

**Committee:** Economic and Social Council (ECOSOC)

**Issue:** Tackling the Ineffective Methods of Handling Food Waste in More Economically Developed Countries (MEDCs)

**Student Officer:** Lenio Bitsopoulou

**Position:** Deputy President

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## PERSONAL INTRODUCTION

Dear delegates,

My name is Lenio Bitsopoulou, I am 15 years old, and I am a 10th-grade student at the International School of Athens (ISA). I am so happy and extremely grateful to be serving as the deputy president of the Economic and Social Council (ECOSOC). Whether this is your first MUN conference or one of many, I would like to begin by welcoming you to the 7<sup>th</sup> ACGMUN conference. I began my MUN journey about a year ago and I can assure you that MUN is a community where you will gain many skills, engage in fruitful debates, understand global issues, and most importantly, have fun!

In our committee, we will be debating different issues, mostly related to economic and social development and environmental sustainability given the theme of the conference. This study guide will provide you with everything you need to know in terms of food waste handling in MEDCs, which also relates to the topic of "Reaching Net-Zero" and I advise you to read it thoroughly! However, I encourage you to extend your research further to gain a better understanding of the topic, as well as your country's stance towards it. If you have any further questions about the study guide or MUN as a whole, please, do not hesitate to contact me.

I cannot wait to meet you in person!

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## TOPIC INTRODUCTION

Ineffective food waste handling in More Economically Developed Countries (MEDCs) is a pressing and problematic crisis in today's day and age due to its significant economic, social, and environmental consequences. While reducing food waste and food loss is essential, it is also disregarded. The number of people suffering from hunger has increased since 2014 and 13% of food produced is lost between harvest and retail.<sup>1</sup>

Food systems cannot be strong if they are not sustainable, yet many consumers in MEDCs are unaware of the impact of food waste and may not know how to reduce it or help reduce its negative impact. This lack of awareness can lead to more food waste in households and businesses.<sup>2</sup> In many MEDCs, food products often have expiration dates as "best before" or "use by". Consumers may misinterpret these labels, leading to the premature disposal of edible food, contributing to waste, or discarding significant amounts of food due to cosmetic imperfections, overstocking, or concerns regarding product quality. Similarly, food supply chains can be inefficient, leading to food waste before it even reaches consumers.<sup>3</sup>

While some MEDCs have implemented food recovery programs to redirect surplus food to those in need, there is still the possibility for improvement in these systems, while many businesses or nations do not participate.<sup>4</sup> Food waste management in MEDCs can be hindered by fragmented regulations and policies across regions or states, leading to inconsistencies in how food waste is managed. Despite their resources, some MEDCs may still lack the necessary technologies and infrastructure for efficient food waste management, such as composting and anaerobic digestion facilities.<sup>5</sup> In some cases, economic incentives, such as tax

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<sup>1</sup>United Nations. "Reducing Food Loss and Waste: Taking Action to Transform Food Systems." *United Nations*, 29 Sept. 2022, [www.un.org/en/observances/end-food-waste-day](http://www.un.org/en/observances/end-food-waste-day)

<sup>2</sup>Food and Agricultural Organization of the United Nations. "Food Wastage Footprint." 2014

<sup>3</sup>UN Environment Program. "Why the Global Fight to Tackle Food Waste Has Only Just Begun." *UNEP*, 28 Sept. 2021, [www.unep.org/news-and-stories/story/why-global-fight-tackle-food-waste-has-only-just-begun#:~:text=According%20to%20the%20United%20Nations](http://www.unep.org/news-and-stories/story/why-global-fight-tackle-food-waste-has-only-just-begun#:~:text=According%20to%20the%20United%20Nations)

<sup>4</sup>Cosgrove, Emma. "Federal Government and Food Industry Take Aim at Organic Waste with Formal Commitment." *Waste Dive*, 30 Oct. 2019, [www.wastedive.com/news/epa-usda-fda-food-waste-supply-chain/566172/](http://www.wastedive.com/news/epa-usda-fda-food-waste-supply-chain/566172/). Accessed 4 Dec. 2023.

<sup>5</sup>"Food Law and Policy Clinic." *Harvard Law School*, [www.hls.harvard.edu/clinics/in-house-clinics/food-law-and-policy-clinic/](http://www.hls.harvard.edu/clinics/in-house-clinics/food-law-and-policy-clinic/)

policies, may inadvertently encourage food waste, as businesses may find it more cost-effective to dispose of surplus food rather than redistributing or repurposing it.<sup>6</sup>

While there have been many attempts by countries and organizations to resolve the food waste crisis, especially in MEDCs, only a few have been successful. The United Nations 2030 sustainable development goals have a focus on food waste and food loss, while other countries, such as France, have begun implementing laws that contribute to the combating of food waste and food loss.

Having said that, the tackling of ineffective methods of handling food waste in MEDCs is closely related to the broader goal of reaching net zero emissions. Food waste generates greenhouse gas emissions during decomposition, and inefficient production, transportation, and disposal of food contribute to carbon footprints. Addressing food waste by promoting sustainable consumption and consumerism, efficient supply chains, and responsible disposal is an important part of reducing emissions and achieving the net zero target. It is a practical and effortless way to minimize the environmental impact of our food systems and contribute to a more sustainable future.

