

Supporting a climate for change

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Luxembourg: Publications Office of the European Union, 2009

ISBN 978-92-79-14213-0

doi: 10.2773/82318

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Printed in Belgium, November 2009

Printed on recycled paper that has been awarded the EU Ecolabel for graphic paper (www.ecolabel.eu)



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Foreword



Manuel Barroso
President of the
European Commission

Climate change is an economic and social issue as much as a development, human and international security issue. While climate change is the result of centuries of human activity, overcoming it must be the great project of this generation. Acting against climate change is not only a moral imperative for current and future generations. It also makes perfect economic sense when the opportunities it opens up are weighed against the expected damage that would be caused by non-action. The 2009 financial and economic crisis arrived at a time when the EU had started taking historic decisions on climate change – a propitious moment to shift economic development towards a greener path.

On 23 April 2009, the EU's "Climate change and renewable energy package" was formally adopted, witnessing Europe's and its Member States' strong and unanimous commitment to define a common response, and react quickly to a challenge that affects the lives of every single European citizen. With this "package", Europe has shown its readiness to lead by example, committing to significant reductions in greenhouse gas emissions of at least 20% below 1990 levels by 2020 and by doubling the share of renewable energy to 20% within the same time-frame. In the context of a fair multilateral climate agreement the EU is ready to scale up its emissions reduction target to 30%.

Moreover, Europe's action goes beyond the borders of its Union, and expands its commitment and support to assist the most vulnerable countries in the world to adapt to the effects of climate change. These are in reality the countries that are severely affected, despite having contributed the least to the emission of greenhouse gases. For example, Africa as a continent is responsible for 4% of global greenhouse gas emissions⁽¹⁾, yet the impact of climate change could be devastating.

At the same time, the current growth path of many developing countries – in particular those more economically advanced – will lead to increasing emissions of greenhouse gases. Between 1990 and 2005, Non Annex I countries' share of total greenhouse gas emissions increased from 39% to 49% – and the percentage would be higher if emissions from land use change and deforestation are taken into account. Thus, the substantial reduction in the rate of emissions' growth in developing countries needs to be an integral part of an international strategy to prevent dangerous levels of climate change. This will be crucial to achieve the objective of limiting global warming to less than 2°C above the pre-industrial temperature – or around 1.2°C higher than today's level. Undoubtedly this is a formidable challenge, and it will require a major international effort to organise strong and diversified support strategies, including stepping up the development and deployment of key low carbon technologies.

Europe has the will and the strength to lead on climate change, not just by committing to deep emission reduction targets, but also by taking forward its vision of how the global community can address this problem – with a clear commitment to climate finance for developing countries as an essential component of the deal.

The EU is indeed ready to contribute its fair share to the global financial needs, subject to other key players also contributing their fair share. The total net incremental costs of mitigation and adaptation in developing countries could amount to around €100 billion annually by 2020. This figure is based on projections that rely on an ambitious agreement in-line with meeting the 2°C objective. These costs will need to be met through a combination of domestic finance, the international carbon market and international public finance. For the latter part, needs are estimated to be between €22 to 50 billion per year in 2020; a financial burden that needs to be shared at the global level.

Fast-start international public support for 2010, 2011 and 2012 is also important for preparing efficient actions and avoiding delay of far-reaching measures. The Commission has estimated that, following an ambitious agreement in Copenhagen, a global financing of €5-7 billion per year will be needed in this context.

This brochure highlights key areas of intervention by the European Commission in action against climate change in developing countries, illustrating through practical examples its current policies and identifying steps for the future. Tackling climate change is essential to safeguard the future of our planet. It also brings major new opportunities for the world. The time has come to seize them with confidence.

1 This figure does not account for land use change and deforestation.

Introduction

EU Action against climate change

As the world's largest provider of development assistance, the European Union is strongly committed to supporting developing countries in the fight against poverty, the fulfilment of the UN Millennium Development Goals and the achievement of sustainable development. Combating climate change, one of the gravest challenges facing mankind, forms an integral part of this agenda.

Climate change is an environmental problem but poses also a clear risk to development. While climate change will affect all countries, it is developing countries and in particular the poorest populations that will be hit earliest and hardest. Increasing food insecurity, water scarcity, spread of diseases to new areas, damage from floods, forced migration due to desertification of previously arable land and sea-level rise are some of the likely effects that will concern developing countries the most.

Poorer countries with economies heavily depending on natural resources, such as agriculture, forestry and fisheries, will be disproportionately affected. But even developing countries with more diversified economies are vulnerable, since the lack of financial resources, adequate technology and effective institutions limits their capacity to adapt to the consequences of climate change. Adaptation to climate change and shifting towards low-carbon growth, requires a different economic path, and therefore a rethinking of development strategies.

The EU believes that deep cuts in global emissions of greenhouse gases are necessary to prevent climate change from reaching levels, that could lead to irreversible and potentially catastrophic planetary changes. If we are to have a fair chance of limiting global warming to no more than 2°C (3.6°F) above the pre-industrial level, global emissions must peak by 2020 at the latest, be at least halved from 1990 levels by 2050 and then continue falling thereafter.

Fostering effective adaptation is equally important, given that poor people in poor countries lack adequate resources to protect themselves, or to adapt promptly to evolving circumstances.

An ambitious new UN climate change agreement is needed to create the global framework within which these goals can be met. The EU is determined to achieve its independent emissions reduction commitment of 20% below 1990 levels by 2020 – moving to a 30% reduction, under a comprehensive global agreement, provided that other developed countries commit themselves to comparable emission reductions and that developing countries contribute adequately in line with the principle of common but differentiated responsibilities and respective capabilities⁽²⁾.

Climate change and development

Climate change has a development impact that could bring unprecedented reversals in progress with poverty reduction, nutrition, health and education, thus undermining efforts towards achieving the Millennium Development Goals.

Abiding by the principles of equity and common but differentiated responsibilities, developed countries must take the lead in cutting emissions, as they are responsible for the bulk of the problem and have the greatest resources to tackle it. Yet, without commitment by developing countries and in particular more advanced economies, in line with respective capabilities, any deal will have insufficient effectiveness.

The combined fossil fuel emissions of developing countries and emerging economies are projected to overtake those of the industrial world by around 2020; indeed, they already have if emissions from deforestation, agriculture and land use changes are counted. It is thus vital that developing countries start to slow the growth of their emissions as soon as possible and prepare for absolute reductions from 2020 onwards. Furthermore, rapid and uncontrolled deforestation in tropical countries has to be halted and reversed if the fight against climate change is to be successful. Deforestation is currently responsible for around one-fifth of global greenhouse gas emissions.

Even if these measures are effective however, global average temperatures will continue to rise in the coming decades, and both industrialised and developing countries alike need to adapt to the already evident changes in climate in order to minimise their impact. Richer economies need to provide concrete support to assist developing countries coping with the consequences of global warming.

The EU recognises that the most effective way to promote adaptation to, and mitigation of climate change, is to integrate these objectives into strategies for poverty reduction and sustainable development. It also attaches great importance to ensuring that these strategies are owned and driven by developing countries themselves. Such processes shall identify specific actions that developing countries will undertake to contribute to the global mitigation effort and to increase resilience to climate change, while reducing vulnerabilities. Coping with current climate variability and attempting to anticipate future climate changes is no longer an option, but a policy imperative.

This brochure provides an overview of the EU's multifaceted approach of supporting developing countries in adapting to the negative effects of climate change and to mitigating its causes.

² See: http://europa.eu/legislation_summaries/development/sectoral_development_policies/r12542_en.htm





Bringing about change: EU cooperation with developing countries



1.1. Climate change, a global issue: international engagement and political dialogue with partners

Climate change has been an issue of growing concern in the relations between the EU and developing countries, since the UN Framework Convention on Climate Change (UNFCCC) was signed in 1992. It has become an integral component of EU External Relations, and today features as a priority on the agenda of the EU's dialogue with third countries.

