GCCA Global Learning Event 2012

Brussels, 12-14 September 2012

Background documents

Annex – Overview of GCCA programmes and key insights

Photo credit: Catherine Paul

Final – 3 September 2012

Table of contents

Disclaimer

This annex to the background documents developed in the context of the GCCA Global Learning Event has been prepared using available information on GCCA-supported interventions. This includes documents prepared during project formulation, updates provided by EU Delegations, from a small number of visits to GCCA-supported interventions undertaken by members of the GCCA Global Support Facility (GSF), and during specific side events held during the series of regional workshops on "Mainstreaming climate change into national development planning and budgeting" in the Pacific, Africa, Asia and the Caribbean. It is acknowledged that these approaches to information collection are not comprehensive, and that as such, *the compiled descriptions and analysis of GCCA-supported interventions may contain errors and/or omissions*.

The background documents and this annex are presented as a basis and framework to collect information, experience and knowledge from those most directly involved in GCCA-supported interventions across the initiative. *The observations included in these documents do not constitute and should not be interpreted as an evaluation*.

1. Africa (ClimDev) (2012-2015)

Context

Science-informed and evidence-based policy, planning and practice are essential in ensuring that development is more resilient to the negative impacts of climate change and in fostering sustainable development. Some of the major challenges for the African climate community have been a critical lack of expertise in the fields of hydrology and meteorology, an inadequate network of stations and a weak communication and computational capacity. From the user side, the main obstacles include lack of appropriate climate information and services, inadequate awareness about the existence of specific climate information, lack of access to specific data, lack of capacity to use climate information, and a poor understanding on how to deal with scientific uncertainties.

GCCA-supported actions

The GCCA programme, coordinated by the African Climate Policy Centre (ACPC) (which operates under the auspices of the UN Economic Commission for Africa and collaborates with the Climate Change and Desertification Unit of the African Union Commission and the African Development Bank), seeks to overcome the lack of essential information, analysis and options required by policy and decision makers at all levels. It supports the collection, 'packaging' and wide dissemination of climate-related information, targeting policy makers, policy support organisations and the population at large; the use of available data for analysing climate change adaption and mitigation options; and the promotion of best practices through continental knowledge sharing and sharing of policy ideas and solutions.

Insights from programme preparation

Collecting, managing and analysing data in support of evidence-based responses to climate change: The ClimDev Africa programme supports the upgrading of observation networks and infrastructure to enhance the provision of essential data for climate services and early warning systems, including seasonal and long-term forecasting at continental and sub-regional levels and downscaling of climate projections and scenarios. It also promotes research into and the analysis of climate change adaption and mitigation options, in support of the identification of climate-resilient and low-carbon development pathways, for the purpose of contributing to policy dialogue, enhancing Africa's position in international climate negotiations, and supporting African climate change and development policy making.

2. Bangladesh (2011-2015)

Context

Bangladesh is one of the most climate-vulnerable countries in the world, and is expected to become even more so as a result of climate change. Climate change and variability have already had an impact on the lives and livelihoods of people living in coastal areas and in arid and semi-arid regions. Floods, tropical cyclones, storm surges and droughts are becoming more frequent and will be more severe in the coming years and decades. These changes are threatening the significant achievements Bangladesh has made over the last 20 years in increasing incomes, reducing poverty and in achieving self-sufficiency in the production of rice, the country's staple food crop.

GCCA-supported actions

The GCCA supports the Government of Bangladesh with the implementation of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP). This support pursues a range of objectives including improvements in food security, social protection and health; disaster risk management; the building of climate-resilient infrastructure; improved knowledge and understanding of climate change and its impacts; less carbon-dependent development; and institutional strengthening and capacity building.

Planned actions that support adaptation include livelihood diversification; better access to basic services and social protection; the development and implementation of climate change-resilient cropping, fisheries and livestock systems; disease surveillance; the building of climate-resilient drinking water and sanitation infrastructure in areas at risk; the building of flood protection and mitigation infrastructure such as coastal and river embankments, water management and drainage systems; and the repair and rehabilitation of existing infrastructure. A programme for Agricultural Adaptation in Climatic Risk-Prone Areas of Bangladesh, to be led by the Ministry of Agriculture, is under preparation.

Insights from programme preparation

Contributing to a government-led, multi-donor initiative: In the context of the BCCSAP, Bangladesh established a multi-donor trust fund, the Bangladesh Climate Change Resilience Fund (BCCRF), for channelling external climate change funding. Contributing to this trust fund is a way of ensuring that GCCA support is aligned with national priorities.

Focusing on the poorest and most vulnerable: The Action Plan focuses on meeting the needs of the poorest and most vulnerable components of society, in the most vulnerable areas of the country, with regard to food security, housing, livelihoods, employment and access to basic services.

Engaging local communities: 10% of the amount available for the BBCRF will be disbursed in the form of grants to community-based adaptation projects, on the basis of calls for proposals.

Increasing the knowledge base: The Action Plan supports research and modelling activities. The research window, launched in the first quarter of 2012, will cover three research topics of which the potential impact of adaptation options related to waterlogging in urban areas. Research and modelling activities will help estimate the likely nature, scale and timing of climate change impacts and provide a foundation for identifying and prioritising suitable adaptation responses. GCCA support also contributes to the development of early warning systems for cyclones, storm surges and floods. This will enable more accurate short-, medium- and long-term forecasts, in support of timely disaster preparedness and response.

Strengthening capacities and institutions to manage natural disasters: Capacities for natural disaster management need to be widespread and address all levels and stakeholders. GCCA funding supports the strengthening of capacities to manage natural disasters in government, civil society and communities. It also contributes to the setting up of a functional institutional framework and mechanisms to support natural disaster management, including appropriate policies, laws and regulations.

Addressing disaster response capacities through infrastructure: Disaster risk reduction requires an integrated approach, which also involves investments in infrastructure to reduce vulnerabilities and

increase disaster response capacities. Examples of infrastructure supported include coastal and river embankments, urban drainage systems, river erosion control works, cyclone and flood shelters.[1]

Increasing adaptive capacity: Increasing the adaptive capacity of the population is another way of reducing climate change vulnerability that contributes to disaster risk reduction. Activities supported to this effect include for example livelihood diversification, better access to basic services and social protection, climate change resilient cropping, fisheries and livestock systems, drinking water and sanitation programmes.

Challenges

The main challenges to the implementation of the programme seem to be of an administrative and managerial rather than technical nature, and are discussed in the paper on financing modalities and aid effectiveness.

3. Benin (2012-2016)

Context

The degradation and destruction of gallery forests in the Ouémé river basin, caused by over-exploitation and agricultural encroachment, are being exacerbated by climate change. This is not only a significant problem for forest-dependent communities, but also for downstream regions, which increasingly suffer from devastating floods during the rainy season. There is a need to address some structural drivers of forest degradation, including charcoal production, non-sustainable timber extraction and extensive fallow-based agricultural practices.

GCCA-supported actions

The forest-related component of the programme aims to reduce flood impacts by promoting the conservation and sustainable use of gallery forests in the lower valley of the Ouémé river, through the establishment of a network of community-based conservation areas embedded in the national protected area system, as well as the setting up sustainable local forest management institutions and the implementation of sustainable use models for forest resources.

The cartography component supports the acquisition of new GIS data and new topographic maps covering the whole territory of Benin, as well as the strengthening of capacities of the National Geographical Institute (IGN) and structures in charge of producing maps.

Insights from programme preparation

Reducing risk of floods through improved watershed management: The link between deforestation and increased risk of disasters (flooding of downstream areas) is direct and well acknowledged, and one that is likely to become exacerbated by increasing climate variability and climate change. Acting on forest protection and sustainable forest management will reduce run-off and the risk of flooding.

Supporting sustainable livelihoods: Forest protection is unlikely to be successful without efforts to develop sustainable livelihoods for local forest-based or forest margin communities. In partnership with research institutions and local communities and authorities, sustainable management plans for

[1] In terms of DRR, the most evident developments so far have been on infrastructure, especially the construction of cyclone shelters. Amongst projects already being implemented is the construction of a multipurpose cyclone shelter by the Local Government Engineering Department. Actions foreseen to kick off in the short term include the construction of 56 additional cyclone shelters and the rehabilitation of another fifty.

gallery forests, buffer zones and connection corridors will be prepared. The plans recognise the importance of and will include incentives for promoting sustainable practices. Support will be provided to local communities for the diversification of livelihoods such as sustainable production of non-timber forest products and medicinal plants, and ecotourism.

Giving gallery forests the status of protected areas: Degraded forests such as gallery forests in the Ouémé river basin need to be included in the national network of protected areas, in the form of community-based conservation areas. This involves creating a suitable policy and legal framework for such integration, and understanding the institutional changes required for the adoption of a new management structure for gallery forests.

Involving communities and traditional authorities: The design of a new management structure for gallery forests, and the development of sustainable management plans, will be undertaken with the involvement of local communities and traditional authorities, using participatory processes.

Building on existing experience: The GCCA intervention in support of forest protection and management builds on an existing initiative of the United Nations Development Programme (UNDP), which on this basis has been entrusted with the management of the GCCA programme.

Mapping the territory: The acquisition of cartographic tools will support the mapping of the entire national territory. This will support a variety of objectives, including enhanced disaster risk management (through improved land use planning) and improved forest management. It will also inform the Growth Strategy for Poverty Reduction, the National Environmental Management Programme and the National Action Programme of Adaptation to climate change.

Investing in knowledge management for early warning of flood risks: The project incorporates a result on the establishment of an early warning system for floods, which will improve the disaster response capacity at the level of institutions and the population.

4. Belize (2012-2015)

Context

Belize's economy is based on agriculture, fishing, timber, and tourism industries. Belize is prone to recurrent hurricane damage, tidal waves, floods and wind damage, which affect agriculture, property and infrastructure, and have devastating consequences for the economy. A rise in sea level threatens potential consequences such as coastal erosion and land loss, flooding, soil salinisation, and intrusion of saltwater into groundwater aquifers. The quantity and quality of available water supplies can affect agricultural production and human health. Similarly, changes in sea surface temperature and ocean circulation could affect marine organisms including corals, sea grasses, and fish stocks.

GCCA-supported actions

GCCA support aims to enhance adaptive capacity and resilience to climate change in national policies, with a focus on the water sector. In this sector: (i) Technical assistance will be provided to the newly established National Integrated Water Resources Authority (NIWRA), in support of institutional development and financial sustainability. (ii) By-laws and regulations necessary for enabling action by the NIWRA will be elaborated and enforced. (iii) National water resources vulnerability profiles and associated water safety plans will be prepared. (iv) A water resource assessment will be conducted. (v) Pilot projects addressing issues such as droughts, floods, soil erosion and salinisation will be implemented.

Insights from programme preparation

Supporting the sector at a strategic level: In 2009, the Government of Belize adopted simultaneously a National Integrated Water Management Policy and a National Adaptation Strategy to Address Climate Change in the Water Sector. The strategy provides a solid foundation for mainstreaming climate change into the sector. The GCCA supports the implementation of the National Adaptation Strategy, including through the development of legal and regulatory framework aligned with the new policy and strategy.

Testing and demonstrating concrete measures: Support to the water sector will be implemented to a large extent in the form of pilot, community-based projects. One such project, entitled 'Climate change and food security: building resilience among cattle producers of the Belize District', aims to enhance resilience to droughts in the livestock sector. Another project, entitled 'Innovative solutions in securing local water quality', will look at ways of guaranteeing a sustainable supply of water throughout the year, addressing water turbidity during the rainy season, salinisation and other aquifer contamination problems during the dry season. Other pilot projects will allow testing approaches to flood risk management, through the introduction of watershed management measures and small-scale infrastructure works, and to soil erosion prevention, through land use management and replanting of damaged forests in strategic locations.

Strengthening information systems: The programme will support the development of a water management system for monitoring the quality and quantity of national water resources.

Using integrated approaches to water management: Watershed and 'ridge-to-reef' approaches will be promoted. For instance, trees, crops and mangroves will be replanted in strategic locations to prevent or limit soil erosion and coastal degradation, which are drivers of water resources degradation. A water resources assessment will also be conducted to inform a master plan for integrated water resources management.

5. Bhutan (2012-2016)

Context

Bhutan's development is highly dependent on climate-sensitive sectors such as agriculture, hydropower and forestry. The melting of the Himalayan glaciers increases risks of flooding and water scarcity in the dry season, while changing monsoon patterns are reflected in shorter rainy seasons characterised by increasingly heavy rains and longer dry seasons when water becomes increasingly scarce. These changes are a threat to people's livelihoods and the rural economy.

GCCA-supported actions

The GCCA provides sector budget support for the mainstreaming of climate change readiness into Bhutan's renewable natural resources (RNR) sector, which encompasses rural development, agriculture, food security and the preservation of natural resources. The main expected outcome is the preparation and endorsement of a Climate Change Adaptation Action Plan for the RNR sector, to be mainstreamed into the 11th Five-Year Plan (FYP). This must lead in particular to the implementation of concrete adaptation measures in the agricultural sector, such as the development of infrastructure to save, store and reuse rain and groundwater, and the introduction of sustainable land management practices. GCCA support is also expected to pave the way for the establishment of an institutional framework allowing a multi-sectoral approach to climate change adaptation.

Insights from programme preparation

Building on evidence of climate change impacts: Former and ongoing EU support to the livestock and agriculture sector, notably in the field of farm road construction and crop cultivation, shows the high vulnerability of the sector to the effects of climate change and the urgent need to implement climate change adaptation. This experience confirms the relevance of the GCCA intervention, and underpins the programme's focus on the implementation of concrete adaptation measures in the agricultural sector.

Fostering inter-sectoral coordination: Through its involvement in the RNR Sector Programme (another EU-funded programme), the EU is taking the lead in establishing a formal and active sector and donor coordination mechanism for the RNR sector. As a result of GCCA involvement, the EU will now also foster coordination between this mechanism, the multi-sector task force on climate change set up by the government, and the on-going activities of the Joint Support Programme, a multi-donor initiative aimed at mainstreaming the poverty–environment–climate change nexus into the policies and plans of all ministries and at all government levels.

Improving performance monitoring systems: Based on the identification of some weaknesses in monitoring the performance of the RNR policy and strategy, improvement in sector monitoring and the quality of statistical data has been made a criterion for sector progress and disbursement of the variable tranche of budget support.

Challenges

The planning of the exercise for the 11th Five-Year Plan (2013-2018) should be substantially completed by the end of 2012. With GCCA programme implementation expected to start only in mid-2012, there will be little time to ensure that climate change adaptation is prominently reflected in the RNR 11th FYP. Technical assistance to the government will be recruited as soon as possible to support this.

As a consequence of the crosscutting nature of climate change, responsibility for climate change actions in Bhutan is shared among several ministries, departments and agencies. This makes climate change coordination a complex process.

