

Final Workshop on Policy
Recommendations on Open
Waste Burning in Lao PDR

**Regional Roadmap to End
Open Burning of Waste for
Asia**

18 December 2025

Shibu K.N.

Regional Campaigner - Organics and Climate

www.no-burn.org



**Zero Waste Cities
Experiences from India**

About GAIA

GAIA is a worldwide alliance of more than **1000 grassroots groups**, non-governmental organizations and individuals in over **92 countries**.

It aims to catalyze a global shift towards a **zero waste world** built on respect for ecological limits, community rights and environmental justice by strengthening grassroots social movements.

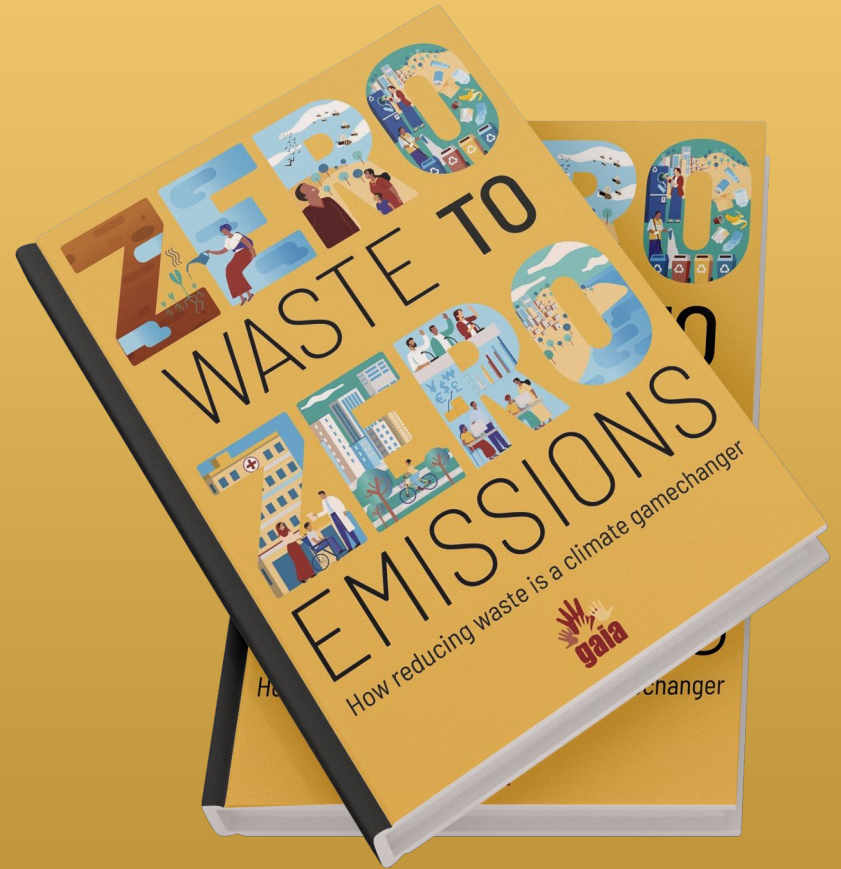


ZERO WASTE TO ZERO EMISSIONS

