



African Regional Workshop on Adaptation Bulletin

A summary report of the United Nations Framework Convention on Climate Change (UNFCCC) African Regional Workshop on Adaptation

Published by the International Institute for Sustainable Development (IISD)

ONLINE AT [HTTP://WWW.IISD.CA/YIMB/ADAPTATIONACCRA/](http://www.iisd.ca/yimb/adaptationaccra/)
VOLUME 2, No. 1, TUESDAY, 26 SEPTEMBER 2006



UNFCCC AFRICAN REGIONAL WORKSHOP ON ADAPTATION: 21-23 SEPTEMBER 2006

The UN Framework Convention on Climate Change (UNFCCC) African Regional Workshop on Adaptation was held at the M Plaza Hotel in Accra, Ghana, from 21-23 September 2006. The workshop aimed at highlighting African concerns related to climate change adaptation and vulnerability reduction, with a view to identifying specific adaptation needs to be considered under the UNFCCC. Sixty participants were in attendance, mainly from Africa, but also from developed countries, as well as representatives from UN agencies and intergovernmental organizations.

The workshop was convened following a request by the tenth Conference of the Parties (COP 10) in decision 1/CP.10, calling for the UNFCCC Secretariat to organize three regional workshops and one expert meeting for small island developing states (SIDS) to enable information exchange and integrated assessments that would assist in identifying specific adaptation needs and concerns. The African workshop is the second of these, following the Latin American workshop that was held in April 2006. COP 10 further requested the Secretariat to prepare reports on the outcome of these workshops, which will be considered by the Subsidiary Body for Implementation (SBI) at its twenty-sixth session in May 2007, with a view to making a recommendation on further action to COP 13 in November 2007.

The workshop was structured around four sessions: impact and vulnerability assessments; adaptation planning and implementation; regional collaboration; and outcomes and ways forward. The first three sessions consisted mainly of country presentations followed by a question-and-answer period and open discussion. Session three, on regional collaboration, took the form of two roundtable discussions, while session four, on outcomes and ways forward, consisted of discussions in three breakout groups aimed at identifying key adaptation needs. The results of these discussions were then presented to the workshop. The UNFCCC Secretariat, in collaboration with the respective Chairs of the breakout groups, will prepare a report summarizing the outcomes and recommendations of the workshop.

A BRIEF HISTORY OF ADAPTATION TO CLIMATE CHANGE AND AFRICA

Climate change is considered to be one of the most serious threats to sustainable development, with adverse impacts expected on the environment, human health, food security, economic activity, natural resources and physical infrastructure. Global climate varies naturally, but scientists agree that rising

concentrations of anthropogenically produced greenhouse gases in the Earth's atmosphere are leading to changes in the climate. According to the Intergovernmental Panel on Climate Change (IPCC), the effects of climate change have already been observed, and scientific findings indicate that precautionary and prompt action is necessary.

The international political response to climate change began with the adoption of the UNFCCC in 1992. The UNFCCC sets out a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases to avoid "dangerous anthropogenic interference" with the climate system. Controlled gases include methane, nitrous oxide and, in particular, carbon dioxide. The UNFCCC entered into force on 21 March 1994, and now has 189 parties. The parties to the UNFCCC typically convene in an annual meeting of the COP, and twice a year in meetings of the subsidiary bodies – the SBI and the Subsidiary Body for Scientific and Technological Advice (SBSTA).

THE KYOTO PROTOCOL: In December 1997, delegates at COP 3 in Kyoto, Japan, agreed to a protocol to the UNFCCC that commits developed countries and countries making the transition to a market economy to achieve quantified emissions reduction targets. These countries, known under the UNFCCC as Annex I parties, agreed to reduce their overall emissions of six greenhouse gases by an average of 5.2% below 1990 levels between 2008-2012 (the first commitment period), with specific targets varying from country to country. The Protocol also establishes three flexible mechanisms to assist Annex I parties in meeting their national targets cost-effectively: an emissions trading system; joint implementation of emissions-reduction projects between Annex I parties; and the Clean Development

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The *African Regional Workshop on Adaptation Bulletin* is a publication of the International Institute for Sustainable Development (IISD) <info@iisd.ca>, publishers of the *Earth Negotiations Bulletin* © <enb@iisd.org>. This issue was written and edited by María Gutiérrez, Asheline Appleton, and Suzanne Carter. The Editor is Lisa Schipper, Ph.D. <lisa@iisd.org>. The Director of IISD Reporting Services is Langston James "Kimo" Goree VI <kimo@iisd.org>. Funding for coverage of this meeting has been provided by South Africa's Department of Environmental Affairs and Tourism through the IISD/DEAT/UNEP ROA project for IISD Reporting Service coverage of African regional meetings. IISD can be contacted at 161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba R3B 0Y4, Canada; tel: +1-204-958-7700; fax: +1-204-958-7710. The opinions expressed in the *Bulletin* are those of the authors and do not necessarily reflect the views of IISD. Excerpts from the *Bulletin* may be used in other publications with appropriate academic citation. Electronic versions of the *Bulletin* are sent to e-mail distribution lists (ASCII and PDF format) and can be found on the Linkages WWW-server at <http://www.iisd.ca/>. For information on the *Bulletin*, including requests to provide reporting services, contact the Director of IISD Reporting Services at <kimo@iisd.org>, +1-646-536-7556 or 212 East 47th St. #21F, New York, NY 10017, USA.

Mechanism (CDM), which allows for projects to be implemented in non-Annex I parties. To date, there are 164 parties to the Kyoto Protocol, including 37 Annex I parties representing 61.6% of 1990 Annex I greenhouse gas emissions. The Protocol entered into force on 16 February 2005, and the first Meeting of Parties to the Kyoto Protocol (COP/MOP 1) was held in conjunction with COP 11 in Montreal, Canada, from 28 November to 9 December 2005.

ADAPTATION: Adaptation is a cross-cutting theme under the UNFCCC and is referred to in different articles. In particular, Convention Article 4.1 states that parties shall “formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to [...] facilitate adequate adaptation to climate change,” and “cooperate in preparing for adaptation to the impacts of climate change.” Convention Article 4.4 states that developed country parties shall “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.” While COP 1 in 1995 addressed funding for adaptation (decision 11/CP.1), it was not until the adoption of the Marrakesh Accords in 2001 that adaptation began to be more widely seen as a prominent area for action, as set out in decision 5/CP.7 (adverse effects of climate change).

