



GCCA Global Learning Event 2012

Brussels, 12-14 September 2012

Background document

Addressing climate change through forest-based mitigation and adaptation: GCCA experience



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1. Background, scope and objective

The EU is taking decisive action on addressing climate change and making it an integral part of EU development aid. In 2007, it established the Global Climate Change Alliance (GCCA), its flagship initiative to strengthen dialogue, exchange of experiences and cooperation on climate change with developing countries most vulnerable to climate change, in particular the Least Developed Countries and the Small Island Developing States.

Since its inception, EU GCCA funding has been used to formulate and implement programmes aimed at addressing climate change in a range of different countries and contexts. As part of knowledge management efforts, the GCCA has prepared a series of five papers (“background documents”) intended to inform the Global Learning Event to take place in Brussels in September 2012.

The objective of the background documents is primarily to identify key insights, emerging lessons and challenges arising from GCCA experience in the formulation and implementation of interventions. Observations are presented and discussed, with occasional references to international knowledge and experience, to support the collection of additional or more detailed insights and to inform better practice; they do not constitute and should not be interpreted as an evaluation.

The papers have 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, on which these papers are based, may contain errors and/or omissions. As such, the papers 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 information, experience and knowledge collected at the Global Learning Event will then directly provide the material to prepare the forthcoming publication “GCCA achievements and lessons learned” that will be presented at the Qatar Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in November 2012.

This paper addresses GCCA forest-related interventions, in support of both mitigation and adaptation objectives.

2. Overview of GCCA forest-related interventions

Supporting efforts to reduce emissions from deforestation and forest degradation (REDD) is one of the five GCCA priority areas. GCCA funding is provided in direct support of this aim in **Burkina Faso**, **Central African Republic**, **Guyana**, **Mali**, **Papua New Guinea** and **Sierra Leone** – whether or not the concerned activities are directly related to a country’s participation in the REDD+ initiative.¹ At

¹ REDD+ is the global initiative to reduce greenhouse gas emissions from deforestation and forest degradation, in the context of the United Nations Framework Convention on Climate Change. Under the Bali Action Plan, it has been extended to include actions aimed at conserving forest carbon stocks, sustainably managing forests, and enhancing forest carbon stocks in developing countries {UNFCCC Decision 1/CP.13, 1.(b) (iii)}.

regional level, programmes in the **Caribbean** and **Eastern and Southern Africa** include some activities in support of participation in REDD+.

GCCA funding also supports projects that involve protecting or planting trees for a variety of purposes, such as stabilizing slopes and protecting watersheds (e.g. **Jamaica**, **Timor-Leste**), diversifying livelihoods based on the sustainable exploitation of timber and non-timber forest products (e.g. **Benin**, **DR Congo**, **Guyana**, **Timor-Leste**), or restoring or maintaining the resilience of local ecosystems (e.g. **Benin**, **Central African Republic**, **DR Congo**, **Jamaica**). Mangrove restoration, supported in **Guyana** and **Jamaica**, can be used to protect coastal zones, and agroforestry approaches may be incorporated into sustainable land management strategies, as in **Tanzania** and **Timor-Leste**. In such cases, reducing forest-related emissions or storing carbon may not be the primary objective, despite being one of the inadvertent benefits.

Depending on their main focus and objectives, forest-related activities supported by the GCCA may thus contribute to different GCCA priorities: reducing emissions from deforestation and forest degradation; enhancing participation in the global carbon market and the Clean Development Mechanism (CDM); and adaptation and disaster risk reduction.

The GCCA currently supports and/or is in the process of formulating programmes with a focus on forests in eleven countries and in two (sub)regions, namely the Caribbean and Eastern and Southern Africa. For each of these, a summary of activities and expected results, as well as some key insights and emerging lessons, is provided in Table 1.²

Table 1 – Summary of GCCA forest-related programmes

Country or region	Main activities and/or expected results	Key insights and/or emerging lessons
Duration GCCA budget Sector(s) concerned		
Benin 2012-2016 €8.0 million Forests	<ul style="list-style-type: none"> Establishment of a network of community-based conservation areas embedded in the national protected area system Setting up of sustainable local forest management institutions Implementation of sustainable use models for forest resources 	<ul style="list-style-type: none"> Involving communities, and promoting local forest management and sustainable forest-based livelihoods, are key for sustainable forest management Integrating endangered forests into the national network of protected areas is a way of enhancing their protection
Burkina Faso 2013-2017 €8.0 million Forests; land management	<ul style="list-style-type: none"> Mainstreaming of environmental and climate-related issues in the forest sector Data collection and knowledge management Stakeholder engagement on climate-related issues (notably in the context of REDD+) Implementation of adaptation and mitigation measures in the forest and land management sectors 	<ul style="list-style-type: none"> Mainstreaming CC into the forest sector's planning and budgetary processes supports REDD+ implementation Synergies can be developed with ongoing REDD-related initiatives Pilot projects can be used to support learning in the REDD readiness process Investment in forest data collection and management supports CC mainstreaming

² The information presented in Table 1 is extracted from a more detailed Annex to the background documents, developed on the basis of 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. The complete Annex for this paper will be available in hardcopy at the Global Learning Event, while each individual entry will be shared in advance of the Global Learning Event with the appropriate national / (sub) regional delegate(s) for their review and comment.

