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Regional Gateway for Technology Transfer and Climate Change Action

REGATTA

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Summary Report Mitigation Sessions

Defining REGATTA's support in the area of climate change mitigation

Note from the editor:

This draft report has been compiled to capture the key information and main outputs of the mitigation sessions. Due to the sheer volume and scope of the rich and productive discussions that took place during the two days of the workshop, a selection had to be made and certain omissions were necessary to allow focusing follow-up efforts and limited resources on the very core issues identified during the event. Within this context, the REGATTA secretariat will be grateful for any observations, critiques and corrections relative to the selections and omissions made and edit this document accordingly to produce an agreed report reflecting the regional consensus to the greatest extent possible.

Introductory Session

The mitigation sessions of the 1st Regional REGATTA Roundtable started with introductory presentations on the implications of recent outcomes of UNFCCC COP16 regarding climate change mitigation in LAC. These were followed by presentations on UNEP's experience and support in the area of climate change networks and technology transfer. The introductory session ended with a number of presentations and group discussions on the regional and sub-regional mitigation opportunities, related gaps and needs that REGATTA could address to foster climate technology transfer.

Session M1: Post Cancun Context – CC Mitigation Support that can be provided through the REGATTA Climate Knowledge and Technology Centre

1.1 Climate Technology Centres - Conceptual background and key concepts for CC Mitigation

While Technology Transfer has always been part of the UNFCCC agenda, one of the major outcomes of the CoP16 negotiations in Cancun was the agreement for the institutionalization of a technology mechanism (TM). The Technology Mechanism aims to enhance action and cooperation for technology development and transfer, particularly to developing countries, in support of climate change mitigation and adaptation. The TM is expected to be fully operational in 2012. In order to facilitate the effective implementation of this mechanism, a Technology Executive Committee (TEC) and a Climate Technology Centre and Network (CTCN) will be established.

While many challenges still need to be addressed to render the TM and its related entities operative (i.e. functions, funding, institutional set-up and design still need to be agreed), the international community, with their agreement for the establishment of the TM (which includes a Climate Technology Centre and Network (CTCN) as its operational arm), have clearly recognized Climate technology centres and

associated networks as a key tool to accelerate the transition to low-carbon and climate-resilient development.

In many developing countries which are striving to further stimulate economic growth while slowing their GHG emission growth rates, clean energy technologies have an important role to play. Decoupling energy consumption from economic growth, and switching to clean energy technologies and cleaner energy sources currently constitute the bulk of climate change mitigation technology interventions in the region and globally. This trend might be explained by the following factors:

- The energy efficiency and renewable energy sectors already feature a wealth of technically and commercially proven technologies, methods and best practices that can be rapidly deployed and replicated;
- There are strong economic arguments for private sector participation and investment in climate change mitigation in the region's energy sector (e.g. potential production cost savings, seizing new market opportunities, reducing company CO2 footprint, etc.), however prevailing legal, regulatory and fiscal frameworks are not always suited to provide the necessary incentives and enabling environment;
- The related global mitigation potential is huge: by 2030, improving Energy Efficiency and Energy Conservation could save 7.1 gigatonnes of CO2 emissions, while deploying Clean energy sources would save about 6.6 gigatonnes (IEA, 2010).

In this specific area, Climate Change Technology Networks and related Centres can play important roles - assisting countries in developing related technology initiatives, and in preparing and implementing related Nationally Appropriate Mitigation Actions (NAMAs) by e.g.:

- Promoting cost-effective renewable energy technologies and energy efficiency improvements (e.g. by conducting resource assessments, feasibility assessments and market assessments);
- Providing tailored capacity building and technical assistance for designing, financing, implementing, operating and monitoring renewable energy and energy efficiency (RE/EE) measures;
- Supporting governments in designing and implementing technology collaboration programmes to phase out obsolete technologies;
- Promoting enabling policies for RE/EE technology deployment and monitoring and evaluation tools for measuring impacts of national RE/EE policies and regulations;
- Encouraging cross-sectorial dialogue and collaboration for the promotion of clean energy technologies;
- Establishing national, regional and global expert groups and Networks on clean energy technology transfer;

- Promoting private sector involvement and public-private partnerships for clean energy technology transfer;
- Sharing information, tools and best practices on clean energy technology transfer.

The REGATTA platform, sponsored by the Governments of Norway and Spain, supports the objectives of the Technology Mechanism and is currently UNEP's largest Climate Change Network covering 33 countries in addressing both mitigation and adaptation. The mitigation component is expected to have a strong focus on reducing current and future CO2 emissions through supporting action on energy conservation in view of the major opportunities and related socio-economic benefits these types of interventions represent. REGATTA's support in the area of climate change mitigation will be oriented towards highly focused country driven activities and sub-regional initiatives. REGATTA will also benefit from the outputs, experience and lessons from existing UNEP technology initiatives, networks and centres of excellence.