6. Burkina Faso (2013-2017)

Context

Burkina Faso, a Sahelian country, has few natural resources and a climate particularly in the north characterised by insufficient and erratic rainfall, making it prone to droughts but also catastrophic floods. Various human pressures contribute to land degradation and water stress; climate variability and change add to these pressures. The economy is very dependent on agriculture, a sector particularly sensitive to climate conditions. The country's energy system, based to a large extent on the extraction of woodfuel, is unsustainable and leads to forest degradation, deforestation and greenhouse gas emissions.

GCCA-supported actions

The GCCA intervention aims to improve climate change governance in relation to sustainable forest management and the REDD+ process. More specifically, the programme will support the mainstreaming of environmental and climate-related issues into the forest sector, data and knowledge management, stakeholder engagement and consultation on climate-related issues

(notably in the context of REDD+), and the implementation of adaptation and mitigation measures in the forest and land management sectors.

Insights from programme preparation

Mainstreaming climate change into sector planning and budgeting: Principles of sustainable environmental management (including climate-related aspects) will be mainstreamed into the planning and budgeting of key policies in the rural sector. The legal and regulatory framework governing climate change and the forest sector will be reviewed.

Mainstreaming climate change at sub-national levels: The GCCA will support the mainstreaming of climate change into regional land use plans and municipal development plans.

Integrating into the existing management structures: The programme will be implemented in support of the National Rural Sector Plan. It will make full use of the national coordination and steering mechanisms set up in this context, under the leadership of the Ministry of Environment and Sustainable Development. This is useful because of reduced administrative costs, ensures collaboration, and ensures capacity to implement.

Developing synergies with the REDD+ process and related initiatives: The GCCA intervention will be implemented through a contribution to a World Bank-managed programme supporting sustainable decentralised forest management, in the context of the Forest Invest Program (FIP). The FIP is a component of the Strategic Climate Fund set up by multilateral investment banks; it promotes public and private investment and structural measures aimed at reducing deforestation and forest degradation and promoting sustainable forest management.

Collecting and managing climate-related data: The programme will support the establishment of a National Observatory on Environment and Sustainable Development, which will notably be in charge of developing national climate change-related indicators. It will also help create a database of ongoing studies and research projects on climate change in Burkina Faso and Western Africa, disseminate their most relevant findings, and support the interconnection of various existing information systems, such as early warning systems linked to food security and natural disasters.

Promoting the use of sustainable development tools: The use of tools such as environmental accounting, environmental fiscal reforms, environmental and vulnerability assessments will be promoted to support the integration of climate change-related considerations into the forest sector.

Implementing concrete measures: The programme will finance concrete climate change adaptation and mitigation projects (including REDD+ pilot projects) at the local level, in collaboration with local authorities and civil society.

Engaging a wide range of stakeholders: Stakeholder engagement, consultation and capacity building will be emphasized as part of institutional building efforts. All stakeholders will be associated to this process, including government, the scientific community, civil society organisations and the private sector.

7. Cambodia (2010-2014)

Context

Cambodia's vulnerability to climate change is linked to its characteristics as a post-civil war, little developed, agrarian country, with 80% of the population relying on subsistence crop production in rural areas, combined with a weak adaptive capacity and poor infrastructure. Climate change is a threat to life, livelihoods and life-supporting systems. It is expected to compound and amplify already

existing development challenges, through more severe water scarcity and more frequent floods, resulting in agricultural failure and food shortages, and through the accelerated loss of biodiversity and decline in ecosystem services. It may also have health implications in the form of higher incidence of malaria and dengue.

GCCA-supported actions

GCCA support, implemented through a multi-donor sector policy support programme entitled Cambodia Climate Change Alliance (CCCA), is used to strengthen the capacity of the National Climate Change Committee (NCCC) to coordinate national policy making, capacity development, outreach and advocacy efforts; to monitor the implementation of the national climate change strategy, policy and plans; and also to prepare for the establishment of a nationally-owned climate change trust fund. To this effect, a CCCA Trust Fund has been set up to start channelling funds to climate change adaptation projects in the field. The programme also supports the establishment of a multi-stakeholder climate change information sharing and knowledge management platform. The GCCA has also provided support for a Climate Public Expenditure and Institutional Review to be carrier out by ODI and UNDP. This provides an overview of the institutions related to climate change and the expenditure on climate change within both the national budget and the broader national context.

Insights from programme preparation

Strengthening existing national institutions: Before the start of the GCCA programme, Cambodia had already set up institutions for coordinating the response to climate change, including the inter-ministerial NCCC chaired (on a honorary basis) by the Prime Minister, assisted by the Climate Change Department of the Ministry of Environment (providing a secretariat), and the National Committee for Disaster Management. GCCA support aims to strengthen the capacities of these existing institutions, not create new ones. Support for the participation of NCCC officials in UNFCCC meetings, including the latest two Conferences of the Parties in Cancún and Durban, is a particularly valued contribution of the programme to Cambodia's participation in the international dialogue on climate change.

Supporting climate-related information sharing and knowledge management: The programme supports the organisation of national forums on climate change, the development of a NCCC website for providing access to up-to-date information on the CCCA and other climate change-related programmes, as well as the establishment of a National Climate Change Data, Knowledge Management and Learning Centre to act as a clearing house for climate change data, resources, learning services and dissemination of climate change information. A Climate Change Communication Strategy will also be developed, and a public awareness and learning campaign targeting all regions and vulnerable groups (and addressing gender issues) will be undertaken.

Involving civil society: The GCCA programme recognises the need to engage civil society, including academia, non-government organisations and the private sector. This is why the information sharing and knowledge management platform is a multi-stakeholder one, open to non-state actors. Also and importantly, the CCCA Trust Fund can provide grants to civil society organisations to implement adaptation projects in the field.

Insights from programme implementation

Using evidence to raise awareness: The programme has supported the preparation and dissemination of two key reports: a study illustrating the perceptions of climate change in Cambodian society, and the Cambodian Human Development Report entitled 'Building Resilience: The Future for Rural Livelihoods in the Face of Climate Change'. Both create opportunities for increased communication and public debate on climate change impacts.

Paving the way for a climate change trust fund and climate change budget support: The multi-donor initiative to which the GCCA contributes is seen as a transitional instrument. The CCCA Trust Fund is expected to develop a scalable grant mechanism for providing financial support to climate change initiatives on the ground[2], and to explore the legal framework and design options for the establishment of a nationally owned trust fund. This, in turn, combined with actions aimed at strengthening the institutions in charge of managing the response to climate change, potentially paves the way for budget support feeding a future national climate change trust fund. The trust fund model used by the CCCA provides a valuable model for accountable and transparent selection of project proposals. It could be highlighted to the UNFCCC's Green Climate Fund prior to its 2nd Board Meeting, currently tentatively planned for October 2012.

It should be noted that while the CCCA Trust Fund aims to constitute a unified engagement point for development partners to provide resources for climate change, it is currently not the only multi-donor financial facility operating in the country. A separate facility and fund supported by the World Bank and Asian Development Bank is operating under the Pilot Program on Climate Resilience (PPCR). Government officials express some frustration at the burden these two separate systems placed on already stretched financial, human and technical capacity. In future, it will be important to move to the establishment of a single trust fund.

Stressing the response to climate change as a development and livelihood-related issue: In Cambodia, climate change is often still articulated as a secondary issue to pressing national concerns related to food security, poverty, water security and basic infrastructure needs. This reflects a lack of understanding of how climate change responses can address urgent development priorities. Some concept notes submitted following the first call for proposals also reflected an understanding that the response to climate change has to be technical and addressed distinctly from other threats. To promote a more impact- and resilience-focused approach, further outreach efforts will have to keep stressing the response to climate change as a way of protecting livelihoods and enhancing the resilience and sustainability of development interventions.

Challenges

Different rules and procedural requirements of different donors involved in the CCCA create significant delays in implementation, notably for the contracting of coastal zone adaptation activities. These issues should have been sorted out at a much earlier stage.

Human and financial resource limitations in government services, slow recruitment for key positions and a high rate of staff turnover, linked to current policy on civil service salary and entitlements, also place constraints on programme achievements.

Weaknesses in the communication mechanisms between ministries, and between the national and sub-national levels, may constitute obstacles to the sharing of lessons learned and the scaling-up of successful initiatives.

8. Caribbean (2011-2014)

Context

All 16 CARIFORUM Member States are small island developing states (SIDS), hence generally recognised as highly vulnerable to the effects of climate change. The effects most threatening the

[2] It has already launched a call for proposals and identified eight adaptation interventions, covering ten provinces and multiple sectors and issues. Another call for proposals is planned.

island nations and their inhabitants are increased hurricane frequency and intensity and the rise in sea level.

Over the past decade, the Caribbean region has mainly focused on adaptation measures. Several programmes with a regional scope and approach have been implemented, with support from various donors. The GCCA programme builds on the results achieved by the earlier programmes, and on the work of the Caribbean Community Climate Change Centre (CCCCC), established in 2005, which coordinates the region's response to climate change.

GCCA-supported actions

The programme aims to enhance local, national and regional capacities and resilience in ways that link sustainable development, risk management, and adaptation for a win-win-win situation. More specifically, it finances activities in the field of climate monitoring, climate modelling, and vulnerability and risk assessment. It also promotes the development and implementation of concrete adaptation projects, and supports a range of activities aimed at improving access to carbon financing, including REDD+.

Insights from programme preparation

Collecting and managing data for the development of evidence-based adaptation and disaster risk reduction responses: The existing regional climate monitoring system is being expanded and integrated in the Global Climate Observing System (GCOS). Over 100 hydro-meteorological stations, and 6 coral reef early warning stations, are to be installed; a system for collection, digitizing and storage of data is being set up; and a protocol for sharing information through the Information Clearing House Facility of the CCCCC is being developed. The programme also supports the development of improved climate models based on data at smaller resolutions, and their use in studies on climate impacts, of which about ten should be conducted throughout the region. About ten vulnerability and risk assessments, based on improved methodologies, are also planned to inform future land use planning, zoning and development planning.

Learning by doing through pilot projects: At least two adaptation projects will be funded and implemented, based on the experience gained under the Special Pilot Adaptation to Climate Change (SPACC) project in St Lucia, Dominica and St Vincent and the Grenadines.

Promoting improved access to climate finance: The programmes promotes increased access to carbon finance, through support for the establishment and operationalisation of Designated National Authorities, for the development of criteria for screening project proposals in the area of renewable energy, and for the implementation of two renewable energy projects in indigenous communities.

Building capacities for participation in REDD+: In view of increasing the region's preparedness to access REDD funding, the programme will organise a seminar on REDD+. Emphasis will be put on enhancing capacities for developing reference scenarios and complying with monitoring, reporting and verification requirements.

9. Central African Republic (2013-2017)

Context

Tropical forests cover nearly half of the Central African Republic's territory. Forest resource exploitation makes a significant contribution to the country's economic development and formal employment, in particular in the South-western region, where timber companies operate forest

concessions. The Central African Republic is engaged in the REDD+ readiness process. It has also signed a Voluntary Partnership Agreement in the context of the EU FLEGT[3] initiative.

GCCA-supported actions

The programme will support the sustainable management of forest ecosystems and the strengthening of capacities to sustainably manage local development in the forested South-western region, contributing to the implementation of the national REDD+ strategy. More specifically, it will help enhance the capacity of local authorities to sustainably manage the benefits obtained from forest exploitation; contribute to the sustainable management of production forests in the South-west; lay the foundations for a regional environmental management and monitoring initiative; support REDD+ implementation at the regional level; and build the capacities of local stakeholders in relation to the above objectives.

Insights from programme preparation

Support sustainable livelihoods: The programme will help enhance the capacity of local authorities to manage the royalties obtained from forest concessions in a way that supports sustainable local development and the provision of services to citizens. It will support the preparation of local development plans, based on a participatory process and with an emphasis on the sustainable management of natural resources.

Develop synergies with the REDD+ and FLEGT processes as well as other activities and processes in country: The programme will support the implementation of the REDD+ strategy in the South-western region, including the setting up of a land use planning system, the development of a regional forest strategy and environmental and social strategic assessments. A baseline scenario and a monitoring, reporting and verification (MRV) mechanism for a REDD pilot project, and the registration of this project under a recognised voluntary carbon market standard will be supported. It will include capacity building for civil society and other stakeholders in relation to the FLEGT and REDD+ processes, as well as the networking of civil society organisations to reinforce their role of independent observers of these processes.

Capitalise on existing experience and initiatives: The programme will be implemented in conjunction with an intervention of the French Development Agency (AFD) in the same region. It complements, and builds on the experience of, a successfully concluded AFD project in support of the implementation of forest management plans.

10. Democratic Republic of Congo (2012-2017)

Context

Forests cover 67% of territory of the DRC, with an estimated area of 155.5 million ha, of which 99 million ha is dense humid forests. By the standards of other tropical forest regions, the deforestation rate in the Congo Basin and DRC has been quite moderate over the past decades. Nevertheless, forest degradation and deforestation are significant in some regions, particularly those surrounding Kinshasa and other large cities (Eba'a Atyi and Bayol, 2009; Eba'a Atyi et al, 2009). In the DRC as elsewhere in the Congo Basin, forests are a major source of livelihoods and revenue for both the formal and the informal sectors (de Wasseige et al, 2009). Improved forest protection and management is therefore a key component of the DRC's response to climate change, in terms of both adaptation and mitigation.

[3] The EU 'Forest Law Enforcement, Governance and Trade' initiative, which fights trade in illegal timber.

GCCA-supported actions

The GCCA programme will contribute to institutional and capacity building in support of climate change mainstreaming into the forest and environment sector. The focus will be on enhancing skills required for 'ecosystem-based adaptation', carbon stock measurement and monitoring, synergies between adaptation and mitigation in the forest sector, and climate-related policy making.
In addition, concrete measures to protect forests in the eastern part of the country, notably in the vicinity of the Virunga National Park, will be undertaken. The development of woodfuel plantations based on an agroforestry model, as well as the restoration and more sustainable management of degraded natural forests, will be supported.

Insights from programme preparation

Adapting training for different target groups: Training programmes on adaptation- and mitigation-related topics will be adapted for various target groups including civil servants, policy makers, media and civil society.

Involving the private sector: In the wake of successful initiatives in the western part of the country, it has been decided to encourage the development of woodfuel plantations, at different scales and by various actors, including village communities, small private land owners and private investors. Private sector stakeholders such as civil society organisations and the media should also be involved in capacity building activities, in recognition of their role in forest management and protection.

Developing sustainable woodfuel alternatives: Support for agroforestry plantation development and the restoration of degraded natural forests is expected to increase the supply of wood for charcoal under sustainable conditions, and thereby reduce pressure on natural forests.

Developing sustainable forest-based livelihoods: The development of woodfuel plantations based on an agroforestry model, as well as the restoration and more sustainable management of degraded natural forests, are expected to provide new livelihood and income opportunities for local populations.

