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

How Better Waste Management Can Help Counter Climate Change

Waste Strategy Summit

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UN environment

1 Background

The Climate and Clean Air Coalition

- Who are we

CLIMATE & CLEAN AIR COALITION

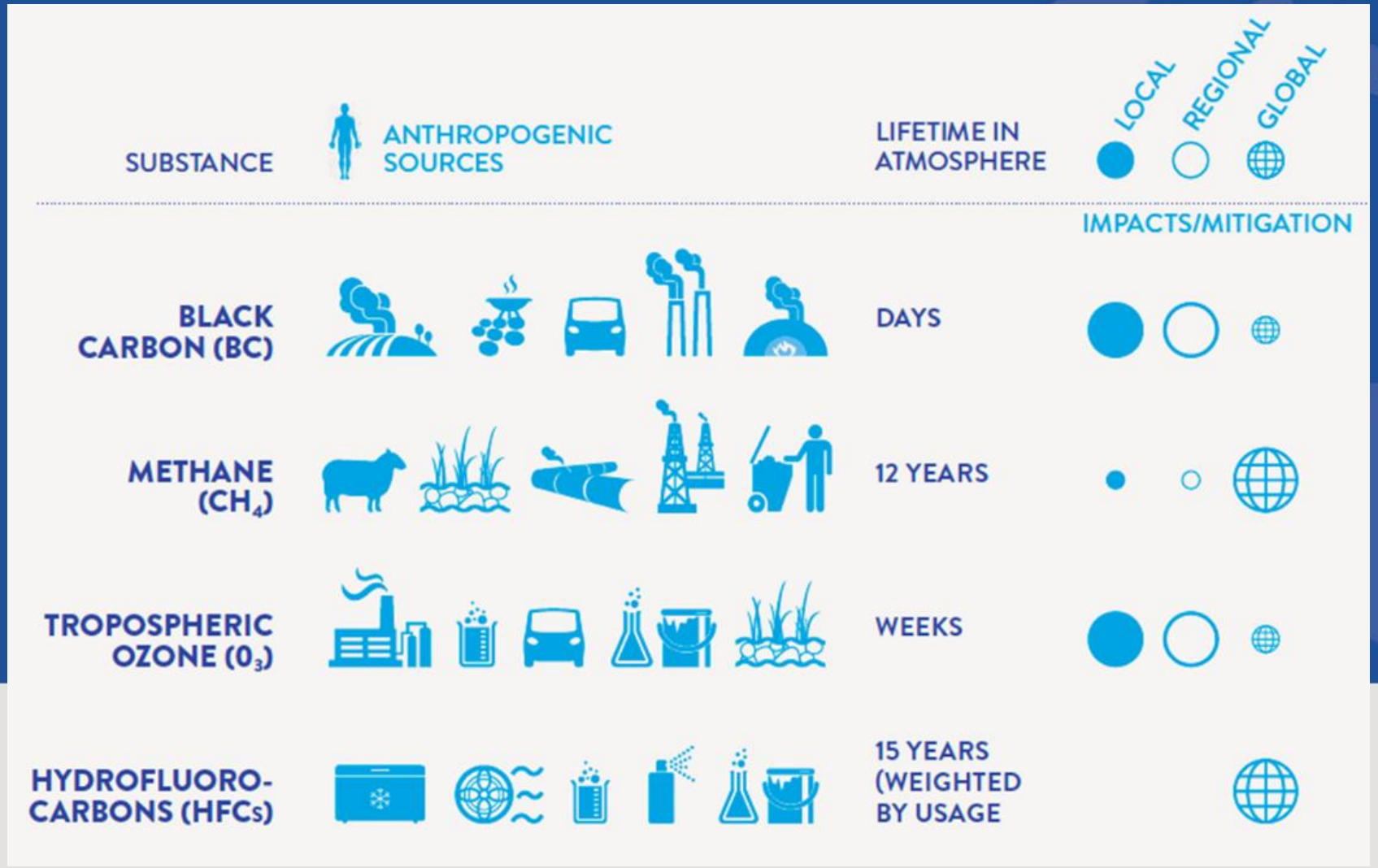
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

Political **leadership**
Good practice **sharing** On the ground **actions**
Better public **policies**
Effective **partnerships**

UN environment

WHAT ARE SHORT-LIVED CLIMATE POLLUTANTS?

