

**Committee:** Environment Sub-Commission 1

**Issue:** The role of the Global Initiative on Food Loss and Waste Reduction in sustainable development

**Student Officer:** Marilena Rentzou

**Position:** Deputy President

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## INTRODUCTION

We live in 2019 and technology has completely penetrated our lives. One of the most severe issues that humanity has been facing for multiple years is the high amount of food that is being dissipated in combination with the upraised quantities of waste. There is a variety of comestibles that happen to exist only in specific regions, so food travels all around the world resulting in not only a risk of food waste but also a serious environmental impact on the atmosphere due to the thousand miles of distance. Furthermore, people do not care about the impact of what they buy. According to the Food and Agriculture Organization (FAO) around one third of the food produced around the world -approximately 1.3 billion tones- gets lost or wasted. Fruits and vegetables have the highest wastage rates of any other food.<sup>1</sup> Moreover, except for the striking aforementioned amounts of food that ends up thrown away, it is important to mention that waste amounts to \$990 billion dollars at a worldwide level. Environmentally, food loss and waste cause greenhouse gas emissions and wastefully used water, a situation that can lead to diminished natural ecosystems.

Food loss refers to food that spills, spoils or gets lost due to mainly consumer behavior and due to problems in handling, storage or transportation. In developing countries, food waste, mainly appears at early stages of the food value chain but in medium and high-income countries occur at later stages due to discoordination between actors in the supply chain.

Waste reduction is a higher goal than enhancing recycling because it is about a process before reaching the recycling stages. It is a matter of environmental benefits, such as less energy production. The key to achieving this is the reuse of plastic and glass products, the

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<sup>1</sup>Food and Agriculture Organization of the United Nations. (n.d.). *Key facts on food loss and waste you should know!*. [online] Available at: <http://www.fao.org/save-food/resources/keyfindings/en/> [Accessed 9 Jun. 2019].

<sup>1</sup> United Nations Sustainable Development. (n.d.). *Goal 2: Zero Hunger - United Nations Sustainable Development*. [online] Available at: <https://www.un.org/sustainabledevelopment/hunger/> [Accessed 9 Jun. 2019].

purchase of durable and reusable products like the use of merchandise constructed with biodegradable materials.

From the aforementioned information, it becomes evident that food loss and waste reduction is a multi-dimensional issue. It is not only an environmental issue with adverse implications, but it refers to financial losses as well. One of the most important goals of Sustainable development is Zero Hunger. Globally, one in nine people is undernourished<sup>2</sup>- and this is a paradox considering the amount of food that is wasted.

## DEFINITION OF KEY TERMS

### Sustainable Development

“Sustainable development is maintaining a delicate balance between the human need to improve lifestyles and feelings of wellbeing on one hand and preserving and enhancing natural resources and ecosystems on the other”<sup>3</sup>

### Food Loss

“Food Loss refers to food that gets spilled, spoilt or otherwise lost, or incurs reduction of quality and value during its process in the food supply chain before it reaches its final product stage. Food loss typically takes place at production, post-harvest, processing and distribution stages in the food supply chain.”<sup>4</sup>

### Food Waste

“Food waste refers to food that completes the food supply chain up to a final product, of good quality and fit for consumption, but still doesn't get consumed because it is discarded, whether or not after it is left to spoil or expire. Food waste typically (but not exclusively) takes place at retail and consumption stages in the food supply chain.”<sup>5</sup>

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<sup>2</sup> United Nations Sustainable Development. (n.d.). *Goal 2: Zero Hunger - United Nations Sustainable Development*. [online] Available at: <https://www.un.org/sustainabledevelopment/hunger/> [Accessed 9 Jun. 2019].

<sup>3</sup> Sustainabilityexchange.ac.uk. (2019). [online] Available at: [https://www.sustainabilityexchange.ac.uk/files/definitions\\_of\\_sustainable\\_development.pdf](https://www.sustainabilityexchange.ac.uk/files/definitions_of_sustainable_development.pdf) [Accessed 7 Jun. 2019].

