

**Adapting to climate change**

Adapting to the adverse effects of climate change is, along with mitigation, a major area of action for Parties under the Convention. The world is already experiencing changes in mean temperature, shifts in the seasons, and an increasing frequency of extreme weather events. These are set to continue, for the global climate system has great inertia. Adaptation is therefore essential.

This chapter describes the main provisions of the Convention that address adaptation (section 12.A) and the work related to adaptation that is being done under various agenda items under the Convention (section 12.B).

**12.A. Relevant provisions of the Convention**

The Convention refers to adaptation in several articles. First of all, the ultimate objective of the Convention is to stabilize “greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner” (Article 2).

In their commitments under Article 4.1(b) of the Convention, all Parties are to “formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to ... facilitate adequate adaptation to climate change”. In the same way as for all the provisions of Article 4.1, this is subject to “common but differentiated responsibilities and specific national and regional development priorities, objectives and circumstances” of all Parties.

Article 4.1(e) calls on Parties to “cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods”.

Article 4.1(f) requires Parties to “take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions”. It also calls on Parties to “employ appropriate methods, for example impact assessments, formulated and determined nationally”, with a view to minimizing adverse effects that adaptation projects or measures could have on the economy, on public health or on the quality of the environment.

Article 4.4 requires Annex II Parties to “assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects”.

Article 4.8 of the Convention calls on Parties to give full consideration, in implementing their commitments, to “what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country

Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures”. It also lists categories of countries that may be particularly affected<sup>66</sup>.

Article 4.9 further requires Parties “to take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology”.

### 12.B. Work related to adaptation under the Convention

Adaptation received less attention than mitigation in the early years, as Parties requested more certainty on impacts of, and vulnerability to, climate change before agreeing on concrete adaptation measures. With the publication of the IPCC Third Assessment Report, (see Box 12.1 for findings and definitions) adaptation gained more momentum and Parties agreed at COP 7 on a process to address the adverse effects of climate change and on establishing three new special funds (see chapter 13).

The importance of adaptation was reaffirmed in the *Delhi Ministerial Declaration on Climate Change and Sustainable Development* (decision 1/CP.8). The Declaration notes, for example, that “adaptation to the adverse effects of climate change is of high priority for all countries. Developing countries are particularly vulnerable, especially the least developed countries (LDCs) and Small Island Developing States (SIDS). Adaptation requires urgent attention and action on the part of all countries. Effective and result-based measures should be supported for the development of approaches at all levels on vulnerability and adaptation, as well as capacity-building for the integration of adaptation concerns into sustainable development strategies”.

Issues related to adaptation have been included in a number of areas of work under the Convention. In addition to the items on the SBI and SBSTA agendas that specifically address vulnerability and adaptation, other areas include providing financial resources (see chapter 13), transferring technology (see chapter 14), improving research and systematic observation (see chapter 15), increasing education, training and public awareness (see chapter 16), building capacity (see chapter 17) and preparing national communications (see chapter 18).

Activities relating to adaptation focus on:

1. collecting, compiling, synthesizing and disseminating information on effects, vulnerability and adaptation, including information on methodologies, technologies and activities reported in national communications and national adaptation programmes of action (NAPAs);

<sup>66</sup> Small island countries; countries with low-lying coastal areas; countries with arid and semi-arid areas, forested areas and areas liable to forest decay; countries with areas prone to natural disasters; countries with areas liable to drought and desertification; countries with areas of high urban atmospheric pollution; countries with areas with fragile ecosystems, including mountainous ecosystems; countries whose economies are highly dependent on income generated from the production, processing and export, and/or on the consumption of fossil fuels and associated energy-intensive products; and land-locked and transit countries.

2. facilitating support for capacity-building and enabling activities;
3. developing mechanisms to disseminate information and increase public awareness – including clearing houses, information systems and workshops;
4. facilitating the exchange of information and sharing experiences and views among Parties on practical ways of helping implement the Convention;
5. liaising/cooperating with international and other United Nations organizations.
6. implementing concrete adaptation actions.

The following sections of this chapter highlight aspects of these activities.

#### Box 12.1: Adapting to the adverse effects of climate change<sup>67</sup>

According to the IPCC, the most significant adverse effects of climate change include:

- a general reduction in potential crop yields in most tropical and sub-tropical regions – for most projected increases in temperature;
- a general reduction in potential crop yields in most regions in mid-latitudes, with some variations, for increases in annual average temperatures of more than a few degrees Celsius;
- even less water in many water-scarce regions, particularly in the sub-tropics;
- greater exposure to heat stress, vector-borne diseases such as malaria and water-borne diseases such as cholera;
- increased risk of flooding for human settlements because of heavy precipitation and sea-level rises – tens of millions of people will be affected;
- increased demand for energy for space cooling because of higher summer temperatures.

The **vulnerability** of human populations and natural systems to climate change differs substantially across regions and across populations within regions.

Natural systems are vulnerable to climate change, and some will be irreversibly damaged. Those particularly at risk include glaciers, coral reefs and atolls, mangroves, boreal and tropical forests, polar and alpine ecosystems, prairie wetlands, and remnant native grasslands.

Human systems too are sensitive to climate change, and those vulnerable include: water resources; agriculture and food security; forestry; coastal zones and fisheries; settlements; energy and industry; insurance and other financial services; and health.

**Adaptation** is defined by the IPCC as the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects that moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation.

**Adaptation policy** is defined by the IPCC as action taken by governments including legislation, regulations and incentives to mandate or facilitate changes in socio-economic systems aimed at reducing vulnerability to climate change, including climate variability and extremes. Changes can be made in practices, processes, or structures of systems in response to projected or actual changes in climate.

<sup>67</sup> Information from *The first Ten Years*, UNFCCC 2004, p.68, based on the IPCC Third Assessment Report (TAR) <[http://www.grida.no/climate/ipcc\\_tar/](http://www.grida.no/climate/ipcc_tar/)>.

### **12.B.1. Addressing vulnerability to the adverse effects of climate change (Article 4.8)**

How to address the particular vulnerability of developing countries first appeared as a separate agenda item at COP 3 in 1997. After consideration, Parties, by decision 3/CP.3, asked the SBI to launch a process to identify actions necessary to meet the needs of developing countries specified in Article 4.8 and 4.9. At COP 4 (November 1998), Parties adopted a work programme on this issue (decision 5/CP.4 and Annex) as part of the Buenos Aires Plan of Action. In decision 5/CP.4, the COP noted that gaps in information on the adverse effects of climate change and their assessment should be filled. The specific needs and concerns of developing countries should be identified, for instance, on the basis of their national communications. The process of implementing Article 4.8 and 4.9 was further outlined at COP 5 (decision 12/CP.5) and involved, inter alia, a number of workshops on this issue<sup>68</sup>.