Global Climate Change Alliance

Global Learning Event 2012 – Background document

Addressing climate change through forest-based adaptation and mitigation: GCCA experience

Country or region	Main activities and/or expected results	Key insights and/or emerging lessons
Duration GCCA budget Sector(s) concerned		
Caribbean 2011-2014 €8.0 million Agriculture; education and research; energy; fisheries; forests; health; tourism; water and sanitation	<ul style="list-style-type: none"> • Strengthening of capacities to access carbon finance • In this context: enhancement of capacities to develop reference scenarios for REDD+ and to comply with monitoring, reporting and verification requirements 	<ul style="list-style-type: none"> • Improved access to climate finance, and capacity building with regard to REDD+, are important aspects to support in relation to forest-based mitigation
Central African Republic 2013-2017 €4.0 million Overall development / poverty reduction; forests	<p>In the forested Southwestern region:</p> <ul style="list-style-type: none"> • Enhancement of the capacity of local authorities to sustainably manage the benefits obtained from forest exploitation • Contribution to the sustainable management of production forests • Setting up of a regional environmental management and monitoring initiative • Support for REDD+ implementation at the regional level 	<ul style="list-style-type: none"> • Complex data requirements are associated with participation in REDD+ • For improved efficiency, GCCA forest-related interventions can build on past and ongoing initiatives • Pilot projects can be used to support learning in the REDD readiness process
Democratic Republic of Congo 2012-2017 €14.0 million Forests	<ul style="list-style-type: none"> • Enhancement of skills in relation to ecosystem-based adaptation, carbon stock measurement and monitoring, synergies between adaptation and mitigation in the forest sector, and climate-related policy making • Development of woodfuel plantations based on an agroforestry model • Restoration and more sustainable management of degraded natural forests 	<ul style="list-style-type: none"> • Promoting sustainable forest-based livelihoods, and developing sustainable woodfuel systems that engage the private sector, supports forest-based adaptation and mitigation • Capacities should be built for a variety of stakeholder groups • Forest-based interventions support synergies between adaptation and mitigation
Eastern and Southern Africa 2010-2014 €4.0 million Overall development / poverty reduction; agriculture; energy; forests; land management	<ul style="list-style-type: none"> • Support for investment in, and promotion of, agriculture, forestry and land use (AFOLU)-related adaptation and mitigation activities • Support for the design of national REDD+ strategies and the design and implementation of at least 4 REDD pilot projects • Research on practices and standards related to bio-carbon and AFOLU applications • Setting up of a COMESA carbon fund to enhance participation in carbon trading 	<ul style="list-style-type: none"> • Improved access to climate finance, as well as research and capacity building with regard to REDD+ and other AFOLU methodologies, support involvement in forest-based mitigation as well as adaptation • Pilot projects support learning in the REDD readiness process
Guyana 2009-2014 4.17 million Coastal zone management	<p>Support for implementation of the National Mangrove Management Action Plan, incl.:</p> <ul style="list-style-type: none"> • Rehabilitation of mangrove fields • Mangrove protection and monitoring • Mangrove mapping • Mangrove-related research • Formulation of a code of practice for mangrove management • Public awareness campaigns and training • Ongoing policy and legislation review 	<ul style="list-style-type: none"> • Involving communities, and promoting sustainable mangrove-based livelihoods, are key for the sustainability of mangrove protection and rehabilitation • Limited coordination, and a lack of systematic management, monitoring and institutional memory, are obstacles • Education and outreach activities are essential for (mangrove) forest protection • Private sector engagement can support the development of sustainable mangrove-based livelihoods

