**Regional Assessment of Short-Lived Climate Pollutants for Latin America and the Caribbean**

As you may already know, Short-Lived Climate Pollutants, SLCPs, including black carbon, methane, ozone and hydrofluorocarbons (HFCs), impose heavy costs in terms of premature deaths, ill health, and damage to the environment and food security, and in their contribution to near-term climate forcing. However, information on their sources, atmospheric transfer and impacts, and on remedial measures at the regional level, is poor.

In 2012, an Inter-Governmental Consultation on SLCPs in Latin America and the Caribbean was convened in Bogota. The 20 participating governments called upon the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) to support the implementation of a LAC regional assessment of SLCP issues.

In response to this call, the CCAC Partners decided to support a region-wide integrated assessment with a planned two-year timeframe. The assessment is designed to be a free-standing, independent and regionally owned initiative, chaired by Professor Paulo Artaxo from the University of Sao Paulo, Brazil and managed from Mexico, and with outreach and consultation processes undertaken from the UNEP Regional Office for Latin America and the Caribbean in Panama.

The process has been designed to engage scientists and policy makers from across the region and complement and link with the variety of existing initiatives and processes across the region that relate to air pollution, climate change, and other relevant sectors, including the Regional Action Plan on Air Pollution.

The government of Mexico, through the National Institute of Ecology and Climate Change, focal point of the CCAC, will support in the coordination of this important LAC assessment in order to advance in our region in the issue of short lived climate pollutants, and continuing with the implementation of CO2 mitigation measures, which will allow our countries to get reductions of these pollutants and achieving great health benefits for the population in the region.

Support and engagement from all countries across the region in this exercise will be critical to its success and I would like to invite you to nominate a technical expert from your country, with expertise in the scientific and/or policy issues described above, to be the focal point for your government with the Assessment. For further information please contact Misael Perez misael.perez@inecc.gob.mx

Attached to this letter, please find an information paper which describes the origins, objectives and processes for the Assessment, as well as expectations for your government engagement.

It is envisaged that national governments would be consulted during the assessment process, with a consultation planned for the 'Draft 1' assessment in late 2014, have additional chances to participate in the assessment review process, and, on a voluntary basis and depending on time and resource availability, governments could contribute to the development of policy-related and other sections of the report.

Yours sincerely,

Maria Amparo Martinez Arroyo
General Director of the National Institute of Ecology and Climate Change

**REGIONAL ASSESSMENT OF SHORT-LIVED CIMATE POLLUTANTS (SLCPs) IN LATIN AMERICA AND THE CARIBBEAN**

**INFORMATION PAPER FOR NATIONAL GOVERNMENTS AND REGIONAL STAKEHOLDERS**

## *INTRODUCTION*

Short-lived climate pollutants (SLCPs) are substances with a relatively short lifetime in the atmosphere - a few days to a couple of decades – and have a warming effect on the climate. The main SLCPs are black carbon, methane, tropospheric ozone, and some hydrofluorocarbons (HFCs). With the exception of HFCs, SLCPs are also air pollutants, with various detrimental impacts on human health, agriculture and ecosystems. SLCPs are responsible for a substantial fraction of the climate forcing experienced to date and have a significant control over the rate of warming in the near term (next few decades).

Compelling scientific evidence indicates that fast and widespread action to reduce these pollutants, by implementing identified measures focusing on sources of methane and black carbon, has the potential to significantly slow down the rate of global warming, as well as globally prevent millions of premature deaths and millions of tonnes of crop losses each year. Implementing these SLCP measures also increases the chances of staying within the 2°C target, achievement of which is contingent upon ambitious global reductions in $CO_2$. Furthermore, introducing alternatives to HFCs will help avoid the substantial build-up of these substances, which have high warming potential, in the atmosphere. In addition to the UNEP/WMO Integrated Assessment of Black Carbon and Tropospheric Ozone in 2011, the Fifth Assessment Report of the IPCC (2013) assesses that the climate impacts of methane and black carbon are large, and that these exert strong leverage over near-term climate change.