<sup>4</sup> ThinkEatSave. (n.d.). *Definition of food loss and waste*. [online] Available at: <https://www.unenvironment.org/thinkeatsave/about/definition-food-loss-and-waste> [Accessed 7 Jun. 2019].

<sup>5</sup> ThinkEatSave. (n.d.). *Definition of food loss and waste*. [online] Available at: <https://www.unenvironment.org/thinkeatsave/about/definition-food-loss-and-waste> [Accessed 7 Jun. 2019].

## Waste Reduction

In order to achieve reduced rates of waste, we should turn to strategies encouraging people to generate lower amounts of garbage, such as reuse of products, recycling of packaging and buying products with minimal packaging.

## Composting

“Mixture of various decaying organic substances, as dead leaves or manure, used for fertilizing soil.”<sup>6</sup>

## Fertilizer

By fertilizer we refer to a substance such as solid animal waste or a chemical mixture that aims at making plants grow more successfully and faster. It is usually spread on the ground.

## BACKGROUND INFORMATION

### Association with the Sustainable Goals

The 2030 Agenda for Sustainable Development<sup>7</sup> was adopted by all member states during 2015. As it was mentioned above, SDGs refer to a global call to action in order to combat poverty and hunger, and to ensure that each human being has peace in his-her life. Food loss and waste reduction are closely related to the second and the twelfth SDGs, which at one point call for the same thing.



The second SDG calls for Zero Hunger, a goal which refers to the end of hunger, the achievement of food security, the promotion of sustainable agriculture and the improved nutrition habits due to the unfortunate rise of hunger. In 2012 in Rio 20+ The Zero Hunger Challenge was introduced by the Secretary General Ban Ki-moon. The reduction of food waste is everyone's responsibility. Both farmers and consumers have to work across food and supply

<sup>6</sup> [www.dictionary.com](https://www.dictionary.com/browse/composting). (n.d.). *Definition of composting* | *Dictionary.com*. [online] Available at: <https://www.dictionary.com/browse/composting> [Accessed 7 Jun. 2019].

<sup>7</sup> <https://sustainabledevelopment.un.org/post2015/transformingourworld>

chains. The goal has to be based on the help of producers into achieving better harvesting, processing, marketing and storage methods.



The twelfth SDG calls for Responsible consumption and production. The main purpose of this goal refers to the reduction of food losses through supply chains by 2030.

### **Techniques for food losses and waste reduction**

Except for the common habits that each person can execute in order to contribute to the reduction of food waste and garbage such as shopping smart, saving leftovers, emphasizing on recycling, reusing and donating items etc., the evolution of technology has contributed in the emergence of more efficient and comfort methods. Here is an example of some of the most important and common techniques.

#### **Composting:**

Composting is one of the best and easiest ways to reduce food waste and at the same time to diminish greenhouse gas emissions. The reason why someone can define this process as one of the easiest ones is its process. There are a plethora of ingredients that can be composted. Tree leaves, vegetables food waste such as banana peels and coffee grounds, newspapers and grass clippings constitute the most common and important things that can be put at each compost pile. Automatically and naturally the mixture of “organic matter” gets disintegrated into fertilizer which is essential for the growth of each plant.



#### **Compactor:**

The compactor is one machine that is used in order to reduce the size of waste material. Except for industries or companies that prefer to use trash compactors, each person can own one. Its function is simple. The garbage that is placed inside it gets crushed and due to niche material - and more specifically a metal ram - waste converts into smaller pieces.

#### **Extended Producer Responsibility systems (EPR)**

For the food industry, one of the biggest problems is their approach to planning the production and the redistribution of their products, in other words the overproduction. EPR refers to a strategy that accompanies a product throughout its whole product life system. The establishment of an EPR system will help each enterprise to control and even reduce its production. The absolute visibility enables to monitor the way that each department of industry functions.