The EU is actively supporting partner countries in facing the climate change challenge, both multilaterally, and through regional and bilateral cooperation with partner countries in all developing country regions.

Supporting the implementation of international agreements, such as the UNFCCC and the Kyoto Protocol, and contributing to institutions such as the Global Environment Facility (GEF), are the natural avenues for the EU to ensure general support and financial assistance on climate change to developing countries.

In 2004, the EU substantiated its commitment to help developing countries tackle climate change by adopting an Action Plan on Climate Change in the Context of Development Cooperation for the period up to 2008⁽³⁾. The Action Plan was centred on mainstreaming aspects of climate change into development cooperation in four strategic areas: policy dialogue, mitigation, adaptation and capacity-building. One of the Action Plan's strategic objectives was to raise the policy profile of climate change. This is being achieved in practice, by ensuring that climate change is systematically addressed in the context of the EU's relations with international partners, at the multilateral, regional and bilateral levels.

Applying the principle that climate change must be integrated into a country's own strategies and actions, the EU has established dialogue with numerous emerging economies on climate change, to share experiences, expertise and develop common understandings. On a bilateral basis, since 2005, the EU has stepped up its cooperation with both China and India in the field of climate change, through the establishment of the EU-India Clean Development and Climate Change Initiative and the EU-China Partnership on Climate Change. A dialogue on environment and climate change has

³ http://europa.eu/legislation_summaries/development/sectoral_development_policies/r12542_en.htm



also been established with Brazil, South Africa, South Korea, as well as in the context of the European Neighbourhood Policy (ENP)⁴. Concrete initiatives for closer cooperation on climate change are under way with Mexico. Climate issues are also high on the agenda in multilateral and regional fora, including the Eastern Partnership, the Black Sea Synergy, the Union for the Mediterranean, the African Union, ASEM, ASEAN⁵, the Pacific Islands Forum, the Rio Group and Cariforum.

In addition, the EU is working with third country partners to better understand the international security implications of climate change. This initiative stemmed out of a joint EU High Representative/European Commission paper on "Climate Change and International Security" published in March 2008⁶, and was followed by the update in December 2008 of the European Security Strategy, of which Climate Change has now become a building block.

Building on the 2004 Action Plan, the Commission launched in September 2007 the Global Climate Change Alliance (GCCA) between the EU and the developing countries most vulnerable to climate change, in particular the Least Developed Countries (LDCs) and Small Island Developing States (SIDS).

The Global Climate Change Alliance

The GCCA is an EU initiative aimed at strengthening political dialogue and cooperation on climate change with the most vulnerable and poor developing countries, in particular LDCs and SIDS. Through the GCCA, support is being tailored primarily towards actions integrating climate change in developing countries' policies and focussing on adaptation activities, especially in the water and agricultural sectors, on reducing emissions from deforestation and forest degradation, on disaster risk reduction, and on enhanced participation of LDCs in the carbon market.

Fifteen countries have been identified to start up activities under the GCCA: Vanuatu, Maldives, Cambodia, Tanzania, Bangladesh, Belize, Guyana, Jamaica, Madagascar, Mali, Mauritius, Mozambique, Rwanda, Senegal and the Seychelles. More countries will be able to benefit from this support as additional funds become available over the coming years. In 2009, a regional capacity development support programme for adaptation in ACP countries was agreed, complementing national efforts.

A GCCA Support Facility was established in 2009 to support capacity-building for target countries, to improve their knowledge on the expected impacts of climate change, to effectively integrate climate change vulnerability into development plans and budgets, and to identify and prepare GCCA activities in particular sectors.

In the countries where preparatory work has started, GCCA concrete support actions include, for instance:

- Capacity development of climate policy national coordinating entities;
- The implementation of National Adaptation Programmes of Action (NAPA) such as improved farming practices, sustainable land management, land tenure, soil erosion and flooding control, water management in coastal communities and hazard mapping.

4 The ENP covers Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, the Occupied Palestinian Territory, Syria, Tunisia and Ukraine.

5 ASEM: Asia-Europe Meeting; ASEAN: Association of Southeast Asian Nations.

6 http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf



In addition to concrete support actions, the GCCA involves regional dialogues which resulted in Joint Declarations on climate change between the EU and the Caribbean (May 2008), the Pacific (November 2008), Africa (December 2008) and, more recently, in an overarching ACP-EU Declaration (May 2009)⁷. The Joint Africa-EU Strategy is the framework for Africa and the EU to pursue their common vision on climate change. In this respect, work undertaken under the GCCA represents one of the pillars of the Joint Strategy's Africa-EU Partnership on Climate Change. Such efforts encompass sustainable land management and earth observation through support for continental flagship programmes, such as the Great Green Wall of the Sahara and Sahel Initiative (GGWSSI) and the Africa Climate Information for Development Programme (CLIMDEV).

Joint ACP-EC Declaration on Climate Change and Development

On 29 May 2009, the African, Caribbean and Pacific (ACP) Group, the European Community (EC) and its member States adopted a joint declaration on climate change and development during the Joint ACP-EC Council of Ministers. The Declaration builds on the strong historical political engagement of both EU and ACP constituencies in Climate Change policy dialogue and cooperation. The joint document renews the ACP and EU endeavour for the successful conclusion of a post-2012 agreement under the UNFCCC and its Kyoto Protocol, stressing the importance of addressing development issues in the ongoing negotiating process through enhanced consultations, with the ultimate objective of mobilizing political support for stronger action on climate change.

At the level of the EC's development cooperation with ACP States, ministers agreed to undertake meaningful cooperation activities through multilateral and bilateral assistance channels, in order to help ACP countries adapt to climate change, and integrate climate change and disaster preparedness considerations into ACP country and regional development and poverty reduction strategies.

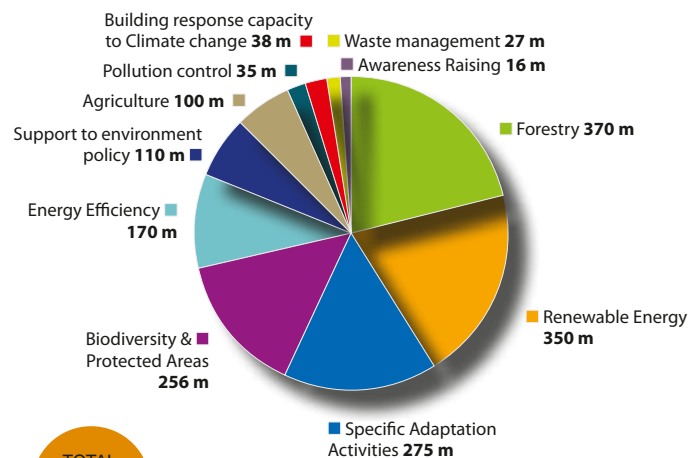
7 http://ec.europa.eu/development/geographical/regionscountries_en.cfm

1.2. Translating political dialogue into action

The efforts at the political level are reflected in the EC's development cooperation with third countries. An analysis of the EC portfolio in 2008, shows that commitments for climate related interventions have increased since 2002, totalling over €1.7 billion. This demonstrates that a significant amount of climate change integration has already taken place in development cooperation, and will continue to be prioritised in the years to come, to ensure that EC development cooperation becomes increasingly sustainable.

Many projects and programmes dealing with water, agriculture, forests, fisheries, rural development, health, the promotion of energy efficiency and renewable energies and the conservation of natural areas are relevant for climate change. It is mainly in these sectors in which EC cooperation has been promoting adaptation and mitigation synergies, alongside poverty alleviation.

