Supporting National Action and Planning Initiative (SNAP)

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

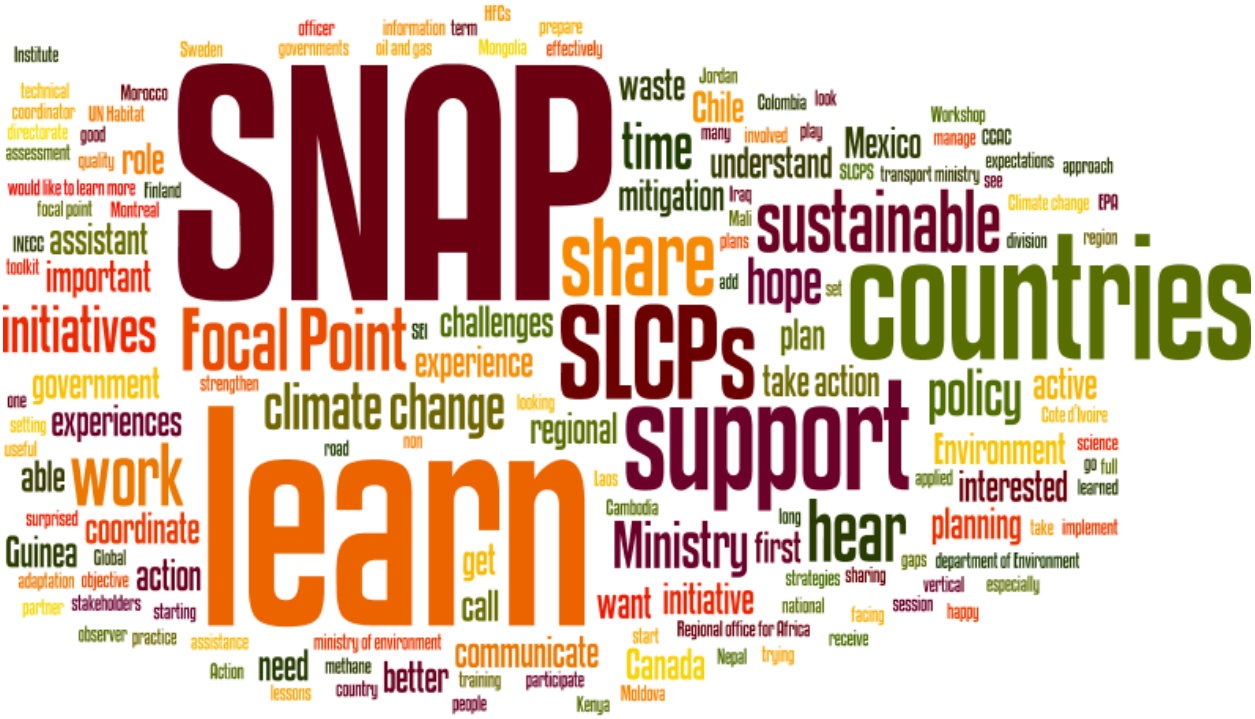
Institutional Strengthening Workshop

Scaling up action on SLCPs: Peer to Peer exchanges on Institutional Strengthening and National Planning

22-23 September 2016
Paris

The following is a report from the Institutional Strengthening Workshop, organised by the Initiative "Supporting National Action and Planning (SNAP) on short-lived climate pollutants" of the Climate and Clean Air Coalition (CCAC).

The workshop was attended by 64 participants from 25 countries and 15 government agencies and non-governmental organizations. It took place in **Paris on 22-23 September 2016**. The objective was to strengthen countries' capacity to scale up national action on short-lived climate pollutants (SLCPs) through the sharing of expertise, experiences and ideas.



Wordle of the participants' expectations of the workshop.

Overview and highlights of the workshop

Session 1 covered the science behind **Black Carbon's impacts** and the CCAC's measures to mitigate these. Countries outlined activities and projects they are carrying out to reduce Black Carbon emissions, sharing good practices, successes, challenges and the overall lessons learnt. *Highlights included: the shared experience on using SLCPs as agents of change; how to bring about behavioural change; and the link between SLCPs, livelihoods and development*.

Session 2 looked at **implementation pathways** for SLCP measures. Multiple presentations outlined the wide range of technical, societal, developmental and economic factors that must be taken into account when looking at SLCP measures. Countries shared the strategies they have adopted to push for the inclusion of SLCPs into National action plans and Nationally Determined Contributions (NDCs). *Highlights included: use of multi-variate analysis to prioritise measures in national planning; that SLCPs are useful for aligning climate change and sustainable development objectives (SDGs); and that the three countries that had separate sections on SLCPs in their intended NDCs were SNAP countries.*

Session 3 explored the opportunities available to **finance SLCP control measures** and to redirect both public and private investment to green assets. Presenters outlined the approaches, strategies and considerations necessary to access both national and international financing, as well as the functioning of the Green Climate Fund (GCF) and its application process. *Highlights included: the need to understand that the bulk of climate finance will be private and that it will be domestic (not international); the need for a shift from 'brown' to more 'green' economic development; and the need to understand how the CCAC could be a platform with information on proof of concept to enable the GCF to be a catalyst for change.*

Session 4 looked at ways to **communicate on short-lived climate pollutants**. The presentations outlined the key elements of communication strategies, as well as the approaches and tools useful to get decision-makers' attention. *Highlights included: the need to be clear, consistent and repeat key messages, especially when dealing with the media; that Cities are endorsing the CCAC/World Health Organization Breathe Life Campaign; and the need to have your elevator speech on the tip of your tongue always!*

All presentations are available at http://bit.ly/2delqHL

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

Contents

Session 1
Black Carbon,
Its impacts and the measures to mitigate it

The key takeaway messages from this session are:

- BC is produced by the incomplete combustion of biomass, it is part of fine particulate matter ($PM_{2.5}$) and it harms health, climate and crops.
- Measures have been identified to reduce BC emissions.
- Countries are already taking actions to mitigate BC emissions. Future activities can build on their experience.

The science behind Black Carbon | Stockholm Environment Institute

Johan Kuylenstierna
Policy Director,
CCAC Scientific Advisory Panel member
Stockholm Environment Institute (SEI)

Email: johan.kuylenstierna@york.ac.uk

Presentation available here

What is Black Carbon?

Black Carbon (BC) is a component of fine particulate matter ($PM_{2.5}$ aerosols) and is produced by the **incomplete combustion** of fossil fuels, wood and other biomass.

BC particles are **co-emitted with other particles**, which include Carbon monoxide (CO), Nitrogen oxides (NO_x), Sulphur dioxide (SO_2), volatile organic compounds (VOCs), organic carbon (OC), and methane (CH_4).

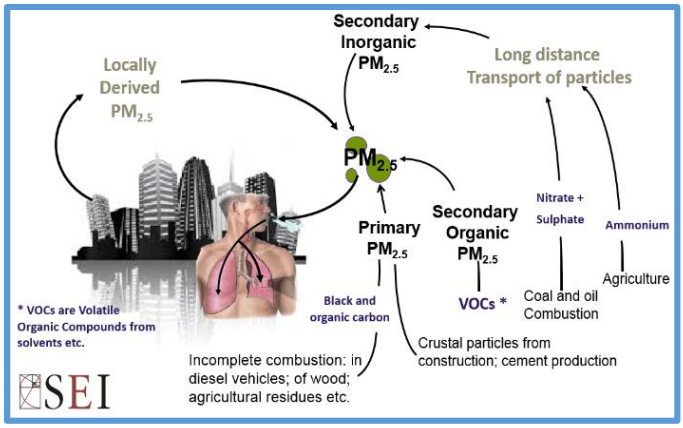


Figure 1: The sources and components of $PM_{2.5}$.

Whether BC sources have a warming or cooling effect on the climate depends on the ratio of warming BC particles to other cooling particles and gases. Forest fires, for example, have a net cooling effect as the ratio of BC emissions to organic carbon emissions (which are cooling) is relatively low, and organic carbon reflects more sunlight than it absorbs. Conversely, transport has a net warming effect as the ratio of BC to OC emissions are much higher. Hence, to specifically address near-term warming, CCAC measures focus on sources whose ratio of BC to cooling particles is larger.

The effects of Black Carbon

$PM_{2.5}$ is harmful to human **health** when inhaled. BC constitutes 10-15% of the $PM_{2.5}$ that causes most damage. While the consensus among scientists relates the health damages to $PM_{2.5}$ concentrations as a

whole, there is some evidence demonstrating that BC particles – especially those from diesel exhausts – are more toxic than other particles.

Black Carbon also has an impact on **climate**: it is the most important aerosol in causing a warming of the atmosphere, as it absorbs visible light, increasing solar energy in the atmosphere. Furthermore, when BC deposits on snow it changes its albedo (i.e. reduces the amount of light reflected), causing a greater absorption of light and faster melting. BC also interacts with cloud formation, changing clouds' properties. Given such diverse impacts, there are uncertainties with regards to BC's overall radiative forcing.

BC also affects **crops** in diverse ways. Firstly, by causing an increase in the atmosphere's solar energy, BC particles decrease the energy absorbed by the earth's surface and thus by plants. Secondly, by changing clouds' reflectivity and lifetime, BC also alters rainfall patterns.