Following the conclusion of consideration of the IPCC’s Third Assessment Report, COP 9, held in Milan in December 2003, initiated a discussion on adaptation. At that time, the COP requested the SBSTA to initiate work on scientific, technical and socioeconomic aspects of, and vulnerability and adaptation to, climate change (decision 10/CP.9).

Parties reached a milestone in 2004 at COP 10 with decision 1/CP.10, known as the Buenos Aires Programme of Work on Adaptation and Response Measures. The programme of work was later elaborated on at a workshop in Bonn in October 2005 (see <http://www.iisd.ca/climate/v&a/>). COP 10 set up two complimentary tracks for adaptation: the development of a structured five-year programme of work on the scientific, technical and socioeconomic aspects of vulnerability and adaptation to climate change under SBSTA, which was adopted at COP 11 (decision 2/CP.11); and the improvement of information and methodologies, implementation of concrete adaptation activities, technology transfer and capacity building under the SBI. As part of the latter, COP 10 requested the Secretariat to organize three regional workshops and one expert meeting for SIDS to facilitate information exchange and integrated assessments to assist in identifying specific adaptation needs and concerns. COP 10 further requested the Secretariat to prepare reports on the outcome of these workshops, with a view to making recommendations to COP 13 on what further action may be required. The first of these regional workshops, held for the Latin American region, took place in Lima, Peru, from 18-20 April 2006.

AFRICA AND CLIMATE CHANGE: From the beginning, Africa has been given special mention in regards to adaptation under the UNFCCC. Convention Article 4.1(e) states that all parties shall “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.” The Delhi Declaration on Climate Change and Sustainable Development, adopted at COP 8 in 2002, further recognized that Africa was the region suffering the most from

the combined impacts of climate change and poverty, and called on development initiatives such as the New Partnership for Africa’s Development (NEPAD) to be supported in the context of sustainable development.

Likewise, the Johannesburg Plan of Implementation, adopted at the World Summit on Sustainable Development in September 2002, devotes an entire chapter to sustainable development in Africa, and calls on the international community to assist African countries in mobilizing adequate resources for their adaptation needs and in developing national climate change strategies and mitigation programmes. In 2005, the Africa Regional Statement, adopted at the Economic Commission for Africa’s Committee on Sustainable Development’s Regional Implementation Meeting for Africa, held in Addis Ababa, Ethiopia, highlighted Africa’s high vulnerability and low capacity to mitigate, as well as the inadequate support to African countries to cope with the current climate variability.

For their part, African ministers have established a number of institutions and programmes to address the region’s environmental needs.

THE AFRICAN MINISTERIAL CONFERENCE ON THE ENVIRONMENT (AMCEN): AMCEN was established in Cairo in 1985 as the permanent forum of Africa’s environment ministers, with the aim to strengthen cooperation between African governments on economic, technical and scientific activities in order to halt the degradation of Africa’s environment. At its eleventh session, which took place from 22-26 May 2006 in Brazzaville, Republic of the Congo, AMCEN adopted the Brazzaville Declaration on Environment for Development, which seeks to further AMCEN’s goal of halting environmental degradation and promoting sustainable development in Africa. Ministers also adopted 11 decisions including on the integration of environmental dimensions into disaster risk reduction programmes in the context of the Africa Regional Strategy for Disaster Risk Reduction. AMCEN plays an important role in providing political guidance to the development of Africa’s positions with respect to the UNFCCC and Kyoto Protocol. The Africa Climate Change Group of Negotiators held a preparatory meeting for COP 12 and COP/MOP 2 in Naivasha, Kenya, from 4-6 September 2006. The meeting aimed to ensure that the African representatives are well prepared for negotiations and that the outcomes of COP 12 and COP/MOP 2 have as far-reaching benefits for Africa as possible.

AFRICAN MINISTERIAL CONFERENCE ON WATER: The African Ministers Council on Water (AMCOW) was established in 2002 to promote cooperation, security, socioeconomic development and poverty eradication through the management of water resources and provision of water supply services. At the Pan African Implementation and Partners Conference in December 2003, Ministers adopted the African Ministerial Commitments on Implementation and Partnerships for achieving the Water and Sanitation Targets, in which they recognized climate change as one of the nine key water management challenges for Africa.

AFRICAN REGIONAL STRATEGY FOR DISASTER RISK REDUCTION: The Strategy was adopted by the African Union and the African Ministerial Conference on the Environment in 2004. The aim of the Strategy is to contribute to the attainment of sustainable development and poverty eradication by facilitating the integration of disaster risk reduction into development. The African Union’s 2004 Sirte Declaration on the Challenges of Implementing Integrated and Sustainable Development on Agriculture and Water in Africa called on

African governments to “enhance Early Warning Systems at regional level and their establishment where they do not exist as well as their coordination at continental level in order to avert the negative impact of drought, desertification, floods, natural disasters and pests.” The First African Ministerial Conference on Disaster Risk Reduction was held on 7 December 2005 in Addis Ababa, Ethiopia, and concluded with the adoption of the Programme of Action for the Implementation of the Africa Regional Strategy for Disaster Risk Reduction.

NEW PARTNERSHIP FOR AFRICA’S DEVELOPMENT:

In October 2001, African heads of state adopted the New Partnership for Africa’s Development (NEPAD). Among other things, NEPAD called for the development and adoption of an environment initiative to address the region’s environmental challenges, while at the same time combating poverty and promoting social and economic development. This led to the adoption two years later of NEPAD’s Environment Action Plan by the Assembly of the African Union at its second ordinary session, held in Maputo, Mozambique, in July 2003. The Action Plan is organized into clusters of programmatic and project activities to be implemented over an initial period of 10 years, of which one programme area is dedicated to combating climate change in Africa (Programme Area 5). This programme area envisages the development of Africa’s Climate Change Strategy and revolves around the issue of vulnerability assessment and the development of adaptation strategies.