At COP 7, the process initiated at COP 3 resulted in an agreement as part of the **Marrakesh Accords**. It included a decision on implementing Article 4.8 and 4.9 (decision 5/CP.7) as well as the establishment of three new funds: the Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF) and the Adaptation Fund (see chapter 13).

To address the adverse effects of climate change, decision 5/CP.7 provided a list of activities in the areas of information and methodologies as well as vulnerability and adaptation, to be funded by the GEF Trust Fund, the SCCF and the Adaptation Fund as well as other sources, which includes:

- collecting data, undertaking research into effects and monitoring them;
- assessing vulnerability and options for adapting to climate change;
- building capacity for, for instance, disaster preparedness and management and integrating adaptation measures into sustainable development;
- transferring technologies for adaptation to climate change;
- improving early warning systems for rapid response to extreme weather events;
- implementing adaptation activities where appropriate.

In addition, decision 5/CP.7 sets out a longer-term programme of analytical work on the adverse effects of climate change and the impact of the implementation of response measures (see section 12.B.3.), involving a series of workshops. Workshops were held in 2002 and 2003 on:

- modelling activities to assess the adverse effects of climate change and the impact of response measures<sup>69</sup>;
- insurance issues around climate change, extreme weather events and the impact of response measures<sup>70</sup>;

<sup>68</sup> See FCCC/SB/1999/9 for results of the workshops <<http://unfccc.int/resource/docs/1999/sb/09.pdf>> and FCCC/SB/2000/2 <<http://unfccc.int/resource/docs/2000/sb/02.pdf>>.

<sup>69</sup> FCCC/SBI/2002/9 <<http://unfccc.int/resource/docs/2002/sbi/09.pdf>>.

<sup>70</sup> FCCC/SBI/2003/11 <<http://unfccc.int/resource/docs/2003/sbi/11.pdf>>.

- synergies and cooperation with other environmental conventions<sup>71</sup>;
- needs and options of non-Annex I Parties for economic diversification and corresponding support programmes by Annex II Parties<sup>72</sup>; and
- local coping strategies and technologies for adaptation<sup>73</sup>.

The SBI considered the progress made on the implementation of decision 5/CP.7 at each of its sessions following COP 7. This included considering the results from the workshops. The SBI also took into account submissions from Parties and relevant international organizations on their views and the activities implementing decision 5/CP.7. It ultimately led to the adoption of the **Buenos Aires programme of work on adaptation and response measures** (decision 1/CP.10) at COP 10 in 2004.

Regarding the **adverse effects of climate change**, COP 10 decided to further the implementation of decision 5/CP.7 through actions including:

- improving the collection, analysis and dissemination of information, by, for example, improving systematic observation and monitoring networks in connection with the Global Climate Observing System (GCOS; see chapter 15), through increased data sharing between Parties and by strengthening in-country capacity-building;
- continuing training in specialized fields relevant to adaptation;
- developing and strengthening region-specific and country-specific modelling tools to assess climate change and its impacts;
- strengthening institutions and centres through targeted research programmes to address the adverse effects of climate change in vulnerable sectors;
- continuing to support education, training and public awareness on climate change issues and to assist participation by stakeholders;
- carrying out pilot and demonstration projects for adaptation to climate change;
- further improving technical training for integrated impact and vulnerability assessments, and for environmental management;
- promoting urgently the transfer of adaptation technologies in priority sectors such as agriculture and water resources;
- continuing to build capacity to prevent and react to disasters related to climate change, such as droughts, floods, and extreme weather events.

COP 10 asked the GEF to report to subsequent COP sessions on how these activities had been supported, and on barriers, obstacles and opportunities that had emerged from its various programmes and funds.

In addition, COP 10 encouraged the IPCC (see Chapter 4) to incorporate region-specific modelling information on the adverse effects of climate change

<sup>71</sup> FCCC/SB/2003/1 <<http://unfccc.int/resource/docs/2003/sb/01.pdf>> and <[http://unfccc.int/meetings/workshops/other\\_meetings/items/1104.php](http://unfccc.int/meetings/workshops/other_meetings/items/1104.php)>.

<sup>72</sup> FCCC/SBI/2003/18 <<http://unfccc.int/resource/docs/2003/sbi/18.pdf>>.

<sup>73</sup> FCCC/SB/2003/INF.2 <<http://unfccc.int/resource/docs/2003/sb/inf2.pdf>>.

into its fourth assessment report (AR4). It also stressed the importance of involving experts from developing countries in related research and assessment activities. COP 10 asked Annex II Parties to report on progress with support programmes for developing country Parties. It also encouraged non-Annex I Parties to report on their specific needs and concerns, including gaps in the implementation of decision 5/CP.7.

In order to facilitate the exchange of information and integrated assessments to assist in identifying specific adaptation needs and concerns, COP 10 requested the secretariat to organize, before COP 13 in 2007, three regional workshops and one expert meeting for SIDS.

The status of the implementation of Article 4.8, decision 5/CP.7 and decision 1/CP.10 is to be reviewed at COP 14 (2008).

**Relevant COP decisions:**

- Decision 1/CP.10: Buenos Aires programme of work on adaptation and response measures
- Decision 5/CP.7: Implementation of Article 4, paragraph 8 and 9, of the Convention (decision 3/CP.3 and Article 2, paragraph 3, and Article 3, paragraph 14, of the Kyoto Protocol)
- Decision 12/CP.5: Implementation of Article 4, paragraphs 8 and 9, of the Convention and matters relating to Article 3, paragraph 14, of the Kyoto Protocol
- Decision 5/CP.4: Implementation of Article 4, paragraphs 8 and 9 of the Convention (Decision 3/CP.3 and Articles 2.3 and 3.14 of the Kyoto Protocol)  
Annex: Programme of work
- Decision 3/CP.3: Implementation of Article 4, paragraphs 8 and 9, of the Convention

***12.B.2. Addressing the special needs and special situations of least developed countries***

Addressing the specific needs and the special situations of LDCs has been part of the overall work on implementing Articles 4.8 and 4.9, but it has also led to separate actions. In 2001, COP 7 adopted a package of decisions on the specific needs of LDCs. It established:

- a separate work programme for LDCs (decision 5/CP.7);
- an LDC Fund (decisions 5/CP.7, 7/CP.7 and 27/CP.7);
- guidelines for preparing national adaptation programmes of action (NAPAs) (decision 28/CP.7); and
- a Least Developed Countries Expert Group (LEG; decision 29/CP.7).