1.2 Lessons learnt from existing Networks and opportunities for exchange

1.2.1 The Southeast Asia Network of Climate Change Focal Points (SEAN-CC)

SEAN-CC (http://www.unep.org/climatechange/mitigation/sean-cc/) offers a wealth of experience and tested best practices for REGATTA's activities in the area of climate change mitigation. Since 2009 and working primarily through the UNFCCC National Climate Change Focal Points, SEAN-CC assists the ten member countries of the Association of Southeast Asian Nations in making sound policy, technology, and investment choices leading to a reduction in greenhouse gas emissions and related co-benefits, with a specific focus on energy efficiency and conservation (EE&C); as well as clean and renewable energy sources.

A Network Secretariat has been established in the UNEP Regional Office for Asia-Pacific in Bangkok, Thailand to provide day-to-day support for the implementation of the various Network activities at regional and national levels. It is supported technically and methodologically by dedicated staff at the UNEP Division of Technology, Industry and Economics (DTIE, Paris) which provide back stopping services to the SEAN-CC Secretariat, as well as a link between the Southeast Asia Network activities and the broader UNEP DTIE climate change programmes and projects, including similar networks in other regions of the world with which lessons and good practices are constantly shared.

The overall SEAN-CC priorities are jointly defined with the national climate change focal points during bi-annual Network meetings which are also the opportunity to review progress and assess the ongoing or completed Network activities. On the basis of the overall SEAN-CC priorities, the SEAN-CC Secretariat designs Network activities by responding to direct requests from the countries, and communications, country missions and bilateral meetings with national and regional partners and stakeholders. SEAN-CC activities cover technical assistance (including policy advice), capacity building, and knowledge generation and information sharing with a view to:

- Strengthen coordination and collaboration amongst decision makers for low carbon development.
- Address the capacity gaps of energy professionals in the region and support countries to strengthen energy institutions for designing, implementing and monitoring mitigation activities.
- Expedite development of good policies to accelerate the transfer of clean energy technologies.
- Engage the private sector in national and regional efforts for low carbon development.
- Improve the development of knowledge, disseminate best practices and foster interactions and exchange of experiences among climate change professionals in the region.

SEAN-CC activities cover the following areas:

- Sustainable energy, energy efficiency and energy conservation e.g. developing enabling policies, harmonized standards and regulations
- Low carbon technologies and technology transfer e.g. conducting market and feasibility assessments, designing sector specific technology transfer programs/initiatives (for the phase out of obsolete technologies and/or deployment of Environmentally Sound Technologies (ESTs)
- Energy management and Energy auditing e.g. developing trainings, energy management systems and accreditation schemes
- Carbon finance and funding mechanisms e.g. trainings on PoA and feasibility studies for PoAs
- Climate change negotiations, National communications and GHG reporting, analysis, measurement and verification e.g. trainings on specific tools, workshops to prepare countries to CoPs

While the LAC region's emissions are currently mainly related to land use practices and agriculture, it is expected that CO2 emissions from the energy, industry and transport sectors will increase drastically over the coming decade if LAC countries do not engage on a low carbon development path. There are thus good opportunities for replicating and tailoring the SEAN-CC model to LAC for REGATTA's mitigation component while enhancing the sectorial focus to include activities on land use and agriculture.

However, it will also be of crucial importance to allow for enough flexibility to reflect the significant sub-regional differences of the LAC region, in particular with regards to electricity production. While Mesoamerica's and the Caribbean's main energy sources for electricity production are fossil fuels, the South Cone and the Andean countries are mainly relying on hydropower for electricity generation. Hence, while a strong emphasis on clean energy would be recommendable for the Mesoamerican and Caribbean sub-regions, REGATTA should allow for a different sectorial focus in the Southern Cone.

1.2.2 IDB's knowledge networks as a tool for Technology Transfer in LAC

IDB designed a Regional Program for Renewable Energy and Energy Efficiency (RE & EE) Research and Innovation Networks in Latin-American and the Caribbean (LAC). The program aims to help fostering production and use of renewable energy in LAC and develop feasible and widely accepted energy efficiency models, by supporting R&D networks aiming to developing and transferring state of the art technology, adapted to the region, on a sustainable basis, considering environmental, economic and social aspects. This IDB program proposes the establishment of technology-based networks, which focus on removing barriers for deployment and market transformation. IDB established two of these

networks: “Redbiolac” which focuses on biogas production technologies (www.redBioLAC.org) and “Redgeolac” which focuses on geothermal energy technologies (www.redgeolac.org). As a next step, IDB is planning to set-up similar networks and web portals for solar energy technologies (Solar Water Heaters and photovoltaic panels), as well as marine and wind energy technologies. IDB’s technology specific networks present good opportunities for synergies, collaboration and partnerships with REGATTA.