## DEFINITION OF KEY TERMS

### Food waste

Food that is fit for consumption but consciously discarded at the retail or consumption phases.<sup>7</sup>

### Food loss

Food that does not reach the consumer because of issues in the production, storage, processing, and distribution phases.<sup>8</sup>

### Food security

The state of having reliable access to enough healthy food that one can afford.<sup>9</sup>

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<sup>6</sup>Gunders, Dana. "Wasted: How America Is Losing up to 40 Percent of Its Food from Farm to Fork to Landfill." *NRDC*, 28 Jan. 2019, [www.nrdc.org/resources/wasted-how-america-losing-40-percent-its-food-farm-fork-landfill](http://www.nrdc.org/resources/wasted-how-america-losing-40-percent-its-food-farm-fork-landfill)

<sup>7</sup>Harvard School of Public Health. "Food Waste." *The Nutrition Source*, 26 Apr. 2017, [www.hsph.harvard.edu/nutritionsource/sustainability/food-waste/#:~:text=Food%20%E2%80%9Cwaste%E2%80%9D%20refers%20to%20food](http://www.hsph.harvard.edu/nutritionsource/sustainability/food-waste/#:~:text=Food%20%E2%80%9Cwaste%E2%80%9D%20refers%20to%20food)

<sup>8</sup> Ibid

<sup>9</sup>"Food Security - Noun." *Oxfordlearnersdictionaries.com*, 2019, [www.oxfordlearnersdictionaries.com/definition/english/food-security?q=food+security](http://www.oxfordlearnersdictionaries.com/definition/english/food-security?q=food+security)

### **Circular economy**

A model of production and consumption, that involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products as long as possible.<sup>10</sup>

### **Sustainable consumption**

The use of services and related products, that respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations.<sup>11</sup>

### **Supply chain management**

The management of the flow of goods, data, and finances related to a product or service, from the procurement of raw materials to the delivery of the product at its final destination.<sup>12</sup>

### **Consumerism**

The theory that an increasing consumption of goods is economically desirable.<sup>13</sup>

### **Affluent**

Having an abundance of goods or riches.<sup>14</sup>

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<sup>10</sup>European Parliament. "Circular Economy: Definition, Importance and Benefits | News | European Parliament." 12 Feb. 2015, [www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits#:~:text=The%20circular%20economy%20is%20a](http://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits#:~:text=The%20circular%20economy%20is%20a)

<sup>11</sup>Environment, U. N. "Sustainable Consumption and Production Policies." *UNEP - UN Environment Programme*, 2 Oct. 2017, [www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-consumption-and-production-policies#:~:text=Sustainable%20consumption%20and%20production%20refers](http://www.unep.org/explore-topics/resource-efficiency/what-we-do/sustainable-consumption-and-production-policies#:~:text=Sustainable%20consumption%20and%20production%20refers)

<sup>12</sup> "What Is Supply Chain Management? (SCM)." *Oracle.com*, 2020, [www.oracle.com/in/scm/what-is-supply-chain-management/#:~:text=At%20the%20most%20fundamental%20level](http://www.oracle.com/in/scm/what-is-supply-chain-management/#:~:text=At%20the%20most%20fundamental%20level)

<sup>13</sup>Merriam Webster. "Definition of CONSUMERISM." *Merriam-Webster.com*, 2019, [www.merriam-webster.com/dictionary/consumerism](http://www.merriam-webster.com/dictionary/consumerism)

<sup>14</sup>"Definition of AFFLUENT." *Www.merriam-Webster.com*, [www.merriam-webster.com/dictionary/affluent](http://www.merriam-webster.com/dictionary/affluent)

## Overproduction

The act or an instance of producing too much of something.<sup>15</sup>

## Biodiversity

Biodiversity is all the diverse kinds of life you will find in one area—the variety of animals, plants, fungi, and even microorganisms like bacteria that make up our natural world.<sup>16</sup>

## BACKGROUND INFORMATION

### Food Handling in MEDCs

Hunger and food insecurity pose significant challenges in More Economically Developed Countries (MEDCs), as exemplified by the situation in the United States. Approximately 10.5% of the population experienced food shortages in 2020, especially affecting low-income households.<sup>17</sup>

While many MEDCs, like the United States, have implemented various programs and services to tackle hunger and the lack of food, a move towards building an equitable, sustainable food system is still very much essential.<sup>18</sup>

When referring to food handling, MEDCs use strict regulations, advanced technologies, and effective monitoring to ensure the safety and quality of the food supply. However, these methods come with both advantages and disadvantages. For example, they include an active approach to identifying and controlling potential risks, and easily comprehensive labeling for consumer awareness. Despite these advantages, however, challenges still exist. One significant concern is the potential for food waste, even in the presence of advanced waste management systems. For

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<sup>15</sup>“Definition of OVERPRODUCTION.” *Www.merriam-Webster.com*, [www.merriam-webster.com/dictionary/overproduction](http://www.merriam-webster.com/dictionary/overproduction)

<sup>16</sup>Hancock, Lorin. “What Is Biodiversity and Why Is It under Threat?” *World Wildlife Fund*, 2023, [www.worldwildlife.org/pages/what-is-biodiversity#:~:text=Biodiversity%20is%20all%20the%20different](http://www.worldwildlife.org/pages/what-is-biodiversity#:~:text=Biodiversity%20is%20all%20the%20different)