Fast action on SLCPs needs to be underpinned by robust up-to-date assessments of relevant science. As in some other regions, the absence of data on the origin, impact and mitigation measures relevant to pollutant emissions poses a major constraint for the development of effective air pollution, climate and SLCP mitigation policies in Latin America and the Caribbean.

In 2012, an Inter-Governmental Consultation on SLCPs in Latin America and the Caribbean was convened in Bogota. The 20 participating governments called upon the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC) to support the development of a LAC regional assessment of SLCP issues.

In response to this call, the CCAC has decided to support a major integrated assessment of SLCPs which will be undertaken across the region over the next two years to support and provide a framework for national action; underpin regional co-operation on SLCP mitigation; and provide a regional focus for engagement with policy makers, scientists, technical experts, and other key stakeholders.

The LAC regional SLCP assessment is to be implemented through a broad and representative team of scientific and policy experts from across the region, with the support of the UNEP Regional Office for Latin America and the Caribbean and other institutions in the region and underpinned by consultation and outreach within the region. This note outlines the origins, objectives, approach and programme of the LAC SLCP assessment.

## *WHY ARE SLCPS IMPORTANT FOR LATIN AMERICA AND THE CARIBBEAN?*

'Short-lived Climate Pollutants' are a group of atmospheric particles and gases which have a profound impact on the local, regional and global environment affecting global and regional climate, human health and

ecosystems. They also have an important characteristic – a relatively short 'residence-time' in the atmosphere in comparison to $CO_2$. The important consequence of this is that abatement measures can lead to temperature reductions in the near-term, thus protecting vulnerable communities, regions and ecosystems, such as the Andes.

Recent work by UNEP[1] has indicated, for instance, that fully implementing 16 identified measures targeting significant sources of black carbon and methane would globally avoid about 2.4 million premature deaths and avoid losses to crop yields by about 50 million tonnes per annum, and halve the rate of warming over the next decades, resulting in 0.5°C less warming in 2050, compared to a reference scenario. In addition, measures to prevent the increased use and abundance of HFCs in the atmosphere could reduce near-term warming in 2050 by about an additional 0.1°C [2]. While mitigating SLCPs will help to increase the chances of avoid exceeding the 2°C target, long-term climate protection will only be possible if rapid, ambitious and sustained cuts in carbon dioxide emissions are realized.

The effects of the implementation of such mitigation policies in Latin America and the Caribbean (LAC) would be dramatic. According to the global-scale UNEP/WMO assessment[1], this could result in:

- about 300,000 tonnes reduction in black carbon;
- about 14 million tonnes reduction in methane;
- about 1.3 million tonnes of avoided crop yield losses each year;
- about 39,000 fewer premature deaths p.a.

Fast action on SLCPs, therefore, has the potential to achieve rapid, *multiple* benefits for development and human well-being through existing, cost-effective technologies.

## *WHY A REGIONAL INTEGRATED ASSESSMENT?*

The Global Assessment of SLCPs undertaken by UNEP and WMO in 2011 made possible a step-change in understanding the nature and impact of SLCPs, but it must be recognised that generalisations and aggregations at global scale now need to be downscaled at the regional level to enable more detailed understanding of the issue and identification of opportunities and priorities. As well as providing a more effective basis for regional and national decision making, better information that can be provided by the integrated Regional Assessment is needed to help ensure that the circumstances and priorities of the region can be taken more effectively into account in wider international strategies and initiatives.

Equally, as atmospheric policies are developed, the region will need the continuous building of shared and agreed information base on which common regional policies can be developed and common positions agreed. In addition, building on the existing UNEP assessments, the integrated regional assessment will allow for a detailed discussion at regional and sub-regional scales of opportunities and barriers to policy implementation in support of successful policy and planning.

