



FUTURAL

Welcome

Ainhoa Salterain, *Mayor of Amorebieta-Etxano*

Erramun Osa, *President of Urkiola Rural Development Association*



11:00



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EU-wide Rural Innovation Forum



URKIOLA

LANDA GARAPENA

ONURĀ PUBLIKOKO ALKARTEĀ

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Good morning,
Thank you, and a warm welcome.

On behalf of the Urkiola Rural Development Association, and in my capacity as President, it is my distinct honour to extend a most cordial welcome to this European event, which we are pleased to host here in Amorebieta-Etxano within the framework of the FUTURAL project.

It is a source of great pride for us to receive, over the course of these two days, individuals dedicated to the sustainable development of rural areas, representing a diversity of regions and countries across Europe.

The FUTURAL project, co-financed by the European Union, was conceived with a clear and ambitious aim: to equip rural territories with digital and innovative tools that foster resilience, sustainability, and quality of life.

In a context where rural areas are frequently confronted with challenges such as depopulation, limited access to essential services, and digital exclusion, this project offers a meaningful opportunity to shape the future from a local standpoint, guided by a European vision.

Throughout these sessions, in addition to presenting the core objectives and planned initiatives of the FUTURAL programme, we will facilitate co-creation spaces designed to directly gather insights, proposals, and needs from those who live and work in rural environments.

I wish to express my sincere gratitude to the Municipality of Amorebieta-Etxano and to its Mayor, Ms. Ainhoa Salterain, for their unwavering support and generous hospitality. I also extend my deepest appreciation to all individuals, institutions, and European partners whose commitment and collaboration have made this project a reality.

I encourage all participants to take full advantage of these days to exchange experiences, strengthen inter-territorial connections, and forge lasting partnerships.

It is only through concerted and collective effort that we will be able to transform our rural communities into innovative, vibrant, and forward-looking spaces.

Thank you once again, and welcome.



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PARTNERS



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AQUATIM



Partnership for Rural Europe





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Objectives of the EU Rural Innovation Forum and Purpose of the day



11:15

Ari Lomis, Agricultural University of Athens, FUTURAL Coordinator

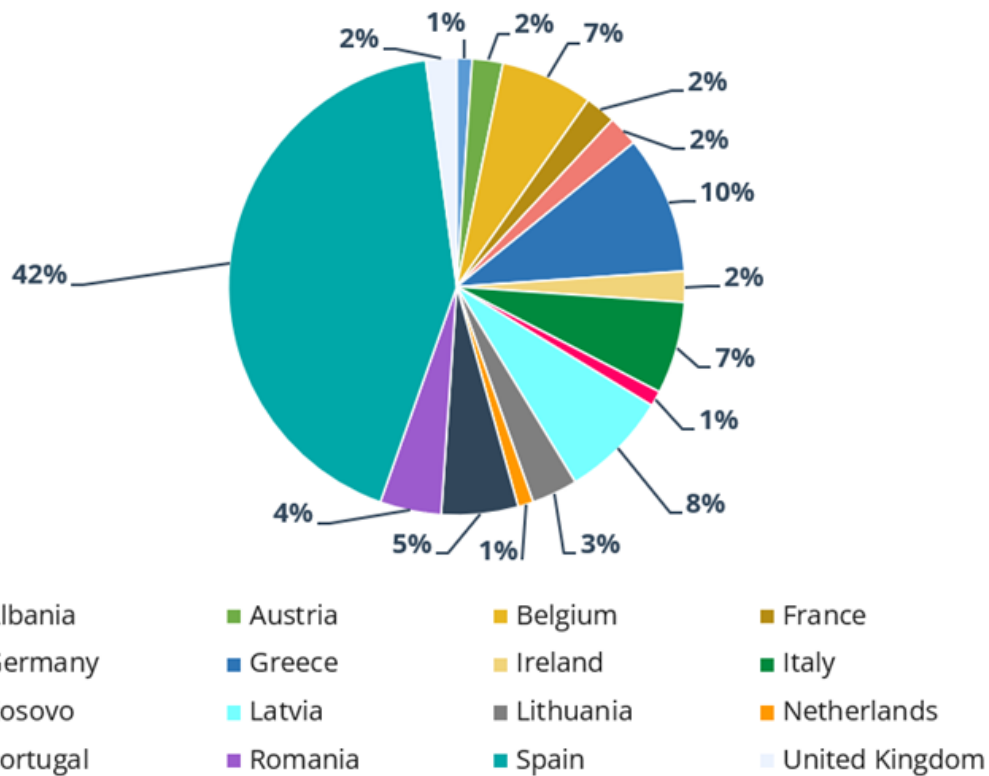
EU-RIF Objectives

- **Promote networking and synergies** between key actors in the rural ecosystem.
- **Create a collaborative space** for community-led innovators, researchers, policymakers, and practitioners.
- **Strengthen rural innovation ecosystems** by facilitating dialogue, learning, and co-creation.
- **Support the adoption and scaling** of Smart Solutions in diverse rural contexts.
- **Connect local experiences to EU policy**, ensuring rural voices shape future strategies and funding frameworks.

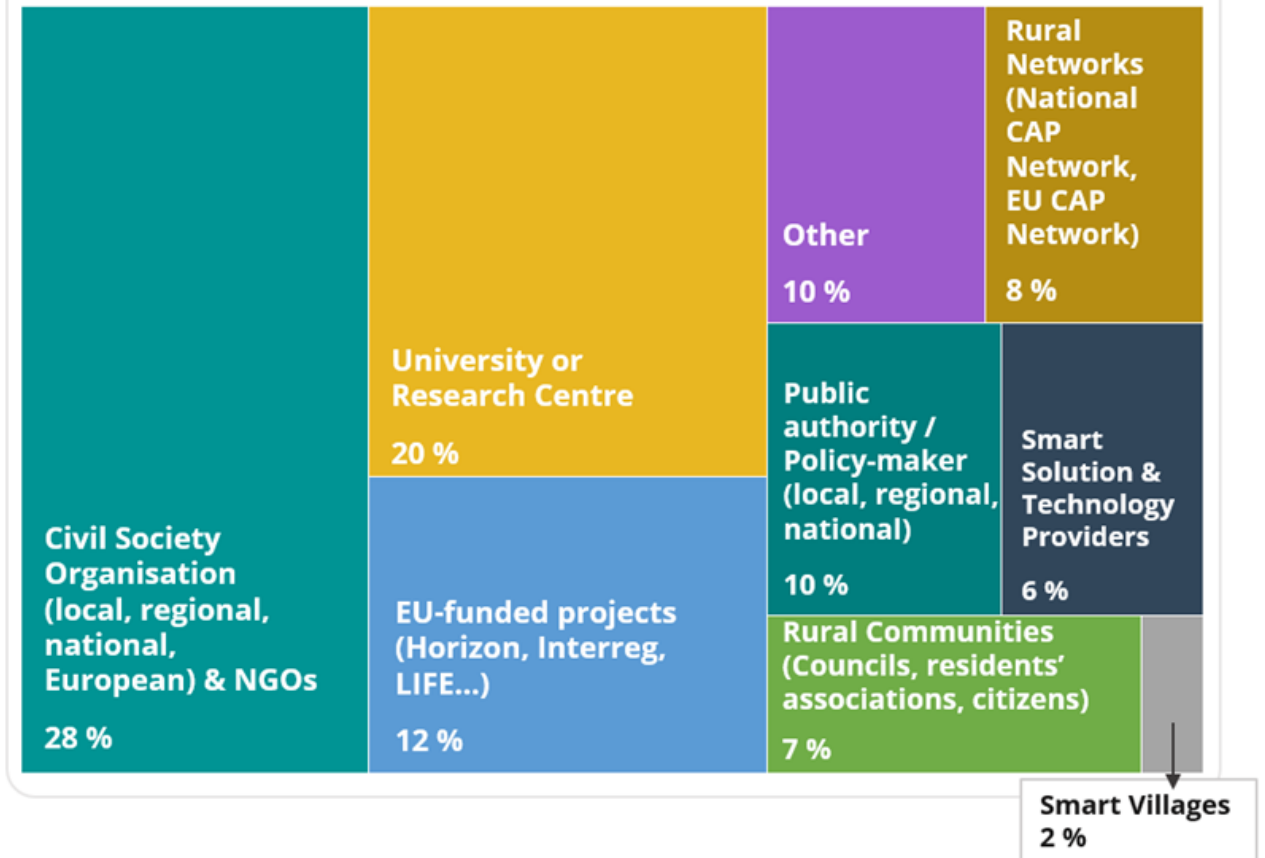


Who are here today? >100 confirmed participants

COUNTRY



STAKEHOLDER TYPE



Purpose of the day

- Explore local innovation through learning journeys from six FUTURAL pilot regions
- Showcase Smart Solutions developed in FUTURAL.
- Demonstrate the Metasearch Platform for accessing and connecting rural innovations
- Build digital competencies for smart rural communities
- Discuss the role of policy in enabling and scaling rural innovation
- Foster collaboration and dialogue among rural actors, experts, and policymakers

Agenda (before lunch)

Time	Session	Presenter
11.00 AM	Welcome	<i>Ainhoa Salterain, Mayor of Amorebieta Etxano</i> <i>Erramun Osa, President of Urkiola Rural Development Association</i>
11.15 AM	Objectives of the EU Rural Innovation Forum and Purpose of the day	<i>Ari Lomis, Agricultural University of Athens, FUTURAL Coordinator</i>
11.30 AM	Showcasing Learning Journeys: Insights from Five Rural Areas (<i>Capacity Building Workshop session</i>)	<p><i>Chaired by Carlo Giua and Brigida Marovelli, University of Pisa</i></p> <p><i>Presentations from:</i></p> <ul style="list-style-type: none"> • <i>Irene Zuazo, Urkiola Rural Development Association, Basque Country, Spain</i> • <i>Aksana Zachariva, Jonava Municipality, Lithuania</i> • <i>Antonia Fatsea, Kytherian Foundation for Culture and Development, Greece</i> • <i>Josef Fanninger, Regionalverband Pongau, Austria</i> • <i>Jan Leicher, Provincie West- Vlaanderen, Belgium</i>
1.00 PM	Lunch Break	

Agenda (after lunch)

Time	Session	Presenter
2.15 PM	FUTURAL Smart Solutions: Empowering Rural Innovation	<i>Nikos Tantaroudas, Institute of Communications and Computer Systems</i>
	Making Smart Solutions accessible with FUTURAL Metasearch Platform	<i>Matei Popovici, Natural University of Science & Technology Politehnica of Bucharest</i>
3.00 PM	Building Digital Competencies for Smart Rural Communities: Tools and Insights (Capacity Building Workshop)	<i>Chaired by Carlo Giua and Brigida Marovelli (University of Pisa), Leotrim Gërmizaj and Miodrag Matavulj (PREPARE- Partnership for Rural Europe), Louise Lennon and Vanessa Healhead (ERCA- European Rural Community Alliance)</i>
4.30 PM	Tea & Coffee Break	
5.00 PM	Rural Innovation in Policies: Are Policies Less Smart Than Smart Rural Areas?	<i>Raquel Pastor Carretero and Carla Lostrangio, EU Association for Innovation in Local Development</i>
5.45 PM	Stocktaking from the day	<i>Ari Lomis, Agricultural University of Athens, FUTURAL Coordinator</i>



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Empowering the **FUTure** through innovative Smart Solutions for **rURAL** areas



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21 partners

10 EU countries

→ Prototype, test, pilot, and demonstrate community-led, social, technological and business innovations

→ Deliver a set of digital Smart Solutions to address key societal, environmental and financial challenges



What are we going to do?

- Prototype, test, pilot, and demonstrate community-led innovations in 6 **Multi-Actor Pilots** across the EU
- 8 digital **Smart Solutions** (SS) under 5 SS domains to address societal and environmental challenges in rural communities
- SS will be accessible through an integrated **Metasearch Platform**
- Establish **EU-RIF** an event to promote networking and synergies between key actors in the rural ecosystem
- An **Open Call** will fund additional projects to develop digital SS
- **Business Models, Governance Frameworks and Policy Recommendations**





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Showcasing Learning Journeys: Insights from Five Rural Areas



11:30

Capacity Building Workshop session



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Capacity Building and Digital Portfolio: MAPs learning journey

Carlo Giua and Brigida Marovelli, *University of Pisa*

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CAPACITY BUILDING

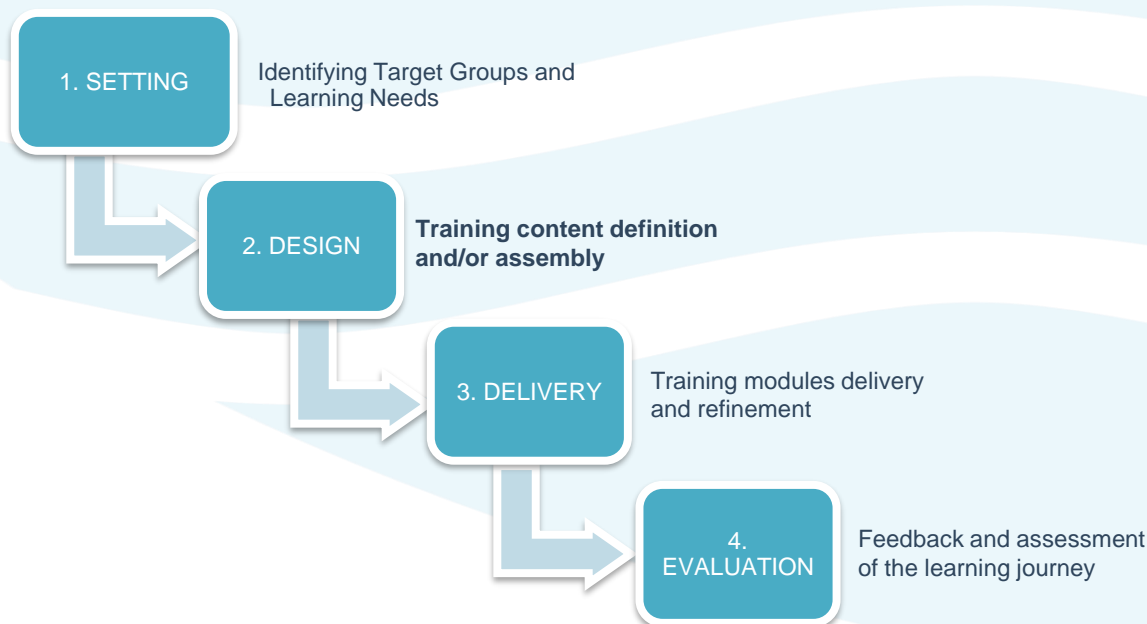
A definition: Capacity building refers to structured initiatives designed to **strengthen the knowledge, skills, competencies, systems, and resources of individuals, organizations, or communities**, enabling them to achieve specific goals effectively and sustainably. It often includes **training, networking, coaching, and institutional support**.

Why is it especially necessary in rural areas?

- ★ Because of the persistent **digital skills divide between urban and rural areas**
- ★ The EU's Long-Term Vision for Rural Areas (LTVRA) recognizes the importance of addressing the digital divide in rural areas to ensure they can **fully benefit from the digital transformation**.
- ★ Capacity Building seen by European institutions as a **critical determinant for the success of EU-funded interventions and policy initiatives** (OECD, 2020)

CAPACITY BUILDING IN FUTURAL

- ★ Aims at developing the capacity of rural communities to realise the potential of co-created community-led innovations.
- ★ While innovations are being co-created with rural stakeholders participating in the Multi-Actor Pilots (MAP), the Capacity Building Programme allows rural actors to acquire knowledge, skills, and attitudes to embrace and implement a sustainable rural digitalization.