Global Climate Change Alliance

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Country or region	Main activities and/or expected results	Key insights and/or emerging lessons
Duration		
GCCA budget		
Sector(s) concerned		
Jamaica 2011-2013 €4.13 million Coastal zone management; forests; natural resource management	<ul style="list-style-type: none"> Rehabilitation (through replanting) and improved management of selected watersheds, to reduce downstream run-off Restoration and protection of coastal ecosystems, including mangroves, to enhance natural buffers and increase resilience 	<ul style="list-style-type: none"> Involving communities, and promoting local forest management, are key for sustainable forest management Support for an existing national initiative, with systems and procedures already in place, can speed up implementation while contributing to staff retention
Mali 2010-2015 €5.65 million Forests	<ul style="list-style-type: none"> Support for 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 Enhancement of forest stocks through afforestation/reforestation projects 	<ul style="list-style-type: none"> Developing sustainable woodfuel systems supports forest protection Synergies can be developed with past activities (e.g. forest inventories) as well as future ones (e.g. REDD+ participation) Strengthened information systems are required for participation in REDD+ Afforestation/reforestation field projects help enhance forest stocks while supporting learning on effective approaches
Papua New Guinea 2013-2017 €6.0 million Forests	<ul style="list-style-type: none"> Support to the PNG Forest Authority for the implementation of a continuous and multi-purpose national forest inventory Capacity building Realisation of specific studies on forest and tree characterisation Support for policy dialogue on forestry 	<ul style="list-style-type: none"> Capacity building and the development of specialised skills is required to support participation in REDD+ Significant investments in data collection and management are also required GCCA funding can be used for making a key contribution to participation in REDD+ Non-state actors should be involved in capacity building, stakeholder consultations and policy dialogue
Sierra Leone 2012-2016 €5.0 million Forests	<ul style="list-style-type: none"> At national level: strengthening of the Forestry Department of the Ministry of Agriculture, Forestry and Food Security to help it fully assume its role in the protection and management of forest resources; completion of basic REDD readiness At local level: implementation of pilot sustainable charcoal production projects 	<ul style="list-style-type: none"> Developing sustainable woodfuel systems supports forest protection Strengthening forest-related institutions and fostering coordination are also essential aspects GCCA funding can be used for making a key contribution to participation in REDD+ Capacity building should concern the forest agency and also non-state actors Pilot projects support learning and capacity building
Tanzania 2010-2013 €2.21 million Overall development / poverty reduction; agriculture; coastal zone management; land management; natural resources; water and sanitation	<ul style="list-style-type: none"> Support for 3 'eco-villages' where innovative adaptation measures are tested in the fields of agriculture, rangeland and forest management, water management, sanitation and biomass energy Support for sustainable practices such as participatory forest management, community-based afforestation and reforestation and agroforestry 	<ul style="list-style-type: none"> Involving communities (including women and children), and promoting local forest management and sustainable forest-based livelihoods, are key for sustainable forest management Fostering intersectoral coordination is an important driver of success Pilot projects that test forest-based and other adaptation responses in various ecosystems can help identify appropriate measures

Country or region	Main activities and/or expected results	Key insights and/or emerging lessons
Duration		
GCCA budget		
Sector(s) concerned		
Timor-Leste 2013-2017 €4.0 million Overall development / poverty reduction; forests; natural resources	Implementation of environmental restoration and sustainable livelihood activities, incl.: <ul style="list-style-type: none">• Awareness raising on forestry and agroforestry techniques• Promotion of forestry and agroforestry techniques in the field, taking into account watershed management principles	<ul style="list-style-type: none">• Involving communities (using participatory approaches), and promoting sustainable livelihoods, are key for sustainable forest management• Learning by doing through field operations supports capacity building and the identification of appropriate measures• Forest-based interventions support the convergence of adaptation and mitigation

3. GCCA insights and emerging lessons

In this section, the individual country and regional experiences presented in Table 1 are clustered under broad themes and general findings.

3.1 Investing in research, data collection and management

Reliable data are needed to support both climate change adaptation and mitigation in the forest sector.

On the mitigation side, data requirements can be particularly stringent. The first stage of the 'REDD readiness' process involves getting a clear understanding of the drivers of deforestation and forest degradation, and defining country-specific emission reference levels, i.e. the baseline against which emission reductions and 'removal enhancements' (i.e. enhancements of forest carbon sequestration) will be assessed, and REDD units (i.e. payments for emissions avoided or extra carbon stored) credited. Monitoring, reporting and verification (MRV) systems must also be set up, which notably involves setting up a 'benchmark map' of forestland, defining activities potentially eligible under REDD+, and defining 'emission factors' (i.e. factors determining the emissions or removals of greenhouse gases per unit of activity) (Angelsen et al, 2009; Minang and Murphy, 2010).

Data requirements are also significant in the context of afforestation and reforestation projects set up under the CDM, or with a view to selling verified emission reduction units in the voluntary carbon market. The methodologies for determining a project's carbon reference level and carbon sequestration volumes are quite complex, and MRV requirements can also be quite stringent (Gardette and Locatelli, 2007).