Commitments in € on Climate Change per main sectors 2002-2008





Alongside actions to support mitigation and adaptation, the EC is promoting mainstreaming climate change concerns into development strategies. Integration for development has to happen in two complementary ways: on the one hand, efforts to pursue this goal should start from within EC development cooperation activities, to ensure supported activities pay due consideration to climate change and environmental sustainability issues as a key horizontal dimension in all sensitive sectors. On the other hand, there is the need to advance with the integration of these aspects in partners' policies and strategies, from the poverty reduction strategy papers to sectoral policies. The EC is promoting a bottom-up approach, which calls for the gradual integration of adaptation into national development strategies and poverty eradication plans. Integration is crucial because adaptation efforts concern sectors which are usually at the core of each country's development.

SWITCH Programme (Asia):

With a budget of € 90 million, the SWITCH-Asia programme offers co-funding to partnerships of SME supporting organisations and networks boosting the use of information, knowledge, training, awareness, technologies and processes that cut down on pollution during production. The programme also addresses consumers and the changes in behaviour that can minimise waste and stimulate the production of cleaner products.

A practical example of the programme is the "**Sustainable Public Procurement in Urban Administrations in China**" (SuPP-Urb) project which, started in 2008, aims at implementing and mainstreaming sustainable public procurement, at mitigating climate change and reducing environmental degradation, helping to achieve the environmental target of the 11th five-year plan in China.

Working in close cooperation with the Public Procurement Centres and research organisations, SuPP-Urb China will lead to up to 18 million kWh of energy savings, up to 49 million tons of wastewater reduction per year, and up to 8 million tons of solid waste reduction per year.

Despite its recent launch, the project has already shown its first successes, with an increased awareness from institutions and Procurement Centres of environmental challenges, and their interest in involving external experts in evaluation processes.

For more information:

http://ec.europa.eu/europeaid/where/asia/regional-cooperation/environment/switch_en.htm



The June 2009 Council Conclusions on the integration of environment in development cooperation acknowledge that sustainable management of natural resources and adaptation to climate change, as well as energy saving and promotion of renewable energy, are fundamental to ensure sustainable urban and rural development and progress in poverty eradication, in particular the achievement of the Millennium Development Goals (MDGs). The Council emphasises the importance of supporting the integration of environment, both as a sector and as a cross-cutting policy issue, in national development strategies, in particular Poverty Reduction Strategies and in sector/programme/project planning and implementation, notably in EU supported programmes. Furthermore, in line with the Paris Declaration and Accra Agenda for Action, it flags the importance of coordinating approaches towards environmental integration and of promoting low carbon development, as a way to address climate change and as a potential opportunity for development.

To enhance this process of integration, continuous efforts are underway and will be stepped up in the near future, supporting the development of human and institutional, as well as regulatory, capacities of developing countries to deal with climate change.

The following sections will look in more detail at specific adaptation and mitigation activities financed by the EC.

Mainstreaming in practice: building climate resilience in EC Development Cooperation

The European Commission has already put in place an approach to promote integration of environment as a critical cross-cutting theme under main areas of cooperation and is building upon this approach to strengthen consideration of climate change concerns:

- The EC is currently revising its environmental integration strategy in order to define an EU wide strategy which also adequately covers climate change;
- In order to “learn by doing”, the EC has carried out a “country portfolio screening” for climate risks in a number of pilot countries;
- Tools and methods for environmental integration in programmes and projects are also being revised to give more emphasis to climate change-related aspects, particularly in the programming, identification and formulation of activities. Training seminars delivered at Headquarters and EC delegations will reflect this new approach;
- A majority of European Commission partner countries now have Country Environment Profiles (CEPs) in place; and there is increasing use of Strategic Environment Assessments (SEAs) in relation to programmes in environmentally sensitive sectors. Some environmental profiles are being updated in order to adequately take into account climate change vulnerabilities and impacts. This is planned to be generalised in relation to the preparation of the new programming cycle starting in 2012;
- The EC is an active member of the OECD task team on integration of climate change adaptation into development cooperation, as well as of related task teams working on the environment and SEAs more broadly. The European Commission is also participating in other “best practice circles”, such as the Vulnerability and Adaptation Resource Group, in order to identify joint methods and practices.



Adapting to climate change: supporting our partners in meeting the challenge



2.1. Supporting adaptation in the field

Considering the higher vulnerability of poor people in developing countries, adaptation strategies are needed to strengthen their resilience to the impacts of climate change. International support for adaptation is essential for reasons of fairness, poverty reduction and global responsibility.

“ If people are well educated, have access to good basic services and can fall back on effective response systems in times of crisis they will be much less vulnerable to climate change. This is why I describe climate change adaptation as essentially development in a hostile climate” **Lord Nicolas Stern**

Shaping climate-resilient development. A framework for decision making. *A report of the Economics of Climate Adaptation Working Group, 2009⁸*

Adaptation is different from mitigation in as far as the direct benefits of adaptation actions are local or regional, while the benefits of mitigation actions are also shared globally. To ensure that adaptation efforts are effective, they should target firstly the most affected populations, and must be integrated across all areas of development cooperation in order to ensure that development does not lead to mal-adaptation.

Specific actions addressing the most immediate and urgent needs of vulnerable populations, for instance as identified in the National Adaptation Programmes of Action (NAPAs), will continue to be financially supported, both through contributions to the Least Developed Countries Fund and bilateral support. The EU also strongly backs the 2005-2010 UNFCCC Nairobi Work Programme on adaptation and welcomes the operationalisation of the Kyoto Protocol's Adaptation Fund. The Nairobi Work Programme provides an opportunity to strengthen understanding of the impacts of climate change and of countries' vulnerabilities, adaptation needs and responses. Beyond the multilateral framework, the EU is also

⁸ http://www.mckinsey.com/clientservice/Social_Sector/our_practices/Economic_Development/Knowledge_Highlights/Economics_of_climate_adaptation.aspx?sc_lang=en



supporting a range of specific bilateral or regional projects to help adaptation and capacity-building efforts by developing countries.

While NAPAs need to be implemented urgently and require increased donor support, it is essential to ensure in the medium and long term a move beyond NAPAs and towards a programmatic approach to adaptation. In this respect the comprehensive work undertaken by several LDCs to shape long-term national adaptation strategies beyond their NAPAs is extremely valuable and should be capitalised upon through specific initiatives such as those promoted by the EU's GCCA . These initiatives, while building essential experience, should gradually lead to effective integration of adaptation into a country's broad development strategy.

Adapting to climate change will entail adjustments and changes at every level – from local, to national and international. In many instances, regional coordination will provide great opportunities for dealing with the climate change response, as many countries may face similar challenges as those of their neighbours. Regional organisations can therefore play an important role in analysing lessons learned, exchanging experiences, ensure diffusion of information on best practices and develop regional response strategies and tools. At the same time, communities must build their resilience, including adopting appropriate technologies while making the most of traditional knowledge, and diversifying their livelihoods to cope with current and future climate stress. Local coping strategies and traditional knowledge needs to be used in synergy with national interventions. Local authorities know their community best and should be given increasing responsibility both for identifying groups at risk, and for supporting them in their efforts to increase resilience.

The Climate Change Capacity Development Project – C3D

Launched in 2003, C3D is helping developing countries develop measures and strategies to respond to the causes and impacts of climate change, particularly those that affect the poorest and most vulnerable.

The project has created an innovative South-South training and capacity-building partnership between institutes in Senegal, South Africa and Sri Lanka that are focusing, respectively, on risk management, vulnerability and adaptation, greenhouse gas mitigation, and climate change and sustainable development. Each trains the others as well as local and regional stakeholders.

The project also supports research as an important tool to address the mitigation, adaptation and cross-cutting issues.

Co-financed by the EC, IrishAid, DANIDA and the Swiss Federal Office for the Environment, C3D was managed by the UN Institute for Training and Research. In 2009, a follow up project was agreed, C3D+, which will also stimulate synergies between various EC funded projects related to climate change.

