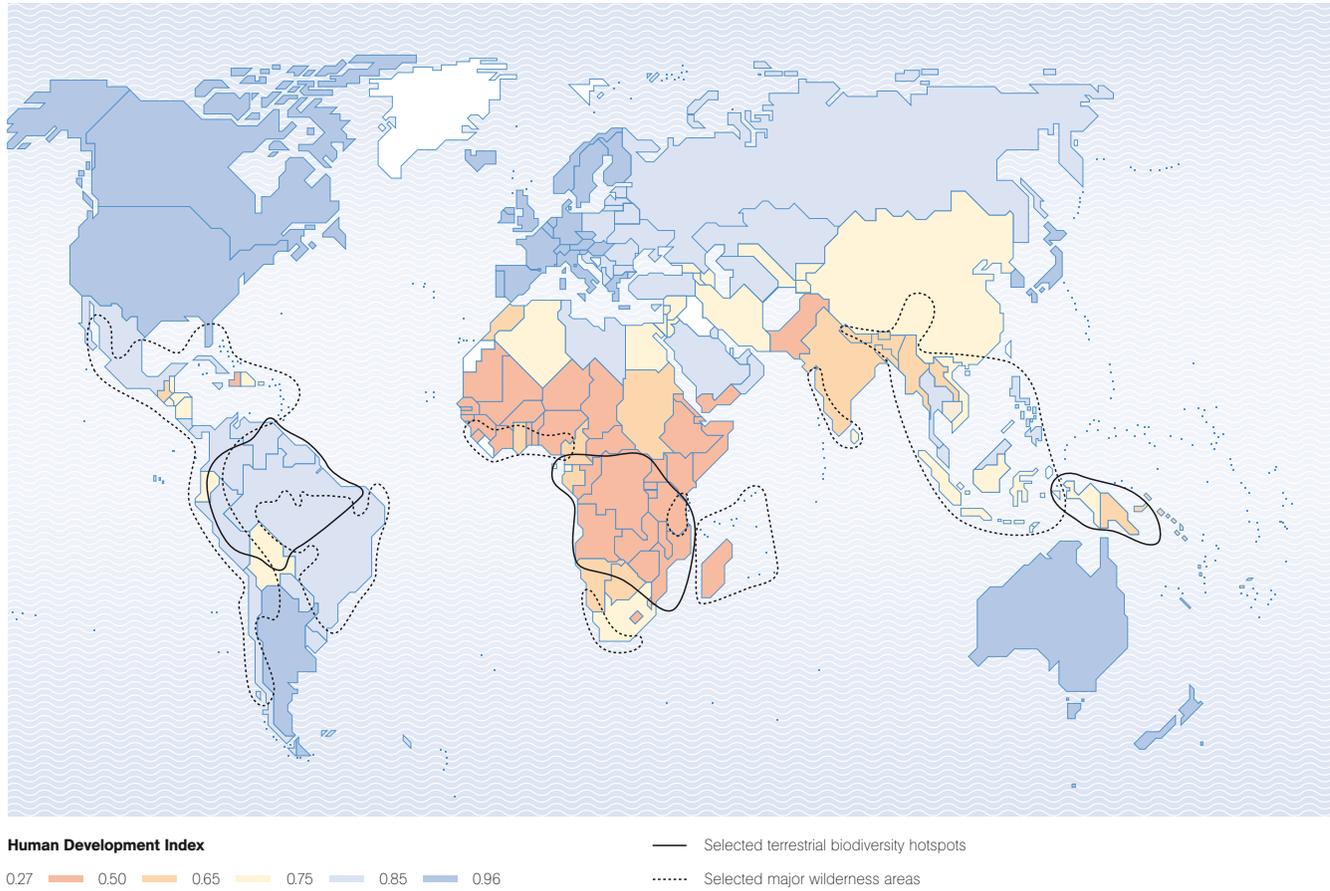


Figure IV-3. Global development and biodiversity



Sources: UNDP 2004, Conservation International 2004
Abbreviations: HDI = Human Development Index, UNDP = United Nations Development Programme.
Note: Some of the world's least developed countries are located in areas of high importance for biodiversity. This map displays HDI by country, with biodiversity hotspots indicated over the top.

4.8.3. UNDER UNITED NATIONS CONVENTION TO COMBAT DESERTIFICATION

Figure IV-4. Timeline of major events for the least developed countries under the United Nations Convention to Combat Desertification

