

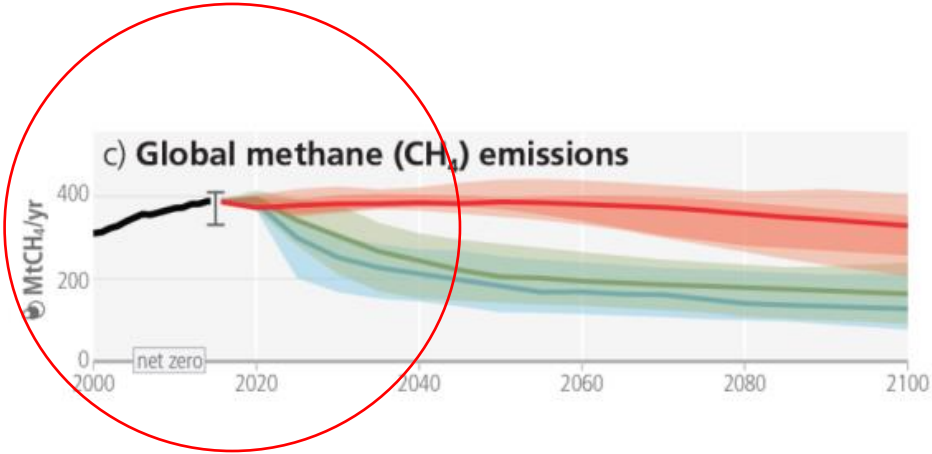
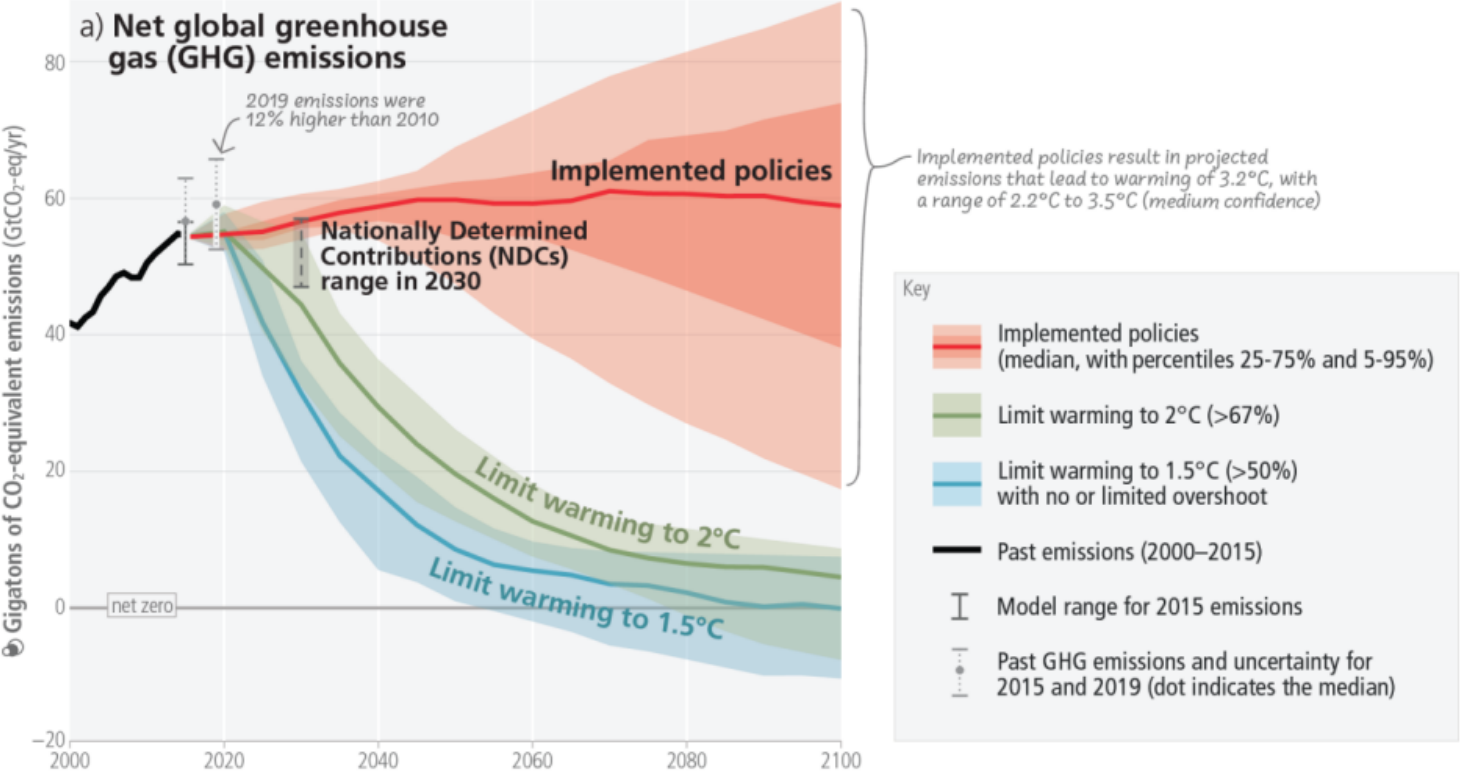
Mitigating Methane in Waste Sector