<sup>17</sup>Pathak, Arohi, et al. “The United States Can End Hunger and Food Insecurity for Millions of People.” *Center for American Progress*, 11 Aug. 2022, [www.americanprogress.org/article/the-united-states-can-end-hunger-and-food-insecurity-for-millions-of-people/](http://www.americanprogress.org/article/the-united-states-can-end-hunger-and-food-insecurity-for-millions-of-people/)

<sup>18</sup> Ibid

instance, in the United Kingdom, excess food is disposed of as general waste or processed for alternative uses like compost and biogas.<sup>19</sup>

In contrast, France has taken a pioneering step in addressing food waste by prohibiting supermarkets from destroying unsold food products. Instead, they are turned to donate excess food, creating a model for other nations to consider implementing.<sup>20</sup>

The issue is that the disadvantages in food handling, if not addressed, can lead to significant food waste. In MEDCs, where resources and infrastructure are available, preventing food waste is crucial and much easier. The resolution of the ongoing hunger and food insecurity conflict which lingers in our minds projects the need for a more thoughtful approach that correlates food-handling practices with broader social goals than the ones already present.

The methods of food handling in MEDCs are critical for ensuring food safety and quality, however, to truly address the challenges of hunger, food insecurity, and waste, a more holistic and integrated approach is necessary to ensure safe food practices globally for a mutual goal to reduce food waste. By learning from successful initiatives in various nations, such as France's example mentioned above, and actively working towards reducing disadvantages in food handling, MEDCs can contribute to a sustainable and equitable global food system that prioritizes the well-being of all citizens for a world worth leaving behind to future generations to come.

### Causes of Food Waste

Food is thrown away daily, which is causing a huge issue environmentally, economically, and socially. This monumental problem has no doubt caused massive consequences, affecting everyone. Cutting down on food waste is especially important because it has a serious impact on the planet and fairness in society. The causes of food waste are divided into 7 groups, each of them affecting our planet and generations in a different, yet similarly negative, way.<sup>21</sup>

The primary, as well as the most classic, is overproduction. When a restaurant, hotel, supermarket, or other food industry company produces more food than needed

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<sup>19</sup>"Food Waste [Everything You Need to Know in Westminster]." *Commercial Waste*, [www.cleanstreets.westminster.gov.uk/food-waste-what-you-need-to-know/#1](http://www.cleanstreets.westminster.gov.uk/food-waste-what-you-need-to-know/#1)

<sup>20</sup> Zero Waste Europe. "France's Law for Fighting Food Waste ." 2016.

<sup>21</sup>Merckaert, Geert. "15 Powerful Ways to Reduce Food Waste in Multi-Site Restaurants." *Apibase*, 28 Apr. 2023, [www.get.apibase.com/how-to-reduce-food-waste-in-restaurants/](http://www.get.apibase.com/how-to-reduce-food-waste-in-restaurants/). Accessed 4 Dec. 2023.

to satisfy customer demand, most of the time excess food goes to waste.<sup>22</sup> Moreover, overproduction can risk contributing to pollution and have a negative impact on the environment, since pollution is known to aggravate climate change and dismissive impacts on Earth's habitats and natural processes.<sup>23</sup>

Next, poor inventory management can contribute to food waste. If a food industry company does not have the required inventory space to track quantities of food, said the company will over-order or keep too much security stock, which in any case ends in excess food that spoils before it is consumed.<sup>24</sup>

Everyone finds shame in poor or expired food. When food is not stored properly or used before its expiration date, it is most likely to spoil and become unsuitable for consumption.<sup>25</sup> It is important to ensure refrigeration systems always work properly, and sensors are installed to notify the staff when they are not, to reduce expired food as much as possible since food close to expiration dates can still be utilized instead of thrown away. Furthermore, avoiding over-purchasing is a method that helps consume all food before its set expiration date.

Customer preferences act as a balancing act in food waste. When a customer does not finish their meals or request specific ingredients, food waste is much more prominent. Considering most restaurants, hotels, or other companies go by a "customer is always right" policy, food waste is inevitable.<sup>26</sup>

Poor portion control among undisciplined people can also act as a cause for food waste. If food portions are not accurately calculated, excess food goes to waste, not to mention the food cost calculations which become useless.<sup>27</sup>

Always, something unexpected will happen. Unforeseen events, such as a thunderstorm, power shortage, or customer traffic, could lead to food waste for assorted reasons. Many foods already created might not be able to be sold or eaten, causing more waste in perfectly good food.<sup>28</sup>

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<sup>22</sup> Ibid

<sup>23</sup> Loughlin, Bronagh. "Why Is It Important to Stop Overproduction?" *Institute of Sustainability Studies*, 1 May 2023, [www.instituteofsustainabilitystudies.com/insights/lexicon/why-is-it-important-to-stop-overproduction/#:~:text=Businesses%20that%20overproduce%20ultimately%20risk](http://www.instituteofsustainabilitystudies.com/insights/lexicon/why-is-it-important-to-stop-overproduction/#:~:text=Businesses%20that%20overproduce%20ultimately%20risk)

<sup>24</sup> Merckaert, Geert. "15 Powerful Ways to Reduce Food Waste in Multi-Site Restaurants." *Apibase*, 28 Apr. 2023, [www.get.apibase.com/how-to-reduce-food-waste-in-restaurants/](http://www.get.apibase.com/how-to-reduce-food-waste-in-restaurants/). Accessed 4 Dec. 2023.