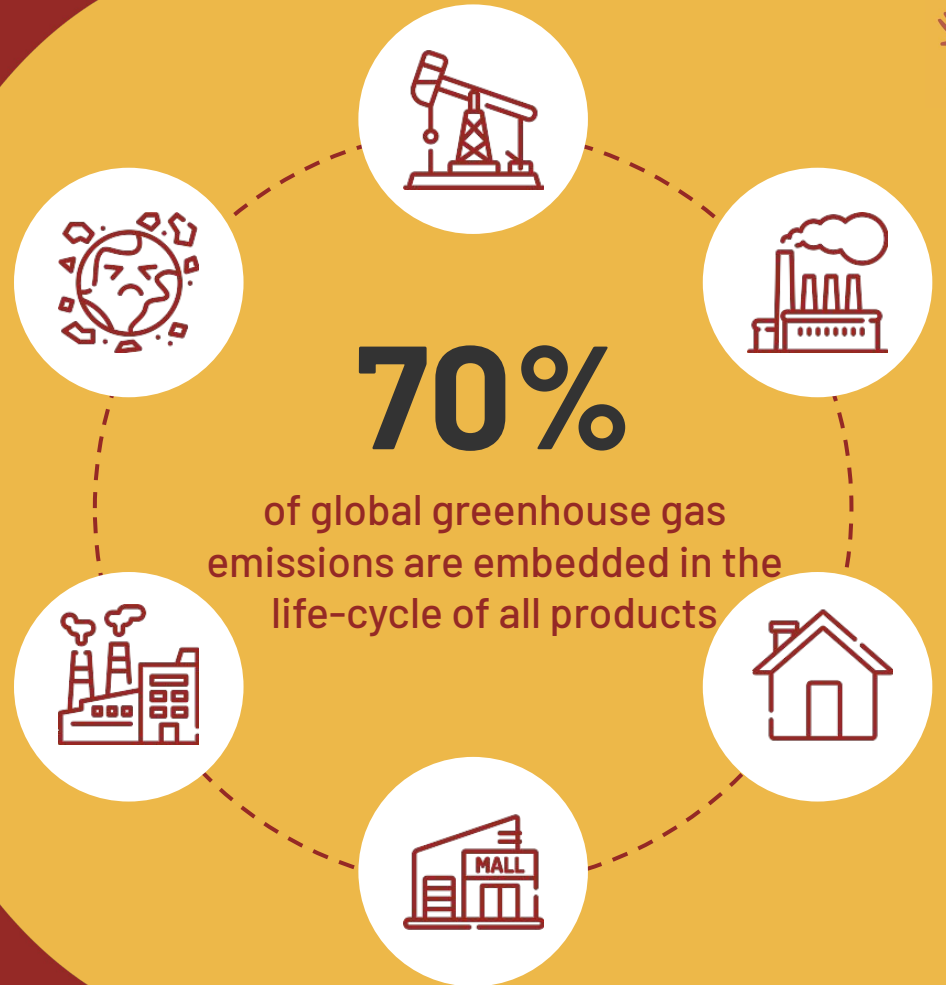
Waste prevention, source-separation of organic discards, and other methods can reduce solid waste methane emissions by as much as 95% by 2030..



**ZERO WASTE TO ZERO
EMISSIONS: HOW
REDUCING WASTE IS
A CLIMATE
GAMECHANGER**



HOW DOES WASTE CONTRIBUTE TO CLIMATE CHANGE?



Zero Waste

Zero Waste is a goal that is ethical, economical, efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.



Thiruvananthapuram: City Profile

Area: 214.86 sq.km

Population: 1,068,163

Floating Population: 150,000

Households: 377,232 in 100 Wards

- 2000 - Zero Waste Kovalam
- 2012 - Zero Waste Alappuzha
- 2014 - ZW Thiruvananthapuram
- 2025 - ZW Kerala