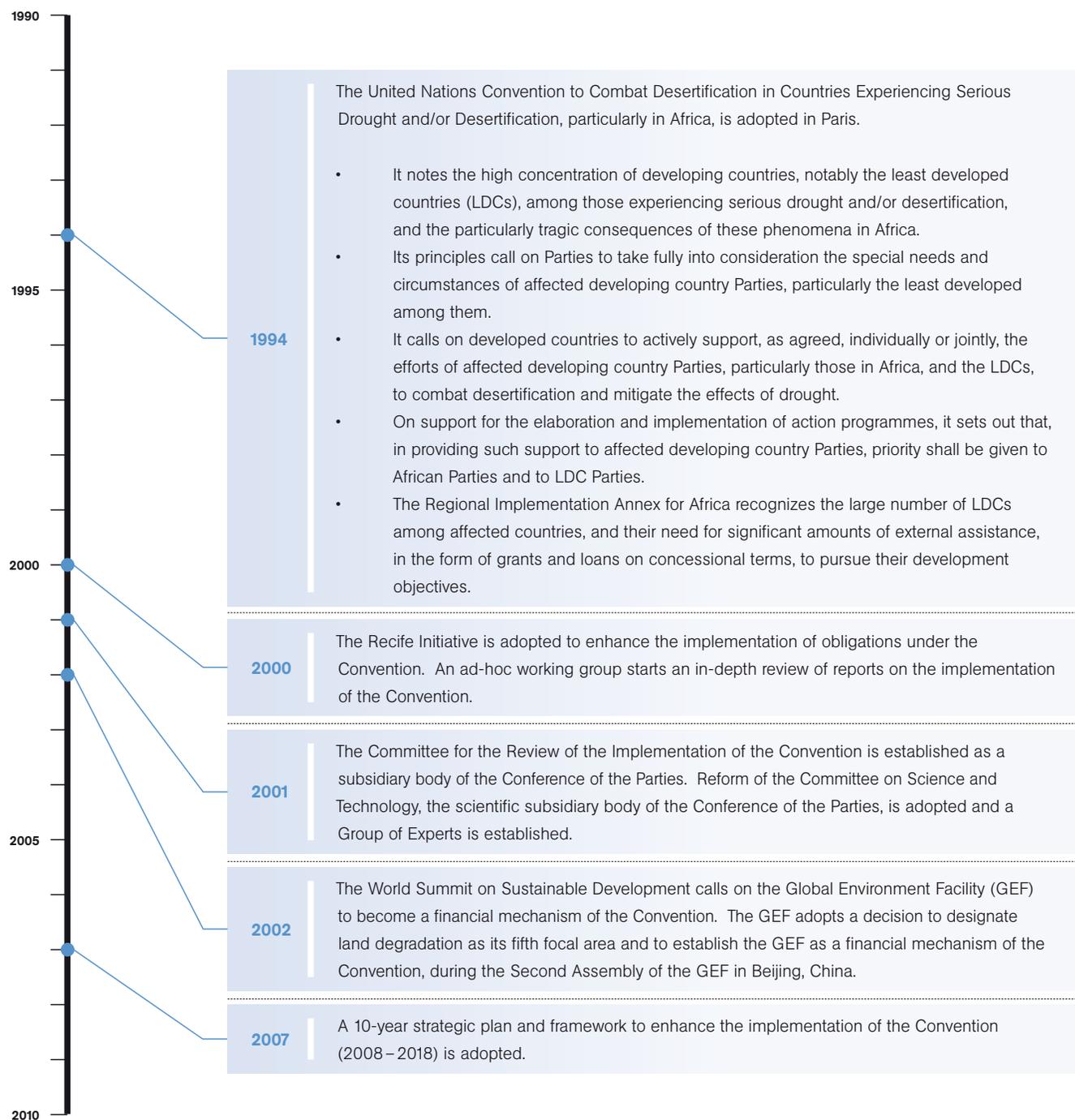
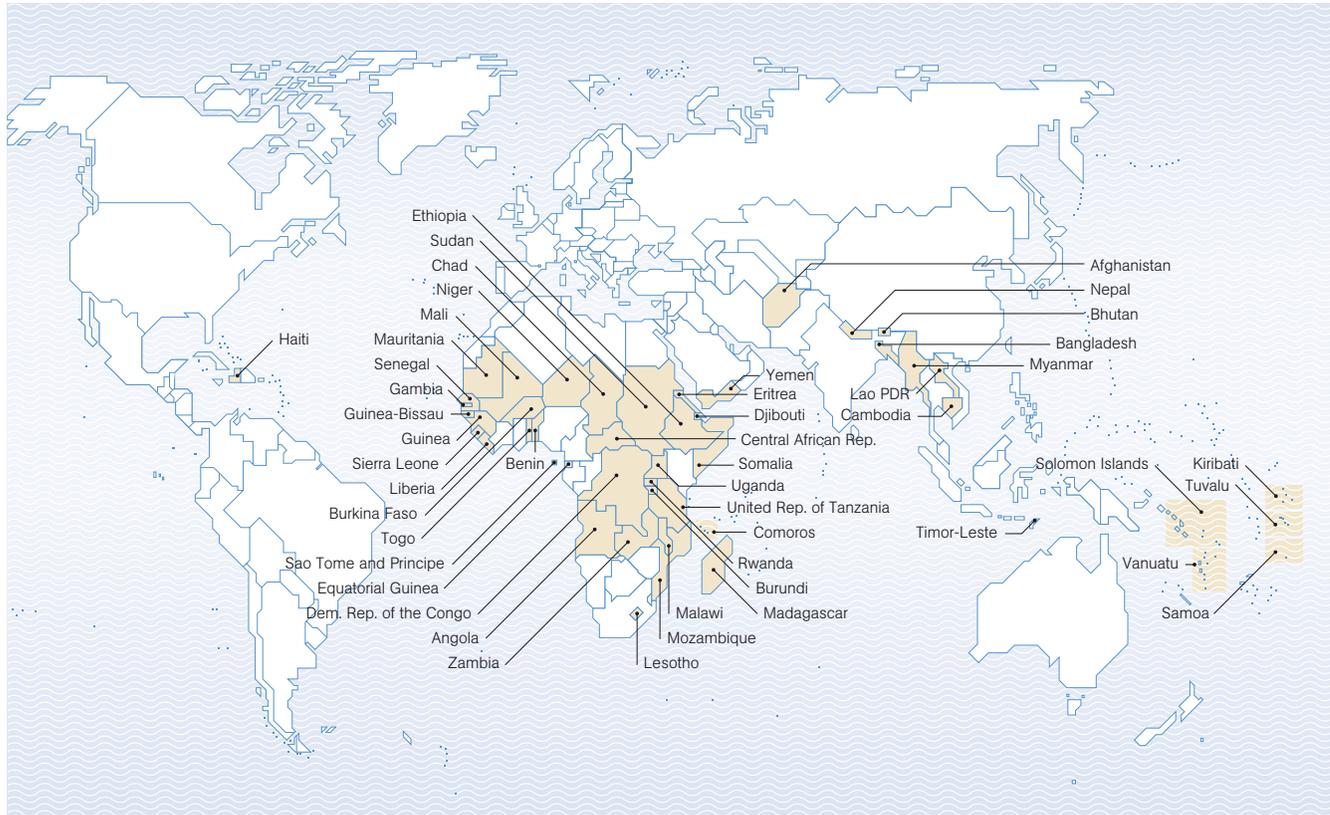


