



**Third Meeting of COST CA22134
FoodWaStop**



**Quantifying Food Loss and Waste in Türkiye:
A Critical Step Towards Achieving Climate Targets**

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My Goals Today Are;

- To highlight the critical gap in food waste management focus and data in Türkiye
- To argue for accurate, official data collected through:
 - Scientific papers
 - Household surveys
 - Field studies
 - Actual waste generation audits and official reports
- To demonstrate that only with reliable data can we effectively manage, reduce, and valorize our largest waste stream
- To show that by closing this data gap, we can unlock the true potential of food “resources” and build a more resilient and circular system for Türkiye



Food Loss and Waste

The Figures Behind a Global Crisis

The Global Situation

- Food waste is a global challenge with direct impacts on climate change, resource use, and food security
- 1 Trillion USD per year (*UNEP, 2024*).
- UN Sustainable Development Goal **“Target 12.3 calls for cutting in half per capita global food waste at the retail and consumer level, and reducing food losses along production and supply by 2030”**

The Environmental Cost

- Responsible for 8% of global greenhouse gas emissions causing the release of methane gas (4.4 Gt CO₂-eq).
- Wastes 20-23% of agricultural land, 24% of freshwater, and 38% of energy in the supply chain (*FAO, 2024a; Erol ve Siriken, 2024 TUBA*).

A Moral Imperative

- Approximately one-third (1.3 billion tons) of all food produced is lost or wasted annually (*FAO, 2011*).
- While 735 million people face chronic hunger,
- We waste a third of our food.

The Critical Data Gap in Türkiye

- Türkiye is among the top 10 countries globally in food waste
- 7.7 million tons wasted annually
- 93 kg per capita (Durmuş et al., 2023)
- Turkey lacks a comprehensive national monitoring system for food loss and waste across the supply chain
- Food waste is not disaggregated; excludes losses from production, processing, and retail

TÜİK Ana Sayfa Veri Portalı

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YAYIM TARİHİ : 10 Kasım 2025
SAAT : 10:00
SAYI: 54134

BİLGİ TALEBİ

/tuikbilgi | /tuikbilgi

Atık İstatistikleri, 2024

Türkiye İstatistik Kurumu, atık istatistikleri kapsamında Türkiye'deki; tüm belediyelerden, 50 ve üzeri çalışan olan imalat sanayi işyerlerinden, kurulu gücü 100 MW ve üzeri olan tüm aktif termik santrallerden, altyapısı tamamlanmış tüm organize sanayi bölge müdürlüklerinden, Maden ve Petrol İşleri Genel Müdürlüğü'ne referans yılı için üretim beyan eden maden işletmelerinden, lisanslı veya geçici faaliyet belgeli tüm atık bertaraf ve geri kazanım tesisleri ile lisanslı olmasa da belediyeler tarafından ya da belediyeler adına işletilen düzenli depolama, yakma ve kompost tesislerinden veri derlemektedir.

Olmuş atık miktar 120 milyon ton olarak hesaplandı⁽¹⁾

Araştırma kapsamındaki imalat sanayi işyerleri, maden işletmeleri, termik santraller, organize sanayi bölgeleri (OSB) ve

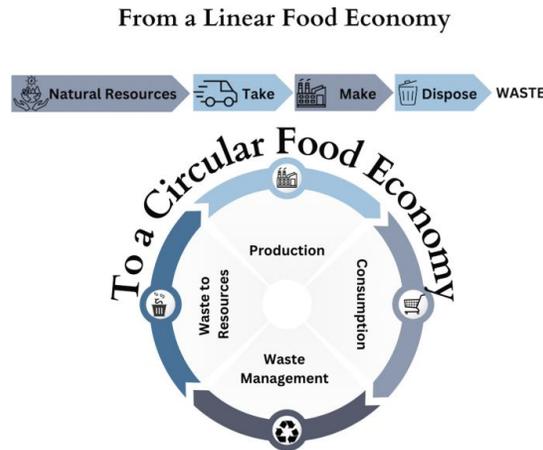
Tablolar

Tablo-1 İmalat sanayi alt sektörler atık istatistikleri
Tablo-2 İmalat sanayi atık yönetimi istatistikleri
Tablo-3 Termik santraller atık istatistikleri
Tablo-4 Maden işletmeleri atık istatistikleri
Tablo-5 Organize sanayi bölgeleri atık istatistikleri
Tablo-6 Belediye atık hizmeti istatistikleri
Tablo-7 Belediye atık yönetimi istatistikleri

