

# WASTE & ITS CLIMATE CONTEXT: INVESTING IN PREVENTION, REDUCTION & CIRCULARITY

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*Sixth global dialogue and investment-focused event under  
the Sharm el-Sheikh mitigation ambition and  
implementation work programme*

*Addis International Convention Center, Addis Ababa, Ethiopia  
5-6 September 2025*



[ccacoalition.org](http://ccacoalition.org)



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

# The Climate & Clean Air Coalition

UNEP-convened since 2012

Global, voluntary partnership of committed countries & organisations

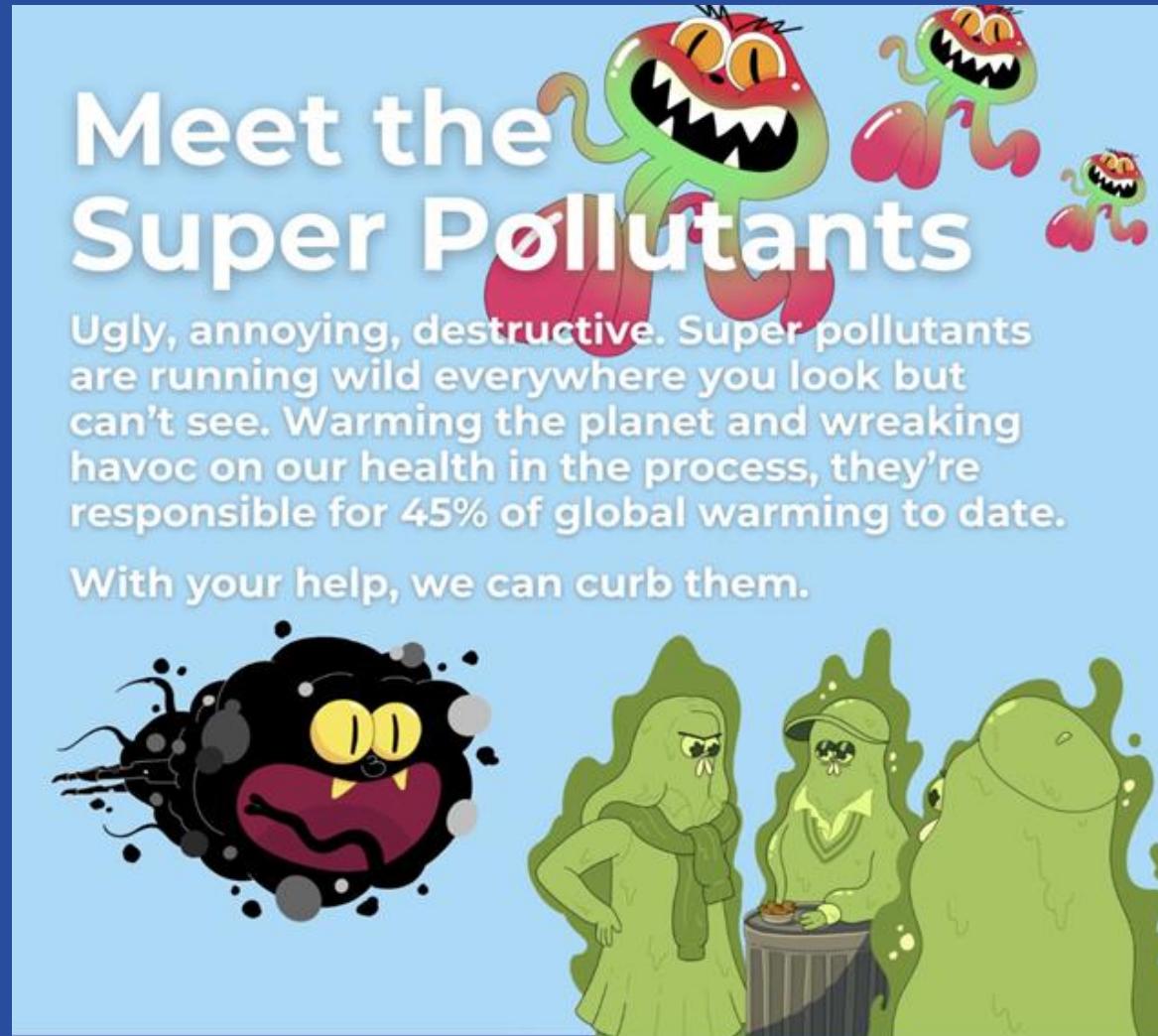
Dedicated to addressing short-lived climate pollutants (SLCPs)

