Co-benefits Approach for Short-lived Climate Forcers (SLCFs)

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Significant attention to SLCFs especially after 30 years anniversary of CLATAP in 2009.

Two important reports by UNEP in 2011.
Basic knowledge on SLCFs
SLCFに対する基礎知識

◆ CO2 mitigation actions are essential for long-term climate protection.
◆ However, for short-term achievement, it is difficult to limit global mean temperature within 2° from pre-industrial level only with CO2 mitigation actions.
◆ It is necessary to address short-lived climate forcers (SLCFs) such as tropospheric ozone, black carbon and methane on the top of CO2 mitigation actions.

Radiative forcings of various gases
様々なガス・粒子の放射強制力
Black carbon has positive radiative forcing, but other aerosols such as organic carbon, SO2 have negative radiative forcing.

Air pollution control measures, such as reduction of SO2 emissions, might enhance climate change by removing negative radiative forcing.

It is, therefore important to consider co-control of air pollutants enhancing climate change (e.g., SO2) and those reducing climate change (e.g., black carbon, tropospheric ozone etc.) in a well considered manner.
Life shortening by PM2.5 (estimated by GAINS)
PM2.5による早期死亡数 (GAINSによる試算)

- Life shortening increased by PM2.5 estimated by GAINS.

![Graph showing life shortening by PM2.5 for different scenarios.](image)

- Baseline 2030
- SLCF measures
- All air pollution controls
- CO2 measures for 450 ppm

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline 2030</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>SLCF measures</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>All air pollution controls</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>CO2 measures for 450 ppm</td>
<td>20</td>
<td>15</td>
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</tbody>
</table>

A platform to improve information sharing and stakeholder dialogue on co-benefits in Asia.

Goal: to support the mainstreaming of co-benefits into decision-making processes in Asia.
New report in 2012

Reducing Black Carbon Emissions in South Asia
Low Cost Opportunities

Office of International and Tribal Affairs
U.S. Environmental Protection Agency

Figure A.1. Percent South Asian black carbon emissions contributions. Source: Adapted from [60].

<table>
<thead>
<tr>
<th>Region</th>
<th>Black carbon emissions (in Tg)</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-biomass burning anthropogenic emissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East/Southeast Asia/China¹</td>
<td>1.5</td>
<td>18.3</td>
</tr>
<tr>
<td>North America</td>
<td>0.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Europe</td>
<td>0.5</td>
<td>6.1</td>
</tr>
<tr>
<td>South Asia</td>
<td>0.6</td>
<td>7.3</td>
</tr>
<tr>
<td>Other (South America and Africa)</td>
<td>1.5</td>
<td>18.3</td>
</tr>
<tr>
<td>Biomass burning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South America</td>
<td>1.2</td>
<td>14.6</td>
</tr>
<tr>
<td>Africa</td>
<td>1.5</td>
<td>18.3</td>
</tr>
<tr>
<td>Other (North America, Europe, South Asia, and Southeast Asia)</td>
<td>1.0</td>
<td>12.2</td>
</tr>
<tr>
<td>Total</td>
<td>8.2</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a. The Koch et al. estimates are based on global black carbon emissions estimates from [15].
b. Estimates for major emitting regions are provided for each of two source types: non-biomass burning and biomass burning; minor emitters for each source type are subsumed under the category “other.” Koch et al. define six major emitting regions: North America, South America, Africa, Europe, South Asia, and Southeast Asia.
c. Koch et al. define Southeast Asia as being approximately equal to China in geographic area.
Source: [85].
Europe and North America pay much attention to CH4 and black carbon (BC).

This is because actions for Nox mitigation have been promoted in Europe and CH4 reduction measures seem to be crucial in the European future.

UNEP Report identified 16 mitigation measures for CH4 and BC emissions reduction.

Climate and Clean Air Coalition: CCAC

Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants Initiative: CCAC was set up in February 2012.

The Coalition intends to accelerate and scale-up action, catalysing new actions as well as highlighting and bolstering existing efforts.

