



# CirCle 2019

## Challenges for the Islands in the era of the Circular Economy

### The prevention of Food Waste as a strategy to implement the Bioeconomy

*Adamantios D.Skordilis*

*f.General Director of the Hellenic Recycling Agency*

Under the auspices of



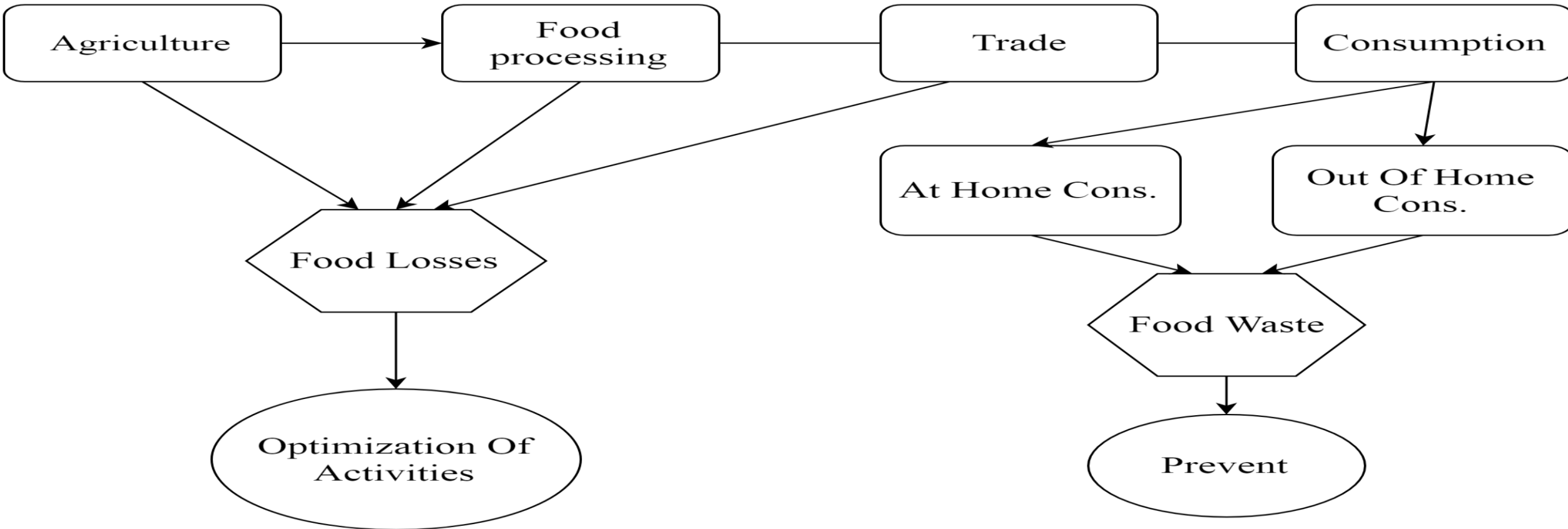
## SMile 2019

### 6th Sustainable Mobility & Intelligent Transport conference





# Food chain losses and waste





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



# Agriculture

- Impact from climatic conditions
- Diseases / Parasites
- Losses during storage
- Losses during transportation

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



# Food processing

- Deviation from the required product properties and quality attributes
- From storage of return samples
- Overproduction and mismanagement
- Errors in the production process (eg production break, incorrect marking, etc.)

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



# Trade

- Damage during transportation
- Past expiration date
- Improper storage
- Surpluses due to poor product- market calculations

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





**CIRCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



- **Consumption at Home**
- **Bad market planning**
- **Lack of stock inventory at home**
- **Past expiration date**

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



- **Out of Home consumption**
- Incorrect estimations of the volumes of generated waste
- Insufficient storage
- Shopping planning
- Bad implementation of hygiene and safety standards
- Invalid portion size determination

**SMile 2019**

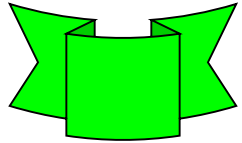
**6th Sustainable Mobility  
& Intelligent Transport  
conference**



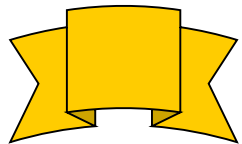


•

# Production



**The global quantity of discarded food is 1.3 billion tons.**



**1/3 of the food produced for human consumption is lost or becomes waste at the world level**

**925 million people suffer from chronic hunger**







## • Production in EU, Greece and Cyprus

In the **EU discarded food amounts to 89 million tons.**( 173 Kg / inhabitant per year). **In terms of households, this amounts to 76Kg / year.**



The BCFN (2012) study estimated that **Greeks and Cypriots produce 50kg per person annually.**

This corresponds to 550,000 tons and 42,000 per year respectively.





CirCIE 2019

Challenges  
for the Islands  
in the era of  
the Circular Economy

under the auspices of



# Eurobarometer the most practical ways to help people to waste less food



Using the freezer to conserve food longer (60%),



Re-using leftovers instead of throwing them away (59%),



Better shopping planning by your household (49% )

SMile 2019

6th Sustainable Mobility  
& Intelligent Transport  
conference





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



- Being able to choose for a smaller portion in restaurants (55%)
- Better estimation of food portion sizes (53%)
- Better product information on food labels (51%),
- Clearer product use information (48%).