### **Impact on environment and economy**

The environmental impact of food waste seems to be of the highest importance. The greatest amount of unconsumed food ends up into rubbish dumps. Most of the people do not know or recognize what is the problem behind this situation. The production of methane, which is much more detrimental than carbon dioxide, accompanies the process of decomposition that happens at landfills. Furthermore, one more problem that is caused due to the big amounts of food that are wasted is the pollution of groundwater. For instance, the natural phenomenon of rain is aggravating for rubbish tips. Unfortunately, water allows for the creation of noxious chemicals such as ammonia, that - except for the likelihood of ending up to water that we result in drinking - they can also drive out to lakes or rivers, and in this way, many living organisms will get extinct.

Economy, moreover, constitutes one of the most important and several fields that is affected due to the big quantities of food waste. The waste of food depends on the producer, the distributor, the seller and the consumer. Almost one-third of all food produced gets wasted, in other words, 1.3 billion tons of food. The current moment the economic loss hits the highest ever levels and we refer to high amounts between 780 billion and 1 trillion dollars. Additionally, people who do not have the opportunity to eat (also due to the inappropriate redistribution of food) can easily get ill and in some cases maybe they will be unable to work, a phenomenon that puts a barrier on the economy.

### **Benefits of the process**

It is still possible that many of you may not have understood why immediate action must be taken. Previously, the major impacts of this loss were mentioned. By establishing reduced high food waste rates, the feed of the underfed people can be achieved, and this leads to the improvement of food security levels. Moreover, we will also help ourselves and our own health. The dangers of the energy source methane gas are high. We smell methane and this can cause death by asphyxiation. Last but not least, enterprises – mainly big industries

– are responsible for the production of food. This means generating energy. Diminished demand for food means fewer resources that can be saved for the appropriate use of the new generations.

## MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

### Australia

This region had the world's biggest amount of food waste. The cost of this loss is estimated to be around \$20 billion dollars per year while 361 kg of food per person was wasted<sup>8</sup>. The main reason for this situation is once more the lack of communication between the producers and the markets in conjunction with the consumers' habits. Although the Australian nation decided to take action through the education of its consumers and food collection for redistribution. The Australian Government also, developed the National Food Waste Strategy with the main action to reduce waste, based on the 12<sup>th</sup> Sustainable Development Goal -ensure sustainable consumption and production patterns-<sup>9</sup>.

### United States of America

The USA was ranked as the second most wasteful country in the world, where over one third of all available food goes wasted-approximately 278kg of food per person gets lost. The American Administration has set a Waste Reduction Goal by the end of 2030<sup>10</sup>, therefore, the United States Environmental Protection Agency plans to promote action and work with the directors of the food system.

### Greece

The Greek nation has the honor to represent the country with the lowest food waste per capita, with 44kg wasted per person each year. The European Regional Development Fund<sup>11</sup> in coordination with the municipality of Heraklion is planning to set a "smart" food

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<sup>8</sup> Department of the Environment and Energy. (2017). *Department of the Environment and Energy*. [online] Available at: <https://www.environment.gov.au/protection/waste-resource-recovery/publications/food-waste-factsheet> [Accessed 9 Jun. 2019].

<sup>9</sup> Department of the Environment and Energy. (2017). *Department of the Environment and Energy*. [online] Available at: <https://www.environment.gov.au/protection/waste-resource-recovery/publications/national-food-waste-strategy> [Accessed 9 Jun. 2019].

<sup>10</sup> US EPA. (n.d.). *United States 2030 Food Loss and Waste Reduction Goal | US EPA*. [online] Available at: <https://www.epa.gov/sustainable-management-food/united-states-2030-food-loss-and-waste-reduction-goal> [Accessed 9 Jun. 2019].

<sup>11</sup> [https://ec.europa.eu/regional\\_policy/en/funding/erdf/](https://ec.europa.eu/regional_policy/en/funding/erdf/)

card that will detect each consumer's habits, while at the same time, the system will inform each person about the expiration dates of the products that they purchased. Except for this future progressive system, Heraklion in association with Life For Feed<sup>12</sup> plans to put into practice a new project that will convert food waste into animal feed via an altered solar drying process<sup>13</sup>. Moreover, it is important to mention the contribution of the Sustainable Food Movement<sup>14</sup> whose aim is not only to reduce waste production but mainly to sensitize people about Sustainable Development in Greece.

