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Adults 4 Green

- Training adults for a sustainable life -

- Erasmus+ 2022-2-ES01-KA210-ADU-000101053 -

THE PARADOX OF FOOD WASTE

- Analysis of Causes, Consequences and Strategies

INTRODUCTION

- Food waste represents one of the most disturbing paradoxes of our time.
- In a world where approximately 828 million people suffer from hunger, a staggering amount of food is lost every year.
- According to the Food and Agriculture Organisation of the United Nations - FAO - approximately 1.3 billion tonnes of food is wasted, i.e. one third of the world's production destined for human consumption.

INTRODUCTION

- This phenomenon raises crucial questions about the sustainability, ethics and efficiency of our food systems.
- This report aims to take an in-depth look at the different dimensions of food waste, its underlying causes, its multiple impacts and possible strategies to mitigate this global scourge.

1 CONCEPTUAL FRAMEWORK

2 CAUSES OF WASTE

3 IMPACTS OF WASTE

CONTENT

1 CONCEPTUAL FRAMEWORK

What is food waste really?
We will explore the key definitions and different types of food waste, as well as its economic, social and environmental implications.

CONTENT

2 CAUSES OF WASTE

What are the main causes of food waste at all stages of the supply chain?
Dive into the causes, from agricultural production to consumption habits.

CONTENT

3 IMPACT OF WASTE

What impact does food waste have on the economy, society and the environment?
Analyse the far-reaching consequences of food waste, including economic losses, food inequalities and adverse effects on our planet.

1 CONCEPTUAL FRAMEWORK

INTRODUCTION

Food waste is a complex phenomenon that encompasses all losses and waste along the supply chain, from production to final consumption.

According to FAO, it is

"THE DECLINE IN THE QUANTITY OR QUALITY OF FOOD AS A RESULT OF DECISIONS AND ACTIONS OF DISTRIBUTORS, FOOD SERVICE PROVIDERS AND CONSUMERS".

1 CONCEPTUAL FRAMEWORK

A. WHAT ARE WE TALKING ABOUT ?

Food losses : These losses occur during the production, post-harvest and processing stages. They include losses due to poor agricultural practices, inadequate storage and transport infrastructure, as well as damage caused by adverse weather conditions.

Food waste : This term refers to losses that occur at the distribution and consumption level. This includes food products that are discarded by retailers and consumers due to overproduction, overbuying, expiry or non-compliance with aesthetic standards.

1 CONCEPTUAL FRAMEWORK

B. CONCEPTUAL FRAMEWORK

ECONOMIC PERSPECTIVE

- **Food waste represents a significant economic loss on a number of levels**
  - **Producers :** Suffer loss of income when products cannot be sold.
  - **Distributors and retailers:** They face additional costs for managing surplus inventories and waste.
  - **Consumers:** Waste money by buying and disposing of unconsumed food.

- **Relevant Statistics**
  - According to a study by the Institution of Mechanical Engineers, up to 30% of the world's food production never reaches the final consumer.
  - The annual cost of food waste is estimated at approximately 1 trillion dollars.

1 CONCEPTUAL FRAMEWORK

ECONOMIC PERSPECTIVE

- **Impacts of the Capitalist System**
  - It exacerbates waste through overproduction, often intentional to keep prices high and maximise profits.
  - Farmers, often poorly paid, are forced to produce more, increasing the risk of loss and waste.
- **In Europe**
  - Approximately 20% of total food production is wasted each year, leading to significant economic losses.