<sup>25</sup> Ibid

<sup>26</sup> Ibid

<sup>27</sup> Ibid

<sup>28</sup> Ibid

Finally, aesthetics plays a much larger role in food marketing than anything else, which fools most people. Food is thrown away because it does not meet a specific criterion or aesthetic standards, yet it is still safe to consume, which leads to extremely useless food waste.<sup>29</sup> In a customer's mind, when the food does not look aesthetically pleasing to the eye, the food is automatically deemed 'unfit' for consumption.

In conclusion, the various causes of climate change demand urgent attention and collaborative global efforts. From overproduction and poor inventory management to poor portion control and aesthetics, human activities play a pivotal role in disrupting the Earth's climate system.

Addressing the root causes necessitates a shift towards sustainable practices, cleaner energy alternatives, and responsible land use. As we navigate the complex web of contributors to climate change, it becomes evident that food waste is a noticeably big cause and effective solutions must be established as soon as possible, involving not only policy changes but also individual and collective behavioral shifts. The responsibility lies with governments, industries, and individuals alike to prioritize environmental stewardship, fostering a global commitment to safeguarding the planet for current and future generations.

### Environmental Impact

Food waste has significantly had multiple negative influences on the environment. Considering its greenhouse gas (GHS) footprint and carbon dioxide (CO<sub>2</sub>) emissions, food waste is one of the primary reasons for climate change and pollution.<sup>30</sup>

When we waste food, we also waste the energy and water it takes to grow, harvest, transport, and package the food.<sup>31</sup> Water is needed for all parts of food production, accounting for 70% of water used worldwide.<sup>32</sup>

Furthermore, when wasted excess food ends up in landfills and rot, a greenhouse gas more potent than carbon dioxide is produced – methane. When

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<sup>29</sup> Ibid

<sup>30</sup> Buzby, Jean. "Food Waste and Its Links to Greenhouse Gases and Climate Change." *Www.usda.gov*, 24 Jan. 2022, [www.usda.gov/media/blog/2022/01/24/food-waste-and-its-links-greenhouse-gases-and-climate-change#:~:text=Food%20loss%20and%20waste%20also](https://www.usda.gov/media/blog/2022/01/24/food-waste-and-its-links-greenhouse-gases-and-climate-change#:~:text=Food%20loss%20and%20waste%20also)

<sup>31</sup> WWF. "Fight Climate Change by Preventing Food Waste." *World Wildlife Fund*, 2022, [www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste#:~:text=But%20wasted%20food%20isn](https://www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste#:~:text=But%20wasted%20food%20isn)

<sup>32</sup> Lewis, Jangira. "How Does Food Waste Affect the Environment." *Earth.org*, 17 Oct. 2022, [www.earth.org/how-does-food-waste-affect-the-environment/](https://www.earth.org/how-does-food-waste-affect-the-environment/)



methane is released, it lingers on Earth for 12 years and traps heat from the sun, contributing to climate change. According to the WWF, about 6%-8% of all human-caused greenhouse gas emissions can be limited if food waste is stopped, highlighting the negative influence food waste has on the planet.<sup>33</sup> When food waste contributes towards 20% of the global greenhouse gas emissions, it is only logical that the contribution to climate change is astonishing. According to the Consultative Group on International Agricultural Research, a third of all human-contributed greenhouse gas emissions are from food waste.<sup>34</sup>

Moreover, food waste causes extreme harm to biodiversity. While agriculture causes harm to biodiversity, food waste does extreme damage considering it converts wild lands into pastures for no present reason whatsoever, since the food is wasted anyway.<sup>35</sup>

Noting that the production of food has significant impacts on the environment, intensive livestock farming, such as pigs or cows, also generates substantial amounts of greenhouse gas emissions and contributes to deforestation, climate change, and biodiversity loss.<sup>36</sup>

In conclusion, food waste contributes to the damage of the environment in several ways, whether through carbon emissions, methane emissions, livestock, or waste of natural resources. It is important to stop food waste as soon as possible to tackle climate change more efficiently and effectively.

### Economic Impact

Furthermore, there have been notable economic impacts due to food waste. Waste in general affects our communities, considering its significant impact on living

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<sup>33</sup>WWF. "Fight Climate Change by Preventing Food Waste." *World Wildlife Fund*, 2022, [www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste#:~:text=But%20wasted%20food%20isn](http://www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste#:~:text=But%20wasted%20food%20isn)

<sup>34</sup>Lewis, Jangira. "How Does Food Waste Affect the Environment." *Earth.org*, 17 Oct. 2022, [www.earth.org/how-does-food-waste-affect-the-environment/](http://www.earth.org/how-does-food-waste-affect-the-environment/)

<sup>35</sup> Ibid

<sup>36</sup>Fransen, Bas. "the Environmental Impacts of Food and Diet." *EcoMatcher*, 22 Jan. 2023, [www.ecomatcher.com/the-environmental-impacts-of-food-and-diet/#:~:text=The%20way%20we%20produce%20food](http://www.ecomatcher.com/the-environmental-impacts-of-food-and-diet/#:~:text=The%20way%20we%20produce%20food). Accessed 4 Dec. 2023.