Figure IV-5. The least developed countries as at February 2011





V. CHALLENGES AND GAPS

5.1. HUMAN AND INSTITUTIONAL CAPACITIES

77. Although the three Rio Conventions and WMO have provided support to the LDCs over the last decade to address vulnerability to climate change, climate variability and extreme events, desertification and loss of biological diversity, the LDCs have become increasingly vulnerable to environmental shocks and are suffering their adverse impacts. One of the great difficulties in reducing vulnerability and minimizing the severity of environmental impacts on the LDCs has been developing adequate human and institutional capacities.

78. Most institutions in the LDCs have been hampered by weak infrastructures, the inability to provide basic services, and an overall lack of resources to meet the development objectives. The lack of data at the local and national levels does not allow for an accurate assessment of the potential effects of climate change and, hence, the adoption of adaptation and mitigation strategies in the LDCs. The LDCs are often forced to rely on external consultants or implementing agencies to design their proposals, and these consultants are not always fully cognizant of national priorities and needs.

79. In order to effectively address environmental problems, the LDCs require: well-established national teams with relevant expertise; requisite institutions and facilities to undertake research for, coordination of, and planning and implementation of national plans; and programmes to provide financial resources for research and the implementation of projects. The LDCs lack most of these basic needs. Environmental institutions in the LDCs therefore need to be supported in order to bridge the gulf separating them from the rest of the global community, so that they can effectively contribute to national development agendas. Efforts to build the human capacity in the LDCs also need to be increased.

5.2. FINANCIAL RESOURCES

80. Without external funding, the LDCs will not be able to respond to environmental challenges in addition to their existing economic and social burdens.

81. Under the UNFCCC, the NAPAs prepared by the LDCs identify nearly 500 urgent and immediate priority interventions that need to be implemented in order to respond to the challenges and severe impacts of climate change. The interventions are mostly in the areas of agriculture and food security, water resources, coastal zones and terrestrial ecosystems. Estimates from the submitted NAPAs indicate that these interventions would require financial support in the order of billions of United States dollars.⁴⁶ The full scope of adaptation to climate change would therefore clearly require massively scaled-up financial resources.

82. The LDC Fund, which is a dedicated fund to support the LDCs in addressing climate change, had received cumulative pledges of USD 290 million only as at August 2010 since its establishment in 2001. The LDCs have continued to find it difficult to access funds from the biodiversity window of the GEF, owing to the complicated criteria laid out by the GEF Resource Allocation Framework and difficulties in complying with the co-financing requirements of the GEF. This has become even more difficult in the current economic climate.

5.3. ACCESS TO TECHNOLOGY

83. The LDCs are often left behind in technology development and transfer, and their level of development of technological capabilities is very low. For most LDCs, basic activities are performed using manual labour, with rudimentary tools and equipment, little education and training, little access to financial services, and poor infrastructure. The development of productive capacities, including in particular policies to promote technological learning and innovation, needs to be put at the heart of efforts to promote reducing vulnerability and protecting the environment in the LDCs.

5.4. LIMITATIONS IN LANGUAGE DIVERSITY

84. In addition to obstacles stemming from the capacity of the LDCs, there are also institutional obstacles that prevent their meaningful participation in negotiations. Inequality in negotiation-related capacity between nations is exacerbated by language inequalities. In many cases, negotiated texts are available only in English. Further, the infrastructure of meetings provides logistical hurdles that sometimes favour negotiators who have the financial means to stay closer to the negotiations or to hire a car.

⁴⁶ <http://unfccc.int/resource/docs/publications/09_ldc_sn_napa.pdf>.

Box V-3. Global Environment Facility funding and the least developed countries

The Fourth Overall Performance Study (OPS) of the Global Environment Facility (GEF) was completed in 2010, in time for the Fourth GEF Assembly, in Uruguay. The OPS categorized all GEF activities from the pilot phase to 30 June 2009 and found that GEF activities tend to follow three stages:

- (1) A foundation stage, with projects to help governments address global environmental issues in their countries through enabling and foundational activities that lead to changes in national policies, agendas and priorities;
- (2) A second, demonstration, stage, in which the GEF demonstrates how new policies could lead to improved environmental management and market changes;
- (3) A third, investment, stage, in which successful approaches are scaled up to a national level.

While this approach has worked well in middle-income countries, the GEF has not moved sufficiently into demonstration and scaling up in the least developed countries (LDCs), small island developing States (SIDS) and fragile states. These countries are receiving insufficient support on demonstration and investment

activities, owing to the low levels of allocations for these countries. The GEF is therefore more or less stuck at the level of laying a foundation for future work and, with some efforts made towards demonstrating innovation and the removal of market barriers, investment has been achieved in only a few countries in these groups.

The OPS warns that if the GEF continues at its current funding level, this practice will also continue. It does not advocate ceasing work in middle-income countries in favour of these countries because most global benefits can be gained in middle-income countries, but found that the current funding does not allow for support to grow to levels that would enable the implementation of good policies, hold the promise of new approaches and ensure market transformation in many countries.

Moreover, the OPS did not find evidence of increased funding for the environment from other donors and funds in countries receiving GEF funding. In the LDCs and SIDS, no evidence is visible yet that lower levels of GEF funding are compensated by additional efforts of bilateral or multilateral donors.