Four phases of the FUTURAL CB Program

DIGITAL PORTFOLIO

A definition: An electronic portfolio is defined as a collection of authentic and diverse evidence, drawn from a larger archive, **representing what a person or organisation has learned over time.**

We have adapted this concept to align with the project's goals and audience by drawing inspiration from the *Journeyfolio*, a term and approach developed by Rachel Fèlix, primarily utilised for personal learning and development.

In FUTURAL, the Digital Portfolio is a flexible and dynamic tool used to:

- ★ Monitor progress
- ★ Showcase achievements
- ★ Narrate the learning journey through multimedia storytelling.

During this session each MAP will be presenting an excerpt of their Digital Portfolio corresponding to the outcomes of the first part of the Capacity Building, with particular focus on the target groups involved and any specific learning needs identified during the workshops.



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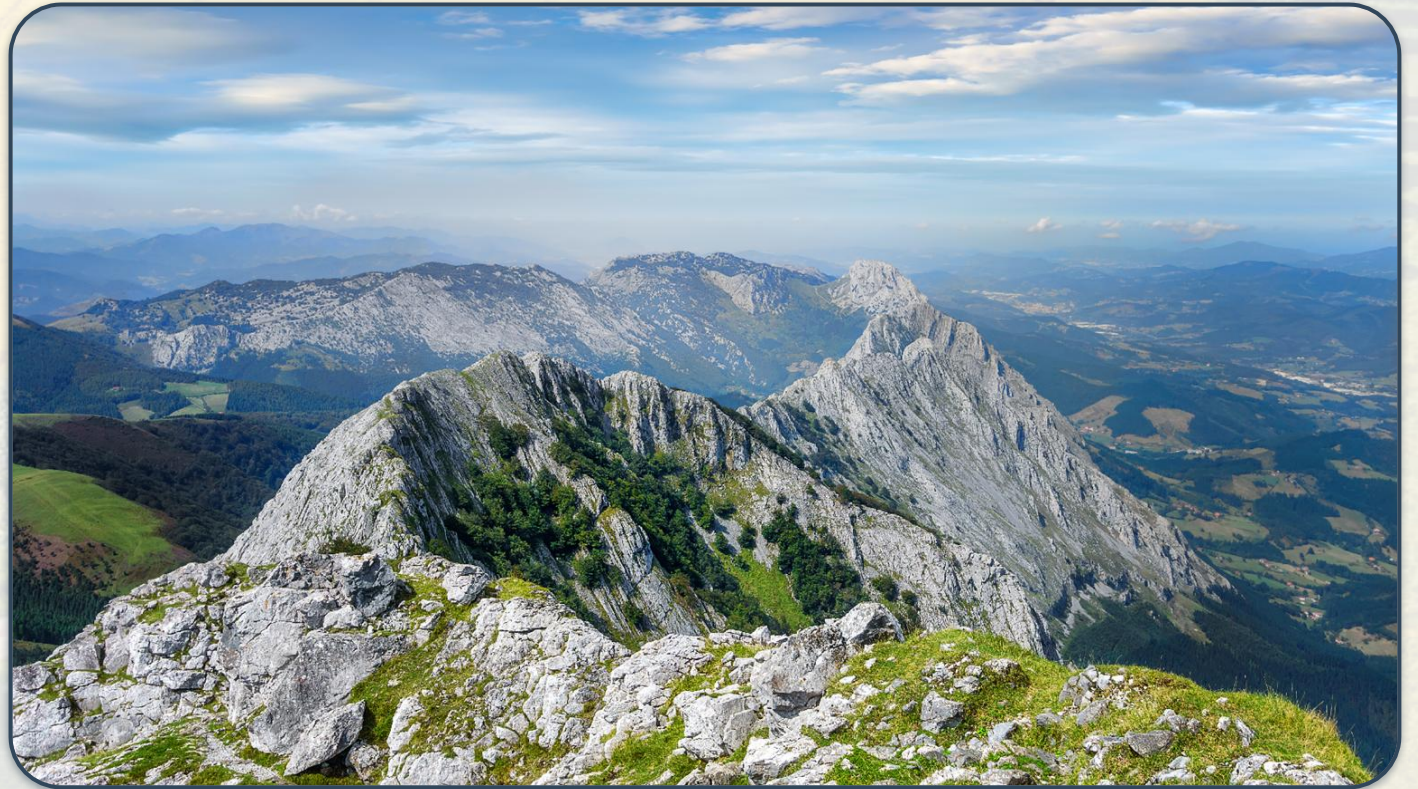


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DURANGALDEA (Basque Country, Spain)

Learning Journey

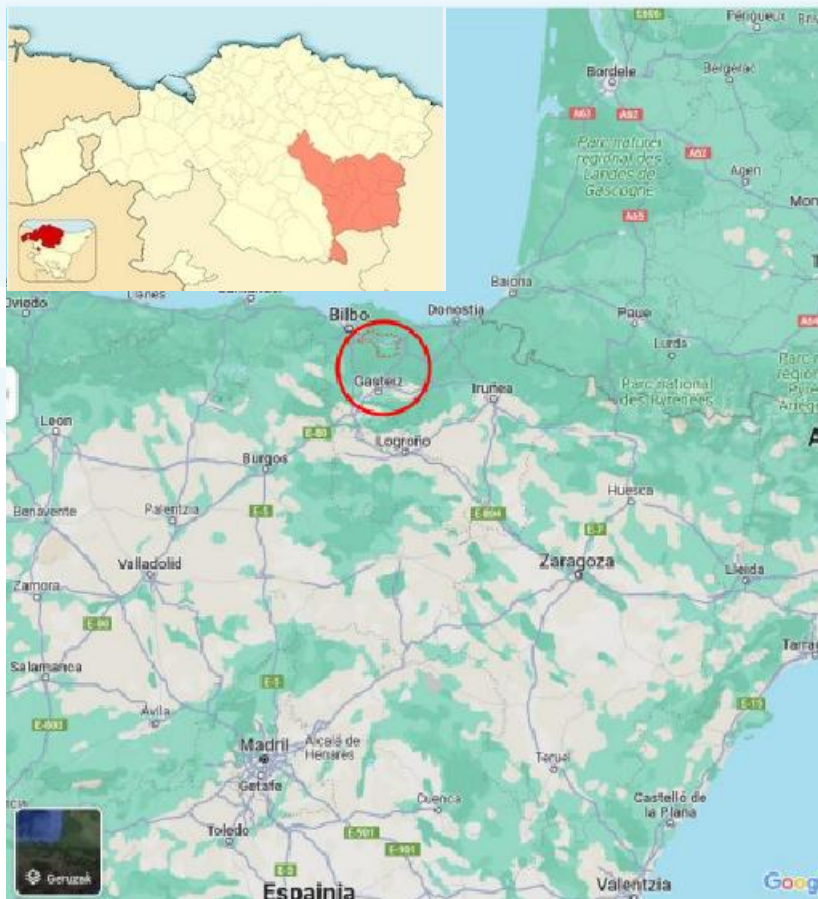
14th May 2025, Durangaldea, Spain



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CONTEXT

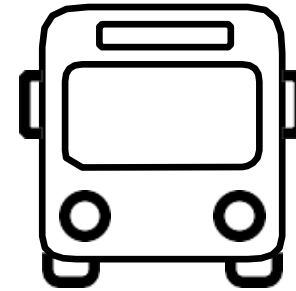


- Durangaldea region, located at the southeast of Bizkaia is composed by 13 different municipalities.
- The region's economy has been based on the metallurgical and automotive industries. Only 1% of the population is dedicated to the first sector.
- Durangaldea is the sum of two different environments: on the one hand, the industrial area; and on the other hand, the Urkiola natural park.

KEY CHALLENGES



Transport systems
vulnerable to
natural disasters



Availability of
services and
mobility provision

SMART SOLUTIONS UNDER DEVELOPMENT

Solution to transport systems vulnerable to natural disasters



A crowdsensing platform will assess road networks and bridges based on rural traffic trends to help estimate the risk likelihood and severity of road network problems to anticipate preventive measures.



Provider: Tecnalía



Solution to availability of services and mobility provision



An online platform will monitor vital infrastructure, travel time to infrastructure or services (e.g., hospitals), hard-to-reach areas (e.g., firefighter access), and general accessibility.



Provider: DLR



TARGET GROUPS



- Working as a group brings out new needs and new ideas to include in the platforms.
- The solution providers need to give us more information on progress.
- Solution providers need to be able to say on the spot what is possible and what is not in order to optimize work time.

LEARNING NEEDS



- Understand better the deficiencies of Durangaldea.
- Identify the needs that each stakeholder and destination has.
- Think and define all together the objectives that have to be achieved within the Futural project.

KEY INSIGHTS AND REFLECTION

Areas for improvement



Obstacles



Next steps



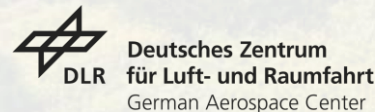


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JONAVA (Lithuania)

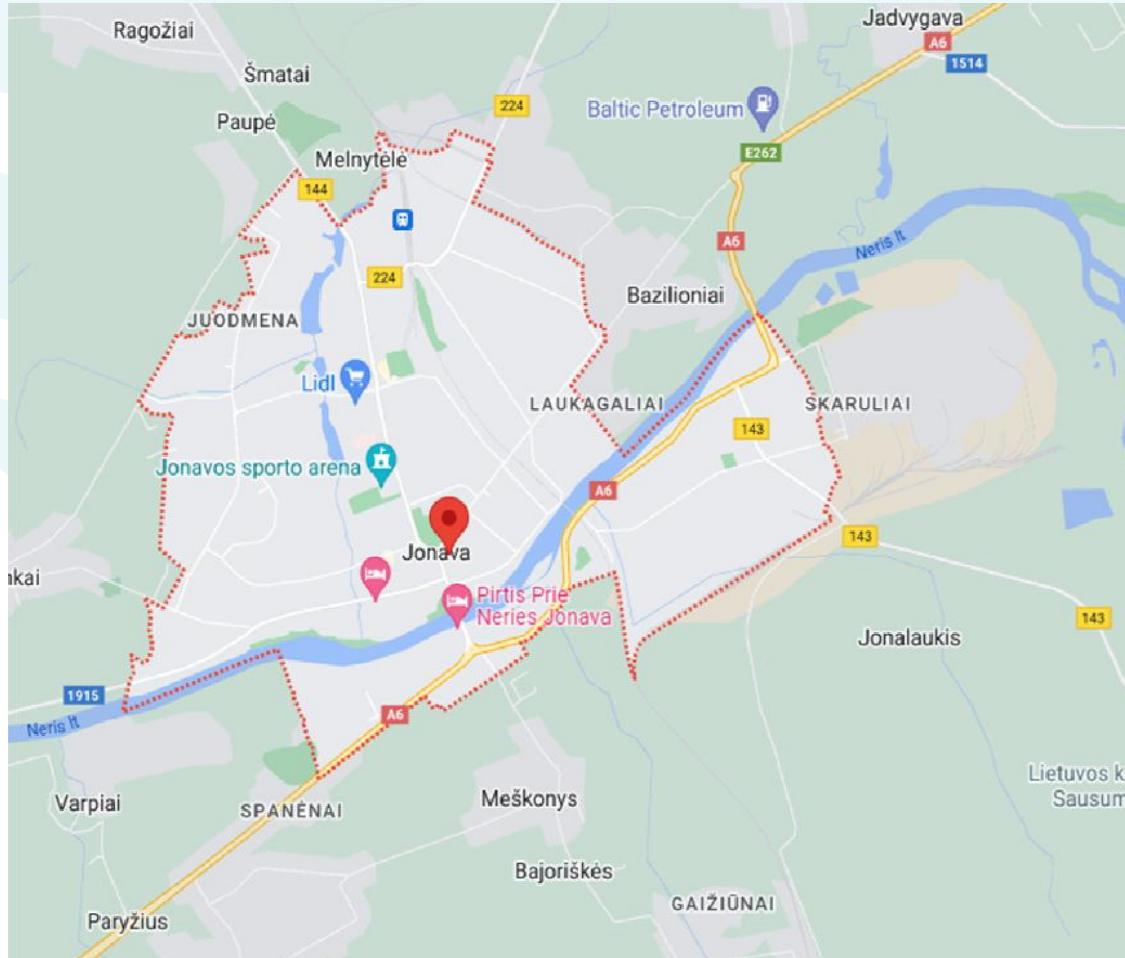
Learning Journey

14th May 2025, Durangaldea, Spain



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CONTEXT



The City of Jonava and its district with about 42.000 inhabitants are being developed as a harmonious center of smart industry, logistics, innovation and national defence, nurturing multicultural traditions, distinguished by a developed, environmentally and family friendly infrastructure.

KEY CHALLENGES



Challenge 1

*Loss of crops due to
local bison population*



Challenge 2

*Ageing population
and lack of
opportunities*

SMART SOLUTIONS UNDER DEVELOPMENT

Smart Solution 1

The Biodiversity score

The bison monitoring system will be created. Artificial intelligence will take place. The bison monitoring system will analyse and monitor bison populations, provide information on their numbers and location so that precise preventive measures can be taken to keep them out of crop fields and improve ecosystem management. Local farmers could use the system and so take the preventive measures to crop preservation.

The installed app will show information about the location of bison, their migration routes. It is designed to minimize damage to farmers. With this information on the location of the bison, the beneficiaries will be able to take some steps to save their fields. If we are informed about the movement of bison, farmers will be warned, preventive measures will be taken: repellents, sound cannons, drones.

Smart Solution 2

Online e-Government platform

An online e-Government platform "Man Rūpi" (I care) will be created for rural citizen engagement. Open-source and collaborative digital framework, a customisation of the FixMyStreet web service. Offers an online channel where citizens can report a problem or issue by geolocating it on a map. Problem reports are sent through to specific departments of Jonava City Council to be fixed and resolved. Encourages engagement and participation of citizens in the management of local infrastructure.

The expected outcomes of implementing "Man rūpi" in Jonava include an increase in active citizen involvement. The web service will be dedicated to helping citizens to easily report an issue, defect or problem in their local area by geolocating it on map.

The SS will help to engage the citizens in the improvement and maintenance of their city through actively reporting issues that they find via the web service.

TARGET GROUPS



Audience during the CB W SS 1 session

Audience during the CB W SS2 session



The target groups identified in Jonava for SS1:

1. Local authorities. Government of Jonava District Municipality administration; Director of administration of Jonava municipality, deputy mayor of Jonava municipality; representatives of municipality administration various sections and departments (investments and innovation department; Agricultural department; property and environmental section);
2. Local municipality: residents of Jonava city, farmers with farmer certificate;
3. Environmental organizations: NGO on social development;
4. Local organisations. Union of local farmers, local rural communities;

LEARNING NEEDS



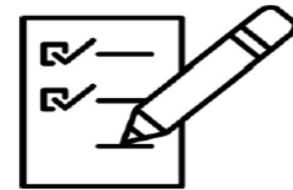
1

Deeper understanding
, perception of the
technologies



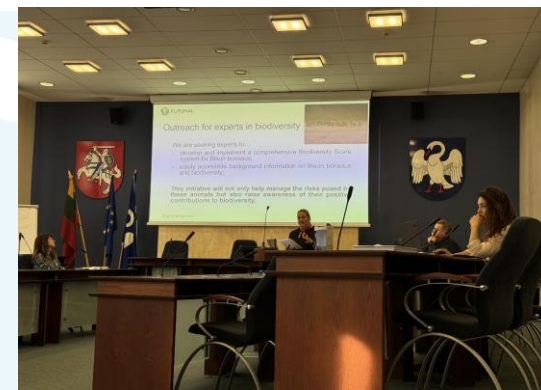
2

Need for practical
exercises



3

Testing according to
the relevant
categories



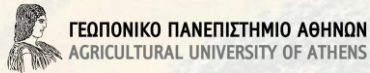
KEY INSIGHTS AND REFLECTION

- Participation. The participants showed their interest to get more knowlegdes about innovations and found sessions very engaging; felt good knowing that their opinion and involvement mattered. It was good for them to know that they were part of it.
- Expect of needs. Great interest and attention to innovation, which is assessed as very important process and when assessing feedback an integral part of development.
- Session format. Sessions format acceptable: seminars, creative workshops, trainings, practical trainings.
- Age involved. A wide range of age diversity of participants. Both young and seniors are interested and involved and feel improved their skills and some of participants become familiar with the topic, would continue the analysis in that direction.