The CCAC Secretariat provides secretariat services to the Global Methane Pledge



97  
State  
partners

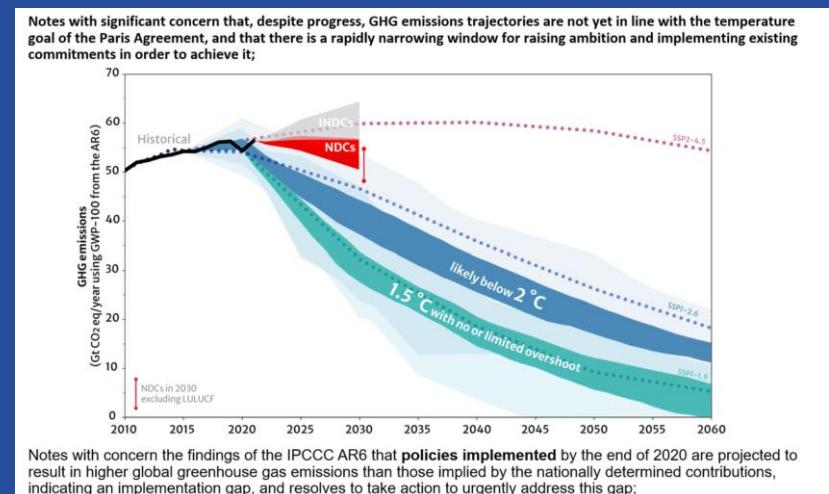
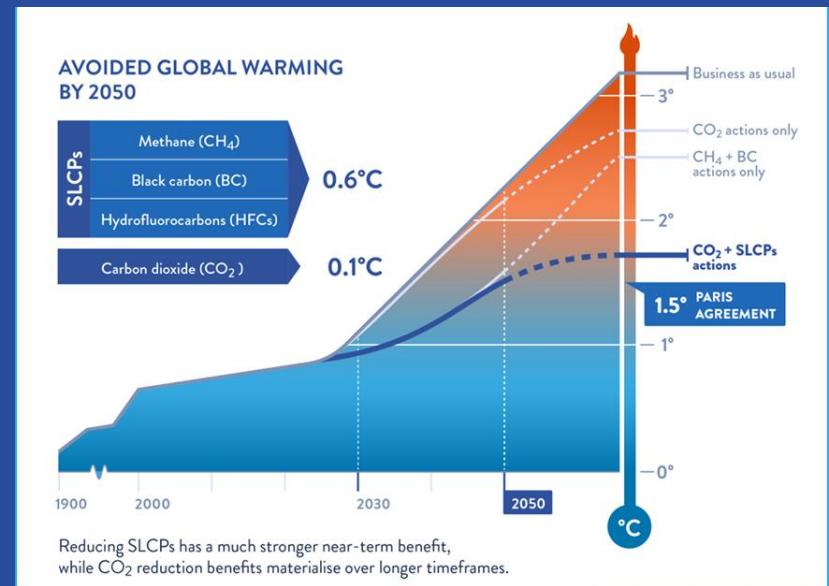
131  
Non-State  
partners



#WorldCleanAirDay  
7 September 2024

# Short-Lived Climate Pollutants (SLCPs)

- Consist of Methane (CH<sub>4</sub>), black carbon (BC), HFCs, tropospheric ozone and Nitrous Oxide (N<sub>2</sub>O)
- Powerful climate forcers responsible for half of global temperature rise
- Air pollutants that are harmful to people, ecosystems and agricultural productivity
- Present in the atmosphere for a few days up to a decade
- Increasingly important target given slow progress on decarbonization & increasing concerns over health and air quality



# Waste and its Climate Impacts

Waste accounts for **20%** of anthropogenic methane emissions

1.5°C-consistent global reductions of **30-35%** below 2020 levels by 2030 and nearly **55%** by 2050

But, if current trends continue, the amount of waste will increase by over 70% to 3.88 billion tons per year by 2050 growing at 2.4%/year

Emissions from waste will consequently double by 2050 compared to 2016.