Sources: <http://www.thegef.org/gef/sites/thegef.org/files/documents/FULL%20REPORT_OP54%20Progress%20Toward%20Impact_0.pdf>.



TDK6

TDK1

TDK3

VI. PRIORITIES FOR CREATING OPPORTUNITIES FOR THE LEAST DEVELOPED COUNTRIES IN THE NEW PROGRAMME OF ACTION

85. Reducing vulnerability to climate change and environmental degradation in the LDCs requires development initiatives that are attuned to social needs and environmental sustainability. In a world constrained by ecological limits, new opportunities and technologies must be made available to the LDCs, in order to achieve the goals of disaster mitigation, environmental sustainability and economic development. This will require innovative practices that depart from business-as-usual economic growth models. It will also require strong international financial and institutional support, a shift to valuing local knowledge systems, the strengthening of civil society groups, and major efforts to meet social goals in the LDCs, such as the MDGs.

86. With this in mind, the following priorities should be pursued in order to create opportunities for addressing the vulnerability of the LDCs to the impacts of climate change, climate variability and extremes, land degradation and loss of biodiversity.

6.1. STRENGTHENING THE HUMAN AND INSTITUTIONAL CAPACITIES AND RESOURCES OF THE LEAST DEVELOPED COUNTRIES

RATIONALE

87. In addition to facing disproportionate exposure to climate variability and extremes, land degradation and loss of biodiversity, the LDCs have the least capacity to prepare for and recover from the associated impacts. As measured by the United Nations, the LDCs have the lowest indicators of socio-economic development, including income, human resources such as nutrition, health, education and adult literacy, and economic vulnerability. The LDCs lack many of the key elements of the capacity to adapt to climate change and other environmental crises, including a stable and prosperous economy, a high degree of access to technology, clearly delineated roles and responsibilities for the implementation of adaptation

activities, robust information dissemination systems and equitable access to resources. There are limited or no institutions for the research, planning, implementation and coordination of measures to reduce vulnerability to climate change, climate variability and extreme events, and to fight loss of biodiversity and land degradation. In addition, the nature and scale of the support provided to the LDCs will have vast implications for the ability of the LDCs to reduce their vulnerability to these environmental crises.

RECOMMENDED ACTIONS

6.1.1. PROVIDE ADEQUATE FUNDS FOR THE LEAST DEVELOPED COUNTRIES TO ADDRESS CLIMATE AND ENVIRONMENTAL CHALLENGES

88. The extreme impacts of climate change on the LDCs necessitate a shift to adaptation funding levels that are adequate for meeting the impacts as determined by scientific analysis. Such an approach would require that funding for adaptation be based on a top-down binding legal framework to meet the assessed need, rather than bottom-up donor pledges of funding. This will require a major shift in global thinking and international institutional structures of development.

89. International revenue-generating mechanisms capable of covering the full costs of adaptation needs should be established, with funds that are predictable, external to the budgets of donor governments, and new and additional to official development assistance funds.

90. Fast-start finance should be rebalanced to support preparedness and capacity-building activities, immediate adaptation needs and absorptive capacity, especially regarding technology transfers for adaptation and green growth.

91. Full funding should be provided immediately for the implementation of all NAPAs.

92. Adequate funding should be ensured for activities included in the Cancun Adaptation Framework, including up-front, simplified, expeditious and direct access financing for urgent adaptation activities and programmes.

93. The Green Climate Fund should be a key pillar of predictable, adequate and equitable climate change finance that is readily accessible to the LDCs and other highly vulnerable countries.

94. Effective priority and support should be given to the LDCs to access the Green Climate Fund and the Adaptation Fund. Procedures should be simplified for access to funding, and technical support should be provided for accessing funds.

95. An effective international loss and damage mechanism including an insurance component should be immediately established and operationalized.

96. The effectiveness of existing sources of funding at the national level should be maximized. Actions the LDCs should take may include: pooling resources for all national planning exercises (including development planning exercises that are often better funded) to address common elements such as capacity-building; internalizing plans into national planning and budgetary processes to ensure consistency of goals; ensuring better harmonization of donor funding; and promoting greater involvement of the private sector. These actions should be used to spur local-level action based on new synergies and linkages where possible, without waiting for some sort of international 'go-ahead' through the provision of funds.

6.1.2. SUPPORT THE LEAST DEVELOPED COUNTRIES' DECISION- MAKING POWER AND CAPACITY TO UTILIZE FUNDS TO MEET NATIONAL AND LOCAL PRIORITIES

97. Strong representation should be given to the LDCs and SIDS in the decision-making bodies of the UNFCCC, especially the Board of the Green Climate Fund and the executive body of the Adaptation Committee.

98. Given the complexity and long-term nature of climate change, it is essential that adaptation be designed as a continuous and flexible process and subject to periodic review. Funding modalities through the newly established Green Climate Fund and the newly established Adaptation Committee should take into account this reality.

99. Institutional capacity-building should be enhanced at the national level through the establishment of national funding entities to facilitate direct access to funds and guarantee mutual accountability.

100. The global community should shift its focus from micromanagement at the point of disbursement to establishing better systems of accountability. Accountability for the use of global funds should be sought through the establishment of more democratic global funding mechanisms where recipients as well as donors agree on targets and methodologies, as well as more effective monitoring systems that include reporting from all stakeholders. This should involve moving away from a project-based approach towards a more programmatic approach for adaptation action. The need to shift donor assistance from individual, disconnected projects towards integrated support is reflected in the 2002 Monterrey Consensus on Financing for Development, the 2005 Paris Declaration on Aid Effectiveness and the 2008 Accra Agenda for Action.