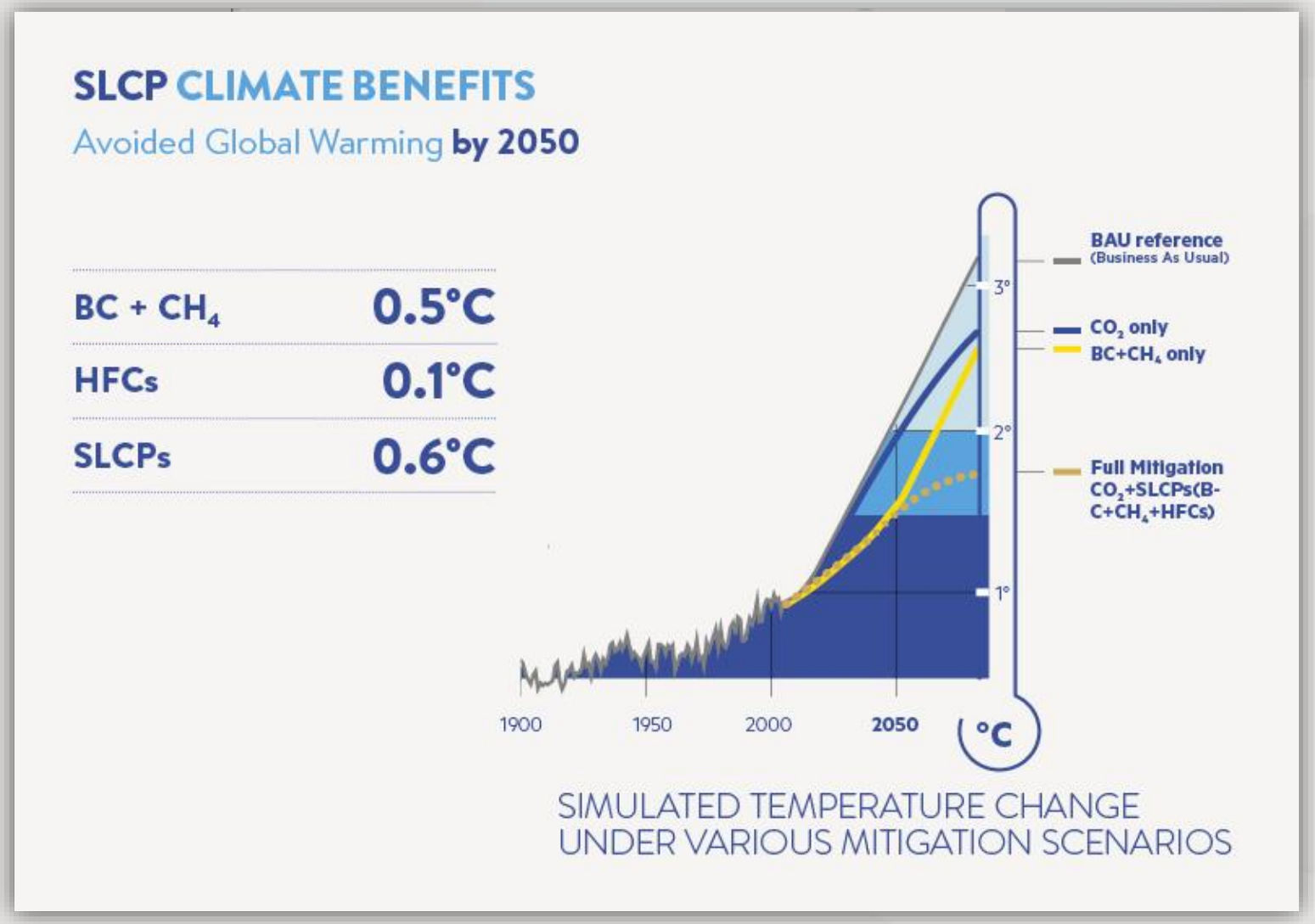
SLCPs are substances with relatively short lifetime in the atmosphere and a warming influence on near-term climate.