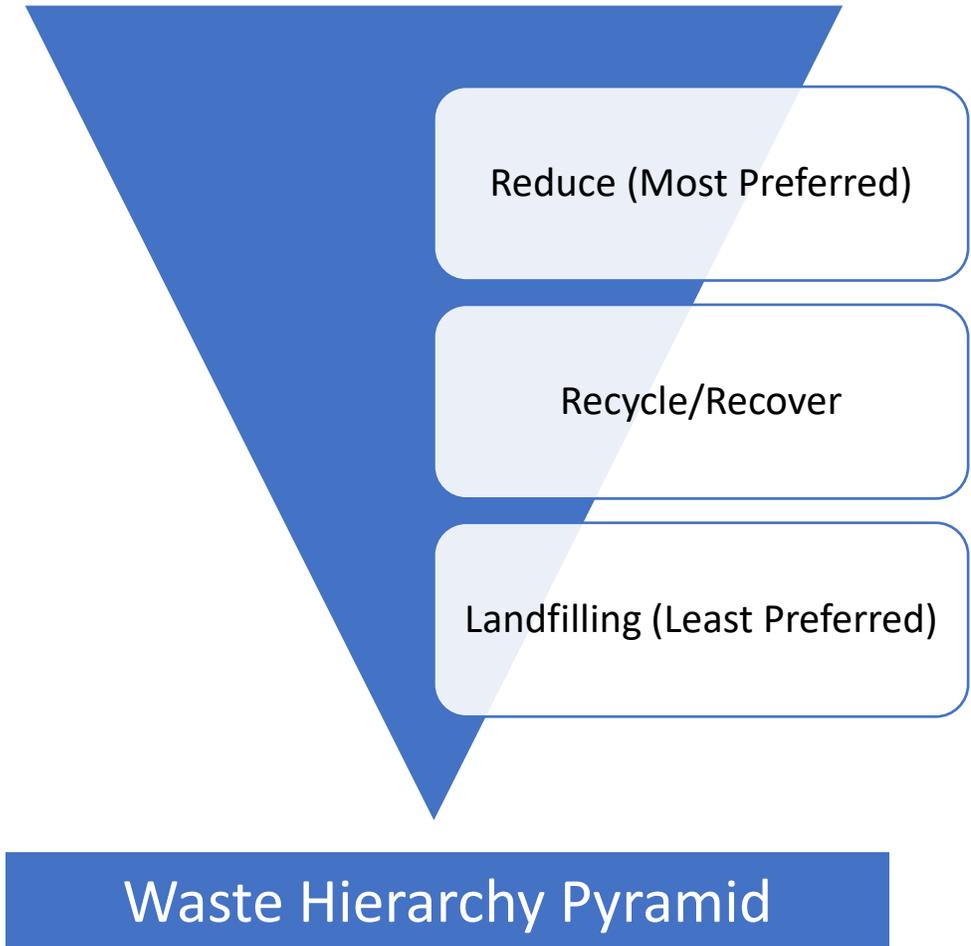
- Official data covers **municipal solid waste only** (TÜİK, 2024).
- **32.3 million tons** collected.
- Food waste is a component of the organic fraction.

The Environmental Engineering Viewpoint

- We have approached by viewing food scraps as "waste" ...
- Our primary goal has been to manage this waste within the waste hierarchy framework.