101. For the achievement of development and climate objectives on the ground, it is crucial that adaptation measures are integrated into the development planning efforts of various ministries, including health, education, agriculture, etc. Adequate resources and training opportunities need to be made available for these ministries to appropriately integrate national adaptation plans into national development planning.

102. The global community should focus on strengthening civil society in order to empower people to hold their own governments accountable for funding priorities.

103. Medium- and long-term national climate adaptation plans should be developed which are strongly integrated with national development plans and adaptation plans concerning biodiversity and desertification.

104. A structure should be established to ensure the permanence and enhancement of services provided by the LEG, in particular through the continuity of national NAPA teams.

6.1.3. ENHANCE AND STRENGTHEN THE CAPACITIES OF THE NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES OF THE LEAST DEVELOPED COUNTRIES

105. Financial resources should be provided to enhance and strengthen the capacities of the NMHSs of the LDCs.

106. Support should be given to NMHSs for them to provide basic services to help their communities reduce risk through the effective use of weather, climate and water products and services in their daily activities.

107. Scientific and technical programmes should be introduced, along with networks of regional training activities and specialized centres for NMHSs in the LDCs.

108. The infrastructure necessary for the services of NMHSs should be improved.

109. A system to provide information that is crucial for the formulation of appropriate policies in a timely manner should be introduced, including the mainstreaming of DRR into national development plans and strategies with a view to ensuring sustainable development in the LDCs.

6.1.4. STRENGTHEN INSTITUTIONS FOR RESEARCH, PLANNING AND IMPLEMENTING ACTION ON ADAPTING TO CLIMATE CHANGE AND PROTECTING THE ENVIRONMENT

110. Climate change research facilities should be established and/or strengthened at the national or regional level in the LDCs in order to provide sound scientific information on the causes, nature and consequences of climate change; governments, businesses and communities should be supported in the development of effective strategies to adapt to climate change; and strategies and actions for building communities' resilience and establishing the right conditions for people to adapt should be proposed.

111. It is necessary to strengthen the mechanisms and institutions for coordinating climate change issues at the national level, which have an influence from the community level, through government structures and civil society, to the government decision-making level.

6.1.5. ESTABLISH PROGRAMMES TO SUPPORT RESEARCH INTO AND THE IMPLEMENTATION OF ADAPTATION AND LOW-CARBON DEVELOPMENT PLANS

112. Climate change research should be supported in programmes, in order to better understand global and regional climate changes and potential impacts on natural and human systems. High-performance computing, observing systems and education on environment and climate change should also be funded, in partnership with academic institutions.

113. Programmes should enable investment in climate change adaptation projects, such as securing quality water supplies through the construction of dams and supporting healthy rivers and wetlands, and provide funding to help primary agricultural producers to adapt and respond to climate change.

114. Programmes should enable funding for local councils and communities, including professionals, to implement adaptation activities that build the professional skills needed to plan for and respond to climate change risks, and contribute to undertaking national vulnerability and adaptation assessments, and the implementation of local and national adaptation and low-carbon development plans.

6.1.6. STRENGTHEN EFFORTS TO BUILD RESILIENCE TO CLIMATE CHANGE

115. Efforts to build resilience to climate change should be supported by mainstreaming resilience in development agendas, programmes, budgeting and processes at the national, subregional, regional and international levels.

6.1.7. STRENGTHEN THE CAPACITY OF CIVIL SOCIETY GROUPS IN THE LEAST DEVELOPED COUNTRIES

116. The capacity of civil society groups in the LDCs should be strengthened in order to support climate change adaptation and greater adaptive capacity among the most vulnerable groups.

117. Programmes for strengthening the capacity of individuals and civil society organizations working in the areas of environment and development in the LDCs should be strengthened.

118. Civil society initiatives that integrate climate change issues into the planning and implementation of projects should be supported.

119. An information and knowledge system catering to the LDCs should be established, dealing with the adverse impacts of climate change.

120. The NAPA process should be mainstreamed within the non-governmental sector.

6.2. PROVIDING LARGE-SCALE OPPORTUNITIES FOR LOW-CARBON DEVELOPMENT AND TECHNOLOGY INNOVATION AND TRANSFER TO ADDRESS SOCIAL AND ENVIRONMENTAL GOALS

RATIONALE

121. In a world with limits on GHG emissions the, LDCs will not be able to develop in the fossil fuel intensive ways that developed countries have. Overcoming poverty will require massive investment in low-carbon technologies in the LDCs, including in energy, buildings and transportation systems. While developed countries and intergovernmental institutions must provide funding and institutional support, much of the technology and practices should be innovated and manufactured in the LDCs themselves. Given that many LDCs are not already invested in carbon-intensive and costly technologies, they may have a comparative advantage for becoming leaders in and innovators of low-carbon technology. This will require a shift in development practices, which generally view the developed countries as having the technological solutions for the developing ones. This will also require strong measures to ensure that the LDCs can compete in global trade and reap the benefits of new industries. The LDCs will also need more affordable access to technologies that are developed in developed and newly industrialized countries.

RECOMMENDED ACTIONS

122. The UNFCCC technology transfer framework should be developed with particular measures to meet the needs of the LDCs and other vulnerable countries. There should be a particular emphasis on mechanisms to ensure that the LDCs and other vulnerable countries can become innovators and manufacturers of low-cost and low-carbon technologies.

123. Laws on intellectual property rights should be reformed to provide affordable access to technologies to the LDCs and other vulnerable countries.

124. Technology development and transfer and low-carbon growth in the LDCs should be supported by adequate financial support from developed and newly industrialized countries.