NEPAD SCIENCE AND TECHNOLOGY PROGRAMME

– COMBATING DROUGHT AND DESERTIFICATION:

The NEPAD Science and Technology Secretariat facilitates a programme to strengthen the scientific and technical capacities of African countries to combat drought and desertification. The programme’s specific goals include: improvement of scientific understanding and sharing of information on the causes and extent of drought and desertification in Africa; mobilizing, building and promoting sharing of scientific expertise and technical skills in drought- and desertification-related research; and enhancing regional and continental centers of excellence in drought and desertification research.

REPORT OF THE WORKSHOP

On Thursday, 21 September, after opening statements and the presentation of a background paper on climate change in Africa, participants addressed the availability, applicability and accessibility of systematic observation, data, climate methods and tools, and impact and vulnerability assessments. On Friday, 22 September, under adaptation planning and implementation, participants discussed: agriculture and food security; water resources; health; coastal zones; support for adaptation in the context of sustainable development; and synergies. In the morning session on Saturday, 23 September, one roundtable addressed South-South collaboration, while another addressed North-South collaboration. That afternoon, workshop participants broke out in groups to discuss outcomes and ways forward. William Agyemang-Bonsu (Ghana) chaired all the sessions except the Friday afternoon session, which was chaired by Abdullatif Salem Benrageb (Libya) former SBSTA Chair.

OPENING PLENARY

Welcoming participants to Ghana and to the workshop, Kojo Twumasi, of the Environmental Protection Agency (EPA), Ghana, opened the meeting. Jonathan Allotey, Executive Director of Ghana’s EPA, drew attention to the IPCC Third Assessment

Report, noting that it had shown the African continent to be the least able to cope with the adverse effects of climate change while having contributed the least to the accumulation of greenhouse gas emissions. Roberto Acosta, UNFCCC Secretariat, said adaptation will be one of the more important issues on the agenda at COP 12, with possible agreement on outstanding issues on SBSTA’s five-year programme of work on adaptation, and progress on the agenda item on the Adaptation Fund. He encouraged participants to identify specific needs that may lead to action under the UNFCCC.

William Agyemang-Bonsu, EPA’s National Climate Change Coordinator, Ghana, speaking on behalf of SBI Chair Thomas Becker (Denmark), said he counted on former SBSTA Chair Benrageb, present at this meeting, to assist in the success of the workshop, and expressed hope that the workshop will serve to address Africa’s adaptation needs.

Kofi Poku-Adusei, Deputy Minister of Local Government, Rural Development and Environment, Ghana, highlighted the impacts of climate change already being experienced in agriculture, water resources, human health and women’s livelihoods. He called for identifying feasible steps to address adaptation in the region and said he looked forward to recommendations for inputs to policy from the workshop.

Youssef Nassef, UNFCCC Secretariat, gave an overview of past and recent developments on adaptation under the UNFCCC. He explained that the objectives of the workshop included an exchange of country experiences and the use of successful case studies, in order to produce actionable recommendations to promote planning and implementation of adaptation in the region. Regarding the Adaptation Fund, Nassef noted that funding ranging between €150-750 million was envisaged up to 2012, in addition to funding from voluntary contributions.

Balgis Osman Elasha, Sudan, presented a background paper on impacts, vulnerability and adaptation to climate change in Africa. She outlined key vulnerable sectors, including agriculture and food security, water resources, human health, biodiversity, energy and coastal zone management, giving country-specific examples. She highlighted the lack of observing stations, especially in Central Africa, and the limited scientific capacity to produce regional climate projections and scenarios. She also stressed that climate change would hinder the fulfillment of the Millennium Development Goals. Osman Elasha further observed that Africa’s high climate variability has yielded numerous coping strategies that should be built upon to increase adaptive capacity to climate change.

Chair Agyemang-Bonsu summarized the background paper presentation, highlighting governance, critical gaps in capacity building, and the need to diversify economies and to maximize synergies.

DISCUSSION: Nigeria lamented the general absence of information on cost estimates and, with Gambia, Sudan, Benin and others, requested clarification on opportunities for accessing the various funds for adaptation. Sudan highlighted the importance of climate observation and early warning systems not only for Africa but for global use, while Swaziland asked about local coping techniques and monitoring infrastructure. Zimbabwe drew attention to weather prediction, and, with Nigeria and others, stressed the importance of closing the gap between policy and research. Libya called for a focused strategy and the establishment of a programme of work to initiate action on areas that have already been identified. The UK questioned whether the lack of specific country information was a constraint to

funding for adaptation activities, and Morocco highlighted the need for South-South cooperation. Ghana underscored the need to mainstream adaptation in Official Development Assistance (ODA) programmes.

In response to questions regarding funding, Bonizella Biagini, Global Environment Facility (GEF), noted that the GEF project cycle had been streamlined to allow for easier access to funds and for the implementation of projects identified in the NAPA reports. She also stressed the need for more quantified data to enable the GEF to raise additional funds.

SESSION 1: VULNERABILITY AND IMPACT ASSESSMENTS

SYSTEMATIC OBSERVATION, DATA, CLIMATE METHODS AND TOOLS – AVAILABILITY,

APPLICABILITY, ACCESSIBILITY: William Westermeyer, Global Climate Observing System (GCOS) secretariat, presented the GCOS Regional Workshop Programme, aimed at addressing gaps and deficiencies in climate data from the atmosphere, ocean and terrestrial domains, in order to facilitate the development and implementation of regional action plans. He stressed that an improved knowledge base, from denser observational networks, results in improved forecasting and greater adaptive capacity. Westermeyer also mentioned the positive results of recovering historical data, and emphasized the importance of communication between climate data providers and users.

Motsomi Maletjane, Lesotho, highlighted the importance of systematic observation to ascertain vulnerability to climate variability and adaptation needs. Lamenting the absence of high density observing networks in his country, which restricts participation in GCOS, he added that many African countries are constrained by limited financial resources and lack of capacity to interpret and draw benefits from current observations. He noted that models used were originally designed for developed countries, and called on the UNFCCC to assist in coordination efforts amongst parties concerning capacity building, training and research.