For more information: <http://www.c3d-unitar.org/>

2.2. Making the link: climate change adaptation and disaster risk reduction

Hydrometeorological hazards such as floods, droughts and tropical cyclones afflict many regions of the world, but their impact in terms of lives lost and livelihoods disrupted tends to fall most heavily on the poor in developing countries. Climate change threatens to heighten these impacts in many areas, by increasing the frequency and/or intensity of extreme events. The result in the decades to come may be an increase in the global burden of climate and weather-related disasters – events that can threaten the sustainability of development processes and undermine progress toward poverty reduction.

Disaster Risk Reduction (DRR) is an essential part of successful adaptation to climate change. Most vulnerable developing countries and societies should be supported in reducing disaster



risk through focussed action on disaster prevention, mitigation and preparedness. The 2009 EU Strategy on DRR in developing countries responds to a real and urgent need – vital for sustainable poverty reduction. Effective DRR reduces the risk of disaster, allowing to decrease the loss of life and property and the costs of humanitarian aid. The EU Strategy aims at integrating DRR within development cooperation efforts, recognising it as a key element to fight poverty across the globe, and for the achievement of the Millennium Development Goals. The Strategy, moreover, highlights the need to inter-link DRR and climate change adaptation, in line with the 2007 Bali Action Plan⁹ that identifies disaster reduction strategies as a means to enhance action on adaptation. Concrete implementation activities of the DRR EU Strategy are currently being designed bearing in mind this imperative.

In the DRR context, the European Commission has signed an agreement with the African, Caribbean and Pacific (ACP) group of developing countries to establish an EC-ACP Natural Disaster Facility, which will enhance the capacity of regional ACP bodies in the areas of disaster prevention and preparedness.

EU humanitarian aid and civil protection assistance

The EU is a major provider of humanitarian aid to help developing countries prepare for and cope with disasters, including those linked to extreme weather and climate change. In 2006, the European Commission spent €671 million providing humanitarian aid around the globe.

Besides disaster relief, the EU's humanitarian aid effort includes the DIPECHO disaster preparedness programme to help the most vulnerable populations in disaster-prone regions prepare for natural catastrophes including cyclones, storms and floods. Since 1998 over €150 million has been invested through DIPECHO in disaster preparedness in South and South-East Asia, Central Asia, Central and South America and the Caribbean.

For more information:
http://ec.europa.eu/echo/aid/dipecho_en.htm

Bangladesh:

In Bangladesh, the EC is committed to supporting the government's efforts to reduce the vulnerability of its population to climate change impacts. Comprehensive disaster risk management is indeed one of the pillars of the government's Climate Change Strategy and Action Plan (BCCSAP). The objective is to strengthen the capacity of institutions and the population, to deal with the increasingly frequent and severe natural catastrophes that are likely to occur as a result of climate change. Activities will build and extend Bangladesh's capacities in this area, and include:

- Strengthen governments, civil society and communities' capacity to manage natural disasters and ensure that appropriate policies, laws, and regulations are in place;
- Strengthen community-based adaptation programmes and establish them in each of the disaster prone parts of the country;
- Strengthen Bangladesh's cyclone, storm surge and flood early warning systems to enable more accurate short, medium and long term forecasts.

At the same time, the EC is co-financing the Comprehensive Disaster Management Programme (CDMP), which contributes significantly to Disaster Risk Reduction, a very important pillar in adapting to the expected impacts of climate change. A number of ongoing smaller EC-financed projects focus on DRR at community level. The EC is co-financing a number of ongoing large actions in the area of food security in Bangladesh. These actions systematically integrate climate change impact considerations in relevant activities.

⁹ Decision -/CP.13.
http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf



The path to low carbon growth



3.1. Stimulating clean development through emissions trading

The EU's strong support for the Kyoto Protocol's three flexible mechanisms – international emissions trading, the Clean Development Mechanism (CDM) and Joint Implementation (JI) – is helping developing countries move towards more sustainable development, by promoting projects that use clean technologies to reduce greenhouse gas emissions.

Emission-saving projects located in developing countries are carried out under the CDM while those in transition countries are covered by JI. CDM and JI projects promote sustainable development by transferring environmentally sound technologies to the host nation. The projects yield emission reduction credits, which can be bought by governments or companies in industrialised countries to help meet their emission targets.

Investment in CDM and JI projects is spurred by the EU Emissions Trading Scheme (EU ETS), which caps overall CO₂ emissions from some 10500 large emitters in energy-intensive industrial sectors and power generation in the EU. The scheme, launched in January 2005, is the cornerstone of the EU's strategy for cutting greenhouse gas emissions cost-effectively and meeting its Kyoto targets. It has rapidly become the driving force behind the expansion of the global carbon market.

For the period between 2008 and 2012 – the Protocol's first commitment period – companies participating in the EU ETS are able to buy emission credits from CDM and JI projects equivalent to 1.38 billion tonnes of CO₂. The inclusion in the EU ETS of the aviation sector from 2012 will further increase the demand for credits from developing countries.

Several EU Member States have set up programmes to buy emission reduction credits generated by CDM and JI projects, either directly or through government-financed 'carbon funds', to help them meet their Kyoto targets more cost-effectively. During the first commitment period, EU governments plan to buy CDM and JI credits equivalent to around 550 million tonnes of CO₂, and have budgeted €2.9 billion for these purchases.

This combined demand from the private and public sectors means that the EU will be the main buyer of CDM credits between 2008 and 2012.



The Haryana Community Forest Project (India)

The Haryana Community Forestry Project (HCFP), co-funded by the Government of Haryana State in India and the European Commission, was implemented in 338 villages in 11 districts of Haryana with the objective of conserving and rejuvenating natural resources, mainly through forestry development, with the active participation of communities, especially women. A number of participatory appraisal exercises with stakeholder farmers were carried out, by-laws for a farmers' society to implement the project were framed and the society was registered.

Within the broader framework of the HCFP, an afforestation area of 370 hectares of sand dunes belonging to 227 farmers in eight villages in the Sirsa district has been selected for a carbon trading project within the Kyoto Protocol Clean Development Mechanism (CDM), under the United Nations Framework Convention on Climate Change (UNFCCC). Validation of the proposed project activity by a company accredited by UNFCCC was carried out through site inspection in April 2008 and the proposed CDM project was approved by the UNFCCC CDM Executive Board on the 23 March 2009. This CDM pilot project is the first small scale afforestation project in the world to get certified by the Clean Development Mechanism.

For more information: <http://hcfp.gov.in/>

The EU sees an enlarged and reformed international carbon market, with linked-up domestic emission trading systems at its heart, as an essential tool for achieving, at least cost, the deep reductions in global greenhouse gas emissions that are needed.

Under a post-2012 global climate agreement, the EU wants the CDM reformed to improve its effectiveness and environmental integrity and to broaden the participation of developing countries, particularly the least developed countries. Indeed, the CDM has a high potential to contribute to sustainable development, by channelling private investments into development activities with economic, social, and environmental benefits. Unfortunately, investments have tended to flow outside LDCs, where CDM

activities provide higher returns. To ensure that the CDM positively contributes to sustainable development and to global emission reductions, strengthening the participation of the LDCs is thus crucial, and additional assistance is needed to further enhance the capacity of developing countries to participate in the carbon market and its mechanisms.

The EU also proposes integrating economically more advanced developing countries gradually into the international carbon market, through the introduction of sectoral crediting and trading mechanisms in place of the CDM for their most internationally competitive sectors.

3.2. Promoting the transfer of low carbon technologies

A major boost must be given to research, development and demonstrating low-carbon and adaptation technologies in all economic sectors and activities. International cooperation, on research or the setting of international standards, is vital to stimulate the global development, commercialisation, deployment and access to low carbon technologies. International public funding required for capacity building and cooperation for research and technology demonstration has been estimated at an additional € 2–6 billion in 2020⁽¹⁰⁾. Public finance in the short and medium term and beyond should also fund, in addition to urgent adaptation needs, capacity building and technology research, development and demonstration. It is also crucial that public funds help to leverage private sector investment, e.g. by covering the financing needs during early uptake of new technologies.