Measures to reduce BC emissions

Measures aimed at reducing BC emissions only target sources whose ratio of BC to cooling particles is larger. The measures that the CCAC promotes to reduce BC emissions are:

1. Improved biomass stoves	2. Cooking with clean fuel	3. Improved biomass stoves
4. Coal briquettes replacing coal	5. Modern coke ovens	6. Improved brick kilns
7. Reduce flaring	8. Reduce agricultural open burning	9. Remove big smokers/ Diesel Particulate Filters

Predicted impacts of BC measures[1]

The important issue is that the benefits of BC mitigation measures are due to the reduction in BC and the other co-emitted substances.

If the 9 BC measures are fully implemented, in 2030 75% of BC emissions would be reduced. These measures would significantly reduce the emissions of other particles and gases as well. These reductions would positively affect human health, climate and crop yields.

Results from the UN Environment-World Meteorological Organization assessment show that the largest **health benefit** from SLCP measures that reduce $PM_{2.5}$ is associated with BC measures, which would avoid 2.4 million premature deaths globally

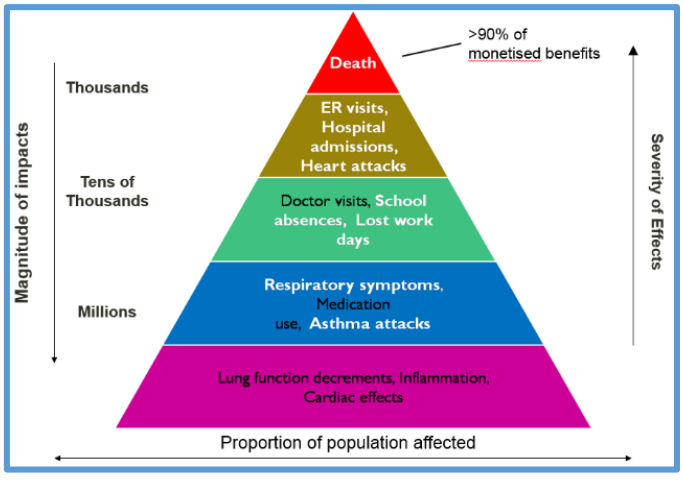


Figure 2: The Pyramid of Health Effects of Air Pollution shows that BC control measures can have greater benefits than just reducing premature mortality.

[1] N.B: There is some uncertainty in emission estimates and assumptions. For example: Brick kilns are assumed to be good technology in Latin American countries; Forest clearance burning was not included; Diesel vehicle fleet not as big as in other regions; Fewer people using biomass for cooking / heating

each year. This partly stems from the fact that BC measures also reduce organic carbon, NO_X and SO_2, (which are also harmful to health). Furthermore, as shown in Figure 2, death prevention is only part of the picture, as there are many other benefits of reducing BC.

Full implementation of all the SLCP measures results in about half a degree **reduction in warming**. Half of this reduction is due to methane measures, and half is due to BC measures, but uncertainty is greater for the latter (HFC reductions also lead to about an additional 0.1°C reduction in warming). The share of global temperature reduction achieved from the implementation of BC measures varies across different regions: Asia and Africa – which have large BC emissions – would benefit the most from the measures.

The World Meteorological Organization (WMO) and UN Environment carried out an Integrated Assessment of Black Carbon and Tropospheric Ozone

Globally, about 52 million tonnes of **crop yield** losses would be avoided in 2030 if all BC measures were implemented. Benefits would result from reduced disruptions in rainfall patterns as well as less ozone precursors (NO_X, NMVOCs and OC).

The BC factsheet is available here

Montevideo's transition to bus fleets with Diesel Particulate Filters | Uruguay

Magdalena Hill
Chief of the Department of Air Quality
Ministry of Housing, Spatial Planning and Environment (MVOTMA), Uruguay
Email: magdalena.hill@mvotma.gub.uy

Presentation here

M. Hill shared information on Montevideo's project of installing Diesel Particulate Filters (DPFs) into its urban bus fleet, drawing attention to the factors that enabled the transition to take place.

The launch of the **Global Fuel Economy Initiative** in Uruguay in April 2013, the establishment of an **inter-institutional transport group** that connects the energy and transport sector, and Uruguay's joining the **CCAC's Diesel initiative** jointly triggered an **overall consensus** which called for the legal requirement that all vehicles be Euro 4. Building on this consensus, the Ministry of Housing, Spatial Planning and Environment (MVOTMA) and the National Director of Environment planned Montevideo's transition to DPFs with the technical **support of the Centro Mario Molina Chile**. The latter's collaboration was crucial when assessing Montevideo's existing bus fleet, when estimating the yearly BC emissions avoided with DPFs and the yearly national health costs incurred because of public transport's emissions.

M. Hill drew attention to additional 'enabling' factors. Firstly, **Uruguay's strong push for renewable energy** made it possible to integrate public transport emissions into the general discourse to raise awareness and push for change. Secondly, linking pollution from public transport to both the **environment and health** significantly strengthened the case for DPFs, and collaboration with the health sector was especially beneficial. Thirdly, highlighting how mere reliance on the hoped-for transition to electric vehicles was unsustainable (as it will be very slow) made it possible to promote the significantly faster shift to cleaner vehicles.

The transition: the National Director of Environment, the MVOTMA and the Centro Mario Molina Chile tested and selected Montevideo's best engines, filters and buses. They subsequently proposed the removal of all pre Euro 4 vehicles; the introduction of diesel filters into all Euro 2 and Euro 3 vehicles; and the sole selling of Euro 4 and Euro 5 vehicles moving forward. Electric vehicles were also included in the proposal. Although in April 2016 the company that partnered with MVOTMA went bankrupt and the new one is currently experiencing software difficulties, the filters are ready and so is Uruguay.

Legislative achievements in the transport sector | Kenya

Moses Omedi Jura
Deputy Director
Climate Change Action Plan Secretariat,
Ministry of Environment & Mineral Resources, Kenya
Email: omedijura@gmail.com

M. Jura's presentation outlined Kenya's major achievements in the transport sector and what made these possible. Achievements include the East African parliaments' passing of a law to transition to low sulphur diesel in January 2015; the closing of one of Kenya's refineries and the subsequent signing of a contract with an international company that supplies clean fuel diesel; and the passing of a national law on climate change which made Kenya the first African country to do so.

Diverse factors made these achievements possible. The January 2015 legislation on low Sulphur diesel was the result of a **lengthy collaboration** between UNEP, government ministries in East African countries, lead agencies, **stakeholders** and the national environment management authority in Kenya. The climate change act was the result of **cross-sectorial cooperation**, and the **Kenyan constitution** – with its right to a clean and healthy environment – was also crucial in making this happen.

Cookstoves initiative | Colombia

Claudia Carolina Cuentas
Advisor on SLCPs and Climate Change
Climate Change Directorate
Ministerio de Ambiente y Desarrollo Sostenible, Colombia
Email: CCuentas@minambiente.gov.co

Presentation here

C. Cuentas made a presentation on Colombia's cookstoves initiative. To begin with, the presentation outlined the initiative's **short-term goal of distributing 1 million efficient and clean cookstoves** to address existing health issues. Currently, 30,000 cookstoves have been distributed and 62,300 more will be distributed each year from 2016 to 2031. To achieve this goal, the Ministry of Environment and Sustainable Development has established an **inter-institutional committee** promoting the programme, significantly speeding up its implementation. Furthermore, a **market analysis** is currently being carried out to determine the best way to market and distribute the cookstoves, and a file is being put together to outline the programme's **cost-effectiveness**, as well as the **CO_2 emissions reduction** that could be

achieved through the distribution of the remaining 62,500 cookstoves**,** pushing for inclusion in Colombia's NDCs implementation.

C. Cuentas also outlined the diverse ways in which the initiative has evolved over time. Firstly, there has been a fundamental shift in focus from efficient cookstoves to clean and efficient ones. With the support of an academic team, the inter-institutional committee for cookstoves is **developing technical standards for clean and efficient cookstoves**. In addition, over time the initiative could evolve to include **a long-term vision that links in with development**. As energy often does not reach remote communities in Colombia, energy poverty reduction could become the initiatives' long-term goal. This has **opened up new opportunities,** such as collaboration with the ministry of mines and energy that is already implementing a program to achieve this goal, with **6 funds currently available** for its implementation.

Development-related and employment-producing SLCP-mitigating projects | Nigeria

Bahijjahtu Abubakar
National Coordinator
Renewable Energy Programme
Federal Ministry of Environment, Nigeria

Email: bahijjah@yahoo.com

Presentation here

B. Abubakar's presentation shed light on the diverse projects that are currently being carried out in Nigeria in the Domestic Energy sector. The presentation outlined the strategies adopted to implement these projects, the enabling factors, and the way **SLCP reduction is employment-producing, fostering development**.

The National Clean Cooking Scheme in Nigeria, for example, aims to distribute 20 million cookstoves by 2020, using **market-driven intervention** to ensure both clean and efficient cookstoves are accessible to rural Nigerians at affordable rates. Thanks to the CCAC's network, the scheme has received **support from different partners** (the UN Development Programme, the National Assembly Intervention for Clean Cooking Initiative, the Deutsche Gesellschaft für Internationale Zusammenarbeit and stove manufactures), many of whom have also provided the scheme with the necessary financial resources. **Presidential intervention** has also politicized the issue and scheme, raising further awareness. The project has both an **environmental and social aspect**, as lack of clean energy translates into health, development and other issues.