1.3 Ongoing UNEP initiatives – Facilitation of Technology Transfer for Mitigation

With the support of GEF and other donors, UNEP has established a number of technology transfer initiatives fostering the deployment, dissemination of and investment in environmentally sound technologies (ESTs). These UNEP-led initiatives provide numerous services to developing countries ranging from setting-up knowledge networks and centres of excellence for specific technologies to direct technical support for developing targeted tools, partnerships and policies that facilitate technology transfer. UNEP’s technology transfer activities can be clustered in the following categories:

- Assessments to inform and accelerate EST transfer in countries;
- Market transformation and technology deployment initiatives creating the necessary enabling environment to bring identified technologies into the market;
- Fostering investment with innovative financing mechanisms to support the development and deployment of ESTs;
- Network and centres of excellence for knowledge sharing and capacity building.

1.3.1 Assessments to support low carbon and climate resilient development

UNEP provides countries with numerous assessment activities in different areas (e.g. targeted scientific assessments, policy assessments, capacity assessments…).

In the area of climate technology transfer, it is clear that a wide range of technologies are needed to tackle climate change, with the choice of the most adequate technology being dependent on local circumstances. Within this context, UNEP is currently supporting 36 countries though the GEF-supported Technology Needs Assessment (TNA) project (see http://uneprisoe.org/TNA/index.htm and http://climatetechwiki.org/). In the target countries, the TNA project aims to establish a National consensus on priority technologies and agreement on an action plan that will allow the accelerated deployment of technologies, techniques and methods to reduce energy consumption, replace fossil fuels with clean energy sources and develop ways to adapt to climate change for the most vulnerable countries. In addition to identifying technology priorities and identifying barriers, the TNA project supports countries to develop Technology Action Plans (TAP) specifying activities and enabling frameworks to overcome the barriers and facilitate the transfer, adoption, and diffusion of selected technologies. In LAC, the GEF-UNEP TNA project provides support to ten countries (Argentina, Costa Rica, Peru, Guatemala, Ecuador, El Salvador, Dominican Republic, Cuba, Bolivia and Colombia). REGATTA will disseminate the tools, outputs, lessons and experiences from the TNA project to the countries in LAC which are currently not engaged in the TNA project.

Another relevant UNEP climate change initiative in the area of assessments is the Multi Criteria Assessment for Climate project (www.MCA4climate.info) funded by the Government of Spain. In the framework of this initiative UNEP is developing a tool / methodological framework to support countries for climate policy planning taking into account non-monetary values, uncertainty, and the long-term dynamics of environmental, socio-economic and technological systems. This tools aims to help policy makers to identify low-cost and environmentally effective climate mitigation and adaptation policy choices. UNEP is currently looking for developing country governments wishing to pilot the methodology and Mexico is the first country that expressed interest in doing so. REGATTA will share results and lessons from the MCA4Climate piloting exercise and facilitate the participation of other LAC countries that would wish to pilot this methodology.

1.3.2 Market transformation and technology deployment

Many climate mitigation technologies - especially clean energy technologies reducing CO2 emissions - can make a difference now, and in many cases, are available now given the right conditions. In this context, market transformation initiatives are one of the most efficient tools to facilitate climate technology transfer and deployment. Such initiatives allow establishing institutional frameworks and policies that offer effective incentives to providers of both technology and capital to support global development and deployment of climate technologies, and thus facilitate private sector engagement in climate technology transfer actions.

UNEP implements a number of market transformation initiatives to accelerate the deployment of climate technologies such as the Global Market Transformation for Efficient Lighting or en.lighten project (http://www.enlighteninitiative.org) - a GEF Earth Fund initiative implemented by UNEP in partnership with Philips Lighting and OSRAM GmbH or the Global Solar Water Heating Market Transformation and Strengthening Initiative (http://www.solarthermalworld.org/) - a GEF supported initiative jointly Implemented with UNDP.

The en.lighten initiative has been established to promote, accelerate and coordinate global efforts to push for efficient lighting. It aims at reaching a global consensus to phase out inefficient lighting technologies (ILs) taking into consideration the full life cycle of the efficient lighting technologies available on the market. The project supports the promotion of harmonized quality & performance requirements, generates guidance for countries for phasing out ILs building on global best practices, assists countries to set up adapted policy and financing approaches and shares knowledge and expertise through its global network of stakeholders. While a number of LAC countries have taken steps in promoting efficient lighting technologies and some in actually phasing out ILs (i.e. Cuba), the en.lighten Country Lighting Assessments show the potential benefits in terms of electricity savings and CO2 mitigation that can be achieved regionally and in each country through phasing out ILs and introducing CFLs (see annex 1). In partnership with en.lighten, REGATTA will engage LAC countries for a regional phase-out of ILs.

The Global Solar Water Heating Market Transformation and Strengthening Initiative seeks to accelerate the commercialization and market transformation of solar water heating technology in residential and

public buildings and, where feasible, in the services, agricultural and industrial sectors. In Mexico and Chile UNDP implements country projects in the framework of this initiative. In addition, UNEP – in partnership with the International Copper Association (ICA) at the global level and OLADE for the LAC region - gathers and disseminates information about the current market situation and the institutional framework to promote solar panels in Argentina, Barbados, Brazil, Colombia, Nicaragua and Peru. In this regard, OLADE recently organized two online courses offered to public and private officials, university professors and students, regarding issues such as supply and demand, solar collector technology, policies, incentives, laws, technical barriers, technical standards and certification, and economic and environmental assessment of thermal solar panels.