Reciclo Organicos LAC Workshop
March 2023

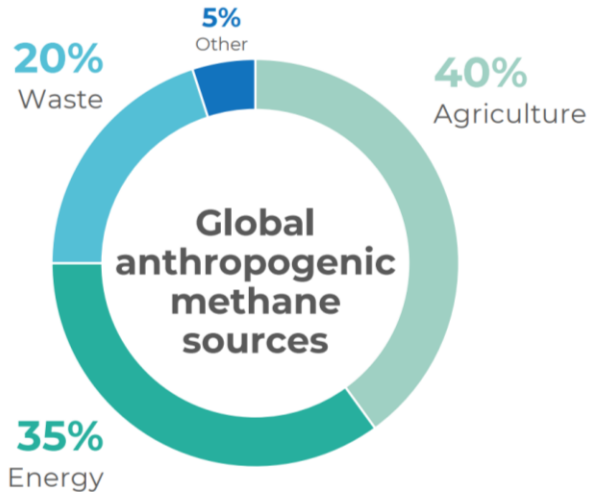


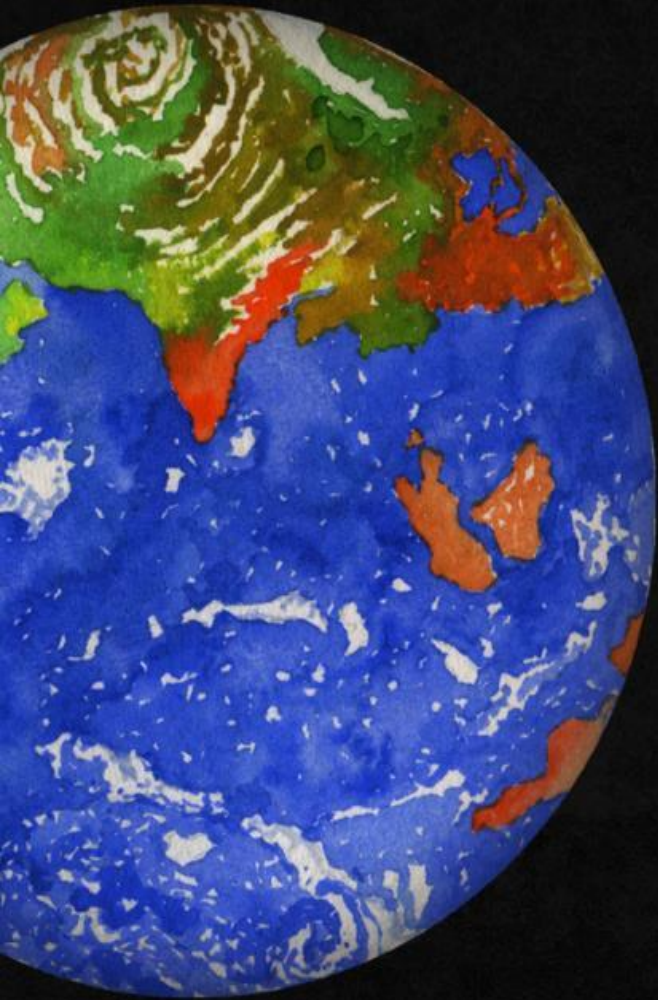
Limiting warming to 1.5°C and 2°C involves rapid, deep and in most cases immediate greenhouse gas emission reductions

Net zero CO₂ and net zero GHG emissions can be achieved through strong reductions across all sectors



Which sectors are methane emissions coming from?





The Global Methane Hub

- Philanthropic effort to align funding on methane mitigation
- Focus on energy, agriculture, and waste.
- Supporting Global Methane Pledge signatories and potential signatories in meeting the pledge and going beyond.
- Drive coordination and collaboration on methane advocacy
- Granting areas with the highest impact.
- Offices based in Santiago, Chile.