Another exemplar project is the Place of Sanctuary and Hope (P.O.S.H), which is a safe place for internally displaced women and young girls. P.O.S.H aims to heal and reintegrate them back into society, hosting over a thousand girls every three months, with 510 permanent workers. During their stay, women and girls get involved in a variety of activities which range from producing fuel briquettes using the paper waste of embassies in Nigeria, to learning how to preserve agricultural products, ensuring they meet international standards, to learning about clean technologies in kitchens. This project clearly exemplifies the **link that can be made between SLCP reduction, development and humanitarian projects**.

Transitioning to modern and cleaner brick kilns | Bangladesh

Sultan Ahmed
Director of Natural Resources Management & Research
Government of the People´s Republic of Bangladesh

Email: sulbul2002@yahoo.com
Presentation here

S. Ahmed's presentation outlined how Bangladesh is providing brick producers across the country with technological and financial support, to accelerate the country's conversion to modern – and less polluting – brick kilns. There are currently **7 modern brick kilns** across Bangladesh, which brick producers can visit to learn how Fixed Chimney Kilns can be converted into improved zigzag kilns; how modern kilns can be constructed; and how bricks can be made using sand, gravel chips and cement. A **Brick information Centre** to support the design, construction and operation of brick kilns has also been established to further assist brick producers. **Financially**, the Bangladesh Bank (Central Bank) has provided US$ 25 million to entrepreneurs under the Refinancing Scheme for Renewable Energy and Environment Friendly Financeable Sectors; the government has provided $25 million to entrepreneurs; and the Asian development bank – through the Bangladesh Bank – has also provided US$ 50 million to entrepreneurs (US$30 million for upgrading Fixed Chimney Kilns to improved Zigzag, and $20 million for the construction of new Vertical Shaft Brick Kilns, Hybrid Hoffman Kilns, Tunnel Kilns). Furthermore, under the Brick Manufacturing and Kiln Establishment (Control) Act 2013 – applicable since July 2014 – brick kiln owners that do not convert polluting kilns to environmentally friendly ones will be fined, imprisoned, or have their kilns demolished. However, S.Ahmed noted that this act might be amended to become less stringent.

Lessons learnt in Latin America and South Africa | Swisscontact

Sara Pauli
Environment Officer
Swiss Foundation for Technical Cooperation (Swisscontact)

Email: sara.pauli@swisscontact.org

Building on Swisscontact's work in the Brick Sector in Latin America, S. Pauli shared valuable lessons learnt and advice. Firstly, the presentation drew attention to the importance of considering **local technologies** that are available in the market: the vertical shaft brick kilns that were used in the Chinese market, for example, worked in South Africa but did not work in Latin America. The presentation also stressed the importance of focusing on the **supply side of technologies** and not just on the demand side, ensuring the necessary technologies are available on the market.

With regards to finance, S. Pauli shared how often in Latin America there has not been one single bank offering green credits for the brick sector, and how these **credits were provided on a more competitive basis**. This created an interaction between financial entities and brick producers, physically bringing the two together so that banks understood how the brick sector could be an interesting market for them,

while brick producers understood how they could use less fuel, produce better bricks and increase their income.

S. Pauli also touched upon the support that is provided to brick producers. It was stressed that **training should not just be technical** – it should also include business administration, decision-making and finance. The importance of providing **incentives** was also highlighted: in Colombia and Bolivia for example, a green certification is provided to brick producers when they shift to new technologies. This could also be a means to formalize the brick sector, getting an overview of the actors involved in the sector across the country.

With regards to policy-making, attention was drawn to the fact that rules and legislations must have **clear time-frames**. You cannot just tell people they have to change technology, but also when they have to change it by. Finally, the importance of promoting a more general shift to sustainable construction and **alternative materials** was also noted, as these hold great potential.

Progressive legislative bans on agricultural open burning | Chile

Macarena Caceres Dupre
Junior Advisor on SLCPs
Ministerio del Medio Ambiente, Chile

Email: mcaceres@mma.gob.cl

Presentation here

M. Caceres shared Chile's strategy to reduce BC emissions from agricultural open burning, and the challenges encountered. Since the 1930s, Chile's forestry association, the ministry of agriculture and the ministry of environment have **progressively introduced bans on open burning**. In 1932 forest **fires were first regulated with sanctions**, then in the 1990s open burning of agricultural waste was banned in winter and finally, in 2015 a new proposal was put forward to ban 100% of open burning of agricultural waste by 2018 to stop local pollution. There is also a **new voluntary scheme** in Chile which designates some responsibility to the ministry of agriculture within the framework of climate change.

The issue is that the 2010 inventory of greenhouse gas emissions in Chile shows that forest fires cause much greater emissions than the burning of agricultural waste and accordingly national action plans prioritize more emitting sectors. However, given that – though low – BC emissions in the agricultural sector exist, efforts are being made to push for SLCPs' inclusion in existing legislation.

Alternatives to agricultural open burning | MCE2

Luisa Molina
President,
Molina Center for Strategic Studies in Energy and the Environment (MCE2)

Email: ltmolina@MIT.EDU

Presentation here

L. Molina described existing alternatives to agricultural open burning and barriers to implementation, ultimately outlining economically viable alternatives.

In **Brasil**, the **green protocol** – a voluntary agreement between the São Paulo State Government and the Brazilian Sugarcane Industry Association (UNICA) – banned pre-harvest field burning as of 2014 for mechanized areas and as of 2017 for non-mechanized areas. This encourages the mechanization of sugar cane harvesting, reduces air pollution and protects the ecosystem.

In **Lima**, Peru, the Molina Centre and the International Cryosphere Climate Initiative (ICCI) organized a workshop to discuss alternatives to open burning. It was discussed that seeding crops into **untilled soil** without removing stubble by opening a narrow slot sufficient to obtain proper seed coverage (see Figure 3) would minimize soil disturbance and improve soil quality. **Barriers** to implementation include insufficient knowledge on how to do it, unavailability of adequate machines and herbicides, and lack of adequate policies that promote this alternative.

Figure 3: crops being sown into untilled soil without removing stubble.

In India and Australia, the **"Happy Seeder" machine** is attached to the back of tractors to facilitate the direct seeding of wheat into standing rice stubbles. This stops rice straw burning and the concurrent air pollution, and improves soil fertility by incorporating organic matter in the soil. However, **the initial cost** of the machine is 500,000 times greater than using a match for open burning.

Finally, **economically viable alternatives exist**. These include farmers in Vietnam selling rice straw bales for construction material, livestock feed and making mulch for vegetables; fuelling industries with biomass pellets made from crops residues in India; and gasifying rice husk and other biomass waste to supply electricity to rural villages in India. These measures also have the co-benefit of providing local farmers a market for their crop residues.

Session 2
Implementation Pathways for SLCPs measures

The key takeaway messages from this session are:

- A wide range of factors need to be taken into account when assessing the feasibility and importance of SLCP control measures.
- SLCP control measures significantly align with development agendas. This linkage must be emphasized to attract decision makers' attention and reach new audiences.
- Policy recommendations and proposals must be backed by extensive analysis on a wide-range of economic factors and real-life complexities.
- Push for legislative backing: integrate SLCPs into NDCs, development, air quality and climate action plans, and into as many official internal and external policies as possible. This will make SLCP mitigating projects more credible, it will provide a degree of permanence and generate a lever in relevant country institutions internally.

The prioritization of measures | IUAPPA

Richard Mills
Director-General
International Union of Air Pollution Prevention Associations (IUAPPA)
Email: rmills_iuappa@yahoo.co.uk
Presentation here

R. Mills showed the multivariate analysis consultants in Colombia carried out to determine which measures were the **most important and feasible** for SLCP mitigation. The following factors were assessed: the impact of the emission; the measure's implementation time (the quicker the better); the time it takes to see benefits; the reduction certainty (a technical fix is more reliable than behavioural changes for example); the straightforwardness of implementation (considering obstacles due to unions / costs / technology); tentative costs; and co-benefits. Measures with the highest overall score would be the most important and feasible. When making final calculations, factors were weighted

Measure	Evaluation Criteria						
	Impact on emissions	Implemet. time	Time to Benefits	Reduction Certainty	Straight-forward implemet.	Tentative Costs	Co-benefits
Elimination of high emitting vehicles in road transport	9	3	10	10	2	4	10
EURO IV -vehicles, DPF's	7	6	4	5	7	7	6
Promoting cleaner diesel	4	1	3	5	3	1	3
Introduction of clean burning biomass stoves for cooking	3	7	6	5	7	7	6
Substitution of biomass cookstoves with stoves using clean-burning fuel	7	3	9	8	3	4	10
Replacing traditional brick kilns with modern technologies	8	4	10	9	6	5	8
Replacing traditional coke ovens with modern recovery ovens	5	4	10	9	6	5	8
Phase out/reduce open burning of agricultural waste	7	3	10	10	4	4	7
Upgrading primary wastewater treatment to secondary/tertiary treatment with gas recovery and overflow control	3	3	7	7	7	1	8

COLOMBIA STAGE 1 REPORT - Results of an experimental multi-variate analysis

Table 1: the matrix Colombia adopted to assess the importance and feasibility of SLCP control measures

differently: co-benefits having more weight than others for example. While the data on the table is only an estimate, it shows the process of thought that needs to be adopted when assessing the importance and feasibility of measures and the factors that need to be taken into account.

Contributions & Discussions

A study in **Mexico** analysed measures such as carbon taxes using the general equilibrium economic model. The study found that **the social impact / side effects** of measures must also be taken into consideration. The removal of energy subsidies and carbon taxes, for example, should be distributed and not regressive. Distributive mechanisms must accompany environmental measures, to ensure economic and environmental policies align.

