



# Feed4Food Living Labs aiming for Urban Food Security

V. IAKOVOGLOU



G. N. ZAIMES, I. KASAPIDIS, A. SAVVOPOULOU



# Background Info

## Roadmap

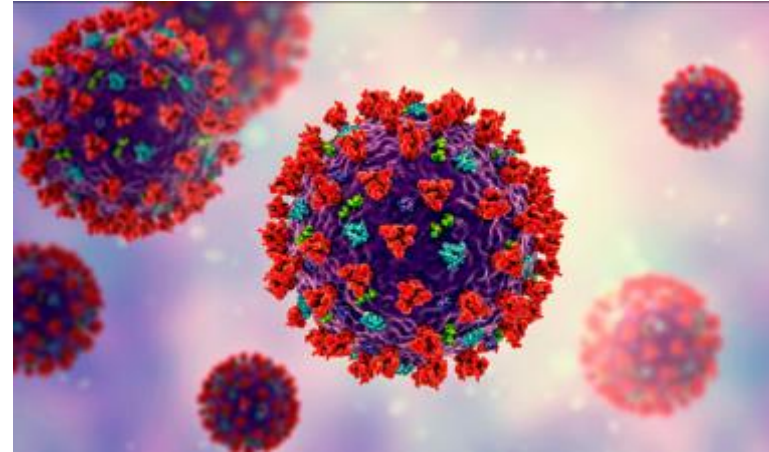
- Background Info
- Objectives
- LL - Drama GR
- KPIs
- Dashboard
- Preliminary Conclusions



# Background Info

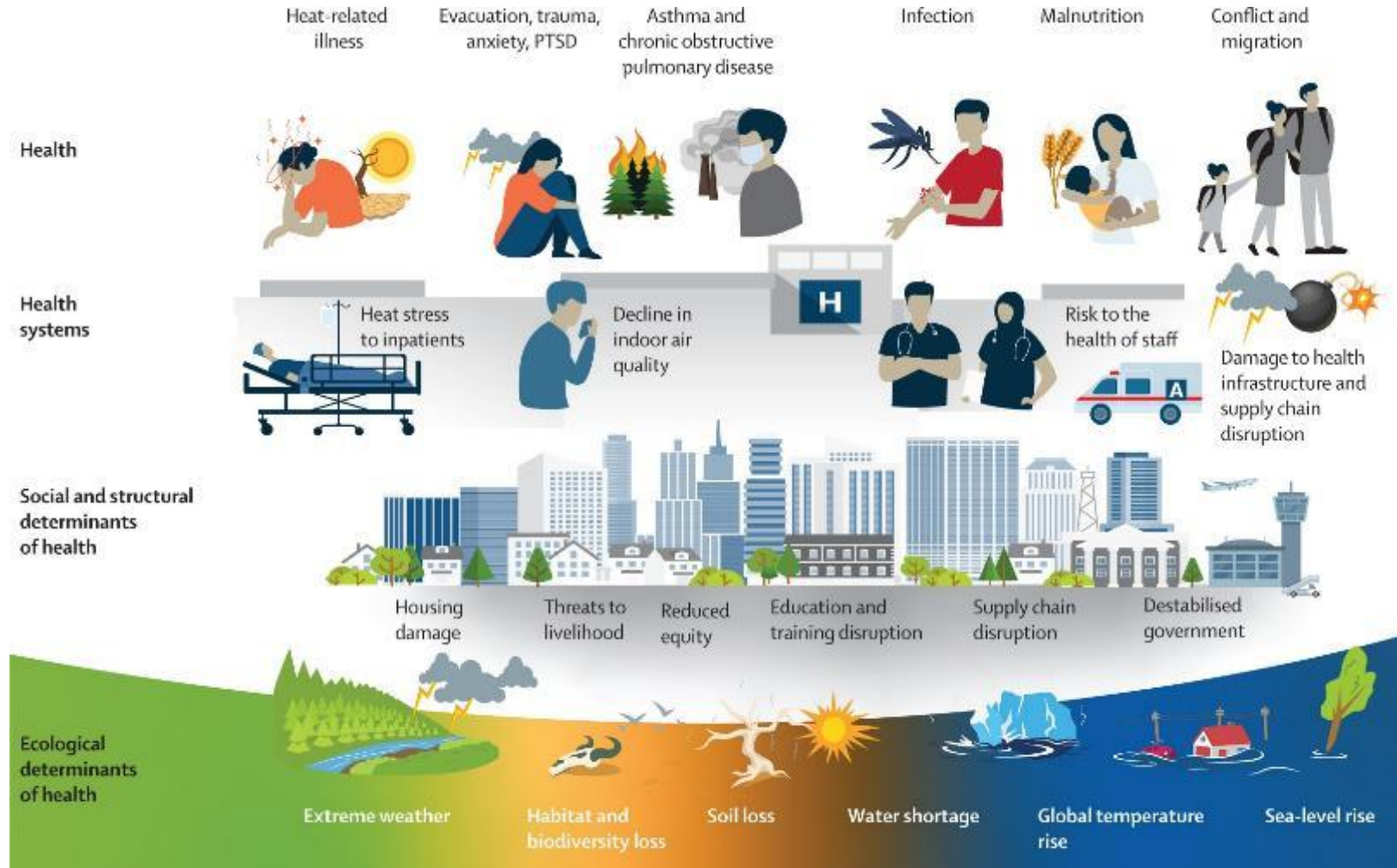
## Exposed EU urban food systems weakness

- ✓ COVID-19
- ✓ Ukrainian War...Wars...
- ✓ Different EU regions face different crises
- ✓ EU face diverse challenges
- ✓ Innovative approaches to ensure food security