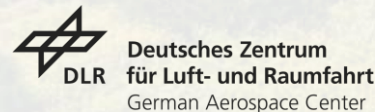


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Kythira (Greece)

Learning Journey

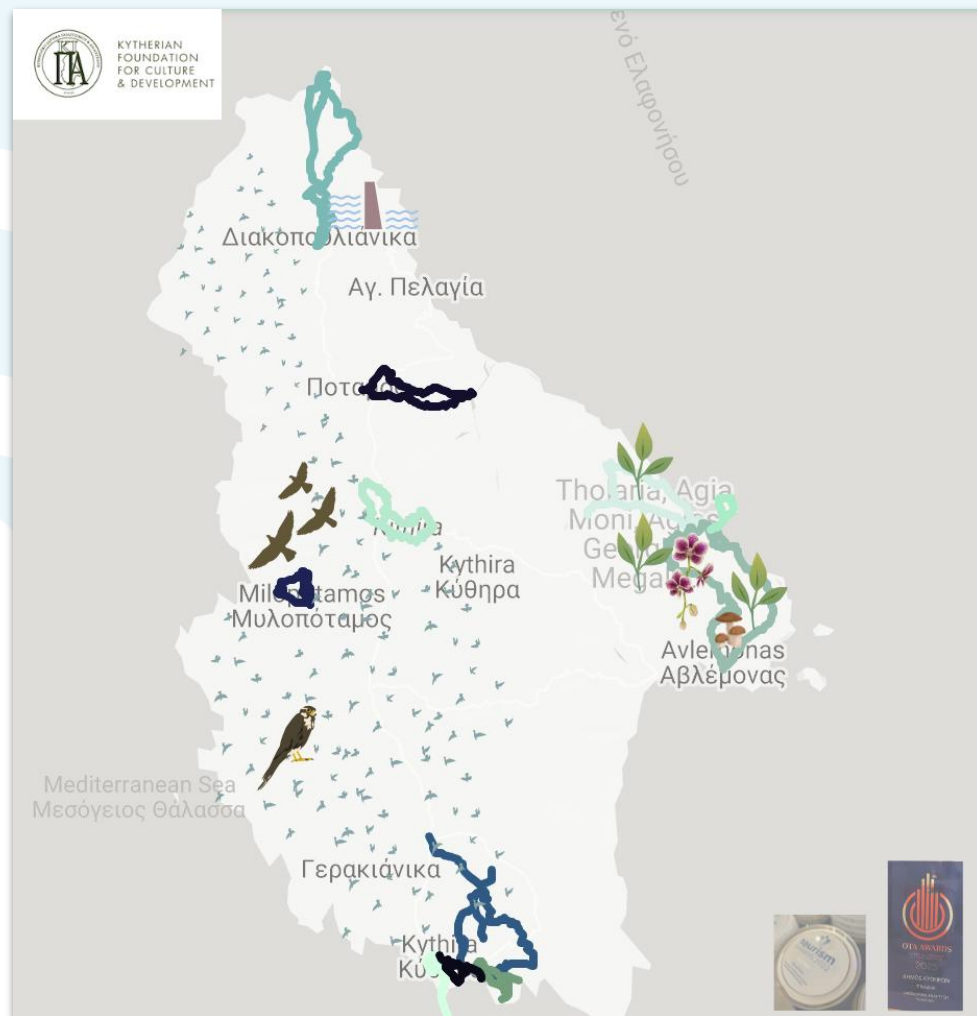
14th May 2025, Durangaldea, Spain



MAP Greece Kythira

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CONTEXT



- Location: Southwestern Greece, at the crossroads of the Ionian, Aegean, and Cretan Seas. Diverse terrain with mountains, valleys, and beaches.
- Administration: Municipality including Antikythera, part of the Attica region.
- Population: Approximately 4,000, spread across small villages.
- Economy: Primarily tourism and agriculture (olive oil, honey, aromatic plants).
- Challenges: Youth out migration, sustainability issues (natural resources, infrastructure) and Citizen Engagement.
- Opportunities: Sustainable/alternative tourism, agricultural innovation.

Key Challenges



Challenge 1

Sustainable Tourism

Balancing tourism growth with environmental conservation is essential to avoid overdevelopment and degradation of natural landscapes



Challenge 2

Youth Leaving Island

Nurturing Kythera's earth for sustainable agriculture, preserving biodiversity, and ensuring a thriving ecosystem.



Challenge 3

Biodiversity Preservation

Preserving the island's unique flora and fauna is crucial, as invasive development and habitat destruction threaten its biodiversity

SMART SOLUTIONS UNDER DEVELOPMENT

SS1 under development in MAPs

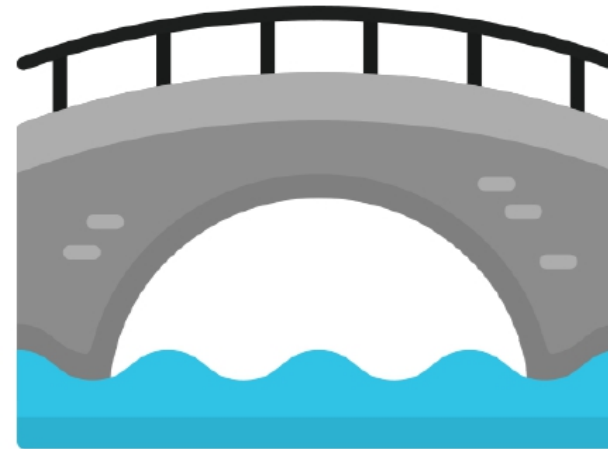
The Kythera Citizen Engagement Platform, FixMyKytheraTrails, helps maintain and preserve the island's ancient paths. Residents and tourists can report issues like fallen trees or unclear signs, uploading photos for detailed information. This tool empowers users by ensuring quick problem resolution and preserving the island's beauty. Users confirm their location, select an issue category, provide details, and submit reports with photos. Collaborating with local authorities, the platform enhances communication, leading to faster responses and improved trail maintenance. This fosters community ownership and involvement in preserving Kythera's heritage and nature. Additionally, users learn about the island's flora, fauna, and cultural heritage. The platform promotes sustainable tourism, boosts the local economy, and supports local businesses. Practitioners can map, track, and manage maintenance tasks, analyzing data for future improvements. This collaborative approach benefits local governments, conservation groups, and tourism boards managing natural and historical trails.



SMART SOLUTIONS UNDER DEVELOPMENT

SS2 under development in MAPs

Kythera, known for its rich cultural heritage and diverse landscape, faces significant infrastructure challenges, particularly with bridges and old buildings. These structures experience heavy use during the tourist season and deteriorate due to environmental factors like sea air. To address this, an online crowdsensing platform for infrastructure health monitoring has been developed. This platform uses low-cost IoT accelerometers on vehicles and additional sensors on the infrastructure to assess bridge conditions. Starting with a pilot on the Diakofti bridge, it measures stress and stability in real-time. Key activities include data collection, reporting, and targeted maintenance. Expected outcomes are improved maintenance decisions, enhanced public safety, and long-term infrastructure resilience. The platform aims to identify structural weaknesses, prioritize cost-effective repairs, and extend the lifespan of older structures. It benefits local authorities, engineers, and public safety teams by enabling data-driven decisions and efficient resource allocation.



SMART SOLUTIONS UNDER DEVELOPMENT

SS3 under development in MAPs

Kythera, with its rich cultural heritage and diverse ecosystem, faces challenges like a declining young population and the need to preserve its natural landscape. The Kythera Lifelong Education and Training Platform addresses these issues by offering online courses tailored to rural communities. It focuses on local activities such as beekeeping, olive oil production, and herb farming, equipping residents, especially the youth, with modern skills. Users can access instructional videos, quizzes, and progress-tracking features, fostering interactive learning. The platform, developed with local experts, promotes environmental stewardship and sustainable agriculture, building a resilient local economy. Key activities include accessing courses, interactive learning, and applying skills locally. Expected outcomes are job creation, youth retention, and economic growth. The platform helps young residents acquire skills, create job opportunities, and reduce migration, while supporting small businesses and boosting the rural economy.



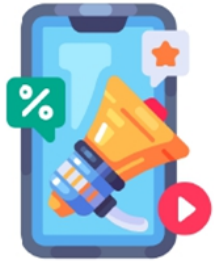
TARGET GROUPS



The target groups identified for the Smart Solutions on Kythera include:

- Local Residents: Particularly young people and those involved in traditional activities, like beekeeping, olive farming, and herb farming.
- Local Businesses: Owners and employees of tourism-related businesses, agricultural enterprises, and local shops.
- Educational Institutions: Schools involved in local research and educational programs.
- Local Authorities: Municipal officials and public safety teams responsible for infrastructure and community welfare.
- Environmental Organizations: NGOs and local groups focused on environmental conservation and sustainable practices.
- Tourists: Visitors who engage with the island's natural and cultural heritage.

LEARNING NEEDS



1

High demand for training in digital tools and technologies



2

Strong interest in sustainable farming techniques, including water conservation



3

Focus on engaging young children in primary schools with local heritage activities.



KEY INSIGHTS AND REFLECTION

Stakeholder Engagement:

- Involve the right stakeholders at the right time.
- Focus on output, less on the process.

Communication:

- Language (English) & terminology are a barrier.
- Visualization is very helpful.
- Clear communication is essential.

Challenges:

- Timing is a challenge.
- Gathering participants is difficult.
- Explaining technology is challenging.

What Worked Well:

- Interactive workshops were appreciated.
- Content was relevant (digital skills, sustainability).
- Youth involvement was supported.
- Collaboration with experts was valued.
- In-person training was preferred.
- Feedback collection is crucial.

Reflection for Future Activities:

- Refine training programs.
- Continue community engagement.
- Adapt to participant schedules.
- Ensure practical & culturally appropriate content.

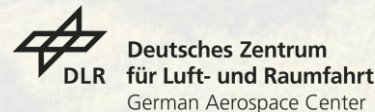


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PONGAU (Austria)

Learning Journey

14th May 2025, Durangaldea, Spain



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Map Context

Pongau:

Economically strong region thanks to a good mix of sectors with a focus on tourism. Sustainability in the municipalities is becoming increasingly important.

Circular Bioeconomy, Biodiversity and Ecosystem Management: An online circular bioeconomy platform will provide knowledge on resource availability and sharing, product diversification, and employment creation outside of tourism, reducing dependence on tourism. There will be a first point of contact and support for bioeconomy initiatives.

Vacancy management online platform: The crowd-sensing platform tool will measure the quality of existing infrastructures, especially after a long period of disuse (eg. old buildings), and decide what kind of maintenance or renovation is needed or if something needs to be replaced.



Challenges

Pongau in Salzburg/Austria:

Current Challenges:

1. Poor diversification of bio-derived products and production of waste: Agricultural production and wood processing lack innovation. Farms lack crop diversification. Classical food production, centralised and inefficient processing routes. Hotels don't recycle food wastes. Burned biomass is thrown in landfills.
2. High dependence on tourism: Businesses and villages still rely on winter (skiing) and summer tourists (hiking, cycling). During the rest of the year, many infrastructures are underutilised and employment is low.
3. Inefficient use of space: 16% of built-up area is used year-round. Remaining infrastructure (hotels, lifts, spa) used only during high tourist season. Due to underuse, this infrastructure requires regular maintenance.
4. Old buildings: In several villages, old imperial buildings are deteriorating and cannot be used. Renovations are required to make them attractive to investors.



Key Challenges



Challenge 1

Poor diversification of bio-derived products and production of waste



Challenge 2

High dependence on tourism



Challenge 3

Inefficient use of space



Challenge 4

Old buildings

SMART SOLUTIONS 1: online circular bioeconomic platform

The platform supports sustainable regional development by showcasing the benefits of alternative valorisation of local resources.

Key Features:

- Analysis of specific residue streams, such as sewage sludge and food waste from tourism
- Evaluation of valorisation options through multi-criteria assessment
- Visualization of feasible pathways using Sankey diagrams

Objective:

To guide stakeholders in making informed decisions on resource use, demonstrating how circular solutions can benefit the Pongau region economically, environmentally, and socially.

Outcome:

Promotion of circular bioeconomy practices, reduction of waste, and improved resource efficiency



Target Groups & Stakeholders Smart solution 1

- Local residents and households: direct impact on living environment, improved services
- Municipal authorities and regional governments: policymaking, compliance, infrastructure planning
- Waste collection and recycling companies: business opportunities, efficiency gains
- Local businesses and hospitality industry: reduced waste costs, compliance, reputation
- Environmental NGOs and civic groups: advocacy, education, sustainability goals
- Educational institutions and researchers: data access, partnership potential
- Policymakers and political representatives: regulatory impact, voter interests
- Tourists and tourism agencies: environmental quality, regional image
- Outcomes benefit: cleaner community, cost savings, environmental protection

Target Groups



SMART SOLUTIONS 2:

Vacancy management online platform



- Pongau faces significant vacancy challenges with 12% commercial and 8% residential empty properties.
- Three key issues drive this problem: demographic shifts, tourism seasonality, and complex ownership structures.
- Municipalities have implemented innovative solutions. Inventory mapping and owner outreach show promise.
- EU funding and digital platforms wants to offer better future possibilities.

Target groups

Online Vacancy



Target Group & Stakeholders Smart solution 2

- Local government authorities (e.g. municipal councils, regional planning offices)
- Property owners and private landlords (main holders of vacant properties)
- Real estate agents and property developers (market facilitators)
- Local businesses, chambers of commerce, and tourism operators (economic stakeholders)
- Civil society organisations, citizen initiatives, and residents' associations (community perspective)
- Regional economic development agencies and funding bodies (project support)
- Urban/rural planners and academic researchers (data provision and analysis)

Learning needs



1

Finding interfaces
between the
stakeholders



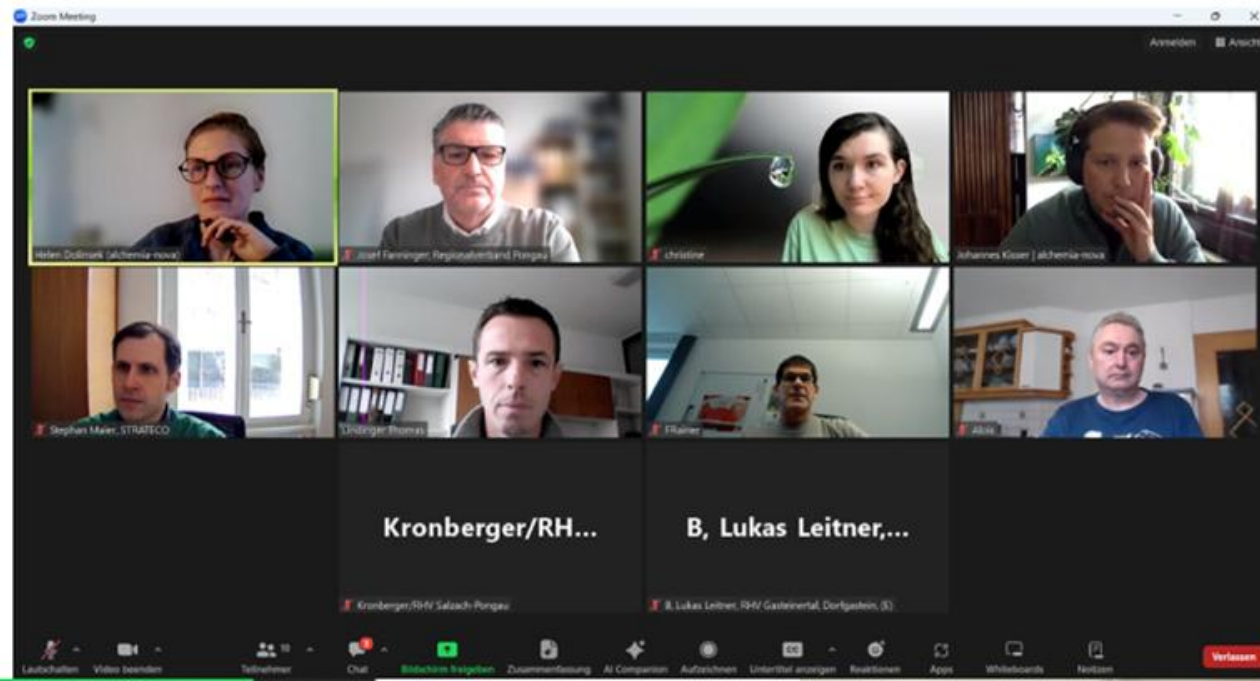
2

Demonstrate and
offer economic and
ecological advantages



3

Platform must be self-
explanatory and easy
to understand



MAP REFLECTIONS

Lessons learnt from the
organisation of the
workshop



1. **Planning Flexibility**

Being adaptable to participants' schedules and preferences greatly enhances engagement and overall satisfaction.