R. Mills: There is a natural tendency for regressive taxation that should be consciously resisted. If you don't consider the social impacts of a measure, people will quickly find ways around it, undermining it.

Mexico's inventories show that while brick kilns, for example, do not strongly affect climate change, they significantly affect air pollution and health. Both **climate and health** must be taken into account when assessing and prioritizing measures.

Johan: In addition, while Brick Kilns do not make a significant **impact nationally**, they make a very significant impact **locally.** A balance between the two must be found as these type of emissions make a big difference to some people's lives while other are not affected. Furthermore, from an overall climate change perspective, the impact of emissions both in the **short and long term** should also be taken into account.

SLCPs from a development perspective | OXFAM

Thomas Damassa
Senior Policy Advisor on Climate Change
OXFAM
Email: thomas.damassa@oxfam.org

Presentation here

T. Damassa's presentation explored the links that can be made between SLCP reduction measures and **development agendas**, arguing that making this linkage provides opportunities to **reach new audiences** and attract decision makers' attention. Many SLCP measures align with development agendas much more than CO_2 measures, touching upon health, human rights, women's rights, and these are the **issues that resonate most with governments**. When mainstreaming SLCPs as part of development however, national priorities, indicators and processes should be assessed to select which specific issue areas should be engaged. In addition, governments should be looking for opportunities to coordinate across agencies and sectors to align development and climate financial flows within federal budgets.

To illustrate this point, T. Damassa provided diverse examples of OXFAM projects that can be approached from an SLCP-reduction perspective. These included working with rice farmers in South East Asia to reduce water consumption, which led to reduced methane emissions as well as increased yields; and the distribution of cookstoves during crises relief efforts in Darfur. A climate component could be added to these projects, making them **more holistic** as currently they are merely being approached from

development and social justice lenses. To increase leverage, **cross-sectoral and cross-issue projects** should be pursued moving forward. Engaging a broader set of stakeholders and including civil society organizations can help governments ensure that policies and programs achieve multiple development and climate benefits, that any trade-offs are managed, and that there is robust local ownership.

Over the next months and years, T. Damassa would like to expand OXFAM's work on SLCPs by developing research, narratives and language that maps linkages between SLCPs and development based on country experiences. Although OXFAM's initial SLCP work aims to provide content and recommendations that support broad advocacy for SLCP policies and financing, and facilitate conversations with governments, these will need to be further refined for specific sectors and national contexts.

Policy considerations to scale up action on SLCPs | OECD

Simon Buckle
Head of Climate Change, Biodiversity and Water Division
Organisation for Economic Co-operation and Development (OECD
Email: simon.buckle@oecd.org

Presentation here

S. Buckle's presentation outlines how policy recommendations should be backed by analysis of economic factors and real-life complexities, to maximize their effectiveness.

The primary suggestion was to **price negative externalities** (costs incurred by society) when proposing policies. In Figure 4, E* shows the optimal point in economics, which is when the marginal costs and the marginal benefits of reducing damaging emissions are equal. Policies opting for E* are economically efficient, increasing their appeal and stimulating the creation of new technologies and new business models.

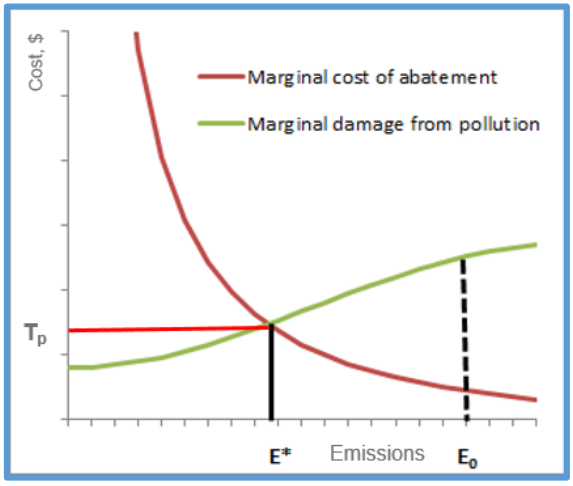


*Figure 4: the x axis indicates levels of emissions; the y axis indicates costs to mitigate emissions; E_0 is where we are at now; E*is when costs and benefits are equal.*

S. Buckle noted that this diagram is very simplistic. In practice the benefits of reducing pollution are multi-faceted (environmental, agricultural and health-related) and pollution's marginal damages vary across regions and over time. The marginal costs of abatement also vary, e.g. across firms. Accordingly, **a tailored analysis must be carried out for each project**. Expecting the same solution to be optimal for all firms would be inefficient and this is where emissions trading schemes can be useful. Furthermore, distributional issues should be built into the cost-benefit analysis and because social discount rates are difficult to quantify, sometimes it is best to evaluate policy options based on two or three different assumptions which might have different implications for equity.

S. Buckle also outlined **the wide-range of real-life complexities that must be taken into account** when making policies. Policy proposals must take into account:

- Uncertainties over damages and people's reactions to policies.
- The different abatement costs of different pollutants.
- Information asymmetries – while firms might know the costs of reducing emissions, people in governmental ministries might not.
- The different climate impacts of different pollutants – gases such as CO_2 have a cumulative effect, while the impacts of SLCPs are completely different.
- Different regions' vulnerability to pollutants, contingent on factors such as regional ecosystems.
- The spatial and temporal inhomogeneity of pollutants.
- Sustainability – while electricity reduces charcoal consumption (and thus BC emissions), progressive electricity tariffs that charge big industries more than small users (to benefit poor people) might have perverse consequences, leading firms to provide a bad service to unprofitable customers, causing them to turn to burning biomass.
- Avoiding the rebound effect and technological lock-in: While Israel's green tax on cars had a very positive effect in terms of reducing a wide range of pollutants, the changes in the tax rules also led to people buying more cars, reducing the benefits from cleaner cars. Technological lock-in to vehicle transport in cities could be reduced by investing in public transport, perhaps on a subsidised basis.

Attention was also drawn to the different type of measures that can be promoted. The table on the right shows how **regulatory, economic and information/voluntary measures** can be implemented to address different types of emissions.

Table 2: Regulatory, economic and information/voluntary type of policies that can be adopted to mitigate BC, methane and HFC emissions

	Regulatory	Economic	Information/voluntary
Black carbon	Vehicle emissions standards Catalytic converters	Taxes on vehicle purchases. Subsidies to public transport. Reform of electricity tariffs	Health information on impacts of indoor biomass burning
Methane	Regulations on fossil fuel production	Phase out environmentally harmful subsidies Landfill taxes	Dietary changes Labelling & health information
HFCs	Progressive ban Montreal Protocol	Taxes	Company disclosure Consumer Goods Forum

Finland and Norway's actions | Finland

Kaarle Kupiainen
Senior Research Scientist
Finnish Environment Institute (SYKE), Finland
Email: kaarle.kupiainen@ymparisto.fi

While the Nordic countries are burdened with transport and residential pollution, they are amongst the cleanest countries in Europe and the world. Norway is one of the few countries to have developed a **national action plan on SLCPs,** while Finland has worked on emission information and implemented some sectorial programmes. K. Kupiainen explained, building on Nordic examples, how to keep SLCPs on the government's agenda.

Firstly, the **international fora** – which include the Artic Council, the European Union and the UN's environmental initiatives – have ensured SLCPs' visibility, also providing a setting to discuss and study alternative actions. The European Union itself has been a very important driver, as EU legislation already indirectly targets many SLCP emissions. Secondly, **effective communication** between academia, experts and the government has been important in identifying priority sectors and formulating policies.

> While attention and resources currently are on the southern continent, the north also has problems and a lot of experience. SNAP should enhance communication between experienced countries in the northern hemisphere and those in the southern hemisphere. (R. Mills, IUAPPA)

Close collaboration with government agencies, universities and international organizations has made it possible to develop a **high level of expertise** on emissions and ambient concentrations, and extensively assess the impacts of policy options, climate and health impacts among others. Norway's national action plan was informed by **thorough sectoral analyses and detailed climate metrics**, with the cost of control measures informing the prioritization of different measures. Finland has initial plans to follow Norway's example and include cost data into the analyses as well. Finally, from a national perspective it is often important to highlight regional or national impacts alongside global ones.

Implementation Pathways | IUAPPA

Richard Mills
Director-General
International Union of Air Pollution Prevention Associations (IUAPPA)
Email: rmills_iuappa@yahoo.co.uk

Presentation here

R. Mills outlined strategic pathways and linkages to progress and implement SLCP control measures:

- Get **legislative backing** or even a very weak reference to SLCPs within existing legislation. This makes SLCP projects more credible to other departments and gives them a sense of permanence. Also, once legislation has passed it is hard to get rid of it, and governments generally slash economic funding in areas that do not have legislation.

- **Frame and embed SLCP mitigation plans within existing development plans**. Most countries have 5-year development plans and budgets allocated to these, so time your proposals to ensure they are not received just after a 5-year budgetary cycle has been approved.
- **Link SLCP plans to existing national climate and air quality plans**. However, in some countries the climate and air quality departments are separate and in this case work with both, establishing a structured relationship to optimize benefits across the two sectors. In some countries there are no existing bodies for climate and pollution, providing the opportunity to integrate SLCPs from the outset.
- **Approach central finance departments** as they are fairly sympathetic to SLCP measures which provide a means to reach overall environmental objectives and targets cost-effectively. Finance departments seem to be the most sympathetic to SLCP measures after health. Also, the economic argument is understood by everyone.