### **People from Heraklion during the process of transforming food waste into animal feed**



### **France**

According to a report from the French Agency for the Environment and Energy 10 million tons of food are wasted every year. Although, France is in advance of other countries for quite a number of reasons. Firstly, in February 2016 France became the first country all around the world that prohibited, through legislative measures, the action of throwing away unused food. Secondly, the country got on top of the rank in the 2017 Food Sustainability Index. Thirdly, restaurants in France have to be equipped with take - away bags in order for the avoidance of throwing away food. Last but not least, the French government required schools to teach about food responsibility because everything has to be adopted from an early age.

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12 <https://life-f4f.gr/en/>

13 <https://www.interregeurope.eu/winpol/news/news-article/5666/heraklion-to-transform-food-waste-into-animal-feed/>

14 <https://oneplanetrating.org/blog/sustainable-food-movement-greece/>

## Food and Agriculture Organization (FAO)

FAO supports that everyone can contribute to the battle against food loss and the supernumerary amounts of waste. FAO not only offers activities in coordination with governments for raising awareness on specific policies that can reduce FLW, but it also focuses on building through human's activities via the provision of the appropriate education and information with many different events, conferences, symposiums and workshops that are organized every month all around the world.<sup>15</sup>

## Stop Wasting Food

This is the Denmark's largest non-profit movement which was created in 2008 in order to combat and reduce food waste. They state that they create results and that is true. They have made many national and international projects, events and campaigns such as the free education campaign for schools, the save & help campaign with the main aim to reduce food by helping families in need, among others. Since its collaboration with the UN, this movement managed to influence politicians and the media.

## People from Stop Wasting Food movement



<sup>15</sup> <http://www.fao.org/about/meetings/en/> Here you can explore some of them



## TIMELINE OF EVENTS

Date	Description of Event
1900	Age of Industry: People start to waste more and more food due to its low cost, due to industrialization. That was the time when diseases started to get spread as a result of the unclean waste removal
1914	World War I – Born of Food Administration in order to take control of food production and allocation
1930	Rise of Refrigerators: The number of people who owned a refrigerator was 8% but due to the need for preserving as much food as possible the percentage increased and turned to 50%
1934	The United States Supreme Court sets it illegal to dump waste into oceans
1937	The Dembster system was created with the main aim to store waste and when it gets full, a garbage trucker collects the garbage
1961	The first “vacuum waste collection system” <sup>16</sup> - it refers to a process was created in Sweden
1970	The International Solid Waste was found
2000	More than 5000 cities in the United States started using “Pay as you throw” programs and as rationally can be understood by the name residents were forced to pay based on the amount of garbage that they wasted to the local authorities <sup>17</sup>
2009	A study in the United Kingdom was conducted in which it was estimated that 20% to 40% of fruit and vegetables are rejected before even they reached to the markets
2002	The global solid waste reached the number of 12 billion tones.
2007	San Francisco became the first state in the United States that outlawed the dispersal of plastic bags by food stores
2011	A study estimated that the total amount of food loss and waste reached 1.3 billion tons per year

16 En.wikipedia.org. (n.d.). Automated vacuum collection. [online] Available at: [https://en.wikipedia.org/wiki/Automated\\_vacuum\\_collection](https://en.wikipedia.org/wiki/Automated_vacuum_collection) [Accessed 11 Jun. 2019].

17 En.wikipedia.org. (n.d.). Pay as you throw. [online] Available at: [https://en.wikipedia.org/wiki/Pay\\_as\\_you\\_throw](https://en.wikipedia.org/wiki/Pay_as_you_throw) [Accessed 10 Jun. 2019].

2018	Ethiopia made the big step to build a waste to plant that converts food garbage into electricity
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## UN INVOLVEMENT: RELEVANT RESOLUTIONS, TREATIES AND EVENTS

1972: The United Nations Conference was held in Stockholm, Sweden, a conference in which a new mentality through waste management started to be acquired.