1 CONCEPTUAL FRAMEWORK

B. CONCEPTUAL FRAMEWORK

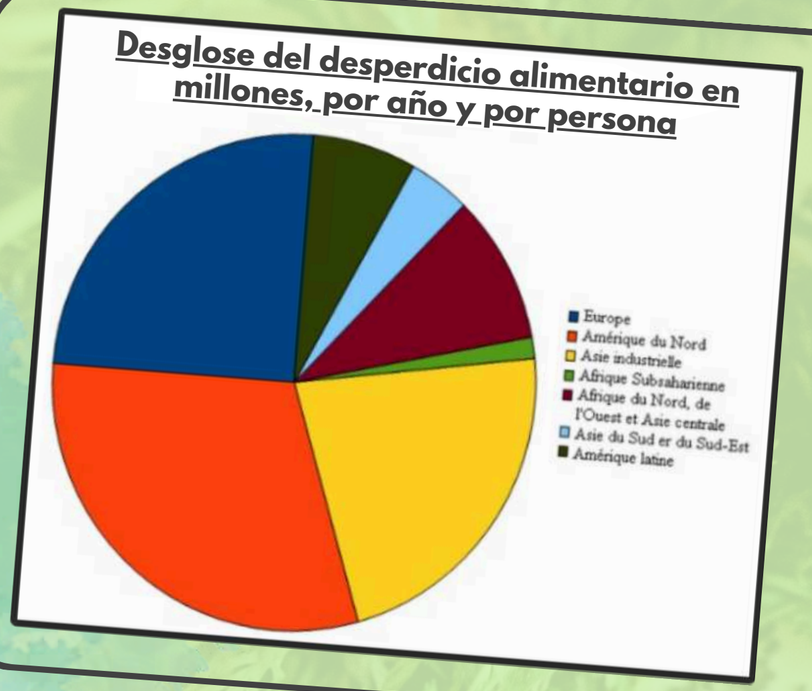
SOCIAL PERSPECTIVE

- **Food waste is profoundly paradoxical and socially unjust**
  - Approximately 828 million people in the world suffer from malnutrition and food insecurity.
  - This phenomenon raises ethical questions about the distribution of food resources and social responsibility.
- **Potential Social Impacts**
  - Tackling food waste could improve access to food and help reduce world hunger.
  - According to the UN, reducing food waste by 25% could feed 870 million hungry people.

1 CONCEPTUAL FRAMEWORK

B. CONCEPTUAL FRAMEWORK

SOCIAL PERSPECTIVE



- **In Europe**
  - Approximately 88 million tonnes of food is wasted each year, or about 173 kg per person.
- **Reflection of Systemic Failures:**
  - Food waste reflects a systemic failure to properly value food resources and distribute them equitably.
  - Reducing food waste could strengthen social solidarity and promote fairer and more efficient use of food resources.

1 CONCEPTUAL FRAMEWORK

ENVIRONMENTAL PERSPECTIVE

- **The environmental impact of food waste is colossal.**
  - The production of wasted food mobilises valuable natural resources, such as water and agricultural land.
  - Approximately 24% of all water used in agriculture goes into lost or wasted food production.
- **Greenhouse Gas Emissions**
  - Agricultural and food production processes are major sources of greenhouse gas emissions. Therefore, if food waste were considered as a country, it would be the third largest emitter of greenhouse gases after China and the United States.

1 CONCEPTUAL FRAMEWORK

B. CONCEPTUAL FRAMEWORK

ENVIRONMENTAL PERSPECTIVE

- **Environmental Statistics**
  - Food waste is responsible for 8% of global greenhouse gas emissions.
  - Every year, 1.4 billion hectares of agricultural land, or almost 30% of the world's agricultural land, is used to produce food that is then lost or wasted.
  - Food wastage accentuates deforestation and ecosystem degradation, threatening biodiversity and environmental health.
- **Beneficios de la Reducción del Desperdicio**
  - Reducir el desperdicio alimentario podría contribuir significativamente a la reducción de las emisiones de gases de efecto invernadero.
  - La preservación de recursos naturales, como el agua y las tierras agrícolas, también se mejoraría con una reducción del desperdicio alimentario.

2 CAUSES OF WASTE

INTRODUCTION

Food waste is a complex phenomenon with varied and interconnected causes, which extends along the entire food supply chain. To fully understand this problem, it is necessary to examine the factors at each stage of the chain, from production to final consumption.