Intended Nationally Determined Contributions | IGSD

Nathan Borgford-Parnell
Staff Attorney
Institute for Governance and Sustainable Development (IGSD)
Email: nborgford-parnell@igsd.org

Presentation here

NDCs represent a great opportunity to control the climate mitigation language and communicate in a way that is most relevant to constituents. Accordingly, including SLCPs in NDCs is very beneficial. All SNAP countries included at least 1 SLCP in their NDCs; Mexico, Chile and Nigeria included separate sections on SLCPs, Mexico being the only one with a separate section on BC; Ivory Coast and Morocco talked about the importance of SLCPs in their NDCs; Bangladesh, Ethiopia, Ghana, Jordan, and Togo listed the SLCP-related co-benefits of NDC actions; and many countries included specific activities that are being carried out to mitigate SLCPs – Bangladesh included a Brick initiative, for example. The point is to **integrate SLCP action into NDCs and into as many official internal and external policies as possible**. The two-target proposal represents a great opportunity at the moment. This integration or harmonization is key as it will **generate a lever internally**.

> While BC might not be mentioned in NDCs, a closer analysis might show that the measures included in the NDCs also reduce BC and other SLCP emissions as co-benefits (O. Jura, Kenya)

SLCPs, National Action Plans and Nationally Determined Contributions | Discussion

On-going efforts have been made to insert SLCPs into National Action Plans and Nationally Determined Contributions (NDCs). Countries shared their approaches, good practice, successes and challenges.

Chile's NDCs include SLCPs. The climate action plan's first draft did not mention SLCPs and the climate change department argued this was because they were part of co-benefits. Efforts were made to specifically include SLCPs in the national action plan because although BC emissions are low compared to other emissions in the transport sector, not mentioning them and SLCPs might lead to lost opportunities for action.

Peru has an air quality action plan and diverse climate change commitments. Several studies have been carried out to align existing commitments with SLCP measures: an emissions inventory of SLCPs was put together and a first mitigation scenario – based on existing climate change commitments – was also developed. This made it possible to assess whether more action was needed to mitigate SLCPs and in what sectors. As Peru has separate ministries for air pollution and climate change, collaboration with both was established from the outset. Presentation link here.

Chad is considering adopting Peru's approach to harmonize the different climate and air quality-related legislations with each other.

Bangladesh has a constitutional provision for the protection of the environment from pollution and degradation. Moreover, the country's environment conservation act of 1995 now also includes SLCPs.

The health section of Cote d'Ivoire's NDC refers to adaptation to climate change, showing how linkages with health provide an opportunity to insert SLCP measures into NDCs.

Colombia has decided to push for a separate SLCP action plan, as the air quality action plan does not have a sufficiently strong institutional framework and as the climate change action plan is focused on long-term goals. To push for this action plan, SLCP measures have been evaluated and prioritized using the multivariate analysis outlined earlier, which was subsequently presented to various sectors. However, the existing climate change policy does refer to SLCP mitigation, providing SLCP measures with a legal framework.

Cote d'Ivoire finds it very useful that the SNAP toolkit used for the SLCP national planning uses a bottom-up approach. This approach takes into account the contribution of different sectors to air pollution and global warming, and the impacts of different measures, including co-benefits. This makes it possible to clearly indicate how reduction of emissions target will be achieved. Conversely, Cote d'Ivoire's NDCs planning adopted a top-down approach and thereby does not set out how the 28% reduction of emissions target will be achieved, making it difficult to determine whether it will be reached. The Ministry is now looking to the SNAP team to be the driving force of combining the two assessments, pulling information together in terms of SLCP reduction and CO_2 reduction. (A. B. Brida, Côte d'Ivoire)

Nigeria is in the process of developing a national action plan. All relevant stakeholders have been involved in the process, including the national budgetary planning and the ministry of justice. A workshop with all stakeholders will be held to develop the final draft. Subsequently, obtaining legislative backing should be facilitated by the fact each legislative branch in Nigeria has a chairman for the environment who constantly liaises with the ministry of environment. Challenges include the lack of funding for SLCP-related projects but this should be partly addressed by the linkage forged with the national budgetary planning commission; the lack of data available and the reliability of the one that is available, but this can partly be addressed through the use of international data provided by the World Bank and other international organizations. Once country-data is available, the international one can be replaced. Nigeria has also been facing financial challenges to implement the project and strongly encourages countries to ensure an adequate institutional set up when starting the project, with the support of the CCAC.

When developing national actions plans, engage and communicate with as many stakeholders and actors as possible, at the national and sub-national level and in the public and private sector. Look at governance structures and understand how to best engage with all actors.

Session 3
Financing SLCP mitigation: exploring opportunities

The key takeaway messages from this session are:

- It is not a matter of finding the money but of redirecting it from brown assets to green ones. Redirection can be facilitated by putting a price on carbon or by establishing ambitious national policy frameworks and action agendas.
- Activities can be financed through internal processes (the private sector's interventions in the market), national funding and external funding (private and international). Choice of funding will depend on the nature of the problem, existing national taxation and resource bases.
- Analyses demonstrate that the bulk of climate finance will be **private** and that it will be **domestic** (not international).
- To get financial resources from government finance systems, it is important to know the financial dimensions and impacts of SLCP control measures, the organizational structures of financial entities and the stakeholders in different sectors.
- It is a good time to submit proposals to the Green Climate Fund. However, proposals must follow specific procedures and meet specific criteria.

Financing SLCP Reduction measures after COP21 | I4CE	
Benoit Leguet	Email: benoit.leguet@i4ce.org
Managing Director	
Institute for Climate Economics (I4CE)	Presentation here

I4CE's presentation outlined the financial implications of COP21, financers' need to integrate global warming into their decision making, the need to redirect both public and private investment to renewables, and how to push for this redirection.

> "It's not so much about finding money, it's about redirecting flows that today go towards brown assets to green ones." (B. Leguet, I4CE)

COP21's targets ultimately boil down to **aligning the economy, development and climate**, which implies reaching 0 net emissions globally by the end of the century. To achieve this either carbon capture storages need to be developed on a large scale or carbon needs to be left underground. Given that roughly $5,000 billion per year are needed to limit global warming to under 2°C and given that currently roughly the same amount is being invested in the carbon economy, it's not a matter of finding money but of **redirecting it to green assets and renewables**. In 2016 36 billion euros were invested in green assets in France out of 400 billion euros of national investment. Hence, the remaining 360 million could have been invested in carbon-neutral assets or brown assets – attention must be directed to these investments, as they hold growth potential for SLCP control measures.

One way to achieve this redirection is to **put a price on carbon**, assessing business-as-usual scenarios and externalities (explored in session 2). Another way is to **reduce the costs of transitioning** to a low emission economy by: establishing **clear national policy frameworks and action agendas** that complement the international one; fully integrating low-carbon and SLCP measures into the **financial value chain** to make them more attractive, because currently, many of them have high upfront costs, relatively less known winners and regulatory uncertainties. Also, as many SLCP measures are small-scale, they need to be **made replicable** to gain attractiveness.

> Analyses demonstrate that the bulk of finance will be **private** and that it will be **domestic** (not international). Public financial institutions however will still play a major role, as they have specific mandates. Hence, the investment environment needs to be made more attractive to finance, and private and public finance must be blended.

Finding the money: Picking your way through government finance systems | IUAPPA

Richard Mills
Director-General
International Union of Air Pollution Prevention Associations (IUAPPA)
Email: rmills_iuappa@yahoo.co.uk

R. Mills outlined the key factors that need to be taken into account when looking for money.

Richard's first point was the need to **be aware of the financial dimensions and impacts** of every control measure from the start, knowing the upfront and longer-term costs, who will cover them and how they will bear the strain. When external grants or benefactors do not provide the financial resources necessary, there are two alternative routes. The first is central government funding, meaning the public will bear the costs through taxation. The second is funding by the companies or organizations being regulated, which makes it more challenging to determine who will bear the costs, given that in a competitive market for example, companies will likely not be able to pass the cost onto the consumer, but lost profit might translate into job losses.

> Redirecting money means there will be winners and losers: it's a matter of managing this.
> (M. Berglund, UN Environment)

> The fact many SLCP measures are cost-effective in the long-run, with some methane ones also being profitable, needs to be emphasized.

Financial considerations and the way they are communicated will **vary across financial entities with different organizational structures**. Organizational types can roughly be divided into three categories: large-scale international private-sector companies such as oil companies, with a clear top-down hierarchical decision-making structure; small-scale local activities such as small artisans, which involve large numbers of people; and public utility services such as water, with the public sector being both the commissioner and contractor. In the latter case for example, the issue of whether the water company, the water department or the environment department bear the costs will arise. Financial considerations and their communication will also **vary across sectors**. The transport sector for example, is a particularly challenging one as it implies negotiating with trade associations. Given that these associations exist to defend the economically weakest parties in their sector, they generally have a distorted view. In this case, champions who are willing to bear the risks of innovating must be identified. In the residential sector for example, household measures will require lending.

The CCAC's finance innovation feasibility study is available online. It assesses barriers to financing for SLCP measures in a number of key sectors and markets, and the financial profiles of key SLCP mitigating technologies.

Several countries, led by Germany, have put together an **NDC partnership**. The partnership will help countries turn their NDCs into action, showing existing sources of funding.