- In a circular economy model, there is no concept of waste, only resources.
- We must view food scraps not as waste to be managed, but as valuable raw materials.



Current Challenges & Collection Gaps

- **Zero Waste Model (2021)** exists, but separate collection is not mandatory for households.
- Household food waste is not separately collected at the source, missing the largest potential stream.
- It is collected only from large-scale generators (restaurants, institutions) for compost applications.
- Organic waste comprises over 50% of municipal waste, yet policies primarily focus on the remaining ~40% (plastics, paper, etc.).



Türkiye

WHO WE ARE

WHAT WE DO

OUR IMPACT

GET INVOLVED

The Zero Waste Project receives UNDP Turkey's first Global Goals Action Award

MARCH 22, 2021



- Composting rate: 0.7–1.1%.
- Organic waste in landfills contributes to methane emissions.

Household Food Waste & Behavioral Drivers

Behavioral drivers:

Over-purchasing (78.5%),
Spoilage (66.6%),
Leaving food on plate (61.9%).



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They should not be considered conclusive, used to inform clinical practice,
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Food waste and its economic dimension in retail and household stage

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- Annual per capita household food waste: 102 kg (UNEP, 2024).
- 23% of purchased food is discarded unconsumed (Ministry of Trade, 2018).
- Most wasted items are Fruits & Vegetables (42%), Dairy Products (41%).
- Annual edible food loss and waste: 26.04 million tons which corresponds to ~12% of food produced
- Largest loss at agricultural production stage: ~13.7 million tons (*Salihoglu et al., Bioresource Technology 2018*).

The Current Situation in Türkiye

Method	Current Status	Potential	Main Barrier
Animal Feed	Limited	High	Lack of technology & standards
Biogas	Low capacity	Very High	Lack of investment & plants
Compost	Very limited	Medium	No market, low quality
Biofuel	Limited	High	Low collection rates
Incineration	None	Low	Low calorific value of waste
Landfill Gas (LFG)	Active	Limited	Environmental risk

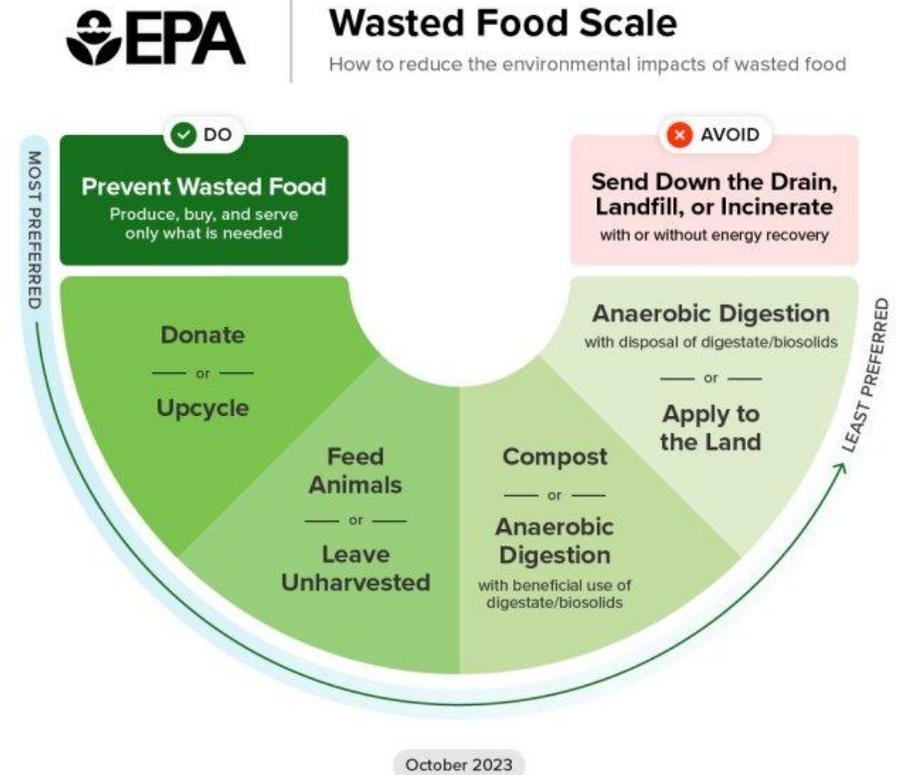
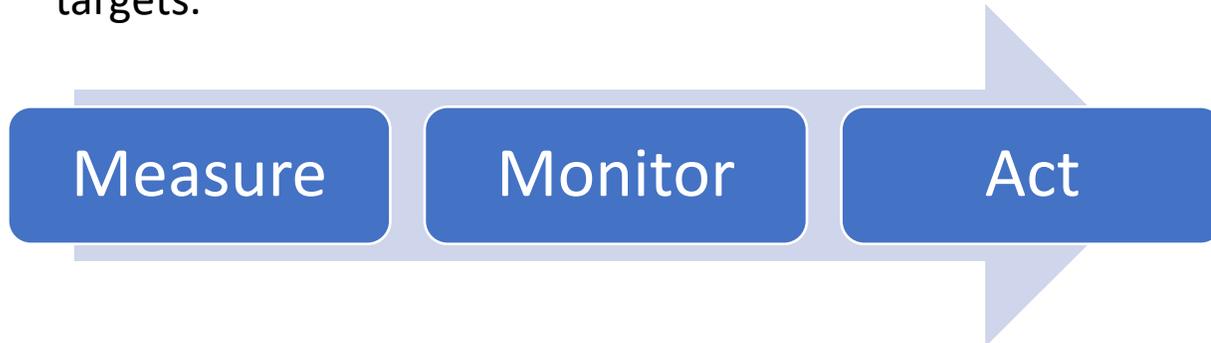
Success Case: Bread Waste Prevention Campaign