1.3.3 Fostering investments

No technological solution to climate change will materialize without sufficient levels of investment capital and it is thus clear that innovative financing mechanisms are needed to foster investments for climate technology transfer. These mechanisms are needed as investments must support both the development of new, promising technologies, and the large-scale deployment of existing technologies, along with the related infrastructure needed to support them.

In this regard, UNEP is conducting some key initiatives such as the Seed Capital Assistance Facility (SCAF) (http://www.scaf-energy.org/) a project co-implemented by UNEP, AsDB and AfDB and funded by the GEF and the UN Foundation. SCAF aims at facilitating the investment in local sustainable energy enterprises in Asia and Africa. The project was designed to stimulate the creation and development of specialized funds, targeted to sustainable energy niches such as renewable energy (RE), energy efficiency (EE), and clean technology, collectively so called “clean energy,” where investment capital interest exists.

Another UNEP initiative worth mentioning in the area of financing for climate mitigation technology transfer is the African Rift Geothermal Development Facility (ARGeo) co-implemented by UNEP and the World Bank with funding from GEF. This project aims at promoting the commercial development of geothermal resources in six East African countries. UNEP provides up-stream technical assistance to the countries to identify the most promising geothermal sites and develop the enabling policy environment and the World Bank manages a Risk Mitigation Facility (RMF) covering the drilling failure risks (in relation to the high cost of a drilling campaign) with a view to attract investors/investments for developing the geothermal power plants.

1.3.4 Networks, centres of excellence and capacity building

UNEP’s technology initiatives generally include a knowledge management component supported by centres of excellence and networks. Apart from sharing experiences and best practices, and promoting cross-country collaboration and south-south cooperation, these networks and centres often also provide on-demand services such as the provision of tools, trainings, and policy advice. Recent examples of knowledge management platforms and centres of excellence are the following:

- The GEF TNA project offers a ClimateTechWiki which is a platform for a wide range of stakeholders in developed and developing countries who are involved in technology transfer and the wider context of low emission and low vulnerability development.
- A key component of the en.lighten initiative is the Centre of Excellence composed of top international experts and organizations from developing, emerging and developed countries.
- In the GEF Solar Water Market Transformation project, UNEP leads the development of a global solar water heating knowledge management repository with a primary objective to be the main reference website worldwide for solar thermal sector.
- In the framework of the GEF ARGeo project, UNEP also leads the related regional knowledge sharing and capacity building component which includes the creation of a regional network for promoting geothermal energy development.

REGATTA will thus benefit from the outputs, tools and lessons of UNEP's different climate mitigation initiatives, which cover all the key aspects of technology transfer. The above projects are merely examples of relevant UNEP initiatives. There is a much wider range of ongoing projects at a global level - such as UNEP's sustainable transport, buildings and CDM support initiatives.[1]

Session M2: Climate Change Mitigation in Latin America and the Caribbean – Overview of potential, opportunities and technologies in the region

Note: the below summary is based on presentations and discussions during Session M2

While non-energy sectors still have the highest GHG emissions in the region, the addition of new electricity generation capacity, energy access issues and the growth in energy demand offer a strong potential for deploying climate mitigation technologies such as bioenergy (e.g. biodigesters and biofuels), solar energy systems, wind energy, small hydro, geothermal, energy efficiency and demand-side management. While the suitability of these technologies strongly depends on local conditions, conducting in-depth national technology needs assessments can help countries prioritize mitigation sectors and identify the most adequate technologies to be deployed and promoted.

An increasing number of large non-OECD countries dominate global industrial energy use today. This is due to the dynamic and sustained economic growth they have experienced, which has not presented any major output shift towards the services sector, nor it has implemented energy efficiency measures such as the ones implemented by many developed countries following the past oil shocks. Thus, the industrial sector presents a wealth of opportunities for energy savings especially in the developing world as the wider adoption of Best Practice Technologies (BPT), such as the implementation of commercially proven renewable energy and energy efficiency applications, would enable significant reductions in energy use in the short term.

While there is a strong potential for acting on energy efficiency in the region, many barriers still have to be removed to create an adequate playing field for BPTs: Fuel subsidies which discourage companies

[1] for a complete picture see http://www.unep.org/climatechange/mitigation/

and individuals from saving energy; high import costs and limited availability of energy efficient technologies; lack of information on the benefits of energy efficiency, limited access to finance; lack of enabling policies and frameworks, etc. Growing international support aims to support LAC countries in their efforts to remove these barriers and progress towards a wide range of climate change mitigation measures. Within this context, the international climate change mitigation agenda presents a wealth of new resources (financial and technical) and opportunities with Low-Emission Development Strategies (LEDS) and Nationally Appropriate Mitigation Actions (NAMAs).

