



# 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



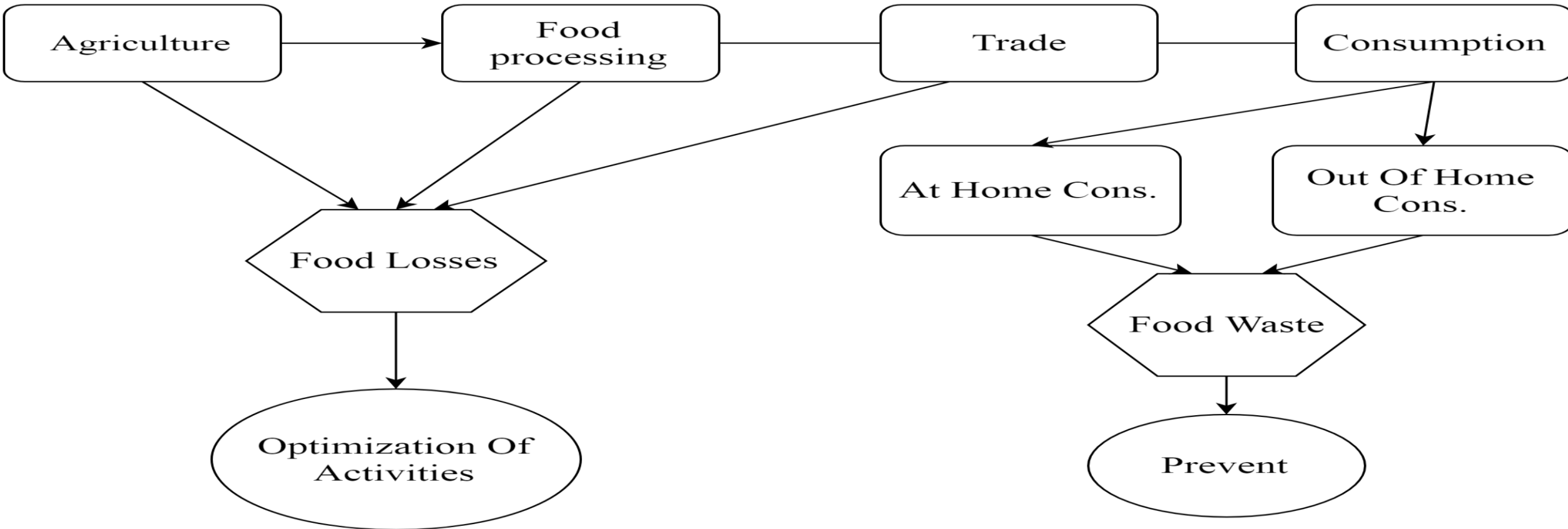
## SMile 2019

### 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**

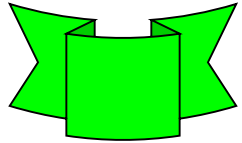
**6th Sustainable Mobility  
& Intelligent Transport  
conference**



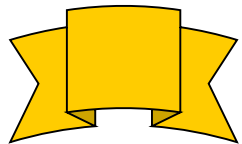


•

# 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**



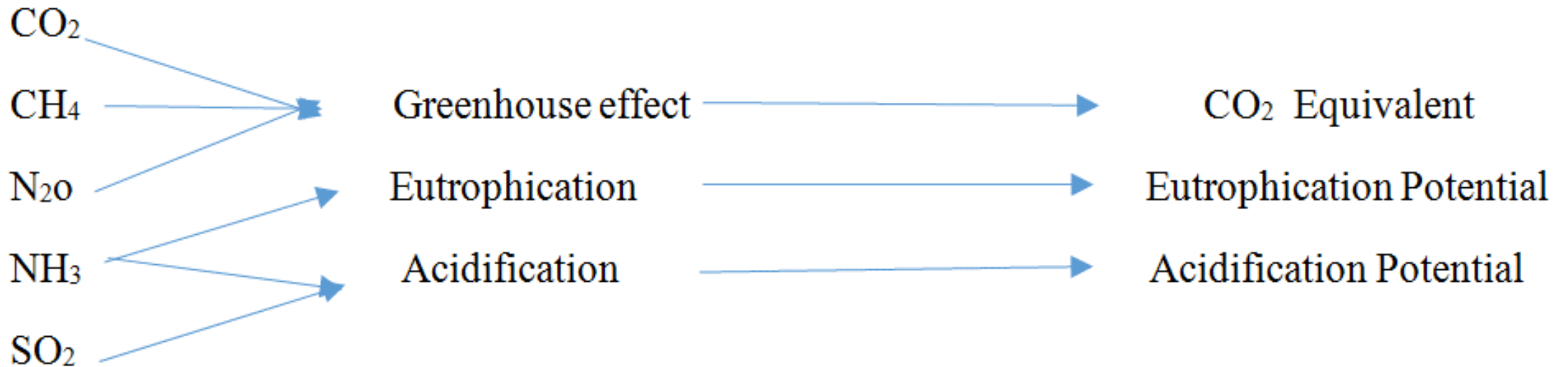


# Environmental Effects

*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**