125. The United Nations Environment Programme's proposed global green new deal should be further developed and acted upon with measures specific to the LDCs and other vulnerable countries, with a focus on: promoting the role of a new global green deal for the LDCs with provisions for scaled-up, effective green technology transfer and 'leap-frogging'; and providing the LDCs with large-scale opportunities for low-carbon development and technology innovation and transfer to address social and environmental goals.

6.3. ESTABLISHING A GLOBAL FRAMEWORK THAT ENSURES THAT FORESTS ARE CONSERVED AND BENEFITS ARE CAPTURED BY MARGINAL GROUPS

RATIONALE

126. Conservation of global forests is crucial for mitigating climate change. Forests are also essential to the livelihoods of many vulnerable populations in the LDCs. REDD-plus⁴⁷ offers opportunities for forest protection. However, such a framework could do more harm than good if it does not provide concrete provisions to ensure that the benefits are captured by marginalized groups, such as women, indigenous peoples and forest peoples.

RECOMMENDED ACTIONS

127. Forests in the LDCs often meet the needs of the communities that live in and around them in terms of food, shelter and livelihood. These needs should be given priority in the discussions on REDD-plus, and any policy decision or mechanism put in place should take this into account. Most of all, measures should be designed so that the benefits flow to the most vulnerable peoples.

6.4. ADDRESSING ENDURING INEQUALITIES IN GLOBAL ECONOMIC RELATIONS BETWEEN COUNTRIES

RATIONALE

128. In the context of a globalized economy, a lack of economic diversity and a reliance on climate-sensitive commodities for export, such as agricultural products, expose the LDCs to the double threat of economic and environmental shocks. International development efforts to address the unequal position of the LDCs in the global

economy have had a limited positive impact on reducing vulnerability. Although there has been increasing recognition of the need for special international support-mechanisms for the LDCs, measures have so far had few practical impacts on development. Despite achieving the economic growth targets in the LDCs established in the BPoA, the number of people living on less than USD 1.25 a day in the LDCs increased by over 3 million per year from 2001 to 2007. The adoption of a one-size-fits-all approach has had particularly adverse consequences for the LDCs, given their very low level of development and structural weakness.⁴⁸

RECOMMENDED ACTIONS

129. The New International Development Architecture (NIDA) of UNCTAD is a framework for the LDCs aimed at: (a) reversing their marginalization in the global economy and helping them in their catch-up efforts; (b) supporting a pattern of accelerated economic growth and diversification which would improve the general welfare and well-being of all their people; and (c) helping these countries graduate from LDC status.⁴⁹ NIDA should be further developed to provide concrete changes in international economic practices, paying special attention to the connection between economic and environmental vulnerability. NIDA should be developed and implemented with the strong participation of LDC leaders and LDC civil society. This will involve both North-South and South-South initiatives.

130. NIDA should serve as a road map to provide synergies between international environmental conventions and international economic frameworks. It should incorporate a global green new deal. Key to NIDA should be measures to ensure that the interface between global trade and the emerging green economy is beneficial to countries and groups within countries that are economically and environmentally most vulnerable.

131. Addressing the vulnerability of the LDCs necessitates engaging with strategies beyond the three Rio Conventions. For instance, fair trade and a better application of the economics of ecosystems should be applied to the trade in natural resources from the LDCs.

6.5. STRENGTHENING THE PARTICIPATION OF THE LEAST DEVELOPED COUNTRIES IN THE RIO CONVENTIONS

RATIONALE

132. One of the only ways for the LDCs to influence the rules that govern international environmental and economic behaviour is by engaging in the negotiations under the three Rio Conventions. However, despite having consensus-based voting structures in the United Nations institutions, the LDCs are often outmatched in terms of financial resources, political influence and negotiating capacity. There are also institutional obstacles that prevent their meaningful participation.

RECOMMENDED ACTIONS

133. The fragmentation of the different international environmental regimes into multiple regimes should be avoided, since the influence of the LDCs would be drastically reduced given their lack of capacities.

134. The use of conference facilities that disadvantage lower-income groups owing to lack of access should be avoided. All sites used should provide affordable accommodation for delegates in close proximity to the conference facilities.

135. The Rio Conventions should create a scientific and technical advice directory, dramatically increase funding for LDC delegations to attend the meetings of the Convention bodies, and continue and enhance the strategic and technical capacity-building and training of LDC delegates.

⁴⁷ Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.

⁴⁸ UNCTAD. 2010. *The Least Developed Countries Report 2010: Towards a New International Development Architecture for LDCs*. Available at <http://www.unctad.org/en/docs/lcdc2010_embargo_en.pdf>.

⁴⁹ As footnote 48 above.

6.6. STRENGTHENING SYNERGISTIC RELATIONSHIPS BETWEEN THE RIO CONVENTIONS AND OTHER INTERNATIONAL PROGRAMMES

RATIONALE

136. Climate change is closely related to environmental issues such as desertification and loss of biodiversity, particularly in the LDCs. To effectively address these and other environmental issues in the LDCs, it is critical that there is strong coordination across the three Rio Conventions and across agencies within the LDCs. For example, regarding biodiversity, projections indicate that 20–30 per cent of assessed species are facing elevated risks of extinction.⁵⁰ Given that biodiversity is the source of many critical ecosystem services, such as provision of food, water, fibre and medicines, recycling of nutrients, and regulation of GHGs, enhancing the conservation of biodiversity and the sustainable use of resources would significantly contribute to the success of many climate change adaptation strategies. It is also important that these environmental initiatives are coordinated with other international and national economic and social development programmes. Addressing vulnerability to environmental problems is very closely related to economic development and meeting social goals. The building of necessary capacities and the provision of resources are fundamental issues that cannot be solved in isolation; they have to go hand in hand with other development and environmental efforts at the international and national levels. This will require international and national agencies to prioritize collaboration and to overcome issues of territoriality and egoism.

