



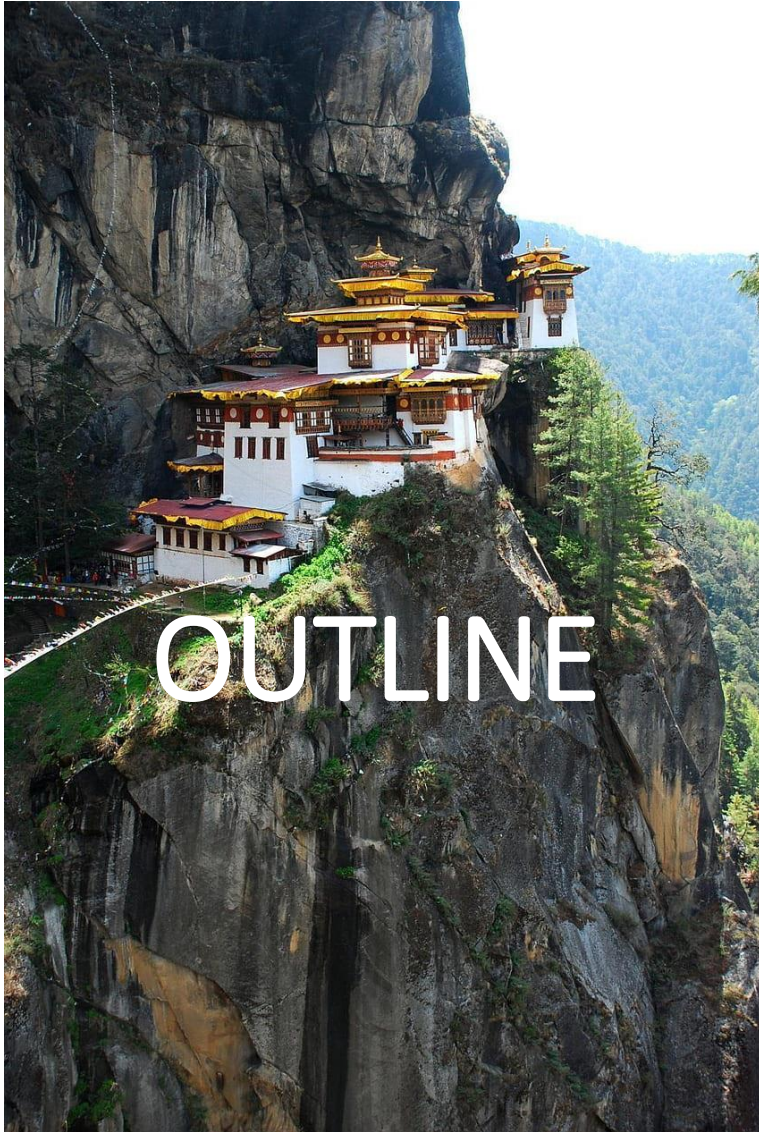
Enforcement of Policies to End Open Waste Burning in Bhutan

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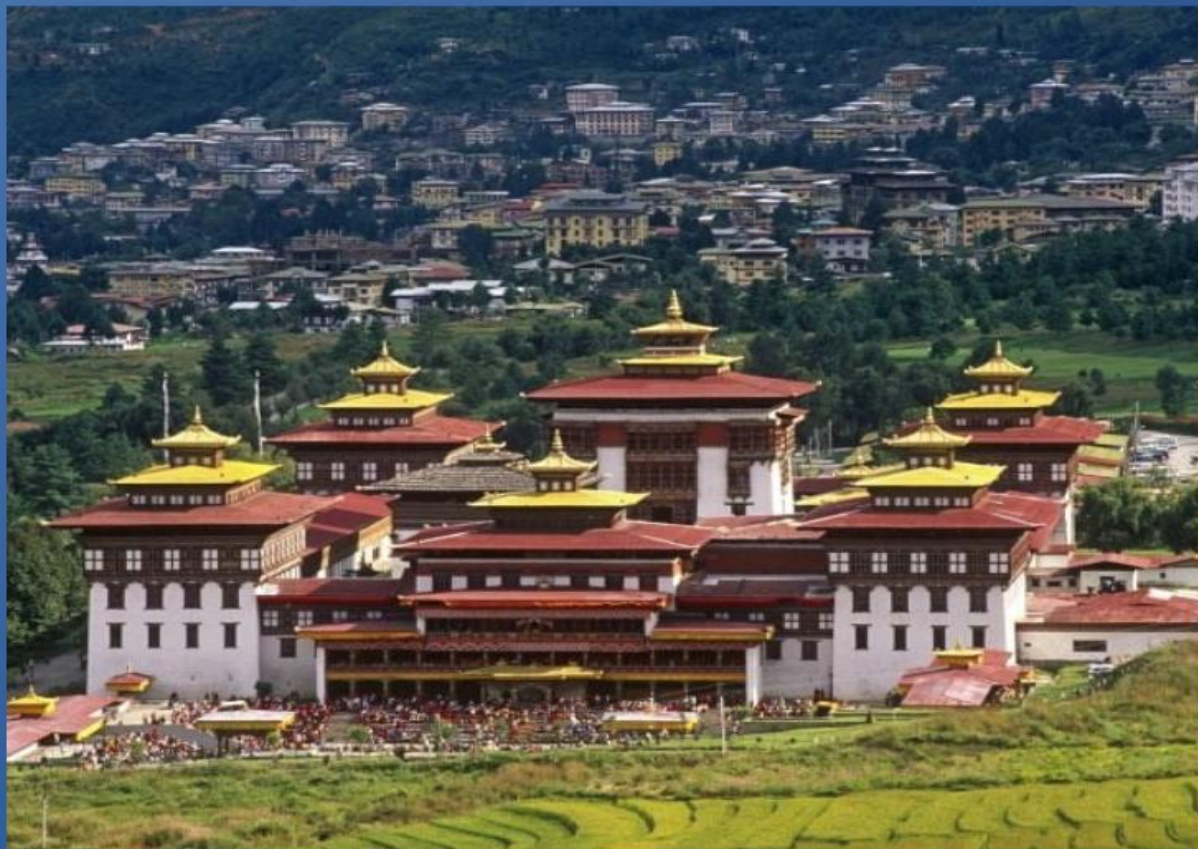
September 6, 2025

Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia

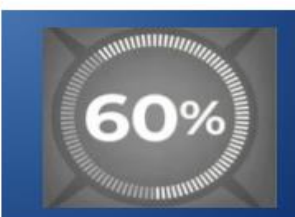




1. Stakes: Bhutan's Dual Commitment
2. Existing Policy Framework
3. Key Stats: Bhutan's Waste at a Glance
4. Enforcement Gap: Key Challenges
5. Multi-Pronged Enforcement Strategy
6. Enforcement is Empty without Alternatives
7. A Visual Guide: Bhutan's Path to Zero Waste
8. Best Practices & Opportunities
9. Path Forward: To end Open Waste Burning



A Global Responsibility: A Carbon Negative Country



A Constitutional Mandate: 60% Forest Cover for perpetuity



The Contradiction: Open burning undermines these commitments, releasing:

- Black Carbon (soot)
 - accelerates glacial melt
- Dioxins & Furans
 - toxic to human/ecosystem health
- PM2.5
 - contributes to respiratory illnesses

STAKES: BHUTAN'S DUAL COMMITMENT



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EXISTING POLICY FRAMEWORK: A STRONG FOUNDATION

The Constitution of
the Kingdom of Bhutan

- 01 Constitution of Bhutan 2008 – mandates environmental conservation
- 02 National Environment Protection Act (NEPA 2007)
- 03 Waste Prevention and Management Act (WPMA 2009) & Regulations 2012 and 2016
- 04 Thromde Act 2007 – municipal authority for waste management
- 05 Bhutan Air Quality Standards (BAQS 2023)
- 06 Ban on plastic bags (1999, reinforced 2019)

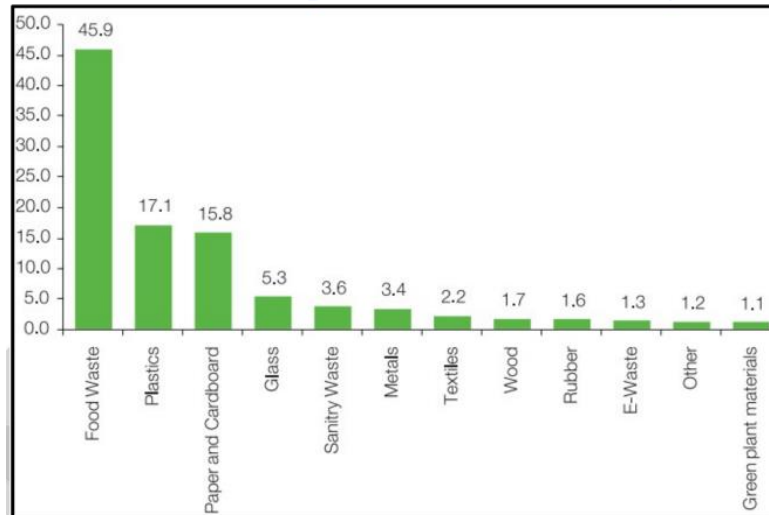
The Challenge: Awareness exists, but implementation is fragmented. Enforcement is often weak, inconsistent, and under-resourced.