Finally, preparation for REDD+, as well as registration under the CDM or validation under a recognised standard for selling carbon credits in the voluntary market, require undertaking environmental and social impact assessments.

On the adaptation side, data needs are likely to be linked to meteorological conditions, short- and medium-term weather forecasts, climate impacts on forest ecosystems, ecosystem degradation and recovery rates, extraction of forest products, forest-related livelihoods, and more.

Box 1 shows how some GCCA programmes support research, data collection and management in the context of forest-based adaptation and mitigation.

Box 1: GCCA experience – Investing in forest research, data collection and management

In **Central African Republic**, the GCCA will support the realisation of an environmental and social strategic assessment for the REDD+ strategy in the Southwest, as well as the definition of a baseline scenario and a monitoring, reporting and verification (MRV) mechanism.

In **Eastern and Southern Africa**, the GCCA-supported programme includes research into methodologies (particularly MRV), practices and standards related to bio-carbon and agriculture, forestry and land use (AFOLU) applications, that can help the region's countries to enhance their participation in carbon markets and REDD+.

In **Guyana**, the Mangrove Management Action Plan supports mangrove mapping and mangrove-related research.

In **Mali**, 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+.

In **Papua New Guinea**, the GCCA provides support to the PNG Forest Authority for the implementation of a continuous and multi-purpose national forest inventory, to be part of the National Forest Monitoring System that will be set up in the context of country's participation in REDD+. The forest inventory will provide a foundation for the REDD+ 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.

3.2 Improving forest sector governance

In the forest sector as in all other sectors, strong institutions are central in providing effective design and implementation of climate-related policies, and also contribute to favourable conditions for the development of a sound legal and regulatory framework. However, forest sector governance (in general and in relation to climate change) is weak in many countries, for a variety of reasons. These may include lack of prioritisation of sustainable forest management in the policy agenda; socio-economic and political interests linked to unsustainable forest exploitation practices; unclear or overlapping institutional mandates for forest management; lack of coordination across sectors and between central and decentralised government; inadequate or poorly enforced legal and regulatory frameworks; human and financial resource limitations in government services; and the limited availability of specialised technical expertise to address emerging topics such as establishing baseline scenarios and monitoring, reporting and verification mechanisms for participation in REDD+.

GCCA programmes support improvements in forest sector governance in various ways:

- by strengthening the institutions in charge of forest and climate change management, and fostering improved intersectoral coordination, as illustrated in Box 2;

Box 2: GCCA experience – Strengthening forest-related institutions and fostering coordination

In **Guyana**, mangrove management 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). A limited track record of continuous, systematic management and monitoring of mangrove programmes, and a lack of institutional memory, compound the problem. The GCCA-supported programme has to operate under these constraints, and tries to address these issues to the extent possible.

In **Sierra Leone**, GCCA support is used to strengthen the national forest authority, i.e. the Forestry Department of the Ministry of Agriculture, Forestry and Food Security, to enable it to fully assume its role in the protection and management of forest resources. Institutional strengthening activities bear on aspects such as institutional structure, policy framework, technical capacities, law enforcement capacities and logistical capabilities. Planned activities include the provision of technical assistance, staff training (guided by a training needs assessment), and the organisation of seminars and workshops to discuss policy options on the management of forest resources. It is recognised that inadequate coordination mechanisms between sector institutions, and conflicting mandates, contribute to the inefficiency of the sector. Particular care will thus be taken in programme implementation to ensure very close communication and coordination between all climate change-relevant actors, especially between the Forestry Department and the Environment Protection Agency.

- by promoting the strengthening of policy, legal and regulatory frameworks in relation to forests and climate change, as illustrated in Box 3;

Box 3: GCCA experience – Strengthening forest-related policy, legal and regulatory frameworks

In **Benin**, degraded forests such as gallery forests in the Ouémé river basin need to be integrated into the national network of protected areas, in the form of community-based conservation areas. The GCCA supports this integration, which involves creating a suitable policy and legal framework, and understanding the institutional changes required for the adoption of a new management structure for gallery forests.

In **Burkina Faso**, the GCCA intervention aims to improve climate change governance in relation to sustainable forest management and the REDD+ process. This is to be achieved by various means, including the mainstreaming of sustainable environmental management and climate change into the planning and legal frameworks of the forest sector.

In **Guyana**, the policy framework is generally supportive of mangrove protection and rehabilitation. Nevertheless, mangroves remain somewhat neglected as a forest ecosystem. One of the expected results from implementation of the National Mangrove Management Action Plan, the implementation of which is supported by the GCCA, is that they are fully considered in the new draft of the Forest Plan. In this context, the quality and effectiveness of regulations protecting mangroves will be reviewed. The programme also supports the formulation of a code of practice for mangrove management.