# Background Info

## Climate Change



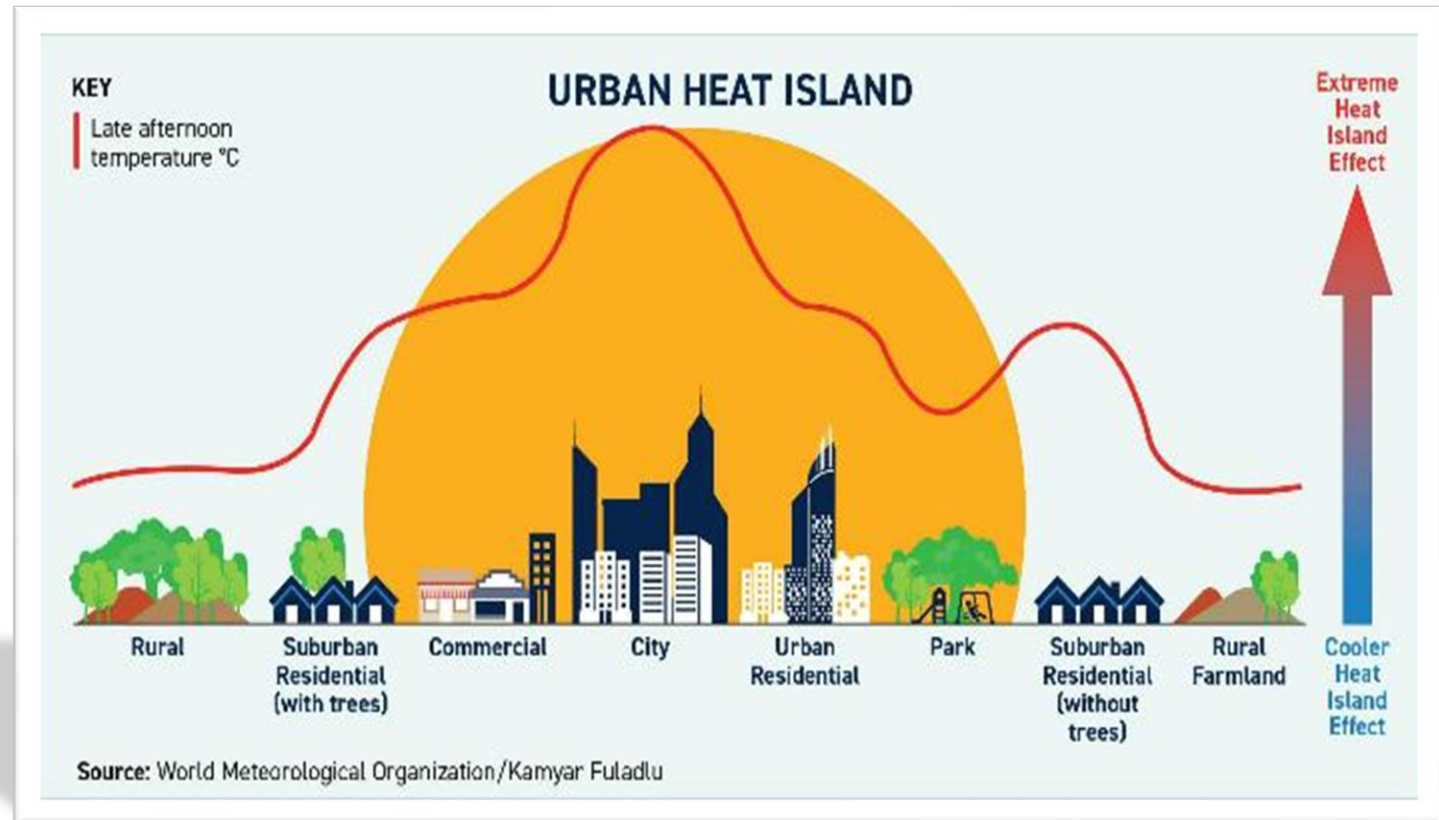
ΔΗΜΟΚΡΕΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ | DEMOCRITUS UNIVERSITY OF THRACE



# Background Info

## Urbanization

- ✓ 2023, 76% EU population lived in urban areas
- ✓ Urban Heat Island Effect
- ✓ Grey intensification, increased energy consumption, air pollution
- ✓ Health risks – low income



# Background Info

## Urbanization

### ✓ Alternatives

- ✓ Green infrastructure
- ✓ Green roofs, green walls, rain gardens
- ✓ Street trees parks, gardens
- ✓ Urban riparian areas and wetlands



# Background Info

## EU Green Deal



Face these challenges



OBJECTIVE of the Green Deal



Transform the EU



Modern, resource efficient & competitive economy



**1<sup>st</sup> climate neutral continent**



Reduce gas emissions by 55%



# Background Info



## Nature-Based Solutions

### Actions

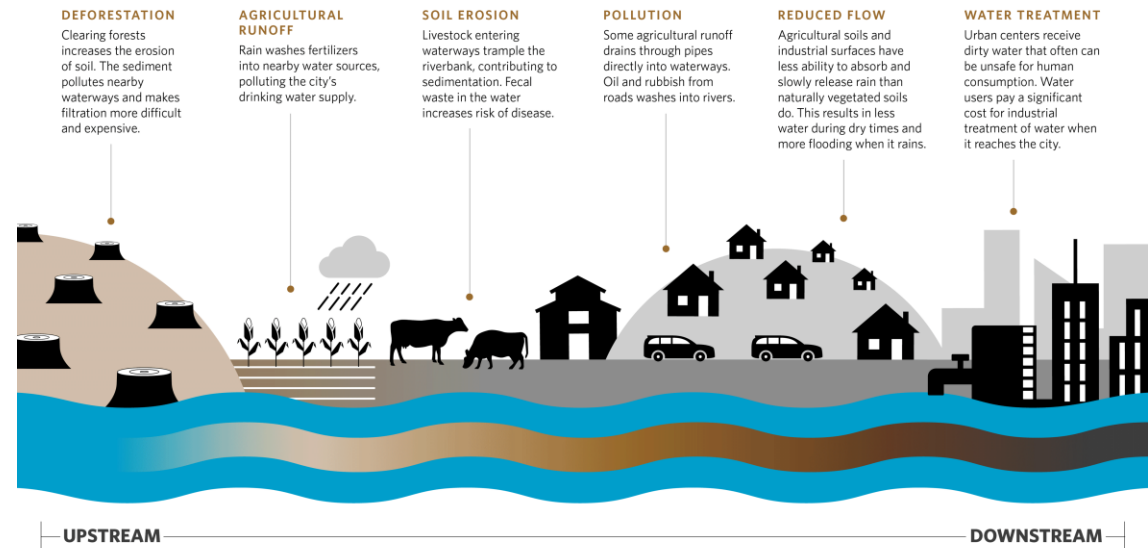
 Protect, sustainably manage & restore natural or modified ecosystems

 Face social challenges effectively & adaptively

 Provide benefits for human well-being & biodiversity

### NATURAL SOLUTIONS TO WATER SECURITY - FROM SOURCE TO CITY

In many cities worldwide, drinking water supplies are greatly affected by how land is managed. Improving the health of the lands around water sources improves water quality, restores reliable water flows and brings numerous other benefits, both upstream and downstream.