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

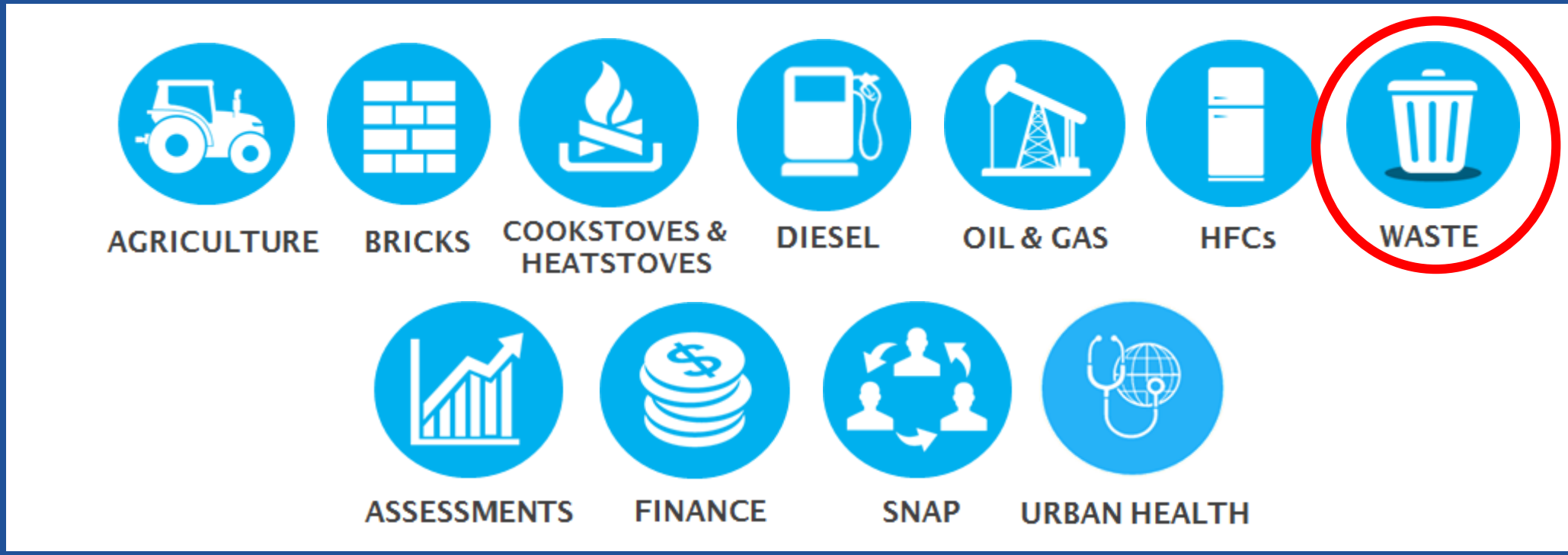
www.ccacoalition.org

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

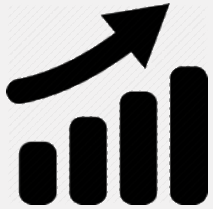
CCAC INITIATIVES



7 sectoral and 4 cross-cutting initiatives

2 Environmental Impacts of MSW

Environmental Impacts of MSW



Waste generation is the **fastest growing environmental pollutant**, including CO_2.

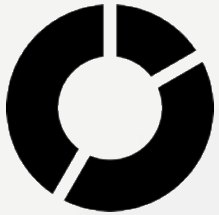
ISWA: Global Waste Management Outlook

We will deplete the known reserves of many resources **before the end of this century**.

UN TEEB, US Geological Survey, BP, Worn et al, 2004

For every kg of waste that is discarded, **70 kg of waste is created upstream**.

The Next Efficiency Revolution: Creating a Sustainable Materials Economy



Solid waste actions have been **historically underrepresented** in emissions inventories.

CH_4

25% of current global warming has been caused by methane.

Methane Matters: Scientists Work to Quantify the Effects of a Potent Greenhouse Gas. NASA Earth Observatory, 2016.

Sustainable materials management can reduce the gap to achieve the Paris emissions reduction targets by half.