Cutting methane emissions is the fastest, most effective way to reduce the rate of global warming and contribute to limiting temperature rise to 1,5°C

METHANE MITIGATION and FLW MOMENTUM

COP27, Climate Change, Global Methane Pledge

- **New GMP Waste Pathway:** Enhancing Measurement and Tracking, Scaling up Subnational Action, Reducing Food Loss and Waste, Regional Platforms, Mobilizing Investment

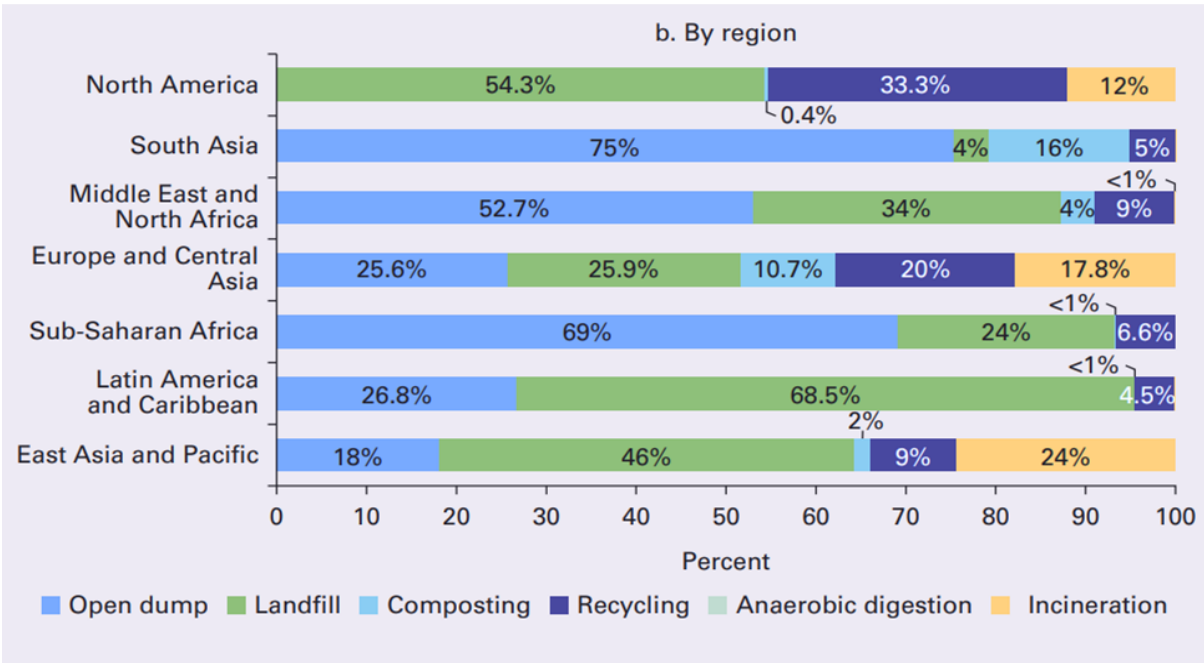


COP15-CBD, UN Biodiversity Agreement

- **TARGET 16, by 2030 halve global food waste:** significantly reduce overconsumption and substantially reduce waste generation, in order for all people to live well in harmony with Mother Earth.



Waste management: High Methane Emissions Intensity



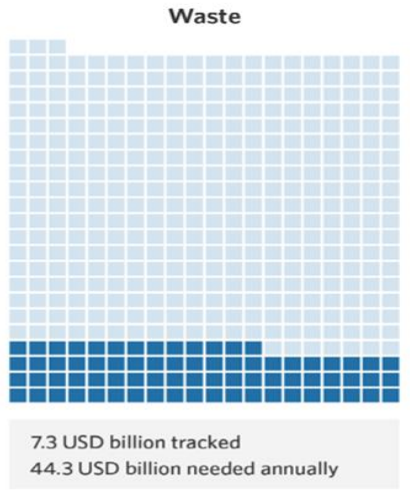
Management System	Emission Factor (gCH ₄ / kg OW)	Emission Factor (g CO ₂ / kg OW)
Open dump	30 - 40	~0
Landfill (semi-aerobic - managed)	25 - 48	~0
Incineration	0 - 1	721
Composting	0 - 8	~0
Anaerobic digestion	0 - 8	~0

Organic waste is emissions intensive. Landfills generate 2-4 kgCO_{2eq} per kg of organic waste. This is roughly 0.85-1.7 liters of gasoline-equivalent. Much more emissions-intensive than cement, or copper.

Finance for methane emissions abatement accounts for less than 2% of global climate finance

Waste sector:

- The limited existing investment flows are not enough.
- 80% of the investment is in Incineration and Landfills.
- Uncertain climate change mitigation and environmental impacts.