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**



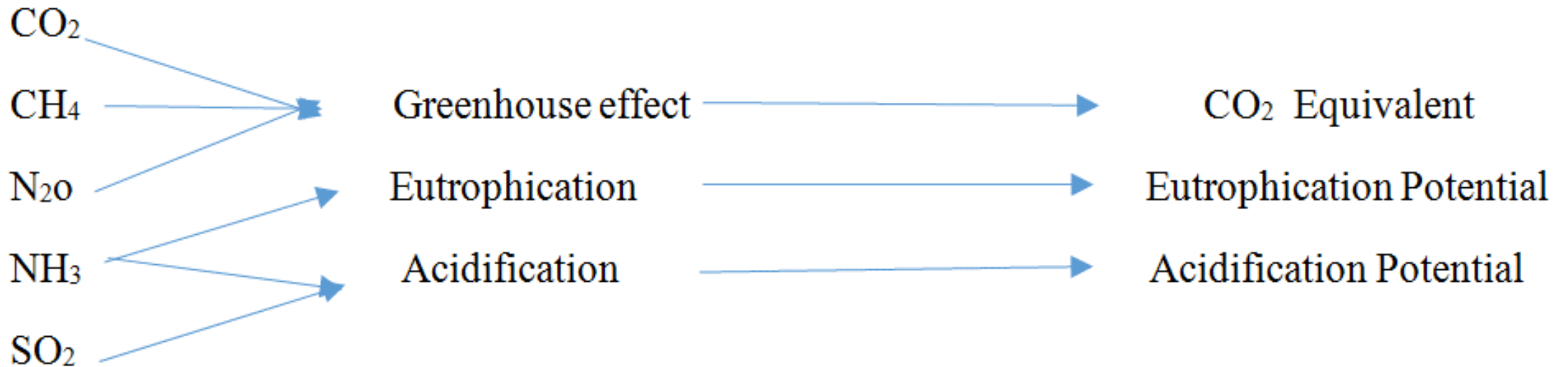


# Environmental Effects

*Classification*

*Effective categories*

*Impact indicator*







- Global CO<sub>2</sub> release from food production processes and discarded food is estimated at 3.3 Gtons.
- Every year, 170 million tons of CO<sub>2</sub> are released in the EU.





CirCIE 2019

Challenges  
for the Islands  
in the era of  
the Circular Economy

under the auspices of



# Water Consumption-Required land

- The required water consumption for food losses is 250Km<sup>3</sup>, 3 times the water in Lake Geneva.
- The required land for producing food we do not eat is up to 1.4 billion hectares.

SMile 2019

6th Sustainable Mobility  
& Intelligent Transport  
conference





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



## Environmental impacts of food waste (per 100 persons)

Greenhouse gas emissions



13.2 t CO<sub>2</sub>e



42,500 km car drive

Agricultural land use



24,900m<sup>2</sup>\*a



3 soccer fields

Agricultural water  
consumption



85,000 litres



85,000 1-litre water bottles

Source: Umweltbundesamt

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





# CO<sub>2</sub> equivalent

## Livestock products



→ 9,21 Kg CO<sub>2</sub> eq./kg

>

3,6 times more

## Plant products



→ 2,55 Kg CO<sub>2</sub> eq./kg







**CIRCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



## **Environmental impact analytics of food losses and food waste per person and year**

	<b>Unit</b>	<b>Agriculture</b>	<b>Food processing</b>	<b>Trade</b>	<b>Consumption</b>	<b>Total</b>
<b>Green house gases</b>	Co <sub>2</sub> -equivalent	3,3	19	10	134	476
<b>Mineral raw materials</b>	kg-oil	54	4	3	48	109
<b>Eutrophication (lakes,rivers)</b>	Kgp-equ	0,034	0,014	0,009	0,1	0,157
<b>Eutrophication (sea)</b>	Kgp-equ	0,188	0,037	0,025	0,028	0,255

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





# Activities for reducing food waste

- **Production** (agriculture, manufacturing and manufacturing)
- **Trade** (food retailing, wholesale, direct marketing)
- **Consumption at Home**
- **Out-of-home consumption** (mass catering, hotels, food supply)
- **Society** (Initiatives, campaigns, NGOs, social institutions, educational institutions)





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



- **Proposals to reduce food waste**
- Measures for designing a framework
- Measures relating to individual aspects
- Measures for increasing appreciation of food

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**

under the auspices of



- **Initiatives in Europe to reduce food waste**
  - Education campaigns,
  - Information and training,
  - Waste collection and supply chain optimization.
- However, most of the measures are yet small and not adequately evaluated because they do not provide the necessary clarity.

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





# The European Platform on Food and Waste (FLW)



- Determining the measures needed to prevent food waste
- Exchange information of best practices and
- Assessment progress over time.





**CirCIE 2019**

**Challenges  
for the Islands  
in the era of  
the Circular Economy**



## **The European Platform on Food and Waste (FLW)**



1. Too Good To Go
2. Resq Club
3. Sir Plus
4. Epepetete
5. Zu gut fuer die Tonne
6. Eat Smarter
7. Essen und Trinken

**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**





- **Examples of best practices**
- New product ideas
- Start-ups
- Associations and
- Initiatives







- # In Conclusion
- A drastic reduction in Food Waste can only be achieved when all stakeholders contribute with concrete solutions and targeted agreements.





# Thank you for your attention

*[askor@tee.gr]*



**CIRCIE 2019**  
**Challenges  
for the Islands  
in the era of  
the Circular Economy**

Thursday 28 - Friday 29 March 2019, **Nicosia, Cyprus**

under the auspices of



**SMile 2019**

**6th Sustainable Mobility  
& Intelligent Transport  
conference**