2 CAUSES OF WASTE

A. PRODUCTION AND POST - HARVEST

INADEQUATE AGRICULTURAL TECHNIQUES

Food losses often start early in the supply chain. Several factors contribute to these losses

- Approximately 40% of global food losses occur during the production and post-harvest phase.
- In developing countries, up to 50% of crops can be lost due to outdated farming techniques and lack of technology.
- The absence of optimised practices and modern technologies leads to losses estimated at approximately $250 billion per year.

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2 CAUSES OF WASTE

A. PRODUCTION AND POST - HARVEST

SOCIAL PERSPECTIVE

Food losses often start early in the supply chain. Several factors contribute to these losses

- Unfavourable weather conditions are responsible for losses of up to 20 % of crops in some regions.
- Droughts, floods and storms can reduce agricultural yields by 10 to 50 %, depending on the severity of conditions.
- Climate changes exacerbate these losses, with forecasts indicating a 10 % increase in agricultural losses by 2050.

2 CAUSES OF WASTE

A. PRODUCTION AND POST - HARVEST

TRANSPORT AND STORAGE PROBLEMS

Food losses often start early in the supply chain. Several factors contribute to these losses

- Approximately 40% of global food losses occur during the production and post-harvest phase.
- In developing countries, up to 50% of crops can be lost due to outdated farming techniques and lack of technology.
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2 CAUSES OF WASTE

B. TRANSFORMATION AND DISTRIBUTION

OVERPRODUCTION

The food processing and distribution phase is also characterised by significant losses

- Approximately 30 % of the food produced is overproduced, and a significant proportion is wasted.
- Food surpluses can lead to losses estimated at 1.3 billion tonnes of food per year.
- The costs associated with the management of food surpluses and food waste are estimated at $100 billion per year.

2 CAUSES OF WASTE

B. TRANSFORMATION AND DISTRIBUTION

AESTHETIC STANDARDS

The food processing and distribution phase is also characterised by significant losses

- **Approximately 20% of fruit and vegetables are rejected before reaching consumers due to strict aesthetic standards.**
- **Retailers and consumers reject perfectly edible produce that does not meet the visual criteria, causing waste of around 30 million tonnes per year in the EU.**
- **These standards contribute to food waste estimated at approximately $700 billion per year globally.**

2 CAUSES OF WASTE

B. TRANSFORMATION AND DISTRIBUTION

INEFFICIENT INVENTORY MANAGEMENT

The food processing and distribution phase is also characterised by significant losses

- **Errors in inventory management result in food losses that account for approximately 10% of the products available for sale.**
- **Retailers can waste up to $1 million a year due to the expiration of mismanaged products.**
- **Errors in demand forecasting and inventory management contribute to 12 million tonnes of food waste per year in the United States.**

2 CAUSES OF WASTE

C. CONSUMPTION

EXCESSIVE PURCHASING

Food waste reaches a certain level with consumers. The main causes include

- Consumers buy on average 25% of excess food, which often ends up being thrown away.
- Promotions and excessive buying habits contribute to an estimated 1.3 billion tonnes of food waste per year.
- On average, each household wastes approximately 300-400 euros a year on uneaten food.

2

CAUSES OF WASTE

C. CONSUMPTION

POOR HOUSEHOLD INVENTORY MANAGEMENT

Food waste is at its peak at consumer level. The main causes include

- Approximately 50% of food wastage occurs at household level due to poor inventory management.
- Households waste around 1.2 million tonnes of food a year due to forgotten or poorly stored products.
- Food is often forgotten in refrigerators and pantries until it becomes unfit for consumption.

3 IMPACT OF WASTE

INTRODUCTION

Food waste has considerable repercussions in several dimensions, including economic, social and environmental. Understanding these impacts is crucial to developing effective strategies to reduce waste.

3 IMPACT OF WASTE

A. ECONOMIC IMPACTS

FINANCIAL LOSSES

Food waste has significant economic repercussions, affecting both producers and consumers.