Session M4: Climate Change Mitigation in Latin America and the Caribbean – Progress and Key challenges to Date: Mitigation progress and challenges – presentations by subregions

Note: the below summary is based on presentations and discussions during Session M4

4.1 Andean countries (Bolivia, Colombia, Ecuador, Venezuela, Peru)

Climate Change is high on the political agendas of the Andean countries, and although priority is given to adaptation, many initiatives contributing to the mitigation of climate change are being planned and implemented as well. Some Andean countries are increasingly moving towards NAMAs and the development of Low Emission Development Strategies, partly as a reaction to the limitations of the Clean Development Mechanism (CDM). The main mitigation priorities in the region as manifested during the roundtable are transport, lighting, LEDS/NAMAs and REDD.

In the transport sector, most countries have initiated some pilot efforts and initiatives: Venezuela is expanding its railway system; Bolivia is converting vehicles to gas; Colombia has submitted one of the first programmatic CDM (pCDM) projects on public transport; and Peru has established a national system for the mandatory technical inspection of vehicles. However, Andean countries need more support to develop sustainable transport strategies and activities (need for information, best practices and lessons learnt; technical support and policy advice; capacity building for local expertise…).

In the lighting sector, both Bolivia and Colombia are implementing efficient lighting projects. Moreover, Colombia is currently establishing a local EE research network of Universities, and has managed to register 28 CDM projects in diverse sectors such as bio, wind and hydro energy, coal to biomass fuel switch, bio and landfill gas, and public transport. However, the untapped economic opportunities of Energy Efficiency remain tremendous throughout the sub-region and could benefit from more attention in most Andean countries. In this regard, Andean countries could take better advantage from information, best practices and lessons learnt in the area of energy efficiency; technical support and policy advice for energy efficiency regulations and standards and labels; and capacity building for local expertise, in particular on energy management systems.

In terms of LEDS and NAMAs, most Andean countries are taking initial steps e.g. Colombia developed its LEDS while progressing on developing NAMAs and on setting-up its MRV system; Bolivia has integrated mitigation the country's Five Year Development Plan and is developing Sectorial Climate Change indicators, conducting sectorial Climate Change investigations and TNA; Peru has developed its National

Mitigation Plan and a number of sectorial NAMAs; Ecuador is prioritizing sectors for its national mitigation plan; and Venezuela is moving towards an intersectorial approach to climate change. Hence LEDS and NAMAs are still very recent concepts and countries would benefit from mutual experience sharing, technical guidance and capacity building.

All Andean countries are engaged in REDD with a strong focus on reforestation and in terms of energy generation, all countries are giving strong emphasis on hydropower development.

4.2 Caribbean countries (Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Haiti, Jamaica, Saint Lucia, St Kitts and Nevis, Suriname, Trinidad and Tobago)

Mitigation is a key priority for all Caribbean countries with only Belize and Dominica putting more emphasis on adaptation. The highly fuel import dependent energy and transport sectors will be central to mitigation actions in the Caribbean, Hence, acting on the mitigation of climate change may very efficiently address other critical issues such as energy security and oil dependence. To reduce energy dependency, countries in the sub-region mainly focus on developing renewable energy but also initiated some actions on energy efficiency mainly targeting the related economic benefits.

On the demand side, the energy-intensive tourism industry, one of the key economic pillars of the subregion, might be one of the most significant opportunities for demand-side management, efficient appliances and small scale renewable energy technology. There is a strong political will in the sub-region to develop NAMAs (both RE and EE) on the tourism industry and the residential sector with a view to decouple growth from energy consumption.

Access to finance is seen as a key issue for the Caribbean countries and support is needed for developing financing schemes and national investment projects. In this regard, CDM is seen as a major funding opportunity (the sub-region has only 5 CDM projects to date) but there is a sustained need to strengthen capacities of the Designated National Authorities (DNAs) in order to develop pCDM initiatives. Moreover, the countries also need support for establishing enabling policy environments and legal frameworks as well as systems for monitoring and evaluating progress and impacts of the mitigation actions taken (i.e. MRV systems).

Most countries in the sub-region have made significant progress in defining their national climate change strategies, e.g. Surinam is in the process developing of its national CC strategy/action plan with the energy sector as key priority; and Trinidad and Tobago has developed its draft CC policy with mitigation, namely RE, EE, CCS, and transport being the main focus.

In terms of renewable energy deployment some countries have taken major steps, e.g. in St Kitts and Nevis, solar technologies are duty free; Jamaica is targeting 15% of renewable energy by 2015 and is quite advanced on wind energy; Granada and Dominica are quite advanced on hydropower (with 40% hydro in the Dominica's energy mix); and Barbados has established itself as sub-regional champion in the dissemination of Solar Water Heating systems (40% homes equipped). Haiti is currently exploring RE options looking at wind energy and waste management (biogas digesters).