Further, while LAC, like other regions, is subject to global meteorological processes, it also has distinct meteorological influences, which it is important to assess and take into account to ensure a more balanced and accurate global picture. The LAC SLCP assessment will be strongly focused on policy and implementation, and will not rework the atmospheric science reported in the global Assessment. But it will

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[1] (2011). Near-term Climate Protection and Clean Air Benefits: Actions for Controlling Short-Lived Climate Forcers, United Nations Environment Programme (UNEP), Nairobi, Kenya. Available from: http://www.unep.org/dewa/Portals/67/pdf/Near_Term_Climate_Protection_&_Air_Benefits.pdf
UNEP. (2011). HFCs: A critical link in protecting climate and ozone layer. A UNEP Synthesis Report. United Nations Environment Programme (UNEP), Nairobi, Kenya. Available from: http://www.unep.org/dewa/portals/67/pdf/HFC_report.pdf
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[2] Xu Y., et al. (2013) The role of HFCs in mitigating 21st century climate change, ATMOS. CHEM. PHYS., 13:6083-6089

seek at add to it and clarify it in important ways which can provide a richer picture for LAC and also increase global understanding.

The LAC assessment will respond to the severe shortage of data on the emission sources, pathways and impacts of SLCPs as air pollutants and their contribution to climate change. This shortage of information is a significant constraint on policy at both the national and regional scales, and one which will become more severe as Governments seek to develop more effective mitigation policies under their Air Pollution Action Plan and parallel climate initiatives. The regional LAC assessment will use readily available global data, and disaggregate, test and refine them to reflect regional and national circumstances. This will help to meet a number of pressing data and information needs at national and international scales. The development of other approaches, as part of longer term process of data improvement, is also needed to increase the availability and accuracy of emission data.

Finally, at the national scale, a key consideration is that while some countries in the region are large enough in terms of geographical scale and resources to undertake broad research and analysis of the kind which the Regional Assessment involves, most are not. For the latter groups of countries, large-scale national-level research may be neither realistic nor cost-effective, and participation in wider co-operative initiatives may be particularly important.

## *WHAT IS THE ASSESSMENT DESIGNED TO ACHIEVE?*

With the above considerations in mind, the LAC regional SLCP assessment has been designed to provide the following outcomes:

- a vehicle for regional focus for co-operation of policy makers, scientists, practitioners, and other key stakeholders at high levels on scaled up SLCP mitigation;
- improved regionally-specific and relevant information and guidance, and proposals for addressing uncertainties, gaps in knowledge and capacity development, as a basis for more scientifically robust and effective action on SLCPs in Latin America and the Caribbean;
- a regionally-owned scientific and policy assessment to support national action, and help ensure that the priorities and needs of the region are properly understood in international initiatives; and
- a vehicle for enhancing public understanding of the issue.

## *HOW WILL THE ASSESSMENT BE CONDUCTED?*

The LAC assessment is designed as an independent and free-standing exercise, owned by and reflective of the interests of the whole region, with leadership by scientists and expert institutions representative of the entire region. It will also, as appropriate, build upon and complement the UNEP/WMO global assessment to allow comparison and aggregation of important elements of the work. While it is regionally owned and led, the LAC assessment will draw upon the best available international resources and expertise. Important technical contributions will therefore be made by the leading international institutions.

It is also intended that it should, to the fullest extent possible, link with the variety of existing initiatives and processes across the region that relate to air pollution, climate change, and other relevant sectors. In this way, for instance, the assessment concept has been developed in close harmony with the LAC 'Regional Action Plan on Air Pollution' of the Regional Forum of Environment Ministers, for which it will provide an important source of information and analysis. UN organizations, international and bilateral partners working in relevant areas will also be actively engaged in the assessment process.

The LAC SLCP assessment team will also work on the basis that the assessment should not be a one-off exercise, but could, as appropriate, the start of a continuing regional process, with work periodically updated

and extended; and that the network of scientific and policy institutions and individuals brought together for the assessment could be a continuing element of the science and policy landscape of the region.