- **Food losses represent a global economic cost estimated at around $1 trillion per year, with significant impacts in Europe and North America.**
- **In Europe, producers lose approximately $40 billion a year in potential revenue due to unsold products.**
- **In France and Germany, consumers waste on average 300-400 euros a year on uneaten food.**

3 IMPACT OF WASTE

A. ECONOMIC IMPACTS

RESOURCE INEFFICIENCY

Food waste has significant economic repercussions, affecting both producers and consumers.

- The production of wasted food uses about 1.4 billion hectares of agricultural land, representing almost 30% of the world's agricultural land, with notable impacts in Asia and Africa.
- Approximately 24% of the world's water used in agriculture is destined for food production that will ultimately be wasted, particularly affecting regions with high dependence on irrigation, such as the Middle East and South Asia.
- The high costs associated with energy and fertiliser for wasted food are particularly visible in South America, where agriculture is a major economic activity.

3 IMPACT OF WASTE

B. SOCIAL IMPACTS

FOOD INEQUALITY

The social impacts of food waste are profound, exacerbating inequalities and affecting cultural and ethical values.

- Approximately 828 million people suffer from malnutrition and food insecurity, while about 1.3 billion tonnes of food are wasted every year. The regions most affected by hunger include sub-Saharan Africa and Southeast Asia.
- Reducing food waste by 25% could feed an estimated 870 million people worldwide according to the UN.
- Food waste exacerbates inequalities by depriving people in need, especially in Africa and Asia, of access to food resources available in surplus in other regions.

3 IMPACT OF WASTE

B. SOCIAL IMPACTS

LOSS OF CULTURAL AND ETHICAL VALUES

The social impacts of food waste are profound, exacerbating inequalities and affecting cultural and ethical values.

- Food waste is particularly notorious in developed countries, where approximately 40% of the food produced is thrown away, especially in North America and Europe.
- This changes attitudes and behaviours towards food, with impacts on cultural values in Europe and North America, where food is often seen as a disposable good.
- Developed countries such as the US and EU countries show a loss of ethical and cultural awareness of the value of food, with significant amounts of food wasted each year.

3 IMPACT OF WASTE

C. IMPACTOS AMBIENTALES

ECOSYSTEM DEGRADATION

The environmental impacts of food waste are colossal, affecting natural resource use, greenhouse gas emissions and ecosystem degradation.

- Wasteful food production contributes to deforestation, with approximately 1.2 million hectares of forest destroyed each year, particularly in South America (e.g. the Amazon) for surplus agriculture.
- Excessive use of pesticides and fertilisers damages biodiversity, with visible impacts in Asia and Africa, where intensive agriculture is common.
- Water pollution from agricultural chemicals is exacerbated by food waste, affecting aquatic ecosystems in North America and Europe.

CONCLUSION

Food waste is a global problem with significant economic, social and environmental impacts.

To tackle it, it is essential to implement solutions at different levels

Economic Solutions

- Optimising Agricultural Practices
  - Africa and South Asia : Adopt modern technologies and improve agricultural practices to reduce post-harvest losses.
  - EU and US: Provide financial incentives to encourage innovative solutions and reduce food losses.

Iniciativas Sociales

- Sensibilización y Educación
  - Europa y América del Norte : Educar a los consumidores para reducir el desperdicio en el hogar mediante campañas de sensibilización.

CONCLUSION

- **Redistribución de Excedentes**
  - **Europa y América del Norte: Ampliar programas que redirijan alimentos no vendidos a quienes lo necesitan.**

Environmental Strategies

- **Greenhouse Gas Emissions Reduction**
  - **Global : Reduce waste to reduce methane emissions and use environmentally friendly alternatives such as composting.**
- **Resource Efficiency**
  - **South America and Africa : Implement sustainable agricultural practices to minimise the environmental impact of waste.**
- **Inventory Tracking and Management Applications**
  - **Global: Promote mobile applications to manage inventories and prevent product expiry.**

CONCLUSION

An integrated and collaborative approach is key to reducing food waste and its negative effects

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THANKS !

Thank you for closely following the progress of our project

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