Improving Air Quality and Mitigating Climate Change Through Better Waste Management

CCAC MSW Initiative session
ISWA Congress 2018

Sandra Mazo-Nix
Coordinator – Waste Initiative, CCAC
24th October 2018
<table>
<thead>
<tr>
<th>Topic</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCAC MSW Initiative and its involvement in achieving SDG Target 12.3 and the CCAC HLA waste commitments</td>
<td>Sandra Mazo-Nix, Coordinator, CCAC MSW Initiative</td>
</tr>
<tr>
<td>Using Waste Initiative Tools to Support Project Screening and Assessment</td>
<td>Joe Donahue, Abt Associates</td>
</tr>
<tr>
<td>Decentralized organic waste management with small scale anaerobic digesters – A case study of Pune, India</td>
<td>Tom Frankiewicz, US EPA</td>
</tr>
<tr>
<td>Evaluating the technical feasibility of anaerobic digestion projects to treat organic waste using the AD Project Screening Tool</td>
<td>Benjamin, Abt Associates</td>
</tr>
<tr>
<td>Organic waste diversion strategies and policies in Europe, perspective from Germany and Sweden</td>
<td>Anja Schwetje, UBA, &amp; Asa Bergerus, Swedish EPA</td>
</tr>
<tr>
<td>Q/A</td>
<td>Moderator</td>
</tr>
</tbody>
</table>
## Second Part of Session

<table>
<thead>
<tr>
<th>Topic</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food recycling law in Japan and its implementation, progress and challenges</td>
<td>Premakumara Jagath Dickella, IGES</td>
</tr>
<tr>
<td>The experiences of CCAC Brazilian cities to prevent and treat food waste</td>
<td>Carlos Silva, ABRELPE</td>
</tr>
<tr>
<td>Preventing open burning of waste/improving waste collection</td>
<td>Dr. P. Agamuthu, University of Malaysia</td>
</tr>
<tr>
<td>Best practices for landfill stabilization in India, based on experiences in East Delhi</td>
<td>Nimmi Damodaran &amp; Pradeep Khandelwal (EDMC)</td>
</tr>
<tr>
<td>Landfill operations to maximize LFG recovery</td>
<td>Bob Dick, SCS Engineers</td>
</tr>
<tr>
<td>SWM Case study – Battambang, Cambodia</td>
<td>Rithy Uch and Phalla Sam, Cambodian Education and Waste Management Organization (COMPED)</td>
</tr>
<tr>
<td>Q/A</td>
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</tr>
</tbody>
</table>
Our work to achieve SDG Target 12.3 and the CCAC HLA Waste Commitments

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1 Background
The Climate and Clean Air Coalition

• Who are we
WHAT ARE SHORT-LIVED CLIMATE POLLUTANTS?

SLCPs are substances with relatively short lifetime in the atmosphere and a warming influence on near-term climate.

They are powerful climate forcers and dangerous air pollutants, and are detrimental to human health, agriculture and ecosystems.

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>ANTHROPOGENIC SOURCES</th>
<th>LIFETIME IN ATMOSPHERE</th>
<th>IMPACTS/MITIGATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACK CARBON (BC)</td>
<td></td>
<td>DAYS</td>
<td>LOCAL</td>
</tr>
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<td>METHANE (CH₄)</td>
<td></td>
<td>12 YEARS</td>
<td>REGIONAL</td>
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<tr>
<td>TROPOSPHERIC OZONE (O₃)</td>
<td></td>
<td>WEEKS</td>
<td>GLOBAL</td>
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<tr>
<td>HYDROFLUORO-CARBONS (HFCs)</td>
<td></td>
<td>15 YEARS (WEIGHTED BY USAGE)</td>
<td>GLOBAL</td>
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www.ccacoalition.org
Maximising Air & Climate Co-Benefits

Fast action to reduce short-lived climate pollutants, especially methane and black carbon, has the potential to slow down the warming expected by 2050 by as much as 0.6 Celsius degrees, in ADDITION to making deep cuts in CO2 emissions.
CCAC INITIATIVES

7 sectoral and 4 cross-cutting initiatives
Environmental Impacts of MSW
Environmental Impacts of MSW

- Waste generation is the fastest growing environmental pollutant, including CO₂.
- For every kg of waste that is discarded, 70 kg of waste is created upstream.
- 25% of current global warming has been caused by methane.
- We will deplete the known reserves of many resources before the end of this century.
- Solid waste actions have been historically underrepresented in emissions inventories.
- Sustainable materials management can reduce the gap to achieve the Paris emissions reduction targets by half.