13 partners as of June 2012: Bangladesh, Canada, Colombia, the European Commission, Ghana, Japan, Mexico, Nigeria, Norway, Sweden, USA, the World Bank and UNEP.

Website: www.unep.org/ccac
Major actions to be taken by CCAC

- Reducing black carbon emissions from heavy duty diesel vehicles and engines;
- Mitigating black carbon and other pollutants from brick production;
- Mitigating short-lived climate pollutants from the municipal solid waste sector;
- Promoting HFC alternative technology and standards; and
- Accelerating methane reductions from oil and natural gas production.

Rio+20: The Future We Want

222. We recognize that the phase-out of ozone depleting substances (ODS) is resulting in a rapid increase in the use and release of high global warming potential hydrofluorocarbons (HFCs) to the environment. We support a gradual phase-down in the consumption and production of HFCs.
Indoor Air Pollution
Initiatives for Cookstoves in South Asia

<table>
<thead>
<tr>
<th>Country</th>
<th>Lead organization</th>
<th>Link</th>
</tr>
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<tbody>
<tr>
<td>India</td>
<td>SKG Sangha</td>
<td><a href="http://www.skgsangha.org/activ_eco.html">http://www.skgsangha.org/activ_eco.html</a></td>
</tr>
<tr>
<td>India</td>
<td>Swayam Shikshan Prayog</td>
<td><a href="http://www.sspindia.org/SSP-WhatWeDo2.html">http://www.sspindia.org/SSP-WhatWeDo2.html</a></td>
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<tr>
<td>Nepal</td>
<td>Centre for Rural Technology</td>
<td>[<a href="http://www.crtnepal.org/?option">http://www.crtnepal.org/?option</a> = projects&amp;pid = 3033333637](<a href="http://www.crtnepal.org/?option">http://www.crtnepal.org/?option</a> = projects&amp;pid = 3033333637)</td>
</tr>
<tr>
<td>Nepal</td>
<td>Child Welfare Scheme</td>
<td><a href="http://www.pcisonline.org/content/breathing-spaces-easha-stoves">http://www.pcisonline.org/content/breathing-spaces-easha-stoves</a></td>
</tr>
</tbody>
</table>

Global BC and CH4 emissions by sector

Both BC and CH4 are significantly emitted from Asia.
Air pollutants emission trends in Asia

Different emission patterns in different Asian countries
Central Asia

5 Central Asia countries formulated the Framework Convention on Preservation of Environment for Sustainable Development of Central Asia.

East Asia:

13 countries, which includes Northeast and Southeast Asia, working under the framework of East Asia Network on Acid Deposition.

South Asia:

8 countries are cooperating under the framework of Male’ Declaration on Control and Prevention of Air Pollution and Its likely Transboundary Effects for South Asia.

Southeast Asia:

10 ASEAN member countries are working under the framework of ASEAN Haze Agreement.

UNEP established the Joint Forum for Asia and the Pacific to promote exchange of experiences and cooperation among sub-regional initiatives.

Recommendations

- SLCF co-benefits receive growing attention.
- New initiatives such as CCAC have been emerging.
- Promotion of co-benefits approach should link with various existing air pollution control initiatives. Model SLCF projects may be developed and implemented.
- Mechanisms to promote SLCF co-benefits, esp. funding mechanisms, are yet to be developed.
- Regional efforts may be more effective and efficient if they are supported by global initiatives, such as information sharing mechanisms, funding mechanisms for SLCF.
- UNEP may take initiatives for global actions on co-benefits, esp. on SLCF, taking into account various regional/sub-regional initiatives.
Two Rio Principles to be recognized

◆ Principle 2: [applied for transboundary pollutions since Stockholm] States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

◆ Principle 7:
States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.
過去の気候変動交渉従事者によるオブザーヴーション

- 気候変動交渉における経験と学び
- 交渉における課題と挑戦
- 交渉での効果と課題
- 未来への期待と課題

- 交渉での経験を共有し、学びを深めるためのためのオブザーヴーション