(...)

Box 3 (continued) – Strengthening forest-related policy, legal and regulatory frameworks

In **Sierra Leone**, the GCCA will support the definition of a national REDD+ policy, with inputs from the Forestry Division.

- and by helping build the capacities of stakeholders, including civil society/non-state actors, to play a constructive role in forest management and forest-based adaptation and mitigation, as illustrated in Box 4.

Box 4: GCCA experience – Building capacities for forest-based adaptation and mitigation

In **DR Congo**, the GCCA will contribute to capacity building in support of climate change mainstreaming in the forest and environment sector. The focus will be on enhancing the skills required for ecosystem-based adaptation, carbon stock measurement and monitoring, the realisation of synergies between adaptation and mitigation in the forest sector, and climate-related policy making. Training programmes on adaptation- and mitigation-related topics will be designed and adapted for various target groups including civil servants, policy makers, media and civil society.

In **Guyana**, education and outreach initiatives targeting coastal communities are an integral part of the GCCA-supported Mangrove Management Action Plan. 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.

In **Papua New Guinea**, 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 training, 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.

In **Sierra Leone**, capacity building activities will target the Forestry Division staff but also, in relation to the REDD+ process, civil society and non-governmental organisations and local communities. A climate change awareness and education strategy targeting the general public will also be prepared and delivered at national and subnational levels, and climate change awareness-raising will be integrated in teachers' training and school curricula (at primary and secondary levels).

In **Tanzania**, support to local communities to attain sustainable forest management involves 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.

(...)

Box 4 (continued) – Building capacities for forest-based adaptation and mitigation

In **Timor-Leste**, capacity building for staff of the National Directorate of Forestry will be achieved primarily through ‘learning by doing’ approaches and daily involvement in programme activities. 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.

When supporting governance improvement, it is useful to remember that sector governance, like capacity development, is primarily a domestic affair – and that governance and institutional strengthening are long-term processes, achieved through incremental improvements.

3.3 Testing and demonstrating concrete, ‘appropriate’ measures, in view of replication

The demonstration of forest-based adaptation and mitigation practices and technologies in the field is a powerful means of evaluating the ‘appropriateness’ of measures, i.e. their suitability from a technical and financial point of view, their acceptability from a social and cultural point of view, their sensitivity to gender issues, and their environmental sustainability in a given context. Identifying and testing forest-based adaptation and mitigation practices and technologies should be done with a view to building and sharing knowledge, identifying best practices, learning from experience (including failures), and replicating successful approaches.

Many GCCA forest-related interventions include a component that supports pilot or demonstration projects.³ Box 5 provides an overview of activities undertaken in this field.

Box 5: GCCA experience – Learning by doing through pilot forest-based projects

In **Burkina Faso**, the GCCA 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.

In **Central African Republic**, the programme will support the definition of 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.

In **Eastern and Southern Africa**, a number of REDD pilot projects will also be designed, initiated and evaluated.

In **Mali**, afforestation/reforestation projects are supported to enhance forest stocks.

In **Sierra Leone**, the GCCA will support pilot projects in the field of sustainable charcoal production.

(...)

³ ‘Learning by doing’ through pilot or demonstration activities is also a topic addressed in Section 3.2 of the background paper on Mainstreaming, and in Section 3.6 of the paper on Adaptation.

Box 5 (continued) – GCCA experience – Learning by doing through pilot forest-based projects

In **Tanzania**, experience from Chololo village shows that 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.

In **Timor-Leste**, 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. They will integrate best agricultural practices and watershed management principles.

If pilot and demonstration projects really are to support best practices and replication, strong provisions need to be made to ensure lessons from their implementation are learned, widely disseminated, and used to support the scaling-up of successful initiatives.

3.4 Engaging stakeholders and promoting local forest management

Engaging forest-based communities, or those that live on forest margins, in forest management can encourage ownership and contribute to the overall success of initiatives. Forests are, for instance, vulnerable to fire damage and over-exploitation if their value is not recognised by local communities. Engagement facilitates collaboration between communities and government authorities. Forest-dwelling people's knowledge can help improve the relevance of planned interventions or the performance of specific actions, such as forest and carbon inventories and forest stock monitoring (Knowles et al, 2010). Local stakeholder involvement can also support the collection of data that help understand the drivers of deforestation, identify opportunities for adaptation through forestry, and monitor the results and impacts of forest protection and management interventions. Community involvement in monitoring can be expected to increase ownership, giving people a stake and an interest in results.