The main focus of the LDC work programme are the national adaptation programmes of action (NAPAs), which provide a process for LDCs to identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change. The rationale for NAPAs rests on the limited ability of LDCs to adapt to the adverse effects of climate change. In order to

address the urgent adaptation needs of LDCs, a new approach was needed that would focus on enhancing adaptive capacity to climate variability, which itself would help address the adverse effects of climate change.

Besides NAPAs, the work programme also includes the following activities:

- strengthening existing national climate change secretariats and/or focal points in LDCs, or establishing new ones, to enable effective implementation of the Convention;
- training in negotiating skills and language to develop the capacity of LDC negotiators to participate effectively in the climate change process;
- promoting public awareness programmes;
- facilitating development and transfer of technology; and
- strengthening the capacity of meteorological and hydrological services.

Decision 5/CP.7 also called upon Annex II Parties to support the work programme, including through financial support. The **LDC Fund** (see chapter 13.C.2.b) is to support the work programme (decisions 5/CP.7 and 7/CP.7).

To provide advice to LDCs on preparing and implementing NAPAs, COP 7, in decision 29/CP.7, established the Least Developed Countries Expert Group (LEG). The group is composed of 12 experts: five from African LDC Parties, two from Asian LDC Parties, two from small island LDC Parties and three from Annex II Parties and meets twice a year. The initial mandate of the LEG ran for two years. In 2003, COP 9 extended its mandate for another two years with unchanged terms of reference. A further review took place at COP 11 in accordance with decision 7/CP.9. By decision 4/CP.11, the LEG's mandate was extended for another two years with unchanged terms of reference.

The LEG's mandate includes:

- providing technical guidance and advice on preparing and implementing NAPAs;
- advising on capacity-building needs for preparing and implementing NAPAs;
- facilitating the exchange of information and promoting regional synergies and synergies with other environmental conventions in the context of NAPAs; and
- advising on the mainstreaming of NAPAs into development planning by integrating them into national strategies for sustainable development.

During its first two-year term (2002–2003), the LEG organized several workshops to promote capacity-building for preparing NAPAs. This included one global workshop in 2002 and four regional workshops in Africa and the Asia and the Pacific region in 2003, which were organized in cooperation with the United Nations Institute for Training and Research (UNITAR) and other agencies<sup>74</sup>.

<sup>74</sup> For more information on the regional workshops, see  
<<http://www.unitar.org/ccp/napaworkshops/index.htm>>.

Decision 28/CP.7 includes guidelines for the preparation of NAPAs (see Box 12.2) and invites LDCs to use them according to their national circumstances. The guidelines were to be reviewed at COP 8. Earlier in 2002, the LEG developed more detailed guidance for users of the NAPA guidelines in the form of annotations<sup>75</sup>. COP 8 decided therefore not to review the original guidelines and invited LDCs to use the LEG's annotations (decision 9/CP.8). COP 9, which was mandated to review the guidelines further, reiterated that no revision of the guidelines was necessary (decision 8/CP.9).

The overall status of implementation of Article 4.9 was assessed at COP 9 and COP 10. COP 9 noted progress in supporting the preparation of NAPAs as one element of the work programme, and emphasized the need to begin work on the remaining elements<sup>76</sup>. COP 10 noted with appreciation the progress in implementing the work programme and in preparing NAPAs<sup>77</sup>, but was concerned that only one country (Mauritania) had so far completed its NAPA<sup>78</sup>. Having considered the LEG report<sup>79</sup>, COP 10 asked the LEG to draw up possible elements of a new mandate strengthening its role as support to the implementation of NAPAs and to report on it to SBI 23 (November–December 2005). Furthermore, COP 10 asked the LEG, in consultation with LDC Parties, to include in the report to SBI 23 information on the potential technical and financial difficulties that LDC Parties might have in implementing NAPAs<sup>80</sup>. COP 11 then asked the LEG to prepare a work programme for the implementation of NAPAs<sup>81</sup> which was welcomed at SBI 24 in May 2006. It also decided to review at COP 13 the progress, need for continuation and terms of reference of the group and to adopt a decision thereon.

As of mid-2006, six countries have submitted their NAPA.

#### Relevant COP decisions:

- Decision 5/CP.7: Implementation of Article 4, paragraph 8 and 9, of the Convention (decision 3/CP.3 and Article 2, paragraph 3, and Article 3, paragraph 14, of the Kyoto Protocol)
- Decision 7/CP.7: Funding under the Convention
- Decision 27/CP.7: Guidance to an entity entrusted with the operation of the financial mechanism of the Convention, for the operation of the Least Developed Countries Fund
- Decision 28/CP.7: Guidelines for the preparation of national adaptation programmes of action.  
Annex: Guidelines for the preparation of national adaptation programmes of action

<sup>75</sup> FCCC/SBI/2002/INF.14 <<http://unfccc.int/resource/docs/2002/sbi/inf14.pdf>>.

<sup>76</sup> FCCC/CP/2003/L.7 <<http://unfccc.int/resource/docs/cop9/107.pdf>>.

<sup>77</sup> FCCC/CP/2004/10, paragraph 85 <<http://unfccc.int/resource/docs/cop10/10.pdf>>.

<sup>78</sup> FCCC/CP/2004/10, Annex III. <<http://unfccc.int/resource/docs/cop10/10.pdf>>.

<sup>79</sup> FCCC/SBI/2004/17 <<http://unfccc.int/resource/docs/2004/sbi/17.pdf>>.

<sup>80</sup> FCCC/SBI/2005/12 <<http://unfccc.int/resource/docs/2005/sbi/12.pdf>> and FCCC/SBI/2005/20 <<http://unfccc.int/resource/docs/2005/sbi/20.pdf>>.

<sup>81</sup> FCCC/SBI/2006/9 <<http://unfccc.int/resource/docs/2006/sbi/09.pdf>>.



Decision 29/CP.7:	Establishment of a least developed countries expert group Annex: Terms of reference of the least developed countries expert group
Decision 8/CP.8:	Guidance to an entity entrusted with the operation of the financial mechanism of the Convention, for the operation of the Least Developed Countries Fund
Decision 9/CP.8:	Review of the guidelines for the preparation of national adaptation programmes of action
Decision 6/CP.9:	Further Guidance for the Operation of the Least Developed Countries Fund

#### Box 12.2: Guidelines for the preparation of NAPAs

These guidelines (Annex to decision 29/CP.7) set out principles, propose a process for preparing NAPAs and provide a structure for the NAPA document.