Finally, there is recognition that the development of the assessment must be guided by an appreciation of the diversity of the region. This means that, while it is a *regional assessment*, it has to take account of other key themes such as

- distinct sub-regions;
- different levels of development, policy and financial mechanisms;
- the role of mega-cities, as the region increasingly becomes the most urbanised in the world;
- major regional issues, such as glacial melt in Andes.

## *WHAT ARE THE METHODS AND APPROACH?*

As indicated above, one starting-point in designing the assessment is the shortage of data on emissions and impacts throughout the region, and the need to find an assessment process which avoids this constraint. Another is a stronger focus on policy assessment, considering than the science which has been largely covered within the Global Assessment. However, in general, the assessment will use the same methods and approaches as those deployed by the Global Assessment, in particular and most fundamentally the same integrated assessment analysis techniques.

The overall project and the report will also, so far as relevant, use the DPSIR format– Drivers (e.g. GDP; population) – Pressure (emissions) – State (concentration) – Impact (health, agriculture etc.) – Response (policy/measures/case studies), extensively used by the UNEP Global Environment Outlook (GEO) reports. Wherever necessary it will draw on work by leading global institutions, notably the IIASA for emission scenarios, NASA-GISS and the European Commission Joint Research Centre (JRC) for the modelling of climate and other impacts.

Finally, a common focus throughout will be to ensure that the specific technologies and policies discussed are regionally specific rather than reflecting a global overview. It will therefore aim to comment extensively on the particular conditions in the region for their success in LAC.

## *HOW WILL THE ASSESSMENT PROCESS OPERATE?*

It is intended that the assessment process be broad and inclusive. Contributions to the assessment will come from a broad range of experts, drawn from the science community and the policy community; from South America, Central America and the Caribbean.

An Advisory Committee is being assembled to assist the project team and help set the direction of the exercise, as well as a network of lead and supporting institutions across the region to be available for consultation and support and in due course help review and refine the draft of the report.

The Assessment will be chaired by Professor Paulo Artaxo (University of São Paulo, Brazil), and Graciela Raga (Universidad Nacional Autónoma de México) as Vice-Chair. It will be managed from Mexico through INECC and other supporting institutions and with outreach and consultation processes undertaken from the UNEP Regional Office for Latin America and the Caribbean, Panama.

Support and engagement from all countries across the region in this exercise will be critical to its success. It is hoped that all governments in the region will be willing to identify national focal points with which the assessment team can liaise, to keep them abreast of developments, provide assistance and be available for consultation over the two years of the project.

In addition, the assessment will aim to establish similar links with relevant non-governmental organisations and representatives of civil society across the region and also involve interested international organizations and development partners working on issues such as health, transport, clean energy and climate change.

## *WHAT ARE THE EXPECTATIONS FOR ENGAGEMENT BY GOVERNMENTS?*

National governments in LAC are being consulted during the assessment process, with one opportunity at the meeting in Los Cabos in March 2014, and will be able to participate in the assessment review process, with a consultation planned regarding the preliminary findings in the 'Draft 1' assessment in late 2014, and, on a voluntary basis and depending on time and resource availability, could contribute to the development of policy-related sections of the report.

## *WHAT IS THE CCAC?*

The CCAC is the first global effort to treat SLCPs as a collective challenge. The Coalition is a voluntary partnership bringing together over 80 Partners including 36 countries, to catalyze global action to reduce SLCPs in ways that protect the environment and public health, promote food and energy security, and address near term climate change. The CCAC secretariat is hosted by UNEP.

More information on the CCAC can be found here: http://www.unep.org/ccac/

TO NOMINATE YOUR NATIONAL FOCAL POINT OR RECEIVE MORE INFORMATION PLEASE CONTACT: Misael Perez, National Institute of Ecology and Climate Change (misael.perez@inecc.gob.mx)