Kerala

Population 36 M

Literacy 100%

Extreme poverty Free State

Zero Waste State

Understanding the Waste Stream in Thiruvananthapuram

1,108.8 TPD

Total Municipal Solid Waste

Tonnes per day of municipal solid waste generated across the city

806.7 TPD

Biodegradable waste

72% of total waste stream

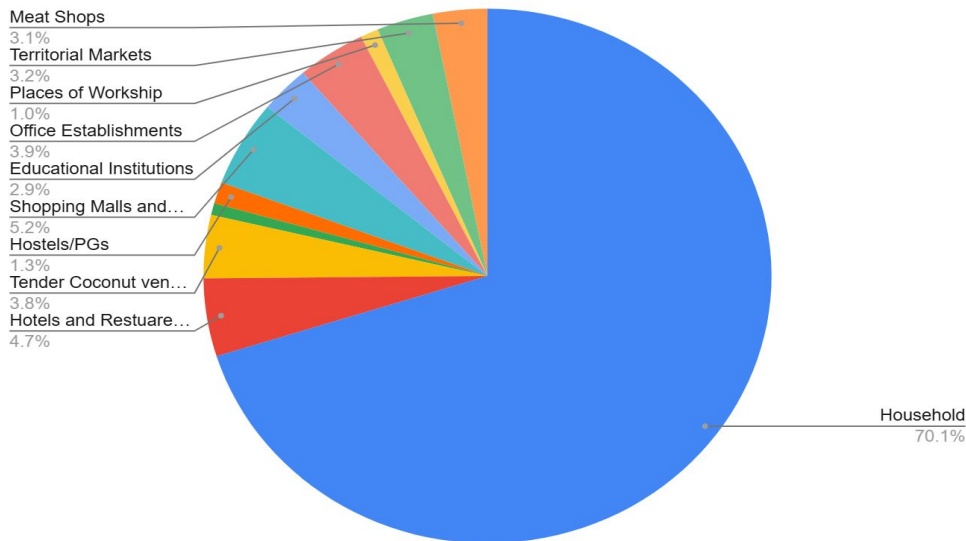
302.1 TPD

Non-Biodegradable Waste

28% of total waste stream

Key Sources

- *Households: 206,517 TPY (70%)*
- *Hotels & Restaurants: 13,870 TPY*
- *Shopping Centers: 15,330 TPY*
- *Markets & Institutions: 12,520 TPY*



Policy

- Waste Minimization
 - Food Loss and Food Waste Reduction
 - **Green Protocol**
 - **Responsible Tourism**
- Segregation
 - Source Segregation
 - Segregated Collection
 - **Calendar Based Collection**
- Decentralized Resource Recovery
- Environmental Justice and Just Transition
- Accountability and Producer Responsibility



Finance and Infrastructure

- Decentralized and Community level Facilities
- Material Recovery Facilities / Dry Waste Collection Centres
- Resource Recovery Centres
- Mobile applications / web based tools
- Budget Support
- User fee
- Subsidies



Management of Organic Waste in Households in TMC

28.8%

TMC Supported

108,801 households with
163.2 TPD managed by
municipal facilities

46.2%

Own Facilities

174,480 households
managing **261.6 TPD**
through private systems

25%

Leakage

93,951 households with
141 TPD unmanaged
waste requiring
interventions

Organic Waste Methane Reduction potential

10,576 tonnes CH₄ / Year

Capacity

- Behaviour Change Communications and Campaigns
- Technical Training
- Safety and Welfare
- Empowerment
- Dignity of labour
- Recognition of rights and gender
- Creating space to grow



Participation

- Building Stake
 - Committees
 - Hotel and Restaurant Association
 - Departments, Kerala Tourism
 - Residents Associations, Trade unions, Merchants Assn, etc
- Meaningful participation at all levels
- Youth and Student leadership
- ZW Schools, ZW Offices, ZW events
- **Green Army International**



Towards Zero Waste Kerala

From 2021-2025, Kerala has transformed waste management across 38,863 sq.km, serving **36 M** people in **8.6 M** Households through **1,034** local self-government institutions.

Rate of Source Segregation and Door to Door Collection Coverage - Residential: 90% (7.7 M)

Rate of Source Segregation and Door to Door Collection Coverage Non Residential: 90% (1.3 M)

2.5M
Household Facilities
Organic waste source-level management facilities established

1,396
Community Centers
Community-level management facilities operational

37,722
Haritha Karma Sena members
Haritha Karma Sena members driving change

252
Service Providers
Empanelled by Suchitwa Mission

75%
Percentage of Organic Waste Managed

- Reduced workload of sanitary workers
- Prevented Waste accumulation in the public places through door to door collection

- Ensured clean materials for recycling by segregated collection of cleaned materials
- Secured decent livelihood with better standard of living

Political Will and Public Finance

Malinya Muktha Nava Keralam (Waste-Free New Kerala) launched as a flagship state campaign, drawing from lessons in Alappuzha & Thiruvananthapuram.