2. **Clear and Consistent Messaging**

Maintaining clear and consistent communication with participants before, during, and after the workshops is vital for smooth organisation and encouraging high attendance.

3. **Active Community Participation**

Engaging community members in both the planning and delivery of workshops enhances relevance, fosters a sense of local ownership, and ensures the training reflects the specific needs and context of the community

4. **Role of Feedback in Improvement**

Consistently gathering and reviewing participant input supports the ongoing enhancement of training quality and relevance, enabling organisers to adapt to changing needs effectively.

Areas for improvement



1

Better internal and
external
communication



2

Identify additional stakeholders who will
also work with the smart solutions in your
specific field of work

Obstacles



1

Finding active partners

motivate stakeholders
to actively participate
in the project



2

Time resources

The time horizon of a
Horizon project is
quite long



3

Interactive workshops

Many potential participants are
tired of workshops, and only the
usual suspects often turn up

Next steps

**Faster and better processing
of formal tasks in the project**

**Closer cooperation with our
provider alchemia nova**

**Become more
efficient**



**Proactive processing of both
smart solutions at all levels**

**Find new stakeholders via
existing stakeholders**

Contact Information

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Project Manager Regionalverband Pongau

fanninger@pongau.org



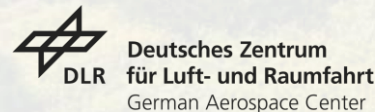


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Co-funded by
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FUTURAL

Westhoek (Flanders, Belgium)

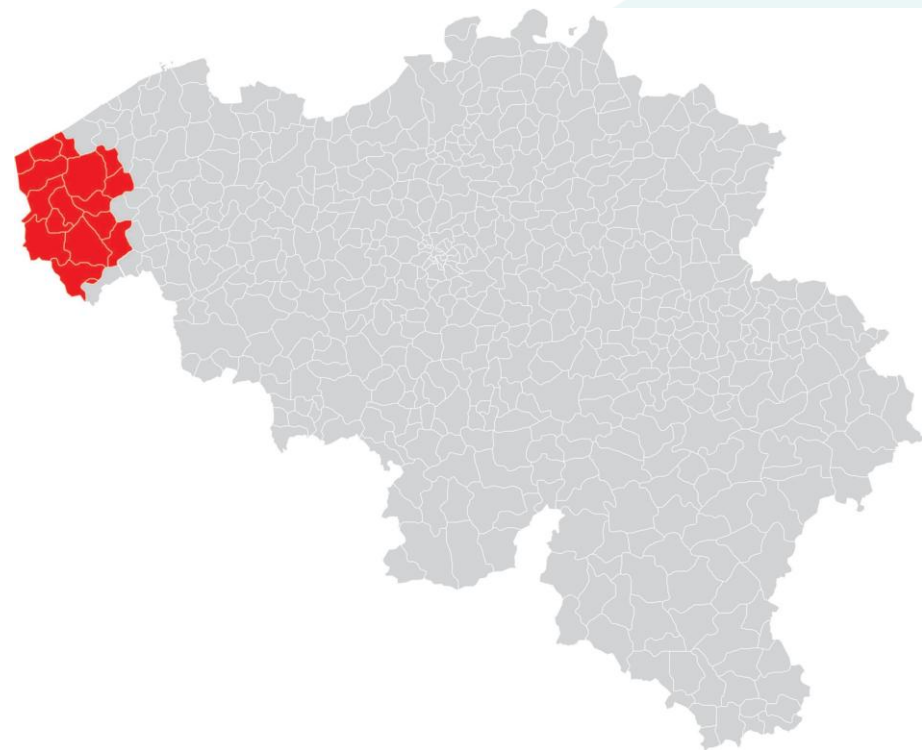
Learning Journey

14th May 2025, Durangaldea, Spain



futural-project.eu

CONTEXT



- 17 municipalities
- 202.855 inhabitants
- more than 100 (small) villages
- bordering France and the North Sea
- coast, polder, IJzer and- handzamevalley, hills
- most rural region of Flanders
- agriculture important economic sector
- mainly SME business
- lack of staff in various sectors
- aging population, braindrain
- impact climate change
- 4 drinking water production centres
- a lot of small villages without amenities
- population decline in some villages



KEY CHALLENGES



**accessibility and
availability of amenities
in the context of an aging
population and a weak
public transportation
system**



**flooding and longer
periods of drought in the
light of even faster
changing precipitation
patterns**



SMART SOLUTIONS UNDER DEVELOPMENT

SS1: A hydrological model for the Handzamevalley

An online platform designed to deliver results of a coupled groundwater and surface water model for the Handzamevalley subbasin and support the implementation of flood and drought adaptation strategies under climate change. The climate change adaptation strategies rely on the implementation of proposed Nature Based Solutions.

IHE  **Institute for Water Education**
DELFT under the auspices of UNESCO

SS2: Accessibility platform Westhoek

An online platform in which accessibility to functional infrastructure can be analyzed and visualized. To this end, a visualization application is generated in which the distance and journey time to a selectable facility using various transport options is determined for an entire region. The analysis answers the question of how long the population of an area needs at least to reach a selectable infrastructure with a selected type of transport.

 **Deutsches Zentrum für Luft- und Raumfahrt**
DLR German Aerospace Center

TARGET GROUPS



Use smart solutions as a policy instrument, target groups are mainly professionals

TARGETGROUP CLIMATE ADAPTION

- Waterboards
- Province of West-Flanders and its departments
- Flemish government and its departments
- 2 municipalities Diksmuide and Kortemark
- Farmer - and nature organisations
- Research institutes

TARGETGROUP QUALITY OF LIFE

- Provincie of West-Flanders and its departments
- 17 municipalities of the Westhoek
- DVV Westhoek
- Public transport region Westhoek
- Welfare and health care institutions active in the Westhoek
- Civil society organisations

TARGET GROUPS



- it takes an effort to engage stakeholders
- a balanced composition of the workshops is necessary
- important to have some specialist in the workshops
- new stakeholders or new representatives of stakeholders sometimes create new expectations
- the involvement of the service providers in the workshops is crucial
- The two CB workshops allowed us to take important steps forward in the development of the smart solutions.

LEARNING NEEDS



Learning needs



1

Objective of the tool
(possibilities and
limitations)



2

Used methodology
and assumptions to
calculate accessibility
or localise NBSS



3

How to create maps,
graphs, and tables by
using the
functionalities and
parameters on the
platform



4

How to correctly
interpret maps,
graphs, tables to draw
the right conclusions



5

How to use the
accessibility tool as a
planning instrument



6

How integrate the
accessibility tool in a
local digital
environment

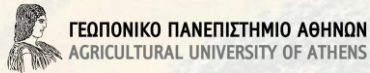
KEY INSIGHTS AND REFLECTION

- Involve the right stakeholders at the right time, not everyone all the time
- Stakeholders are very interested in the output, but less in the process
- The English language combined with the technical terminology is a barrier
- Visualising things helps a lot
- Better alignment of workshop content with stakeholder expectations
- Timing is a challenge, a complex puzzle
- Objective of a CC and CB workshop are in practice much more mixed up
- One approach for all MAPS and all smart solutions has its limitations

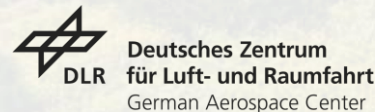


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URKIOLA
LANDA GARAPENA
DESARROLLO RURAL
ONURA PUBLIKOKO ALKARTEA
ASOCIACIÓN DE UTILIDAD PÚBLICA





FUTURAL

FUTURAL Smart Solutions: Empowering Rural Innovation



2:15

Nikos Tantaroudas, *Institute of Communications and Computer Systems*

Circular Bioeconomy, Biodiversity and Ecosystem Management

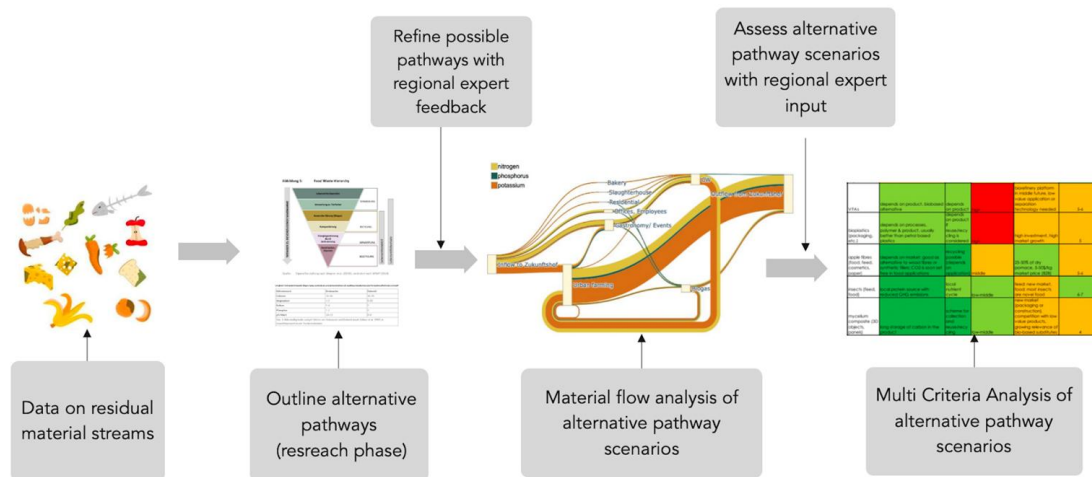
Circular Bioeconomy

- Development of a methodology for residual biomass mapping, analysis and visualization (stakeholder collaboration, material flow analysis, multi -criteria analysis)
- Development of *Good Practice Sheet* (Food Waste)
- Definition of circular solutions for sewage sludge utilization, initial analysis of material flow and sankey visualizations
- vacancy management tool was added to repurpose unused buildings for circular economy applications.
- pre-definition of underutilized vacant building types for circular bioeconomy applications



Circular Bioeconomy, Biodiversity and Ecosystem Management

Circular Bioeconomy key components



- Development of Circular Bioeconomy SS Methodology
- Stakeholder engagement for co-elaboration of regional CBE pathways
- Identification of key utilizable residue streams - sewage sludge
- Data collection for material flow analysis
- Best practice identification on food waste utilization
- Identification of vacancy management tools in place

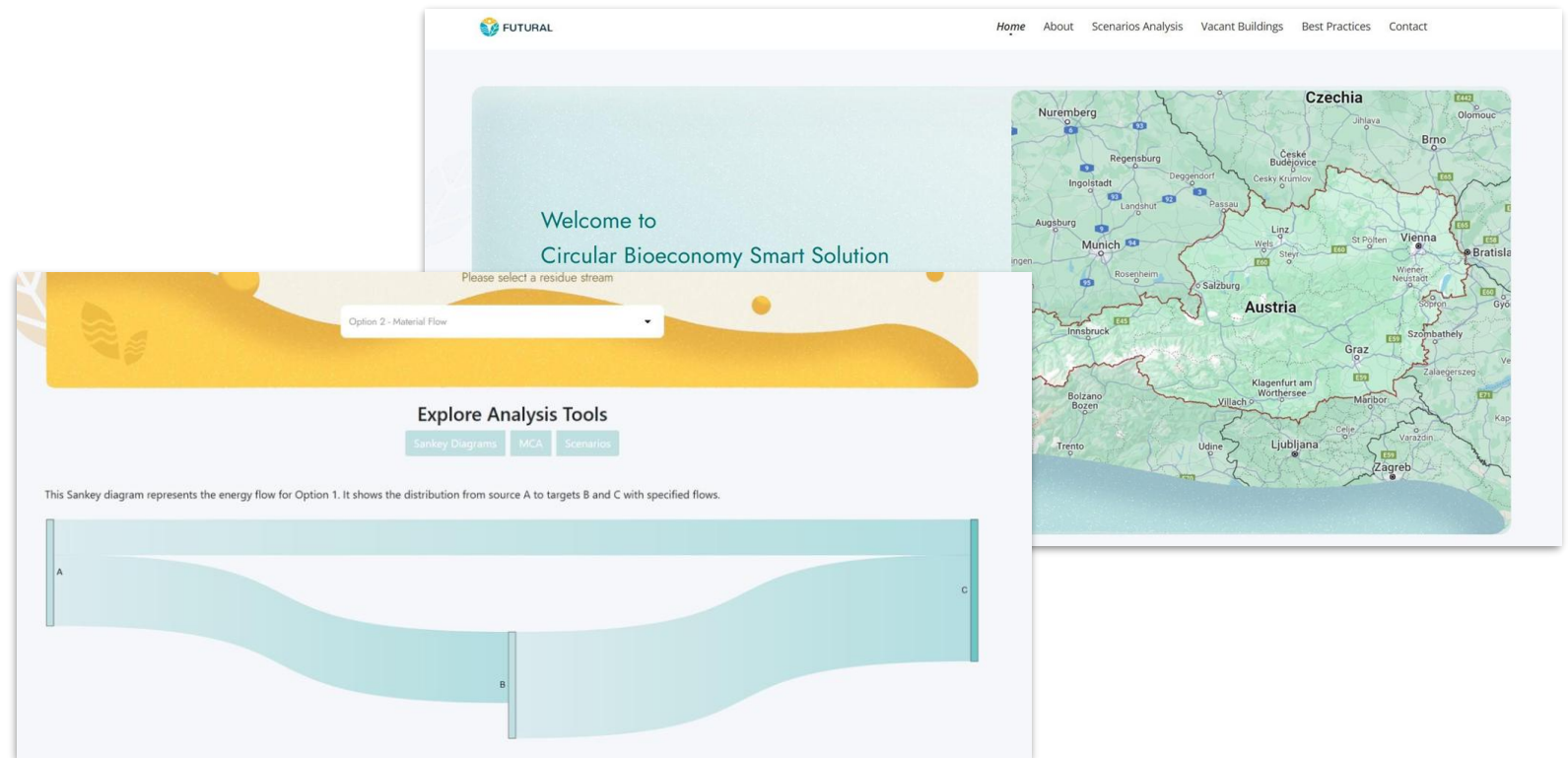
Circular Bioeconomy, Biodiversity and Ecosystem Management

Online Circular Bioeconomy Platform

→Home: Overview of the circular Bioeconomy SS with key information and an interactive map of Pongau

→About: Introduction to circular Bioeconomy, project goals, objectives, and key partners.