To accelerate the development and kick-start deployment of strategically important low-carbon technologies, the EU is implementing the European Strategic Energy Technology Plan (SET-Plan). For developing and emerging economies, the European Community interest lies in helping those countries develop and grow in a more sustainable manner, while building new market opportunities for EU industry and ensuring effective collaboration in accessing and developing resources. Options for

¹⁰ COM(2009) 475/3, http://ec.europa.eu/environment/climat/pdf/future_action/com_2009_475.pdf



further engaging and cooperating with such countries include: networking energy technology centres; setting up large-scale demonstration projects on technologies with the highest potential in those countries; increasing the use of innovative financing mechanisms, such as the Global Energy Efficiency and Renewable Energy Fund (GEEREF); reinforcing the CDM in Least Developed Countries and the use of sectoral crediting and trading mechanisms for the more advanced developing countries.

Research, Development and Innovation (RDI): new strategy for Egypt

In the framework of the EU-Egypt Scientific Cooperation Agreement, signed in 2005, this programme promotes the integration of the concepts of innovation and technology transfer within the strategy for the development of Egyptian enterprises. The RDI Programme financed a series of smaller projects focusing on the inclusion of new and environmentally friendly technologies, such as:

- The development of an innovative solar wind system integrated with high performance multi stage flash system using salts precipitator and nano-filtration for feed water pre treatment, brine crystallizer for salts recovery and cooling tower;
- The development of a manufacturing industry for wind turbine blades with innovative material designs to produce clean energy and introduce innovations for efficient operation;
- The development of solar absorber surfaces for high efficiency solar collectors to benefit from solar radiation and enhance the scientific knowledge in the fields of selective coating and solar conversion systems;
- The design and construction of prototypes of solar powered electric vehicles for passenger and goods transportation;
- The design and manufacturing of desalination units with the water storages and solar-thermal roof.

3.3. The role of clean energy

Ensuring people in developing countries obtain access to modern and affordable energy services is a prerequisite for achieving the Millennium Development Goals, and in particular for eradicating poverty. The EU's framework for dialogue and partnerships with developing countries to meet this challenge is the EU Energy Initiative for Poverty Eradication and Sustainable Development (EUEI), launched at the 2002 World Summit for Sustainable Development (WSSD) in Johannesburg.

The EUEI seeks to help end the limited access to energy services and heavy reliance on traditional biomass that are hallmarks of poverty in developing countries. Currently, 1.6 billion people do not have access to electricity, and 2.4 billion people rely on traditional biomass – wood, agricultural residues and dung – for cooking and heating. These fuels cause harmful indoor air pollution that leads to chronic health problems among women and children.

The EUEI is a joint commitment by the EU Member States and the European Commission to support improved access to sustainable energy services in developing countries. It is also a catalyst for action. Through the Initiative, the EU is working with developing countries to create the necessary conditions in the energy sector to achieve their national economic, social and environmental objectives. This is being done in particular by maximising energy efficiency, including, and increasing the use of renewable energy. In this way the Initiative is also contributing to mitigating climate change.

Activities implemented under the EUEI are driven by the needs and priorities of the participating developing countries. Their ownership of activities is a key feature. Official Development Assistance (ODA) provides a basic funding framework for the Initiative but the aim is also to attract considerable funding from private resources for further investment.



The Energy Facility:

The ACP-EU Energy Facility aims to alleviate poverty by incrementing access to adequate, affordable and sustainable energy services to the poor in economically and socially disadvantaged areas.

The creation of the first Energy Facility was proposed in 2004 with a total budget of €220 m, with three specific objectives:

- Improved access to modern energy services for poor rural people, with priority for the unserved population living in scattered settlements, villages, rural towns, peri-urban areas and remote islands, using the grant funds to leverage additional investment or scale up successful programs;
- Improved governance and management in the energy sector by strengthening poverty related policy making in the energy sector and across sectors, the institutional and legal framework and the capacity of key stakeholders.
- Facilitation of future large scale investment programs in cross-border interconnections, grid extensions and rural distribution.

For the period 2009–2013, the European Union and the ACP States have agreed to establish a new Energy Facility under the 10th European Development Fund. This Facility will contribute to the objectives established within the Millennium Development Goals (MDGs), in terms of poverty alleviation and environment. Endowed with €200 million, it focuses on improving access to renewable energy in rural and peri-urban areas while fighting against climate change. Therefore, the new Energy Facility emphasizes the use of renewable energy sources and energy efficiency measures.

For more information:

<http://ec.europa.eu/europeaid/energy-facility>

The Global Energy Efficiency and Renewable Energy Fund (GEEREF)

Global Energy Efficiency and Renewable Energy Fund (GEEREF) is an innovative Public Private Partnership initiated by the European Commission and managed by the European Investment Fund (EIF) to transfer clean and renewable energy technologies to developing countries. Through its investments in Private Equity funds, GEEREF finances a broad mix of energy efficiency and renewable energy projects and technologies, such as small hydropower, biomass, wind farms as well as solar power technologies. Not only should investments bring almost 1 gigawatt of clean energy capacity to recipient countries, providing sustainable energy services to 3 million people and saving up to 2 million tonnes of carbon dioxide emissions, they will also enable the transfer of low carbon technologies in targeted regions. This makes GEEREF an innovative and groundbreaking financial instrument for sustainable development that has already commenced investments in India, Nepal, Bangladesh, the Philippines and South Africa. The EC, Germany and Norway are GEEREF's first investors.



Pursuing multiple goals: mitigating while helping to adapt



4.1. Strengthening the knowledge base: assisting developing countries through climate research

Enough evidence has been gathered to justify climate policy action, but further knowledge is needed to better understand the climate system, evaluate the impacts of climate change, and identify and assess options for mitigation and adaptation. The EU's 7th Framework Programme for research and technological development, which runs from 2007 to 2013, provides a key framework for international collaborative research in this field. The programme has a strong international dimension as it is open to cooperation with research institutions in third countries and facilitates collaboration with researchers from developing countries who participate directly in a range of EU projects, many of them focusing on climate-relevant issues such as food security, health and ecosystem management.

Numerous projects carried out under the EU's RTD programmes concern global or regional climate change questions of relevance to developing countries. The results are also an important contribution to the Intergovernmental Panel on Climate Change's (IPCC) work on assessing climate change, its potential impacts and options for adaptation and mitigation.

On the following page are a selection of examples⁽¹¹⁾ of climate-relevant research projects funded by the EU that involve and directly benefit developing countries in different areas of the world:

11 Detailed information on the European Commission research activities in the field of Climate Change can be found at: http://ec.europa.eu/research/environment/index_en.cfm?pg=climate



Africa

The **CarboAfrica** project focused on the quantification and prediction of the cycle of carbon and other greenhouse gases in sub-Saharan Africa, in order to evaluate the region's potential as a global carbon 'sink'. It provides a better understanding of photosynthesis and respiration of African ecosystems, which are subject to regular modification due to continual changes in land-use. The three-year project includes the following countries: Benin, Botswana, Burkina Faso, Congo, Gabon, Ghana, Mali, Niger, South Africa, Sudan and Zambia.

The **AMMA (African Monsoon Multidisciplinary Analysis)** project aims to improve predictions of the monsoon and its impacts, as well as forecasts of the influence of climate change on monsoon variability. The project is strengthening regional environmental monitoring systems, covering topics such as the water cycle, atmospheric dynamics, crop yields and human health. It involves partners in Benin, Burkina Faso, Ghana, Guinea, Mali, Niger and Senegal.

