

Food Waste Composting Report 2025

Toiligt Tourist camp

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This report presents the results of food waste composting activities conducted over a period of 67 days, from June 25 to August 31, 2025.

All compost produced during this period was processed in accordance with relevant organic waste management guidelines.

A total of 1122,8 kilograms of food waste was sorted and successfully composted.

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Food Waste Composition

According to the Law on Organic Products, any product containing 95% or more organic ingredients qualifies as organic.

All food waste generated at Toiligt Tourist Camp was sorted at the source to ensure proper composting.
Kitchen waste: 335.3 kg
Restaurant waste: 787.5 kg

The mixture was then placed in a compost bin to begin decomposition.



The food waste was mixed with sawdust and bark, covered, and the process was repeated the following day.

Average Daily Waste Processing

Throughout the 67-day operational period, food waste was sorted and composted daily. The average amount of food waste processed each day was calculated based on total waste volume and visitor numbers at the camp.

≈16.72 kg of food waste per day

0.2 kg of fertilizer is used for every 1 m².

Since 0.2 kg of compost is required per square meter, the 1,122.8 kg of processed food waste can produce enough compost to fertilize approximately 5,614 m² (0.56 hectares), based on the raw input mass.

During the 67-day period, Toilogt Tourist Camp hosted an estimated 3,015 visitors, based on an average of 45 visitors per day.

On average, each visitor stayed three to five days.

Amount of processed food waste per visitor:

≈372 grams/tourist

Based on the total amount of composted food waste, the average food waste generated per visitor is approximately 372 grams.



South Korea's Effective Food Waste Management Practices

- The Republic of Korea has implemented a comprehensive food waste sorting system along with a "Pay as You Throw" (PAYT) policy.
- This approach has successfully prevented 90% of food waste from ending up in landfills. Food waste is collected separately and processed through composting and anaerobic digestion.
- As a result, the average amount of food waste per household has been reduced to about 33 kg per person annually.
- The fertilizer produced from this process is used in agricultural fields, improving soil nutrients and reducing the need for chemical fertilizers.

<https://shorturl.at/KYWl9>

ENVIRONMENTAL EFFECT

01

By composting at the Toilog tourist camp, 705.6 kg of CO₂ equivalent greenhouse gases were prevented from entering the atmosphere.

CH₄

Waste breaks down in an anaerobic environment, producing methane gas. Over a 20-year period, methane traps heat in the atmosphere about 84 times more effectively than carbon dioxide. Carbon dioxide (CO₂) is an invisible gas released into the atmosphere when humans exhale, when wood is burned, and when vehicles are operated. Excessive amounts of CO₂ contribute to global warming.

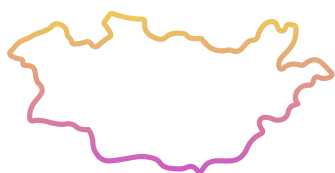
By reducing methane emissions:

- Premature mortality could decrease by 255,000 individuals annually.
- About 775,000 people would be protected from developing respiratory diseases.
- Crop losses could be reduced by 26 million tons.
- Unemployment caused by climate change could be mitigated.

UNEP: GLOBAL METHANE ASSESSMENT 2021

By 2024, Mongolia had experienced a loss of 8.1 million livestock across the country due to dzuds caused by climate change.

Source: www.1212.mn



A study on desertification and land degradation in Mongolia indicates that, as of 2020, 76.9% of the land has been degraded. The effects of climate change include a wide range of challenges such as food insecurity, water scarcity, climate instability, drought, and poverty.

One ton of waste emits approximately 7.5 kg of methane gas (CH₄).

02

03

If the total food waste sorted at the Toilog tourist camp is not composted, 8.4 kg of methane gas will be released from the landfill.

Fifteen to twenty percent of global methane emissions from human activities come from landfills.

When a garbage truck travels 90 kilometers, it emits significantly more carbon dioxide and nitrogen monoxide than a passenger car, which negatively impacts the climate.

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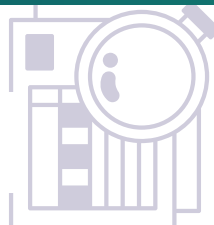
Mongolia produces approximately 2.9 million tons of solid waste annually. About 72% of this waste is sent to designated landfills, while the rest remains unaccounted for. The recycling rate is around 17–20%, and the use of organic fertilizers is minimal.