One way of giving local communities a stake in forest resource protection is to set up *local forest management institutions* in which all key stakeholder groups are represented, and to help them develop concrete forest management plans, with clear objectives, monitoring arrangements, and accountability and enforcement mechanisms. Box 6 presents some examples of how GCCA interventions involve communities and promote local forest management.

Box 6: GCCA experience – Involving communities and promoting local forest management

In **Benin**, the GCCA supports the establishment of a network of community-based conservation areas embedded in the national protected area system, as well as the setting up of sustainable local forest management institutions. The design of a new management structure for gallery forests, and the development of sustainable management plans, are to be undertaken with the involvement of local communities and traditional authorities, using participatory processes.

(...)

Box 6 (continued) – Involving communities and promoting local forest management

In **Guyana**, a strong emphasis is placed on community involvement, which is deemed important in terms of both protection and mangrove monitoring. Mangrove producers are 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 also been established to promote alternative livelihoods (see Box 8).

In **Jamaica**, 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.

In **Tanzania**, the programme has a strong focus on local communities and the use of bottom-up approaches. Participatory vulnerability assessments were used as a basis for designing the supported 'eco-village' projects. In the same spirit, participatory forest management and the establishment of participatory land use management plans are among the approaches advocated in these villages. A key objective in Chololo village is to support local communities to attain sustainable forest management. Local actors such as women and schools are fully involved. Women's groups are being supported to establish sustainable woodlots, which in time will help reduce the time they spend collecting firewood. The project will also mobilize and support schools to establish their own woodlots.

In **Timor-Leste**, 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.

The role of the private sector has not been prominent in GCCA forest-related interventions to date. Nevertheless, a few programmes do engage the private sector, as shown in Box 7.

Box 7: GCCA experience – Engaging the private sector in forest-based adaptation/mitigation

In **DR Congo**, 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. 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.

In **Guyana**, the involvement of a private sector champion with experience in starting and successfully promoting a range of organic food and beauty products produced by Amerindian communities has been instrumental in the success of the programme with regard to the development of sustainable mangrove-based livelihoods. 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.

In **Papua New Guinea**, 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.

The potential for constructively engaging the private sector in support of forest protection and management interventions could be more systematically considered. The possibility of selling

‘carbon credits’ (i.e. certified or verified emission reductions) under the CDM or in the voluntary carbon market is already driving some private investment in afforestation and reforestation projects – even if transaction costs for achieving registration can be relatively high, and the prices of forest carbon credits are low. Private investment can also be mobilised to contribute to REDD+ implementation, provided project-level activities can be implemented in an institutional and regulatory environment that limits risks for private investors, integrated into sub-national and national frameworks, and rewarded fairly for their contribution to national emission reductions (Swickard and Carnahan, 2010).

3.5 Supporting sustainable forest-based livelihoods and woodfuel systems

Adopting a *livelihoods approach* is another key element in ensuring the contribution of forest-based interventions to poverty and vulnerability reduction, and their long-term sustainability. Initiatives aimed at the protection of forests and enhancement of stocks are likely to be enhanced by recognising the need for communities to derive benefits from local natural resources – without eroding natural capital. Activities that are beneficial from a climate change mitigation perspective, but fail to consider livelihood aspects, are unlikely to be successful. Sustainable woodfuel and timber extraction, sustainable extraction of non-timber forest products, agroforestry or integrated agro-sylvo-pastoral activities, and forest-based ecotourism, can support sustainable livelihoods while allowing maintenance or enhancement of forest carbon stocks.⁴

Several GCCA interventions support the development of more sustainable forest-based livelihoods. They are briefly presented in Box 8.

Box 8: GCCA experience – Supporting sustainable forest-based livelihoods

In **Benin**, sustainable management plans for gallery forests, buffer zones and connection corridors will be prepared. They will rely on the identification of incentives needed for promoting sustainable practices. Support will be provided to local communities for the development of alternative livelihoods such as sustainable production of non-timber forest products and medicinal plants, and ecotourism.

In the Southwest of **Central African Republic**, 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. To this effect, 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.

In the East of **DR Congo**, the GCCA will support the development of woodfuel plantations based on an agroforestry model, as well as the restoration and more sustainable management of degraded natural forests. Both approaches are expected to provide new livelihood and income opportunities for local populations.

(...)

⁴ In parallel, the development of alternative livelihoods that do not depend on natural resource exploitation (i.e. non-farming, non-forest-based livelihoods) can be another way of reducing pressure on forests.

Box 8 (continued) – GCCA experience – Supporting sustainable forest-based livelihoods

In **Guyana**, 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. Community members are also paid to cultivate mangrove seedlings on their land, in support of the mangrove rehabilitation effort. Mangrove protection and restoration is thus generating significant benefits for local communities.