# Background Info

## Urban Agriculture

- ✓ EU transition to **circular economy** - sustainable model of production & consumption
- ✓ **Urban agriculture** - Growing food & raising animals within or near urban areas, adapting to diverse urban settings worldwide
- ✓ Aligns with SDGs, address challenges of **food security, climate change & urbanization**
- ✓ **Nature-based solutions** for urban areas



# Background Info



Urban Agriculture



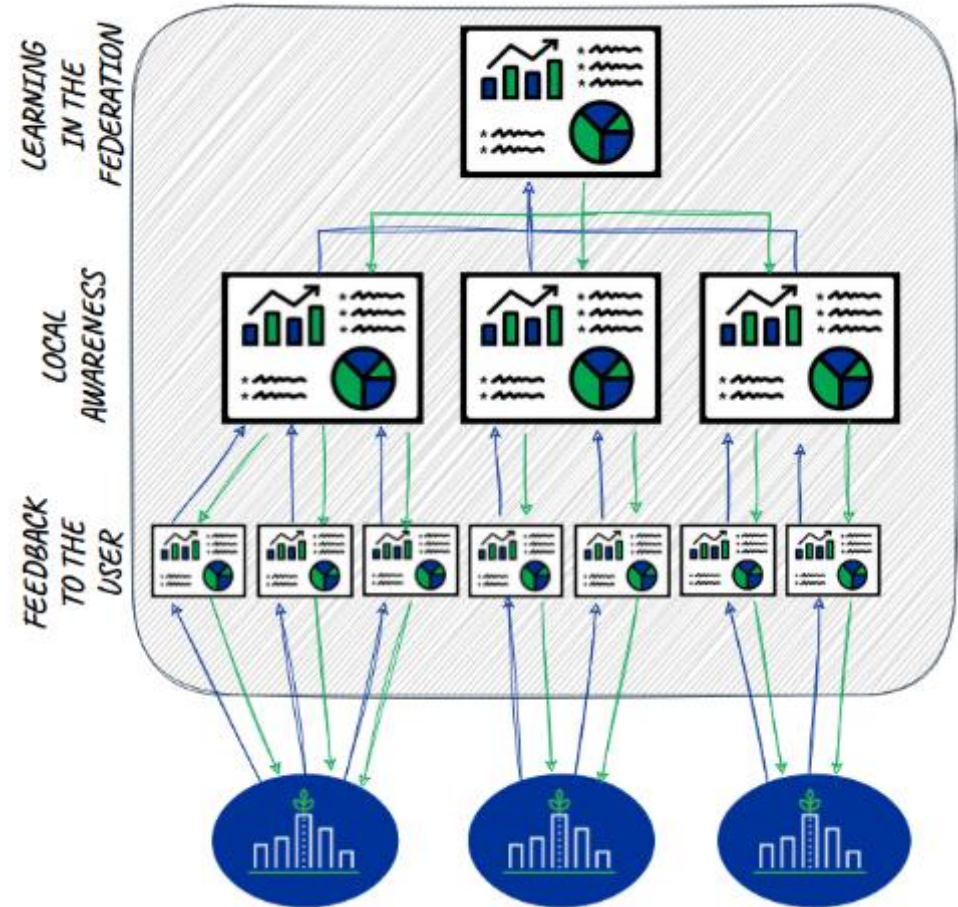
# Objectives

## FEED4FOOD

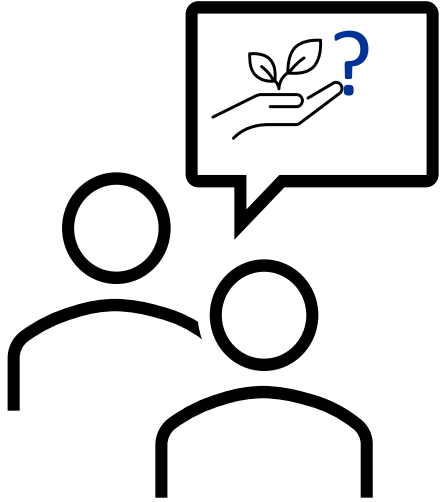
- ✓ On-the-ground **realization of Living Labs** in 3 EU cities Greece, Cyprus & Romania
- ✓ Showcase **utility** of sustainable **urban agriculture**
- ✓ Potential to **mitigate climate change**
- ✓ Feedback to the **user**
- ✓ Enhance **local awareness**
- ✓ Empower and include **vulnerable groups**



ΔΗΜΟΚΡΑΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ  
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# Living Labs (LL)



Re-develop  
use of urban  
garden by  
individuals

- Women
- Dropped-out youth
- Migrants

Rekindle interest &  
Promote native  
varieties  
cultivation



Create a  
gardening area  
in a public park

- Elderly
- Poor
- Migrants
- Mentally challenged
- Unemployed

Nutritious &  
water-  
efficient food  
production



Revitalize  
peri-urban  
farms

- Migrants
- Elderly
- Poor
- Minority

Increase  
employment &  
use of organic  
methods



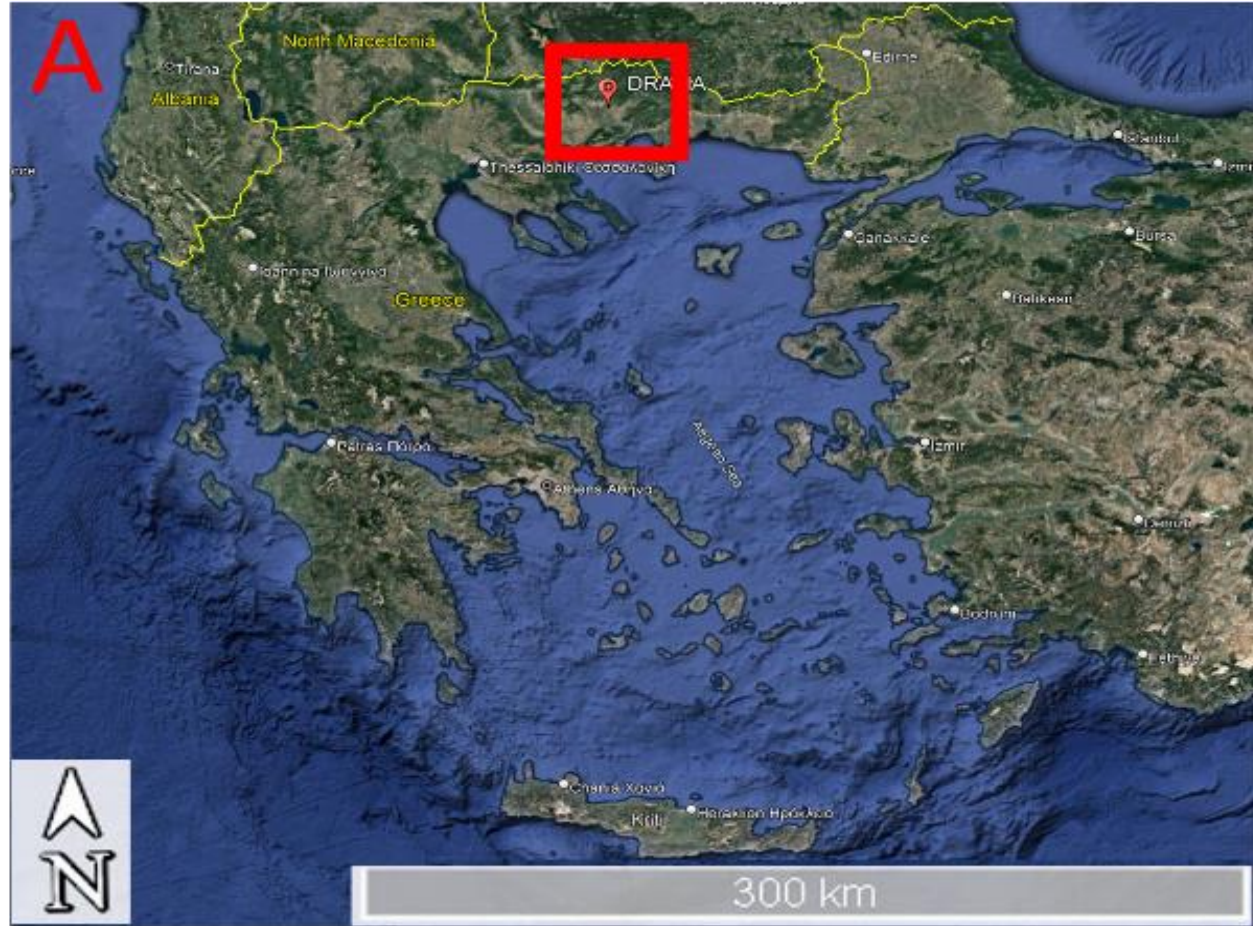
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DEMOCRITUS UNIVERSITY OF THRACE