→Scenarios Analysis: Information on valorization scenarios and visualizations of residue streams



Circular Bioeconomy, Biodiversity and Ecosystem Management

Online Circular Bioeconomy Platform

→ Vacant Buildings: A searchable database of vacant properties

→ Best Practices: Educational resources and best practices within the circular economy domain.

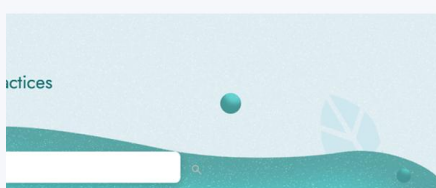
→ Contact: FAQ section and contact information for additional support

Vacant Buildings


Find the perfect space for your business in Pongau! Our platform makes it easy for companies and entrepreneurs to explore available properties, from offices and retail spaces to warehouses and industrial facilities. Discover opportunities that match your needs and connect directly with our administration to express interest and learn more about leasing options.

	Address	Area (sq ft)	Floor	Available From	Construction Year	Proposed Purpose	Description	Action
n y e 2	123 Green St, Springfield	23345.00	1	Feb. 6, 2025	2023	Industrial	example	<input type="button" value="Express Interest"/>
e 2	Some address	2130.00	5	Feb. 6, 2025	2020	Industrial	some space	<input type="button" value="Express Interest"/>
ple ling	129 Green St, Springfield	2154.00	4	Feb. 6, 2025	2023	Co-working Space	rgwrhwrthj	<input type="button" value="Express Interest"/>
side rhouse	88 Lake St, Lakeside	8000.00	2	Feb. 6, 2025	2023	Storage/Warehouse	Large warehouse with excellent transport links and easy access.	<input type="button" value="Express Interest"/>

Home About Scenarios Analysis Vacant Buildings Best Practices Contact




Best Practices



[Title of Best Practice]

Summary and Description of Best Practice


[Learn more](#)



[Title No 2]

[Here you provide a description from the backend]


[Learn more](#)



[Immerge]

Download it now

[Learn more](#)



[Title-example]

[description]

[Learn more](#)

Circular Bioeconomy, Biodiversity and Ecosystem Management

Biodiversity and Ecosystem Management

- 1) Drone-based Monitoring: Drone-based thermal data gathering on bison location and population is going as planned, collected data is being analyzed.
- 2) AI Model Development/ Platform development: Object detection and classification models are being trained and tested on the data collected through drones.
- 2) Stakeholder Engagement: Communication with relevant stakeholders (farmer associations, academia, Jonava citizens) is ongoing.
- 3) Biodiversity Score System: A theoretical method is developed, and data collection can be carried out. Educational content is created to inform end-users about Biodiversity and its impact on the environment
- 4) A Wildlife Monitoring Tool: a mobile app, enabling users to report bison sightings and track incidents.



Circular Bioeconomy, Biodiversity and Ecosystem Management

Key Results

Biodiversity and Ecosystem Management

1) *Drone-based Monitoring*: Drone-based thermal data gathering on bison location and population is going as planned, collected data is being analyzed.

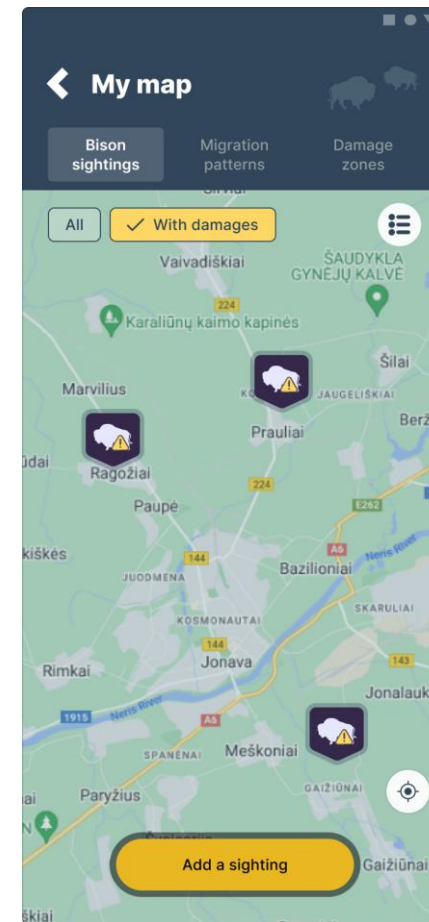
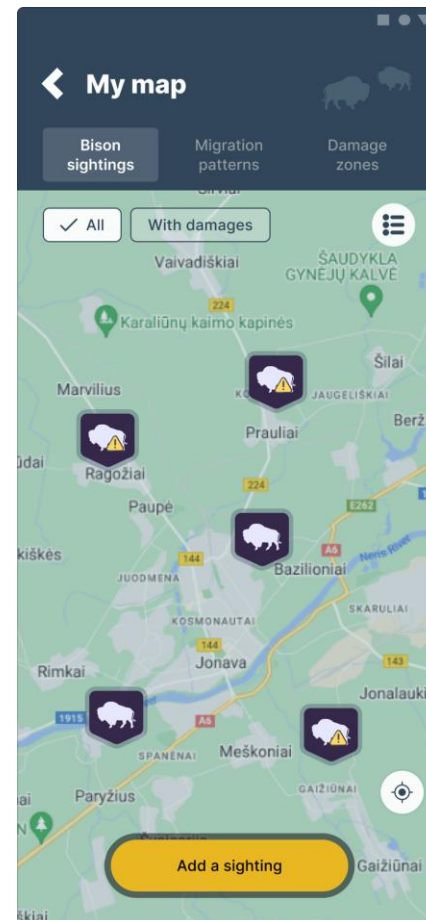
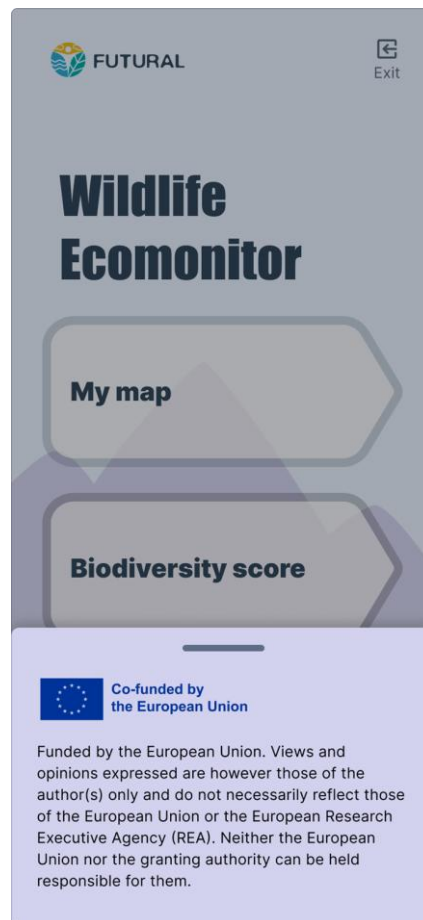
2) *AI Model Development/ Platform development*: Object detection and classification models are being trained and tested on the data collected. It shows good results so far. Working on item count and coordinates calculation.



Circular Bioeconomy, Biodiversity and Ecosystem Management

Wildlife Monitoring Tool

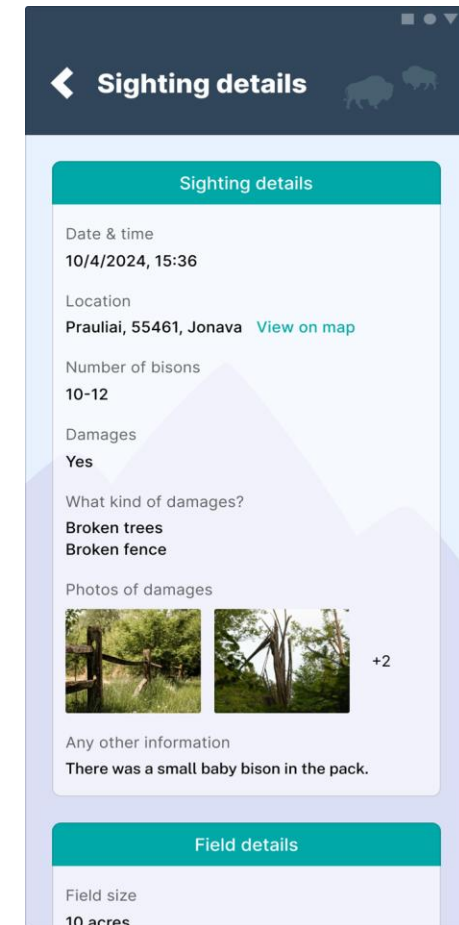
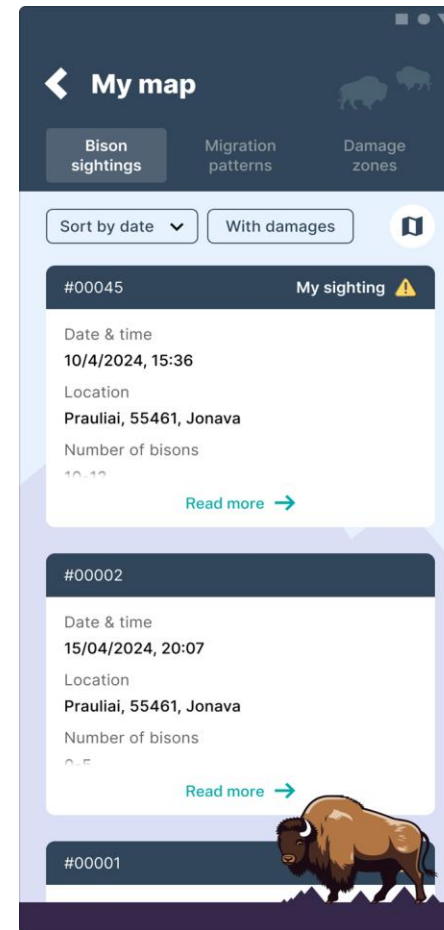
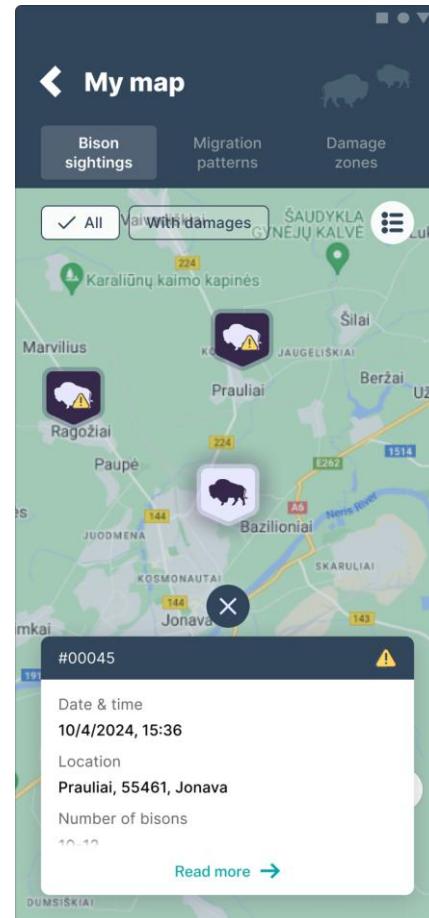
- Easy Navigation: Report bison sightings, access biodiversity stats, and track incidents effortlessly.
- Interactive Map: Visualize bison sightings and filter by damage reports.



Circular Bioeconomy, Biodiversity and Ecosystem Management

Wildlife Monitoring Tool

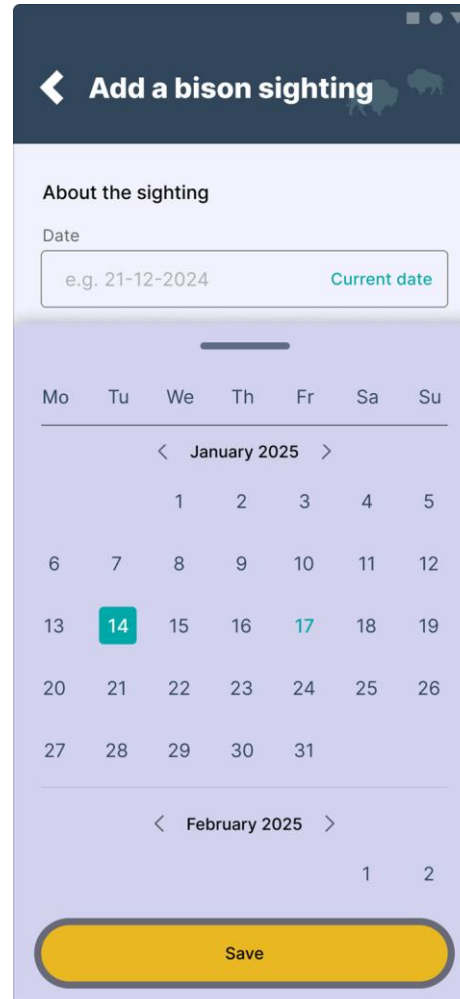
- Detailed Reports: Includes bison count, damage status, date, time, and location.
- Real-Time Monitoring: Enables dynamic data collection for ecosystem management.



Circular Bioeconomy, Biodiversity and Ecosystem Management

Wildlife Monitoring Tool

- Select Sighting Date: i) Users can manually select a specific date from an intuitive calendar interface ii) Offers an option for quick selection of the current date iii) Enhances accuracy in sighting records
- Select Sighting Details: i) Users input the exact date, optional time, and precise location using GPS coordinates. ii) Provides clear input fields to detail the number of bisons sighted. iii) Optional toggle for reporting damages caused by the herd. iv) Additional space provided for users to add other relevant observations



Add a bison sighting

About the sighting

Date

e.g. 21-12-2024 Current date

Mo Tu We Th Fr Sa Su

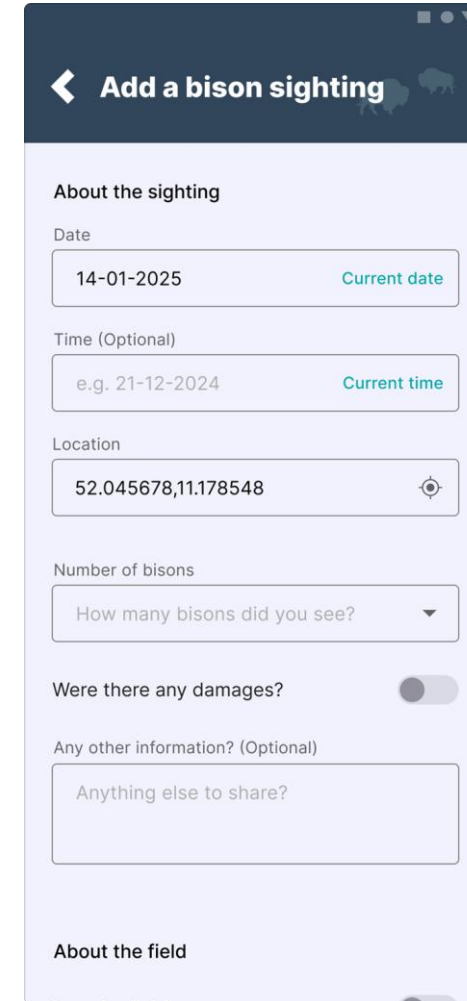
< January 2025 >

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

< February 2025 >

1 2

Save



Add a bison sighting

About the sighting

Date

14-01-2025 Current date

Time (Optional)

e.g. 21-12-2024 Current time

Location

52.045678,11.178548

Number of bisons

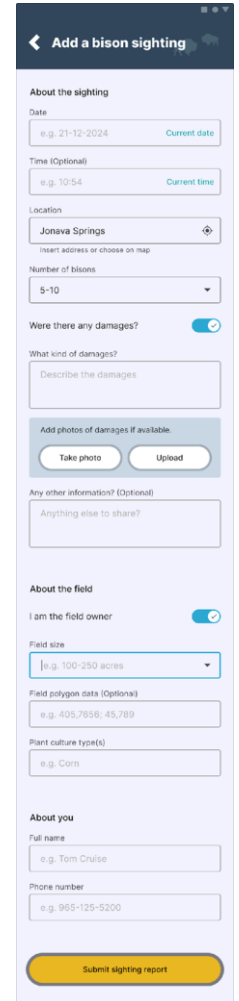
How many bisons did you see?