The purpose of NAPAs is to **communicate priority activities addressing the urgent and immediate needs and concerns** of the LDCs in relation to **adaptation**. NAPAs should be:

- easy to understand;
- country-driven; and
- action-oriented, setting clear priorities for action.

The approach to preparing them is intended to be **complementary**, building on existing plans and programmes and including national sectoral policies. Other guiding elements include:

- sustainable development;
- gender equality;
- sound environmental management; and
- cost-effectiveness.

NAPAs should be **prepared in a participatory process**, involving, in particular, local communities. To this end, the guidelines suggest setting up a **national NAPA team** composed of a lead agency and representatives of stakeholders, including government agencies and civil society. The national NAPA team will assemble a broader, multidisciplinary team to work on most of the tasks involved, in particular to:

- synthesize information;
- conduct a participatory assessment of vulnerability to current variability and extreme events and of areas where risks would increase because of climate change;
- identify key adaptation measures;
- identify and prioritize country-driven criteria for selecting priority activities;
- select a prioritized short list of activities and projects to address urgent and immediate adaptation needs.

The national team then develops **proposals for priority activities** in a **consultative process**, organized nationally and/or sub-nationally. The resulting NAPA document is subject to public **review and revision**, involving government and civil society representatives. After endorsement by the national government, the NAPA document is made available to the public and to the UNFCCC secretariat.

- Decision 7/CP.9: Extension of the mandate of the Least Developed Countries Expert Group
- Decision 8/CP.9: Review of the guidelines for the preparation of national adaptation programmes of action
- Decision 4/CP.10: Work of the Least Developed Countries Expert Group
- Decision 3/CP.11: Further Guidance for the Operation of the Least Developed Countries Fund
- Decision 4/CP.11: Extension of the mandate of the Least Developed Countries Expert Group

### ***12.B.3. Addressing the impact of the implementation of response measures***

The impact of the implementation of response measures refers to any possible adverse consequences that mitigation policies and measures adopted by Annex II Parties may have on developing countries, and how to minimize such adverse consequences. It has been addressed in parallel to the adverse effects of climate change under the Convention. At COP 7, in decision 5/CP.7, Parties agreed on a comprehensive process involving a number of activities in the area of response measures, including:

- promoting investment for economic diversification;
- developing and transferring more climate-friendly technologies, including non-energy uses of fossil fuels, advanced fossil fuel technologies and carbon capture/storage;
- expanding climate-friendly energy sources such as natural gas and bio-fuels; and
- building capacity, especially for improving efficiency in activities relating to fossil fuels.

In addition, some workshops in the series of workshops mandated by decision 5/CP.7 also addressed the impact of the implementation of response measures, including:

- modelling activities to assess the adverse effects of climate change and the impact of response measures<sup>82</sup>;
- insurance issues around climate change, extreme weather events and the impact of response measures<sup>83</sup>; and
- needs and options of non-Annex I Parties for economic diversification and corresponding support programmes by Annex II Parties<sup>84</sup>.

Based on the workshop reports, submissions from Parties and relevant international organizations on their views and the activities implementing decision 5/CP.7, Parties adopted the Buenos Aires programme of work on adaptation and response measures (decision 1/CP.10) at COP 10 in 2004.

<sup>82</sup> FCCC/SBI/2002/9 <<http://unfccc.int/resource/docs/2002/sbi/09.pdf>>.

<sup>83</sup> FCCC/SBI/2003/11 <<http://unfccc.int/resource/docs/2003/sbi/11.pdf>>.

<sup>84</sup> FCCC/SBI/2003/18 <<http://unfccc.int/resource/docs/2003/sbi/18.pdf>>.

Regarding the impact of the implementation of response measures, COP 10 requested the secretariat to organize two expert meetings to be held in conjunction with SBI 23 (November–December 2005) and SBI 24 (May 2006), focusing on respectively

- tools and methodologies to achieve resilience to possible impacts of response measures, including strategies for managing financial risk and modelling for socio-economic impacts<sup>85</sup>;
- options for integrating economic diversification into sustainable development strategies and on needs for technical assistance and ways to encourage private sector investments in economic diversification<sup>86</sup>.

The SBI is mandated to recommend further action to COP 13 in 2007, based on the outcome of these workshops. COP 10 also invited the GEF and other bilateral and multilateral sources of funding to report to COP 12 (2006) on their support for the activities related to this aspect of decision 5/CP.7

Besides work under the Convention, the Kyoto Protocol addresses the impact of the implementation of response measures (see Box 12.3)

**Relevant COP decisions:**

- Decision 1/CP.10: Buenos Aires programme of work on adaptation and response measures
- Decision 5/CP.7: Implementation of Article 4, paragraph 8 and 9, of the Convention (decision 3/CP.3 and Article 2, paragraph 3, and Article 3, paragraph 14, of the Kyoto Protocol)
- Decision 12/CP.5: Implementation of Article 4, paragraphs 8 and 9, of the Convention and matters relating to Article 3, paragraph 14, of the Kyoto Protocol

**Box 12.3: Relevant Kyoto Protocol articles related to the impact of the implementation of response measures**

**Article 2.3** urges Annex I Parties to strive to implement policies and measures set out under Article 2 in such a way as to minimize adverse effects of climate change ... on other Parties, especially on those identified in Article 4.8 and 4.9 of the Convention, taking into account Article 3 of the Convention on common but differentiated responsibilities. COP/MOP may take further action to promote the implementation of Article 2.3. No consensus has yet been reached on the issues related to its implementation but it will be further discussed by the SBSTA.

**Article 3.14** requires Annex I Parties to strive to achieve their emission targets in such a way as to minimize adverse social, environmental and economic impacts on developing countries, particularly those identified in Article 4.8 and 4.9 of the Convention. In line with the relevant COP decisions, this article calls on the COP/MOP to consider what actions are necessary to minimize adverse effects of climate change and the impacts of response measures, including the establishment of funding, insurance and transfer of technology. The SBI agenda includes an item on matters relating to this article.

<sup>85</sup> See <<http://unfccc.int/meetings/items/3593.php>>.

<sup>86</sup> See <[http://unfccc.int/meetings/workshops/other\\_meetings/items/3639.php](http://unfccc.int/meetings/workshops/other_meetings/items/3639.php)>.