## REDUCING SHORT-LIVED CLIMATE POLLUTANT EMISSIONS FROM WASTE

Many common waste disposal methods generate short-lived climate pollutants like methane and black carbon - powerful climate forcers that damage our environment and health. Changing our consumption habits and managing waste differently are important steps in the fight against climate change and air pollution.



Without action, global waste could grow by **70%** by 2050



**OPEN BURNING**  
40% of all waste is openly burned



**BURNING WASTE**

produces multiple air pollutants, including black carbon



**IMPACTS:**

Health, Climate, Environment



**BLACK CARBON**

A dangerous air pollutant that also contributes to global warming



**IMPACTS:**

Health, Climate, Environment



**LANDFILL GAS**

3rd largest human-made source of methane



**IMPACTS:**

Health, Climate, Environment



**ANAEROBIC DECOMPOSITION**

of organic waste produces methane, carbon dioxide, and other gases

## WE CAN STOP EMISSIONS WITH



**OPEN BURNING ALTERNATIVES**

Improved waste management services reduce the need to burn waste



**IMPACTS:**

Health, Climate, Environment



**WASTE PREVENTION AND SEPARATION**

Diverting organic waste from landfills prevents emissions



**IMPACTS:**

Health, Climate, Environment



**LANDFILL GAS CAPTURE**

Existing technology can cut emissions



**IMPACTS:**

Health, Climate, Environment



**IMPACTS:**

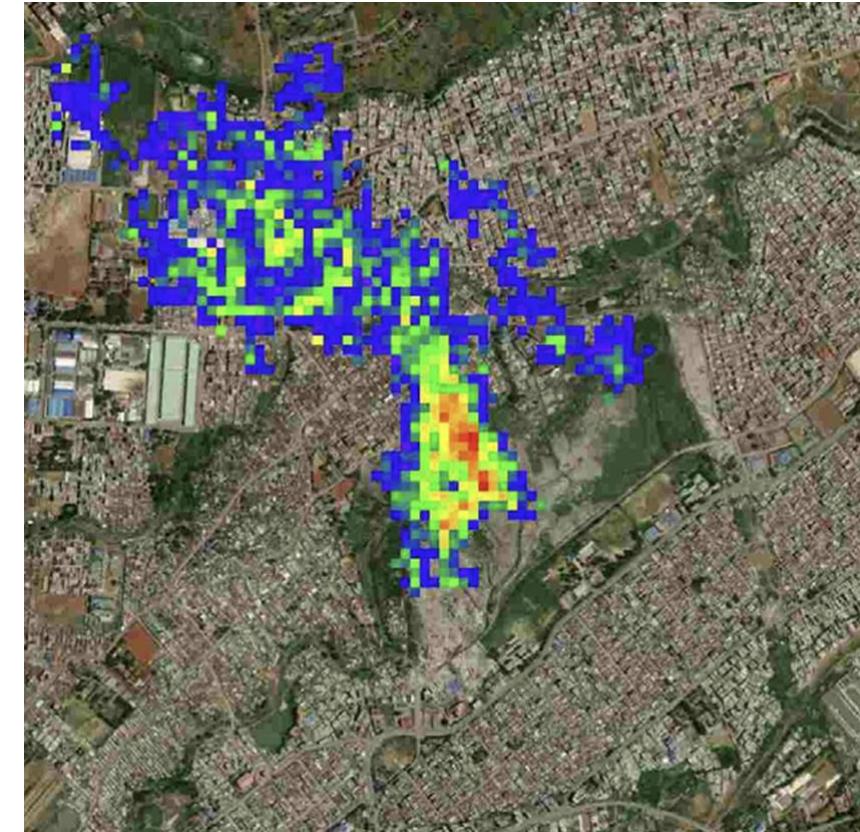
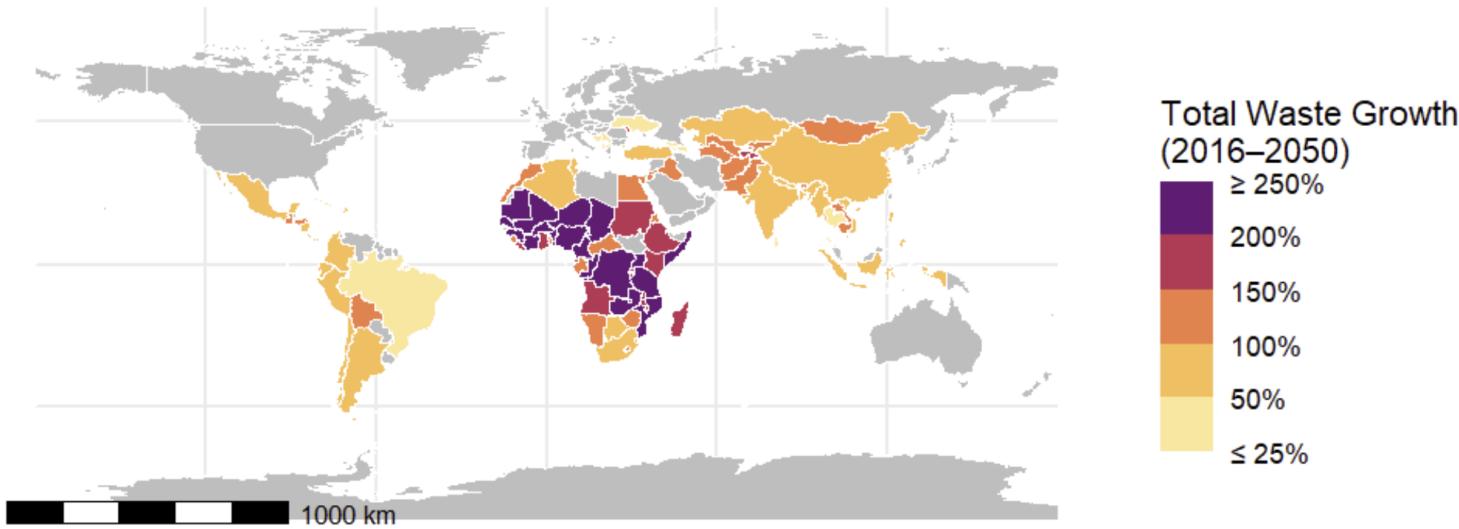
Health, Climate, Environment



# PROJECTED GROWTH IN WASTE GENERATION BETWEEN 2016 AND 2050

(SOURCE: AFD)

- In low-income countries, waste production is expected to triple by 2050
- This primarily will be organic waste (short to medium term)
- Collection rates will likely increase as this is a national goal for many
- A continued reliance on large, deep unmanaged landfills