Were there any damages? ☐

Any other information? (Optional)

Anything else to share?

About the field



Add a bison sighting

About the sighting

Date

e.g. 21-12-2024 Current date

Time (Optional)

e.g. 10:54 Current time

Location

Jonava Springs

Number of bisons

5-10

Were there any damages? ☒

What kind of damages?

Describe the damages

Add photos of damages if available

Take photo Upload

Any other information? (Optional)

Anything else to share?

About the field

I am the field owner ☒

Field size

e.g. 100-250 acres

Field polygon data (Optional)

e.g. 405,7658; 45,789

Plant culture type(s)

e.g. Corn

About you

Full name

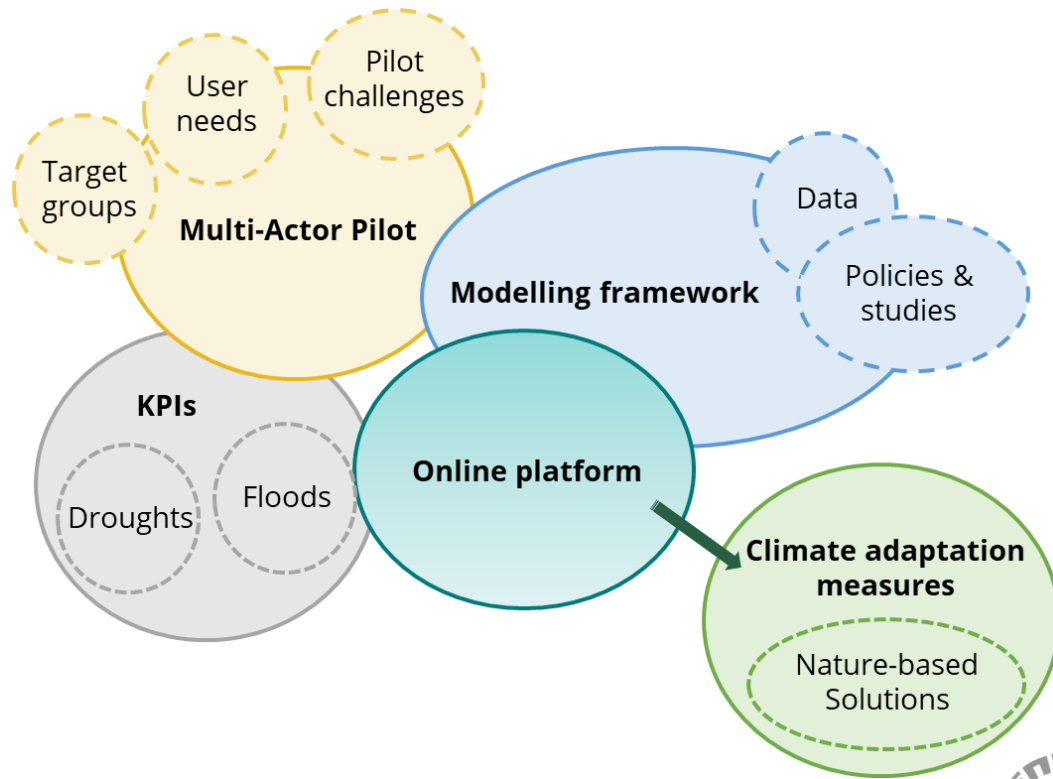
e.g. Tom Cruise

Phone number

e.g. 965-125-5200

Submit sighting report

Climate adaptation and mitigation



1) Identification of water-related challenges in Birda and Westhoek MAPs and suitable modelling approaches for the development of climate adaptation strategies in face of a changing climate

2) Model development:

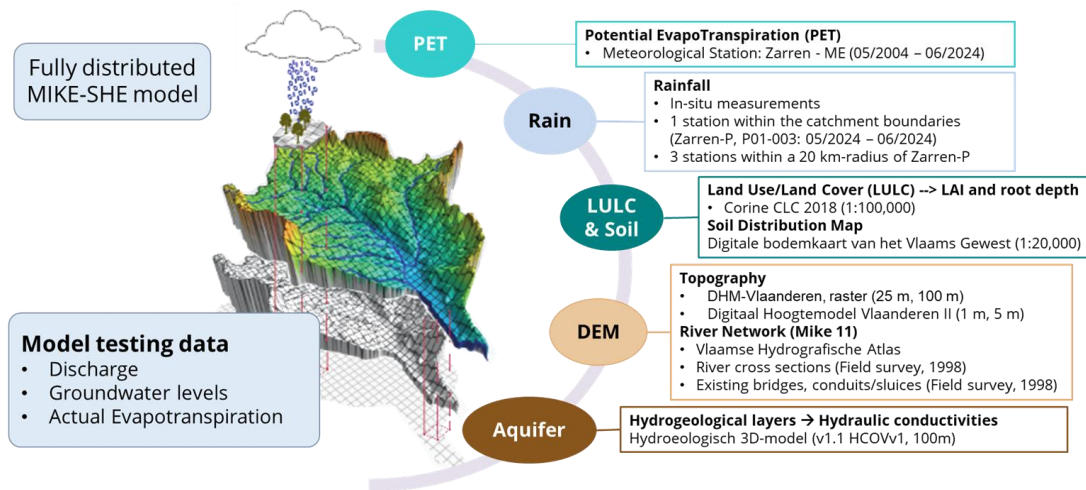
- Westhoek MAP: a fully-distributed, integrated hydrological model for the Handzamevaart catchment using the MIKE SHE modelling system
- Birda MAP: coupled 1D-2D hydrodynamic model for the Barzava river/canal using HEC-RAS

3) Online Platform: An online platform for the delivery of hydrological models will be provided to the two rural communities.

Climate adaptation and mitigation

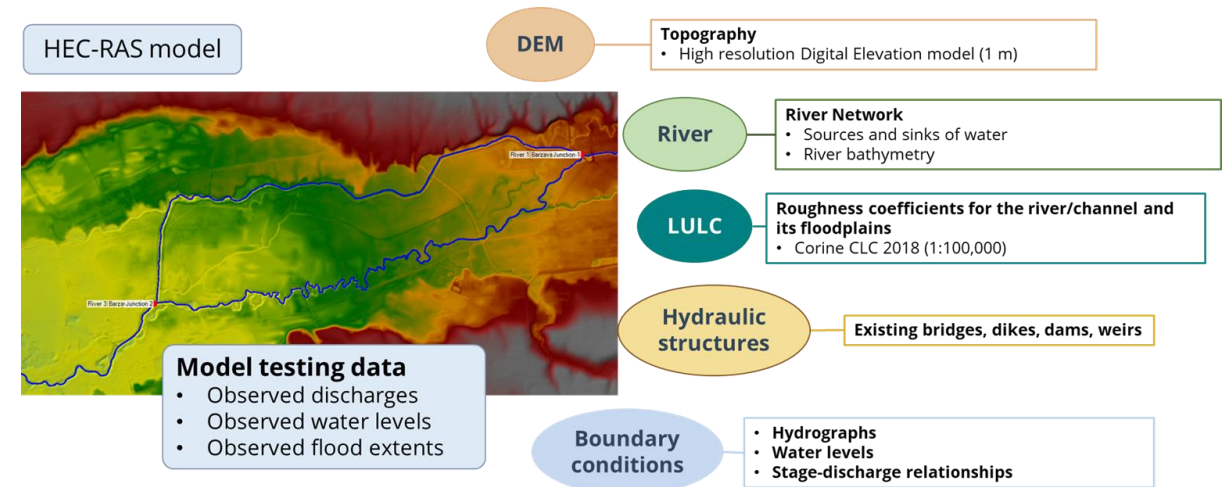
Key Results

Initial version of the hydrological model for the Westhoek MAP.



Overview of the inputs required for model development

Initial setup of the hydrodynamic river model for the Birda MAP.



Overview of the inputs required for model development

- Preliminary model results are available futural-project.eu

Climate adaptation and mitigation

Online Platform for delivery of hydrological models

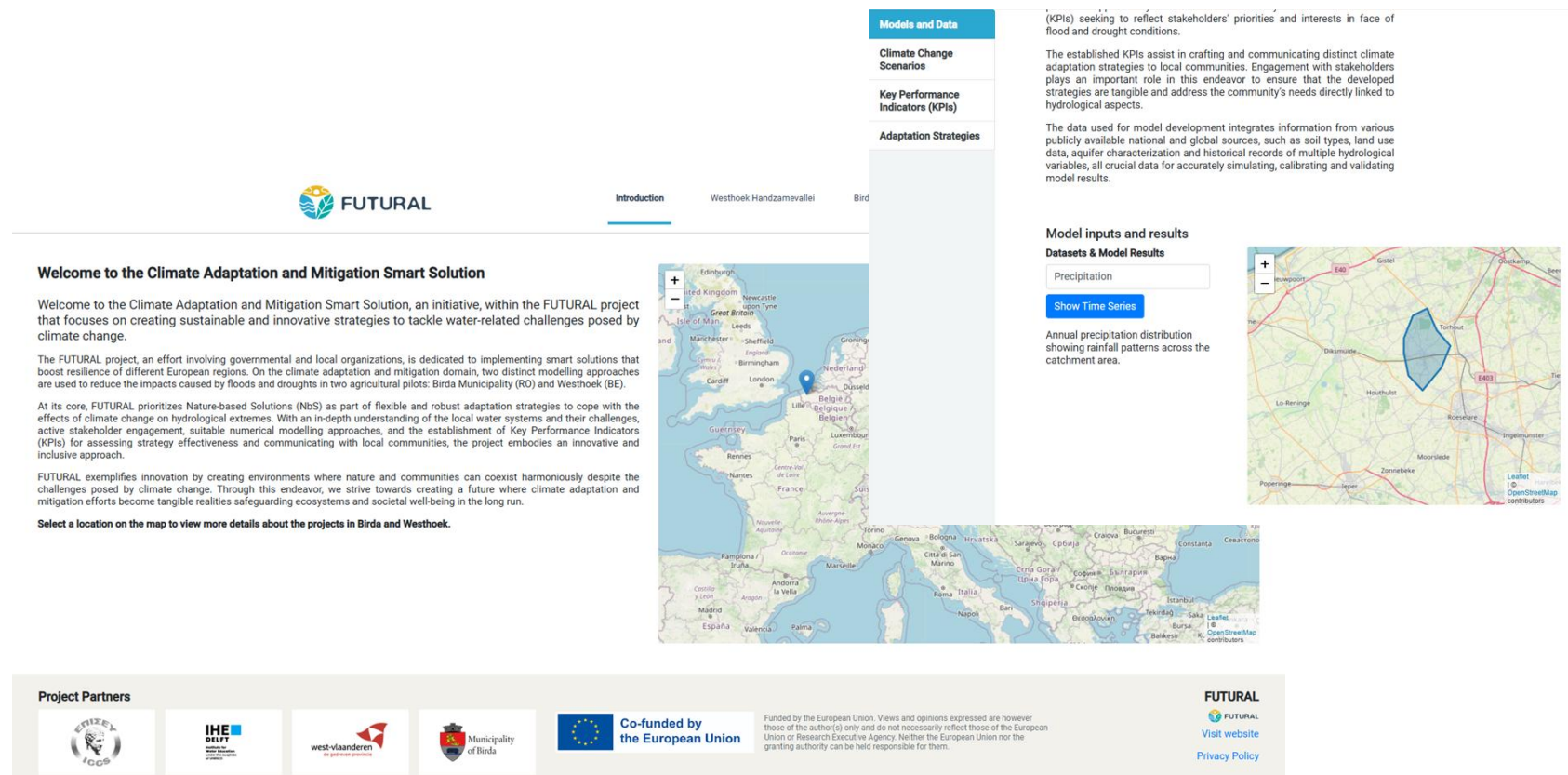
→ Introduction page with access to information and basic description of use cases as well as interactive map and responsive navbar

→ Model and Data Page representing hydrological and hydrodynamic models

→ Climate Change scenarios page with interactive region specific scenarios

→ Key Performance Indicators (KPIs) page with interactive environment for examining region specific KPIs

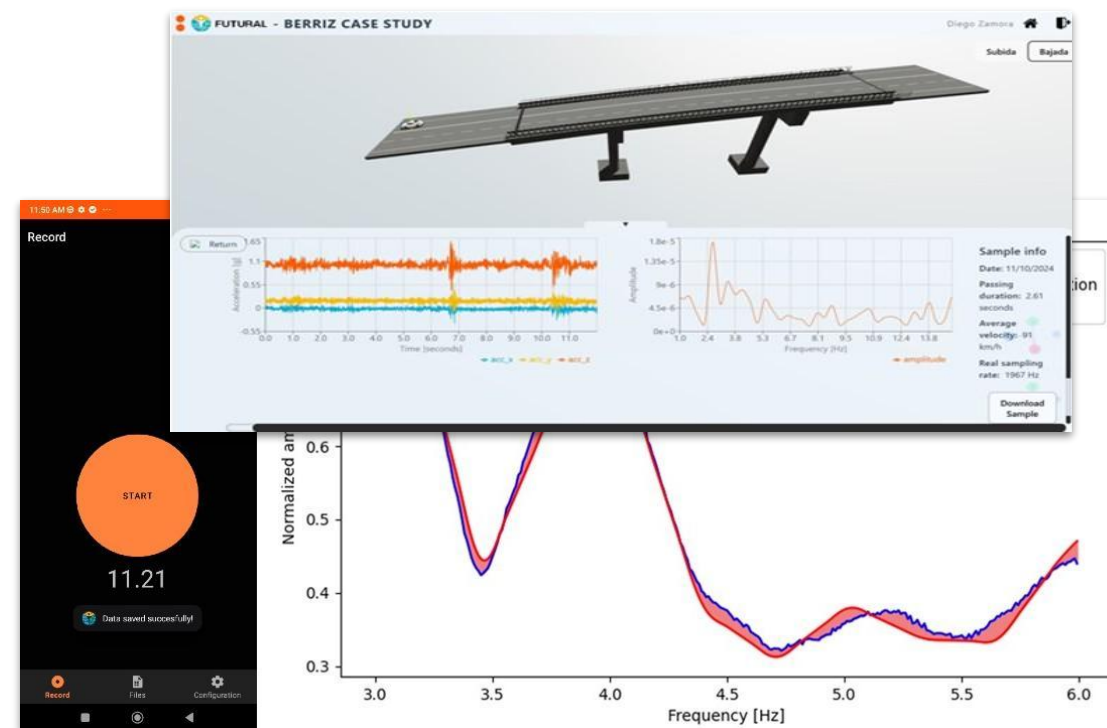
→ Adaptation strategies page with interactive features to visualize adaptation strategies, feasibility deployment and outcomes



The screenshot displays the FUTURAL online platform interface. At the top, the FUTURAL logo is visible. The main navigation bar includes links for Introduction, Westhoek Handzamevallei, and Bird. The left sidebar contains a menu with 'Models and Data', 'Climate Change Scenarios', 'Key Performance Indicators (KPIs)', and 'Adaptation Strategies'. The main content area features a 'Welcome to the Climate Adaptation and Mitigation Smart Solution' section, which includes a map of Europe and a detailed map of the Westhoek region. The right sidebar contains a 'Model inputs and results' section with a 'Precipitation' input field and a 'Show Time Series' button. Below the main content area, there is a 'Project Partners' section with logos for IHE, west-vlaanderen, and the Municipality of Birda. The footer includes the FUTURAL logo, a 'Visit website' link, a 'Privacy Policy' link, and a statement about funding by the European Union.