Realising synergies between adaptation and mitigation: Promoting institutional and technical arrangements that support the implementation of measures realising synergies between adaptation and mitigation in the forest-environment sector is one of the areas of focus of the capacity building component. Such synergies should also result from the development of sustainable woodfuel alternatives: this is expected to provide new livelihood and income opportunities for local people (thus reducing vulnerability and enhancing adaptive capacity), while supporting increases in carbon stocks.

11. Eastern and Southern Africa (2010-2014)

Context

Climate change effects in Eastern and Southern Africa include increased frequency of extreme weather events, flooding, storms and droughts. These developments have significant social, economic and political impacts, including effects on food production. Water availability is becoming an issue and posing serious threats on the region's food production systems and its progress towards poverty reduction. The nature and extent of climate change not only hinders human development and environmental conservation, but also forms a major threat to human security at regional and national levels. Climate change may also spark conflict between and within nations as resources become scarcer and disasters destroy livelihoods. Poor and vulnerable groups are particularly

impacted, as a result of their reliance on local ecological resources, coupled with limited access to credit and technology for implementing adaptation measures.

GCCA-supported actions

The GCCA programme, implemented by the Common Market for Eastern and Southern Africa (COMESA) in partnership with the East African Community (EAC) and the Southern African Development Community (SADC), promotes investment in climate-resilient and carbon-efficient agriculture and in the related areas of forestry, land use and energy. Supported activities include the consolidation of a common African position that is effectively reflected in global climate change agreements, and the mainstreaming of climate change into national planning; the development of national climate smart agriculture (CSA) investment frameworks and national financing strategies for the implementation of conservation agriculture (CA) programmes; the promotion of CSA, CA and other sustainable land use practices as adequate adaptation and mitigation measures; research and training on CSA and CA; vulnerability assessment and analysis; the promotion of mitigation solutions with carbon trading benefits; and the setting-up of a regional Catalytic Facility / Challenge Account for channelling resources to Member States for scaling-up CSA/CA activities.

Insights from programme preparation

Strengthening institutions: A comprehensive process aimed at consolidating the African position in international negotiations on climate change, and at adopting its key elements in international agreements, is supported. Planned activities include an awareness raising programme for decision makers, and support for designing national climate change response strategies. Institutional capacity development is also supported with regard to the development of investment frameworks and financing strategies for the implementation of programmes on 'climate smart' agriculture, conservation agriculture and other agriculture, forestry and land use (AFOLU)-related adaptation activities; in the field of vulnerability assessment; and to promote increased participation in carbon trading.

Managing and enhancing knowledge: Two existing organisations are mandated to become regional knowledge centres on conservation agriculture. The African Climate Change Knowledge Network is also being strengthened and supported in its operations. Two research programmes are planned, of which one focused on generating scientific evidence in support of the African position on climate change. Vulnerability assessment and analysis is to be undertaken in at least eight countries.

Learning by doing through pilot projects: Pilot projects are supported in the field of conservation agriculture and AFOLU-based mitigation. At least four REDD pilot projects will also be designed, initiated and evaluated.

Fostering environmental sustainability and resource efficiency, realising synergies between adaptation and mitigation: Conservation agriculture and other sustainable land use practices are being promoted as approaches that support both adaptation and mitigation.

Paving the way for improved access to climate finance: A COMESA carbon fund was registered in September 2010 in Mauritius. A regional Catalytic Facility / Challenge Account is also being set up. It will act as a vehicle for channelling resources to Member States for scaling up activities in the field of 'climate smart' and conservation agriculture; investments will be made in at least six countries. The programme also includes research into methodologies (particularly monitoring, reporting and verification), practices and standards related to bio-carbon and AFOLU applications, that can help the region's countries to enhance their participation in carbon markets and REDD+.

12. Eastern Caribbean (2013-2017)

Context

In the Caribbean, sea level rise resulting from climate change is expected to exacerbate floods, storm surges, erosion and other coastal hazards, thus threatening vital infrastructure, settlements and facilities that support the livelihoods of communities. The combined effects of changes in rainfall patterns and saline intrusion are also expected to reduce the availability of water resources, especially in small islands, to the point where they may become insufficient to meet demand during low-rainfall periods. Small economies, limited infrastructure, fragile soils, limited land area available for development and exposure to extreme weather events, such as hurricanes, compound vulnerabilities in the Eastern Caribbean region. In this context, inadequate land management policies are recognised as a constraint, shared by all countries in the region that jeopardizes efforts towards sustainable, climate-resilient development.

GCCA-supported actions

The programme, implemented by the Organisation of Eastern Caribbean States (OECS), aims to improve the region's natural resource base resilience to the impacts of climate change through support for the setting up of effective and sustainable land management frameworks and practices, combined with the implementation of a number of physical (i.e. infrastructure-oriented) adaptation pilot projects in areas such as coastal protection, ecosystem restoration and rehabilitation, soil conservation, reforestation, flood mitigation, land and river bank stabilisation, water conservation, etc.

Insights from programme preparation

Investing in data collection and management to support decision making: Human and technical capacities will be built to effectively operate and manage the technical tools required for the collection, storage, analysis and display of geo-spatial data necessary to support the decision-making process in delivering sustainable land management policies and strategies.

Creating an enabling institutional and legal framework, at national and regional level: The GCCA intervention will help establish or reinforce the regional and national land management systems by providing appropriate climate change-oriented institutional and regulatory frameworks. These frameworks are expected to include aspects such as regulations to protect and/or restore ecological buffers, regulations to phase out development in high-hazard areas, strict building codes, and the establishment of coastal construction baselines. There is a rationale for addressing these issues at regional level: it makes sense to ensure that the climate change adaptation and mitigation policies of bordering countries and, more broadly, member states of a regional organisation, are coherent and compatible.

Using needs assessment as a foundation for institutional and capacity building: During the first phase of the programme, a comprehensive 'gap analysis' will be carried out to assess the institutional preparedness and the technical and human capacity level in the land management domain, in the OECS Secretariat and in each member state. Capacity building and training are expected to take place in relation to sustainable land management policies and strategies; land use planning; the use of GIS, GPS, cartography and other equipment; and communication (e.g. management of public awareness and advocacy campaigns). The initial needs and capacity gap assessment will help determine exactly what is needed and where.

Enhancing donor coordination: Nowadays, climate change is attracting attention and significant amounts of funding from many different instruments and donors. Independent, overlapping and

sometimes competing interventions may well affect the sustainability and effectiveness of interventions. The need for enhanced donor coordination was strongly felt during the preparation of this programme.

13. Ethiopia (2012-2016)

Context

In Ethiopia, changes in temperature and precipitation patterns have already been observed. In the short and medium term, these changing conditions could seriously hamper the economic growth of the country as its main driver for economic development, the agricultural sector, is highly climate-sensitive.

GCCA-supported actions

GCCA support contributes to implementing Ethiopia's 'Climate Resilient Green Economy' strategy through capacity building and promotion of sustainable land management. The programme has three main components: (i) one aimed at strengthening the institutional capacity of the Environmental Protection Authority (EPA) to coordinate and mainstream climate change into policy, regulatory and strategic development planning; (ii) one focused on developing a knowledge base that allows stakeholders at all levels to build resilience to climate change impacts; and (iii) one supporting the field-testing of climate change adaptation measures in the context of the Sustainable Land Management (SLM) Programme.

Insights from programme preparation

Contributing to a wider climate change adaptation programme: In July 2009, the Government of Ethiopia launched a comprehensive climate change adaptation programme comprising activities spanning twenty major sectors. The GCCA intervention contributes to planned activities under this programme – specifically, the field-testing of adaptation measures in the area of sustainable land management. It thus builds on an existing initiative of the Ethiopian authorities, and is fully aligned with national priorities.

Downscaling climate change projections: The programme will notably support the development of climate modelling systems that operate at downscaled levels, allowing to produce more reliable local change scenarios and to support the development of early warning systems.

Building national capacity, for multiple stakeholders: Climate change is a recent area of concern in Ethiopia, but is a cross-cutting issue in the Growth and Transformation Plan 2011-2015. Capacity enhancement is needed for public institutions, but also private companies and other non-state actors, so that all stakeholders are in a position to fulfil their institutional roles or mandates and contribute to the national objective of achieving climate-resilient, low-emission development.

Learning by doing to strengthen institutional capacity: Following a capacity needs assessment, on-the-job training will be provided to EPA officials and other stakeholders on a variety of topics, including for instance the development of good practices in relation to the existing NAPA[4] and NAMA[5] programmes, participation in the Clean Development Mechanism, the calculation of greenhouse gas emissions and the carbon footprint, or how to mobilise and effectively use financial resources available for climate change adaptation and mitigation.

[4] National Adaptation Programme of Action.
[5] Nationally appropriate mitigation actions.

Piloting and testing adaptation options across various types of ecosystems: The programme will support a variety of pilot adaptation projects that complement ongoing activities under the SLM programme, which supports land registration and uses watershed-based approaches to rehabilitate degraded lands and improve farmer's livelihoods. Pilot areas will be selected on the basis of various criteria to ensure that lessons learned and best practices can be identified for each type of ecosystem covered by the SLM programme.

Sharing evidence and good practices: An easily accessible database and knowledge management system will be established within the EPA to share experience and good practices in tackling climate change. In addition, the establishment of a national climate change forum and some networks including non-state actors will be supported. This component of the programme can support the dissemination of field project results, and thus contribute to replication and scaling-up.

Exploiting synergies between adaptation and mitigation: While the focus of the intervention is primarily on adaptation, measures that also support climate change mitigation objectives will be promoted. For instance, pilot projects are likely to include watershed rehabilitation through natural regeneration, afforestation and reforestation, which enhance the carbon sequestration potential; tree management for sustainable fuelwood production; implementation of conservation agriculture practices (e.g. zero tillage, retention of residues, mulching, cover crop planting), which support increased carbon storage in agricultural soils as well as increased resilience to climate variation; and the integration of grasslands and pasture management into an agricultural technology package that combines carbon sequestration with improved livestock productivity.

14. Guyana (2009-2014)

Context

Like many coastal countries in the Caribbean, Guyana is vulnerable to increased coastal erosion as a result of climate change. An initiative to restore and plant new mangrove forests is proving an interesting way of contributing to carbon sequestration through reforestation and forest preservation, while supporting adaptation to climate change through the strengthening of natural sea defences and support for coastal zone biodiversity.

GCCA-supported actions

The GCCA supports the implementation of the National Mangrove Management Action Plan. This includes the rehabilitation of mangrove fields (mangrove planting), but also mangrove monitoring by newly created mangrove ranger units, mangrove mapping, mangrove-related research, the formulation of a code of practice for mangrove management, actions aimed at increasing public awareness and education, and ongoing policy and legislation review. The project already has several notable achievements, including the restoration of 2 km of mangroves and the protection of 36 km of mangrove-planted coastline by ranger units.

Insights from programme preparation

Increasing the resilience of coastal areas through enhancement of natural sea defences: The National Mangrove Management Action Plan notably builds on the widely accepted view that mangrove forests contribute to coastal protection – in line with the Sea and River Defence Policy (2009) which considers mangroves as an integral part of sea defences. Although the actual impacts of the mangrove rehabilitation programme on enhancing coastal protection in Guyana are yet to be

determined, contributing to the national effort to enhance coastline protection against sea level rise and climate-related hazards is an important objective.

Raising awareness, engaging local communities: A strong emphasis is placed on public awareness and community involvement. The participation of communities living close to mangrove fields is indeed important in terms of both protection and mangrove monitoring.

Combining rehabilitation with REDD+ preparation: The mapping and rehabilitation of mangroves is undertaken in conjunction with the establishment of a monitoring, reporting and verification (MRV) system undertaken as part of preparation for REDD+.

Including mangroves in the National Forest Plan: In spite of getting increasing attention in policy documents (see below), mangroves have been somewhat neglected as a forest ecosystem; one of the expected results from implementation of the National Mangrove Management Action Plan is that they are fully considered in the new draft of the Forest Plan. In particular, the quality and effectiveness of regulations protecting mangroves will be reviewed.

Insights from programme implementation

Generating community benefits: Mangrove protection and rehabilitation is generating significant benefits for local communities. Mangrove producers are local community members who are paid to cultivate mangrove seedlings on their land; they have already produced 220,000 black mangrove seedlings for planting. A mangrove reserve women's producers group has been established to promote alternative livelihoods, based in particular on the sale of non-timber forest products, honey from beekeeping and other mangrove products.

Complementing local action with wider education and outreach initiatives: Five village mangrove action committees have been set up to promote mangrove awareness and protection at the community level. A 'mangrove song' and a campaign explaining the multiple benefits of mangroves have been shown on national television. A documentary on mangroves entitled 'Holding Back the Sea', aired by the Guyana Learning Channel, has been well received by its audience of primary schools. This has been complemented by the production of a teacher's resource manual on mangroves, endorsed by the Ministry of Education, which is now part of the secondary school curriculum.

Mobilising champions in the private sector: Success is also due to the strength of the key implementing partners. The involvement of a project champion with experience in starting and successfully promoting a range of organic food and beauty products produced by Amerindian Communities in Guyana has been instrumental. Previous experience with project management, commercial experience and connections have been critical in making the project a success, and in ensuring private sector leverage as well as the creation of employment and income-generating opportunities for local communities.

Building on EU-Guyana cooperation experience: Historically, EU support to Guyana has focused on sea defences. Consequently, there is a body of shared experience and understanding on coastal protection requirements. GCCA support to mangrove protection and rehabilitation was assisted by the EU Delegation's practical knowledge of the issues, and its tradition of cooperating with national authorities on this topic.

Making the most of a supportive policy framework: The achievements of the programme are in part due to a supportive policy environment. Climate change is a major issue for Guyana. The new Low Carbon Development Strategy has forest conservation and protection of coastal areas among its aims. The National Biodiversity Action Plan (2008) includes a programme to reduce habitat destruction in the coastal zone, particularly mangroves. The Sea and River Defence Policy (2009)

considers mangrove forests as an integral part of sea defences. The National Mangrove Management Action Plan brings these elements together and sets the operational framework for programme activities.

Challenges

Fire, wood harvesting and animals (e.g. goats) continue posing a threat to mangroves. Ostensibly 36.5 km of mangroves are being protected by rangers, but enforcement remains inadequate and there are no hard structures (e.g. fences) to keep animals or people out.

Mangrove management in Guyana is subject to complicated institutional arrangements. While the Ministry of Public Works is in charge of the budget for coastal zone protection structures including sea walls, the Ministry of Agriculture supervises the Mangrove Restoration Project. Limited coordination between various departments and agencies involved constrains the effective, coordinated implementation of works (including the building of hard structures to protect natural mangrove regeneration).

Also, mangrove protection has only relatively recently begun to attract attention and resources from government and the EU. As is often the case, insufficient staffing and high staff turnover in the agencies in charge of implementing the programme are a problem. Consequently, even though the relevant agencies have technical competences, there is a limited track record of continuous, systematic management and monitoring of mangrove programmes, and a lack of institutional memory.