South America

The EU has contributed through **CLARIS** to build a Europe-South America climate research network. This was the goal of the **Europe-South America Network for Climate Change Assessment and Impact Studies**, established to promote common research strategies to monitor and predict climate change and its socio-economic impact across South America. A new project **CLARIS-LPB**, focusing on the "La Plata Basin", is being implemented. The project contributes to the development of adaptation strategies for sectors such as land use, agriculture, hydro-electric power generation, river transportation, and water resources. It involves institutions in Argentina, Brazil, Chile and Uruguay.

The **CENSOR (Climate variability and el Niño southern oscillation: implications for natural coastal resources and management)** project has the objective to enhance the detection, compilation and understanding of el Niño /la Nina in order to reduce their negative effects on coastal marine environments and resources, which have drastic implications for the ecology, socio-economy and infrastructure of the countries concerned. The project includes partners from Peru, Chile, and Argentina.

Asia

The **TOCSIN (Technology-Oriented Cooperation and Strategies in India and China)** project examines options for reducing greenhouse gas emissions in China and India, with a focus on key industries and technologies such as power generation, agriculture and transport. With the involvement of institutes in both countries, TOCSIN is also analysing the potential for enhancing technological cooperation between the EU and this region, for instance on clean coal technologies and on widening these two countries' participation in the Clean Development Mechanism.

The **NEWATER (New Approaches to Adaptive Water Management under Uncertainty)** project has focused on identifying key typical elements of the current water management systems and on the processes of transition of these elements to adaptive Integrated Water Resources Management. Sectoral integration including climate change adaptation strategies is an important part of the project. The project includes South Africa amongst its partners.

The **POEM (Policy Options to Engage Asian economies in a post-Kyoto regime)** project is applying an integrated modelling framework to explore possible pathways for China and India to contribute to international climate initiatives without compromising their national development priorities. One of the key objectives of the project is the identification of international climate policies for future commitments and participation of emerging economies.



4.2. Promoting sustainable forestry

Forests play a crucial role in regulating the global climate, while also being a vital resource for many developing countries.

They are important on a global scale for the biodiversity they host (70% of all the world's biodiversity is found in forests, a large part of it yet to be known); the valuable timber they produce; the livelihood they provide to local poor people in terms of food, fuel, medicines, etc. (over 90% of the 1.4 billion people living in extreme poverty depend on forests for some part of their livelihoods).

Forests help prevent climate change by acting as 'sinks' that absorb carbon dioxide (CO₂), but at the same time deforestation and land use change are responsible for some 20% of global CO₂ emissions – the second largest source after the burning of fossil fuels, and more than the combined emissions from all forms of transport.

Moreover, forests facilitate adaptation to the effects of climate change: healthy natural forests as well as plantations or naturally regenerated forests protect watersheds against climate-change induced drought, floods or landslides, and they can limit the desertification process. Agroforests integrate food and wood production and supply a range of important environmental, economic and social services, that improve local communities' capacity to cope with adverse climatic events. Mangroves can protect coastlines against the effects of heavy storms and rising sea level, thus playing an important role in disaster risk reduction.

Yet, the health forests can also be damaged by climate change, which has an impact on their ecological functions and reduces their economic productivity.

The EU strongly supports and is actively contributing to negotiations under the UNFCCC on actions to reduce emissions from deforestation and forest degradation (REDD), as part of a global climate change regime for the period after 2012. Incentives need to be created to help developing countries reduce and then stop deforestation. The EU proposes that the future climate agreement should aim to reduce gross tropical deforestation to at least 50% of current levels by 2020 and halt the global loss of forest cover by 2030, at the latest.

Supporting developing countries in managing their forest resources sustainably, combating illegal logging and monitoring changes in their vegetation helps to mitigate climate change and is an important

aspect of EU development policy. Between 2002 and 2008, the EU has provided €370 m for sustainable forest management - €570 m if agroforestry and forest areas protection are taken into account.

The EU's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan represents the EU's answer to the problem of illegal logging and the trade of illegally logged timber. It aims to help build up the capacity of and emerging-market countries to control illegal logging, as well as addressing the trade in illegal timber products between these countries and the EU. FLEGT Voluntary Partnership Agreements have been agreed with Ghana and the Republic of the Congo and are under negotiation with Cameroon, the Central African Republic, Liberia, Indonesia and Malaysia. These agreements will help improve governance in the forest sector and ensure the legality of timber exports to the EU, in particular through a licensing scheme. In 2008, the European Commission proposed legislation requiring those selling timber or timber products in the EU to take measures to minimise the risk of illegal timber being used. The proposal is under discussion at EU level.

The TREES Project

Besides promoting the mitigation of greenhouse gas emissions through sustainable forest management, the EU is also supporting a number of adaptation-related forest projects in developing countries and the development of improved environmental data systems as a basis for more effective decision-making. As far back as 1991 the European Commission's Joint Research Centre (JRC) and the European Space Agency set up the **TREES** – Tropical Ecosystem Environment Observation by Satellite – project to monitor changes in forest cover in the tropics. The TREES project is oriented towards the study of tropical forest dynamics at regional to global scales using remote sensing techniques. The JRC is also providing technical support to a forest observatory for Central Africa – an initiative of multiple members of the Congo Basin Forests Partnership which aims to pool the knowledge and available data necessary to monitor the ecological, environmental, and social aspects of Central Africa's forests.

For more information:
<http://www.observatoire-comifac.net>



Support to the national strategy of forest conservation, management and of biodiversity

The main objective of the programme is the improvement the good economic governance of natural resources, the sustainable management of protected areas and the conservation of biodiversity in the Democratic Republic of the Congo (DRC).

The program comprises mainly two components: conservation and training. In the first component, the focus will be on four areas representative of the biodiversity of the country: the Virunga, the Garamba, the Salonga and the Upemba Parks. The second component will address the needs in terms of capacity building of the Ecole Régionale d'Aménagement intégré de Forêt et Terroirs Tropicaux and the Faculty of Science of the University of Kisangani.

Special attention will be given to the Virunga National park, which will benefit from one third of the total budget available for this programme. This park hosts the greatest number of mammals, birds and reptiles of the afro-mountain ecoregion and with its three species of apes, including the Mountain Gorilla, it has also a great tourist potential. The support to the Park will focus on:

- Improving the Park management quality, and its synergy with bordering protected areas;
- Strengthening the skills and abilities of the Park's staff;
- Building new or restructuring existing infrastructures and providing equipments to make the management of the park more operational;
- Protecting the most fragile resources and reinforcing the value of the ecological services Park offers to local populations, notably by promoting and disseminating alternative energy techniques to fuel wood;
- Developing the financial sustainability of the Park through tourism and mechanisms of sustainable finance.

Pioneering a new way to conserve rainforests: from illegal logging to good governance

Illegal logging is a multi-dimensional problem that requires simultaneous action across all three Priority Actions on Good Governance in Forests:

- Good practice in law enforcement;
- Effective and equitable arrangements for forest title, use and management, including greater transparency in forest land allocation;
- Increased local capacity to manage and utilise forests sustainably.

The project "Pioneering a new way to conserve rainforest: from illegal logging to good governance", funded in 2006, and with a budget of € 3.2m has worked in this direction, supporting the Indonesian Government on Ecosystem Restoration. The first ecosystem restoration concession was established in 2007 to be managed by the BirdLife Consortium. It responds to an urgent need to generate and share lessons on how to combine and sequence action on all three priorities above, and secure just and sustainable solutions to the problems of illegal logging.



4.3. Agriculture and rural development in the context of climate change

In many developing countries agriculture is a major economic sector, contributing to food security and growth and supporting the livelihoods of the rural population. However agriculture is particularly vulnerable to the impacts of climate change. Rises in temperature pose additional stresses on crop plants and animals, changes in precipitation regime lead to increased floods or drought, sea level rise and salinisation due to increased tidal surges will reduce the land suitable for agriculture. The FAO estimates that food production needs to increase by 70% by 2050 to meet growing population demands, it will be increasingly challenging to sustain progress towards the Millennium Development Goals in the face of climate change.