# Drama-LL

## Drama City

- ✓ Region Eastern Macedonia & Thrace
- ✓ Population: 44,257 (2021)
- ✓ Experienced population reduction & economic decline



ΔΗΜΟΚΡΙΤΕΙΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΘΡΑΚΗΣ  
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# Drama-LL

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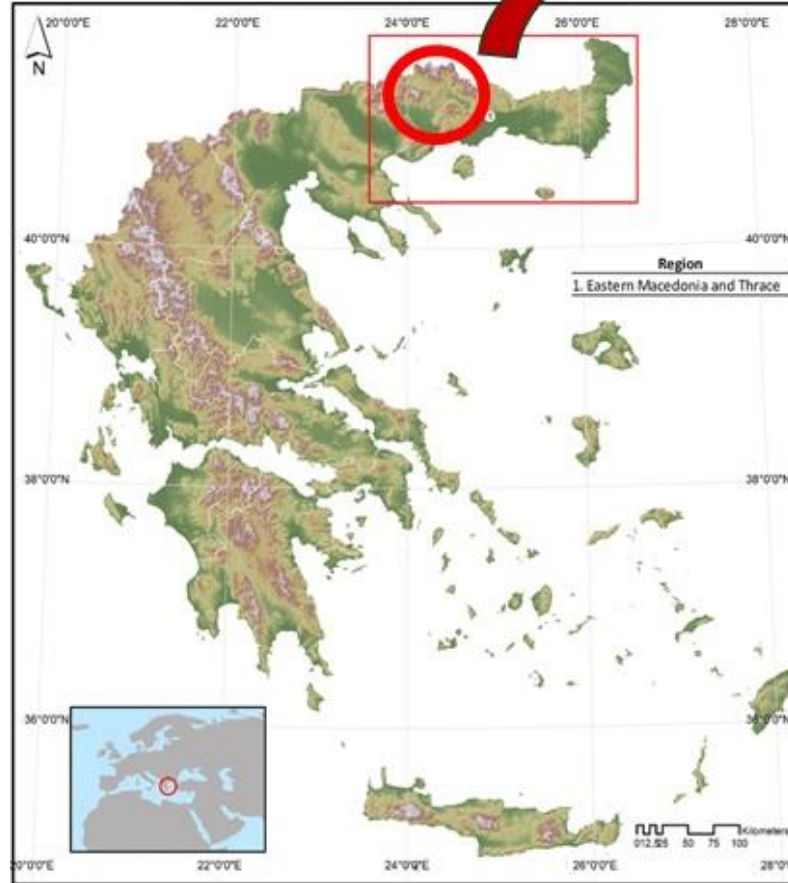
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ΠΤΕΙΟ ΗΜΙΟ ΔΗΜΟΚΡΙΤΟΥ  
AKHIE UNIVERSITY  
OF THRACE



# Drama-LL

## Urban Garden 1 (UG1)

- ✓ The LL is located on a 27 ha
- ✓ Region of Eastern Macedonia & Thrace
- ✓ Create Social Vegetable Gardens
- ✓ Each vegetable garden 100 m<sup>2</sup>
- ✓ 250 gardens for stakeholders
- ✓ Prioritize unemployed, with many children & citizens with low income



# Drama-LL

## Urban Garden 2

- ✓ Road Drama - Mikrochorio, 4 km from city center
- ✓ 12 ha by Ecological Movement of Drama
- ✓ Purpose create Social Vegetable Gardens
- ✓ 70 gardens - 100-110 m<sup>2</sup>
- ✓ Gardens - water supply & storage space for tools
- ✓ Network Social Solidarity & Cooperative Economy
- ✓ Governed by "Municipal & social vegetable gardens in Greece" framework



# Drama-LL



## Urban Garden 2

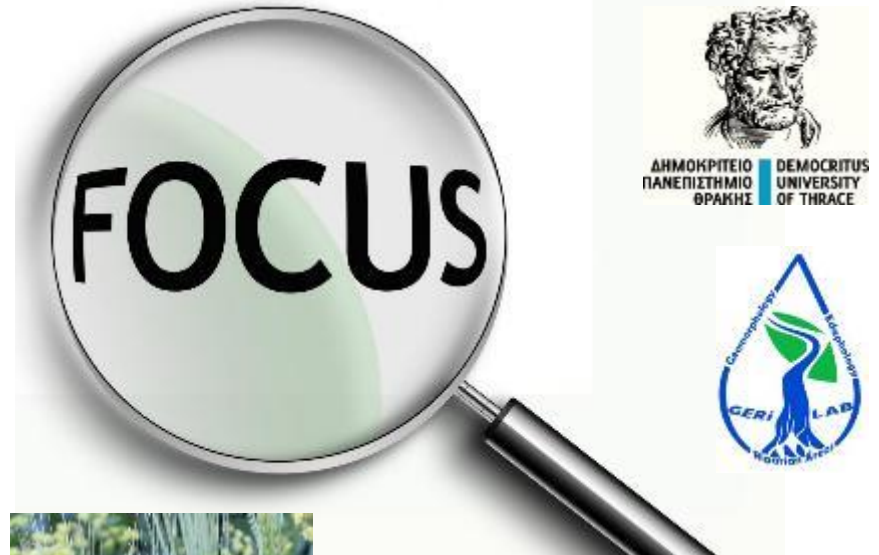
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# Drama-LL