ECOFYS: Implementing Circular Economy makes Paris targets achievable

Waste Sector and Climate Change

Consider not only direct emissions

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

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

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

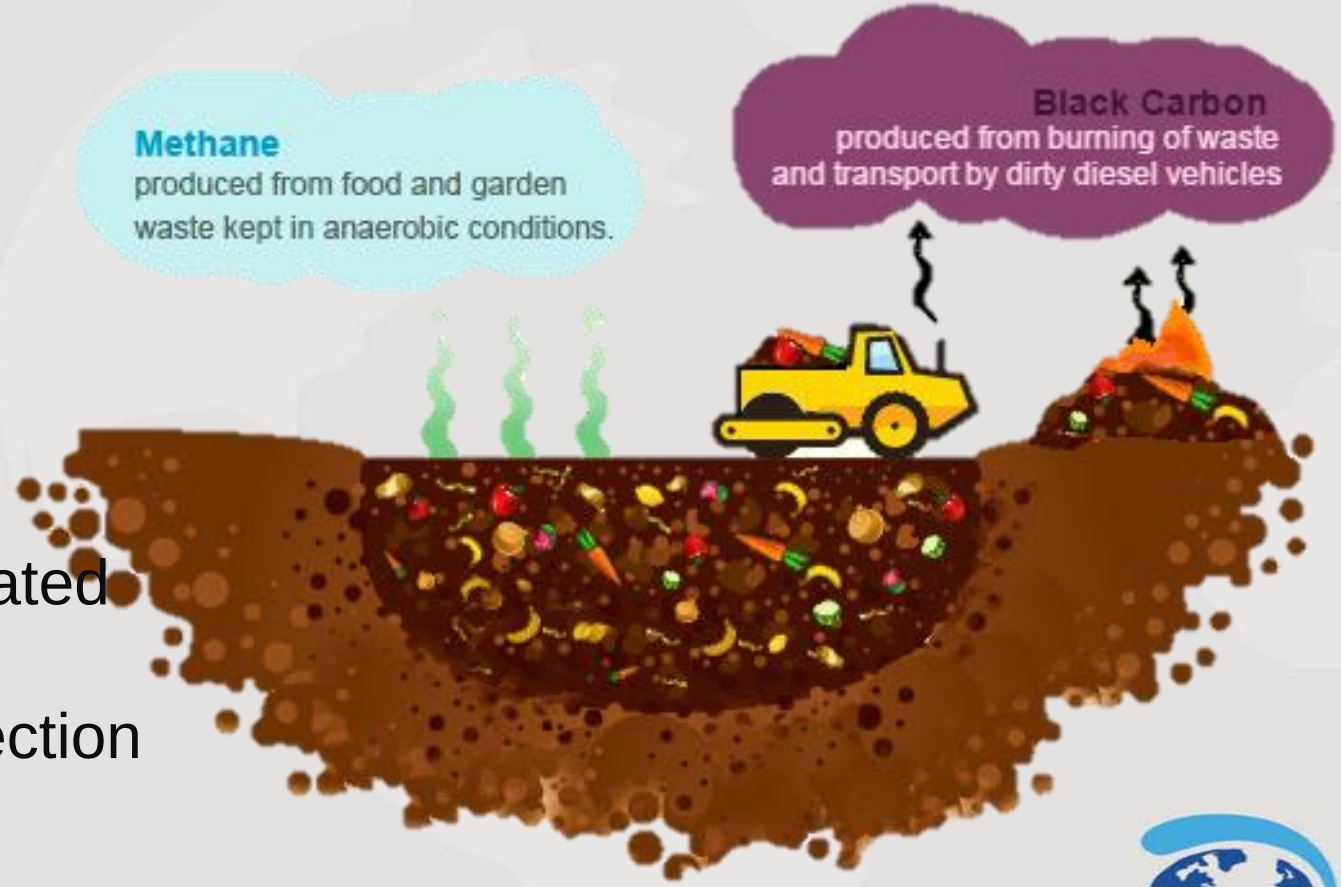
Photo: SLU

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



Reducing emissions from the waste sector results in many benefits for local communities

Short-lived climate Pollutants

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

Solutions

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

Benefits

ENVIRONMENTAL

- Reduced impact on climate change
- Air quality protection
- Water quality protection
- Litter reduction

SOCIAL

- Improved public health
- Worker protection
- Improved health and safety for 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:

ccacoalition.org/waste

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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**