Resilience to shocks

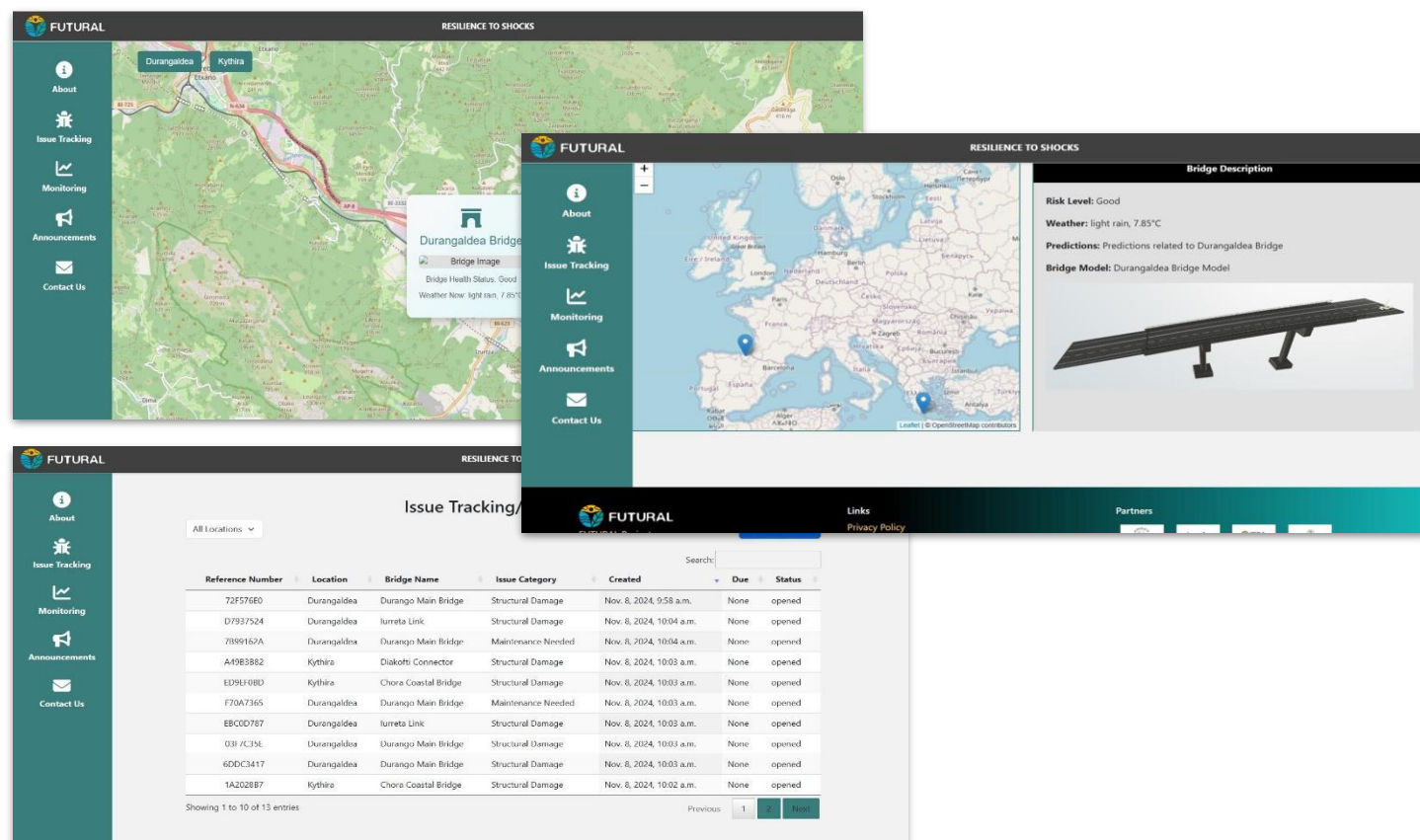
- ❑ Use cases identified for road bridges in rural areas (**Berriz bridge in Durangaldea** and **Diakofti bridge in Kythira**) and research works in progress for both.
- ❑ **iSHM / SHM algorithms** for bridges have been identified and are under development. (sensors on the bridge and on passing vehicles)
- ❑ **Online crowdsensing platform for infrastructure health monitoring:** An online platform is delivered to allow rural citizens report and accessing issues identified on the road network and nearby bridges and to monitor in real time the health status of bridges provided by an analysis carried out from the data acquired by the sensors.



Resilience to shocks

Online Crowdsensing Platform for infrastructure health monitoring

- Home: Overview of the platform and project details.
- About: Answers to common questions about the use cases and the platform.
- Issue Tracking: Tool for users to log infrastructure-related problems.
- Monitoring: Real-time monitoring of health status of bridges, historical data, and insights.
- Announcements: Updates and alerts from the MAPs.



The screenshots display the FUTURAL platform interface, which includes a sidebar with navigation options: About, Issue Tracking, Monitoring, Announcements, and Contact Us. The main content area shows a map of the Durangaldea region with a pop-up for the Durangaldea Bridge, displaying its health status as 'Good' and weather information. Another screenshot shows a map of Europe with a location pin in the Iberian Peninsula. A third screenshot shows the 'Issue Tracking' section with a table of reported issues.

Reference Number	Location	Bridge Name	Issue Category	Created	Due	Status
72F576E0	Durangaldea	Durango Main Bridge	Structural Damage	Nov. 8, 2024, 9:58 a.m.	None	opened
D7937524	Durangaldea	Iumeta Link	Structural Damage	Nov. 8, 2024, 10:04 a.m.	None	opened
7889162A	Durangaldea	Durango Main Bridge	Maintenance Needed	Nov. 8, 2024, 10:04 a.m.	None	opened
A4983882	Kythira	Diakofti Connector	Structural Damage	Nov. 8, 2024, 10:03 a.m.	None	opened
ED9E10BD	Kythira	Chora Coastal Bridge	Structural Damage	Nov. 8, 2024, 10:03 a.m.	None	opened
F70A7365	Durangaldea	Durango Main Bridge	Maintenance Needed	Nov. 8, 2024, 10:03 a.m.	None	opened
EB00D767	Durangaldea	Iumeta Link	Structural Damage	Nov. 8, 2024, 10:03 a.m.	None	opened
0317C35E	Durangaldea	Durango Main Bridge	Structural Damage	Nov. 8, 2024, 10:03 a.m.	None	opened
6DDC3417	Durangaldea	Durango Main Bridge	Structural Damage	Nov. 8, 2024, 10:03 a.m.	None	opened
1A2028B7	Kythira	Chora Coastal Bridge	Structural Damage	Nov. 8, 2024, 10:02 a.m.	None	opened

Showing 1 to 10 of 13 entries

Citizen engagement and quality of life

Citizen Engagement

1. Needs assessments in collaboration with MAP leaders led to focus on crowdsourcing of user reports. Greece:
2. Choice of the most appropriate technical solution(s): two different iterations, both based on FixMyStreet (open source software)
3. Development of MVP version(s) of both smart solutions (M12): *Man Rūpi (I care)* for Jonava and *FixMy KYTHERA TRAILS* for Kythira
4. Further work on refining features and workflow, troubleshooting, testing

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Citizen engagement and quality of life

Key Results

Citizen Engagement

Development (MVP + work-in-progress towards alpha-version) of 2 different iterations of the smart solution with bespoke features.

- Common features
 - Open source software
 - User-friendly interface, optimised for use on mobile devices (most common use case)
 - User types: super-admin / staff / registered user / non-registered user
 - Reporting workflow: Locate > Fine-tune > Select category > Provide details > Confirm & Send
 - Issue handling workflow: View reports > Moderate/Amend details > Assign remedial action > Change report status

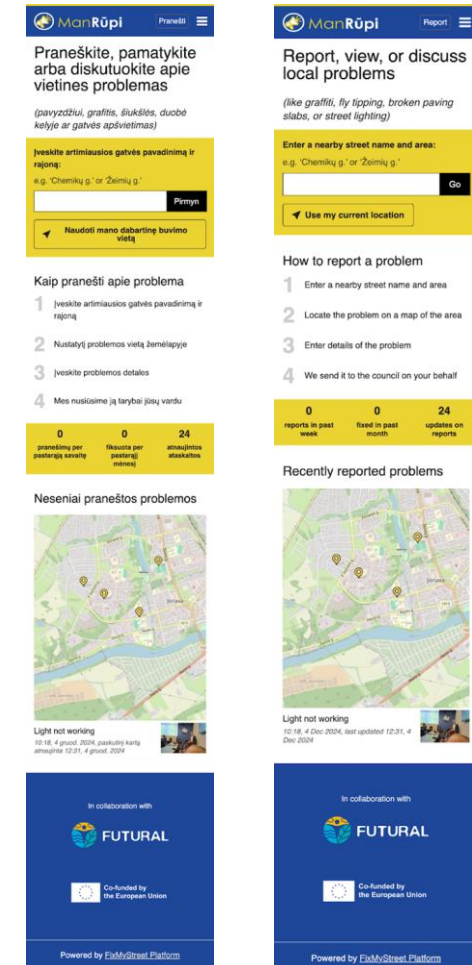
Citizen engagement and quality of life

Jonava

Citizen Engagement

Man Rūpi (*I care*) - Jonava

- Reporting of issues in the municipality is closer to original purpose/use-case of *FixMyStreet*
- Definition of categories and responsible entities in collaboration with Municipality of Jonava
- Translation of key contents into Lithuanian (language in which the platform will be used)
- Field testing completed in December 2024
- Branding in line with Jonava municipal colours



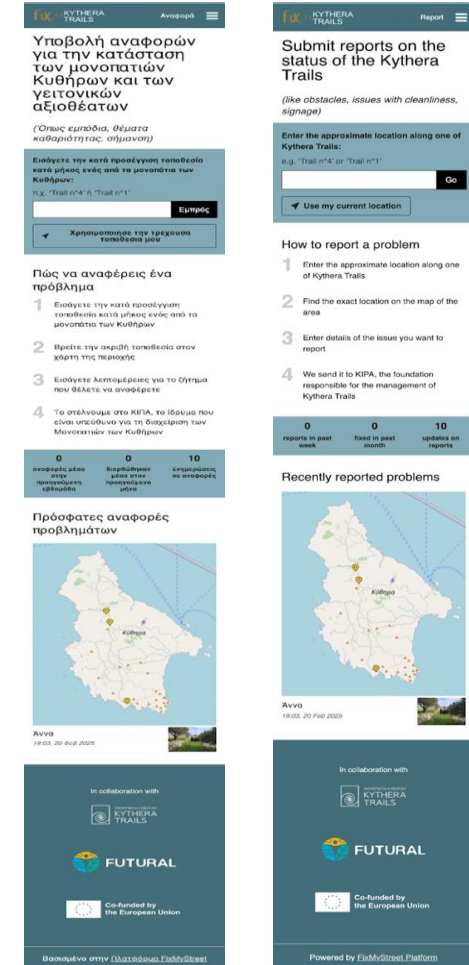
Citizen engagement and quality of life

Key Results / Kythira

Citizen Engagement

FixMy KYTHERATRAILS - Kythira

- Adapting the tool to reports linked to hiking trail management (one of KIPA's competencies)
- Definition of categories relevant to hiking trails and nature conservation in collaboration with KIPA
- Translation of key contents into Greek while preserving dual language (EN-EL) capability for both residents and tourists)
- Branding in line with KIPA's *KytheraTrails*



Citizen engagement and quality of life

Quality of Life

The MAPs are struggling with typical rural problems such as depopulation, an ageing population, closure and loss of infrastructure. The Quality of Life domain is concerned with supporting the MAPs in their regional planning processes. A tool is being developed with which the MAPs can identify and visualize underserved areas. It can analyze the accessibility of the region and “what if” scenarios can be simulated. Example: How would accessibility change if a bus stop/supermarket/pharmacy was built or closed in a certain location and how would this affect the population in terms of numbers?

Activities

- Identifying the requirements of MAPs for the Smart Solution (Capacity Building Workshops)
- Acquisition of geodata and structure of a comprehensive geodatabase
- Development of a unique methodology for the analysis of accessibility in the individual regions
- Development of a universal digital application tool for MAPs in order to carry out analyses independently and to be able to approach experiments beyond the project period.
- Development of an online platform for citizens to access and assess the accessibility in their areas in Westhoek and Durangaldea

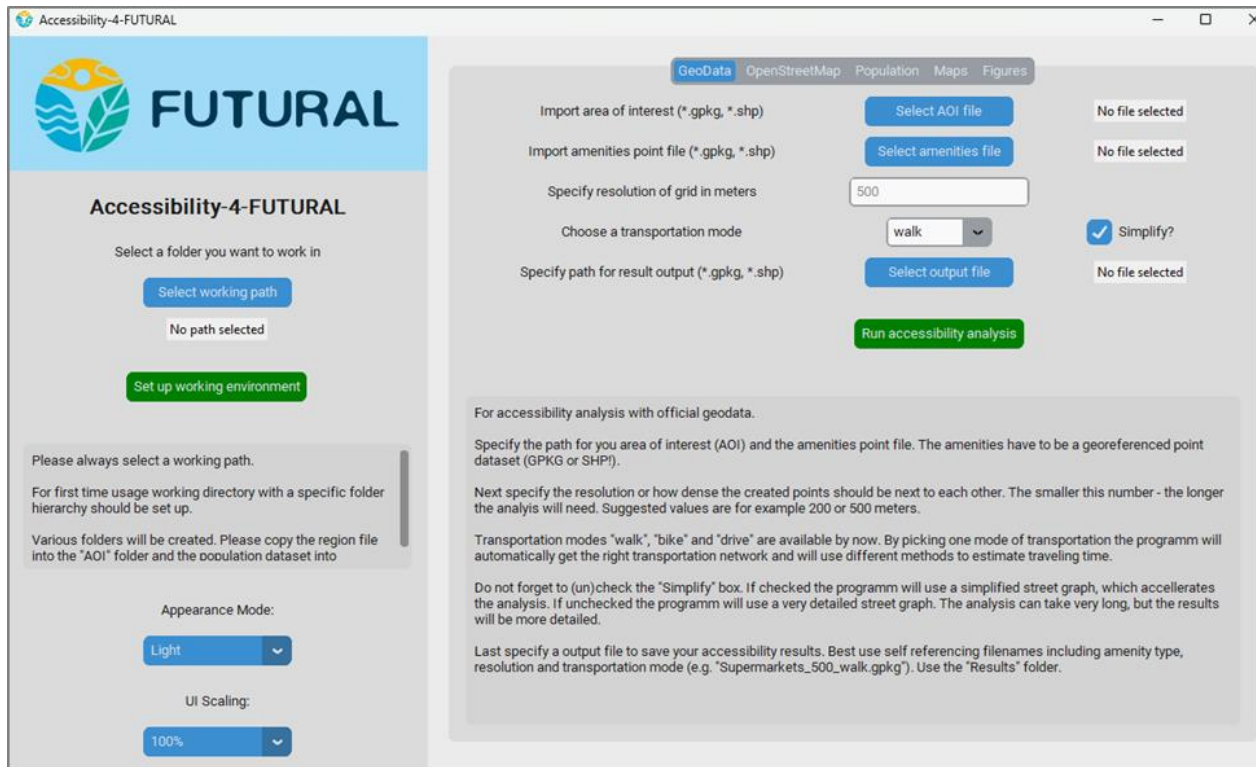


Citizen engagement and quality of life

Key Results

Quality of Life

Smart Solution Development

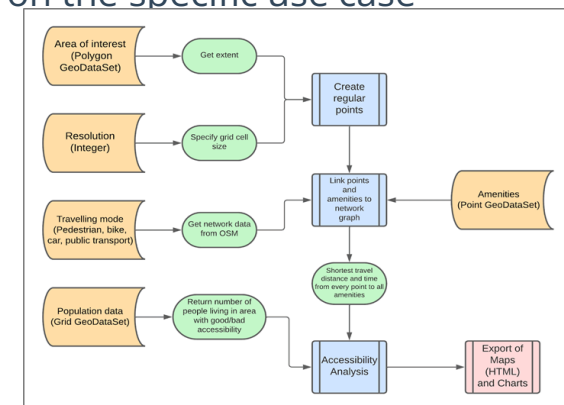


Graphical User Interface of Smart Solution (Alpha Version)