## Characteristics

- ✓ Expected very successful, BUT interest atoned
- ✓ Encourage citizens start urban gardening & waste mgt
- ✓ Emphasis **vulnerable groups: women, dropped-out youth**
- ✓ Bring fresh produce, opportunity in touch with nature
- ✓ Experimental production **endemic or local species**
- ✓ Cultivate **perennial species** e.g. *Thymus vulgaris* & **annuals** e.g. *Triticum turgidum* ssp. *Dicoccum*
- ✓ Enhance conservation & preservation of biodiversity



# Drama-LL

## Potential Growing Plants



January



March



June



September



December

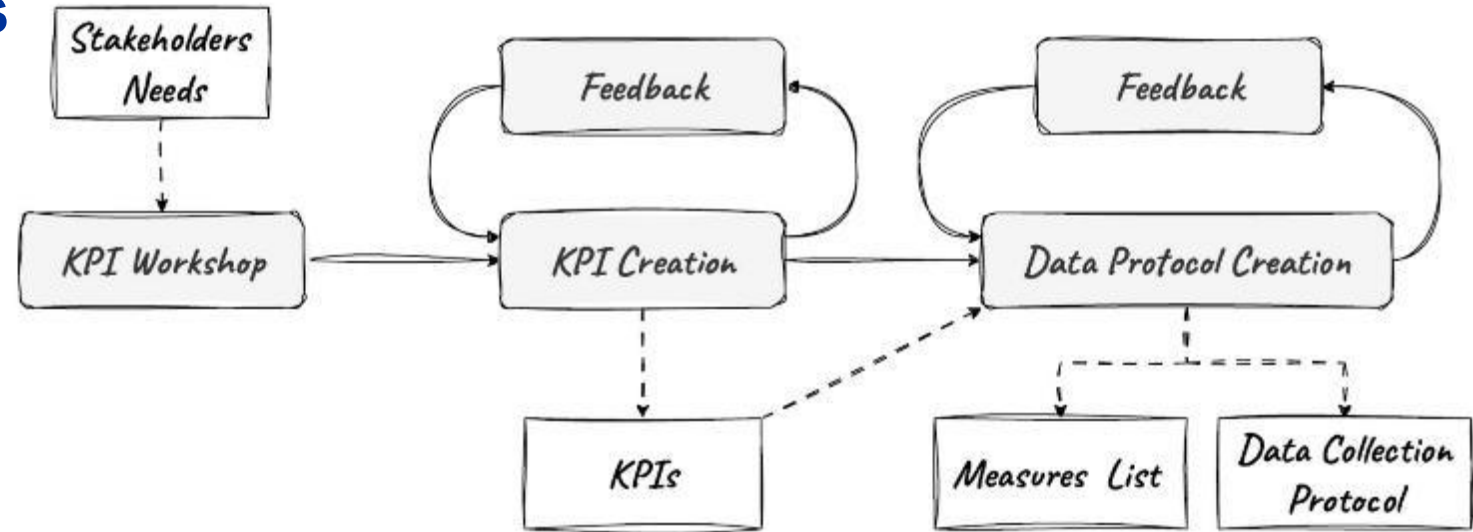


# LL KPIs



## Key Performance Indicators (KPIs)

- ✓ Understand **success** & utility of LLs
- ✓ **Quantifiable measurements** gauge project's long-term performance
- ✓ Compared project targets & objectives
- ✓ Drama
- ✓ KPI-D1 Underrepresented groups
- ✓ KPI-D2 Native species production



# Drama-LL KPIs

## Parameters determined

- ✓ Goal
- ✓ Critical Success Factor
- ✓ Key Performance Indicator (Target & Action)
- ✓ Metrics
- ✓ Measures



# Drama-LL KPIs

## KPI-D1

### Underrepresented groups (UG)

**Goal:** make the LL accessible and inclusive to UG

**Success:** increase utilization of LL by UG

KD1 - Underrepresented groups using the LL				
Goal	Critical Success Factor	Key Performance Indicator	Metric(s)	Measure(s)
Make the living labs of City2 inclusive and accessible to underrepresented groups	Increase the utilization of LLs by the underrepresented groups by the end of the project	Proportion of underrepresented groups aware, with access to and utilizing the living labs <u>f</u> (awareness, accessibility, utilization, MC12-1)	<p><b>Awareness</b></p> <ul style="list-style-type: none"> <li>- Persons reached through print communication actions <u>f</u> (MC19, MS17, MR2, MS11)</li> <li>- Total followers on social media <u>f</u>(MC7)</li> <li>- Total views/visitors per month for digital communication <u>f</u>(MC8, MC24)</li> <li>- Persons from underrepresented groups coming to awareness events <u>f</u> (MC22-1)</li> </ul> <p><b>Accessibility</b></p> <ul style="list-style-type: none"> <li>- Ease of transportation <u>f</u>(MC16-A, MC16-B, MC17, MS4, MS19)</li> <li>- Ease of access</li> </ul>	<p>MC12-1 - Total population per underrepresented group</p> <p>MC13 - Gardens/holdings in use</p> <p>MC14 - Persons working in the gardens/holdings</p> <p>MC14-1 - Persons from an underrepresented/vulnerable group working the gardens (per group)</p> <p>MC15 - Persons employed to work in the gardens</p> <p>MC15-1 - Persons from an underrepresented/vulnerable group employed to work in the gardens (per group)</p> <p>MC16-A - Distance from house (km)</p> <p>MC16-B - Distance from house (time)</p>
		<p>Target</p> <p>Out of the total population in the underrepresented groups: -&gt;50% are aware of the LL (through LL events) -&gt; 10% are utilizing the LL</p> <p>The municipality invests at least 20 € in transportation/accessibility per participant per month</p> <p>At least 500 exemplars of printed communication are distributed per month</p> <p>Each newspaper article published is distributed to at least 100 persons through email.</p> <p>The cumulated reach of digital communication actions is 20 views per post</p> <p>Accessibility and transportation self-evaluation should always be the same or higher than previous value</p>		
			<p><u>f</u>(MS3, MS18)</p> <p><b>Utilization</b></p> <ul style="list-style-type: none"> <li>- Gardens <u>f</u>(MC13)</li> <li>- Persons involved <u>f</u>(MS4, MC14, MC14-1, MC15, MC15-1)</li> </ul>	<p>MC17 – Means of transportation from house</p> <p>MC19 - Number of articles in newspaper</p> <p>MC22-1 – Participants from an underrepresented group in an event/workshop</p> <p>MS17 - Flyers disseminated</p> <p>MS18 - Funds for accessibility</p> <p>MS19 - Funds for transportation</p> <p>MS3 – Accessibility self-evaluation</p> <p>MS4 – Transportation self-evaluation</p> <p>MC7 - Followers on social media (per media)</p> <p>MC8 – <u>Visitors</u> on website</p> <p>MC24 – Number of views for a post</p> <p>MR2 -Printed/sold exemplar of the newspaper (per newspaper)</p> <p>MS11- Email addresses in the distribution list</p>