Key Stats: Bhutan's Waste at a Glance

Quantity of Waste Generated in Bhutan

Waste Sources	Total Weight	Percentages
Household	81500.50	47.34
Commercial Units	67299.70	39.09
Vegetable Markets	6168.50	3.58
Industries	5719.30	3.32
Institutes	5395.90	3.13
Government Offices	3097.19	1.83
Health Centres	2980.60	1.70
Total	172,161.09	100.00

Waste Composition in Percentage



Area	Total Waste (kg)	Mean Waste (kg)
Urban	42,274.5	0.7
Rural	39,226.1	0.4
Bhutan	81,500.5	0.5

National Overview

- **Daily:** 172.15 MT/day
- **Per Capita:** 0.23 kg/day

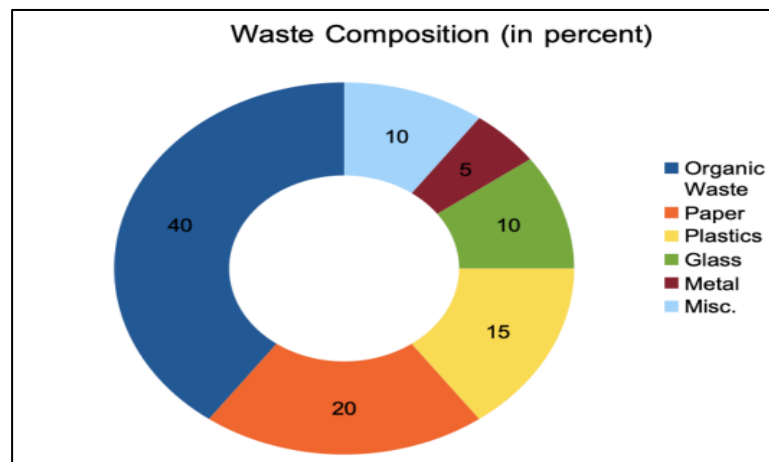
Thimphu City

- **Daily:** 50-55 MT/day
- **Per Capita:** 0.70 kg/day

Waste Composition and Quantity of Thimphu

Waste Category	Waste Composition	Quantity (kg/daily)	kg/Monthly	kg/Yearly
Food waste	59.20%	29600	888000	10656000
Paper and Cardboard	15.10%	7550	226500	2718000
Plastics	9.30%	4650	139500	1674000
Glass	4.50%	2250	67500	810000
Sanitary Waste	5.70%	2850	85500	1026000
Metals	1.40%	700	21000	252000
Textiles	1.80%	900	27000	324000
Rubber	0.90%	450	13500	162000
E-waste	0.80%	400	12000	144000
Other	1.20%	600	18000	216000

Waste Composition (in percent)



ENFORCEMENT GAP: KEY CHALLENGES



Capacity & Resources: Limited trained personnel, monitoring equipment, and budgetary allocation for enforcement at the thromde and gewog levels.



Coordination Silos: Overlapping mandates between DECC, MoIT, MoH, Thromdes, and Local Governments lead to confusion and inaction.



Cultural & Practical Realities: In rural areas, burning is often seen as the only feasible disposal method (>55% HH) due to lack of alternatives.



Penalty Structure: Fines are often too low to be a deterrent and are inconsistently applied.

MULTI-PRONGED ENFORCEMENT STRATEGY



A Strategic Shift: Four Pillars for Enforcement



Empowered Local Governments

- Designated & trained Environment Officers in every Thromde/ Dzongkhags

Technology-Enabled Monitoring

- SMART surveillance and enforcement
- BWB/Fleet management
- Circular economy

Unified Protocol & Data

- Clear national protocol with a central violation database
- Zero-Waste App

Progressive Penalties & Incentives

- Community service
- Rewards
- Recognitions from the "Golden Throne"

ENFORCEMENT IS EMPTY WITHOUT ALTERNATIVES



A Visual Guide: Bhutan's Path to Zero Waste

Collection



Transportation



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A Visual Guide: Bhutan's Path to Zero Waste

Material Recovery



Re-use



End open burning through smart disposal, active communities, recycling incentives, digital monitoring, and united action across all sectors

Best Practices And Opportunities



Infrastructure & Segregation

▶ Designated waste disposal & segregation facilities

▶ Incentivizing recycling & waste-to-value solutions

Recycling & Innovation

Community Engagement

▶ Awareness campaigns and behavior change programs.

▶ Use ICT tools for monitoring and strengthen cross-sector coordination (MoIT, Health, Education, Local Govts).

Smart Governance

PATH FORWARD: TO END OPEN WASTE BURNING

STRENGTHEN ENFORCEMENT (BHUTAN)

- Harmonize roles (DECC, MoIT, Thromdes, LGs)
- Citizen reporting & regular monitoring
- Stronger penalties & compliance checks
- Invest in segregation & recycling infrastructure
- Continuous awareness & PPP for circular economy

STRENGTHEN COOPERATION (REGIONAL)

- Share enforcement models & innovations
- Cross-learning on legal frameworks & monitoring
- Joint research on health & climate impacts
- Mobilize finance & technical support

CALL TO ACTION

- **Govt:** build enforcement capacity
- **Communities:** stop burning, engage actively
- **Private sector:** invest in recycling & innovation
- **Regional partners:** provide support & resources



THANK YOU

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