In terms of energy efficiency, only a few countries have initiated significant actions, e.g. Cuba phased out inefficient light bulbs and supported St Kitts and Nevis to do the same. Cuba also promoted EE fridges.

In the area of transport, no significant steps have been taken by the Caribbean countries so far.

4.3 Mesoamerica & México (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama + Mexico)

For most countries in the sub-region, adaptation is the main priority, with mitigation however gradually gaining more importance. Reforestation, agriculture, energy and transport are generally seen as priority areas for mitigation. Countries mainly need support in terms capacity building, developing enabling policy environments; strengthening inter-sectorial approaches for tackling climate change, and access to finance.

Regarding access to finance for mitigation, countries in Mesoamerica initially saw CDM as a major opportunity for funding. But despite the registration of many CDM projects – mainly in the forestry sector - there has been very little success in the development of a significant market and actual carbon delivery. A common reason for the unsatisfactory development was that countries had engaged in the CDM while rules were not clear yet, transaction costs were very high and validation/registration processes were slow. As a result, while a number of countries still develop and implement a number of CDM projects, some countries have already started developing their own financial mechanisms for supporting climate change initiatives.

All countries are taking major steps in terms of climate change planning, e.g. Costa Rica envisages becoming the first carbon neutral country by 2021; Honduras and Guatemala have developed national CC plans/strategies.

In the area of renewable energies, most countries are implementing initiatives to increase renewable energy production and reduce carbon based energy supply.

Energy efficiency is seen as a key area for intervention and it offers very attractive economic opportunities for the private sector, but it still needs stronger political engagement and regulatory frameworks. Costa Rica is taking major steps in this area: a C-Neutral label was developed for companies and the country compiled national marginal abatement cost curves to identify key mitigation opportunities and related costs. Among other initiatives, we can also note Guatemala's green building initiative with support from IDB.

In the area of reforestation, REDD is a high mitigation priority especially for Honduras, Guatemala and Panama.

4.4 Southern Cone / Mercosur (Argentina, Brazil, Chile, Paraguay, Uruguay)

While adaptation to climate change is the sub-region's climate change priority, mitigation actions are also seen as very important both within the context of the sub-region's climate change as well as the

sustainable development agenda. Although land-use dominates the emissions of Brazil, the sub-region's emission profile is heavily dominated by the energy sector (49%) with 14% and 13% respectively resulting from domestic transport and electricity production[2]. According to Brazil's emission profile, agriculture accounts for the second largest share with a total of 38% of the sub-region's GHG emissions followed by emissions from land-use change and forestry (6.6%) and the water sector (3.5%).

With increasing weather and climate variability of hydropower and the growing share of power generation from fossil fuels throughout the sub-region, there is an increasing pressure to further diversify the energy mix in the sub-region and explore opportunities for the use of new clean energy sources such as small/run-of-river hydropower, wind, geothermal energy and biogas. Apart from a diversification of the energy matrix, governments are increasingly directing their efforts to reducing the carbon footprint of agricultural practices such as improved fertiliser use and reducing emissions from livestock production and manure. Finally, with Brazil's emission from land-use change and forestry (64%) outweighing any other emissions source in the Mercosur region (57%), and Argentina and Paraguay having recently joined UN-led initiatives, efforts to reduce emissions from deforestation and degradation of forests (REDD) have gained traction.

So in terms of mitigation, the priorities include Energy (by acting on transport, demand side management and Industries) but also agriculture, land use change, forestry and waste. Within this context, Southern Cone countries have requested support for the development of NAMAs including enabling policy environments (e.g. regulations for RE development, fiscal schemes for EE), access to finance and the strengthening of institutional capacities.

Session M5: Technologies for Climate Change Mitigation in Latin America and the Caribbean Defining priorities for REGATTA: Sub-regional working groups

Note: the below summary tables are based on presentations from the sub-regional working groups during Session M5

The participants in the working groups were encouraged to identify common sub-regional priorities. The following tables provide an overview of key priorities identified for every sub-region.

[2] Climate Analysis Indicators Tool (CAIT) Version 8.0. (2011)

Table 1: Summary of results from working group sessions: Caribbean and Mesoamerica + Mexico

Sub-region	***Priority sectors***	***Needs***	***Knowledge management priorities***	***REGATTA priorities for 2011***
Caribbean (Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Haiti, Jamaica, Saint Lucia, St. Kitts and Nevis, Suriname, Trinidad and Tobago)	1 Transport: identifying sustainable transport options *2* Energy: promoting energy efficiency and renewable energy	1 Capacity building and support for NAMAs, MRV and PoAs 2 Study on sustainable transport options for the Caribbean 3 Enabling policies and legal frameworks for Technology Transfer	1 Database on projects including policy/legislation (TT) in priority sectors to foster South-South cooperation 2 Information on access to finance 3 Expert roster	1 Setting-up the knowledge platform
Mesoamerica and Mexico (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama + Mexico)	1 Energy: promoting energy efficiency *2* Agriculture: support to agricultural industry	1 Support on carbon markets 2 Capacity building for NAMAs and EE 3 Support to Meso-american integration and development of joint projects (energy interconnection, biofuels, energy access) 4 Promote stronger cross-cutting collaboration of all line ministries and involvement of key industries and private sector entities in low carbon development	1 Access to best practices and tools 2 Facilitating exchange of experience	1 Setting-up the knowledge platform 2 Support to establish baselines for energy efficiency and for agricultural industry sectors, 3 Strengthen the meso-america project in view to enhance the region's competitiveness. 4 Support for the development of domestic carbon markets