creatures and ecosystems, including consequences such as lowered tourism, reduced land values, wasted resources, and clean-up costs.<sup>37</sup>

According to the UN FAO (Food and Agricultural Organization), around 1/3 of food intended for human consumption is gone to waste, estimating over a billion tons of food and about \$940 billion lost annually, all while 1 in 9 people remain un nourished.<sup>38</sup>

Food waste has had significant impacts on the economy, and EPA’s Wasted Food Scale framework provides a foundation for many domestic and international food waste reduction strategies. The Wasted Food Scale is based on the results of a report that evaluates the environmental impacts of food waste management strategies in the U.S. In 2015, the EPA and USDA announced their goal to reduce food waste in the U.S. by 50% by 2030, like the UN’s sustainable development goal.<sup>39</sup>



FIGURE 1: THE EPA WASTED FOOD SCALE<sup>40</sup>

Globally, people waste about \$1 trillion of food each year, with a total economic impact of about \$3 trillion each year if you consider the environmental and social costs of things like deforestation, soil erosion, increased greenhouse gases, water scarcity, exposure to chemicals and reduced profits for farmers, which are also

<sup>37</sup>Queensland Government. “Economic Impacts.” *Wetlandinfo.des.qld.gov.au*, 10 May 2021, [www.wetlandinfo.des.qld.gov.au/wetlands/management/pressures/litter-illegal-dumping/effects-values/economic-impacts.html#:~:text=Waste%20pollution%20not%20only%20affects](http://www.wetlandinfo.des.qld.gov.au/wetlands/management/pressures/litter-illegal-dumping/effects-values/economic-impacts.html#:~:text=Waste%20pollution%20not%20only%20affects)

<sup>38</sup>US EPA, OITA. “International Efforts on Wasted Food Recovery.” *Www.epa.gov*, 8 Oct. 2015, [www.epa.gov/international-cooperation/international-efforts-wasted-food-recovery#:~:text=The%20UN%20Food%20and%20Agriculture](http://www.epa.gov/international-cooperation/international-efforts-wasted-food-recovery#:~:text=The%20UN%20Food%20and%20Agriculture)

<sup>39</sup> Ibid

<sup>40</sup>EPA United States Environmental Protection Agency. “From Field to Bin: The Environmental Impacts of U.S. Food Waste Management Pathways.” *EPA United States Environmental Protection Agency*, 26 Oct. 2023, [www.epa.gov/land-research/field-bin-environmental-impacts-us-food-waste-management-pathways](http://www.epa.gov/land-research/field-bin-environmental-impacts-us-food-waste-management-pathways).

exceptionally large factors of food waste. Food waste also increases prices, reducing the number of people who can afford the healthy food they need, resulting in multiple people remaining hungry or un nourished.<sup>41</sup>

On a local scale, food waste is a lost opportunity to help feed those suffering from food insecurity. Since most adults in most countries do not have standard access to healthy food, their productivity can drop, their healthcare costs can rise, and in some cases, they could be unable to work due to chronic diseases. This can mean fewer productive people in the workplace, which puts a damper on the economy.<sup>42</sup>

The stakes are even higher when children do not have access to the healthy food they need. Food insecurity can influence their physical development and ability to learn. This can have lasting impacts on adulthood and that child's ability to participate in the workforce.<sup>43</sup>

To sum up, food waste impacts society in many ways. From the waste of natural resources to the health and well-being of Earth's population, any way you look at it, food waste influences everyone negatively. Extreme amounts of food are wasted globally every year, further contributing to food insecurity and food waste.

## Social Impact

Alongside environmental and economic consequences, food waste also has significant social impacts, some of which include hunger and malnutrition. According to the UN FAO, about 820 million people suffer from chronic hunger globally, while 2 million people suffer from micronutrient deficiencies. While millions of people are starving every day, a vast majority of food is still wasted daily.<sup>44</sup>

One of the greatest paradoxes of our time is the existence of starvation and food waste simultaneously. Moreover, under current production and consumption trends, global food production will 'need' to increase by 60% by 2050 based on population growth.<sup>45</sup>

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<sup>41</sup>PNC Financial Services Group. "How Food Waste Hurts the Economy – and How You Can Help." @3BLMedia, 15 Aug. 2017, [www.3blmedia.com/News/How-Food-Waste-Hurts-Economy-And-How-You-Can-Help](http://www.3blmedia.com/News/How-Food-Waste-Hurts-Economy-And-How-You-Can-Help)

<sup>42</sup> Ibid

<sup>43</sup> Ibid

<sup>44</sup>"Food Waste: The Social Problem." ECEPL, 15 Apr. 2023, [www.ecepl.com/food-waste-the-social-problem/#:~:text=One%20of%20the%20most%20significant](http://www.ecepl.com/food-waste-the-social-problem/#:~:text=One%20of%20the%20most%20significant)

<sup>45</sup>"What Impact Does Food Waste Have on Society?" *Www.futurelearn.com*, [www.futurelearn.com/info/courses/from-waste-to-value/0/steps/166610](http://www.futurelearn.com/info/courses/from-waste-to-value/0/steps/166610)

Food waste is further considered to be an ethical issue considering the nutrients that go to waste in the process of food waste could have gone towards hunger problems in Less Economically Developed Countries (LEDCs) and the waste of natural resources can have great effects on people, animals, and ecosystems.<sup>46</sup>

Food waste has had destructive effects on humans, animals, and Earth, considering the economic, environmental, and social impacts it has. When we waste food, we are also wasting all the resources that have been used to produce that food, such as land, water, soil, energy, and all the other inputs invested. Reducing food waste would bring numerous benefits. It would help to address food poverty as well as reduce greenhouse gas emissions.

## MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

### France

France takes the issue of tackling waste, especially food waste, very seriously, by providing citizens with a household waste management service, provided by local authorities, financing it to different rules (taxes, duties, etc.). It is noted that around 10 million tons of consumable goods are thrown away in France annually.<sup>47</sup> However, in February 2016, France adopted a developed law that forbade supermarkets from destroying good quality food and donating it instead, thus fighting against food waste.<sup>48</sup>

### United Kingdom (UK)

In the United Kingdom, households are responsible for 70% of all food waste, with 4.5 million tons of edible food discarded each year.<sup>49</sup> As part of the United Nations' SDGs, the government of the United Kingdom is committed to halving the UK's per capita food waste by 2030. In 2018, the UK produced around 9.5 million tons

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<sup>46</sup> Ibid

<sup>47</sup> Network, CGTN, China Global Television. "French Shops Tackling Food Waste with 10m Tons Thrown Away Each Year." *Newseu.cgtn.com*, [www.newseu.cgtn.com/news/2022-11-15/French-shops-tackling-food-waste-with-10m-tons-thrown-out-each-year-1eXlctKHfUc/index.html#:~:text=While%20people%20across%20Europe%20try](http://www.newseu.cgtn.com/news/2022-11-15/French-shops-tackling-food-waste-with-10m-tons-thrown-out-each-year-1eXlctKHfUc/index.html#:~:text=While%20people%20across%20Europe%20try)

<sup>48</sup> Zero Waste Europe. "France's Law for Fighting Food Waste ." 2016.

<sup>49</sup> "EUR-Lex - 52020DC0381 - EN - EUR-Lex." *Europa.eu*, 2020, [www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0381](http://www.eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0381).

of food waste, a 15% reduction from 2007<sup>50</sup>. The Government supports several initiatives as part of its resources and waste strategy, but there have been calls for it to introduce statutory regulations to meet its targets, instead of relying on voluntary agreements. The United Kingdom takes food waste very seriously, with over twenty involved organizations helping tackle the problem *The Real Junk Food Project*, *Too Good to Go*, *Fare Share*, and *The Felix Project*.<sup>51</sup> Such organizations and initiatives tackle the issue by redirecting food waste to a better cause and redistributing it to people in need.

### United States of America (USA)

The USA has many organizations to help fight food waste, including their largest food rescue organization, Feeding America a US hunger relief organization hosting food banks, which partners with food manufacturers, grocery stores, restaurants, and farmers to gather foods which were meant to be thrown away.<sup>52</sup> According to the Green Restaurants Association, restaurants in the US can waste up to 25,000-75,000 pounds (about 34019.4 kg) of food a year<sup>53</sup>, and so the United States Department of Agriculture (USDA) is committed to reducing food loss and food waste in the USA by 50% by 2030<sup>54</sup>. It is important to note how states like California, Connecticut, Massachusetts, Rhode Island, and Vermont have already passed laws to keep food out of landfills, and so reduce food waste.<sup>55</sup>

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<sup>50</sup>Dray, Sally. "Food Waste in the UK." *House of Lords Library*, 12 Mar. 2021, [www.lordslibrary.parliament.uk/food-waste-in-the-uk/](http://www.lordslibrary.parliament.uk/food-waste-in-the-uk/)

<sup>51</sup>Hall, Mark. "Food Waste 2023 - the Facts." *Business Waste*, 4 Jan. 2022, [www.businesswaste.co.uk/food-waste-2023-the-facts/#:~:text=A%20few%20great%20food%20waste](http://www.businesswaste.co.uk/food-waste-2023-the-facts/#:~:text=A%20few%20great%20food%20waste). Accessed 7 Dec. 2023.

<sup>52</sup>Feeding America. "Food Waste in America | Feeding America." *Www.feedingamerica.org*, [www.feedingamerica.org/our-work/reduce-food-waste#:~:text=As%20the%20country](http://www.feedingamerica.org/our-work/reduce-food-waste#:~:text=As%20the%20country)

<sup>53</sup>Fourth. "Food Waste in Restaurants: What We Know." *Fourth*, 2 May 2023, [www.fourth.com/article/how-much-food-restaurants-waste#:~:text=In%20the%20US%2C%20around%2084.3](http://www.fourth.com/article/how-much-food-restaurants-waste#:~:text=In%20the%20US%2C%20around%2084.3)

<sup>54</sup>Commissioner, Office of the. "FDA, USDA and EPA Propose National Strategy to Reduce U.S. Food Loss and Waste." *FDA*, 4 Dec. 2023, [www.fda.gov/news-events/press-announcements/fda-usda-and-epa-propose-national-strategy-reduce-us-food-loss-and-waste#:~:text=The%20U.S.%20Food%20and%20Drug](http://www.fda.gov/news-events/press-announcements/fda-usda-and-epa-propose-national-strategy-reduce-us-food-loss-and-waste#:~:text=The%20U.S.%20Food%20and%20Drug). Accessed 8 Dec. 2023.