Paul Isabirye, Uganda, noted that currently used climate change tools were originally designed for other purposes. Drawing attention to problems with instrument maintenance, he stressed the need for quality data and for collaboration. Isabirye highlighted the mismatched scales of climate-related challenges and the resources available to address them, and said that data from Africa and the Least Developed Countries (LDCs) is characterized by discontinuity and gaps, reiterating that systematic observations and meteorological data needs broader attention beyond the World Meteorological Organization (WMO) and its member countries.

Discussion: Participants commented on: the difficulty of obtaining data, both nationally and regionally; issues of quality and the need for adequate training of data collectors; the lack of funding for station maintenance; and improving internal communication between governmental departments to access data. Speakers' responses highlighted the need to convince governments of the importance of these networks and for economic studies identifying funding priorities for governments.

IMPACT AND VULNERABILITY ASSESSMENTS:

Mamadou Lamarana Diallo, Guinea, presented on vulnerability and adaptation in his country, highlighting vulnerabilities identified in national communications relating to the coastal zone, water resources, agriculture, animal husbandry and forestry. Regarding the coastal zones threatened with sea-level rise, he highlighted adaptation strategies such as planting rice fields

and mangroves to counter tidal effects. On water resources, he mentioned siltation of the river Niger, where the river banks had been eroded due to the disturbance of rainfall regimes, and emphasized the need to apply environmental protection provisions, in addition to involving local communities in the design of measures and the joint management of transboundary water resources.

John Nganga, Kenya, presented on the results of two studies on climate change impacts, vulnerability and adaptation assessments in East Africa. He said that the most effective adaptation options were those that also addressed mitigation, such as soil conservation, afforestation and reforestation. He also emphasized the need for regional cooperation, mainstreaming adaptation strategies in development plans, and incorporating indigenous knowledge and technologies. Regarding areas where the UNFCCC process can make a contribution, he identified the promotion of: international cooperation in adaptation, including through enhanced systematic observation; capacity building through pilot demonstration projects; and adequate and predictable funding for adaptation.

Mohamed Jalil, Morocco, illustrated lessons learned and good practice guidelines from Morocco, including: the involvement of all actors; holding workshops on practical skills; and including experts in policy development. He also identified gaps which need to be addressed, including difficulties in accessing data, as well as low quality and fragmentary data, both of which create difficulties for sectoral programme assessments of vulnerability and adaptation options. He suggested bilateral activities to undertake common research agendas and pool resources.

Mbunazi Gamedze, Swaziland, gave an overview of impact and adaptation assessments in Swaziland, noting the absence of a functional climate monitoring system. Explaining that assessments consisted of a bottom-up approach regarding household vulnerability, he observed that drought had been identified as a major threat by half of the population. He addressed the issue of food aid, which he said could compromise adaptation measures. With regards to livelihood vulnerability assessments, he explained that the country had been divided into livelihood zones to determine the scale of the problem and priority areas, noting that the Lowveld region is the most vulnerable to the effects of drought.

Discussion: Speakers responded to specific questions concerning the vulnerability and adaptation assessments presented, including on: the length of time taken to conduct assessments; whether all sectors and regions were covered; information gaps; whether the assessments resulted from national communications; and whether synergies were contemplated with the other Rio conventions, in particular with the UN Convention to Combat Desertification (UNCCD). On a question by UNDP on the implications of emergency relief, Swaziland responded that food aid is not a sustainable solution, while Kenya pointed to lessons learned from emergency relief which lead to designing better national development plans. Participants also discussed the need for integrated assessments and the benefits of policies such as soil conservation and renewable energies that address both adaptation and mitigation.

SESSION 2: ADAPTATION PLANNING AND IMPLEMENTATION

AGRICULTURE AND FOOD SECURITY: Moïse Sonou, FAO, presented methods and tools available from FAO to identify options and develop responses to climate variability and change in agriculture. He highlighted regional vulnerabilities within

Africa, and outlined specific models, which can be used to determine climate risks and adaptation priorities specific to local climatic conditions.

Thomas Bagan, Benin, described adaptation measures undertaken within the agricultural sector in his country, noting that 84% of the soils were eroded, fallow periods were no longer observed, and that slope erosion caused by run-off posed a serious problem. He elaborated on a pilot project undertaken with German cooperation in the eastern part of the country, aimed at enhancing capacity for the better management of catchments. Citing successful adaptation strategies, he mentioned the use of anti-erosion structures, remote sensing, and public sensitization campaigns to climate change. He also emphasized the role of customary and religious practices when contemplating adaptation strategies.

Leopold Some, Burkina Faso, focused on various endogenous and exogenous adaptation strategies in Burkina Faso, including: abandonment of water-intensive or long-cycle crops such as cotton; mixed cropping; introduction of improved varieties; and cloud seeding. He explained the technique of “zai,” a water conservation measure that has increased agricultural productivity in degraded lands, and elaborated on the construction of underground dams. He said that efficient adaptation strategies exist, but they are limited and need to be popularized and codified, and required financial assistance at the subregional level.

Constantine Shayo, Tanzania, shared adaptation planning and implementation lessons learned from Tanzania. He stressed the importance of mitigation measures to address root causes of climate change, and mentioned environmental challenges, including tree felling for biomass burning and construction, deforestation and overgrazing. He emphasized the need for good governance and policy strategies aimed at reducing vulnerability through local adaptation based on indigenous knowledge, as well as increased research efforts and further development of early warning systems.

Discussion: Participants posed questions relating to FAO’s role in mitigating greenhouse gas emissions from agricultural sources, the effect of climate change on cash crops, and uncertainties in rainfall variability models. In response to a question on the availability of FAO information tools and data, Sonou clarified that there are CD ROM versions of the tools and models in the absence of internet access, and pointed to training workshops to build capacity. He also noted that the demand for databases is driven by research projects. Regarding how best practices were being shared among African countries, GEF pointed to an adaptation learning mechanism aimed at collecting existing information and enhancing South-South information sharing, and added that all GEF financed projects under climate change had to include a replication element so that lessons learned could be disseminated. In response to a question posed by Nigeria on the possibility for non-LDCs to elaborate NAPAs, GEF noted that options existed for various activities in the context of different funding streams.