Developing countries suffer disproportionately from the impacts of climate change because temperature and precipitation regimes are often close to the threshold values beyond which crops fail or animals die. There is thus a clear need to focus donors' and developing countries' efforts on helping the poor to adapt. To reduce vulnerability to these potential impacts, a wide range of possible adaptation measures are available. While some of them, such as modifications in the range of crops to match changes in agro-climatic zones specifically address the effects of climate change, many potential adaptation measures constitute good practices that contribute to wider developmental and sustainability objectives.

At the same time, agriculture is also a significant source of greenhouse gas emissions, accounting for an estimated 14% of the global total. There is therefore a considerable mitigation potential in the agriculture sector, most of which is in developing countries (an estimated 70%). Such mitigation could be achieved often using available technologies at relatively low cost. Given a rational structure of incentives and sufficiently rigorous monitoring procedures, there is huge potential for developing win-win scenarios that both reduce net emissions and support sustainable development objectives for the poor.

TerrAfrica: desertification in the Sahel Region

Land degradation poses a serious threat to livelihoods and economic growth in sub-Saharan Africa. Climate change is expected to add stress on the land degradation process – whereas soils and natural resources are the basis of rural populations' resilience. Sustainable Land Management is therefore a priority for adaptation to climate change in Sub-Saharan Africa.

TerrAfrica is a collective and inclusive partnership, building on each partner's comparative advantage, aiming to address land degradation by scaling up harmonised support for effective and efficient country-driven Sustainable Land Management practices in Sub-Saharan African countries. TerrAfrica's partners include African governments and regional organisations, the UN Convention to Combat Desertification and several UN Agencies, as well as a wide range of civil society organisations, scientific institutions and donors, including the European Commission. Actions under the work program are organised around three mutually reinforcing Activity Lines – Coalition Building, Knowledge Management and Investments – which together aim to generate the coalitions, advocacy, 'know-how', policies and investment packages necessary for full and effective mainstreaming, up-scaling and financing of Sustainable Land Management.

For more information:
<http://www.terrafrica.org/>



Challenge Programme on Climate Change, Agriculture and Food

The Challenge Program on Climate Change, Agriculture and Food Security (CCAFS) – a partnership initiative involving CGIAR, the Earth System Science Partnership (ESSP) and their respective partners, aims at addressing the most pressing and complex challenges to food security in the 21st century. The goal of CCAFS is to investigate critical knowledge gaps on how to manage the trade-offs between food security, livelihood and environmental goals in a changing climate, to develop and evaluate alternative adaptation strategies and to assist policy makers, farmers and others to respond flexibly to a changing climate. CCAFS will address these goals by generating the knowledge base and toolsets to enable and assist farmers, policymakers, researchers and donors to successfully manage agricultural and food systems so as to strengthen food security, enhance rural livelihoods, and improve environmental sustainability in the context of the challenges arising from current climate variability and progressive climate change. CCAFS has a 10-year timeline: the first phase (years 1–5) will conduct the preparatory work, including detailed scoping,

the identification of stakeholder communities, and initial research on adaptation and mitigation pathways. The second phase (years 6–10) will include the undertaking of detailed analyses of adaptation and mitigation pathways, capacity building for undertaking trade-off analyses and identifying win-win situations; further research into additional and/or emerging issues, and enriching the dialogue with the policy community and non-research communities.

The research will produce international public goods that will help protect and enhance progress towards achieving sustainable food security and poverty reduction in developing countries, in the face of new and intensified challenges imposed by a changing climate. The three regions selected for initial research are the Indo-Gangetic Plains, and the East Africa and West Africa regions; others may be added as funding allows.

The EC is contributing to CCAFS with €6 million.

For more information:
<http://www.ccafs.cgiar.org/>



Examples from the ground



India

HighNoon – adaptation to changing water resources in Northern India with Himalayan glacier retreat and changing monsoon patterns.



Brazil

Mainstreaming Market Services, Certification and Codes-of-Conduct in Brazilian Forests and Fringe Areas.



Mali

Regional Solar programme: providing drinking water through solar energy.



Liberia and Sierra Leone

Across the river – a transboundary peace park for Liberia and Sierra Leone.



Worldwide

Advancing Capacity to Support Climate Change Adaptation (ACCCA).

Climate change research needs were discussed with the Indian authorities at the occasion of a workshop on EU-India cooperation, which took place in New Delhi on 8-9 February 2007. As a result, the 2nd FP7 call for proposal included a topic in the field of climate change research and glaciology, which concretised in a new RTD project called HighNoon. The project background is focused on the hydrological system of Northern India which is based on two main phenomena, the monsoon precipitation in summer and the growth and melt of the snow and ice cover in the Himalayas, also called the "Water Tower of Asia". However, climate change is expected to change these phenomena, and it will have a profound impact on snow cover, glacial retreat and its related hydrology, water resources and the agricultural economy of the Indian peninsula. It is a great challenge to integrate the spatial and temporal glacier retreat, snowmelt and changed monsoon patterns into weather prediction models under different climate scenarios. Furthermore, the output of these models will have an effect on the input of the hydrological models. Besides climate change, socio-economic development will also have an influence on the use of water resources, the agricultural economy and the adaptive capacity. In particular, the challenge will be to find appropriate adaptation strategies with stakeholders for each of the agriculture, energy, health and water supply sectors, by assessing the impact outputs of the hydrological and socio-economic models.



IN 1978



IN 2008

NAME OF ACTION

HighNoon – adaptation to changing water resources in Northern India with Himalayan glacier retreat and changing monsoon patterns.

COORDINATION

Alterra b.v, Wageningen - The Netherlands

DURATION

36 months

COVERAGE

Northern India

PARTNERS

- The Energy and Resources Institute, India
- Met Office, UK
- University of Salford, UK
- Indian Institute of Technology, Delhi, India
- University of Fribourg, Department of Geosciences, Switzerland
- Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. Germany
- Indian Institute of Technology, Kharagpur, India
- Nagoya University, Japan

PROJECT OBJECTIVE

The principal aim of the project is to assess the impact of Himalayan glacial retreat and possible changes of the Indian summer monsoon on the spatial and temporal distribution of water resources in Northern India, and to provide recommendations for appropriate and efficient response strategies that strengthen the cause for adaptation to hydrological extreme events.

MAIN ACHIEVEMENTS

- Assessment of impact of Himalayan Glacial retreat and changes to the Indian summer Monsoon;
- Recommendation for appropriate and efficient response strategies for adaptation;
- Improvement of climate forecast skills at regional level.

EU-INDIA COOPERATION

Indian authorities, TERI, WWF-India and close follow-up by DG RTD and DG RELEX

The inefficacy of the Government efforts to combat deforestation was bolstered by the political and macroeconomic conjuncture Brazil is currently facing. To effectively address the key factors that favour deforestation, it is necessary to strengthen economic activities compatible with natural forest cover. This can be achieved building market-driven conditionality on key economic activities, which would lead to forest conversion and squatter occupation.

Voices from the field

“ The project targeted explicitly the forest economy, in its multiple and broad dimensions. The size and type of investments needed to revert perverse incentives and promote local capacity were clearly demonstrated: there is still a long way to go! ”

Roberto Smeraldi

The people living in the Amazon forest, beneficiaries of the project, when asked about the environmental and social benefits of the project, said:

“ The relationship between the peasant and his property has changed - from cutting palm hearts or fuel wood, or even deforesting, he now produces more and better than before...”

“ Environmentally protected properties have products of better quality and this provides a price differential, principally for cacao jellies and processed products...”



NAME OF ACTION

Mainstreaming Market Services, Certification and Codes-of-Conduct in Brazilian Forests and Fringe Areas

COORDINATION

Friends of the Earth–Brazilian Amazonia

DURATION

2005–2009

COVERAGE

Brazil

PARTNERS

- Institute for Forest and Agricultural Management and Certification – IMAFLORA;
- Institute of Man and the Environment of Amazonia – IMAZON;
- Atlantic Rainforest Biosphere Reserve – RBMA.