<sup>55</sup>"How Does the Usa Handle Food Watse - Google Search." *Www.google.com*, [www.google.com/search?q=how+does+the+usa+handle+food+watse&aq=how+does+the+usa+handl+e+food+watse&gs\\_lcrp=EgZjaHJvbWUqBggAEEUyOziGCAAQRrg7MggIARAAGBYHjIINCAIQABiGAXiABBiKBTINCAQABiGAXiABBikBTINCAQQABiGAXiABBikBTINCAUQABiGAXiABBikBdIBCDI4MjdqMGo3qAlAsAIA&sourceid=chrome&ie=UTF-8](http://www.google.com/search?q=how+does+the+usa+handle+food+watse&aq=how+does+the+usa+handl+e+food+watse&gs_lcrp=EgZjaHJvbWUqBggAEEUyOziGCAAQRrg7MggIARAAGBYHjIINCAIQABiGAXiABBiKBTINCAQABiGAXiABBikBTINCAQQABiGAXiABBikBTINCAUQABiGAXiABBikBdIBCDI4MjdqMGo3qAlAsAIA&sourceid=chrome&ie=UTF-8). Accessed 8 Dec. 2023.

### Waste and Resource Action Program (WRAP)

The Waste and Resource Action Program is an organization with a vision; a thriving world in which climate change is no longer a pressing issue. WRAP is a climate-action NGO established in the UK in the 2000s, working with over 40 countries to tackle the issue of climate change, to foster a sustainable planet for the future.<sup>56</sup> They have made significant attempts regarding food waste, like campaigns such as Love Food, Hate Waste and Taste it, Do Not Waste It, or events like the Food Waste Action Week and the Pacific Coast Food Waste Commitment.<sup>57</sup>

### TIMELINE OF EVENTS

Date	Description of event
2011	The United Nations Environment Program (UNEP) and the Food and Agriculture Organization (FAO) publish a global food waste study, attracting support to the issue internationally.
September 25 <sup>th</sup> , 2015	The United Nations Sustainable Development Goals (SDGs) are adopted which include a target to reduce food waste by 2030.
February 2016	France becomes the first country to pass a law banning supermarkets from throwing away edible food. Other countries have begun to consider a similar law.

<sup>56</sup> WRAP. "About Us | WRAP." *Wrap.org.uk*, 2023, [www.wrap.org.uk/about-us](http://www.wrap.org.uk/about-us)

<sup>57</sup> WRAP. "Search." *WRAP*, [www.wrap.org.uk/search?search\\_api\\_fulltext=food+waste](http://www.wrap.org.uk/search?search_api_fulltext=food+waste). Accessed 8 Dec. 2023.

March 11 <sup>th</sup> , 2020	The European Union launches the "Circular Economy Action Plan," which includes measures to reduce food waste.
March 4 <sup>th</sup> , 2021	The 2021 UN Food Waste Index is published, including a research study that states that affluent countries waste food more than others.
September 23 <sup>rd</sup> , 2021	The first-ever UN Food Systems Summit is held, addressing food waste as a significant component of food system reform.
September 23 <sup>rd</sup> , 2021-?	Research, innovation, and awareness campaigns continue, with many countries and organizations actively working together.

## RELEVANT UN RESOLUTIONS, TREATIES, AND EVENTS

### Sustainable Development Goal (SDG) #12

In 2015, the United Nations adopted 17 sustainable development goals that aim to be achieved by 2030, including 169 targets, 3863 events, 1347 publications, and 7796 actions.<sup>58</sup> Amongst those 17 goals, goal number 12 is "ensure sustainable consumption and production patterns". This goal focused on how high-income countries leave a larger environmental footprint in comparison to low-income countries. Material footprint per capita in high-income countries is also 10 times that of low-income countries. At the stake of this goal, 62 countries as well as the European Union (EU) have introduced 485 policies for sustainable consumption and production.<sup>59</sup>

<sup>58</sup>United Nations. "The 17 Sustainable Development Goals." *United Nations*, [sdgs.un.org](https://www.sdgs.un.org/goals), 2023, [www.sdgs.un.org/goals](https://www.sdgs.un.org/goals)

<sup>59</sup>United Nations. "Goal 12 | Ensure Sustainable Consumption and Production Patterns." *United Nations*, 2023, [www.sdgs.un.org/goals/goal12](https://www.sdgs.un.org/goals/goal12)

### **United Nations (UN) Food Systems Summit**

On September 23<sup>rd</sup>, 2021, the United Nations hosted the UN Food Systems Summit in New York. The Food Systems Summit aimed to serve as a wonderful opportunity to empower all people to leverage the power of food systems and recover from the COVID-19 pandemic, to get everyone back on track to achieve all 17 Sustainable Development Goals (SDGs) by 2030.<sup>60</sup> The Summit has managed to unite all UN Member States and globally – including thousands of adolescents, young adults, food producers, Indigenous People, researchers, the private sector, and the UN system, with a mutual goal to bring about tangible, positive changes to the world’s food systems. As a people’s summit and a solutions summit, it has been recognized that everyone, everywhere, must help work together to transform the way we all produce, consume, and think about food.<sup>61</sup> Through this people’s summit, the UN will reaffirm its commitment to promote human rights for all and ensure everyone, everywhere, can participate, to hear everyone’s opinions on this pressing matter.<sup>62</sup>