Participants also addressed, *inter alia*: the difficulties in changing traditional and religious practices; the need for regional coordination and for synergy with other conventions; and the importance of giving a package of techniques to farmers as no single strategy can be the solution to multiple problems. The UNFCCC Secretariat clarified that SBSTA’s five-year programme

of work would facilitate enhanced synergies between different organizations working on adaptation and thereby contribute to the implementation of adaptation activities.

WATER RESOURCES: Jules Venance Kouassi, Côte d’Ivoire, presented on adaptation strategies identified in his country’s national communication, including the management of water demand for industrial purposes, joint management of basins, flood control, and improved prediction and early warning systems. As barriers to implementation, he identified limited knowledge of funding mechanisms, lack of technical expertise and inadequate access to data, and he recommended the creation of structures to implement policies for integrated water resource management, and building capacity to access funding mechanisms.

Micheliarson Andrianirina, Madagascar, gave an overview of water problems related to climate change and adaptation measures adopted in his country. Among the water problems faced by Madagascar, he cited reduction of water quality; an increase in the severity of tropical cyclones in the humid zones; prolonged periods of drought; and lack of water in the semi-arid zones and the south of the island. He said that, even though the NAPA process had yet to be finalized, a public awareness campaign on climate change implications for the different regions of the country had been undertaken.

Evans Njewa, Malawi, presented on adaptation measures identified in Malawi’s NAPA, including the need to: reduce incidences of flood and drought through adequate prediction and early warning systems; improve water supply to rural communities; and promote sustainable innovations in borehole construction. He outlined the priority project profile resulting from the NAPA and identified risks and barriers to implementation, such as reluctance of communities to adopt the strategies proposed, lack of resources during the implementation phase, and poor land-use practices.

Charles Uramutse, Rwanda, spoke about his country’s heavy reliance on the water sector, linked to hydro-electrical energy, as well as problems in obtaining funding for adaptation in the absence of post-1990 station data. He discussed various adaptive strategies employed, including boreholes in areas with low river density, environmental interventions to save aquatic life threatened by reduced water levels, and the provision of basic infrastructure to displaced people to avoid them moving into sensitive areas such as marshlands. He stressed the need to sensitize communities in order to protect the environment.

Discussion: Participants addressed questions relating to inter-basin water transfers the social acceptability of reusing water, and the need to focus on specific sector water requirements such as energy and mining. In response to a question on whether stakeholders were willing to adopt the proposed technology options in Malawi’s NAPA, Njewa clarified that local communities in vulnerable areas had been involved in drafting the NAPA.

HEALTH: Bernard Edward Gomez, Gambia, outlined the method used in his country’s NAPA to identify priority actions to adapt to climate change, which relied on stakeholder participation to rank policy actions in order of importance. As a result of this process, he reported that actions related to the control of malaria were ranked highly, as it is the leading cause of death in Gambia. He also stressed the need for an integration of options to achieve the desired objective.

Gousmane Moussa, Niger, presented on the impact of climate change variability on the health sector in Niger, highlighting increased incidences of diseases like measles, malaria and meningitis. Discussing adaptation strategies required, he underscored the importance of reinforcing water quality control, and called for research into climate-sensitive diseases and for increasing vaccine uptake. He also stressed the need for strengthening early warning systems related to epidemic outbreaks, and emphasized the importance of “good health practice” awareness campaigns.

William Agyemang-Bonsu presented a poster on climate change health adaptations illustrating the links between climate change-related diseases with excessive rainfall, climate variability and heat, and the natural and societal dimensions of exposure. He noted studies undertaken in Ghana on linkages between increased incidence of diseases and climate change, and on the increased resistance of malaria to drugs. He also mentioned attempts being made to set up a human health center for the prevention of diseases related to climate change.

Discussion: Participants addressed seasonal forecasts to create health warning systems and impact assessments, criteria for measuring adaptability, and the selection of sites made in the preparation of NAPAs. The GEF clarified that for the LDC Fund and the Special Climate Change Fund (SCCF) adaptation programme, the definition of co-financing has changed to “existing development financing,” that is, money already integrated in development programmes.

COASTAL ZONES: Abdoukader Oudoum Abdallah, Djibouti, highlighted the need for adaptation strategies in the coastal zone, where 94% of his countries’ population lives. He explained that, to ensure water security, wells and boreholes had been built outside of the city center. He also highlighted a World Bank funded project to build dikes to avert flooding, and mentioned the need for protected biodiversity areas.

Reynold Johnson, Sierra Leone, presented on adaptation measures to combat erosion on the southern coastal zone, which is mostly naturally induced. He made the distinction between erosion of the Freetown peninsula, which had been exacerbated by sand extraction for construction, and outlined active and passive approaches for minimizing erosion, such as structures to dissipate wave energy and controlled abandonment.

Alexandre Cabral, Guinea Bissau, described changes to his country’s landscape related to climate change, including the virtual disappearance of rivers and lakes, coastal zone erosion, mangrove devastation, and loss of biodiversity. As adaptation measures, he referred to the establishment of national parks in species-rich but threatened areas, and plans for ecotourism.

Discussion: Sudan raised issues of attribution, regarding erosion as a result of socioeconomic factors as opposed to climate factors. In response, Johnson and Cabral said climate is not the only factor, but that the role of temperature increases in the expansion of water and subsequent sea-level rise leading to enhanced erosion cannot be ignored. Gambia reassured the need for multiple adaptation strategies and the avoidance of reactive responses. Former SBSTA Chair Benrageb also commented that the contamination of groundwater due to sea-level rise has serious implications for potable water and arable land.

SUPPORT FOR ADAPTATION IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT: Bonizella Biagini gave an overview of GEF funding available through the LDC Fund (US\$100 million) and the SCCF (US\$50 million), outlining

projects underway in Africa. She said these funds did not have same restrictions as the GEF Trust Fund, i.e. there is no need to generate global benefits. She focused on the need for projects to incorporate relevant governmental departments, which she said is also important for matching additional funds. She urged for the submission of NAPAs in order to take advantage of the funding provided by GEF, and highlighted the use of existing local coping strategies as a base to be built upon.

Martha Mwangi, UNDP, presented on the UNDP approach to adaptation, elaborating on adaptation approaches that address hazards, vulnerability, adaptive capacity and policy. She emphasized the need for an appropriate adaptation policy framework, and explained that the strategic entry point for UNDP was during the NAPA process and through demonstration and pilot projects. She clarified that the UNDP/GEF adaptation portfolio includes 18 medium- and full-size projects with US\$43.4 million in GEF funding.