15. Jamaica (2011-2013)

Context

Jamaica, like many small island developing states, is highly vulnerable to climate change impacts. In general, the island is subject to severe tropical weather systems and faces direct threats from climate change because of its geographical location. The region is likely to see increases in extreme weather events such as flood rains and droughts, and an increase in the intensity of hurricanes. Coastal areas in Jamaica are at the forefront of climate change impacts as they are directly affected by storm surges, infrastructure development and sea level rise.

GCCA-supported actions

The programme aims to increase resilience and reduce the risks associated with natural hazards in vulnerable areas by implementing adaptation measures. These include the rehabilitation (through replanting) and improved management of selected watersheds to reduce downstream run-off and associated pollution and health risks; and the restoration and protection of coastal ecosystems, including mangroves, to enhance natural buffers and increase resilience. The programme already has several notable achievements, including the replanting of 76% of the targeted 300 hectares under the watershed protection component.

Insights from programme preparation

Establishing or strengthening local forest management: Local communities are fully engaged to sustain the rehabilitation of watersheds through slope stabilisation measures such as reforestation of degraded hillsides. This is done by establishing or, where they exist, strengthening local forest management committees.

Increasing the resilience of coastal areas through enhancement of natural sea defences: Natural sea defences, including coral reefs, seagrass beds and mangrove forests, will be enhanced through dedicated actions, and appropriate management promoted. This has the benefit of providing enhanced defences and disaster risk reduction whilst enhancing ecosystems and habitats for marine and coastal biodiversity.

Investing in data collection and management: Measuring improvements in the restoration of vulnerable marine sites requires careful and comprehensive data collection. Systematic management of data requires an adequate database to track changes.

Insights from programme implementation

Building on existing structures and procedures: GCCA funding enabled the Forestry Department to accelerate watershed replanting using their existing structures and procedures. Rapid mobilisation was achieved upon signature of the financing agreement, as it was not necessary to set up a separate project management structure. This approach can also contribute to increased sustainability, as the skills and experience are retained within the Forestry Department.

Challenges

The main challenges to the implementation of the GCCA programme seem to be of an administrative rather than technical nature, and are thus discussed in the paper on financing modalities.

16. Lao PDR (2012-2016)

Context

Climate change manifestations in Laos include an increase in temperatures and changes in rainfall patterns – which, based on climate model projections, are likely to be accentuated in the coming decades. Climate unpredictability has become the norm. Rainfall variability is a critical issue for rural livelihoods, which depend primarily on agriculture. There is also evidence of an increasing risk of flash floods in the mountainous areas in the Northern provinces. In terms of greenhouse gas emissions, Laos used to be a net carbon sink. However, due to rapid deforestation driven by illegal logging, commercial concessions and large mining and energy projects, combined with forest degradation linked to slash-and-burn cultivation, the country has now become a net emitter of greenhouse gases.

GCCA-supported actions

The GCCA programme promotes sustainable natural resource management, improved land management, and the adoption of climate-friendly and climate-resilient forms of agriculture and agroforestry. For this purpose, support is provided to strengthen the capacity of local, provincial and national institutions to design and implement plans addressing climate change in the field of land use planning and rural development. In complement, grassroots pilot activities will be supported (on the basis of a call for proposals) to increase the resilience of rural livelihoods through improved agricultural practices and more sustainable natural resource management.

Insights from programme preparation

Mainstreaming climate change into a sub-national intervention: The GCCA programme is designed to complement the Lao Northern Uplands Development Programme (NUDP), aimed at strengthening agricultural productivity, mitigating risks of food insecurity, and improving land management and

local planning processes for rural development. It adds an important dimension of climate change mainstreaming to this ongoing intervention.

Tackling vulnerability by targeting the poorest: The four provinces targeted by the GCCA intervention (and the NUDP) include many districts that are among the poorest in the country.

Tackling vulnerability by enhancing adaptive capacity: With climate unpredictability being the new norm, farming systems and livelihoods need to be adaptive and flexible. Grassroots activities will focus on enhancing the resilience of agriculture and livestock-related ecosystems to changing climatic patterns.

Developing effective national–local coordination mechanisms: Decentralisation has created divergence in the implementation of national policies, and *de facto* governance problems. At sub-national level, central policies and instructions are not always fully adhered to, which may hinder the achievement of objectives. To address this problem, the GCCA intervention puts specific emphasis on strengthening coordination across levels of government, and on planning and information exchange at the district and provincial levels.

Mainstreaming climate change into land use planning processes: Support will be provided for the 'climate-proofing' of provincial, district and village land use planning processes and strategies.

Learning and drawing lessons from grassroots activities: Village-level demonstration activities aimed at increasing the adaptive capacity of local communities, farming systems and livelihoods will be undertaken. These activities will create a body of evidence that can help place climate change-related issues higher on the agenda of the government. The experience and knowledge acquired through the implementation of grassroots activities will be consolidated for communication to decision makers in the relevant sectors, and also disseminated via the Sub-Sector Working Group on Environment.

Promoting sustainable livelihoods: Grassroots activities will contribute to increased resilience to climate change through the promotion of sustainable natural resource management and environment-sensitive livelihoods. Food security, in particular, will be enhanced by the adoption of improved agricultural practices, including agroforestry and the sustainable management of livestock-related ecosystems.

17. Lesotho (2013-2015)

Context

Taking action in relation to environment and climate change is one of the five strategic axes of the National Strategic Development Plan (NSDP) 2012-2017. The 'environment and climate change' strategic axis of the strategy proposes five objectives, including climate resilience, strategic environmental and climate governance, and the development of a green economy. Concerns with regard to climate change notably bear on its potential impacts on agriculture, water availability, soil erosion, mountain livelihoods, biodiversity and disaster risks.

GCCA-supported actions

The GCCA programme, implemented in the form of general budget support (in recognition of the fact that climate change is a cross-cutting issue), will contribute to the finalisation of a national climate change adaptation and mitigation strategy and a national sustainable energy strategy, and the setting up of institutional frameworks to support the implementation of these strategies.

Insights from programme preparation

Mainstreaming environment and climate change into the national development strategy: GCCA budget support aims to enhance the climate resilience and 'climate-friendliness' of the national development strategy – as a complement to other ongoing budget support programmes focused, respectively, on poverty reduction and water and sanitation. On the adaptation side, this mainstreaming process is expected to result in the implementation of actions related to soil and nutrient management, water use efficiency, food security, disaster preparedness, etc. On the mitigation side, it is expected to result in the development of renewable sources of energy, the extension of rural electrification based on renewable energies, and the implementation of energy efficiency measures (e.g. through the promotion of improved cooking stoves).

Strengthening institutions and capacities: The programme will support capacity building for the stakeholders involved in the coordination, monitoring and evaluation of the climate change and energy strategies, including non-state actors. It will also help set up coordination structures around the themes of climate change and renewable energies – which don't exist at the moment. The Ministry of Finance and Development Planning will take the lead until clear roles and responsibilities have been defined and coordination can be transferred to other relevant organisations.

Mitigation 'co-benefits' as a major incentive: Climate change mitigation through the adoption of renewable energies and energy efficiency measures also contributes to energy security and independence, which is a major incentive for embarking in this process.

18. Lower Mekong Basin (2012-2016)

Context

Cambodia, Laos, Thailand and Vietnam, the four countries of the Lower Mekong Basin (LMB), are vulnerable to climate change because of the heavy reliance of their economies on natural resources. Climate change is expected to modify weather patterns in the region in terms of temperature, rainfall, and frequency and intensity of extreme events. Seasonal water shortages, droughts and floods may become more common and more severe, as may saltwater intrusion. Such changes are expected to affect natural ecosystems, agriculture and food production, and exacerbate the problems of satisfying increasing food demand by growing populations.

GCCA-supported actions

The GCCA supports an ongoing initiative of the Mekong River Commission (MRC), the Climate Change Adaptation Initiative (CCAI), which aims to ensure that climate change adaptation planning and implementation becomes a permanent part of development plans (notably in key sectors such as flood and drought management, agriculture, fisheries, aquaculture, hydropower and irrigation) and is guided by improved strategies and plans, at various levels and in priority locations throughout the LMB.

The programme has various components: (i) one focused on the implementation of local demonstration activities and adaptation projects, from which to draw lessons and build experience; (ii) one focused on building capacities in the region to develop climate change-related policies, to plan for climate change adaptation, and to monitor and report on progress and performance with regard to climate change adaptation; and (iii) one focused on developing policy frameworks, strategies and plans for climate change adaptation, and integrate them with other development plans.

Insights from programme preparation

Collecting climate-related evidence, and developing a policy framework for adaptation, at the basin level: To plan for climate change adaptation, LMB countries need more information about how climate change may affect water resources, land use and livelihoods. Given the interconnectedness of countries sharing a river basin, in particular in terms of water resources and ecosystems, it makes sense to undertake climate change vulnerability assessments at the basin scale for food security, flood and drought impacts, sustainable hydropower and ecological systems. MRC involvement also offers an opportunity to build a regional policy framework for collaborative action on climate change adaptation.

Developing synergies with ongoing regional initiatives: The CCAI intends to work closely with and through various other programmes managed by the MRC. These include the Basin Development Plan Programme; the Integrated Knowledge Management Programme, which will be enhanced to support the collection and management of climate-change related data; the Flood Management and Mitigation Programme, which supports a flood warning system that could be upgraded to reflect the consequences of climate change; the Drought Management Programme; the Environment Programme; and regional economic cooperation programmes on fisheries, agriculture, irrigation, forestry, hydropower and navigation. This collaboration supports synergies, a more integrated approach to water resources management in the context of climate change, and thus greater impact of CCAI activities.

Using pilot and demonstration projects as a foundation for adaptation mainstreaming: Pilot projects were implemented at an early stage in the execution of the programme, to provide an opportunity for testing and learning by doing and a concrete foundation for other programme activities. For instance, the adaptation tools to be developed and promoted as part of the capacity building component are expected to be inspired by approaches tested in the field.

Developing tools, practical guidelines and databases to support climate change mainstreaming: There is a strong emphasis on developing tools, methods, technical papers and practical guidelines for assessing and projecting climate change impacts; for identifying, planning, implementing, monitoring and reporting on adaptation responses; and generally for mainstreaming climate change issues into national and local development plans (as well as into well-established tools of environmental management such as environmental impact assessment and strategic environmental assessment). A climate change adaptation database is also to be set up, and training materials developed.

Monitoring and reporting on climate change adaptation: Planned activities include the development of a system for monitoring and reporting on the status of climate change adaptation in the Mekong region.

Insights from programme implementation

Maintaining the strategic integrity of the overall programme: A strong strategic integrity of the CCAI needs to be maintained and reinforced, retaining integration and balance between its various components and activities to ensure that all components move forward together as one, with support for the entire package.

Drawing on high-level expertise: Expert networks, technical working groups and partners are required to guide and support the CCAI by providing high-quality technical input and advice throughout the process. A senior regional technical body is also needed as a high priority to guide adaptation, to monitor and report on climate change and adaptation in the Basin, and to review and provide technical inputs to a Mekong Climate Change Adaptation Strategy and Action Plan.

Building a regional network of local demonstration projects: Establishing such a network is essential, to provide a foundation for the sharing and dissemination of experience.

19. Maldives (2009-2013)

Context

More than 80% of the low-lying coral atolls making up Maldives are less than one meter above mean sea level. Climate change is a stark reality for Maldivian communities, which already experience water shortages, damage to homes and infrastructure, damage to food crops from saltwater intrusion, and an increase in epidemic outbreaks of climate-sensitive diseases such as dengue and chikungunya. Stresses on coral reefs, which include an increase in sea surface temperature, are also a concern since Maldives economy (in particular fisheries and tourism) is heavily reliant on the proper functioning and survival of the coral reef system – which also provides a natural defence for the coastline. Climate change is not the only culprit for these problems; but it compounds and exacerbates vulnerabilities induced by multiple human pressures.

GCCA-supported actions

The GCCA supports the country in the development and implementation of its climate change strategy and action plan, through a contribution to a multi-donor Climate Change Trust Fund set up to finance adaptation and low-carbon technology initiatives. Three projects will initially be supported by grants from the trust fund, of which two contribute to adaptation objectives: one focused on wetlands conservation and coral reef monitoring; and one focused on solid waste management on Ari atoll. Although the programme is not focused on adaptation in the agriculture, land and/or water sectors, it is briefly discussed here since it brings useful insights into approaches to adaptation in general.

Insights from programme preparation

Addressing human pressures on the environment to reduce vulnerability to climate change: Inappropriate design and construction of coastal infrastructure, the lack of proper waste and sewage management systems, and unsustainable development practices such as sand mining, dredging and reef entrance blasting are all examples of human pressures on the environment that contribute to increasing the vulnerability of Maldives to the effects of climate change. The GCCA programme addresses some of these pressures, in particular those that affect coral reef and marine ecosystems, as a way of enhancing adaptive capacity and reducing vulnerability to climate change.

Supporting NAPA priorities: Support for coral reef biodiversity and fisheries is among the priority adaptation strategies identified in the National Adaptation Programme of Action (NAPA). Improving waste management practices is identified as one way of protecting the integrity and productivity of coral reefs and preventing pollution of the marine environment, as well as improving the health status of the population (through the prevention of vector-borne diseases).

Combining adaptation and mitigation: The solid waste management project on Ari atoll, by putting a stop to the dumping of waste into the sea, will contribute to greater resilience of the coral reef ecosystem (and thus help protect its natural beauty, biodiversity, productivity and role as a natural coastal protection system), while reducing emissions of greenhouse gases from inadequate waste disposal.

Promoting public-private partnerships: Programme activities include exploring the potential and creating a supportive environment for the development of public-private partnerships (with an initial focus on the tourism and energy sectors), in view of both adaptation and mitigation.

Testing concrete adaptation (and mitigation) measures in view of their replication: Pilot activities were selected in part on the basis of their potential for replication. Lessons will be learned from their implementation, and they will be disseminated.

20. Mali (2010-2015)

Context

Climate change effects are increasingly felt in Mali, in the form of higher temperatures, reduced precipitation (when considered over the last three decades), and a moving desertification front. Extreme weather events, notably droughts and floods, may become more frequent or intense. Climate variability and change compound significant anthropogenic pressures on land, water and other natural resources. Combined pressures are resulting in resource degradation – a critical issue for a country in which a large share of the population is employed in the rural sector, and livelihoods are very dependent on natural resources.

GCCA-supported actions

The GCCA programme supports institutional strengthening and capacity building for the development and implementation of a national policy, strategy and action plan on climate change – and for mainstreaming climate change into national and sector policies and strategies. Activities include capacity building for the Ministry of Environment and Sanitation.

The forest-related component of the GCCA programme supports improved knowledge and monitoring of forest stocks, in preparation for more sustainable forest management and for participation in REDD+ or other funding opportunities linked to carbon sequestration in forests; and enhancement of forest stocks through afforestation/reforestation projects.