RECOMMENDED ACTIONS

137. The synergies between the UNFCCC and MDG processes are obvious. The Rio+20 process should take fully into consideration the particular vulnerability of the LDCs and SIDS to climate change impacts and ensure that the UNFCCC and MDG agendas reinforce each other.

138. The WMO Programme for the LDCs should be expanded to include an information and knowledge support structure, paying attention to the connection between issues of climate change, biodiversity and desertification. In particular, further research and information is needed on the importance of biodiversity in the LDCs, its contribution to increased vulnerability and its potential for reducing poverty. Currently, there is more information available on climate change and desertification in relation to the LDCs than on biodiversity. Research should prioritize investigating the considerable overlap between these areas.

139. A process similar to that of the IPCC is needed to concentrate on the threats posed by the three global environmental problems of climate change, loss of biodiversity and desertification in the LDCs. Coherent solutions should then be designed at the national level and dovetailed with national development strategies. The LDCs would benefit from pursuing consolidated programmes, given their lack of capacities and structural constraints.

140. A much stronger integration of the national adaptation programmes under the three Rio Conventions into national development plans is required, including the NBSAPs (under CBD), the NAPs (under UNCCD) and the NAPAs for the LDCs (under the UNFCCC).

141. The integration of these three types of action plan should involve the institutionalized coordination of the three scientific subsidiary bodies of the Conventions; the expansion of the LEG (under the UNFCCC) to integrate national planning across the three Rio Conventions; and the full integration of national focal points.

142. National implementing entities should be established in the LDCs to facilitate direct access to funds. This would enable increased national autonomy over planning processes and the possibility of increased coordination across issues.

143. HFA should serve as a key framework for building synergistic approaches across the three Rio Conventions for reducing losses due to disaster. HFA seeks “the substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries” and sets out a detailed set of priorities to achieve this by 2015. The following five specific Priorities for Action identified in HFA should be addressed in explicit coordination with the three Rio Conventions:

- (a) Making DRR a priority;
- (b) Improving risk information and early warning;
- (c) Building a culture of safety and resilience;
- (d) Reducing the risks in key sectors;
- (e) Strengthening preparedness for response.

144. Furthermore, particular attention should be devoted in HFA-related efforts to addressing disaster losses in the LDCs and other particularly vulnerable states.

⁵⁰ IPCC. 2007. Climate Change 2007: Impacts, Adaptation and Vulnerability.



VII. OVERALL INDICATORS OF SUCCESS

145. The following indicators should be used to assess the efforts of the United Nations to address the vulnerability of the LDCs to the impacts of climate change and environmental degradation over the next decade:

- (a) Processes are established to mainstream resilience to climate change in development planning and policies, and the LDCs have developed flexible national development plans that include detailed measures to reduce vulnerability to environmental degradation and climate change;
- (b) Adaptation funding provided to the LDCs is predictable, equitably distributed and adequate to meet the needs of vulnerable populations and systems as determined by science;
- (c) Access to funding in relation to climate change and the environment is facilitated, and the capacity to absorb funding has been built;
- (d) A global framework is established that ensures that forests are conserved and benefits are captured by marginal groups, including indigenous peoples, women and forest peoples;
- (e) The objectives of the Hyogo Framework for Action are met by 2015 in coordination with the three Rio Conventions;
- (f) A new global green deal is established that complements economic growth and employment in the LDCs, protects vulnerable groups, reduces carbon dependency and ecosystem degradation, paves the way for sustainable and inclusive growth and contributes to the achievement of the MDGs.