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CLIMATE POLLUTANTS

# WASTE AND MITIGATION HIERARCHY

Taking actions to reduce Short Lived Climate Pollutants



ACTIONS	ACTORS	BENEFITS
<ul style="list-style-type: none"> <li>Enhanced agricultural waste processing</li> <li>Pay-As-You-Throw regulations</li> <li>Food loss/waste prevention and recovery</li> <li>Cold chain investment</li> <li>Behaviour change to avoid and separate</li> </ul>	<ul style="list-style-type: none"> <li>National and subnational governments</li> <li>Consumers</li> <li>Agricultural waste generators</li> <li>Hospitality and retail/commercial establishments</li> <li>Food retail, producers and logistics</li> <li>Cold chain managers</li> </ul>	<ul style="list-style-type: none"> <li>Improved waste circularity</li> <li>Energy efficiency cost savings</li> <li>Enhanced self-reliance</li> </ul> <ul style="list-style-type: none"> <li>Improved food security and nutrition</li> <li>Improved food production efficiency</li> <li>Public finance savings</li> </ul>
<ul style="list-style-type: none"> <li>Separation through collection and transportation</li> <li>Adequate budgeting for universal waste systems</li> <li>Develop systems to support circular economies</li> </ul>	<ul style="list-style-type: none"> <li>Households</li> <li>Waste workers (formal and informal)</li> <li>National and subnational government waste service providers</li> <li>Retailers</li> <li>Large waste generators</li> <li>Private collection and sorting service providers</li> </ul>	<b>ECONOMIC</b> <ul style="list-style-type: none"> <li>Improved waste valorisation and business development</li> <li>Extended landfill life</li> <li>Green jobs creation and enhanced livelihoods</li> <li>Bioenergy production</li> <li>Improved dry waste recovery</li> </ul> <b>HEALTH AND ENVIRONMENT</b> <ul style="list-style-type: none"> <li>Nutrient recovery</li> <li>Reduced open burning</li> <li>Improved air quality</li> <li>Improved soils</li> </ul>
<ul style="list-style-type: none"> <li>Improved landfill operations and management</li> <li>Gas collection and control systems</li> </ul>	<ul style="list-style-type: none"> <li>National and subnational governments</li> <li>Private sector service providers</li> <li>Waste workers (formal and informal)</li> <li>Large waste generators</li> </ul>	<ul style="list-style-type: none"> <li>Bioenergy production</li> <li>Improved working conditions (formal and informal)</li> <li>Better air quality</li> </ul>

**AVOID, DIVERT,  
VALORISE and  
INVEST in  
INFRASTRUCTURE**

# How Waste Actions Can Lead Global Climate Goals

- 90% of methane emissions from waste could be avoided by 2050 using existing technologies
- More than one strategy is critical to keep below 2 degrees
- Halving waste/diversion & treatment of organics/retrofitting landfills
- Next decade is critical to achieve CH<sub>4</sub> reductions in line with the GMP
- Multi-stakeholder approach needed: regulation/economic incentives/social mobilisation

Hoy et.al (2023)