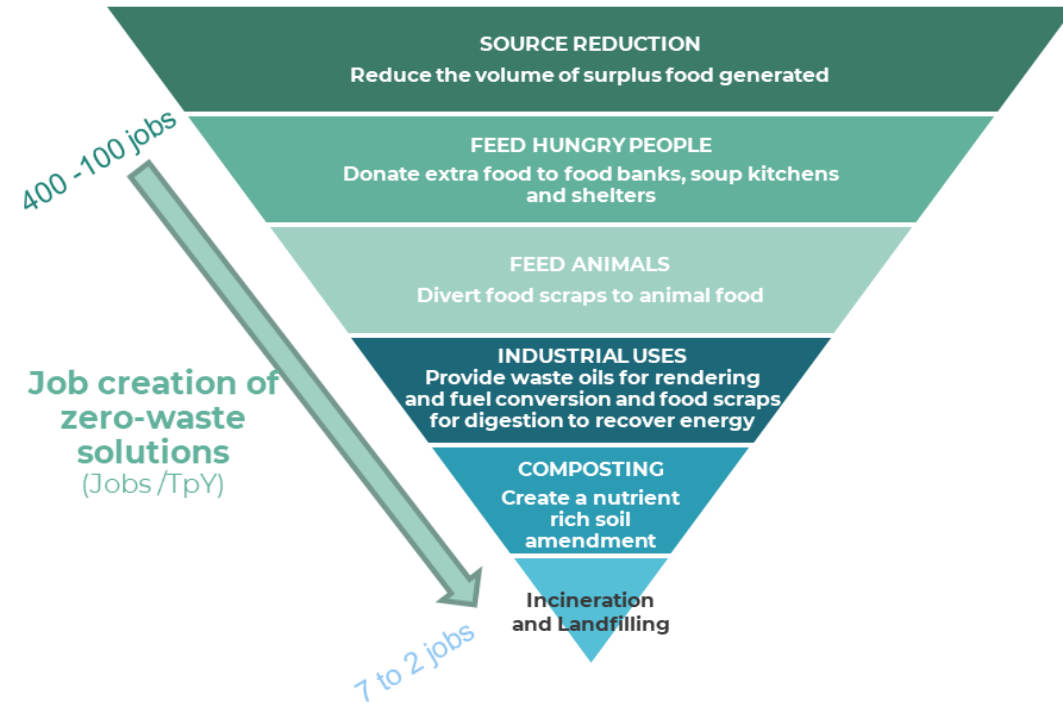
FOOD LOSS AND WASTE HIERARCHY GUIDING THE ACTIONS

Preventing food loss and waste is better than diverting it, and better than disposing of it. CIRCULAR ECONOMY

- FLW **REDUCTION AND PREVENTION** with Food **REDISTRIBUTION**.
- FLW **DIVERSION** with Nutrient **RECOVERY**
- FLW Disposal. with Energy **RECOVERY**

Cost-effective methane mitigation potential

- -35% of reduction in methane emissions in the waste sector by 2030, to be aligned with the Net Zero Scenario.
- -Measures can be put into place at a low cost (less than ~US\$ 21 per ton of CO_{2eq} with GWP100y)



WASTE AND CIRCULAR ECONOMY PROGRAM

A) Enhanced measurement and tracking

- Data information, **satellite monitoring**, evidence including **co-benefits**, monitoring, and transparency for decision-making, improving inventories, and environmental community support.
- Methodologies and MRV for methane mitigation from **food loss prevention, recovery, and redistribution**.

B) Policy, regulation, and accountability

- **National policies and regulations** to better incentivize organic waste diversion and management.
- **Subnational and local governments' zero-waste plans targeting** organic waste management.

C) Project preparation facilities at local level

- Significant expansion of the **priority organic waste management pipeline** in developing nations
- **Pilot implementing** organic waste management practices,
- Improve **collaboration and coordination** between communities.

D) Finance and investment

- Increase of leveraged funds to support targeted portfolios. Global.
- **Subnational Governments and Multi-lateral Banks have shifted financing** from incineration and landfills to include organic waste diversion, nutrient, and energy recovery., considering an integrated waste management system based on circular economy