Table 2: Summary of results from working group sessions: Andean countries and South Cone

Note: Both South Cone and Andean countries working groups reiterated that their overall priority in the area of climate change is adaptation.

Sub-region	***Priority sectors***	***Needs***	***Knowledge management priorities***	***REGATTA priorities for 2011***
Andean countries (Bolivia, Colombia, Ecuador, Venezuela + Peru not represented)	1 Agriculture and land use change: promoting agro-ecology techniques, valorisation of agricultural waste, and strengthening links between REDD and adaptation 2 Energy: energy efficiency in the industrial sector (with a focus on SMEs) 3 Transport: sustainable transport policies ***4*** Solid waste management	1 Capacity building for identifying and developing NAMAs 2 Integrating mitigation in all sectors/policies incl. sub-national level development plans 3 Information on technologies and best practices, standards (transfer of existing EE technologies in cement and steel industries) 4 Capacity building on RE/EE technologies and methodologies, and for the removal of market barriers 5 Support on TNA and TAPs 6 Tools to evaluate impacts of policy interventions, 7 Support for engaging carbon markets	1 Database on climate technologies for South-South cooperation 2 Information on best practices	1 Support the identification/design of NAMAs (incl. definition of NAMA, lessons learnt and sharing exp. on NAMAs) 2 Support the establishment of MRV systems incl. measurement and quantification of GHG emission reductions from policy interventions 3 Support for implementing TNA/TAPs
Southern Cone (Argentina, Chile, Paraguay, Uruguay + Brazil not represented)	1 Energy: promoting energy efficiency and renewable energy 2 Transport: identifying sustainable transport options 3 Agriculture: links with REDD	*1* Integrating mitigation in sub-national level development plans *2* Strengthening institutional capacity for mitigation *3* Enhancing access to finance and	1 Database on technologies for South-South cooperation 2 Information on best practices	

	and adaptation *4* REDD	cooperation with financial institutions 4 Capacity building for project development and fund mobilization 5 Analysis and quantification of carbon footprints of imports/exports to sensitize the private sector 6 Develop institutional and regulatory framework for local carbon markets 7 Support for small pilot projects		

From tables 1 and 2, it is clear that REGATTA's mitigation component should:

1. Provide support services to LAC countries in the following priority sectors:
    i. **Energy** with a focus on facilitating action on energy efficiency and renewable energy deployment
    ii. **Transport** with a focus on identifying and designing sustainable transport options and related policies
    iii. **Agriculture** with a focus on promoting agro-ecology techniques, valorising agricultural waste, and links with REDD and adaptation

2. In each of the above listed priority sectors, REGATTA's support services to LAC countries should have a special focus on the following areas:
    i. **NAMAs and MRV**: providing capacity building, tools and guidelines; supporting the identification and design of NAMAs and related M&E tools
    ii. **Access to finance, Carbon Markets and CDM**: providing support and capacity building for project development and fund mobilization; providing capacity building and facilitating the exchange of lessons and experiences on pCDM/PoAs
    iii. **Institutional strengthening, policy guidance / enabling environment for mitigation actions**: providing capacity building and support for the design of enabling policies and regulations for mitigation technology transfer (e.g. removing market barriers for priority EE/RE technologies…); promoting intersectorial coordination and engagement of all relevant sectors and actors in national low carbon development efforts; supporting the integration of CC mitigation in national, sectorial and local plans, programmes and strategies
    iv. **Facilitating exchange of experience and South-South cooperation**: facilitating the exchange of experience by documenting lessons learnt and best practices from mitigation initiatives with a specific attention to initiatives from the region; encourage South-South cooperation between LAC countries for low carbon development through supporting the development of cross-country projects

3. REGATTA's knowledge management platform should provide:
    i. A database on mitigation projects (including policy/legislation initiatives) in priority sectors to foster South-South cooperation
    ii. Information on mitigation technologies for South-South cooperation (facilitating access to databases on mitigation technologies)
    iii. Information on access to finance for mitigation in LAC
    iv. Regional mitigation expert roster
    v. Access to best practices and tools

On the basis of the above analysis of the summary tables and in line with the sub-regional requests for support on mitigation, UNEP developed an initial work plan for REGATTA's mitigation component presented in the following table.