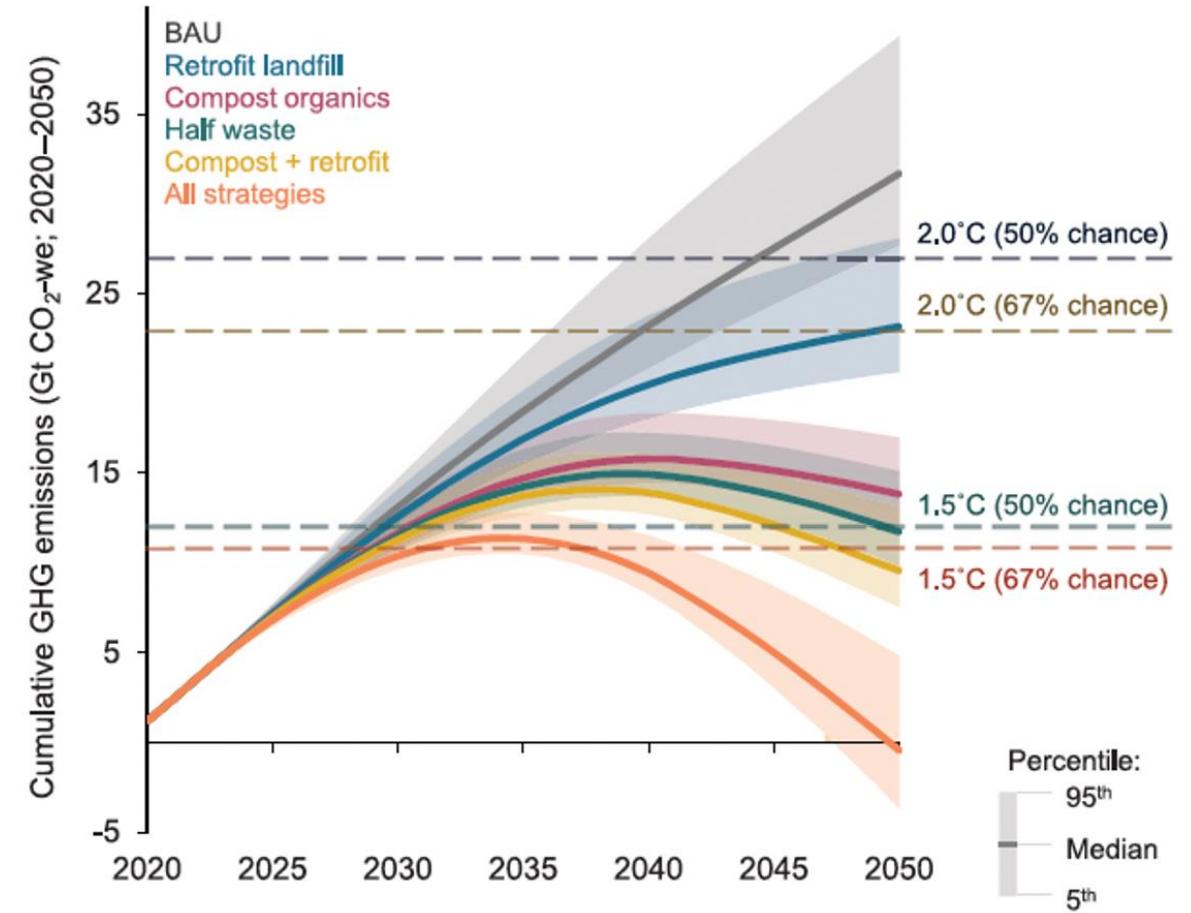


Figure 3. Impacts of waste sector methane solutions on cumulative emissions compared to 1.5°C and 2°C emissions budgets (2020–2050). Source: Hoy et al. 2023.



# COP29 DECLARATION ON REDUCING METHANE FROM ORGANIC WASTE

- At COP29, held in 2024, over 30 countries signed the COP29 Declaration on Reducing Methane from Organic Waste. **Today there are 65 signatories.**
- The Declaration calls on signatories — who represent nearly half of global methane emissions from organic waste — to set national targets, implement policies, and invest in technologies to curb these emissions
  - 1.5°C-consistent waste sector components informing the design of future NDCs
  - National and sub-national policies and actions
  - Stepping up finance
  - Data for action and transparency
  - Innovative partnerships
- Deliver in partnership with sub-national/municipal authorities (LOW-Methane)

# Cutting Methane in the Waste Sector – Emergence in NDCs

- 122 countries (63 per cent) include policies/measures targeting major methane sources in their latest NDCs, a 30% increase compared with pre-2020 NDCs (90 countries).
- Of these, 100 countries (51 per cent) include measures addressing methane from waste
- **Venezuela:** National Sanitation Plan for 35 Landfills & control and capture and use of Methane (CH<sub>4</sub>) generated. Actions will capture 17,134 Ton / year of CO<sub>2</sub> (eq).
- **Cameroon:** Strengthening waste management policies (by 2035, all major cities should have landfills with at least 70% methane capture). (UNFCCC, 2021)
- **Mexico:** Emission reductions for the waste sector by 28% in 2030. Actions are established in the “General Law of Climate Change” (LGCC). (Gobierno de México, 2024)
- **Nepal:** By 2025, 380 million litres/day of wastewater will be treated before being discharged, and 60,000 cubic meters/year of faecal sludge will be managed. Will reduce around 258 Gg CO<sub>2</sub> eq. (Government of Nepal, 2020)

The Commonwealth of Dominica's Nationally Determined Contribution

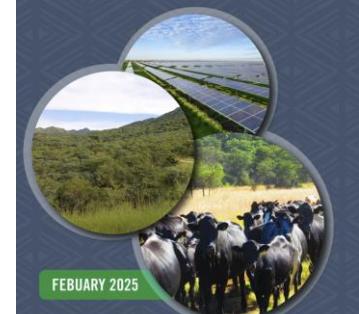


The Commonwealth of Dominica  
UPDATED NATIONALLY DETERMINED  
CONTRIBUTION

For the Period 2020 to 2030  
Communicated to the UNFCCC on July  
4, 2022



GOVERNMENT OF ZIMBABWE  
ZIMBABWE NATIONALLY  
DETERMINED CONTRIBUTION  
(NDC3.0) COUNTRY STATEMENT



# THANK YOU & KEEP IN TOUCH!

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**Resources and more information:**  
<https://www.ccacoalition.org>