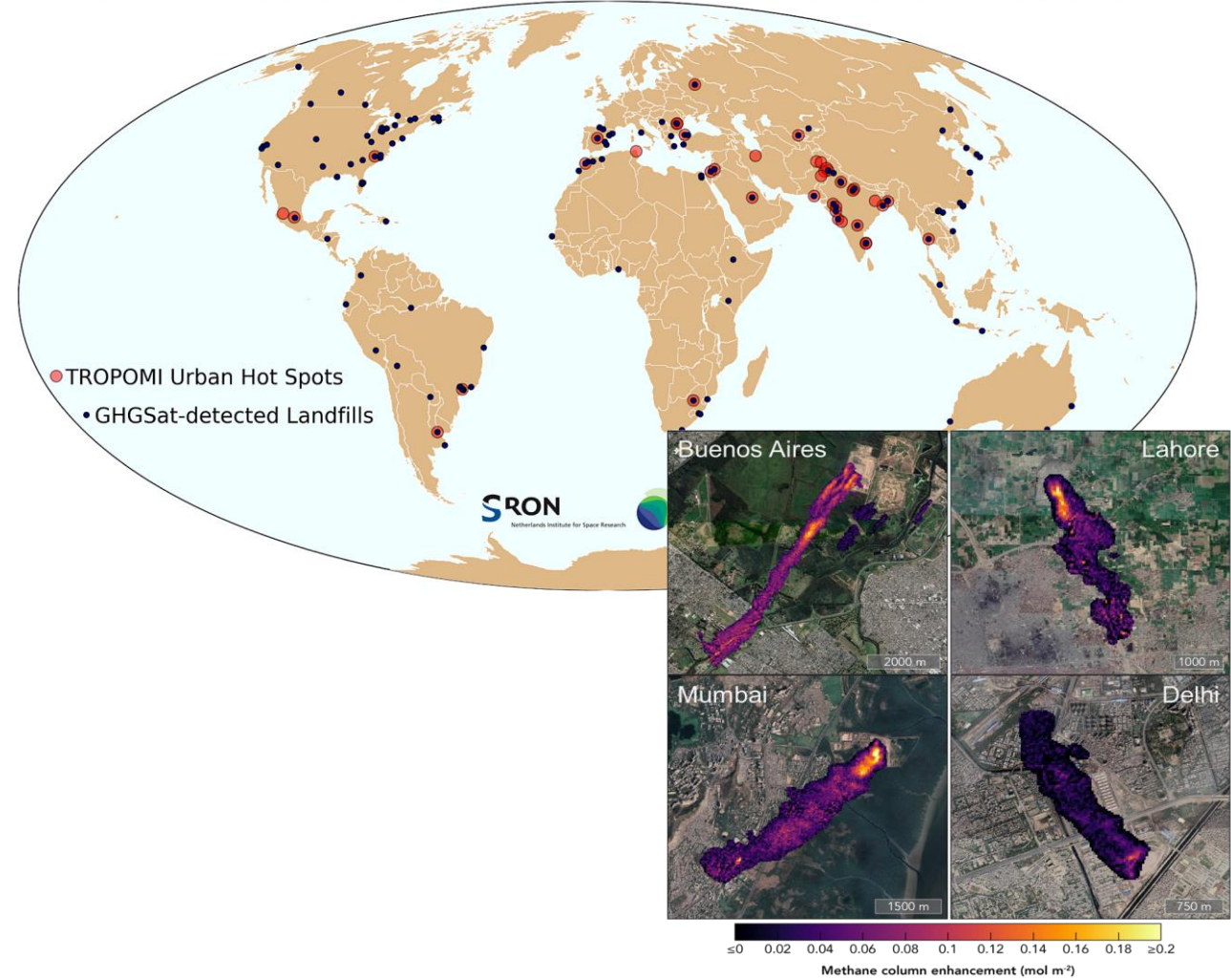
Targeting Waste Emissions Observed from Space

(SRON – Netherlands Institute for Space Research)

Project

- Implementation: **2022- 2025**
- Monitoring identified 29 hotspots in India, Pakistan, Thailand, Turkey, Uzbekistan, Jordan, and other ten countries in Africa, America, and Europe.
- Detailed analysis of emissions from urban/landfill combinations and monthly observations of landfills in 10 target cities: Mumbai, Delhi, Ahmedabad, Jakarta, Mexico city, Buenos Aires, Dakar, Abidjan, Ekurhuleni, and Casablanca.
- Tracking the impact of interventions in final disposal sites in methane emissions .

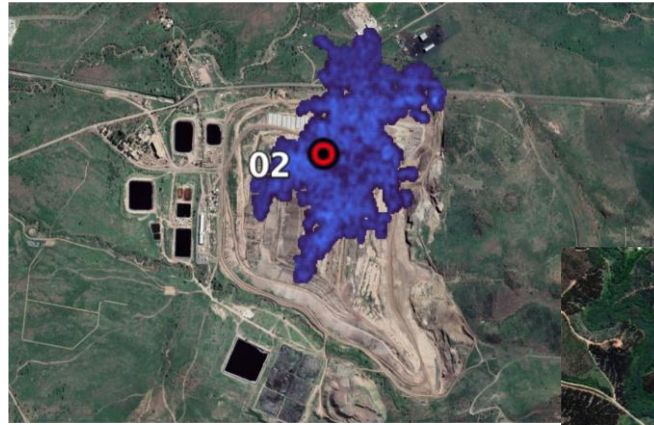
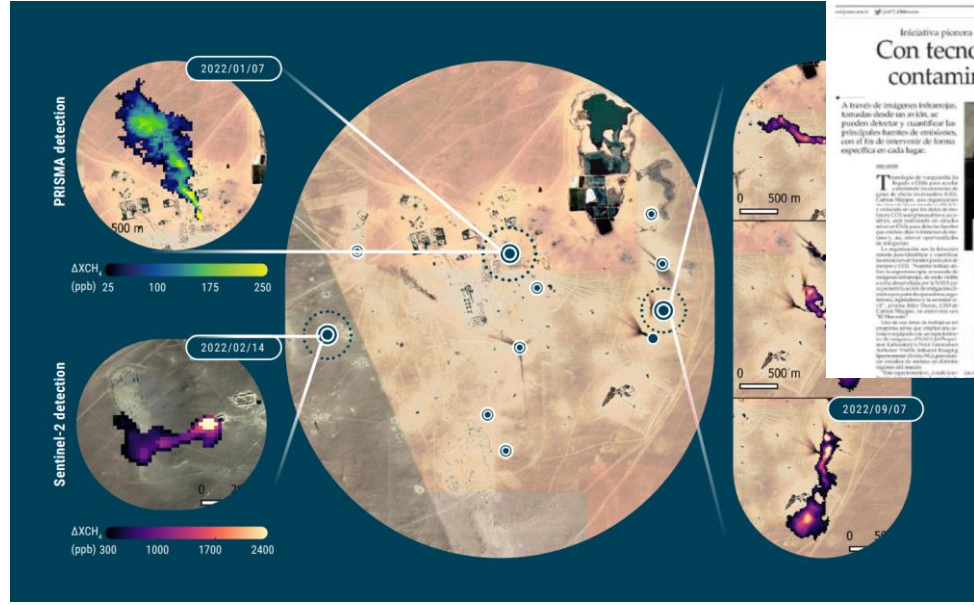
Satellite-detected urban and landfill methane emissions