Insights from programme preparation

Moving from awareness raising to implementation of a response strategy: Awareness of climate change and how it jeopardises development and poverty reduction objectives has been growing in Mali over the past years. The time has come for the country to move from awareness raising and political statements to the design and actual implementation of a coherent response to climate-related challenges. The GCCA intervention contributes to this.

Fostering ownership of the climate change issue: GCCA support is expected to foster a technical and institutional context in which technical and political institutions develop ownership of the climate change issue.

Providing access to decision support tools: One of aims of the programme is to give the various agencies involved in climate change management access to adequate decision support tools.

Investing in data collection and management, notably in support of REDD+ preparation: The project capitalises on previous forest inventories, while supporting the implementation of additional forest inventories in regions not yet covered and of studies on the carbon sequestration potential of various tree species. This, combined with technical and institutional support for the SIFOR (forest information system) management unit, will help the country get prepared for potential participation in REDD+.

Developing sustainable woodfuel alternatives: As in the DR Congo, it is expected that afforestation/reforestation projects will increase the availability of woodfuel, which in turn is expected to help protect the remaining natural forests.

Insights from programme implementation

Getting the institutional framework right: A favourable institutional context is essential to support the implementation of the programme. Mere 'interest' in the climate change issue, which existed in Mali because of its significant impact on agriculture, is not enough to get things moving. The first actions undertaken under the programme were thus the provision of support to the focal point on climate change, the establishment of various committees and support for drafting a national policy and strategy on climate change. Without such a foundation, the project could not really move.

Challenges

All activities planned in the outer regions of Mali have had to be suspended, due to the political and security situation. This affects in particular forest inventory and afforestation/reforestation operations.

21. Mauritius (2010-2013)

Context

Climate change is exacerbating the inherent environmental vulnerabilities of small island developing states like Mauritius, characterised by a small land area, susceptibility to natural disasters, geographical isolation, limited natural resources and sensitive ecosystems. Likely negative climate change impacts include a (potentially significant) increase in annual mean temperature; a declining trend in total annual rainfall, but an increase in the frequency of intense rainfall episodes; sea level rise of 18–59 cm by 2100; and an increase in the intensity of tropical cyclones. Climate change is thus a direct threat to human wellbeing and life-supporting systems, but also compounds problems caused by unsustainable practices such as sand mining, and environmental problems resulting from human pressures such as coastal and soil erosion.

GCCA-supported actions

The GCCA provides general budget support to contribute to the implementation of the '*Maurice Île Durable'* ('Maurice, Sustainable Island') or MID strategy, with a focus on addressing negative impacts of development on the environment and reducing greenhouse gas emissions in the energy sector. Expected outcomes from GCCA support include the adoption and enactment of an Energy Efficiency Bill, and also a new Building Control Bill that comprises requirements for sustainable buildings. They also include the setting up of technical working groups to provide recommendations for the evolution of the MID strategy in a way that better addresses sustainable development challenges, including climate-related ones.

Insights from programme preparation

Mainstreaming environment and climate change into the national development strategy: GCCA budget support is specifically focused on enhancing the environmental sustainability (including climate change mitigation aspects) of the development strategy – while another EU-funded budget support programme is focused on progress in implementing the government's economic reform programme.

Mitigation 'co-benefits' as a major incentive: A key objective of the MID strategy is to make Mauritius less dependent on fossil fuels, with a target of 35% autonomy by the year 2028, through increased utilisation of renewable energy and a more efficient use of energy in general. The congruence of energy independence and climate change mitigation objectives provides an incentive for pursuing the latter. This is an illustration of the 'co-benefits' of undertaking steps towards mitigation.

22. Mozambique (2010-2015)

Context

Mozambique regularly experiences extreme weather events. Droughts occur every three to four years, in a country where most people depend on agriculture for their livelihoods. Many regional river basins converge in Mozambique, and flooding is a perennial threat, especially when coupled with tropical cyclones. The country urgently needs a coordinated approach to tackling climate change.

GCCA-supported actions

The GCCA programme aims to increase the capacity of the Government of Mozambique to adequately mainstream climate change and climate-proofing initiatives into its poverty alleviation and development strategies. This is to be achieved through various actions, including the strengthening of the planning and financial management capacities of the Ministry of Coordination of Environmental Action (MICOA); the review of relevant sector development strategies to improve the mainstreaming of environmental and climate change themes; the strengthening of the environmental monitoring system; the implementation of awareness campaigns; on-the-job training; the setting up of information networks to promote climate change awareness and the sharing of local knowledge; and the implementation of pilot adaptation projects.

Insights from programme preparation

Mobilising around evidence of climate change impacts: Environmental issues and climate change are rising on the political agenda in Mozambique, based on evidence of impacts on development, and on publications such as the 2009 study entitled 'Study on the Impact of Climate Change on Disaster Risk in Mozambique'. Rising awareness of the country's vulnerability has led the government to support the mainstreaming of adaptation measures and environmental sustainability into economic planning. Nevertheless, moving to the implementation of policies and strategies to this effect remains problematic, and environmental management is still widely perceived as an obstacle to economic development. The GCCA intervention aims to address this issue.

Reinforcing the leadership of the Ministry of Environment: One of the obstacles to the implementation of environmental sustainability measures is the lack of political leverage of MICOA over other line ministries, compounded by insufficient technical capacity and financial resources. GCCA support aims to strengthen its leadership and mandatory role as focal point in environmental affairs, and reinforce cross-sectoral coordination mechanisms.

Strengthening the environmental monitoring system: The environmental monitoring system is being strengthened in order to adequately measure sector performance, promote good governance practices and improve compliance with legal and regulatory requirements – and also to provide a clear reference for enhanced coordination and linkages between all government and non-state actors, at central, provincial and district level.

Mainstreaming climate change into administrative systems: The GCCA provides support for expanding the geographical and thematic scope of environmental impact assessments, environmental audits and inspections, and for increasing the use of strategic environmental assessment, so that both environmental sustainability and issues related to climate change adaptation and mitigation are better taken into account.

Targeting the most vulnerable communities: The programme, and in particular its pilot projects component, has a special focus on helping the most vulnerable communities in the rural areas of the country.

Combining institutional and capacity development with field operations: A number of pilot adaptation projects, involving applied research into innovative solutions to climate change, will be implemented in the agricultural and agroforestry sector.

Identifying appropriate technologies: Locally appropriate adjustment and coping strategies on land use in the rural environment will be identified (including the adoption of suitable technologies such as agroforestry, crop and variety diversification, diversification into complementary non-farming activities, etc.) to help local communities adapt traditional farming and livelihood systems to changing climatic conditions in vulnerable areas.

Paving the way for improved access to financial resources: The strengthening of financial management capacity in the environment sector, combined with other activities focused on strengthening the capacities of MICOA to fulfil its mandate, is expected to prepare the ground for higher budget allocations and improved budget execution with regard to environment and climate change.

23. Nepal (2012-2015)

Context

Observations of recent climatic trends include increases in temperature, an upward shift of agro-ecological zones, increasingly variable precipitation patterns, and changes in snowfall patterns (less snow and changes in timing). Communities also perceive a shift in wind, frost and dew patterns, as well as increases in extreme weather events (droughts and floods) and avalanches. The Himalayan glaciers, an important renewable water source, are retreating as temperatures increase. All of this entails risks for a poor country with an economy very dependent on natural resources, notably in terms of agricultural productivity and food security, availability of water, nutrition, health and sanitation. Glacial lake outburst floods are also a threat to population and infrastructure.

GCCA-supported actions

GCCA support aims to build the capacity of Nepalese authorities, at various levels, to develop, cost, budget and implement evidence-based policies and measures aimed at mainstreaming climate change into key development sectors, including agriculture, forestry, water and energy. At the sub-national level, activities include strengthening the capacity of local institutions to establish and monitor the impacts of climate change, with a focus on the Karnali and Rapti river basins. At the national level, planned activities include preparing and implementing policies, plans and strategies; enhancing the negotiation skills of government and non-government actors; and developing the skills required to access, manage and disburse climate change financing.

Financial support will also be provided to civil society and local and national government, based on a call for proposals, to pilot innovative mechanisms of adaptation, and to test the convergence of

mitigation and adaptation options. A mechanism for sharing and learning from adaptation interventions among different stakeholders at the district and national levels will be established.

Insights from programme preparation

Paving the way for climate-related budget support: Programme activities include carrying out detailed economic and social appraisal, governance and fiduciary risk assessment, with a view to addressing public financial management and other weaknesses and enable the country to receive future climate-related funding in the form of sector budget support rather than project support.

Combining institutional and capacity development with field operations: Pilot initiatives allowing to test and promote scalable initiatives for climate adaptation and resilience are an integral part of programme activities. Their results will be monitored and evaluated, and disseminated across different stakeholders at the district and national levels.

Strengthening institutions at the sub-national level: The technical and institutional capacities of village and district development committees will be strengthened, in recognition of the importance of sub-national institutions for the implementation of adaptation measures. The district level, together with the national level, will also be targeted by awareness campaigns and knowledge sharing activities.

Supporting locally appropriate adaptation measures, in line with NAPA priorities: The programme will help build resilience in vulnerable sectors identified during the National Adaptation Programme of Action (NAPA) process, which include water and energy; agriculture and food security; forestry and biodiversity; and health and disaster risk reduction. Specifically, it will support the mainstreaming of NAPA-prioritised activities through the national framework of Local Adaptation Plans for Action (LAPAs). These LAPAS are essential in Nepal, given the huge climatic and social variability which requires location-specific actions. This approach will ensure that climate change adaptation is integrated into local development processes through local government and community-based organisations – and that the supported measures are appropriate for local conditions.

Targeting the most vulnerable communities: Field projects will be implemented in particularly vulnerable communities and areas, identified as 'climate vulnerable hotspots' in the NAPA due to a combination of particularly low human development index and location in the areas most vulnerable to climate change impacts. Selected projects will have to prioritise the poor and marginalised.

Developing climate change baselines: Climate change-relevant baselines, including climate observations, climate impacts but also a mapping of local institutions and their capacities in terms of monitoring climate change impacts and assessing the effectiveness of intervention measures, will be established to support effective decision making and climate-resilient planning – in particular in the targeted Karnali and Rapti river basins.

Supporting an integrated watershed approach: Field projects will have to be based on an integrated watershed approach, linking climate adaptation investments geographically. This approach is conducive to the realisation of synergies between adaptation and mitigation (e.g. between irrigation development and small hydropower, or between forest-based livelihoods and carbon sequestration).

Promoting private sector investment, low-carbon livelihoods diversification and green jobs: Supported projects are expected to promote low-carbon livelihoods diversification and private sector investment in clean development and green jobs, especially through forest management, water resources management, and alternative energy development. Public-private partnerships will be encouraged.

24. Pacific (USP) (2011-2014)

Context

Most states in the Pacific Region are small island developing states (SIDS) and hence recognised to be severely impacted by climate change effects. Over the last decade, the issue of climate change has been high on the agenda of the leaders of the Pacific Islands Forum. In view of concerted action at regional level, the Pacific Island Countries and Territories developed a common strategy for action on climate change. The document is known as the Pacific Islands Framework for Action on Climate Change (PIFACC) and covers the period from 2006 to 2015.

GCCA-supported actions

The GCCA programme supports the implementation of the PIFACC through support for the Pacific Centre for Environment and Sustainable Development of the University of the South Pacific (USP). The programme aims to improve the level of understanding of climate change and adaptive capacity in the region by means of capacity building, community engagement in adaptive activities and applied research, looking for synergies between these three types of activities.

Insights from programme preparation

Building capacities through formal and informal training: With GCCA support, the University of the South Pacific has developed training modules and scholarship programmes on various topics related to climate change and disaster risk reduction. It will soon start delivering formal training (through post-graduate, master and PhD-level courses and the provision of scholarships for action research) and informal training (through workshops and information sessions).

Learning by doing: Low-input, replicable community climate change adaptation projects, accompanied by a robust process of best practice promotion, will be implemented. These projects are expected to draw on the programme's training and research components, but also to contribute inputs into them. Project sites are in the process of being chosen, and should represent different types of islands and problems common in the Pacific, building synergies with ongoing work carried out under major adaptation projects in the region. Projects sites are expected to be predominantly in outer (peripheral) and more vulnerable islands, where self-sufficiency issues are more acute.

Engaging communities: A process of participatory community engagement governs the formulation and implementation of community-based adaptation activities. Through a "train-the-trainer approach", training activities are also expected ultimately to reach local communities.

Enhancing and managing knowledge for evidence-based adaptation: With GCCA support, applied research is to be undertaken with a focus on better understanding the degree and nature of the vulnerability of the communities of various sizes (cities, towns, villages) which occupy particularly vulnerable locations (e.g. atolls and river deltas), and on developing tools needed for assessing vulnerability and developing adaptation plans. The programme also supports the development of a Climate Change Knowledge Centre at the University of the South Pacific, to become a regional repository for data, reports and scientific documents on climate science, climate change impacts, lessons learned from community adaptation projects, traditional knowledge, and good climate change adaptation practices.

25. Papua New Guinea (2013-2017)

Context

Climate change is a crucial issue for Papua New Guinea (PNG), where 80% of the population directly depends on local natural resources and subsistence agriculture for their livelihoods. PNG has significant areas of largely intact tropical forests, covering approximately 60% of the total country area. These forests are threatened, however: as a result of logging activities and other pressures, the combined annual rate of deforestation and forest degradation was estimated at 1.41% for 2002. Consequently, 95% of the country's emissions of greenhouse gases derive from deforestation and other land use changes.

GCCA-supported actions

The programme will provide support to the PNG Forest Authority to implement a continuous and multi-purpose national forest inventory as part of the National Forest Monitoring System that will be set up in the context of country's participation in REDD+. Planned activities include capacity building, support for the actual implementation of the forest inventory, specific studies on forest and tree characterisation, plus support for policy dialogue on forestry.

Insights from programme preparation

Collecting data to support REDD+ implementation and multi-functional sustainable forest management: The national forest inventory is a key element in the implementation of PNG's REDD readiness plan. It will provide a foundation for the monitoring, reporting and verification (MRV) mechanism, and a baseline for the five pilot REDD projects currently under preparation. Methodologies will be developed to support multi-purpose forest inventory, in support of 'multi-functional sustainable management' of forests (encompassing aspects such as climate change mitigation, biodiversity protection, sustainable livelihoods based on the exploitation of non-timber forest products, etc.). Methodologies will combine field data collection with the use of a satellite land monitoring system. An on-line forest inventory database will be developed. To improve the knowledge base and support inventory operations, specific studies will also be undertaken, on aspects such as allometric equations and wood density (needed to estimate the amount of carbon stored in tree biomass), biodiversity, indigenous knowledge and use of forest land, soils as source and sink of greenhouse gases, etc.

Building capacities for different target groups, through a variety of approaches: Capacity building will target staff of the PNG Forest Authority, to provide it with technical autonomy to carry out multi-purpose forest inventories on a regular basis – but also non-governmental organisations involved in sustainable forest management and forest industry staff. Capacity building will be achieved through field trainings, teaching of specific course modules at the University of Technology–Department of Forestry, the provision of internships and scholarships for students, and the publication of books and technical manuals.