# Drama-LL KPIs

## KPI-D2

### Native species

**Goal:** Increase cultivation of native species

**Success:** increase awareness on the benefits of native species when using LL

KD2 – Promoting native species cultivation														
Goal	Critical Success Factor	Key Performance Indicator	Metric(s)	Measure(s)										
Increase cultivation of native species	By the end of the project, increased awareness on the benefits of native species when utilizing the living labs of City2	Proportion of (underrepresented) groups to apply the knowledge gained via awareness, training and practical application at the living labs to increase the use of native species f(awareness, training, application, MC12, MC12-1)	<b>Awareness</b> - Persons reached through print native species communication actions f (MC19-1, MR2, MS11) - Total views/visitors per month for digital native species communication f(MC24-1) - Persons (from underrepresented groups) coming to native species awareness events f (MC22-3, MC22-3-1)  <b>Practical application</b> - Gardens (per group) cultivating native species f(MC1-1) - Transplanting seedling success (% of survival) f(MS20, MS20-1) - Yield of native species f(MC1-1) - Yield of native species seedlings f(MC1-2)	MC1-1 – Production per native species product type MC1-2 – Production per native species seedlings MC12 - Total population MC12-1 - Total population per underrepresented group MC19-1 - Number of native species articles in newspaper MC22-3 - Participants in an native species event/workshop MC22-3-1 – Participants from an underrepresented group in an native species event/workshop MC18-B-1– Number of native species plants MS20 – Number of transplanted seedlings MS20-1 – Number of alive transplanted seedlings MR2 -Printed/sold exemplar of the newspaper (per newspaper) MC24-1 – Number of views/impressions to an event/post about native species MS11 – Emails in the distribution list										
		Cultivation index f(Gardens cultivating native species, yield of native species)  Seedling index f(Transplanting seedling success, yield of native species seedlings)												
		<table border="1"> <thead> <tr> <th>Target</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>Out of the total population of the (underrepresented) group active in the LL: - &gt; 20% are cultivating native species in the LL</td> <td>Awareness - different type of events (workshops, conferences), different ways of engagement (participation at marketing activities)</td> </tr> <tr> <td>Each newspaper article published about native species is distributed to at least 100 persons through email.</td> <td>Skills – train on regeneration techniques, Knowledge on proper transplanting, Timing of transplant</td> </tr> <tr> <td>The cumulated reach of digital communication actions about native species is 20 views per post</td> <td></td> </tr> <tr> <td>The cultivation index is &gt; 5 The seedling index is &gt; 5</td> <td></td> </tr> </tbody> </table>	Target	Action	Out of the total population of the (underrepresented) group active in the LL: - > 20% are cultivating native species in the LL	Awareness - different type of events (workshops, conferences), different ways of engagement (participation at marketing activities)	Each newspaper article published about native species is distributed to at least 100 persons through email.	Skills – train on regeneration techniques, Knowledge on proper transplanting, Timing of transplant	The cumulated reach of digital communication actions about native species is 20 views per post		The cultivation index is > 5 The seedling index is > 5			
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# Dashboard