Political Leadership

Mr. Pinarayi Vijayan
(Chief Minister, Kerala)

Dr. Thomas Isaac
(Initiated Zero Waste Alappuzha)

Mr. M.B. Rajesh
(Minister for LSGD)

Institutional Support

Kerala Suchitwa Mission

Haritha Kerala Mission

Clean Kerala Company Ltd.

Kerala Institute of Local Administration

LSGIs

(Statewide integration of departments for expertise & financing)

Public Financing & Investments

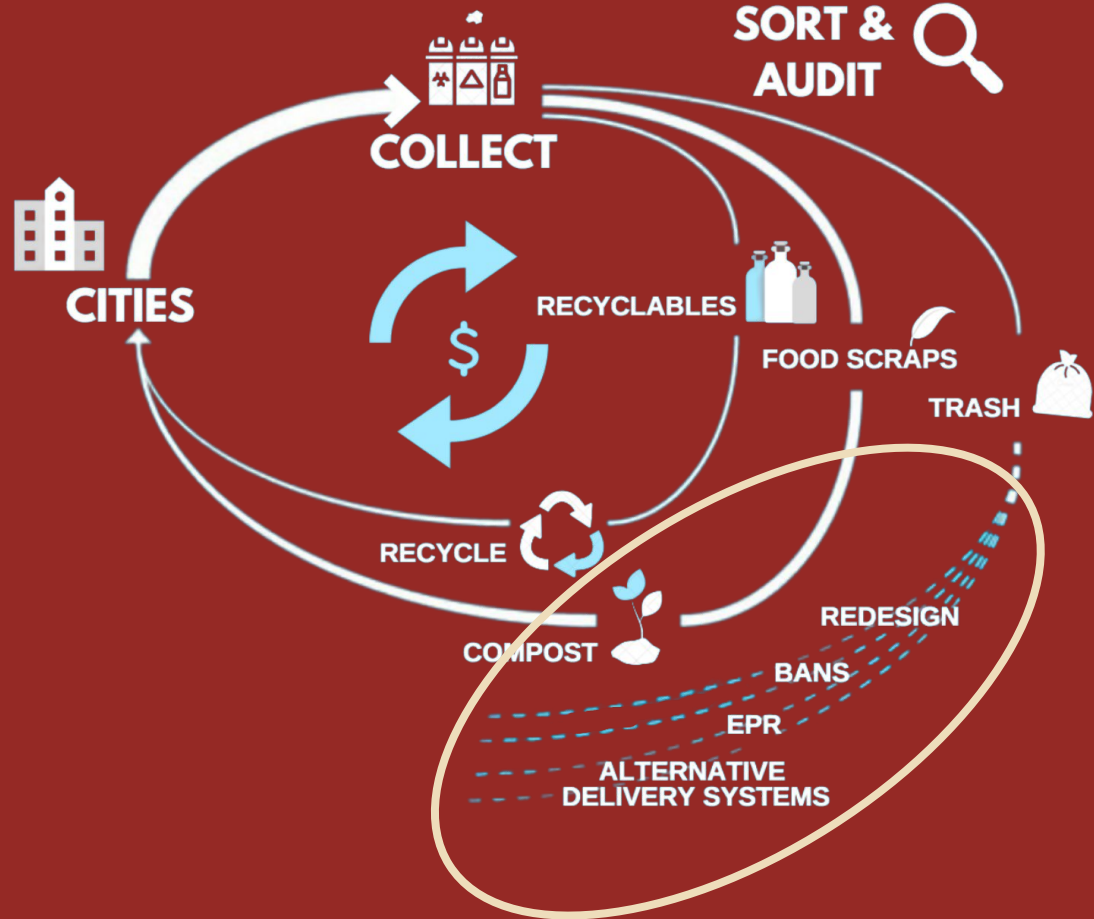
LSGI + State + Union Government Funding
(Core financing for decentralized waste systems)

Subscription fees
from Public and Institutions

CSR & Sponsorships
(to supplement project costs)

World Bank – USD 105 million
(For urban local bodies upgrading and expansion)