Involving the private sector: Non-governmental organisations involved in sustainable forest management, forest industry staff and interested land and forest resource owners will be associated with capacity building measures, stakeholder consultations and policy dialogue.

26. Rwanda (2010-2012)

Context

Climate change is thought to be driving abnormal torrential downpours, flooding and changing weather patterns in the East Africa region. This has a negative impact on agricultural productivity, with potentially disastrous consequences in a country in which more than 80% of the population is engaged in subsistence agriculture. Harsher climatic conditions require offsetting by increased investments in both soil conservation and irrigation. However, without clear land rights, farmers are often reluctant to make such investments.

GCCA-supported actions

Through sector budget support, the GCCA has contributed to the implementation of an ambitious national land registration programme, the 'Strategic Roadmap for Land Reform', that contributes to the wider objectives of Rwanda's environment and natural resources sector strategy. This programme supports the establishment of a land tenure system that guarantees tenure security for all Rwandans, gives guidance on land management and provides incentives for the rational use of land resources (including environmental protection aspects). It is expected to reduce vulnerability by protecting the resource base, and by encouraging farmers to undertake the necessary investments to combat land degradation, a phenomenon exacerbated by climate change.

Insights from programme preparation

Promoting sustainable land management: The certificate of title issued at registration is accompanied by land use conditions that landholders are obliged to comply with. These conditions mandate the application of a number of good practices (e.g. tree planting around farms to reduce soil erosion) that are critical to sustainable land management, particularly in fragile areas such as wetlands and high relief areas.

Insights from programme implementation

Investing in data collection and management: By the end of March 2012, more than 8.9 million parcels had been registered, and more than 1.25 million of titles issued. Making such a system work requires significant investment in data collection and management infrastructure, including the preparation and distribution of aerial ortho-photo base maps, and the development of a land administration information system and the underlying databases. Furthermore, data management systems must be developed so that data are available simultaneously at decentralised and centralised levels.

Developing cross-sectoral coordination mechanisms: The land tenure regularisation and land registration process is a cross-cutting issue. Strong coordination mechanisms must be set up between the National Land Centre (which operates under the Ministry of Natural Resources) and other government services concerned by land reform implementation, including the Ministry of Agriculture and Animal Resources, the Ministry of Local Government, the Ministry of Infrastructure and the Ministry of Justice. Coordination must also take place with decentralised institutions.

Challenges

Making such an ambitious land registration system financially sustainable is an obvious challenge. Initial investment in system development can be supported by external funding, but there are also significant costs associated with system maintenance. The expectation is that the recurrent costs

incurred by land management organisations are covered by the collection of fees perceived on day-to-day land transactions. Whether this is realistic remains to be seen.

27. Samoa (2012-2015)

Context

Approximately 70% of Samoa's population and infrastructure are located in low-lying coastal areas, with 50% of the population living in the Apia urban area and northwest Upolu. Projected sea level rise could exacerbate coastal erosion, loss of land and property and dislocation of the island settlements. Coastal floods are also likely to become more frequent and severe. Tropical cyclones Ofa and Val caused damage with costs estimates amounting to approximately four times the gross domestic product. Environmental sustainability and disaster risk reduction are among the priorities of the Strategy for the Development of Samoa 2008-2012, which identifies climate change adaptation as a cross-cutting issue.

GCCA-supported actions

The GCCA provides sector budget support to the water and sanitation sector. One expected result is the preparation of an updated Water for Life sector plan 2012-2016 that effectively integrates climate change adaptation measures. The programme will also support the implementation of selected adaptation measures in the water sector, namely the rehabilitation of the drainage infrastructure of the Greater Apia area, and rebuilding and upgrading of priority drainage infrastructure for stormwater flows in the flood-prone central business area of Apia. To enhance the sustainability of new and rehabilitated drainage infrastructure, an effective asset management system will be established, and a maintenance plan implemented.

Insights from programme preparation

Mainstreaming climate change into the water sector action plan: The government is undertaking a review and update of its 'Water for Life' sector plan to cover the period 2012-2016. One of the main challenges is to ensure more effective integration of climate change impacts into all aspects of planning and infrastructure development. GCCA support will help achieve it.

Combining adaptation and disaster risk reduction: Drainage is an essential component of the Water for Life sector plan, considering its contribution to flood mitigation. The GCCA intervention will support the rehabilitation and upgrading of the drainage infrastructure in the flood-prone central business area of Apia, thus contributing to disaster risk reduction efforts. Technical specifications will be defined taking account of the latest climate change projections for Samoa, thus supporting adaptation to future climatic conditions.

Contributing to national priorities: The GCCA intervention is fully integrated with various ongoing plans and strategies, including (besides the water sector action plan) coastal infrastructure plans, the national disaster preparedness and management strategy, and the flood management action plan. It supports an under-funded component of the overall national strategy.

Insights from programme implementation

Moving towards integrated water resources management (IWRM): IWRM at the catchment or watershed level is crucial in building the country's resilience to the impacts of climate variability and change. Flood mitigation efforts and initiatives are part and parcel of the IWRM planning process. The planned works will be undertaken in the context of an integrated watershed approach to flood

reduction, complementing the regulation of development activities in the upper watersheds and the rehabilitation (replanting) of the Apia watershed.

Promoting network maintenance and sustainability, notably through public-private partnerships: Besides rehabilitation, reconstruction and upgrading of drainage infrastructure, the programme supports the setting up of an effective asset management system and the implementation of a maintenance plan for drainage infrastructure, under the responsibility of the Land Transport Authority. A novel element is the contracting out of some of the maintenance to private firms, through the establishment of public-private partnerships for routine maintenance of the urban drainage network. This approach has already proved to greatly improve the performance of the network. To sustain improvements made to the existing drainage network, a standardised local drainage design manual is also required, to guide the design of new residential and commercial developments within the urban area.

28. Senegal (2011-2014)

Context

Senegal's coasts are affected by a number of environmental problems, including coastal erosion, coastal flooding, soil and water salinisation, mangrove degradation and a reduction in fish stocks. Coastal erosion, in particular, is recognised as one of the four main natural risks that affect Senegal, and vulnerability of the coastal zone is identified as an area of intervention under the National Adaptation Programme of Action (NAPA). In the worst-affected areas, the coastline is retreating at a rate of two metres per year on average. Although the drivers of this phenomenon are in part of human origin (e.g. beach sand mining, coastal development), combined with natural problems (e.g. fragile coastal soils), their effects are expected to be exacerbated by climate change. Considering the significant demographic and economic importance of coastal areas, a comprehensive and effective response that integrates adaptation to climate change is required.

GCCA-supported actions

The GCCA programme supports coastal management through a combination of 'soft' (institution- and capacity-oriented) and 'hard' (infrastructure) measures. The programme is centred around the establishment of an integrated coastal zone management (ICZM) system aimed at coastal protection. This requires the collection of data on coastal hydrodynamics and the establishment of an institutional and legal framework for ICZM. The programme is also preparing to support the implementation of concrete adaptation and disaster measures (with a focus on resettlement) in designated vulnerable areas, to be accompanied by an awareness raising campaign on ICZM and erosion control, and engagement of the population in coastal zone protection. Alternatives to sand extraction from beaches under environmentally sustainable conditions are also being explored.

Insights from programme preparation

Developing an integrated approach to coastal zone management: ICZM is promoted as a way to address all components that have an influence on coastal dynamics, for which inter-sectoral coordination is required, as well as the development of an appropriate institutional and legal framework for managing coastal zones.

Investing in data collection and management: The project will collect data on coastal hydrodynamics that are necessary for coastal management, and integrate them into a database of coastal areas.

Addressing beach sand mining: Addressing the drivers of coastal degradation is an important aspect of ICZM. Beach sand mining is an important driver of beach erosion and coastal degradation. To address this, an environmental impact assessment will be conducted for a new sand quarry to be identified away from the coastline, with the objective of meeting the demand for sand from the construction industry from a source that does not contribute to coastal degradation.

Addressing coastal protection through ecosystems management: In relation to the implementation of concrete projects, coastal communities will be involved in sensitisation actions on coastal zone management and in the restoration of coastal ecosystems. The aim is to train champions of sustainable coastal zone management in different communities, who will then further promote good practices.

Insights from programme implementation

Starting to tackle the challenges of ICZM: Inter-institutional coordination around integrated coastal zone management has started to develop. The preparation of a World Bank assessment study on the economic value of the impact of climate change on the Senegalese coastal zone has contributed to this process. The GCCA is also contributing; for example, in March 2011, it brought together all actors involved in the 10 coastal zone projects currently active in Senegal, emphasising the need for nationally led coordination.

Strengthening the link between ICZM and climate change coordination: The link with the institutions in charge of climate change coordination is currently weak and should be strengthened. Better coordination and alignment of the coastal protection and climate change agendas may give a new impetus to the programme's implementation – and also support progress towards a more integrated, less infrastructure-focused response to coastal erosion.

Supporting resettlement away from high-risk areas: The programme was initially expected to cover the construction of a breakwater in the Rufisque area. However, this project had to be dropped as a study revealed a high level of financial and technical risk, and insufficient funding capacity under the GCCA programme. As a result, the selection of alternative 'concrete projects' to be financed is under way. Final choices still have to be confirmed, but interest now seems to have moved to support for the resettlement of communities established in particularly vulnerable areas to safer places.

Challenges

For programmes with activities in very specific, highly technical areas such as coastal management, highly specialised expertise is required. The setting up of mechanisms to facilitate access to the large pool of expertise that exists in the EU on ICZM would be most useful.

The apparent preference of some government services for infrastructure-based coastal protection measures over 'softer' approaches such as ICZM needs to be overcome.

Other challenges encountered are of a more administrative and managerial nature, and are addressed in the paper on financing modalities and aid effectiveness.

29. Seychelles (2010-2012)

Context

The likely impacts of climate change on Seychelles include increased flooding and erosion from sea level rise, and increased tropical storm and cyclone intensity. Rising sea surface temperature and changes in ocean chemistry threaten to damage coral reef systems, which are a natural protective

barrier for the coastal plateaux (where 90% of the population lives), a major tourist attraction, and an essential foundation for the island fisheries and the conservation of biodiversity. The economy and population are also expected to be impacted by water shortages resulting from dryer south-east monsoons, and a higher risk of climate-sensitive diseases during wetter north-west monsoons.

GCCA-supported actions

The GCCA programme, implemented through general budget support, is supporting the implementation of the Seychelles National Climate Change Strategy (SNCCS). Expected results include the effective mainstreaming of climate change adaptation and mitigation into the national development strategy and key sector strategies and action plans. On the adaptation side, it has so far supported the strengthening of meteorological and disaster management services, the updating of national aerial and GIS coverage, the implementation of projects to fight coastal erosion, and sensitization and education initiatives. It is also expected that the Town and Country Planning Act and Environment Protection Act are revised in coherence with the National Climate Change Strategy. On the mitigation side, the intervention focuses specifically on the creation of an institutional and legal framework conducive to the adoption of mitigation measures in the energy sector and access to carbon finance mechanisms.

Insights from programme preparation

Mainstreaming climate change into the national development strategy: GCCA budget support is specifically focused on enhancing the integration of climate change into key national development policies and strategies (in particular the Seychelles Sustainable Development Strategy 2011-2020). It complements another EU-funded budget support programme, the Seychelles Economic Reform Programme, focused on economic recovery and growth.

Strengthening the energy sector's institutional and legal framework: The GCCA intervention supports the creation of an institutional and legal framework in the energy sector promoting renewable energies, energy efficiency, innovation and access to technology transfer, and integrating opportunities for participation in the CDM and other carbon finance mechanisms.

Mitigation 'co-benefits' as a major incentive: One of the priorities of the SNCCS is to achieve sustainable energy security. The congruence of energy independence and climate change mitigation objectives provides an incentive for pursuing the latter.

Insights from programme implementation

High-level institutional assistance needed: Considering the limited availability of technical expertise in a small island country and the complex institutional frameworks, it would have been useful to provide targeted high-level institutional assistance, and specific resources for capacity building – in particular for the Seychelles Energy Commission, which will take up additional responsibilities (notably as a sector regulator) when the new Energy Act enters into force in late 2012.

Challenges

The complex institutional framework, lack of coordination between actors, the limited availability of staff, staff turnover and management capacity put institutional constraints on programme implementation. The creation of a new ministry in charge of Environment and Energy, in March 2012, is expected to help address concerns identified in previous years in terms of leadership, management and coordination capacity.

30. Sierra Leone (2012-2016)

Context

Sierra Leone is particularly vulnerable to environmental disaster and the effects of climate change and variability, as its economy is highly dependent on natural resources and agriculture. In terms of greenhouse gas emissions, Sierra Leone is a net carbon sink, meaning that it absorbs more carbon than it emits. Nevertheless, the alarming rates of deforestation (natural rainforest cover has been reduced from over 70% some decades ago to about 4% at present) and the carbon-intensive growth the country is experiencing (e.g. almost complete dependency on fossil fuels for energy) are slowly reducing the difference between carbon emissions and carbon absorption.

GCCA-supported actions

With GCCA support, the Forestry Department of the Ministry of Agriculture, Forestry and Food Security will be strengthened to fully assume its role in the protection and management of forest resources. Basic REDD readiness will also be completed. At the local level, sustainable charcoal production will be piloted.

Insights from programme preparation

Strengthening capacities and institutions: Effective forest management and protection, and the achievement of reductions in carbon emissions from deforestation and forest degradation, demand a strong forestry authority. To support these goals, the national forest authority will be strengthened in terms of institutional structure, policy framework, technical capacities, law enforcement capacities and logistical capabilities. Technical assistance will be provided, staff will be trained on the basis of a training needs assessment, and seminars and workshops will be organised to discuss policy options on the management of forest resources.

Improving sector coordination: Contributing to the inefficiency of the sector are inadequate coordination mechanisms between sector institutions, and conflicting mandates. Particular care will be taken in project implementation to ensure a very close communication and coordination between all climate change relevant actors, especially between the Forestry Department and the Environment Protection Agency.

Preparing for REDD+: In spite of the attractiveness of REDD+, a significant amount of preparatory work needs to be done by the country before qualifying. The GCCA programme will support the completion of the forest and carbon inventory; the development of a MRV system; the completion of an opportunity cost assessment for the conversion of forest areas; and the provision of inputs into the definition of a national REDD+ policy.

31. Solomon Islands (2011-2014)

Context

The Solomon Islands' coastal areas are particularly vulnerable to the impact of cyclones and saltwater intrusion. Cyclones can damage agriculture through intense winds and flooding. Coastal erosion and increased intensity of storm surges could impact agricultural productivity across the low-lying areas of the country. Water crises during El Niño-driven droughts may become increasingly common on smaller and more remote atolls. Mangrove degradation, coral bleaching, and increased incidence of nutritional deficiencies due to lower crop yields and diarrheal and vector-borne diseases, are other climate-related issues.