UNCRD, 2024



Climate change refers to the phenomenon characterized by a rise in average global temperatures and changes in climate patterns, primarily driven by the accumulation of greenhouse gases.

Permafrost covers 29.3% of Mongolia's total land area.



Khuvsgul Province has the highest permafrost coverage in Mongolia, with permafrost covering 95% of its area, according to a study by the Institute of Geography and Geoecology, Permafrost Research Branch of the Mongolian Academy of Sciences.

Climate change



Global warming caused by climate change is leading to rapid temperature fluctuations in Mongolia's permafrost, as well as changes in its properties, resulting in permafrost loss.

A study found that glaciers in the mountainous regions of Altai, Khuvsgul, and Khangai in Mongolia have shrunk by 35% and are melting rapidly.

Walther, M., & Kamp, U. (2023). Mountain permafrost: Insights into the Mongolian ice sheet environment. *Geosciences*, 13(9), 274.

Negative effects



Permafrost is a unique groundwater resource, and climate change is expected to significantly increase the frequency of forest fires, droughts, and soil degradation.

Permafrost contains large amounts of greenhouse gases, and as global temperatures rise, thawing permafrost releases methane and carbon stored deep within the soil into the atmosphere, further contributing to global warming. Recent findings show that Arctic permafrost is releasing more carbon dioxide than previously estimated.

Maintains balance and moisture in the forest ecosystem



Approximately 40 percent of the total land area in Khuvsgul province has undergone desertification.



ECONOMIC IMPACT

Direct and Indirect Benefits

Composting food waste improves soil fertility, reduces the need for chemical fertilizers, and offers a practical business opportunity.



Transporting 1.12 tons of waste requires one truckload.

This results in direct savings of 250,000 tugriks, including 50,000 tugriks saved from the salary of one worker involved in waste transportation to the landfill.