In **Tanzania**, the concept of 'eco-village' is focused on sustainable natural resource management and the promotion of more sustainable livelihoods. Sustainable practices such as participatory forest management, community-based afforestation and reforestation and agroforestry are part of the approaches being tested.

In **Timor-Leste**, the GCCA will support the implementation of environmental restoration and sustainable livelihoods 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.

A particular area is the development of sustainable woodfuel systems. In many developing countries, woodfuel extraction (for firewood and charcoal) is a major cause of forest degradation – especially in the ever-widening supply basins of large cities (Marien, 2009; FAO, 2010). Improved efficiency in charcoal production, more efficient use of biomass fuels (e.g. through the use of improved stoves) as well as fuel switching to non-biomass fuels and electricity, can all contribute to alleviating this problem. However, urban poverty is a brake on switching from biomass fuels to modern fuels, and charcoal remains the 'transition fuel' of choice in many urban areas, in particular in Africa (Arnold et al, 2006).

In such conditions, the development of sustainably managed woodfuel plantations can be part of the solution – especially where large numbers of rural and urban people are involved in woodfuel supply chains, and there is a lack of immediate alternative livelihood opportunities (Ducenne, 2009; Marien, 2009; Trefon et al, 2010). Woodfuel plantations can reduce pressure on natural forests not only by increasing the supply of sustainably produced woodfuel, but also by supporting the creation of new, more sustainable livelihoods (World Bank, 2009). A few GCCA programmes in Africa support the development of woodfuel plantations or sustainable charcoal production, as illustrated in Box 9.

Box 9: GCCA experience – Developing sustainable woodfuel systems

In **DR Congo**, support for agroforestry plantation development and the restoration of degraded natural forests in the vicinity of the Virunga National Park is expected to increase the supply of wood for charcoal under sustainable conditions, and thereby reduce pressure on natural forests.

In **Mali**, the GCCA supports afforestation/reforestation projects that will increase the availability of woodfuel. As in DR Congo, this is expected to help protect the remaining natural forests.

In **Sierra Leone**, the main drivers of deforestation include charcoal production, land clearings for slash-and-burn agriculture, and firewood collection. To meet the demand for charcoal, which is one of the main sources of energy (especially for urban households), the GCCA will support analysis of the economics and dynamics of charcoal production and consumption, the definition of a sustainable charcoal production strategy, and a number of pilot sustainable charcoal production projects.

The choice of location for woodfuel plantations, their scale, the way in which they are established (e.g. through afforestation, reforestation, or rehabilitation of degraded areas), the choice of tree species, and the balance between positive and potentially negative impacts on livelihoods, are all key factors that determine the environmental and social sustainability of this type of initiative.

3.6 Developing synergies

In countries engaged or considering engagement in the *REDD+ process*, GCCA-funded activities can support specific aspects of ‘REDD readiness’, complementing relevant activities financed by other programmes such as UN-REDD (a joint initiative of the Food and Agriculture Organisation, the UN Development Programme and the UN Environment Programme), the Forest Carbon Partnership Facility (FCPF), or the World Bank-administered Forest Investment Program (FIP). GCCA interventions can also help investigate options to tap the Clean Development Mechanism (CDM) and/or the voluntary carbon market in relation to forest-based carbon sequestration.⁵ In countries where *FLEG⁶ bilateral negotiations* are ongoing, the stakeholder consultation process organised around the preparation of a voluntary partnership agreement can provide a foundation for GCCA-related consultations. Opportunities to develop synergies and build complementarities also exist in relation to national forest-related initiatives, policies and frameworks. Box 10 provides some examples of GCCA interventions that exploit synergies with other ongoing initiatives, at international or national level – capitalizing on existing structures, systems and competences whenever possible.

Box 10: GCCA experience – Exploiting synergies with REDD+ and other initiatives

In **Benin**, the GCCA supports the integration of degraded gallery forests in the Ouémé river basin into the existing national network of protected areas, in the form of community-based conservation areas. This is expected to enhance possibilities to protect, restore and sustainably manage these forests. The GCCA intervention builds on an existing initiative of the United Nations Development Programme (UNDP).

In **Burkina Faso**, 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, in support of the REDD+ process. 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.

In the **Caribbean**, one of the objectives of the supported programme is to support increased access to carbon finance, notably through participation in the CDM (with no specific focus on forests) and REDD+. In this context, a seminar will be organised to enhance capacities to develop reference scenarios for REDD+ and to comply with monitoring, reporting and verification (MRV) requirements.

(...)