PROJECT OBJECTIVE

The project aims to stimulate demand for sustainable and certified timber and non-timber forest products. Moreover, it also wished to enhance performance and access to markets by sustainable and certified small forest-based businesses and develop standards, codes of conduct and certification schemes to limit activities and add value to sustainable products.

MAIN ACHIEVEMENTS

During the implementation of the project, consumer recognition of the Forest Stewardship Council certification label increased from 0%-22% (2006–2009) and 84% of Brazilians interviewed demonstrated an interest to purchase environmentally certified farm/livestock products. Thanks to the project, over 50% of small and micro forest product enterprises registered an increase in gross returns for adopting social and environmental criteria in their production practices. 70% beneficiary enterprises in the Amazon region recorded improvements in the situation of land tenure and in access to credit, and a majority of these adopted environmental conservation practices. Around 3000 families were involved in 200 community and individual enterprises based on natural products. The project also allowed to certify over 2.4 million ha of forest for sustainable management, multiplying by almost ten times the amount of certified hectares.



Voices from the field

“Solar energy is available in the Sahel Region. Using it helps preserve the environment from GHG emissions and allows people living in rural areas to adapt to and mitigate the negative consequences of climate change on water supply.”

Permanent inter state committee on the fight against desertification in the Sahel – CILSS

“The "Programme Solaire" allowed us to have tap water. This helps us and frees us from getting water from the well, which is very tiring. Now it is enough to open the tap, and water arrives. It will allow us, women, to have more time and to be less tired by the "hunt for water". We can also save some money, as we do not need anymore petrol for the well pump to work or to have some money aside to mend the pump when it breaks.”

Group of women, beneficiaries of the project.



NAME OF ACTION

Regional Solar programme: providing drinking water through solar energy.

DURATION

2001–2010

COVERAGE

West Africa

PARTNERS

- Permanent inter state committee on the fight against desertification in the Sahel – CILSS;
- Governments of Burkina Faso, Cape Verde, Guinea Bissau;
- Mauritania, Senegal, Mali, Chad, Niger and Gambia.

This project offers the rural population of the Sahel Region a solution to mitigate climate change and adapt to its consequences. In a region like the Sahel where desertification, pollution and poverty are persistent, solar energy is a required response.

PROJECT OBJECTIVE

The overall objective of the project is to contribute to the improvement of living conditions in the rural and semi rural areas of West Africa.

More specifically the project aims at ensuring the supply of drinking water and at improving water use patterns among the citizens of the selected areas. The project also focuses on protecting the environment through clean energy, raising awareness and training private companies working in the energy sector.

MAIN ACHIEVEMENTS

Thanks to the project, 3 million people living in the Sahel Region now have access to water, through solar energy. During the past years, 1 000 solar installations have been built, together with almost 400 solar systems, bringing electricity to houses, schools and hospitals. The project has also strengthened the photovoltaic energy sector, creating 28 new industries and training almost 1 000 people.

Liberia and Sierra Leone

The Upper Guinea Forest is one of the world's priority areas for biodiversity conservation due to its high degree of species endemism, and its key ecological functions. Centuries of human activity have led to a loss of 70% of the original forest cover. The remaining 420,000 km² is highly fragmented, habitats are isolated and unique species threatened.

Global carbon markets offer an opportunity to avoid deforestation, and make carbon sequestration an economic alternative to degradation.

Voices from the field

“This is the best thing that is happening in our chiefdom and it will bring a lot of benefits to our children. It will also ensure security and stability in the two countries and continuous cooperation in cross border issues.”

Local town chief Brima Kpetema



NAME OF ACTION

Across the river – a transboundary peace park for Liberia and Sierra Leone

DURATION

2009–2013

COVERAGE

West Africa

PARTNERS

- SL Forestry Division;
- L Forest Development Authority;
- SL Conservation Society;
- L Society for the Conservation of Nature;
- BirdLife International;
- Royal Society for the Protection of Birds.

PROJECT OBJECTIVE

The main objective of the project is to protect and conserve forests and their biodiversity in threatened and cross border areas. The project, moreover, aims at capacity building of institutions and communities on forest reserves and on carbon credit benefit negotiations. The protection of forests is also achieved through their effective management by National institutions, with an ongoing collaboration of local communities and through the securing of global carbon storage benefits towards improved forest governance.

MAIN ACHIEVEMENTS

Thanks to the project, corridor areas have been established and managed. Forest governance has been strengthened, together with management capacity of the Government, CSOs and local communities to improve cross border conservation. Policies have been developed to ensure implementation of Forest Law Enforcement Governance and Trade Action Plan, and to enable an environment for cross-border conservation at local, national and regional levels. Thanks to the project, a trans-boundary Peace Park is being established and carbon trading mechanisms and options for sustainable financing are being investigated.

Worldwide

Voices from the field

“One of the core principles developed in the ACCCA project is that adaptation is a social and institutional process. This is now well established; techniques for supporting such learning-and-doing processes were instigated by project partners. It is exciting to see the results now: a much larger and more experienced community of practitioners, developing successful projects and working with stakeholders at all levels.”

Tom Downing, the leader on social science for adaptation

“Fisheries, subsistence agriculture and livestock keeping have been the major cash and food providing activities that have been affected by climate related changes. Historical decline of rainfall is the major climatic change (...). Communities are now highly exposed to food shortage. In [the] absence of proper adaptation strategies, communities have resorted to unsustainable livelihood activities which include hazardous fishing techniques, unhealthy private wells, and ecological destruction of wetlands by agricultural activities and indiscriminate cutting of useful fruit trees.”

Dr. Clavery Tungaraza

“Although I come from a community of “rainmakers” in Kenya, it was after attending the risk communication workshops organized by the pilot action that I was able to understand why our rainmakers have been unable to make rain as regularly as the community demanded because the climate is changing and the environmental signals [...] are changing in tandem, putting the rainmakers in a dilemma. Our only hope and prayer is that the Napier grass will have covered the irrigation channels before the onset of the rainy season, so that we can beat malaria.”

Dr. Clavery Tungaraza



NAME OF ACTION

Advancing Capacity to Support Climate Change Adaptation (ACCCA)

DURATION

2006–2009

COVERAGE

Worldwide

PARTNERS

- Climate System Analysis Group, UCT, Cape Town
- ENDA T M, Dakar;
- START International, Washington;
- Southeast Asia START Regional Centre, Bangkok;
- Stockholm Environment Institute, Oxford;
- Temperate East Asia START Regional Centre/ IAP, Beijing.

Climate changes are now recognized to have a significant impact on development efforts, and pose a notable threat to efforts directed to meet the growing needs of the most vulnerable. A key step in improving the way climate impacts are managed is to assess the extent and magnitude of future potential changes. A sound risk assessment is a fundamental first step in this process, ensuring climate change science is appropriately taken into account in decision-making. ACCA has supported 12 pilot actions with capacity development.

PROJECT OBJECTIVE

- Enhancing communication between vulnerable communities and policy makers. Increasing the relevance of information on climate risks in a broad multi-dimension context, influenced by social, economic, environmental and governance factors.
- Develop varied and flexible communication tools and methods that resonate with a broad range of stakeholders.

MAIN ACHIEVEMENTS

- Several tools and datasets, relevant guidance material were provided after recognizing that a major impediment to the use of this information was the lack of established methodologies to properly assess a community's risk.
- An improved use and interpretation of climate information produced rewarding effects on several levels in that community concerns were given voice through the multi-stakeholder dialogues with policymakers.



European Commission

Supporting a climate for change

The EU and developing countries working together

Luxembourg: Publications Office of the European Union

2009 – 32 p. – 19x27 cm

ISBN 978-92-79-14213-0

doi: 10.2773/82318

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