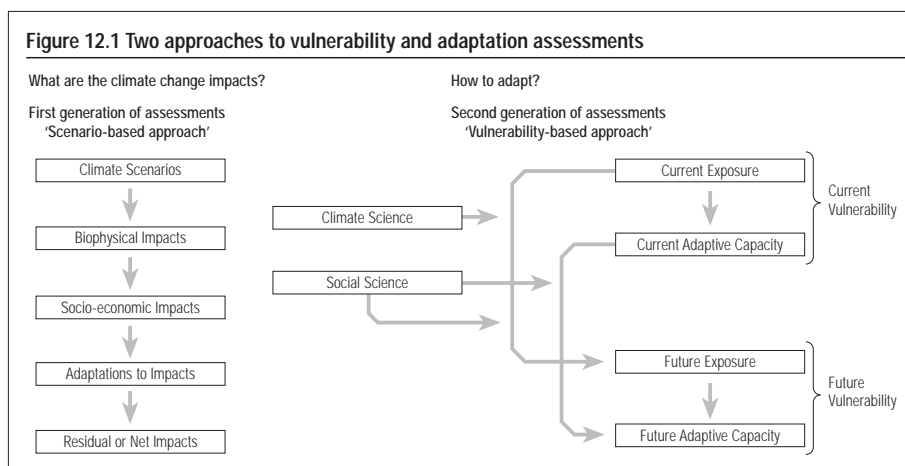
- Decision 5/CP.4: Implementation of Article 4, paragraphs 8 and 9 of the Convention (Decision 3/CP.3 and Articles 2.3 and 3.14 of the Kyoto Protocol)  
Annex: Programme of work
- Decision 3/CP.3: Implementation of Article 4, paragraphs 8 and 9, of the Convention

**Relevant COP/MOP decision**

Decision 31/CMP.1: Matters relating to Article 3, paragraph 14, of the Kyoto Protocol

**12.B.4. Methods and tools to assess climate change effects and adaptation options**

COP 3 (1997) asked the secretariat to accelerate the development of methodologies for assessing adaptation technologies, in particular decision tools to evaluate alternative strategies (decision 9/CP.3). This request aimed to assist Parties to apply the best available methods of assessing their vulnerability to climate change and their options for adapting to it. In response, the secretariat has undertaken a number of activities, among them the publication in 1999 of an initial compendium of decision tools to evaluate adaptation strategies. COP 8 encouraged non-Annex I Parties to use this compendium to evaluate adaptation strategies and measures when preparing their national communications (decision 17/CP.8). The latest version<sup>87</sup> was released in January 2005. The secretariat continues to solicit comments from Parties, organizations and experts to regularly review and update the compendium.



<sup>87</sup> *Compendium of methods and tools to evaluate impacts of vulnerability and adaptation to climate change. Final draft report*, January 2005. <[http://unfccc.int/files/adaptation/methodologies\\_for/vulnerability\\_and\\_adaptation/application/pdf/consolidated\\_version\\_updated\\_021204.pdf](http://unfccc.int/files/adaptation/methodologies_for/vulnerability_and_adaptation/application/pdf/consolidated_version_updated_021204.pdf)>.

The secretariat has also organized a number of expert meetings and workshops with the participation of the IPCC, the United Nations Development Programme (UNDP) and the user community to identify opportunities for cooperation. These include a workshop held in June 2001 which explored:

1. the experience developing countries have had with adaptation tools and methodologies;
2. the current state-of-the-art methodologies identified in the IPCC's Third Assessment Report (TAR) and how these apply to the specific circumstances of developing countries; and
3. options for improving the quality and flow of information on impact and adaptation methodologies.

The workshop came to a number of conclusions on further methodological work<sup>88</sup>. It also highlighted the need for a "second generation" of assessments of vulnerability, impacts and adaptation, which would incorporate traditional and local knowledge and be integrated into national processes for sustainable development.

SBSTA 15 (October–November 2001) supported the conclusions of the workshop and noted that more scientific work should be done on improving and developing methodologies for assessing impacts and adaptation. At the same session, the SBSTA endorsed the acceleration and broadening of the work of the secretariat in this area and noted the linkages between work on methodologies and activities relating to Articles 4.8 and 4.9, national communications from non-Annex I Parties, technology transfer and capacity-building.

Methodological work on adaptation was further considered at subsequent SBSTA sessions.

**Relevant COP decisions:**

- Decision 9/CP.3: Development and transfer of technologies  
 Decision 17/CP.8: Guidelines for the preparation of national communications from Parties not included in Annex I to the Convention

***12.B.5. Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change***

Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change was one of three preliminary areas identified by SBSTA 16 (June 2002) for regular consideration. The other areas were scientific, technical and socio-economic aspects of mitigation and research and systematic observation. All three were discussed by the SBSTA up to SBSTA 19 (December 2003) in the context of consideration of the IPCC Third Assessment Report (TAR). Following decision 10/CP.9 (see chapter 11) and the conclusion of consideration of the TAR, work on adaptation and

<sup>88</sup> FCCC/SBSTA/2001/INF.4. <<http://unfccc.int/resource/docs/2001/sbsta/inf04.pdf>>.

mitigation was separated into two new agenda items<sup>89</sup> from SBSTA 20 on. The work focuses on exchanging information and sharing experiences and views among Parties on practical ways to help implement the Convention.

**12.B.5.a. SBSTA five-year programme of work on impacts, vulnerability and adaptation**

As part of the Buenos Aires programme of work on adaptation and response measures, relating especially to the implementation of Article 4.8 (see section 12.B.1 above), COP 10 (December 2004) asked the SBSTA to develop a structured five-year programme of work which would address the issues of:

1. methodologies, data and modelling;
2. vulnerability assessments;
3. adaptation planning, measures and actions; and
4. integration of adaptation into sustainable development.

The SBSTA programme of work on impacts, vulnerability and adaptation to climate change was adopted by COP 11 in 2005 (see decision 2/CP.11). This decision defines the objective of the programme of work, its expected outcome, scope, modalities and process for implementation.

The objective is to assist all Parties 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 and socio-economic basis, taking into account current and future climate change and variability”.

The work comprises two thematic areas and ten sub-themes for action, as follows:

- (a) Impacts and vulnerability:
  - (i) Promoting the development and dissemination of methodologies and tools for impact and vulnerability assessments, such as rapid assessments and bottom-up approaches, taking account of sustainable development;
  - (ii) Improving the collection, management, exchange, access to and use of observational data and other relevant information on current and historical climate and its impacts, and promoting the improvement of observations, including the monitoring of climate variability;
  - (iii) Promoting the development of, access to, and use of information and data on projected climate change;
  - (iv) Promoting the understanding of impacts of, and vulnerability to, climate change, current and future climate variability and extreme events, and the implications for sustainable development;
  - (v) Promoting the availability of information on the socio-economic aspects of climate change and improving the integration of socio-economic information into impact and vulnerability assessments.

<sup>89</sup> These are “technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change”; and “scientific, technical and socio-economic aspects of mitigation”.

