



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

# Mitigating climate change through practical measures and policies to reduce food waste

2019 International Solid Waste Association World Congress  
October 2019  
Bilbao, Spain

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# Food waste and loss

- 40% of the food produced in India is wasted
- Where is food wasted:
  - Production (e.g. poor storage and transportation)
  - Retail (e.g., markets, grocery stores)
  - Consumption (e.g., restaurants, social events, households)
- Meanwhile
  - Poverty and hunger is prevalent across the country
  - Landfills are running out of space



# Biogas-based cooling system to improve farmers' incomes and reduce food loss

- Biomass gasifier system using crop residue
  - Located in Kapurthala, Punjab
  - 15-ton cold storage for melons, pears and other local fruits
  - Farmers able to sell their produce at 35% higher prices
  - Cost of running the cooling system using biogas gasifier system is a fourth of using electricity and a tenth of using diesel as an energy source
- Anaerobic digesters using crop residues and livestock manure
  - 160 m<sup>3</sup> volume to produce 55 m<sup>3</sup> biogas per day
  - 15 to 30 Ton cold storage or 1,500-liter milk chiller



# Collecting food from restaurants and events to feed the hungry and reduce food waste

- **Food Dosti:** 2 cities, App to connect restaurants with surplus food with NGOs; customer rewards to finish ordered food or order partial portions
- **No Food Waste:** 10 cities, nearly a million meals (<https://www.nofoodwaste.in/>)
- **Feeding India:** 24 cities and 20 million meals (<https://www.feedingindia.org/magicwheels/home>)
- **Robin Hood Army:** 140 cities and over 124 million meals (<https://robinhoodarmy.com/>)



Information from websites as of October 6, 2019



# Community refrigerators in neighborhoods to feed the hungry and reduce food waste

- **Feeding India:** Happy Fridge Program in multiple cities and partnership with Indian Railways (<https://www.feedingindia.org/happyfridge>)
- **No Food Waste:** Food ATMs in Coimbatore and Salem
- Neighborhood associations in Delhi, Gurugram and other cities



Photo credit: <https://www.feedingindia.org/happyfridge?lightbox=dataptem-jyzalxv4>





# Reducing food waste by feeding animals

- Green waste is collected for cows and pigs
- Cows eat green waste at markets



# Reducing food waste disposed at landfills

- Food waste processed at decentralized biodigesters (e.g., Pune, Delhi, Varanasi)
- Food waste processed at centralized facilities (e.g., Pune, Varanasi)



# Policies addressing food waste

- National Solid Waste Management Rules, 2016
  - Certain identified bulk generators: Resident welfare associations and market associations; gated communities and institutions with more than 5,000 sqm area; hotels and restaurants
  - Requirement for above: Segregate and manage organic waste on their premises as far as possible.
- Local governments attempting to implement this policy face resistance
  - Odor problems
  - Lack of standardized technologies
  - Operational issues
- Recommended actions by central and local governments
  - Technical guidelines for selection of technology and operations
  - Outreach to stakeholders





# Thank you! Questions?

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