### **United Nations Food and Agricultural Organization (UNFAO) Save Food Initiative**

The United Nations Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD), and World Food Programme (WFP) launched the joint project “Mainstreaming food loss reduction initiatives for smallholders in food deficit areas,” funded by the Swiss Government. The project aims to control food losses in grains and bursts value chains in three pilot countries, Burkina Faso, DRC, and Uganda, as one of its outcomes is a web-based Food loss reduction Community of Practice.<sup>63</sup>

### **World Food Program (WFP)**

The United Nations World Food Program is the largest humanitarian organization globally which saves lives using food aid. WFP is all about the second SDG, zero hunger, however, over the past, conflict, climate change, disasters, inequality, and the COVID-19 pandemic have made their work difficult. They currently work in over 120 countries with 23,000 staff worldwide and have been awarded the Nobel

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<sup>60</sup> Nations, United. “The Summit.” *United Nations*, [www.un.org/en/food-systems-summit/summit](http://www.un.org/en/food-systems-summit/summit)

<sup>61</sup> Ibid

<sup>62</sup> Ibid

<sup>63</sup>---. “SAVE FOOD: Global Initiative on Food Loss and Waste Reduction.” *Food and Agriculture Organization of the United Nations*, [www.fao.org/save-food/en/](http://www.fao.org/save-food/en/)



Peace Prize in 2020.<sup>64</sup> WFP is committed to ending hunger, achieving food security, and improving nutrition by 2030, considering 1 in 10 people worldwide still do not have enough to eat, regardless of the amount of food waste which occurs annually.<sup>65</sup> WFP focuses on many aspects regarding food security and hunger, including food crisis, food systems, and nutrition.

## PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

### European Commission

The European Commission has proposed targets to reduce food waste across Europe by the end of 2023 and began monitoring food waste levels. Furthermore, to ensure national efforts are made against food waste, the EU has been improving the quantification of food waste levels. Moreover, when food cannot be prevented at source, the EU donates surplus food where it is safe to do so. The European Commission takes food waste very seriously in order to save money and lower the environmental impact of food production and consumption all across Europe.<sup>66</sup>

## POSSIBLE SOLUTIONS

### Promotion of Circular Economy Models

The promotion of circular economy models in the food industry, where surplus food is repurposed, recycled, or used as a resource to reduce waste and environmental impact, is one terrific way to reduce and limit food waste. A circular economy model aims to provide less raw materials, less waste, and fewer carbon emissions, focusing on an optimistic future. By implementing a circular economy model in Member States, raw materials are collected and used for sustainable products and ideas in production and redistribution. Consumers will reuse and repair said products, leading to collection and waste management instead of residual waste. In order to urge Member States to adopt a circular economy model, we can raise

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<sup>64</sup>World Food Programme. "Who We Are | World Food Programme." *Wwww.wfp.org*, 2022, [www.wfp.org/who-we-are](http://www.wfp.org/who-we-are)

<sup>65</sup>World Food Programme. "Overview." *Wfp.org*, 2023, [www.wfp.org/overview](http://www.wfp.org/overview)

<sup>66</sup>European Commission. "EU Actions against Food Waste." *Food.ec.europa.eu*, [www.food.ec.europa.eu/safety/food-waste/eu-actions-against-food-waste\\_en](http://www.food.ec.europa.eu/safety/food-waste/eu-actions-against-food-waste_en)

awareness and communicate the benefits efficiently, provide education and training to policymakers, businesses, and the public, and engage stakeholders such as governments, NGOs, businesses, and academic institutions, showcase pilot projects to inspire broader adoption, or even leverage ongoing projects, such as the Sustainable Development Goals (SDG), to align circular economic goals.

### **Food Redistribution Programs**

Encouraging food businesses to donate surplus but still edible food to charities and food banks is one way of avoiding food waste by acting before excess food piles up or reaches its expiration date. This could work by implementing legal protections to reduce liability concerns for food donors. The Good Samaritan laws work by allowing a person, without expectation of payment or reward and without any duty of care or special relationship, to voluntarily come forward to administer immediate assistance or emergency care to a person injured in an accident, crash, or emergency medical condition.<sup>67</sup> This could be easily implemented in food programs, especially by marketing it as a volunteering program to people interested or high and middle schools.

### **Regulations for Supermarkets and Restaurants**

Enforcing regulations that prohibit supermarkets and restaurants from discarding edible food is another adequate way of minimizing food waste. It is important to encourage businesses to sell or donate unsold food rather than throwing it away. Regulations could include tax incentives, food waste targets that require supermarkets and restaurants to report their progress daily, weekly, monthly, or yearly, collaborations with NGOs or charities to facilitate the donation of surplus food, or implementing dynamic pricing models to encourage the sale of perishable items before they reach their expiration dates. In summary, considering supermarkets and restaurants affect the amount of food wasted, focusing on them, and changing laws that apply to them would limit food waste by a lot.

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<sup>67</sup>Government of India. "Good Samaritan | Ministry of Road Transport & Highways, Government of India." *Morth.nic.in*, [www.morth.nic.in/good-samaritan#:~:text=The%20Good%20Samaritan%20Law%20allows](http://www.morth.nic.in/good-samaritan#:~:text=The%20Good%20Samaritan%20Law%20allows)

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