- (b) Adaptation planning, measures and actions:
  - (i) Promoting the development and dissemination of methods and tools for assessing and improving adaptation planning, measures and actions, and integration with sustainable development;
  - (ii) Collecting, analysing and disseminating information on past and current practical actions and measures, including adaptation projects, short- and long-term adaptation strategies, and local and indigenous knowledge;
  - (iii) Promoting research on options and the development and diffusion of technologies, know-how, and practices for adaptation, particularly addressing identified adaptation priorities and building on lessons learned from current projects and strategies;
  - (iv) Facilitating communication and cooperation among and between Parties and relevant organizations, business, civil society, and decision makers, and other stakeholders;
  - (v) Promoting understanding and the development and dissemination of measures, methodologies and tools including those for economic diversification to increase economic resilience and reduce reliance on vulnerable economic sectors, especially for relevant categories of countries listed in Article 4.8 of the Convention.

The work will be implemented through specific activities under each sub-theme. The implementation of such activities should incorporate two cross-cutting issues:

- i) methodologies, data and modelling;
- ii) integration into sustainable development.

An initial draft list of activities for the programme of work was considered at SBSTA 23 (November–December 2005), at an informal meeting of Parties held before SBSTA 24<sup>90</sup> and at SBSTA 24. The secretariat has also compiled an initial list of entities active in areas relevant to the programme of work<sup>91</sup>. Activities and modalities will be further considered at SBSTA 25 with the aim of identifying specific actions up to SBSTA 28 (June 2008). At that session, in accordance with decision 2/CP.11, the programme of work will be reviewed.

#### Relevant COP decisions:

- Decision 2/CP.11: Five-year programme of work of the Subsidiary Body for Scientific and Technological Advice on impacts, vulnerability and adaptation to climate change
- Decision 1/CP.10: Buenos Aires programme of work on adaptation and response measures
- Decision 10/CP.9: Scientific, technical and socio-economic aspects of impacts of, and vulnerability and adaptation to, climate change, and scientific, technical and socio-economic aspects of mitigation

<sup>90</sup> See report of the informal meeting in FCCC/SBSTA/2006/4 <<http://unfccc.int/resource/docs/2006/sbsta/eng/04.pdf>>.

<sup>91</sup> See FCCC/SBSTA/2006/INF.3 <<http://unfccc.int/resource/docs/2006/sbsta/eng/inf03.pdf>>.

**12.B.6. Providing financial resources**

The Global Environment Facility (GEF), an entity operating the financial mechanism under the Convention, has been mandated to support adaptation activities in developing countries. Funding options were extended by the Marrakesh Accords at COP 7 (2001) and included the establishment of three new funds which all have a strong adaptation component. While chapter 13 describes the operation of the financial mechanism in general and the Marrakesh funds in particular, this section more specifically addresses the overall approach taken in financing for adaptation.

In its initial guidance to the GEF (decision 11/CP.1), COP 1 (March–April 1995) established a three-stage approach to funding adaptation to climate change.

1. **Stage I** (short term): studies of possible impacts of climate change to identify particularly vulnerable countries or regions and provide policy options for adaptation and appropriate capacity-building.

The following two stages (for the medium to long term) were envisaged for the particularly vulnerable countries or regions identified in Stage I:

1. **Stage II**: measures, including further capacity-building, which may be taken to prepare for adaptation, as envisaged by Article 4.1(e). This provides for the preparation of plans for adaptation (see section 12.A above).
2. **Stage III**: measures to facilitate adequate adaptation, including insurance, among others.

The GEF has funded Stage I studies in non-Annex I Parties, as requested by decision 11/CP.1. It has further funded some Stage II activities in accordance with decision 2/CP.4 and decision 6/CP.7. In both cases, funding was provided in the context of national communications and therefore on an “agreed full costs” basis (see chapter 13), according to Article 4.3 of the Convention<sup>92</sup>. In line with this initial approach, COP 10 (December 2004), in its decision 8/CP.10, asked the GEF to expand support for drawing up adaptation strategies as part of the national communication process for non-Annex I Parties.

Guidance to the GEF provided at COP 7 (October–November 2001) included the request to provide financial resources, in particular to the least developed country Parties and the SIDS, for “establishing pilot or demonstration projects to show how adaptation planning and assessment can be practically translated into projects that will provide real benefits, and may be integrated into national policy and sustainable development planning, on the basis of information provided in national communications or in-depth national studies, ... and of the staged approach” (decision 6/CP.7).

In response to increased requests for financing adaptation by the COP, in 2003 the GEF adopted a new strategic priority *Piloting an operational approach to*

<sup>92</sup> FCCC/CP/2004/6, Report of the GEF to COP 10. <<http://unfccc.int/resource/docs/cop10/06.pdf>>.



*adaptation*, known as SPA, under its Trust Fund (from which the Marrakesh funds are managed separately). COP 9 asked the GEF to put the new strategic priority into operation as soon as possible and report on it to the COP (decision 4/CP.9). The SPA was then endorsed by the GEF Council in May 2004, along with a document describing how it would be implemented<sup>93</sup>.

In its report to COP 10, the GEF provided the following information on steps taken to implement decision 4/CP.9. The strategic priority would lead to broad-based results, good practices and lessons that would inform the international community as it sought effective ways to address adaptation. The pilot approach envisaged that adaptation-related funding separate from the ongoing funding for national communications was to be increased. This would be provided on the basis of “incremental costs” rather than “full costs”, in accordance with the GEF’s general principle. This is to fund the incremental costs of projects to achieve global environmental benefits, i.e. those additional costs that are necessary to make the project yield global benefits in addition to national benefits (see Box 13.1 in chapter 13). Since funded adaptation projects were also expected to provide other major development benefits, baseline activities would require funding by governments, NGOs, and bilateral and other sources of financing.

Under the SPA, the GEF foresees funding the incremental costs of those adaptation activities that generate global environmental benefits as well as the incremental costs of selected adaptation activities that are identified as high priorities by national communications. The SPA offers the opportunity to test selected adaptation measures in key vulnerable sectors, regions, ecosystems and communities. The lessons from the SPA should guide and assist the global community as it seeks to address the issue of adaptation in developing countries. Projects are to be selected on the basis of information contained in the national communications under the Convention, NAPAs, and other national or regional studies. Further clarification on the eligibility criteria for projects submitted under the SPA and practical and operational advice to implementing agencies, executing agencies and project proponents can be found in the GEF document *Operational guidelines for the strategic priority ‘Piloting an operational approach to adaptation’*<sup>94</sup>.