3 Waste Management as part of Sustainable Development

Agenda 2030 – Sustainable Development Goals

- Goal 1 (No Poverty) & Goal 2 (Zero Hunger) by addressing food waste and by creating jobs in waste sector
- Goal 3 (Good Health & Well-Being) by addressing the well-being of the people that work in the MSW informal sector
- Goal 4 (Quality Education) & Goal 5 (Gender Equality) by ensuring children are receiving a good education instead of scavenging waste and raising the profile of sound waste management in higher education programs
- Goal 6 (Clean Water and Sanitation) by avoiding contamination of the water from waste

- Goal 7 (Affordable & Clean Energy) by utilizing waste to generate renewable energy
- Goal 8 (Decent Work & Economic Growth) by addressing working conditions in waste sector and by promoting circular economy and 3R concepts
- Goal 9 (Industry Innovation & Infrastructure) by embedding the concept of waste prevention, sustainable resource management and resource efficiency
- Goal 10 (Reduced Inequalities) by increasing green economies based on resource recovery
- Goal 11 (Sustainable Cities and Communities) by optimizing waste management
- Goal 12 (Responsible Consumption and Production) by promoting public demand of sustainable materials and mainstreaming circular economies

- Goal 13 (Climate Action) by addressing SCLPs from waste sector and by aligning waste management system for new waste patterns due to climate change
- Goal 14 (Life Below Water) by addressing marine litter from land-based and sea-based sources,
- Goal 15 (Life on Land) by reducing pollution through environmentally sound waste management)
- Goal 16 (Peace, Justice, and Strong Institutions) by providing waste management services to informal areas
- Goal 17 (Partnerships for the Goals) by promoting the Global Partnership on Waste Management and other related partnerships

4 CCAC Waste Initiative

WASTE INITIATIVE

Mitigating SLCPs from Municipal Solid Waste

WASTE

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.

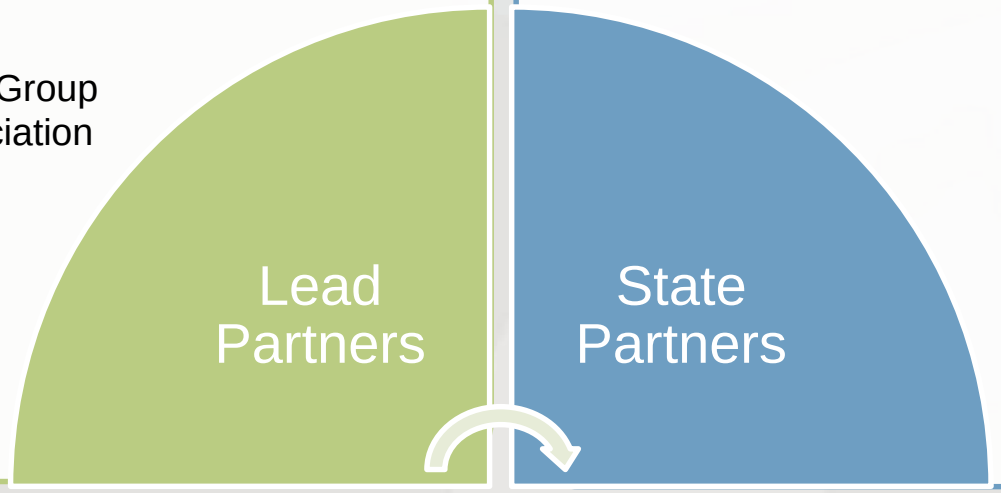
Added value of the Initiative:

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

Knowledge platform to support cities and governments in short lived climate pollutant reduction.

waste.ccacoalition.org

MSW Initiative Partners & Governance



- Canada
- Japan
- Mexico
- United States of America
- C40 Cities Climate Leadership Group
- International Solid Waste Association (ISWA)
- United Nations Environment Programme (UN Environment)
- World Bank

- Bangladesh
- Chile
- Colombia
- Cote d'Ivoire
- Ethiopia
- Germany
- Ghana
- Jordan
- Liberia
- Netherlands
- Nigeria
- Peru
- Sweden

- **MSW Initiative Coordinator**
- Finance Initiative Coordinator
- SNAP Initiative Coordinator
- Health Initiative Coordinator

- Private sector

- ABRELPE
- AIT
- CCAP
- CEGESTI
- EIB
- GEC
- Gevalor
- IDB
- IGES
- ICLEI
- NALAS
- TERI
- Waste Advisers