## User Needs



### Website 2 part

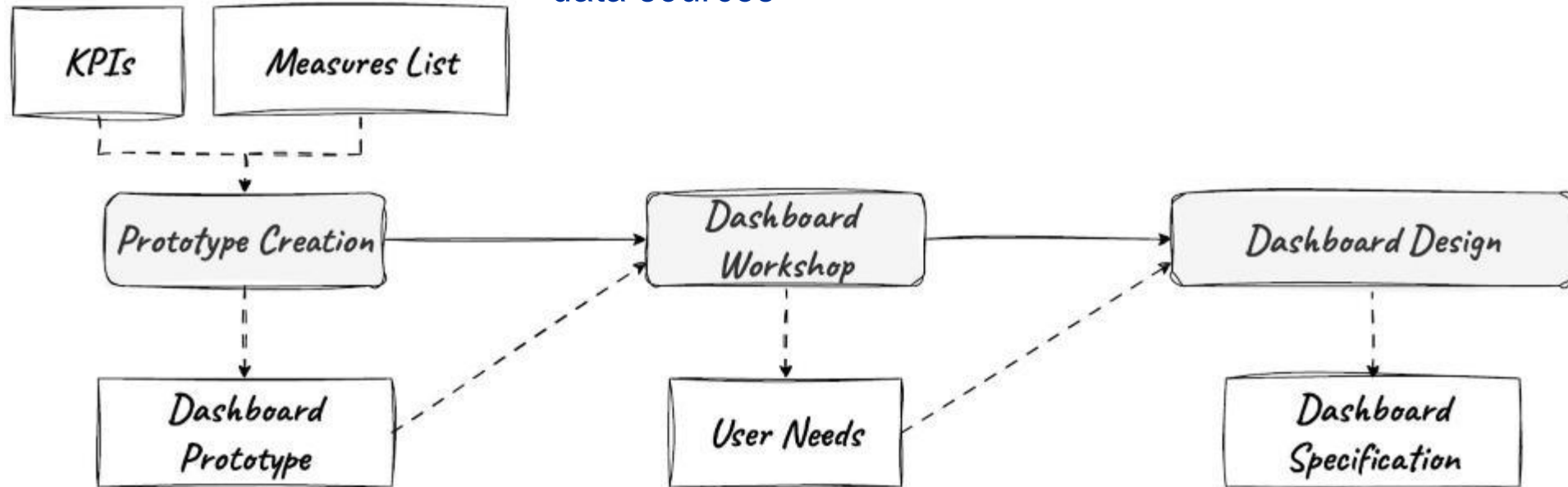
- Data Collection Protocol
- Each LL

### 1. Data gathering:

- Easy-to-use & accessible interface
- Handle different types of data sources

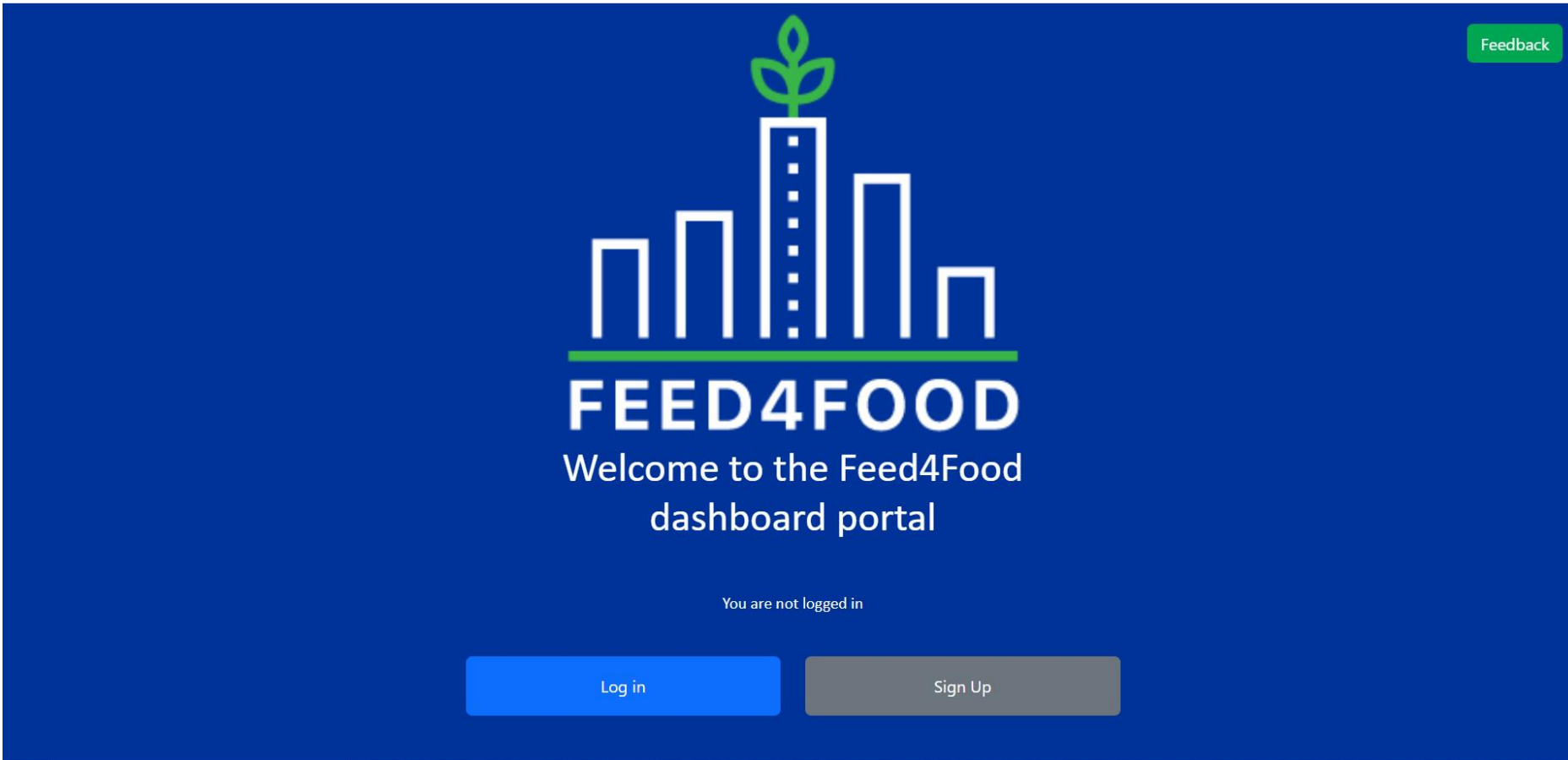
### 2. Data visualization:

- Different visualizations & levels of customization
- Different types of users



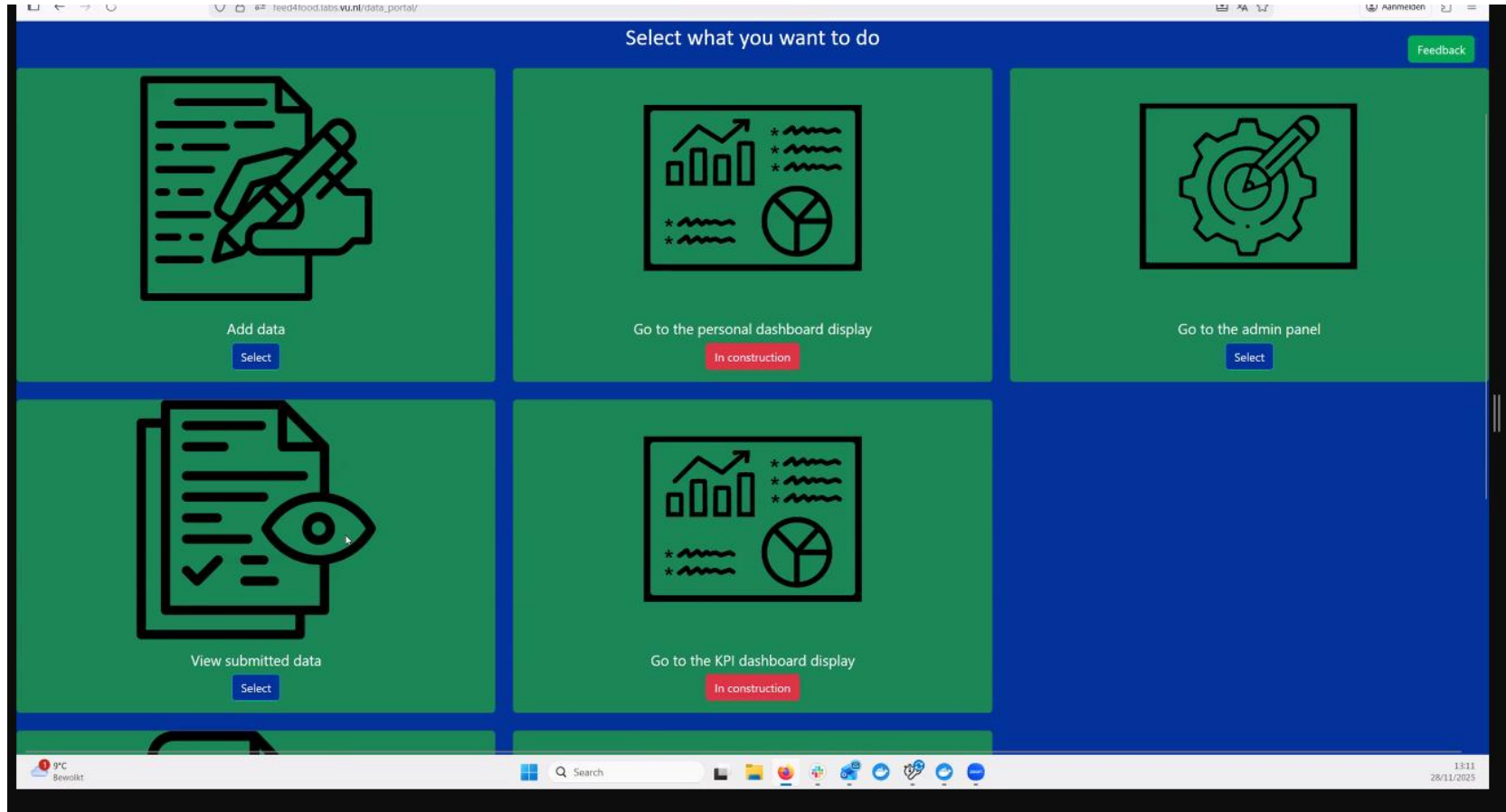
# Dashboard

Enter Data <https://feed4food.labs.vu.nl/>



# Dashboard

## Enter Data



# Drama-LL

## Home Gardens



# Drama-LL



## Home Gardens



Zucchini



Peppers



Tomatoes



# Dashboard

## Enter Data



Sales Report

City\* Amsterdam Location\* 11th floor Garden\* -----

Currency\* €

Sales performed

Sale date\* dd-mm-jj Sale location\* Product\* Sele Quantity\* Price\*

€ per null Delete

Add Sale Submit

You are logged in as admin\_django!