Bastian Bomhard, The World Conservation Union (IUCN), focused on IUCN’s current initiatives and projects in support for adaptation addressing biodiversity, global species assessment, protected areas, world heritage, natural resources, and people and livelihoods. Among these initiatives, he highlighted the Protected Areas Learning Network Project for information exchange, the preparation of a Climate Change Strategy for World Heritage Sites, and the Water and Nature initiative. He emphasized that IUCN has its own climate change policy, under which management of ecosystems is an important component of any response to climate change.

Discussion: Questions were raised on problems in accessing funding from GEF and possible funding from UNDP and IUCN. There was confusion concerning the cap on funding under the GEF, for which Biagini clarified stating that all LDCs should have access to roughly US\$3 million, and that only stand-alone adaptation projects are capped at US\$300,000. She reiterated the new efforts of the GEF in streamlining access to funds. She also suggested that countries’ choose the implementation agency most aligned to their interests, to facilitate accessing funds from the GEF. Mwangi noted that UNDP is one of the three implementing agencies of the GEF. Bomhard explained that IUCN was not able to provide funding and worked outside of the GEF. He said however, that they could offer technical support in preparing proposals.

SYNERGIES – THE EXPERIENCE OF THE UNCCD: Bettina Horstmann, UNCCD, gave an overview of the implementation of the UNCCD and synergies with the UNFCCC, explaining that UNCCD is a member of the Joint Liaison Group together with the Convention on Biological Diversity (CBD) and the UNFCCC. She noted that national-level activities were the most advanced implementation activities under the UNCCD, and stressed the need for inter-sectoral coordination and land tenure reforms. Discussing linkages with NEPAD’s environment initiative, she mentioned Terra Africa, a multi-donor initiative for sustainable land management.

Discussion: In the question-and-answer period, participants addressed UNCCD funding difficulties compared to UNFCCC or CBD. Horstmann explained that the reasons for limited funding are multiple, including insufficient support from developed countries, inadequate scientific capacity, and changes in stated goals, but reassured that progress was being made,

noting a plan to develop a 10-year strategy for the UNCCD. She added that much depends on developing countries' prioritizing desertification.

Questions were also raised on the potential for synergies, with Horstmann noting various opportunities, including through National Capacity Self-Assessments reports. The World Bank suggested focusing on synergies in projects' goals, linking for example land degradation and climate change. In response to a question by Morocco on the possibilities of having adaptation projects inscribed in more than one of the Rio conventions, GEF explained that although the only convention that has a mandate to fund adaptation is UNFCCC, the Strategic Priority on Adaptation GEF Trust Fund has supported projects that address issues under the CDB and UNCCD.

SESSION 3: REGIONAL COLLABORATION

ROUNDTABLE ON SOUTH-SOUTH

COLLABORATION: Njeri Wamukonya, UNEP, highlighted projects under AMCEN which incorporate South-South collaboration. She noted that cooperation tends to consist of one-way transfers of funds or technology to Africa, and that there was limited collaboration between African countries, in particular between northern Africa and southern Africa. She stressed the need for follow-up mechanisms to ensure pledge commitments and for a framework for cooperation, adding that cooperation cannot be limited to the UNFCCC, but must be seen within the larger macroeconomic context.

Rhea Katsanakis, UN International Strategy for Disaster Reduction (UN/ISDR), highlighted regional strategies of the UN/ISDR. She mentioned the provision of information booklets and the establishment of a multi-stakeholder forum to exchange experiences and adapt mechanisms to country situations. She stressed the need to develop climate change adaptation plans with disaster risk reduction practitioners in addition to inviting climate change focal points to join disaster risk reduction platforms at the national level.

Noting that Africa lost 65% of its arable land between 1950-1990 and can expect to lose up to two thirds by 2025 due to land degradation, Issa Aboubacar, Sahara and Sahel Observatory (OSS), spoke about OSS's work generating information to support decision making through 30 observatories situated throughout the continent. He elaborated on OSS's initiatives on environmental surveillance, monitoring and evaluation, and systems of early warning. Commenting on the vicious cycle whereby poverty leads to overexploitation of natural resources, decreased production, and increased vulnerability, Aboubacar called for a new strategy focused on: improving institutional cooperation; mobilizing capacity for the production and sharing of information; and integrating adaptation action programmes in economic plans.

Johnson Nkem, Center for International Forestry Research (CIFOR), presented on Tropical Forest Climate Change Adaptation (TroFCCA), a global initiative using forests as a platform for adaptation. He explained that TroFCCA aims to, *inter alia*: identify adaptation issues expressed in national communications and forest communities' and ecosystems vulnerability; and facilitate a science-policy dialogue in order to contribute to national and regional adaptation processes. He stressed the importance of good baseline climate data, integrating indigenous knowledge in scientific adaptation strategies, elaborating vulnerability assessment methodologies, and developing mechanisms for policy formulation, implementation and enforcement.

Discussion: Participants addressed: synergies between disaster risk reduction and adaptation; insufficient capacity; funding constraints; regional and inter-agency cooperation; and the need for information sharing, with Namibia calling on UNEP to create an appropriate resource directory. Sudan suggested that forestry provided an entry point for South-South cooperation in terms of linkages between multilateral environmental agreements and the trans-boundary nature of resources, while Zimbabwe underscored the need to document and disseminate indigenous knowledge on coping strategies.

The UNFCCC Secretariat announced the existence of a searchable database on local coping strategies, consisting of several hundred cases that are replicable and initiated and undertaken by communities (see <http://maindb.unfccc.int/public/adaptation>).

ROUNDTABLE ON NORTH-SOUTH

COLLABORATION: Kunihiko Shimada, Japan, stressed his country's interest in working in Africa, and referred to a Japanese commission currently in Africa exploring possible CDM projects. He emphasized that adaptation should be addressed in the context of development, and that ODA can therefore be used for adaptation.