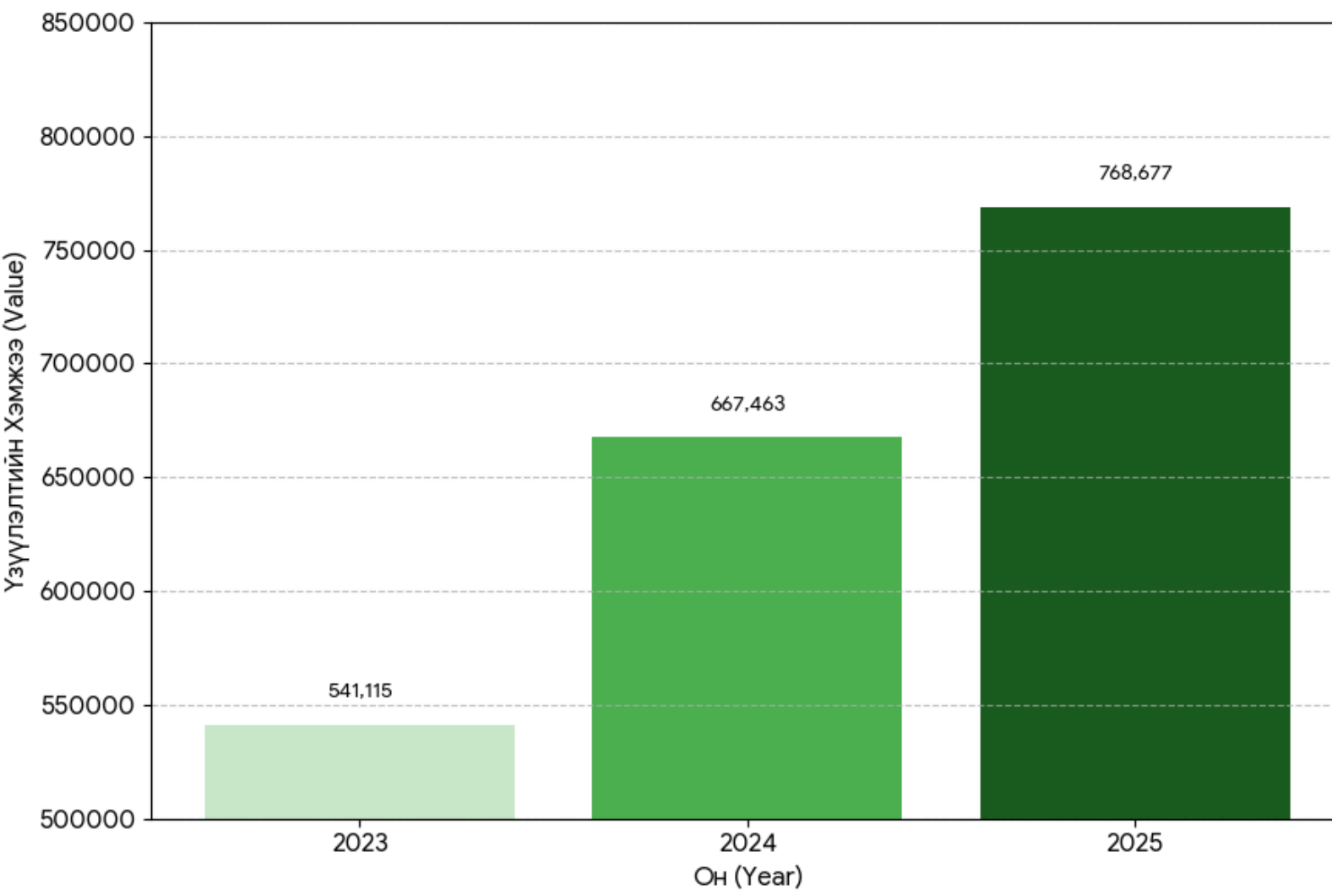
Extending Landfill Lifespan

Mixing waste materials such as plastic, glass, and metal with food waste greatly slows down decomposition in landfills and contributes to the generation of toxic leachate.



Reduce decomposition time
Food waste naturally decomposes within 2 to 5 years.

ANNUAL VISITOR NUMBERS TO MONGOLIA



Sustainable tourism

Sustainable Business

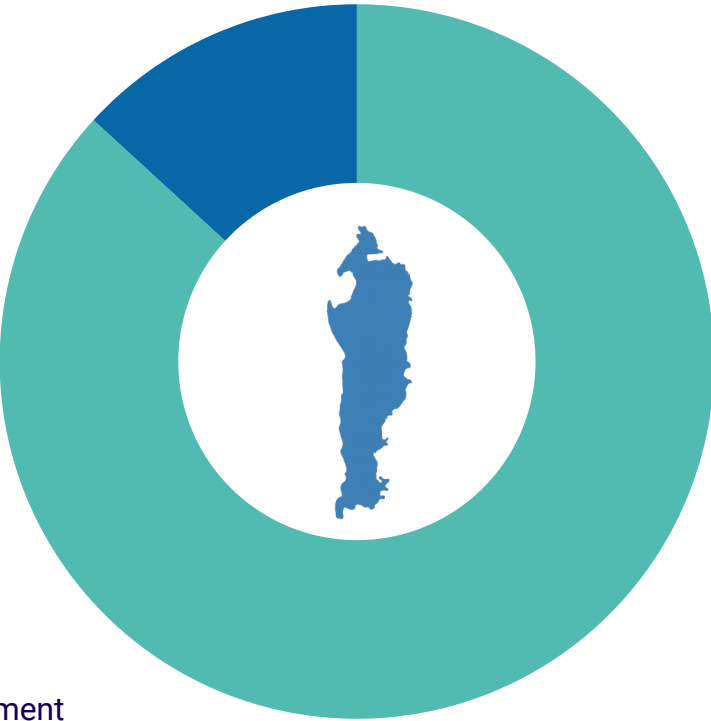
According to the research, the total annual waste generated by tourists, categorized by type, includes 1,983.7 tons of food waste, 1,207.17 tons of glass, 456.77 tons of plastic containers, 371.94 tons of plastic bags, and 215.33 tons of rigid plastic.

Green and Circular Economy Comprehensive Assessment Report) <https://shorturl.at/1UopO>

As tourist camps operate seasonally, they have the potential to become a "green business" by managing their organic waste through composting, thereby promoting environmentally friendly practices.

According to registration data at the entry point of the Khuvsgul Specially Protected Area, a total of 157,562 domestic and international tourists visited in 2025.

International visitors
20782



Domestic travelers
136780

CONCLUSION

The Toilogt Tourist Camp achieved the following outcomes through composting food waste:

- Produced fertilizer that helps reduce toxic gases from landfills and improves soil fertility.
- Lowered unnecessary costs related to one-time waste transportation.
- Improved local waste management and reduced the burden on landfills.
- Made a significant contribution with lasting environmental, social, and economic benefits.



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