Future of SWM

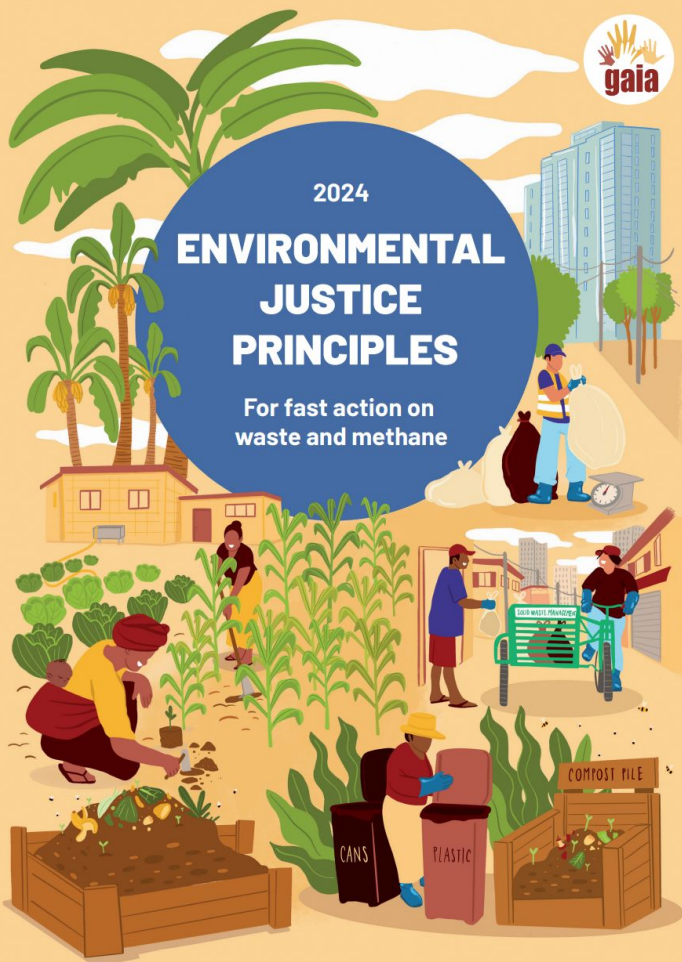




2024

ENVIRONMENTAL JUSTICE PRINCIPLES

For fast action on waste and methane



ENVIRONMENTAL JUSTICE PRINCIPLES FOR THE WASTE SECTOR



2 Respect for all waste pickers and waste workers

1 Respect planetary boundaries to ensure intergenerational equity



3 Enhance inclusion and build from local knowledge



5 Support holistic solutions through systems change

4 Respond to pollution and environmental harm with accountability



THE CITIES METHANE PLEDGE

70% Recovery of Organic Waste by 2030 to Combat Climate Change

In Asia, more than 50% of the waste generated is organic. Left unmanaged, organic waste produces methane, a powerful greenhouse gas, trapping 82.5 times as much heat as carbon dioxide. Unmanaged organic waste degrades the environment, poses public health risks, and contributes to climate change.

CITIES CAN COMBAT CLIMATE CHANGE.

Organic waste is the easiest waste stream to manage. Just by managing organic waste, cities can fight climate change. By reducing methane emission from organic waste by 70%, they can effectively limit the global warming level to 1.5°C.

MAKE THE COMMITMENT TO FIGHT CLIMATE CHANGE. Sign the METHANE PLEDGE to recover 70% of organic waste by 2030.

Engr. Cle Bern Paglinawan
Siquijor, Philippines



THE CITIES METHANE PLEDGE

We are on the edge of the climate cliff. The past years have been a period of immense challenges, making communities more vulnerable to climate change. Production and consumption patterns across the world are accelerating greenhouse gas emissions, which in turn is creating a warmer planet where extreme climate events are challenging our environment, ecosystems, economy, and the very existence of human life.

It is time for a just and quick transition.