2013: The head of the specialized agency of the UN, FAO started an initiative by asking a more “innovative way of thinking”. The SAVE FOOD initiative was introduced in association with the UN Environment Program (UNEP) to reduce food loss and waste along the entire food chain.

### Draft Resolution<sup>18</sup>

The Paris Agreement on Climate Change reaches his 21<sup>st</sup> session in Paris in 2015. During the convention, the decrease of the global food loss and waste was discussed as it is closely related to the lessening of Climate Change.

2016: United Nations announced the first ever global standard measure to combat waste and food loss at the Global Green Forum in Copenhagen, Denmark.<sup>19</sup>

2019: In March a new report: **Waste Not, Want Not: Reducing Food Loss and Waste in North America Through Life Cycle Based Approaches**, was launched in UN Environment Assembly. This report describes how specific sets of systems or principles such as life cycle assessment can help decision makers to prioritize their interventions in order to reduce food loss and waste.

<sup>18</sup> [https://www.un.org/ga/search/view\\_doc.asp?symbol=FCCC/CP/2015/L.9/Rev.1](https://www.un.org/ga/search/view_doc.asp?symbol=FCCC/CP/2015/L.9/Rev.1)

<sup>19</sup> Valencia, M. (n.d.). *UN announces first-ever global standard to measure food loss and waste*. [online] United Nations Sustainable Development. Available at: <https://www.un.org/sustainabledevelopment/blog/2016/06/un-announces-first-ever-global-standard-to-measure-food-loss-and-waste/> [Accessed 13 Jun. 2019].

## PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

### Food Banking Network (GFN)

The Global Food Banking Network (GFN) and its partners seek to nourish the world's hungry through a united and passionate network of food banking organizations. It is highly related to this topic since it distributes food to



more than 30 countries making sure that no food is wasted and that those that don't have access to it are not starving to death. This initiative is directly linked to the second Sustainable Development Goal which is about Zero Hunger. Until today, the Network has served more than 7 million people and distributed 1,04 billion pounds of food.

### Global Initiative on Food Loss and Waste Reduction

Save Food-The Global Initiative on Food Loss and Waste Reduction launched by FAO and later joined by EUFIC. It is based on collaboration and coordination, awareness raising and research. The Save Food Initiative seeks and invites private sector companies and civil society organizations from all over the world to join its network of partners. Save Food promotes collaboration among partners, with each organization contributing its greatest advantages and all complementing each other<sup>20</sup>. The program takes a regional approach to the matter with the Save Food regions being: the European Union, North America and Australia, industrialized Asia, Eastern Europe and Central Asia, North Africa and the Middle East, sub-Saharan Africa, South and Southeast Asia and the Pacific, Latin America and the Caribbean.

<sup>20</sup> <http://www.fao.org/3/i2776e/i2776e00.pdf>

## POSSIBLE SOLUTIONS

As long as there is eagerness, there is a great number of solutions that can officially end this issue. There are many people in conjunction with a plethora of organizations and governments that have tried since many years ago to combat this problem.

Raising awareness about the impacts of this phenomenon, educating people about the appropriate methods and ways that will lead to the reduction of food loss and waste such as the formation of environmental or eco-friendly zero waste festivals constitute the most essential solutions. Everyone has to support the efforts of collaborative initiatives that are executed in order to eliminate waste.

But what can anyone do in his personal daily life and in his own industry will make the change. Start composting, checking the expiration dates, storing food at an appropriate way and shopping smartly constitute the actions that each human has to do and there are no excuses for their avoidance. Small actions lead to great things, and here are some examples of what humanity has to start doing for the common societal, economic and environmental good.

To start with, the redistribution of food to people that are in need of but mainly to food banks is the beginning of reducing the percentage of food that is thrown away. Secondly, “raising awareness” methods have to take a different route. Through actions like these, from local elected officials to politicians in governments have to get sensitized. Last but not least, we have to follow the example, of categorizing garbage, of MEDC such as Japan, where the food waste gets cut into small pieces and after this process, they are placed into landfills that produce fuels.

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