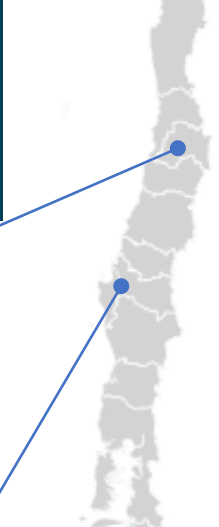
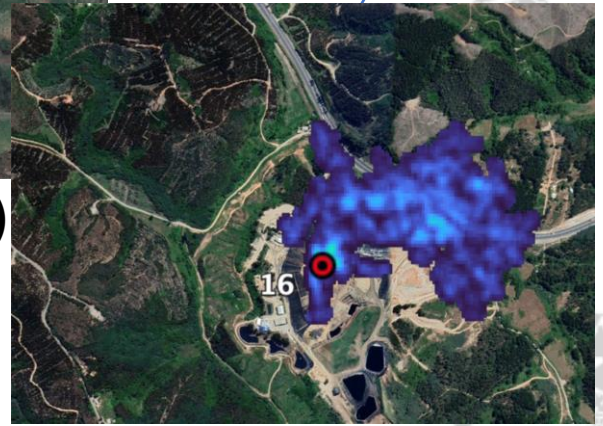
Targeting Waste Emissions Observed from Space, align funds with Carbon Mapper and IMEO

Aligned projects

- Carbon Mapper will launch a constellation of satellites to survey and monitor more than **10,000 landfills globally by 2024.**
 - The initiative will also be conducting **airborne monitoring in North and Latin America** while satellites are put in place.
- UNEP’s IMEO Methane Alert and Response System (MARS) – will detect emissions from the three sectors with an **initial focus on the energy sector.**
- Both initiatives will be delivering precise imagery on methane emissions to allow stakeholders to act upon detected, geolocated, and quantified emissions.



- Lomas Los Colorados (RM)
- Copiulemu (Biobio)