Finally, it must be stressed that most **industries find value in regulations** that provide them with a level-playing field. However, they only like regulations that don't force them to invest very quickly, requiring gradual investments and thus smoother transitions.

Bangladesh has a dedicated Climate Change Trust Fund that is drawn from the national government's funds, and has already committed $400 million over the last 4-5 years. This fund has both positive and negative aspects. On the one hand, because the Trust has a limit of $3 million per project, when big projects exceed this limit the central government team refuses to offer financial support on the grounds that a separate climate trust fund has already been established. On the other hand, more than 300 small projects are being implemented under this fund.

The Central Bank of Bangladesh has mandatory programmes for banks to lend to renewable energy and energy efficiency activities. It also gives favoured interest rates to small and medium sized enterprises. Being amongst the few in the world to do this, they were recognized by UN Environment's inquiry as one of the leading countries in the climate change space.

The Green Climate Fund | UN Environment

Marko Berglund
Programme Management Officer
Finance Unit, Economy Division
UN Environment

Email: marko.berglund@unep.org

Presentation here

M. Berglund's presentation outlined what the Green Climate Fund (GCF) is and how funding proposals for the GCF should be carried out.

What is the Green Climate Fund?

Launched in 2011 and fully operational since 2015, the GCF is the largest global fund ($10.3 billion) that is fully dedicated to climate change, with **an aspirational target of approving $2 billion by the end of the year**. The GCF sees itself as a catalyst for the redirection of finance flows to climate resilient initiatives. GCF projects fall under 4 categories: micro projects (under $10 million); small projects (under $50 million); medium projects (up to $250 million); and large projects (over $250 million). Projects that are smaller than $10 million can be bundled together, developing a **programmatic approach**. **Regional proposals** can also be developed, in which case a regional implementing agency that can work in all countries must be selected. To make a regional proposal it is not necessary for all the countries to have the same level of policy framework.

A guidance document on developing a programmatic approach is available here.

Large institutions tend to cut back on administrative expenses, making small projects difficult to fund (higher transaction costs). Accordingly, they are more willing to fund bigger projects. (R. Mills, IUAPPA)

To be approved, GCF funding proposals must meet at least one of the **GCF's investment criteria** and must demonstrate a clear link to the **GCF's paradigm shift**. Funding proposals cannot be submitted without a letter of no-objection from countries' **national designated authorities** (NDA). **Implementing entities** also have to submit a document outlining how they want to engage with the GCF. Implementing entities are responsible for the GCF fund and for the project's implementation. They can be national (such as Kenya's national environment management authority), regional (such as the secretariat of the South Pacific Regional Environment Programme) or international (UN agencies, international organizations). It is also possible to receive funds through a blend of national and international implementing entities, with different entities being in charge of different programmes. Currently there are 33 implementing entities and the list is available here.

The GCF funds **adaptation and mitigation actions** and outcomes. It therefore does not fund projects whose central focus is developing the policy environment. Proposals must focus on on-the-ground action that triggers changes in the policy environment, which in turn fosters climate change adaptation and mitigation.

There are **GCF readiness programmes** which support countries to develop programmes and funding proposals. They also support NDAs and assist with the accreditation of national implementing agencies. **UN Environment is conducting 1 GCF readiness programme**, providing support to 8 countries. Obtaining GCF funding can be complex: it takes an average of 12 months to get accreditation and an average of 12 months to develop a funding proposal. However, one could speed up the development of funding proposals by using existing data, information and concepts. The projects carried out through the CCAC or Nationally Appropriate Mitigation Actions (NAMAs), for example, could provide a platform, as they have already done a lot of the **background work**. In addition, while GCF is headquartered in Korea and bearing in mind its secretariat's currently limited capacity, there are regional focal points that can be approached for advice when developing proposals.

The World Bank has a programme called the Partnership for Market Readiness (PMR): it helps countries prepare the underlying regulatory framework for climate change mitigating actions and facilities.

Advice for GCF funding proposals on SLCP measures:

1. Proposals must link SLCP mitigation measures to climate change adaptation and mitigation, to meet at least one of the GCF's investment criteria.
2. Proposals must clearly outline the change projects will bring about, to fit into the **GCF's paradigm shift**, which calls for transformational change.
3. It is important to both **know and engage NDAs** from the start, and to align proposals with NDAs' priorities to ensure their buy-in.
4. **Implementing entities** should also be identified and engaged from the beginning, to ensure they have an adequate accreditation level and that they are comfortable with the proposal's design.

Developing a regional proposal for GCF funding | Peru

Patricia Tord
Senior Advisor on SLCPs
Ministerio del Ambiente, Peru
Email: ptord@minam.gob.pe

P. Tord outlined the process a group of Latin American countries (Chile, Colombia, Mexico, Uruguay, Peru and the Dominican Republic) are going through to prepare a regional proposal for GCF funding.

- To select which sector they are going to develop a regional proposal for, each country used a **matrix**, evaluating each sector against the following criteria: common ground across countries; alignment with NDCs; mitigation potential; change forged; quantity of beneficiaries; environmental, financial and time-related sustainability. This led to the initial

Regional proposals can be beneficial when the situation across countries is very similar, when political reasons make it desirable, and when existing projects across countries provide a base of information that can be adopted. (M. Berglund, UN Environment)

identification of three sectors: transport, open burning and bricks.

- **Concept notes** for each sector are being developed to inform the final selection.
- **Key domestic stakeholders have been engaged from the start** to ensure they will not pushback later on in the process: NDAs have been kept in the loop and asked for feedback; relevant ministries have been approached and informed on how the GCF proposal will affect/benefit their sector; and connections have been forged with existing projects - a Nationally Appropriate Mitigation Action (NAMA) in the Bricks sector, for example, is likely to be included in a GCF proposal on bricks.
- The Inter-American Development Bank is being considered as **implementing agency**.

Lessons Learnt:

- Make sure the NDA is on-board from the start.
- Clearly communicate institutional and financial arrangements with stakeholders, as this might trigger competition between institutions and attract different ministries.
- Think of all the existing barriers within the sector you want to transform, such as market barriers.

Challenges:

- Regional concept notes require a lot of understanding on specific issues and sectors. While some countries have comprehensive studies, others do not.
- The allocation of resources – even when the implementation entity is in all countries – might be a problem
- A regional proposal can add a layer of complexity because feasibility studies, background work, and the NDA's no-objection letter are still required from each country. A regional study is not sufficient and on top of that, all countries might not have the same level of information. (M. Berglund, UN Environment)

> The regional assessment has shown that Latin America is characterized by enormous diversity. Whereas transport conditions in cities and mega cities across the region are very similar, in the agricultural and brick sector there is a lot more variation, making a regional approach more difficult. (R. Mills, IUAPPA)

Session 4
Communicating on short-lived climate pollutants

The key takeaway messages from this session are:

- Communication strategies must have clear goals, set target audiences and simple, emotional messages which are repeated with consistency. They must also use the media outlets that are most effective locally and nationally.
- When communicating with decision-makers, a wide-range of approaches and strategies can increase the chances of drawing their attention to SLCPs and SLCP control measures.

Communication Planning | US Environmental Protection Agency

Sara Terry
Senior Environmental Protection Specialist
Environmental Protection Agency (EPA), United States
Email: terry.sara@epa.gov
Presentation here

S. Terry's presentation outlined the factors that need to be taken into account when planning communication strategies.

Foremost, communication strategies should have **clear goals**. These can range from raising awareness to triggering behavioural changes – communication strategies will vary accordingly. Goals should be SMART (specific, measurable, action-oriented, realistic, time bound): the more specific they are, the more specific the communication strategy and the easier it will be to evaluate the progress made.

> "Development" is the buzzword in Africa. SLCP mitigation measures thereby must be integrated into development discourses to raise awareness and get attention. (K. N'Goran)

Communication strategies need a **target audience**: examples include the public, children, decision-makers and internal audiences. Communication strategies will vary according to the audience: internal audiences (executive directors) for example, do not need technical background whereas the general public and children do. **Once target audiences have been identified, they must be understood**: what do they care about? What motivates their actions? How does the issue affect them directly and what can they do to address it? Are they already bearing the costs of the issue? Are they the winners or are they the losers? Opportunities must be identified, anticipating adversaries and turning them into advocates.

The **most effective media outlets** within specific contexts should also be identified, as communication strategies will vary accordingly. The US for example, strongly relies on the web as most people can access the internet whether at home or in the library. Differently, many African countries strongly rely on radio communication, while other countries rely on printed media and flyers.

Communications must have **key messages**. Whether the audience is children or decision-makers, messages need to be **simple**: they must be short, easy to explain, understand and remember. They must be **emotional:** if you talk about children it will have an impact, as they are the most vulnerable. Key messages should be **limited in number**: people will not remember 10 messages, they might take in 3 and will remember 1. The same message must be **repeated** by different people, to different audiences, through different venues. This must be done with **consistency**, to ensure that when the message travels people do not receive conflicting and confusing information. When an interviewer asks: this is a massive problem, what are you doing about it? If necessary deviate and talk about what you are working on, going back to the key message to reiterate it – "we are working on this and this but more has to be done to help children who are the most vulnerable." When developing messages, **collaborate with technical staff**: you cannot make a message simple if you don't understand the science behind it.

Good communication is not cheap: **budget** from the start!