Back to data portal

# What is next? More data...



# What else?

# Dissemination



# Dissemination

4TH EDITION GLOBAL SUMMIT WOMEN IN AGRITECH & BIO

THEME: “FEEDING THE WORLD THROUGH AGTECH AND BIO INNOVATIONS”



September 24-27, 2025  
Your Nature, Antoing - Belgium

# Dissemination



The 15th International Conference on Environmental and Public Health Issues in Asian Mega-cities (EPAM 2025),  
Shanghai, CHINA, October 16-18<sup>th</sup>, 2025

# Dissemination



**5th Annual Meeting of the Mediterranean GeoSciences Union (MedGU-2025), Athens, GREECE**

**November 10-12<sup>th</sup>, 2025**

2024-2026 FEED4FOOD

[feed4food.eu](http://feed4food.eu)



# Dissemination



Workshop on Ecotourism, Drama, GREECE

March 12<sup>th</sup>, 2026

# Dissemination

## Scientific Committee Members



**Mohammad Babadoost**  
University of Illinois, United States



**Srinivasa Rao Mentreddy**  
Alabama A&M University, United States



**Mary Cole**  
The University of Melbourne, Australia



**Valasia Iakovoglou**  
UNESCO chair Con-E-Ect, International Hellenic University, Greece



**Abdul Khalil Gardezi**  
Colegio de Posgraduados, Mexico



**Edgar Omar Rueda Puente**  
Universidad de Sonora, Mexico



**Bijayalaxmi Mohanty**  
National University of Singapore, Singapore



**P E Rajasekharan**  
ICAR-IIHR, India

10:40-11:20

12:40-13:20

Keynote Session

**Valasia Iakovoglou, Democritus University of Thrace, Greece**

Title: FEED4FOOD: Living Labs (LLs) aiming for urban food security

“Unveiling the Future of **Plant Biology and Biotechnology**”

**March 26-28, 2026**  
**Singapore**

GPB 2026

Valasia Iakovoglou

Home / Speakers / Valasia Iakovoglou



**Valasia Iakovoglou**

UNESCO chair Con-E-Ect, International Hellenic University, Greece

## Biography:

Dr. Valasia Iakovoglou is a distinct graduate of Iowa State University, USA. She has more than 25-yrns of national/international research and teaching experience as an Ecophysiological/Silviculture expert in seedling production and Restoration/Conservation of Ecosystems with emphasis on Biodiversity under the challenges of Climate Change. She has received numerous scholarships, awards and recognitions. She is an editor of more than ten international journals and a reviewer in more than fifteen, as well as a reviewer at the Intergovernmental Panel on Climate Change (IPCC). She has more than 100 publications (books/book chapters, peer-reviewed scientific articles) and more than 20 international projects. She is active in many scientific societies such as the Mediterranean Experts of Climate and environmental Change (MedECC) and the International Network of Bioresource Management (INBM). She holds leading positions such as: Director of Ecotourism Sector of the UNESCO chair Con-E-Ect; Executive Board of Directors of Climate Smart Agriculture Youth Network Global (GCSAYN) in Africa; “General Secretary” of associations such as the “Association of Inter-Balkan Woman’s Cooperation Societies (AIWCS)” of UNESCO Center for the peace in the Balkan area; International Council of World Tourism Forum Institute; Country Chair of Greece of the G100 Women of the World serving as for Farming and AgriTourism

2026

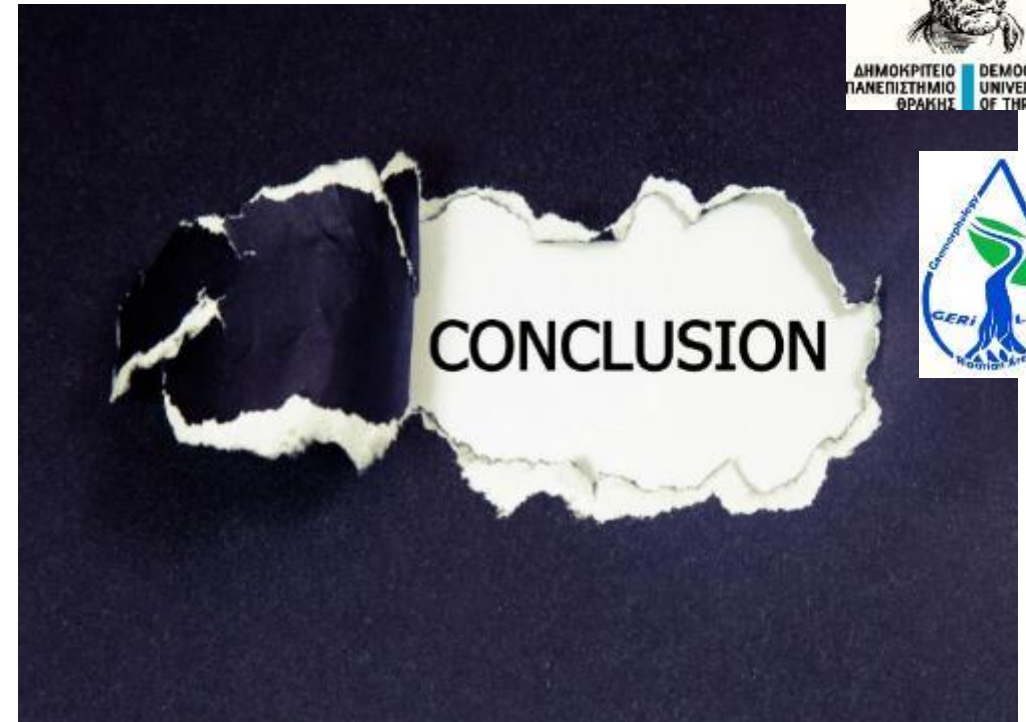
Keynote Presentation (Virtual)

Title : FEED4FOOD: Living Labs (LLs) aiming for urban food security



# Conclusions...

- ✓ Urban gardens **sustainable & profitable**
- ✓ Potential mitigate **climate change**
- ✓ Training & knowledge **transfer**
- ✓ Target **vulnerable groups**
- ✓ Utilize local **endemic plant species**
- ✓ **KPIs** assess success
- ✓ **Dashboard** important tool for target groups
- ✓ **Real life examples**, other cities to adopt





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[linkedin.com/company/feed4food/](https://www.linkedin.com/company/feed4food/)



Driving Urban Transitions



Co-funded by the European Union