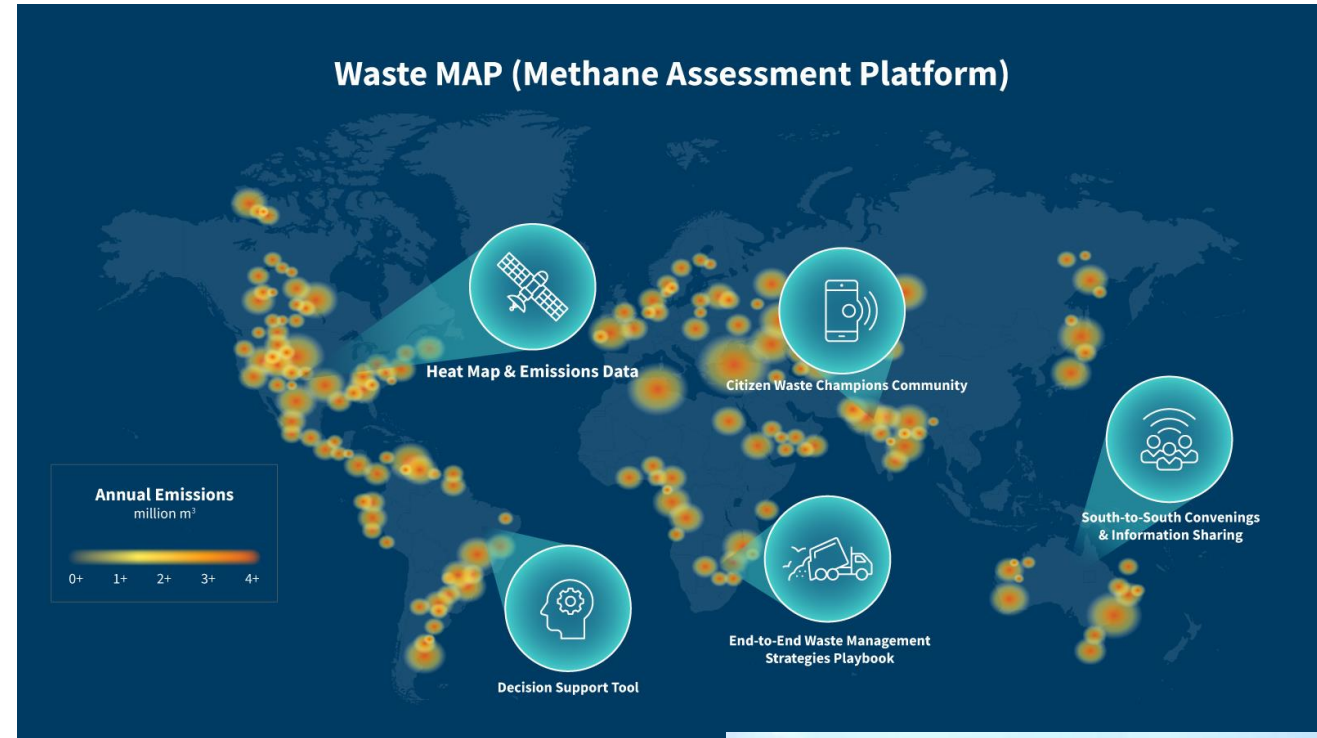


Waste Methane Assessment Platform (Waste MAP)

(RMI & CATF Coalition)

Project:

- Implementation: **2022 –2023**
- Develop the platform through broad and targeted data collection, research on emissions reduction pathways, get stakeholder's input to develop a policy playbook, and pilot a citizen engagement tool.
- Country “Deep dives” to support governments at the national, subnational, and local levels through capacity building for improving their waste methane data quality, availability, and use.
- Deep Dives: India, USA, Mexico, Colombia, Ecuador, and Nigeria