ISWA: Global Waste Management Outlook
The Next Efficiency Revolution: Creating a Sustainable Materials Economy
ECOFYS: Implementing Circular Economy makes Paris targets achievable
Waste Sector and Climate Change

Potential impact of improved waste management on reducing GHG emissions across the economy: **15-20%**

Consider not only direct emissions

**Reduction, reuse and recycling** all displace virgin materials and products, and the GHG emissions in their manufacture

FAO estimates that preventing the 1.3 billion tonnes per year of edible food waste could reduce total worldwide greenhouse gas emissions by 9%

Photo: SLU
Environmental Impacts of MSW

Solid waste sector is a substantial source of short-lived climate pollutants (SLCPs), particularly black carbon and methane.

- Landfills are the third-largest source of global anthropogenic methane emissions.
- Open burning of waste emits black carbon and other air pollutants.
- Black carbon also is emitted by outdated and polluting vehicles used in waste collection and transport.
Mitigating Emissions from the Waste Sector Results in Numerous Benefits for the Community

**Challenges**
- Methane emissions from landfills and dumps
- Black carbon emissions from vehicles and equipment
- Black carbon emissions from open burning and landfill and dump fires

**Solutions**
- Organic waste diversion and management
- Landfill gas capture
- Efficient waste collection, transport, and handling
- Preventing waste burning

**Benefits**

**ENVIRONMENTAL**
- Climate change mitigation
- Air quality protection
- Water quality protection
- Litter reduction

**SOCIAL**
- Improved public health
- Worker protection
- Improved welfare of the informal sector
- Improved aesthetics

**ECONOMIC**
- Job creation
- Resource conservation
- Costs reduction
- Energy generation

Learn how the Climate and Clean Air Coalition is helping cities reduce short-lived climate pollutant emissions from the municipal solid waste sector: [http://www.ccacoalition.org/en/initiatives/waste](http://www.ccacoalition.org/en/initiatives/waste)
Vision for Holistic Waste Management

Benefits of waste management

Waste management has strong linkages to a range of other global challenges: e.g.

- climate change
- poverty reduction
- food and resource security
- sustainable consumption and production.

Waste management is an integral part of the Agenda 2030
Agenda 2030 – Sustainable Development Goals

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals
3 CCAC Municipal Solid Waste (MSW) Initiative
Objective

- Reduce emissions of SLCPs across the municipal solid waste sector by providing a comprehensive package of resources, technical capacity building, and a global network of cities to facilitate the design and implementation of locally appropriate actions.

Added value of the Initiative:

- Working directly with cities
- Support from the CCAC partners
- Mobilizing experts from all over the world
MSW Initiative Overview

The Initiative brings together technical experts and policymakers from all levels of government to offer:

- **Direct technical assistance** for developing waste management master plans, waste assessments, and feasibility studies, and for identifying and promoting appropriate financing for waste projects.

- **Tools and resources** that help cities and national governments track their emissions reductions, determine appropriate waste management solutions, and identify best practices.

- **Information exchange and networking opportunities** bring cities together to share best practices, highlight success stories, and encourage peer-to-peer learning and city mentoring.

- **Training and capacity building** sessions for city officials, waste management staff, and other stakeholders.

- **A Knowledge Platform** that compiles and organizes helpful resources such as case studies, guidance documents, and databases from partners and other organizations.
MSW Initiative is working with its partners on the following focus areas:

- Reduce waste generation
- Address open burning
- Improve waste collection & handling equipment
- Promote organic diversion and treatment programs: composting and anaerobic digestion
- Institute recycling programs
- Use landfills as final disposal option and enhance landfill operations - promote landfill gas recovery
- Measure and track SLCP emissions reduction
In 2017, CCAC Partners committed to implement and support each other to:

- Encourage actions by national, state, and local governments to avoid and reduce methane emissions by diverting organic waste from landfills, which includes preventing and reducing food waste and partnerships with the private sector. As well as adopting measures to capture and use methane from landfills.

- Decrease black carbon emissions by preventing the open burning of waste and working towards achieving universal waste collection by 2025.
2017 Bonn Communiqué
CCAC High-Level Assembly Commitments

- Diverting organic waste from landfills
- Preventing & reducing food waste
- Preventing open burning of waste
- Capture and use methane from landfills
- Achieving universal waste collection

Phitsanulok – recommendations for preventing open burning of waste
By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.
By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.

Promote public procurement practices that are sustainable, in accordance with national policies and priorities.

REDUCE THE RELEASE OF CHEMICALS AND WASTE into the air, water and soil.
Knowledge platform to support cities and governments in short lived climate pollutant reduction.
Thank you!

For more information, contact:

Sandra Mazo-Nix

Sandra.mazo-nix@un.org