GCCA-supported actions

Through general budget support, the GCCA supports the capacity of the government for policy enhancement, coordination and implementation of its national climate change strategy, in line with its National Adaptation Programme of Action (NAPA) and National Disaster Risk Management Plan (NDRMP). Expected outcomes include the effective mainstreaming of climate change and disaster risk reduction priorities into national development policies and the transport sector plan; the recurrent allocation of a budget to key institutions carrying out climate change and disaster risk reduction activities, notably to implement NAPA priorities; the building of capacities of the Ministry of Environment and National Disaster Management Office in the field of climate change and disaster risk reduction; and the development of a national climate change strategy coherent with the NAPA and NDRMP.

Insights from programme preparation

Mainstreaming adaptation and disaster risk reduction into the national development strategy: GCCA budget support is specifically focused on enhancing the integration of climate change adaptation and disaster risk reduction into key national policies and strategies, including the Medium-Term Development Strategy. It complements another EU-funded budget support programme, the Solomon Islands Economic Recovery Assistance programme, aimed at mitigating the impact of the economic crisis on public finances and implementing economic and financial reforms.

Mainstreaming climate change into the national budget: One of the expected outcomes is that the government's development budget allocates annually a certain amount of resources to the first priority of the NAPA (i.e. 'Managing the impacts of, and enhancing resilience to, climate change and sea level rise, on agriculture and food security, water supply and sanitation, human settlements, human health and education, awareness and information') – including relocation. This is to be accompanied by realistic costing of climate change adaptation and relocation measures, and the preparation of guidelines (including safeguard measures) for human resettlement projects.

Strengthening the institutional framework to better integrate climate change adaptation and disaster risk reduction: While NAPA priorities represent the natural starting point for addressing adaptation priorities, they have a relatively short-term focus. It is essential to develop a structural, longer-term framework for ensuring the country's resilience to climate change. Steps in this direction were taken through the adoption of the NDRMP, which explicitly integrates climate change and reflects some NAPA priorities. More recently, the Government of Solomon Islands brought both the Climate Change Office and National Disaster Management Office under the Ministry of Environment, Conservation and Meteorology, in view of rationalising and strengthening coherence in the design and implementation of adaptation and disaster risk reduction policies.

Building capacities on climate change and disaster risk reduction: Technical staff of the Ministry of Environment, the National Disaster Management Office, the Ministry of Development Planning and Aid Coordination and the Ministry of Lands have been encouraged to attend training on climate change and/or disaster risk reduction; participation in such training has been made one of the 'triggers' for disbursement of the variable tranche of budget support.

Addressing DRR by promoting the relocation of vulnerable communities: Budget support performance indicators refer to the allocation of funds to implement the first priority of the NAPA 'including relocation'. Another indicator refers to the costing of relocation options and preparation of 'guidelines for human resettlement projects, including safeguard standards, to minimize risks of conflicts due to resettlement'.

Insights from programme implementation

Setting specific, monitorable objectives: An action-oriented matrix of reform priorities is useful to structure the policy dialogue and assess progress. The preparation of a 'matrix of actions and deliverables' in relation to climate change is one of the expected outputs of the GCCA intervention. It will facilitate the work of the Climate Change Working Group. Government ownership and leadership must underpin the process of preparation of such a matrix.

Challenges

A context characterised by a large number of actors involved (ministries, donors, NGOs) and a broad definition of the 'climate change' sector (comprising adaptation, mitigation, disaster risk reduction and environment) poses challenges for effective coordination.

32. South Pacific (SPC) (2011-2015)

Context

The Pacific islands are among the countries most vulnerable to climate change globally, but demonstrate considerable variety in the level of vulnerability between and within countries. Coastal communities, atoll islands, and the densely populated and low-lying deltaic regions on larger islands are particularly vulnerable to even small changes in climatic variables, especially rainfall patterns and tropical storm patterns, and to sea level rise. Vulnerability results from high population densities and growth rates, and scarce natural resources (particularly land and water). High exposure to natural hazards is also an issue in cyclone and typhoon zones.

GCCA-supported actions

The GCCA programme, with the help of the Secretariat of the South Pacific and the Secretariat of the Pacific Regional Environment Programme, supports the governments of the Cook Islands, Kiribati, Marshall Islands, Micronesia, Nauru, Niue, Palau, Tonga, Tuvalu in tackling the adverse effects of climate change, in line with the Pacific Islands Framework for Action on Climate Change (PIFACC). Activities at the national level include the production of 'adaptation roadmaps' providing for the mainstreaming of climate change adaptation into development policies and budgets, as well as pilot implementation of some activities included in these roadmaps. At the regional level, workshops, conferences and seminars are organised to coordinate activities in the field of climate change, and possibilities for setting up a new regional mechanism to help countries access international climate funding are being explored.

Insights from programme preparation

Moving from awareness to mainstreaming climate change into national development: Awareness about the risks climate change is posing to development is very high in the Pacific region. However, at national level, strategic and operational frameworks to guide and implement adaptation priorities are largely absent. National development strategies and budgets are not yet climate change resilient. The GCCA programme is thus supporting the preparation of concrete national action plans.

From project-based approaches to more strategic, comprehensive ones: The implementation of adaptation and mitigation initiatives remains largely fragmented and project-based. The preparation and endorsement of national 'adaptation roadmaps', building on NAPAs and other similar documents but providing for adaptation mainstreaming in the form of climate-resilient strategies, will help place the response to climate change in a more strategic, comprehensive framework. Climate-related

projects will not disappear (the GCCA programme will finance the implementation of a number of pilot projects comprised in these roadmaps), but they have more chances of having impact if embedded in a consistent overall framework, in which actions can be prioritised.

Combining 'top-down' and 'bottom-up' approaches to climate change adaptation: Experience shows that a system embracing both 'top-down' and 'bottom-up' approaches to the adaptation process has the best chance of improving the adaptive capacity of Pacific inhabitants. This is another reason why strategic planning of adaptation is combined with the implementation of field projects, ideally based on a participatory and inclusive community-based approach, from which practical experience can be acquired and shared.

Developing tools in support of climate change mainstreaming: Programme activities include the development, adaptation, acquisition and/or dissemination of user-friendly tools for a multiple range of tasks, from awareness raising to assisting implementation of projects, with a key focus on adaptation-related activities at community level.

Sharing experience and good practices across the region: The programme will support the creation of a Pacific portal on climate change allowing Pacific countries to share experience, good practices, projects outcomes and evaluations and success stories, in the field of both adaptation and mitigation.

Paving the way for climate-related budget support and enhanced access to climate finance: The preparation of 'adaptation roadmaps', by helping Pacific countries develop a more strategic approach to addressing climate-related challenges, will facilitate eligibility to budget support. Simultaneously, work is under way to explore possibilities for setting up a new regional trust fund mechanism that would help countries more easily access international climate finance. Both approaches should enhance the capacity of Pacific countries to obtain and effectively absorb climate-related funding.

33. Tanzania (2010-2013)

Context

The Tanzanian National Adaptation Programme of Action (NAPA) has identified agriculture, rangeland, water and forestry as some of the most climate change-affected sectors. Indeed, yields of major crops such as maize and rice have declined and groundwater levels have dropped due to rainfall pattern variability and soil erosion/degradation. In addition, deforestation rates are increasing due to overgrazing, wildfires, clearing for agriculture, charcoal production and over-exploitation of wood resources for commercial purposes. The situation is directly affecting the most vulnerable populations, which for the major part live in the rural, remote, drought- and flood-prone and food-insecure areas of the country.

GCCA-supported actions

The GCCA action focuses on the capacity of the most vulnerable Tanzanian communities to adapt to the adverse effects of climate change through sustainable use of their natural resources. The approach is to support a number of 'eco-villages' where innovative adaptation measures are tested in the fields of agriculture, rangeland management, water management, sanitation and biomass energy. Proposed activities include the establishment of participatory land use management plans; the use of improved agriculture techniques such as micro-irrigation, soil conservation measures, drought-tolerant species, agroforestry; the use of improved rangeland management techniques such as zero-grazing; and the use of integrated water management and conservation measures, including

sanitation. Although there is no specific emphasis on forestry, sustainable practices such as participatory forest management, community-based afforestation and reforestation and agroforestry are part of the approaches being tested.

Following a competitive call for proposals, three projects were selected for support and are now under way.

Insights from programme preparation

Focusing on the most vulnerable: During initial discussions, it was agreed at the highest level that climate change funding must reach the most vulnerable people.

Using a holistic approach: At the local level, agriculture and forestry are interlinked with a range of other sectors, such as energy, water management and sanitation. The GCCA programme, through the 'eco-village' approach, supports the testing of holistic, innovative and integrated approaches to the sustainable use of natural resources.

Promoting sustainable livelihoods: The concept of 'eco-village' is focused on sustainable natural resource management and the promotion of more sustainable livelihoods.

Testing adaptation responses in various ecosystems: It is important that approaches are tested in the main types of ecosystems representative of most of the specific climate change vulnerabilities in the country. Accordingly, three zones were selected: i) Coastal zones and islands, with specific issues of sea water intrusion in groundwater resources, sea level rise and erosion, modification of wind patterns affecting artisanal fishermen; ii) Drylands, affected by higher variability of rainfall and increased recurrence of droughts; and iii) Highlands, affected by higher variability of rainfall, increased recurrence of floods, landslides, soil erosion, and deforestation modifying micro-climate conditions. One project was selected in each of these three types of ecosystems.

Using participatory vulnerability assessment as a basis for action: Selected projects were designed through a bottom-up and participatory approach, based on a detailed vulnerability assessment tailored to the needs of the targeted beneficiaries.

Promoting technologically, financially, socially and culturally appropriate measures: Selected projects generally promote low-technology, low-cost, culturally acceptable and gender-oriented solutions, that are deemed most appropriate for the environment in which they are to be implemented. This will encourage the sustainability of interventions and increase the potential for scaling-up and replication.

Engaging key stakeholders in a cross-sectoral framework: The guidelines for the call for proposals were designed in a participatory manner under the lead of the Vice-President's Office. There were important contributions from the National Climate Change Commission, which acted as the Steering Committee. During a workshop, line ministries including Agriculture, Water, Livestock and Fisheries, the National Environment Management Council and civil society organisations all made contributions that guided the preparation of the call for proposals, including definition of the lots, thresholds, percentage of co-financing requested and promotion of local small-scale organisations.

Insights from programme implementation

Chololo village, Dodoma District is one of three communities identified for GCCA support. Project activities, which began in late 2011, include forest-related elements.

Engaging different groups: School-based environmental groups, women's groups, youth groups, faith-based groups and farmers groups are being trained on the kinds of trees with the greatest

growth potential, the types of seedlings available, their sources and costs, and methods of planting, caring for and maintaining fast-growing trees.

Recognising the key role of women and schools: Women in Chololo typically make a five-hour round trip on foot once or twice a week to collect firewood, and are major stakeholders in the use of wood and natural resources. Women's groups are being supported to establish sustainable woodlots. With proper planning, capacity building and co-ordination, the women's groups involved are key to the implementation of tree planting initiatives. The project will also mobilize and support schools to establish their own woodlots. Schools are permanent institutions with land, labour and management capacity; they can also shape the future generations' approach to natural resource management.

Selecting the right trees: Selecting the appropriate tree species for afforestation, reforestation and agroforestry is complex. Factors to be considered include adaptability to local agro-climatic conditions, the production strategy to be promoted, and taking into account male and female farmers' preferences, cultural beliefs and practices.

Promoting community-based forest management: A key objective is to support the local community to attain sustainable forest management, while meeting their needs in terms of security of tenure. The steps involve educating community members on community-based forest management; facilitating the formation and training of a village natural resources committee; assisting with the survey and demarcation of village forest area boundaries; and supporting the village committee in protecting the forest by facilitating the preparation and then the enforcement of a forest management plan.

Planning land use: Inappropriate land use planning and management often results in the degradation of land, forest and ecosystems as well as contributing to conflict among different land user groups. This can be addressed by appropriate land use planning at the village level. To this effect, village communities are supported to develop land use plans and bylaws that will be implemented and enforced to ensure people use land in the most appropriate way. The plan will identify areas suitable for crop and livestock production, settlements, woodlands, conservation, beekeeping, and industry in accordance with land policy and land laws.

Challenges

Although GCCA funding was allocated to Tanzania in 2008, the successful grant contracts from the call for proposals were not signed until September 2011. The delay was in part due to the high level of interest in the call, which attracted 99 concept notes in the first round. The extent of the consultative process, although a strength, is inevitably time-consuming. To speed up the selection of projects, clear, more tightly defined criteria and conditions should be formulated, targeting the most appropriate service providers and streamlining the overall process.

34. The Gambia (2012-2016)

Context

The Gambia's low-lying coastal areas are vulnerable to climate change impacts, including sea level rise, increased saline intrusion and flooding during torrential rains. Coastal areas are particularly vulnerable in view of the concentration of socioeconomic and cultural assets. In some areas, the beach has been retreating at a rate of 1–2 m per year, threatening tourism infrastructure and associated livelihoods. With a 1-metre increase in sea level, some 92 km² of land in The Gambia's coastal zone would be inundated, with the entire capital city of Banjul at risk. Further inland, soil

salinisation in riparian areas resulting from sea level rise and saline intrusion is having negative impacts on farming.

GCCA-supported actions

To strengthen national level capacity to plan for and respond to climate change impacts in coastal areas, the GCCA supports the establishment of a participatory and self-sustainable integrated coastal zone management (ICZM) process, and the identification of priority coastal zone adaptation measures.

To contribute to mainstreaming climate change into development planning, the knowledge base for integrating climate change into key sectors will be strengthened, and support will be given to the formulation of a national climate change policy. Institutional arrangements and coordination mechanisms for climate change and coastal zone management will be rationalised. Policy makers and planners, National Assembly members and civil society representatives will also be sensitised and trained on climate change-related issues.

Insights from programme preparation

Promoting an integrated approach to coastal zone management: it is recognised that coastal protection requires an integrated approach to coastal management, involving all stakeholders and sectors that have an incidence in the management of the coastal area.

Strengthening the institutional framework for ICZM and climate change: The Department of Water Resources, the Ministry of Forestry and Environment and NEA all have responsibilities with regard to climate change, but coordination (assigned to NEA) is hindered by the absence of an overarching framework and by overlapping institutional mandates. The GCCA programme brings stakeholders together to define coordination roles and functions with regard to both ICZM and climate change, and to develop bridges between ICZM and climate change coordination. Two technical working groups (TWCs) are being established, one on ICZM and one on climate change, to facilitate multi-sector dialogue and monitor the implementation of activities. Special efforts will be undertaken to rationalise institutional arrangements and coordination mechanisms for climate change.