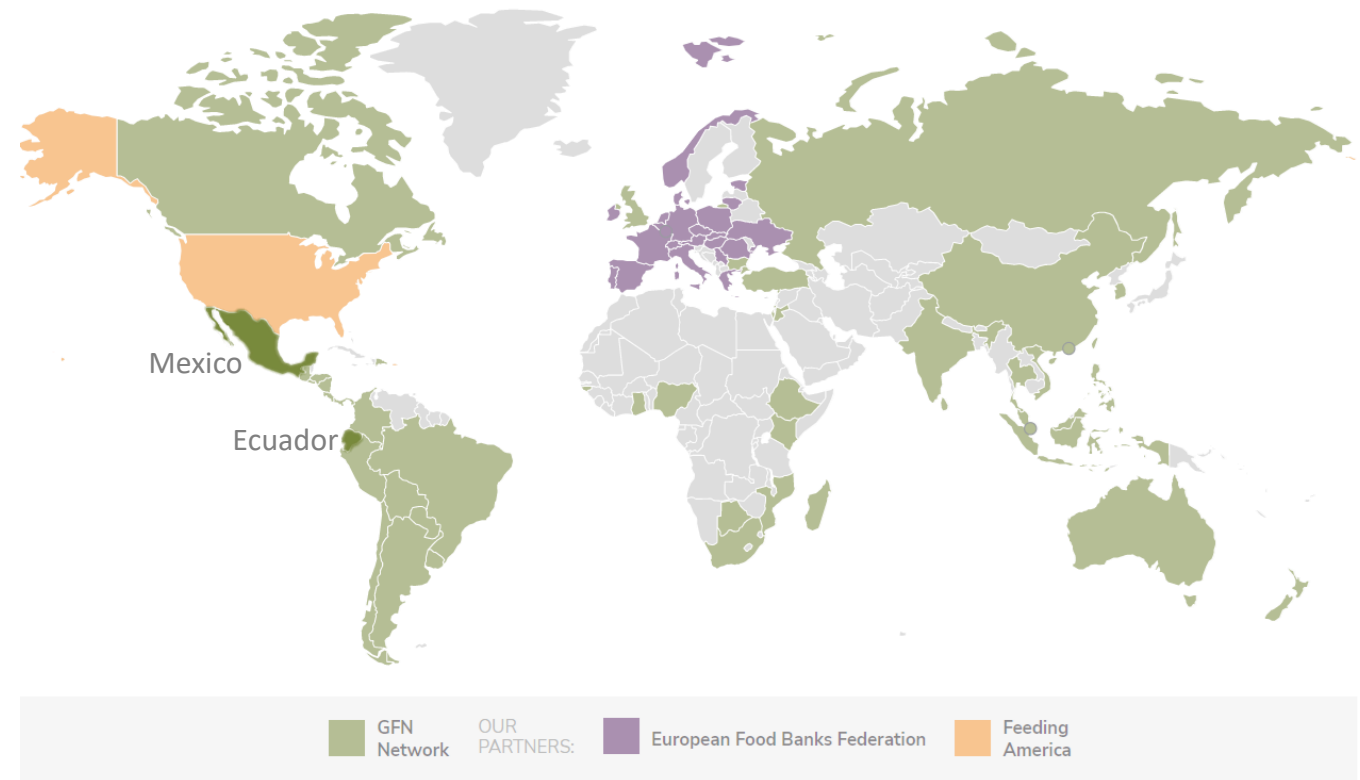


Pilot methodology of quantification, tracking, and communication of food banking methane mitigation

(Global Foodbanking Network)

Project:

- Implementation: **2022- 2023**
- Data traceability and information management capabilities across the food banks to improve data accuracy, reliability and traceability.
- Roadmap identifying inputs to increase methane emissions reduction through food redistribution.
- Food Recovery and Redistribution Methane Measurement Methodology
- Economic instruments to support methane emissions reduction through food redistribution.
- Pilot: Mexico and Ecuador



Methane Assessment for South America

(SSG - Sustainability Solutions Group)

Project

- Implementation: **2022 – 2023**
- Methane mitigation target included in NDC and/or climate action plans, in Chile, Uruguay, and Argentina.
- Methane Mitigation Assessment cost effectiveness pathways to South America, public platform.

Our food system generates a potent greenhouse gas.

But we know how to tackle it.

The food system generates 65% of methane emissions in Central and South America.

HERE ARE SOME KEY SOLUTIONS:



Prevent and compost food waste



Reduce over **90%**

of methane emissions from food waste.



Turn agricultural residues into something new



Reduce up to **93%**

of methane from burning crop residues by turning them into straw, biochar to enrich soil, or paper.



Treat animal manure in biodigesters



Reduce up to **91%**

of methane from animal manure by producing energy and fertilizer.



Feed cows fattier foods and put additives in their meals



Reduce **30%**

of methane emitted by confined cattle when they burp.

Embedding Values & Principles for Environmental Justice in Methane Reduction Efforts

(GAIA - Global Alliance for Incinerator Alternatives)

Project

- Implementation: **2022 – 2023**
- Draft of values and principles for EJ
- Mapping of organics management campaigns around the world
- Country profiles identifying key NDCs where to develop better waste and climate policies and include EJ principles



WASTE TO



EMISSIONS

How reducing waste is a climate gamechanger



OCTOBER 2022

Methane mitigation accelerator program for the waste sector in LAC, align funds with Canadian government (CCAP & ImplementaSur)

Project

- Implementation: **2022-2023**
- Identified of 51+ OWM projects in six selected countries
- Technical assistance: 15 pre-feasibility analyses & 5 detailed engineering
- Identification of financial support for OWM project developers
- Policy recommendations for overcoming identified barriers
- 10 LAC countries: Argentina, Chile, Costa Rica, Peru, Dominican Rep, Mexico, Uruguay. + Aligned fund (Canada): Belize, Grenada, Guyana, and St. Lucia.

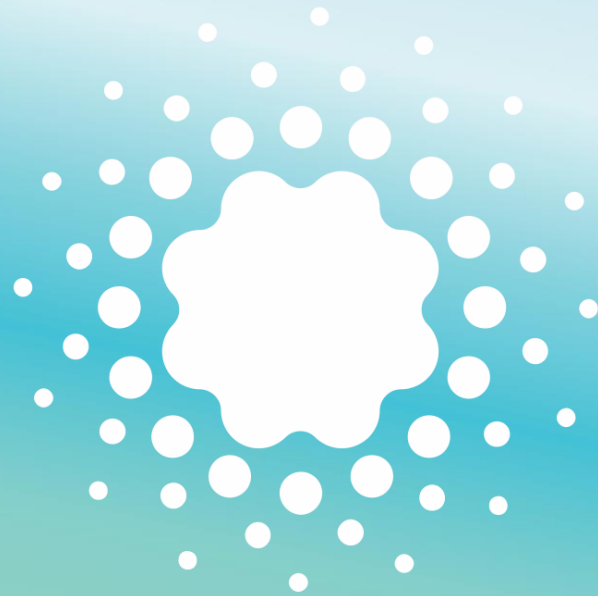


LEAVE THE CAR AT HOME AND COMPOST

¿Did you know that composting your organic waste avoids twice the emissions than leaving your car at home?



*base de cálculo para familia de 4, usando GWP20 para metano.



Global
Methane
Hub