The SLCP campaign in Mexico | INECC

Abraham Ortinez Álvarez Email: abrahamoaa@gmail.com
Technical Specialist
Instituto Nacional de Ecologia y Cambio Climático's (INECC), Mexico

INECC shared elements of its **external and internal SLCP campaign.** Its external campaign includes participating in an **exhibition** that the council of science and technology has organized in Zocalo square, in the heart of Mexico City where thousands of people pass by every day. A big tent that has been placed in the square, using the **Time to Act material** that the CCAC has developed, which clearly outlines SLCP measures. To target children, INECC will also present the Spanish version of Time to Act at an **international book fair** in Mexico in the next months. There will also be a special booth where INECC representatives will read the book to children and share what INECC is doing.

Figure 5: INECC'S tent with illustrations from Time to Act materials in Zocalo Square, Mexico City, Mexico.

INECC's internal campaign includes making a **presentation to ministries, organizations and other entities** across the country. The presentation:

- Outlines Mexico's existing laws and commitments to reduce SLCPs.
- Outlines INECC's work – its projects on emissions monitoring, its achievements, and its collaboration with a national and international stakeholders.
- Highlights the link between SLCPs and health, and those between air quality and climate change, calling for actions that jointly address these issues.

- Invites the audience to collaborate.
- Directs the audience to existing online resources - such as studies, documents and INECC's **inventory platform**.

INECC also has a **BC network**, which is the first to show BC emission measurements and the measures that could be taken to reduce current emissions. The network raises awareness among ordinary people and has led to the involvement of local government and municipalities, to show the current situation across the country and how it can be addressed.

CCAC Communication materials | CCAC Secretariat

Tiy Chung
Communications Officer
Climate and Clean Air Coalition (CCAC) Secretariat
Email: tiy.chung@unep.org

Feedback was provided on what type of communication materials countries would like the CCAC to provide them with: infographics that put conceptual ideas into simple and flashy diagrams; information and data on SLCPs; factsheets; a Spanish version of Time to Act; short messages that can be shared on Facebook and social media; short videos for different stakeholders (such as governments and the general public) that are easy to share; tools that exploit school and educational avenues; a competition on the solutions centre where people submit infographics and artworks, to engage young people.

The secretariat can support communication strategies by providing:

- A how-to media strategy document
- Factsheets with the key messages and facts
- Assistance with script development when countries and partners want to make their own videos

The Global Methane Initiative has a number of methane-specific videos that can be shared.

Partners and countries are also invited to share footage of what they are doing – videos and pictures – so that the CCAC has raw materials to work on. However, they must get release forms that enable them to take video footage and pictures beforehand.

Factsheets on pollutants | Discussion

Thee Factsheets have been developed: Factsheet on BC, Factsheet on HFCs and Factsheet on Methane.

Feedback on the factsheets included: include separate sections on science, development, health, costs etc..; sector-based factsheets (e.g. on transport and agriculture); translate these factsheets into PowerPoint slides; include the human story / an emotional element; include many statistics, facts and figures; provide statistics for different regions; clearly show what actions governments, organizations and individuals can take; clearly outline the measures and their benefits – "one day without a car will

have x impacts"; use simple language (ordinary citizens do not understand PM2.5); translate the factsheets into Spanish and French. **Suggested solution:** creating a factsheet with separate sections on measures, benefits, costs, health impacts and development opportunities, which can be played around with and tailored to different audiences. While it is not possible to include regional and sectorial statistics, the overarching solutions and messages will be included.

The BreatheLife Campaign | World Health Organization

Elaine Fletcher
Science Editor
World Health Organization (WHO)
Email: fletchere@who.int
Presentation here

E. Fletcher comprehensively outlined the BreatheLife campaign, the approach used and the BreatheLife Cities element due to be launched at UN Habitat III. The BreatheLife Campaign's video – launched in July 2016 – now has over 100 000 views, with 1.3 million users having seen its infographics. To reach an even wider public it will also be translated into the 6 UN languages.

The BreatheLife campaign **targets** both the general public and institutions, to foster change both bottom-up and top-down (see Figure 5). This dual approach is necessary, as the public can block change when it does not understand the purpose behind it. The campaign's **goal** includes creating an atmosphere of awareness, changing the way people think about air pollution (linking it to strokes for example) and bringing about political change. To do so, a **block-approach** has been adopted: while the video has a simple message and only includes a few solutions, once awareness has been raised and the audience engaged, all solutions will be promoted. Finally, while the video's tone is **dramatic** it also mentions solutions, to create a sense of urgency without putting people's hopes down.

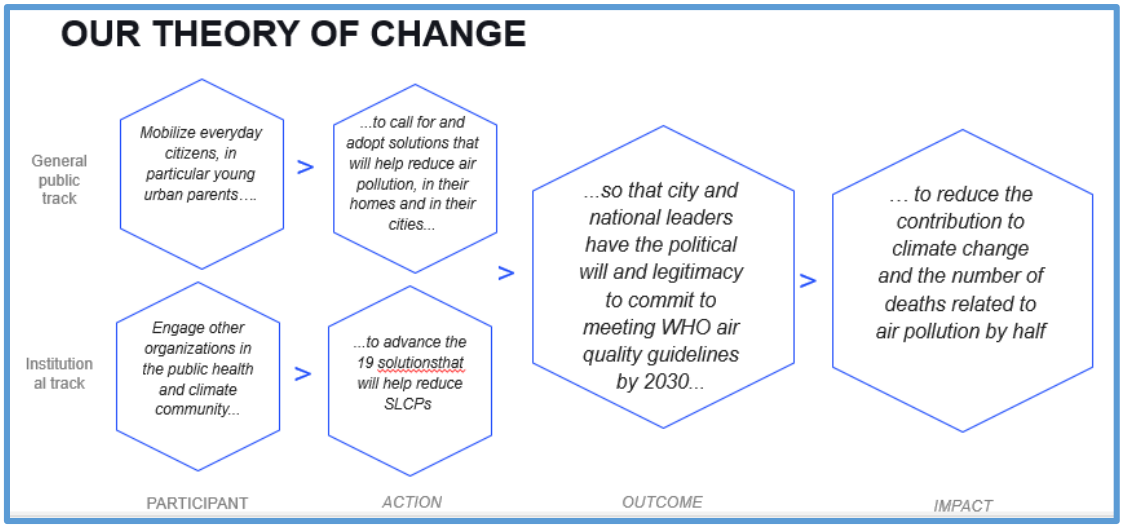


Figure 6: The World Health's Organization's theory of change, which targets both the general public and institutions to trigger change both bottom-up and top-down

BreatheLife Cities will be launched at UN Habitat III. Any city can join BreatheLife Cities, which will also have a microsite (available in all 6 UN languages). The microsite will have a very different look and feel that is promotional and issue-oriented. It will have a data map showing air pollution levels around the world and in over 3000 cities. Clicking on a city on the map or searching it in the search box will lead to more information on its progress timeline, motivated by aspirational targets that are meant to **accelerate change**. Statistics will be drawn from both local and satellite data. Moreover, when a city joins, it will receive its own logo such as "BreatheLife Santiago", and will have a spot on the microsite to share its actions to improve air quality, ideally creating a sense of excitement around the campaign. **The objective is to secure commitments from cities.**

BreatheLife Cities targets cities as they have local decision-making power, local budgets, and use 66% of energy (being where most people live). SNAP could learn from this, as the initiative only focuses on national-level actions that could be complemented with city-level actions. To drive action both globally and locally, the BreatheLife campaign has adopted a multi-layered approach with a **"think global act local"** mentality as a "one size fits all" strategy does not work.

A campaign is different from one-off communications: it is concerted effort over a defined period of time. WHO is working with a big communications firm to implement it.

How to communicate with decision makers | CCAC Secretariat	
Tiy Chung Communications Officer **Climate and Clean Air Coalition (CCAC) Secretariat**	Email: tiy.chung@unep.org Presentation here

Decision makers are very busy so when talking to them you must outline the issue, why it is important to them and what you need from them QUICKLY and SIMPLY, proving only top-line information, omitting details.

To make SLCP measures attractive to decision makers:

- Show their political capital – how they are good for decision makers' legacy and popularity.
- Show how decision-makers can own the agenda and make the issue their own.
- Show how some measures can be implemented easily, quickly and cost-effectively, with quick wins that can be achieved within one political term.
- Talk about their link to health, development, climate and the environment as these are of interest to most decision makers.
- Mention the national number of premature deaths from outdoor and indoor air pollution. The Global Burden of Disease website can assist with the gathering of these statistics.
- Show how they contribute to existing international commitments which politicians have already made.

- Tie SLCP emissions to existing solutions, whose costs and savings are clearly defined (including savings on health costs) and which are technologically feasible.
- Frame economic costs strategically: people are already bearing $5,000 billion in treatments. The question is whether they want to spend this money on inhalers for their children or in clean transport.
- Use different arguments with different audiences: finance minister vs environment ministers, private vs public sector.
- Exploit windows of opportunities: the Paris agreement's reference to the need for mitigation, adaptation and development measures that do not threaten food could be an entry point for SLCP control measures.
- Avoid using the term SLCP, as it is not easily understood.

Air quality and health are selling points at the municipality level, as they foster re-election, but profit and cost-effectiveness are selling points with the private sector.

Framing pollution costs strategically – examples:

- The World Bank's Death is in the Air infographic
- A study carried out in Israel showed that the external costs of transport's pollution was 6% of national GDP, whereas the transport sector's contribution via taxes was only 3.4% of GDP. Accordingly, society was paying the price of transport's pollution and this made a strong case for change.