Acquiring and managing data in support of an evidence-based response: Information and data related to climate change and coastal management is scattered, often held outside the country and not available to decision makers. As a result, studies often fail to capitalise on earlier information, and agencies do not have ready access to information such as historical coastal change. The GCCA intervention tries to address this issue in various ways. It will support the establishment of an information management system at the National Environment Agency (NEA), including a geographical information system, to allow analysis of historical and new data relevant to ICZM and adaptation. It will also make use of tools such as feasibility studies, vulnerability assessment and economic analysis to enhance the body of evidence on which to base strategic choices and planning decisions.

Investing in coastal protection structures, with due caution: Coastal protection structures are one element that could be made use of to reduce coastal erosion that is affecting Gambia's tourism industry and coastal livelihoods. However, it is recognised that the selection of the best alternative for coastal protection has to be derived from a detailed feasibility study, which could point to other alternatives (e.g. enhancing natural defences, retreat, beach nourishment). This study should also take account of the social feasibility of the alternatives under consideration. The costing of coastal protection infrastructure is not possible until the feasibility study has been completed.

Reducing pressure from beach sand mining: Beach sand mining is an important contributing factor to beach erosion in The Gambia, thus alternatives will be sought through support to projects initiated by non-state actors.

Testing and demonstrating coastal adaptation measures: Demonstration and research projects will be supported, based on a call for proposals, with a view to enhancing local-level capacity to adapt to climate change. Projects will focus on enhancing ecosystem and livelihood resilience to climate change, on coastal zone ecosystem rehabilitation, and on developing viable alternatives to sand mining in coastal areas.

Involving civil society in coastal zone management: The involvement of civil society is promoted as an integral component of the ICZM process. The engagement of non-state actors will also be promoted in the context of the above mentioned demonstration and research projects.

Learning by doing: Sustainable working relations between institutions will be developed around concrete feasibility studies, tasks and demonstration projects. Programme managers will put specific emphasis on the collection and documentation of lessons learned, case studies and success stories.

35. Timor-Leste (2013-2017)

Context

In a context of strong reliance on subsistence agriculture, the coping mechanisms of rural communities in Timor-Leste are being severely tested by unpredicted climate events. The effects of climate change are putting an additional strain on communities, in particular in rural areas, by exacerbating the existing food security issues, accelerating the degradation of natural resources, and increasing the probability of natural disasters, notably landslides and flash floods, as well as of internal conflicts over resources. Deforestation is also a major concern: as a result of destructive conversion for agricultural purposes, overexploitation of valuable species and use of wood as a domestic fuel by 90% of the households, it is estimated that forest cover has decreased by almost 30% between 1990 and 2010. This corresponds to a rate of deforestation of about 1.2% a year.

GCCA-supported actions

The programme aims to improve the capacity of populations to cope with climate change effects through the sustainable management of their natural resources and the improvement of their livelihood options. It will focus on three components: (i) enhancement of climate monitoring systems; (ii) mainstreaming of climate change adaptation into local development plans; and (iii) implementation of environmental restoration and sustainable livelihood activities. With regard to forests, planned activities include awareness raising on forestry and agroforestry techniques, and the promotion of forestry and agroforestry techniques in the field, taking into account watershed management principles.

Insights from programme preparation

Strengthening data collection and monitoring systems: The programme will help improve the capacity of ALGIS (the Agriculture and Land Use Geographic Information System) to collect and monitor climate data in all 13 districts, analyse them through agro-ecological perspectives, and disseminate their interpretation at both local and national level. It will also support the collection and sharing of information on existing agricultural and conservation practices that have the potential to improve the ability of communities to prepare for and adapt to climate change.

Mainstreaming climate change adaptation into national policies and plans: Findings from the enhanced ALGIS, as well as from the collection of information on existing agricultural and conservation practices already in use by local communities to cope with climate variability and change, will be used to update national policies and plans with regard to vulnerability areas and adoption of best practices for climate resilience.

Involving forest-based communities: Two of the programme's components are focused on activities at the community level. Community awareness raising, implemented through existing community-based, civil society and extension organisations, will focus on making farmers more responsive to environmental degradation and conscious of the advantages of reforestation and the use of agroforestry techniques. This will be followed by the actual implementation of some of these techniques.

Identifying the best adaptation options using participatory diagnostic tools: Participatory diagnostic tools will be used to develop environmental profiles in the five major watersheds. These profiles will pay specific attention to degraded areas, sources of water to protect from deforestation, the potential for implementing soil and water conservation techniques, the most promising areas for agroforestry, areas which may cause a risk to life or property due to potential landslides, etc. They will provide a basis for identifying the most appropriate adaptation options for specific contexts.

Promoting sustainable livelihoods: The programme will support rural communities, particularly women, in implementing agricultural and soil/water conservation practices, such as terracing and water harvesting, that promote improved nutrition as well as more sustainable use of natural resources. The use of agroforestry techniques (such as intercropping, forest gardening for non-timber forest products, contour buffers and stabilizers, fertility planting) will also be encouraged.

Mainstreaming adaptation best practices into local development plans: The programme will help communities draft local soil and water conservation plans, in coherence with watershed management principles. These plans will then be integrated into sub-district and district development plans, to ensure the actual implementation of proposed measures.

Testing and demonstrating forest-based adaptation and mitigation measures: Field activities will focus on forestry production (e.g. enhancement of the production capacity of national and community nurseries, improvements in planting success rates) and agroforestry, in support of the achievement of national reforestation objectives but also of adaptation objectives, through the development of more climate-resilient and diversified activities. They will integrate best agricultural practices and watershed management principles.

Enhancing capacities based on 'learning by doing': Capacity building for staff of the National Directorate of Forestry will be done through 'learning by doing' and daily involvement in programme activities at all levels. Specific capacity building activities will include support for the implementation of the national forestry management plan (to be ready in 2013), and improving the monitoring and management capacity of production activities, notably in national nurseries. Learning-by-doing approaches will also be used with farmers and extension workers.

36. Uganda (2012-2015)

Context

Several studies have confirmed that Uganda is vulnerable to climate change and variability. Climate change is expected to result in more extreme and frequent periods of intense rainfall, erratic onset and cessation of the rainy season, as well as more frequent episodes of drought. These changes are likely to have significant implications for agriculture, food security, and soil and water resources.

GCCA-supported actions

To build the capacities of communities, commercial farmers and the government of Uganda to cope with climate change, the institutional capacity of the Climate Change Unit (under the Ministry of Water and Environment) will be strengthened. Climate change awareness and understanding will be enhanced in selected departments and a target district. Adaptation good practices will be produced and disseminated, as well as integrated into relevant policies and plans.

In complement, the programme will support concrete actions to strengthen the resilience of rural populations and agricultural production systems in the central part of the 'cattle corridor', including activities aimed at mitigating the impact of water scarcity on livestock production systems, and at making livestock and coffee production systems more resilient to climate change impacts.

Insights from programme preparation

Operationalising the national commitment to climate change mainstreaming: Climate change is already addressed in the 2010 National Development Plan, which sets four objectives in relation to this topic. The GCCA programme will help operationalise two of these objectives, namely those related to developing national capacities with regard to adaptation and mitigation, and ensuring climate-proof development. The latter includes the development of mainstreaming guidelines.

Strengthening capacities to address and mainstream climate change: GCCA support will help overcome identified constraints such as lack of expertise, weaknesses in the institutional framework, insufficient political leadership and coordination, and poor capacity to forecast climate change manifestations and impacts. Capacity building efforts will notably target the Climate Change Unit, which has been overstretched by the international agenda, and is also constrained by a relatively low political profile, limited technical and managerial capacities, and the absence of an annual working plan with clear priorities at national level.

Targeting support to the most vulnerable areas: Field projects and related investments will focus on the districts of the central part of Uganda's cattle corridor, identified as one of the most vulnerable to drought and climate variability.

Involving the private sector and local communities: Experience shows the need to work closely with farmer groups and the private sector, which is the key driver of agriculture and forestry in Uganda. In the water sector, lack of community involvement can be a cause of failure due to lack of ownership of infrastructure, poor operation and maintenance, and lack of coordination between institutions in charge of water and agriculture. Generally speaking, broad stakeholder participation, bottom-up planning and demand-driven approaches are important for the success of investments in agriculture.

Supporting NAPA implementation: The programme will contribute to the implementation of the National Adaptation Programme of Action, particularly its components of water for production; drought adaptation, tree planting, and climate-compatible development planning.

Achieving a more sustainable balance between pasture, livestock and water resources: Activities aimed at mitigating the impact of water scarcity on livestock production systems will include the construction and rehabilitation of valley tanks, mainly for livestock; the rehabilitation of existing multipurpose valley dams; the piloting of small-scale irrigation as part of the multifunctional use of water reservoirs; and support to water user associations and committees to establish effective operation and maintenance systems. To achieve a sustainable balance between pasture, livestock and water resources, these activities will be supported by a programme of applied multidisciplinary research aiming at strengthening the knowledge base on livestock, pasture, water and population dynamics in the cattle corridor, in the context of climate change.

Learning by doing: The 'farmer field school' approach, an adult education method based on field learning techniques such as field observations, simple experiments and group analysis (Clements et al, 2011), will be used to develop and disseminate climate change adaptation packages focused on strengthening the resilience of two key production systems, namely livestock and coffee, in the districts of the central cattle corridor.

37. Vanuatu (2012-2016)

Context

The isolated location, small land area separated by vast oceans, and the attendant challenges and costs of providing basic services make Vanuatu, like all small island developing states, extremely vulnerable to the adverse impacts of climate change. A narrow economic base with a large subsistence agriculture sector compounds vulnerability. Sea level rise, the likely increase in the frequency and severity of extreme weather events, and increased variability in rainfall with an alternation of very dry and very wet periods, are among expected effects of climate change. Climate change is likely to impact all sectors especially agriculture, water, coastal and marine resources and tourism.

GCCA-supported actions

GCCA support, provided through a contribution to the World Bank-managed National Adaptation Project, aims to increase Vanuatu's capabilities to cope with climate change by improving the overall understanding of its effects, and mainstreaming climate resilience and disaster risk reduction into key sectors. More specifically, technical assistance will be provided to the government to foster the integration of climate change vulnerability into development plans and budgets, support participation in international forums, help finalise the ratification of international agreements, and prepare the ground for the use of budget support for actions on climate change.

Concrete activities will also be undertaken to increase resilience to climate risks, in areas such as the improvement of farming practices; water catchment management with an aim to control flooding; the development of early warning and monitoring systems for floods; the development of water harvesting and storage systems; as well as wetland restoration, coastal vegetation replanting, afforestation and risk mapping.

Insights from programme preparation

Strengthening capacities to address and mainstream climate change and disaster risk reduction: Support will be provided to the National Advisory Board (NAB) for Disaster Risk Management and Climate Change, a newly created body integrating the functions of two existing bodies, the multi-sectoral National Advisory Committee on Climate Change (NACCC) and National Task Force for Disaster Risk Reduction and Disaster Management. The NAB Secretariat, under the Vanuatu Meteorological and Geohazards Department, will be reinforced, with the help of external expertise. Some activities will also target regional and community-level stakeholders, in particular with regard to adaptation in coastal areas.

Supporting the implementation of NAPA priorities: The programme will support the implementation of measures aimed at strengthening resilience to climate and weather-related risks identified in Vanuatu's National Adaptation Programme of Action.

Investing in information generation and knowledge management: Support to early warning and monitoring systems will allow building the ability of farmers to cope with critical situations, such as

flooding. Mapping of high-risk areas is also to be promoted as an input to evidence-based land use planning (e.g. to avoid expanding settlements into flood-prone areas).

Promoting sustainable natural resource management / Using ecosystem-based approaches to adaptation and disaster risk reduction: In the field of agriculture, priorities include the promotion of traditional and improved farming practices to conserve soil moisture and nutrients, to reduce run-off and control soil erosion; rainwater harvesting; and diversifying into agroforestry with due regard to wider catchment management issues, in particular to control flooding. In the water sector, the programme will support the scaling-up of successful practices such as roof water harvesting and storage to address water security issues in selected at-risk coastal communities. Wetland restoration, the replanting of coastal vegetation and forests, and the use of indigenous afforestation methods will also be promoted to reduce flooding, coastal erosion and the impact of storm surges.

Providing technical assistance as needed: Critical understaffing of the Climate Change Unit of the Department of Meteorology[6] caused significant delays in starting implementation of both components of the programme. It is felt that needs in terms of technical assistance were not adequately assessed at the time of programme formulation. In small island states, lack of human resources can be a particularly critical factor. While there is no doubt that capacity building should target national stakeholders and notably government staff, the provision of external expertise to complement scarce national human resources may under certain circumstances be an inescapable element of the implementation of donor-funded programmes.

38. Western Africa (2011-2015)

Context

In Western Africa, poverty levels are high and development in the region is hampered by rather unfavourable climate conditions, mainly affecting agricultural and livestock production. The effects of global climate change, which became tangible as from the 1990s in the form of a sharp alternation of dry and wet years combined with extreme weather events, have worsened an already difficult situation. In view of ensuring future food security, adequate adaptation to changing climate patterns has become a clear priority for the region.

GCCA-supported actions

The GCCA programme, implemented by the Economic Community of West African States (ECOWAS) and more specifically its technical branch, the Comité permanent Inter-États de Lutte contre la Sécheresse dans le Sahel[7] (CILSS), aims to strengthen the capacity of national and regional stakeholders for mainstreaming climate change into development policies and strategies, and for implementing measures to adapt to climate change and to increase the population's resilience. More specifically, it supports the strengthening of hydro-climatologic data management systems and related data analysis capacities; the mainstreaming of climate change adaptation and mitigation into regional and national development strategies, and the dissemination of good practices; and the strengthening of climate-related negotiation skills and capacities to access carbon finance mechanisms.

[6] This body is the predecessor to the newly established NAB Secretariat. It was so far in charge of providing a secretariat to the NACCC, and as such was a key actor in GCCA programme implementation.

[7] Permanent interstate committee to fight droughts in the Sahel. CILSS, a regional centre of excellence in matters related to desertification and appropriate land use, is also coordinating regional initiatives regarding climate change adaptation.

Insights from programme preparation

Strengthening data collection and analysis capacities: Hydro-climatologic data management systems are upgraded through support for the Agrhymet Regional Centre (CRA). The CRA's existing database is being updated, and the production and dissemination of data is improved and extended. This is complemented with activities to strengthen the CRA's capacities to conduct detailed analysis of climate change in the Sahel (and other supported countries), and also to assess the potential impacts of climate change on agro-sylvo-pastoral production systems, on socio-economic systems and on ecosystems.

Building partnerships: The programme strives to establish partnerships with NGOs, research institutions and other organisations involved in conducting climate-related studies and assessments, to develop synergies and support the wider dissemination of knowledge on adaptation and mitigation responses. This process builds on the mapping of climate change-related initiatives and stakeholders in the region.

Mainstreaming climate change adaptation: Support is provided for the mainstreaming of national adaptation programmes of action (NAPAs) into existing development policies and strategies, in recognition of the fact that lack of integration of these NAPAs into wider policy and planning processes may be a cause of limited implementation so far.