Lorenz Petersen, Germany, noted that: adaptation is a learning process that is site-specific, adding that there is still work to be done on making the case for adaptation. Noting that there are "oceans of data, but only drops of information," he called for consolidation of information and for drawing on lessons learned, such as those from the preparation of National Action Programmes (NAPs) under the UNCCD. He further stressed the role of the private sector and the need to set priorities.

Esko Kuusisto, Finland, commended the workshop as a good learning process.

Referring to experiences from Latin America, Gonçalo Cavalheiro, Portugal, emphasized the importance of exchanging information, in particular among countries who speak the same language.

Melissa Knight, US, presented on activities for integrating adaptation into planning undertaken by the United States Agency for International Development (USAID), which include the provision of a guidance manual and two pilot studies, one on food security in Mali, and another on regional water supply in South Africa. Project recommendations she mentioned included supporting other conservation practices, stakeholder participation and the need for multiple climate change scenarios.

Karen Sutherland, Canada, spoke about Canada's Climate Change Development Fund, which has contributed US\$30 million to global adaptation for climate change, including through projects on adaptive capacity and food security in the Sahel, sub-Saharan Africa and Nigeria. She identified combining technical expertise with civil society engagement as an important strength in their bottom-up approach. She also stressed that adaptation cannot be seen in isolation from development issues, as vulnerability to climate change is compounded by existing stressors, and that indigenous strategies to adaptation must be incorporated in any action plans.

Abigail Howells, European Commission, noted that adaptation is a new policy area for the EU and pointed out that their policy considerations could also be relevant to Africa. She addressed the availability of information, gaps in research, and integrating adaptation into existing EU policy. Highlighting the need to encourage the private sector to implement adaptation measures, she noted the relevance of the insurance industry, as premiums are a good indicator of vulnerability.

Jessica Troni, the UK, underscored the necessity of making an economic case for investment in building climate resilience in developing countries. She addressed the issue of information gaps, which hindered adaptation activities, while cautioning on the dangers of maladaptation, where short-term and long-term adaptation strategies do not correlate, and emphasized the need for policy to feed into the decision-making process.

The UNFCCC Secretariat drew attention to the report from the Latin America regional workshop on adaptation (FCCC/SBI/2006/19), and extended SBSTA Chair Kishan Kumarsingh's apologies for not being able to attend the workshop and present the report due to travel issues.

Discussion: Participants addressed, *inter alia*: knowledge gaps; the role of integrated planning; access to funds; the integration of adaptation in development assistance and technology transfer; private sector involvement; the role of national experts; making ODA development projects climate resilient; and climate change as a global problem caused primarily by emissions from developed countries. Namibia proposed a US\$0.01 levy per barrel of oil to go to the Adaptation Fund. Saying that funding is also a matter of supply and demand, GEF and Japan stressed the need for African countries to present projects resulting in concrete action.

SESSION 4: OUTCOMES AND WAYS FORWARD

DISCUSSIONS IN BREAK-OUT GROUPS: Participants were split into three breakout groups and tasked to come up with key recommendations or actions to address adaptation to climate change.

Group I, chaired by Mohammed Jalil, addressed the needs of African francophone countries. On vulnerability assessments, participants noted problems with availability and access to basic climate tools and data, and agreed on the importance of improving their provision, management and consistency. Participants proposed evaluating capacities at the institutional and regional levels and making this information available to reinforce South-South cooperation, and proposed holding an annual African forum on vulnerability assessment. They also agreed on the usefulness of a website to exchange information and on the need to reinforce institutional capacities. On adaptation planning and implementation, participants highlighted the need for building capacity to formulate and prepare projects, possibly through workshops. Other problems discussed included the need to integrate adaptation in development policies and sensitizing decision makers.

The UNFCCC Secretariat noted the existence of a list of local experts from LDCs in the UNFCCC website (see http://unfccc.int/cooperation_and_support/ldc/items/3541.php).

Margaret Sangarwe, Zimbabwe, chaired discussions in Group II, where debate centered on aspects of capacity building, especially regarding proposal development, training and equipment. Participants noted the frustration of climate change officers who have diverse portfolios, and highlighted the need for support to allow focused climate change project development. Other issues raised were: mainstreaming adaptation into national development policies; the need for data dissemination to end users; building flexibility into policies to allow parties to act in spite of limited knowledge; the difficulty in allocating funds to adaptation in light of other important stressors with more immediate consequences; and the need to identify existing capacity and best practices and enhancing information exchange.

Group III, chaired by William Agyemang-Bonsu, emphasized: the need to provide useable information and data and to promote the UNFCCC database on local coping strategies; building capacity for conducting integrated risk and vulnerability assessments quantifying adaptation costs and formulating adaptation project proposals; the need for climate change projections and downscaling and integrated impact models; and the use of short-term forecasting tools to manage climate change scenarios. Participants spoke about the possibility of creating an African climate change fund or funding line for adaptation and technology transfer. The group highlighted the need for monitoring and evaluation of different adaptation options, and one participant suggested requesting the FAO for guidance on how it is working with national governments on adapting agricultural planning to climate change. They also called for enhancing coordination among donors, establishing an adaptation network, and for developing a support mechanism for the chair of the Africa Group.

PRESENTATION OF THE RESULTS FROM THE BREAK-OUT GROUPS AND GENERAL DISCUSSION ON NEEDS AND CONCERNS AND WAYS FORWARD:

Thomas Bagan reflected on Group I's discussions, noting problems with data access, assessment techniques and modeling tools. He reported on the group's proposal to hold an annual forum to exchange information on vulnerability assessments. On South-South cooperation, the group identified the need to develop inventories of successful experiences and expertise available, reinforce links with the disaster risk prevention community, and integrate adaptation in sectoral policies. On adaptation actions, the group proposed, *inter alia*, building capacity to identify adaptation measures, including through workshops on project preparation, and promoting NAPA methodologies.

Commenting on Group II's discussion, Balisi Gopolang, Botswana, identified capacity constraints as the most important issue. To address this, the group proposed actions to: improve proposal writing in order to access funds; improve observing system networks; link climate and socioeconomic data; better identify stakeholders; downscale models for regions; and develop regional future climate scenarios. Other actions identified by the group included: support for officers focused on climate change; increased awareness and information dissemination, including translations into local languages; establishment of websites for sharing climate change coping strategies; mainstreaming adaptation policies; establishing frameworks for regional initiatives that are country-driven rather than donor-driven; allocating additional resources for anticipatory adaptation rather than relief; and "acting now regardless of lack of data."