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 options and enhance landfill operations - promote **landfill gas recovery**
- **Measure and track** SLCP emissions reduction

WASTE

Waste Initiative Strategy

Components of the Strategy

1. **City Action**: work with a targeted group of cities towards implementation of actions to reduce SLCPs from the waste sector.
2. **National capacity building**: Strengthen national frameworks to reduce SLCPs at the city level.
3. **Scale up action** beyond Waste Initiative cities through self-directed action (toolbox):
    - Create and deploy a standardized and internationally vetted set of tools to scale up the results of components 1 and 2
    - MSW Knowledge Platform
    - Inform key networks and forums to catalyze broader action

How Cities Participate in the MSW Initiative

WASTE

- Collect and assess MSW **data** through City Waste Assessment Tool
- Conduct work plans to identify the **appropriate opportunities** for managing waste sustainably, from the generation to the maximum recovery
- **Measure SLCP emissions** through Emissions Quantification Tool
- Receiving **capacity building** support through workshops, webinars, and access to online resources, such as free expert advisory services
- City pairing /**mentorship** / link to international waste networks
- Obtain **technical** and **financial analysis** supporting SLCPs mitigation **projects**

Knowledge platform to support cities and governments in short lived climate pollutant reduction.

waste.ccacoalition.org

Regional City Networks

4 Case Studies

Example: Penang, Malaysia

- Waste characterization study
- Studying the incorporation a material recovery facility and bio-digester at the landfill (Pulau Burong)
- Assessing quantities of organic waste from multi-family buildings and the commercial sector
- Enacting policies that will promote the diversion of organics from food vendors
- Pilot project for upscaling of food waste diversion from the landfill in George Town
- Tender for segregated organic waste collection
- OW pilot project: multi-family residences
- OW pilot project: food vendors

GEC

Example: Viña del Mar, Chile

- Completion of the stages of the City Work of the MSW Initiative
- Study of the solid waste management situation in the City
- Formulation of an integrated waste management plan for the City
- Elaboration of an implementation and financial plan for 1.3 MW biodigester (US $6 million investment)
- Tender for a PPP with city and investor, with the support of Canada and the Chilean government
- First joint industrial-municipal project to process organic waste

CCAP
CENTER FOR CLEAN AIR POLICY

Example: São Paulo, Brazil

- Completion of the stages of the City Work of the MSW Initiative
- Strategy for organic waste diversion
- Guidance on the operation of organic waste treatment plants
- Design trial for the source segregation of the organic fraction of household waste
- Feasibility study project of an Eco-Park Waste facility for the treatment/recovery of mixed waste from households and biowaste separated at source from large generators

Example: Amman, Jordan

- Recommendations for optimizing waste collection routes
- Recommendations on increasing private participation in solid waste services
- Training of MSW technicians on
  - Transfer station operations
  - Health and safety waste collection
  - Organic waste management
  - Recovery of recyclable materials
- Completing CCAC deliverables:
  - MSW management assessment, action plan, work plan, SLCP emissions baseline

Transfer Station in Amman

Greater Amman Municipality

Example: Rio de Janeiro, Brazil

- Assessing large-scale sources of high-quality organic waste
- Conducting training on composting project operations
- Developing recommendations for improved operations at the Caju Composting Facility
- Assisting to find greener vehicle options for the waste fleet
- Conducting a training on landfill leachate management
- Completing CCAC deliverables:
  - MSW management assessment, action plan, work plan, SLCP emissions baseline

Caju Composting Facility

Leachate Management Training – Visit to Gramacho Landfill

Example: Dar es Salaam, Tanzania

- Study on household behaviour and awareness raising
- Organic Waste Management Strategy for Dar Es Salaam
- Recommendations for improvements of Pugu Dumpsite
- Report on financing SWM in Dar es Salaam
- Workshops on landfilling, organic waste management and on financing municipal SWM
- Completing CCAC deliverables:
  - MSW management assessment, action plan, work plan, SLCP emissions baseline

Pugu Dumpsite in Dar es Salaam

City director of Dar es Salaam opening the final conference

ISWA
International Solid Waste Association

Thank you!

For further more information, contact:

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LEARN MORE:

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