- 18% reduction achieved since first launch at 2013
- Total annual economic contribution: 2.8 billion TRY
- Additional annual indirect saving of 2.5 billion TRY from changed consumer behavior
- Recognized by FAO as a global best practice (FAO, 2021).



Conclusion & Call to Action

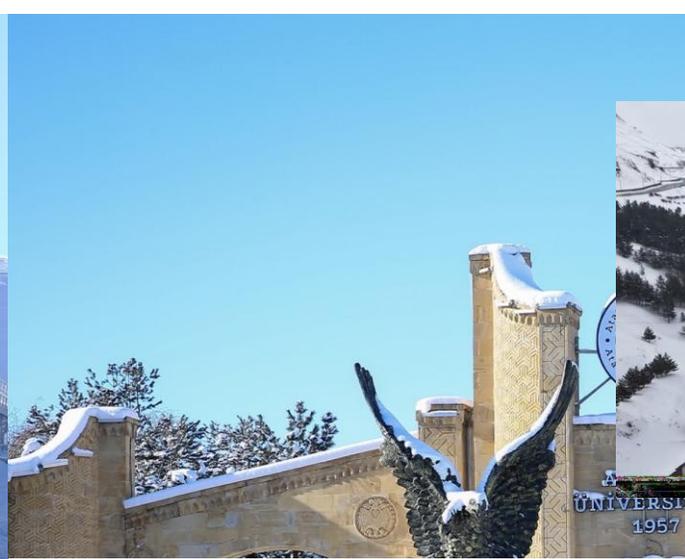
- Food waste is a critical barrier to Turkey’s climate targets
- Lack of reliable data is the primary obstacle
- Achieving 2053 net-zero goal requires tackling methane from organic waste
- Mandatory of home composting systems as well as separate collection of waste type
- Comprehensive food waste management and recycling can directly contribute on the order of **5–10%** to national emission reduction targets.



Türkiye's commitment to achieve **net-zero emissions by 2053** and reduce emissions by **41% by 2030**

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Thanks for Listening...



ATAiklim/ClimATA



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