Karen Sutherland discussed issues identified in Group III, such as limited capacity, insufficient funding, the need for mainstreaming adaptation, and limited coordination among key players on adaptation. Proposed actions included: better collection, storage and dissemination of both policy- and project-relevant information; hands-on training for conducting integrated assessments; mainstreaming climate change into the educational curriculum; and creating national climate change committees feeding into regional committees.

CLOSING SESSION

Chair Agyemang-Bonsu said he would prepare a report reflecting the discussions of the workshop in collaboration with the UNFCCC Secretariat.

Making concluding remarks, Zimbabwe emphasized the need to support capacity for national climate change offices, with Libya reiterating the importance of assigning people within countries to focus on climate change. Namibia recalled the need to support the chair of the Africa Group to facilitate coordination at negotiations. Japan noted that the technology transfer group under the UNFCCC also addressed technologies for adaptation, and could incorporate inputs from this workshop. The UK pointed to funds under the GEF and other resources to help in project preparation, while UNDP urged participants to make use of GEF implementing agencies, such as UNDP, in supporting project formulation processes.

In closing, the UNFCCC Secretariat thanked Chair Agyemang-Bonsu and the staff of EPA in Ghana. Chair Agyemang-Bonsu thanked all participants, and drew the workshop to a close at 6:20 pm.

UPCOMING MEETINGS

INTERNATIONAL WORKSHOP ON CLEAN DEVELOPMENT MECHANISM (CDM): OPPORTUNITIES AND CHALLENGES FOR THE FOREST SECTOR IN SUB-SAHARAN TROPICAL AFRICA:

This workshop, organized by the International Tropical Timber Organization (ITTO) in collaboration with the Ghana Forestry Commission (GFC), will take place from 2-5 October 2006, in Accra, Ghana, and will cover issues related to investment opportunities in natural forest ecosystems and renewable energy in Sub-Saharan Africa. For more information, contact: Emmanuel Ze Meka, ITTO; tel: +81-45-223-1110; fax: +81-45-223-1111; e-mail: zemeka@itto.or.jp; internet: <http://www.itto.or.jp/live/PageDisplayHandler?pageId=223&id=1136>

WORKSHOP ON SUSTAINABLE USE, SUPPLY AND PRODUCTION OF BIOMASS IN AFRICA: The International Energy Agency (IEA)/African Development Bank (ADB) workshop on biomass will be held from 9-11 October 2006, in Nairobi, Kenya. For more information, contact: Jan Tronningsdal; fax: + 33 1 40 57 65 59; e-mail: jan.tronningsdal@iea.org; internet: http://www.iea.org/Textbase/work/workshopdetail.asp?WS_ID=253

CONGRESS ON AFRICAN SCIENTISTS AND POLICY MAKERS: This meeting, organized by the African Ministerial Council on Science and Technology to develop specific recommendations to be considered by African Union Summit 2007, will take place in Alexandria, Egypt, from 27-30 October 2006. For more information, contact: NEPAD Science and Technology Secretariat; tel +27 12 841 -3688/3653 fax,+ 27 12 841-4414 email: biosciences@nrf.ac.za; internet: <http://www.nepadst.org/index.shtml>

EXTRA-ORDINARY CONFERENCE OF THE AFRICAN MINISTERIAL COUNCIL ON SCIENCE AND TECHNOLOGY (AMCOST): This conference will take place from 6-9 November 2006 in Nairobi, Kenya. For more information, contact: NEPAD Science and Technology Secretariat; tel: +27 12 841 -3688/3653 fax: ,+ 27 12 841-4414, email: biosciences@nrf.ac.za; internet: <http://www.nepadst.org/index.shtml>

TWELFTH CONFERENCE OF THE PARTIES TO THE UNFCCC AND SECOND MEETING OF THE PARTIES TO THE KYOTO PROTOCOL: UNFCCC COP 12 and Kyoto Protocol COP/MOP 2 will take place from 6-17 November 2006

in Nairobi, Kenya. These meetings will also coincide with the 25th meetings of the UNFCCC's subsidiary bodies, the second meeting of the *Ad Hoc* Working Group on Further Commitments from Annex I Parties under the Kyoto Protocol, and the UNFCCC Dialogue on Long-Term Cooperative Action on Climate Change. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: <http://www.unfccc.int>

JOINT INTERNATIONAL CONFERENCE ON DESERTIFICATION AND THE INTERNATIONAL POLICY IMPERATIVE: Organized by the UN University International Network on Water, Environment and Health (UNU-INWEH), in collaboration with other international agencies, this conference will take place from 17-19 December 2006, in Algiers, Algeria. For more information, contact: Caroline King; tel: +1-905-525-9140 ext. 24517; fax:+1-905-529-4261; e-mail: conference@inweh.unu.edu; internet: <http://www.inweh.unu.edu/inweh/drylands/IYDD.htm>

For more information on upcoming meetings, please visit: <http://www.iisd.ca/upcoming/linkagesmeetings.asp?id=5>

GLOSSARY

AMCEN	African Ministerial Conference on the Environment
AMCOW	African Ministers Council on Water
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CIFOR	Centre for International Forestry Research
COP	Conference of the Parties to the UNFCCC
COP/MOP	Conference of the Parties to the UNFCCC serving as the Meeting of the Parties to the Kyoto Protocol
EPA	Environmental Protection Agency (Ghana)
GCOS	Global Climate Observing System
GEF	Global Environment Facility
IPCC	Intergovernmental Panel on Climate Change
ISDR	International Strategy for Disaster Reduction
LDCs	Least Developed Countries
NAPA	National Adaptation Programme of Action
NEPAD	New Partnership for Africa's Development
ODA	Official Development Assistance
OSS	Sahara and Sahel Observatory
SBI	Subsidiary Body for Implementation (UNFCCC)
SBSTA	Subsidiary Body for Scientific and Technological Advice (UNFCCC)
SCCF	Special Climate Change Fund (UNFCCC)
SIDS	Small Island Developing States
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Metrological Organization