Cities, local governments, and countries committed to delivering the ambition set forth at the 21st Conference of the Parties (COP21) for United Nations Framework Convention on Climate Change (UNFCCC) to limit the global warming level to 1.5°C, recognize losses of vulnerable communities, and stimulate green jobs. The UN's Intergovernmental Panel on Climate Change indicates that greenhouse gas emissions must decline by 45% by 2030 to limit global warming to 1.5°C.

Methane is the second largest component among greenhouse gasses next to carbon dioxide, contributing up to 30% of global emissions. It is 82.5 times more potent than carbon dioxide over a period of 20 years in trapping heat. Science shows that human-caused methane emissions can be reduced by up to 45% in this decade. Such reductions would avoid nearly 0.3°C of global warming by 2045.

This ambition for significant reduction of methane emissions from municipal waste is realizable through Zero Waste implementation. Evidence shows that waste prevention, source-separation of organic discards, and other methods can reduce solid waste methane emissions by as much as 95% by 2030.

Municipal solid waste contributes 20% of human-induced methane emissions and organic waste forms about 50-80% of municipal solid waste in the Asia Pacific region. This provides the dual opportunity for local governments in the region to both manage domestic waste as well as lower carbon emissions through methane reduction by implementing proper waste management.

Therefore, I hereby declare my commitment to lead global climate action movement in my city /municipality/ community by:

- Prioritizing actions for waste reduction, especially food waste reduction throughout the supply chain.
- Designing and enforcing systems to prioritize waste segregation at source; in particular, targeting up to 70% safe and effective recovery of organics, preferably through decentralized systems in the municipal solid waste stream by 2030.
- Providing support in developing infrastructure, institutions, and financial mechanisms for effective recovery of organic waste and its optimum utilization through anaerobic digestion or biocomposting.
- Building partnerships with farmers, businesses, community-based organizations, non-governmental organizations, educational institutions, and research and development institutions to continuously advance knowledge and create an enabling environment for effective recovery of organic waste with forward linkages for its optimum utilization through value addition.
- Ensuring integration of waste pickers and waste workers in waste management to enable a just transition.
- Learning and utilizing mechanisms to quantify methane emissions from waste in our cities and communities
- Encouraging other local governments to commit to this Methane Pledge.
- Reviewing the progress of this declaration and periodically reporting to the network and the wider public.

Note: Signing up for this cause only means the voluntary intention of the City and/or LGU to build a local climate action.



BUSINESS UNUSUAL

ENTERPRISES PAVING THE WAY TO ZERO WASTE

ZERO WASTE CITY MANUAL

A TOOLKIT TO ESTABLISH CITY AND COMMUNITY ZERO WASTE SYSTEMS

#break free from plastic

STOP TRASHING THE CLIMATE

EXECUTIVE SUMMARY
June 2008

For the full report, visit www.stoptrashingthecolimate.org

QUESTIONS TO ASK

WHEN EVALUATING A "WASTE-TO-ENERGY" INCINERATOR PROJECT OR PROPOSAL

January 2016

It's NOT "recycling" when you treat plastic to BURN it

	Mechanical recycling	Plastic-to-Plastic Repolymerisation	"Plastic-to-Fuel"	"Waste-to-Energy"
Input	Post-consumer Single-polymer	Mixed Plastic	Mixed Plastic	Mixed Waste
Treatment Technology	Mechanical Treatment	Chemical Treatment (e.g. solvents)	Gasification, Pyrolysis, Plasma Aic, etc.	Incineration
Primary Product	Plastic	Fuels	Electricity	Electricity
Waste Products	Solid Waste	No Data ?	Toxic Emissions, Liquid Effluent, Ash and other Solid Waste	Toxic Emissions, Liquid Effluent, Ash and other Solid Waste

Hazards & Issues				
Toxic emissions	Low	?	High	High
GHG emissions	Low	High	High	High
Ash and residues	Low	?	High	High
Cost	Low	High	High	High
Other	Downcycling Lack of markets	Reprocessability Lack of markets	Produces a fossil fuel Energy-intensive	Lack of effect Low efficiency

Supported in part by Plastic Solutions Fund
October 2019



www.no-burn.org



Thank you

shibu@no-burn.org

+91 9447056310

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