A role play exercise was carried out: you are in an elevator and you have 60 seconds to drive the decision makers' attention to SLCP measures.

Finally, decision makers can be influenced directly – either in person or through someone who works closely with them – and indirectly by raising awareness and public pressure. Look at governance structures and understand how to best engage them.

ANNEX 1: LIST OF PARTICIPANTS

	Country /Organisation	Name	Title/Affiliation	Email Address
STATE PARTNERS AND OBSERVERS				
1	Bangladesh	Dr Sultan Ahmed	Director & CCAC Focal point	sulbul2002@yahoo.com
2	Cambodia	Savath KOCH	Deputy Director General, Ministry of Environment	kochsavath@gmail.com
3	Canada	Rita Cerutti	CCAC Co-Chair	rita.cerutti@canada.ca,
4	Canada	Franck Portalupi	Manager	franck.portalupi@canada.ca
5	Central African Republic	Maxime Thierry DONGBADA-TAMBANO	Coordination Technique REDD+ de la République Centrafricain, Ministère de l'Environnement, de l'Ecologie et du Développement Durable	dongbada2001@yahoo.fr
6	Chad	Mahamat Hassane Idriss	Ministry of Environment	mhi1962@yahoo.fr
7	Chile	Carmen Gloria Contreras	Policy and Standards Chief Department at Ministry of Environment	CGContreras@mma.gob.cl
8	Chile	Macarena Andrea Caceres Dupre	Junior Advisor on SLCPs	mcaceres@mma.gob.cl
9	Colombia	Claudia Carolina Cuentas	Advisor on SLCPs and Climate Change, Climate Change Directorate	CCuentas@minambiente.gov.co
10	Cote d'Ivoire	Ange Benjamin Brida	CCAC Coordinator, Centre Ivoirien Anti-pollution (CIAPOL), Ministry of Environment and Sustainable Development	angebrida@hotmail.com
11	Finland	Kaarle Kupiainen	Researcher, Finnish Environment Institute (SYKE)	kaarle.kupiainen@ymparisto.fi
12	Ghana	Emmanuel Kabenlah-Egya Appoh	Chief Programme Officer, EPA	eeappoh@yahoo.com
13	Guinea, Republic of	Oumou DOUMBOUYA	Assistante point Focal CCNUCC/Point de Contact CCAC	oumoudoumbouya@yahoo.fr
14	Iraq	AHMED HAQI TAWFEEQ AL-AJAJ	Assistant Manager of climate change dep.	ahmedajaj63@yahoo.com
15	Jordan	Abdelkarim Murshed Thiab SHALABI	CCAC Focal Point, Ministry of Environment	shalabi3@hotmail.com
16	Kenya	Eng. Omedi Moses Jura; P. Eng; MIEK	CCAC National Focal Point, Ministry of Environment, Natural Resources & RDAs, National Climate Change Secretariat,	omedijura@gmail.com
17	Kenya	Immaculate N Simiyu	Senior Compliance & Enforcement Officer, National Environment Management Authority	isimiyu@nema.go.ke
18	Lao PDR	Thevarack Phonekeo	Director of Pollution Control Division	thevarack@gmail.com
19	Liberia	Zargou Elisah Whapoe	Coordinator for the environment sector working group, EPA	zewhapoe@yahoo.com

20	Liberia	Jefferson P. Dahn	CCAC National Focal Point and SNAP Inst. Strength. Coordinator, EPA	Jefferson.dahn@yahoo.com
21	Maldives	Aminath Maiha Hameed	SNAP Inst. Strength. Coordinator, Ministry of Environment and Energy	aminath.maiha@environment.gov.mv
22	Mali	Mme Tandia Fanta Traore	Ministry of transports	courounytandia@gmail.com
23	Mexico	Iris Jimenez	Director for International Affairs, INECC	iris.jimenez@inecc.gob.mx
24	Mexico	José Abraham Ortinez Álvarez	Technical Specialist, INECC	abrahamoaa@gmail.com
25	Moldova, Republic of	Stela Drucioc	Administrator, Carbon Finance Unit, Ministry of Environment	stela.drucioc@cfu.md
26	Mongolia	ADIYASUREN Tsokhio	National Ozone Authority/Ministry of Environment and Tourism	naransuren1990@gmail.com; ozoff@magicnet.mn
27	Morocco, Kingdom of	Souad Azemmat	CCAC National Focal Point, Ministère de l'Environnement	Souad.azemmat@gmail.com
28	Morocco Kingdom of	Sukaina Kriem	Coordination CCAC, Ministère délégué chargé de l'environnement	soukaina_kr@yahoo.fr
29	Nepal	Ganesh Kumar Shrestha	Department of Environment, Nepal	gshre@yahoo.com
30	Nigeria	Bahijjahtu Abubakar	Renewable Energy Programme, Federal Ministry of Environment	bahijjah@yahoo.com
31	Nigeria	Bala Bappa	SNAP & IS Coordinator, Renewable Energy Programme, Federal Ministry of Environment	balabappa@yahoo.com
32	Peru	Eric E. Concepcion	CCAC and SNAP Focal Point, Ministry of Environment	econcepcion@minam.gob.pe
33	Peru	Patricia Tord Zapata	Senior Advisor on SLCPs	ptord@minam.gob.pe
34	Sweden	Erik Adriansson	Scientific Officer	erik.adriansson@naturvardsverket.se
35	Togo	Essiomle Kossivi Uwolowudu	CCAC National Focal Point and SNAP Inst. Strength. Coordinator	ukessiomle@yahoo.fr
36	Togo	Akpe Kouamivi MALEFO	Assistant coordinator	mak.dave@yahoo.fr
37	United States	Sara Terry	Senior Environmental Protection Specialist, US EPA	terry.sara@epa.gov
38	Uruguay	Maria Magdalena Hill Villamonte	Chief of department	magdalena.hill@mvotma.gub.uy
NON-STATE PARTNERS & OBSERVERS				
39	GMI	Monica Shimamura	Co-Director, Administrative Support Group, Global Methane Initiative	shimamura.monica@epa.gov
40	I4CE	Benoit Leguet	Managing Director, Institute for climate economics	benoit.leguet@i4ce.org
41	ICCI	Jane Metcalfe	International Cryosphere Climate Initiative	jane.e.metcalfe@gmail.com
42	ICLEI	Maryke van Staden	Manager Low Carbon City Agenda, Local Governments for Sustainability	maryke.van.staden@iclei.org
43	IGSD	Giselle Gonzalez	Institute for Governance and Sustainable Development	giselle.gonzalez.254@gmail.com
44	OECD	Simon Buckle	Head of Division, Climate, Biodiversity and Water Division, Organisation for Economic Co-operation and Development	simon.buckle@oecd.org_
45	Oxfam	Thomas Damassa	Senior policy advisor, Climate change	thomas.damassa@Oxfam.org

46	Swisscontact	Sara Pauli	Environmental officer, Swiss Foundation for Technical Cooperation	sara.pauli@swisscontact.org
47	Thailand	Phunsok Theramongkol	Pollution Control Department	phunsak.t@pcd.go.th
48	UNEP	Marko Berglund	Programme Management Officer, Finance Unit, Economy Division	marko.berglund@unep.org
49	WHO	Elaine Fletcher	Communications / Editor, World Health Organization	fletchere@who.int
50	WHO	Michael Hinsch	Project Officer, World Health Organization	hinschm@who.int
LEAD PARTNERS AND ORGANISERS				
51	United States	Amanda Curry Brown	Program Manager - Air Quality & Climate, US EPA	currybrown.amanda@epa.gov
52	United-States	Pamela Franklin	Branch Chief, NonCO_2 Programs, US Environmental Protection Agency	franklin.pamela@epa.gov
53	IGSD	Nathan Borgford-Parnell	Staff Attorney, Institute for Governance and Sustainable Development	nborgford-parnell@igsd.org
54	IUAPPA	Richard Mills	Director-General, International Union of Air Pollution, Prevention and Environmental Protection Associations	rmills_iuappa@yahoo.co.uk
55	MCE2	Luisa Molina	President, Molina Center for Strategic Studies in Energy and the Environment	ltmolina@MIT.EDU
56	SEI	Kevin Hicks	Dr/ Senior Researcher, Stockholm Environment Institute	kevin.hicks@york.ac.uk
57	SEI	Johan Kuykenstierna	Dr /Policy Director/SAP, Stockholm Environment Institute	johan.kuylenstierna@york.ac.uk
58	UNEP Office for Africa	Kouadio Desiré N'Goran	Regional SNAP Coordinator, Africa	Kouadio.Ngoran@unep.org
59	UNEP Office for Latin America	Marisela Ricardez Garcia	Regional SNAP Coordinator, Latin America	marisela.ricardez.affiliate@pnuma.org
CCAC SECRETARIAT				
60	CCAC Secretariat	Helena Molin Valdes	Head, CCAC Secretariat	helena.molinveldes@unep.org
61	CCAC Secretariat	Elsa Lefevre	SNAP Initiative Coordinator	elsa.lefevre@unep.org
62	CCAC Secretariat	Tiy Chung	Communication Officer	tiy.chung@unep.org
63	CCAC Secretariat	Yekbun Gurgoz	Finance Initiative Coordinator	yekbun.gurgoz.affiliate@unep.org
64	CCAC Secretariat	Sunday Leonard	Science Officer	Sunday.leonard@unep.org