The GEF also provides funding that indirectly addresses adaptation through projects in its focal areas other than climate change, such as biodiversity, land degradation and international waters. In order to tap opportunities to further integrate adaptation into all its focal areas, the GEF’s operational approach to adaptation emphasizes linkages in all its other focal areas, with the aim of fully mainstreaming adaptation throughout its portfolio. The SPA will

<sup>93</sup> GEF Assistance to Address Adaptation, GEF/C.23/Inf.8/Rev.1. See also *A proposed GEF Approach to Adaptation to Climate Change*, GEF/C.21/Inf.10

<[http://www.thegef.org/Documents/Council\\_Documents/GEF\\_C21/C.21.Inf.10\\_Adaptation\\_to\\_CC.pdf](http://www.thegef.org/Documents/Council_Documents/GEF_C21/C.21.Inf.10_Adaptation_to_CC.pdf)>.

<sup>94</sup> *Operational guidelines for the strategic priority ‘Piloting an operational approach to adaptation’ (SPA)*, GEF/C.27/Inf.10, 14 October 2005 <[http://thegef.org/Documents/Council\\_Documents/GEF\\_C27/7documents/C.27.Inf.10OperationalGuidelinesforStrategicPriority.pdf](http://thegef.org/Documents/Council_Documents/GEF_C27/7documents/C.27.Inf.10OperationalGuidelinesforStrategicPriority.pdf)>.

therefore support activities that increase adaptive capacity and resilience to climate change in any of the GEF focal areas. Furthermore, adaptation to climate change offers a concrete opportunity to test the linkages between the climate change, biodiversity and desertification conventions at the operational level. The overall goal of the GEF's support in the area of adaptation will be to assist countries to mainstream adaptation into their development planning.

Other initiatives of direct relevance to adaptation supported by the GEF include:

- the new Operational Programme on Sustainable Land Management<sup>95</sup>, which emphasizes an integrated, cross-sectoral approach;
- the expanded role envisaged for capacity-building, particularly for cross-cutting capacity-building projects<sup>96</sup>.

As part of the Buenos Aires programme of work on adaptation and response measures (decision 1/CP.10), COP 10, in its decision 8/CP.10, asked the GEF to report on how activities identified in paragraph 6 of decision 1/CP.10 had been supported, and what barriers, obstacles and opportunities had emerged.

In its report<sup>97</sup>, the GEF updated COP 11 with information on its three ways of funding adaptation: the SPA, the LDC Fund (see chapter 13) and the SCCF (see chapter 13). An indicative target of US\$50 million for the SPA was included in the 2003 business plan. The first medium-sized projects under the SPA were approved in 2003. Activities for support under the SPA include the US\$5million adaptation programme of the Small Grants Programme. It is expected to develop a framework to respond to single community-based adaptation needs, identify and finance diverse community-based adaptation projects in a number of selected countries, and pass on the lessons learned at the community level to all stakeholders, including governments.

In the same report, results from the overall performance study of the GEF indicated that the GEF climate change programme would benefit from more distinct guidance on the role of adaptation in its portfolio. The report also noted that the GEF had many issues to resolve in its funding of adaptation activities.

#### Relevant COP decisions:

- Decision 11/CP.1: Initial guidance on policies, programme priorities and eligibility criteria to the operating entity or entities of the financial mechanism
- Decision 2/CP.4: Additional guidance to the operating entity of the financial mechanism
- Decision 6/CP.7: Additional guidance to an operating entity of the financial mechanism

<sup>95</sup> GEF/C.21/6 <[http://www.thegef.org/Documents/Council\\_Documents/GEF\\_C21/C.21.6.pdf](http://www.thegef.org/Documents/Council_Documents/GEF_C21/C.21.6.pdf)>.

<sup>96</sup> FCCC/CP/2003/3 <<http://unfccc.int/resource/docs/cop9/03.pdf>>.

<sup>97</sup> FCCC/CP/2005/3 <<http://unfccc.int/resource/docs/2005/cop11/eng/03.pdf>>.

Decision 4/CP.9: Additional guidance to an operating entity of the financial mechanism

Decision 8/CP.10: Additional guidance to an operating entity of the financial mechanism

### 12.B.7. Transferring technology

Much work relevant to adaptation has been done in developing and transferring technologies (see chapter 14). Following guidance by the COP and the SBSTA, the secretariat has prepared a number of reports and technical papers, mostly related to technologies for both mitigation and adaptation. Some, however, focus specifically on adaptation. They include papers on *Adaptation technologies*<sup>98</sup>; *Coastal adaptation technologies*<sup>99</sup>; and *Enabling environments for technology transfer*<sup>100</sup>.

A seminar on developing and transferring environmentally sound technologies for adaptation to climate change<sup>101</sup> was organized by the secretariat in 2005. SBSTA 23 (November–December 2005) considered its outcomes and acknowledged its contribution to broadening understanding on: concepts; needs for; and identification and evaluation of, technologies for adaptation; sharing lessons learned; and identifying promising areas of future work. The workshop conclusions served as a basis for the secretariat, in consultation with the Expert Group on Technology Transfer (EGTT), to prepare a technical paper entitled *Application of environmentally sound technologies for adaptation to climate change*<sup>102</sup>.

In addition, the technology information system established by the secretariat (TT:CLEAR; see chapter 14) includes the following elements relating to adaptation:

- an inventory of existing adaptation centres;
- information about adaptation technology projects (mainly from national communications of both Annex I and non-Annex I Parties); and
- a database of adaptation technologies.

### 12.B.8. National communications

The guidelines for national communications of both Annex I Parties and non-Annex I Parties (see chapter 18) require Parties to report on activities related to adaptation. National communications from Annex I Parties are to contain a section on “vulnerability assessment, climate change impacts and adaptation measures”. Non-Annex I Parties are to include information on programmes containing measures to facilitate adequate adaptation to climate change in their “general description of steps taken or envisaged to implement the Convention”.

<sup>98</sup> FCCC/TP/1997/3 <<http://unfccc.int/resource/docs/tp/tp3.pdf>>.

<sup>99</sup> FCCC/TP/1999/1 <<http://unfccc.int/resource/docs/tp/tp0199.pdf>>.

<sup>100</sup> FCCC/TP/2003/2 <<http://unfccc.int/resource/docs/tp/tp0302.pdf>>.

<sup>101</sup> FCCC/SBSTA/2005/8 <<http://unfccc.int/resource/docs/2005/sbsta/eng/08.pdf>>.

<sup>102</sup> FCCC/TP/2006/2 <<http://unfccc.int/resource/docs/2006/tp/tp02.pdf>>.