⁵ Avoided deforestation is not eligible under the CDM – but afforestation and reforestation projects are.

⁶ The EU ‘Forest Law Enforcement, Governance and Trade’ initiative, which fights trade in illegal timber.

Box 10 (continued) – Exploiting synergies with other initiatives

In **Central African Republic**, the GCCA will support the implementation of the REDD+ strategy in the Southwest region, including the setting up of a territorial planning system, the development of a regional forest strategy, the realisation of the related environmental and social strategic assessment, the definition of a baseline scenario and a MRV mechanism for a REDD pilot project, and the registration of this project under a recognised voluntary carbon market standard. It will support 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. The GCCA 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.

In **DR Congo**, capacity building with regard to carbon stock measurement and monitoring will support the ongoing REDD readiness process. Studies and research may also be undertaken on financial opportunities available at the international level in relation to avoided deforestation, REDD+ and the Clean Development Mechanism.

In **Eastern and Southern Africa**, the GCCA-supported programme includes research into methodologies (particularly MRV), practices and standards related to bio-carbon and agriculture, forestry and land use (AFOLU) applications, that can help the region's countries to enhance their participation in carbon markets and REDD+. This complements the setting up, in 2010, of a COMESA carbon fund to enhance participation in carbon trading. The programme also supports the design of national REDD+ strategies and the design and implementation of at least 4 REDD pilot projects.

In **Guyana**, the mapping and rehabilitation of mangroves is undertaken in conjunction with the establishment of a MRV system undertaken as part of preparation for REDD+.

In **Jamaica**, GCCA funding supports a pre-existing watershed replanting initiative. It enables the Forestry Department to accelerate the process 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. Besides speed of implementation, this approach can also contribute to increased sustainability, as the skills and experience are retained within the Forestry Department.

In **Mali**, 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 will help the country get prepared for potential participation in REDD+.

In **Papua New Guinea**, the GCCA will provide support to the PNG Forest Authority for the implementation of a continuous and multi-purpose national forest inventory, which is a key element in the implementation of PNG's REDD readiness plan. It will provide a foundation for the MRV mechanism, and a baseline for the five pilot REDD projects currently under preparation.

In **Sierra Leone**, a significant amount of preparatory work needs to be done by the country before qualifying for REDD+. The GCCA 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.

The forest sector is also one in which the potential for realising synergies between adaptation and mitigation is the highest. While many GCCA forest-related initiatives are likely to contribute to both,

some put more emphasis on adaptation objectives, and some on mitigation ones. Box 11 provides a few examples of programmes that explicitly seek to promote adaptation-mitigation synergies.

Box 11: GCCA experience – Realising synergies between adaptation and mitigation

In **DR Congo**, ‘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 of the GCCA programme. 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.

In **Eastern and Southern Africa**, conservation agriculture and other sustainable land use practices, including agroforestry, are promoted as measures that simultaneously support adaptation and mitigation.

In **Timor-Leste**, field activities will focus on forestry 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.

While synergies exist and should be encouraged, the risk that climate change mitigation measures such as afforestation of non-forested land may negatively impact water resource availability or food security, and thus inadvertently increase, rather than reduce, vulnerability to climate change (risk of ‘maladaptation’), should never be dismissed without a minimum of investigation.

4. Topics for further discussion at the GCCA Global Learning Event

How are forestry and REDD-related issues being addressed in your GCCA programme? How are things being done? What are the challenges, and how are they being tackled? What are the lessons learned to date? Do you have practical examples (e.g. studies, policies or plans) or stories to share? More specifically:

1. Does the GCCA programme in your country support applied research (e.g. forest inventories), data collection and management? If so, how does this aspect of the work complement other areas of work, and which ones?
2. Does the GCCA programme in your country include pilot or demonstration projects? What issues do they address (e.g. sustainable forest-based livelihoods, sustainable woodfuel)? What has been or will be put into place to support learning and dissemination? Can you already share some materials?
3. What is your GCCA programme’s experience in engaging stakeholders in forest management? What have you found successful and what less successful? Typically, the returns on forestry are only realised in the longer term. What are effective incentives for communities to invest time and energy in activities that may only produce long-term benefits? What about the private sector?
4. Does the GCCA programme in your country exploit synergies between adaptation and mitigation? How so? What about synergies with other (national or international) initiatives (e.g. UN-REDD or FCPF)? How do they complement each other?
5. How are you ensuring that the GCCA programme is supporting long-term institutional strengthening (including forest governance) and capacity building? Which activities or

approaches have proven most successful in strengthening capacities and institutions (e.g. in-country technical assistance, training, south-south exchange, etc.)? Can you explain?

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