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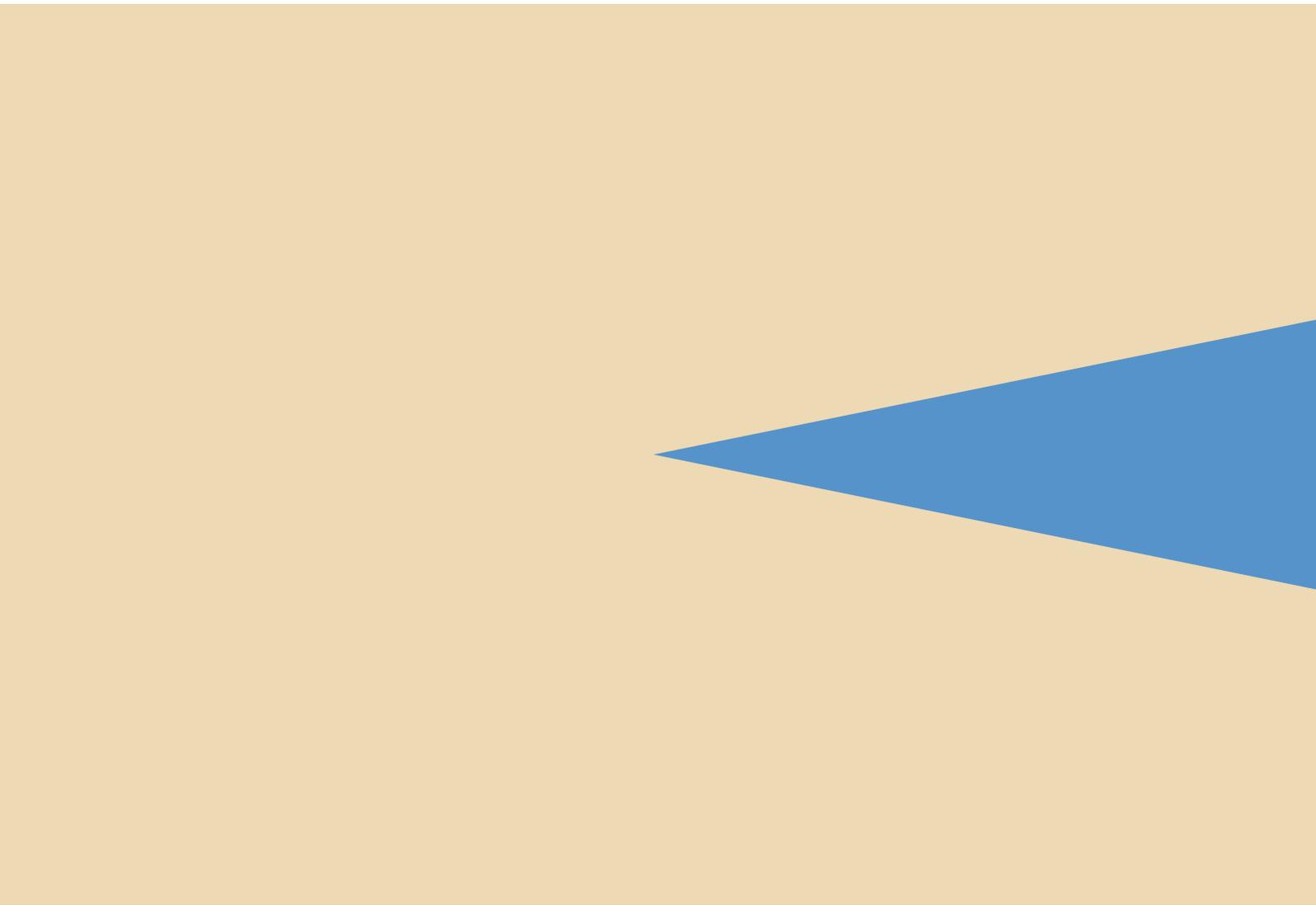
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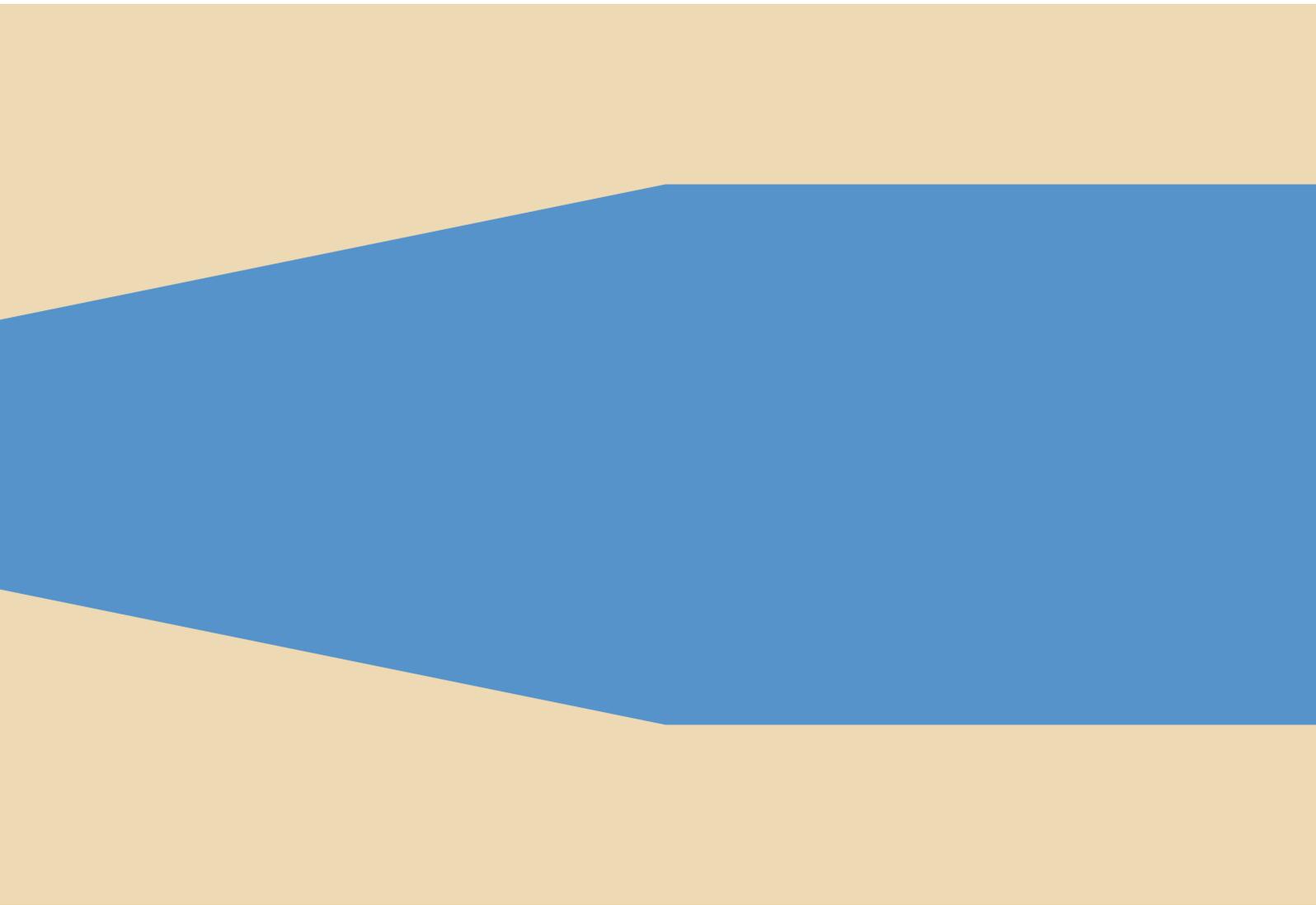
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