All 32 third national communications from **Annex I Parties** covered by the secretariat's compilation and synthesis report<sup>103</sup> contained scenario-based assessments of climate change impacts, including data on recent projections of likely future climate change. Some Parties reported on steps related to adaptation that they had taken within the national climate change process, including the allocation of additional funding to develop a policy framework. Some Parties reported on initial work to identify strategic adaptation options for the coming decades. Parties also reported an increasing focus on integrated assessments to include economic and cross-sectional analysis of adaptation options. All Parties presented initiatives on adaptation research that were in the planning stage or the very early stages of implementation.

Almost all Parties referred to bilateral projects and programmes that would help countries to adapt to climate change, but the quality and quantity of information provided was still variable. Projects aimed at assessments of vulnerability, disaster preparedness, and response and risk management were described as key components of adaptation policies. Vulnerability assessment and disaster preparedness were also among the fields of activity which received most support in capacity-building.

As for **non-Annex I Parties**<sup>104</sup>, all followed the Convention guidelines for reporting on impacts, vulnerability and adaptation. Although the information centered on Parties' current and future vulnerability and adaptation options, measures and strategies, it also covered the methods and approaches used in assessing vulnerability and adaptation; limitations of methods and tools; problems and difficulties encountered; sectors studied; methods for analysing and evaluating adaptation needs and priorities for financial and technical support; and institutional arrangements and networking. Most of the Parties reporting used both internationally developed methodologies and national models, ranging from the use of sophisticated computer models to qualitative assessments based on expert judgment and literature review.

Most of the adaptation options covering a wide range of sectors were identified using the *IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptation* to evaluate and determine the cost of specific adaptation strategies and measures. Most Parties emphasized that they were already experiencing stresses from climate and climate-related events and phenomena that could be exacerbated by future climate change. This makes them highly vulnerable. The key vulnerabilities included agriculture and food security; water resources; coastal zones and marine ecosystems; terrestrial ecosystems (forests, rangelands, etc.); human health and human settlements; fisheries; biodiversity; infrastructure; coral reefs; tourism; and energy. Many Parties also reported on

<sup>103</sup> FCCC/SBI/2003/7 <<http://unfccc.int/resource/docs/2003/sbi/07.pdf>> and FCCC/SBI/2003/7/Add.1 <<http://unfccc.int/resource/docs/2003/sbi/07a01.pdf>>.

<sup>104</sup> See FCCC/SBI/2005/18 and Add.1 <<http://unfccc.int/resource/docs/2005/sbi/eng/18.pdf>>, the sixth compilation and synthesis report, FCCC/SBI/2003/13 <<http://unfccc.int/resource/docs/2003/sbi/13.pdf>>, the fifth compilation and synthesis report, FCCC/SBI/2002/8 and for a summary of the first four compilation and synthesis reports <<http://unfccc.int/resource/docs/2002/sbi/08.pdf>>.

plans to incorporate or integrate climate change concerns into their planning processes as a strategy for adaptation over the long term.

The Consultative Group of Experts (CGE; see chapters 2 and 19) examined the assessments of vulnerability and adaptation in the national communications and recommended ways to improve the process of reporting on them. The results were taken into account in the new reporting guidelines adopted at COP 8 (October–November 2002), which provide flexibility for more detailed reporting on vulnerability and adaptation needs (see chapter 18).

At its second meeting in May 2004, the CGE set up thematic areas to facilitate its work, one of which focuses on assessments of vulnerability and adaptation. Part of its activities planned for 2006 is to organize regional hands-on workshops to train experts in using guidelines to prepare the second and subsequent national communications from non-Annex I Parties. One of these workshops took place in March 2006 for the Asia and the Pacific region<sup>105</sup>; another is scheduled for the Latin America and the Caribbean region.

#### **12.B.9. Other areas of relevance to adaptation**

Research and systematic observation (see chapter 15): the work of the SBSTA on global systems to observe climate is crucial in enabling Parties to apply observations, data and products to climate impact assessments and preparation for adaptation. It also supports the implementation of the five-year programme of work on impacts, vulnerability and adaptation to climate change. Support to the *Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC* prepared by the Global Climate Observing System (GCOS) secretariat is consistent with actions identified in decision 5/CP.7 in relation to the adverse effects of climate. In its consideration of research needs and priorities to support the implementation of the Convention as well as national efforts to cope with climate change, SBSTA 24 considered the results of the synthesis report on research needs and priorities relating to the Convention<sup>106</sup>. This highlights the need to stimulate research in areas not addressed by the global change research programmes, such as mitigation technology and planning and measures for adaptation.

**Education, training and public awareness:** the New Delhi work programme on Article 6 of the Convention (decision 11/CP.8; see chapter 16) recognizes that many Parties, intergovernmental organizations, NGOs and community-based organizations, as well as the private and public sectors, are already working actively to raise awareness, and increase understanding of, the causes and impacts of climate change, and possible solutions. The programme therefore encourages Parties and other entities to cooperate in promoting, facilitating, developing and implementing public awareness programmes on climate change and its effects at all levels. Activities that facilitate public access to information on climate change and its effects, and that promote public participation in addressing climate change and its effects

<sup>105</sup> See <[http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/cge/items/2885.php](http://unfccc.int/national_reports/non-annex_i_natcom/cge/items/2885.php)>.

<sup>106</sup> See FCCC/SBSTA/2006/INF.2.

and in developing adequate responses are also encouraged. Results of regional workshops<sup>107</sup> organized as one of the major activities to implement the New Delhi work programme emphasize a high priority for training in vulnerability studies and access to information on adaptation.

The frameworks for **capacity-building** in developing countries and in EITs adopted at COP 7 (decisions 2/CP.7 and 3/CP.7; see chapter 17) include issues related to adaptation, such as capacity-building for assessing vulnerability and adaptation and for implementing adaptation measures. The technical paper<sup>108</sup> that investigates the range and effectiveness of capacity-building activities in developing countries following decision 2/CP.7, confirms that vulnerability and adaptation assessments and implementation of adaptation measures are areas where there is a great need for capacity-building. Parties are also assisted by the web-based technology information clearing house TT:CLEAR which provides information methods, models, and tools to assess mitigation and adaptation options and strategies.

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<sup>107</sup> See <[http://unfccc.int/cooperation\\_and\\_support/education\\_and\\_outreach/items/3143.php](http://unfccc.int/cooperation_and_support/education_and_outreach/items/3143.php)> for workshop reports>.

<sup>108</sup> *The range and effectiveness of capacity-building in developing countries relating to decision 2/CP.7* FCCC/TP/2004/1 <<http://unfccc.int/resource/docs/tp/tp0401.pdf>>.