Table 3: Initial work plan for REGATTA's mitigation component

Activities	Needs	Duration/timeframe
• REGATTA in-country missions to meet with relevant actors from key sectors (Energy, Transport, Agriculture) and further define national mitigation needs and priorities that REGATTA could help address Rationale: countries representatives clearly stated that REGATTA should visit the countries and meet relevant actors to identify the priorities.	• Develop ToRs • Identify list of priority countries to visit and sector to be focused on • Identify contacts of relevant actors and institutions (both public and private)	June-December 2011
• Regional NAMA feasibility study in the transport sector for the Caribbean countries Rationale: Caribbean countries clearly requested for a study that would permit them to identify the best transport solutions and policies.	In collaboration with UNEP's Energy Branch Transport Unit: • Develop ToRs • Identify institutions (twinning between intl. institution and local institution) or team of experts (incl. intl. experts and local experts)	June-December 2011
• Regional NAMA feasibility study for Regional Energy Management Systems for Central America (replicating AEMAS) Rationale: priority identified by sub-regional study conducted by UNEP in 2010	• Develop ToRs • Identify institutions (twinning between intl. institution and local institution) or team of experts (incl. intl. experts and local experts)	June-December 2011
• Regional study to establish GHG mitigation baselines for energy efficiency and for the Agricultural Industry sector in Mesoamerica Rationale: Mesoamerica countries clearly requested for a study that would permit them to establish GHG emissions baselines for EE and for the agricultural industry sector.	• Develop ToRs • Identify institutions (twinning between intl. institution and local institution) or team of experts (incl. intl. experts and local experts)	June-December 2011
• LAC Meeting for the phase-out of inefficient lighting (joint en.lighten/REGATTA/OLADE event) Rationale: Energy Efficiency is a priority for all LAC countries; while a number of countries conducted (or initiated) EE lighting project; an integrated approach to IL phase out is needed for sustainable impact of lighting initiatives.	In collaboration with OLADE and the en.lighten team: • Identify resource persons, develop agenda and background paper • Logistics (invitation, travel, accommodation)	4-5 August 2011 in Dominican Republic
• LAC Solar Water Heating Technology Workshop (Barbados) Rationale: Barbados is a champion in Solar Water Heating systems (40% homes equipped) in the region and other countries could benefit from their experience/expertise (south-south cooperation)	In collaboration with the Government of Barbados: • Identify resource persons, develop agenda and background paper • Logistics (invitation, travel, accommodation, venue incl. lunch and tea breaks)	October-November 2011
• LAC DNA meeting: the role of DNAs in the promotion of NAMAs (joint IDB/REGATTA event) Rationale: All LAC countries expressed their need for support on NAMAs (capacity building and institutional strengthening). The experience of DNAs with CDM could be built upon for designing/approving NAMAs.	In collaboration with IDB: • Identify resource persons, develop agenda and background paper • Logistics (invitation, travel, accommodation, venue incl. lunch and tea breaks)	Tentative scheduled for end of August 2011 in Mexico

Annex 1: Estimated benefits of the transition to efficient lighting in Latin American and Caribbean countries

Country	Electricity (TWh)	Total electricity consumption (%)	CO2 reduction (Mt)	Reduction in total CO2 emissions (%)	Financial savings (million US $)	Medium size coal power plants avoided	Mid-size cars off road	Estimated amortization time
Guatemala	0,7	10	0,5	4,3	125	1	125 000	0,5
Nicaragua	0,2	9,1	0,1	2,3	22	1	25 000	0,7
El Salvador	0,4	7	0,3	4,8	50	1	75 000	0,6
Honduras	0,3	6	0,2	2,4	20	1	50 000	1,4
Argentina	5,8	5,4	2,8	1,7	350	2	700 000	1,3
Paraguay	0,3	5,1	-	-	20	1	-	1,4
Dominican Rep.	0,6	5	0,4	2,1	110	1	100 000	0,5
Peru	1,4	4,8	0,7	2,3	100	1	175 000	1,1
Colombia	2	4,7	0,8	1,4	200	1	200 000	0,8
Mexico	9	4,5	5	1,1	900	3	1 200 000	1,2
Ecuador	0,5	4,1	0,3	1,1	50	1	75 000	0,8
Bolivia	0,2	4	0,1	0,8	13	-	25 000	1,4
Costa Rica	0,3	3,6	0,1	0,9	30	-	15 000	0,8
Brazil	12,4	3	4	1,2	2000	4	1 000 000	0,5
Jamaica	0,2	3	0,1	0,8	21	1	25 000	0,7
Uruguay	0,2	3,5	0,1	2,3	11	1	30 000	1,4
Venezuela	1,7	2,1	0,4	0,3	80	1	100 000	1,3
Chile	1	2	0,5	0,7	120	1	125 000	0,7
Panama	0,1	2	0,1	1,5	16	1	25 000	0,7
Trinidad Tobago	0,1	1,1	0,1	0,2	10	-	15 000	1,5

Source: Country Lighting Assessments, UNEP/GEF en.lighten initiative (2010)

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