- Executable as .exe file
- Developed with python and open source libraries
- Base version for both MAPs
 - MAP specific features
- One-stop-platform to perform accessibility analysis
- Users can select various parameters themselves, depending on the specific use case



Smart Solution Workflow

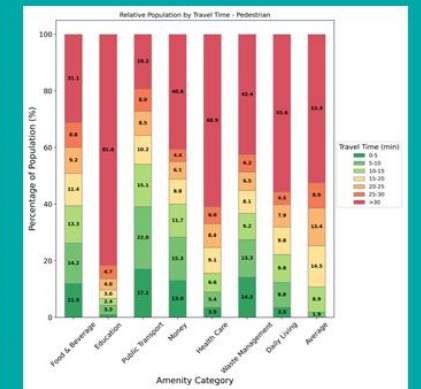
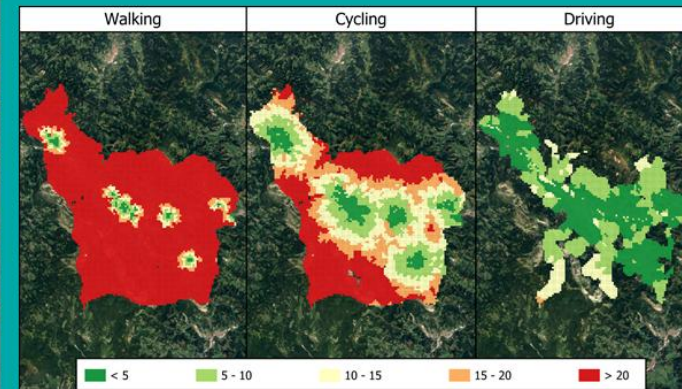
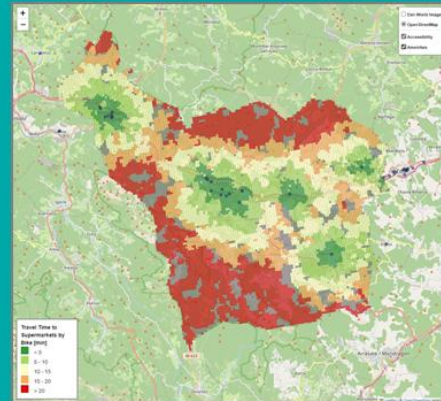


T3.4: Citizen engagement and quality of life

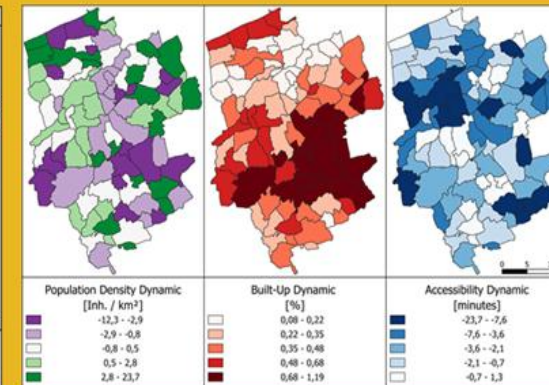
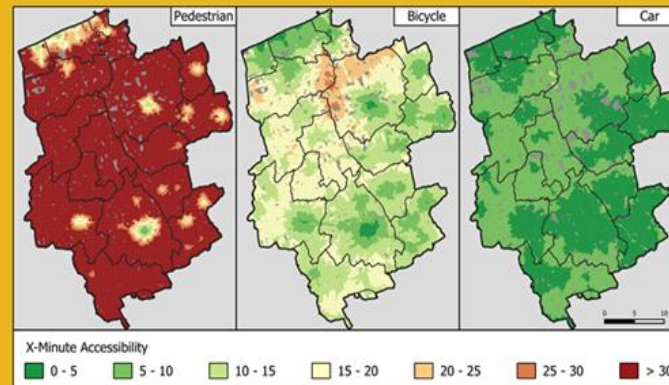
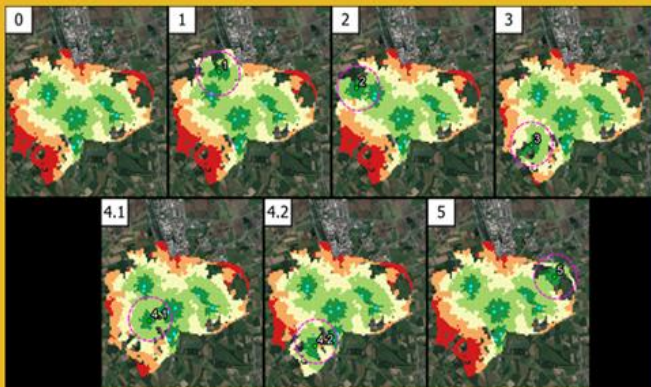
Quality of Life

1. Bike-accessibility to supermarkets
2. Averaged accessibility for different modes of transportation
3. Respective population in relation to travel time and the different infrastructure categories

Duranga/Idia



Westhoek

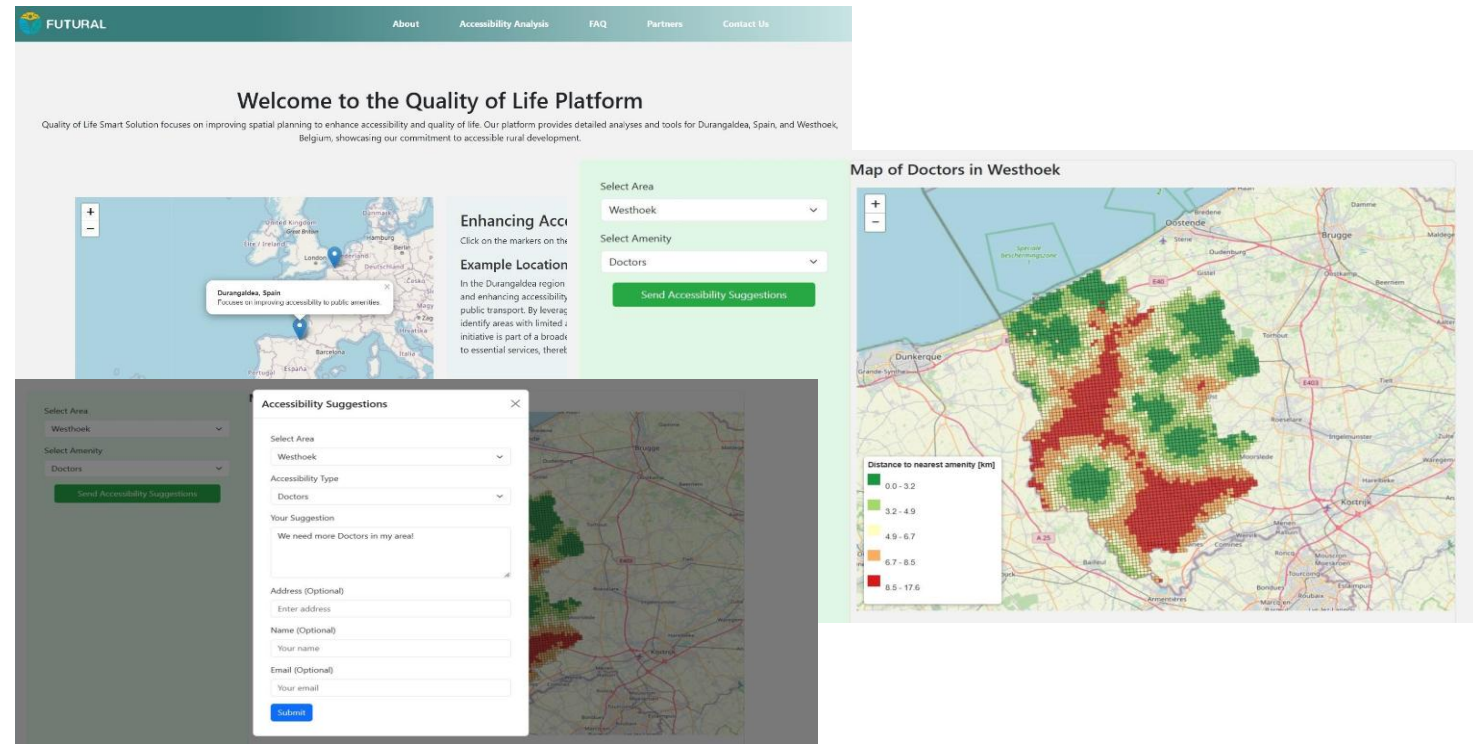


1. Different scenarios for a supermarket location
2. Averaged accessibility for different modes of transportation
3. Population change, urbanization change and accessibility change from 2018 - 2024

Citizen engagement and quality of life

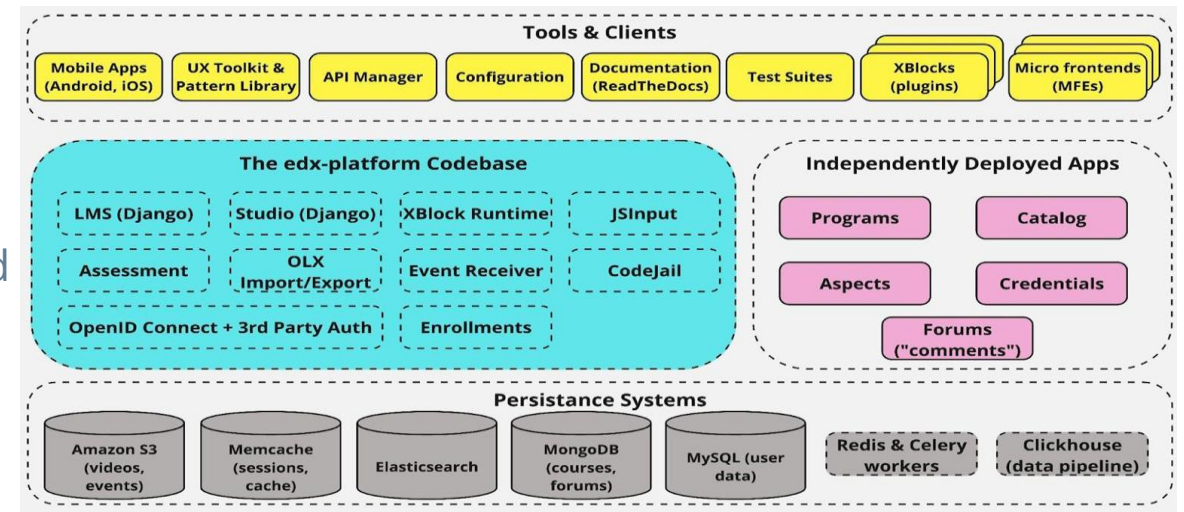
Accessibility Analysis Platform

- ➔ Home: Responsive overview with navigation to key platform features.
- ➔ About: Information on the platform's purpose and objectives.
- ➔ Accessibility Analysis: Interactive maps with travel times and distances for selected regions and amenities.
- ➔ Suggestions Form: Tool for reporting accessibility issues and providing recommendations to authorities.
- ➔ FAQ: Common questions about the platform and its functionalities.
- ➔ Contact: Details for reaching out to platform administrators or local authorities.



Lifelong education and training











- 1) Established the EdX platform, a toolkit for Massive Online Open Courses (MOOC).
- 2) Co-creation activities provided valuable feedback to tailor the courses to the needs of MAPs, Birda and Kythira.
- 3) Created 5 courses for both MAPs and finalized the MVP version of the platform.
- 4) Collected feedback from capacity-building workshops, and the content improvement phase is underway.
- 5) Brainstormed themes for video content to engage users, with development currently in progress.




T3.5: Lifelong education and training

Key Results

Course / Precision Olive Farming: Cultivating Excellence through Advanced ... / Precision Olive Farming: Cultivating Excellence through Advanced ...

< Previous           Next >

2.4 Role of Sensors in Precision Olive Farming

 Bookmark this page

COURSE 2


2.4 Role of Sensors in Precision Olive Farming

Sensors in olive growing

In precision olive farming, sensors play a crucial role in collecting data and monitoring various parameters related to the olive orchard. These sensors empower farmers to make informed decisions and optimize the overall efficiency of olive cultivation. **Here are some key roles of sensors in precision olive farming:**

Soil moisture sensors:








- These sensors gauge the moisture content in the soil, aiding farmers in comprehending the water status of the orchard.
- By delivering real-time data, farmers can optimize irrigation schedules, ensuring that olive trees receive the right amount of water for optimal growth.




Deep soil sensors can give the moisture condition closer to the roots.

COURSE 2.4

Course / Tehnici avansate în managementul apei / Tehnici avansate în managementul apei

< Previous        Next >

3.3 Tehnologii de Irigare cu Precizie

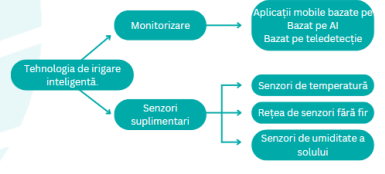
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CURS 3

3.3 Tehnologii de irigare de precizie










Teledetecție și monitorizare la distanță

- Sistemele de teledetecție care utilizează tehnologiile informației și comunicațiilor generează de obicei cantități mari de date spectrale, atribuite rezoluțiilor spațiale, temporale și radiometrice ridicate necesare pentru aplicațiile de irigare de precizie.
- Agricultura modernă se bazează din ce în ce mai mult pe senzorii de la distanță pentru îmbunătățirea producției de recolte și utilizarea eficientă a resurselor. Energia eliberată de culturi este calculată de senzorii termici în infraroșu pentru a determina temperatura, care este utilizată pentru a determina nevoile de irigare și deficitul de apă pentru culturi.




COURSE 3.3

Course / Γεωργία Ακριβείας στην Ελαιοκαλλιέργεια: Καλλιεργώντας με τη... / Γεωργία Ακριβείας στην Ελαιοκαλλιέργεια: Καλλιεργώντας με τη...

< Previous          Next >

2.7 Τεχνικές γεωργίας ακριβείας στη συγκομιδή

 Bookmark this page

ΕΝΟΤΗΤΑ 2

2.7 Τεχνικές Γεωργίας Ακριβείας στη Συγκομιδή

Ας ανακεφαλαιώσουμε...

- Το υψηλό εργατικό κόστος, η ένταση της εργασίας και οι αναποτελεσματικότητες στη διαδικασία συγκομιδής ανέδειξαν την ανάγκη για ενσωμάτωση τεχνολογιών και ανάπτυξη της συγκομιδής ακριβείας.
- Η συγκομιδή ακριβείας είναι η χρήση τεχνολογιών για τη βελτιστοποίηση της αποτελεσματικότητας και της ακριβείας κατά την διαδικασία συγκομιδής.
- Η βιωσιμότητα είναι δυνατή μέσω στοχευμένων πρακτικών διαχείρισης που μειώνουν τη σπατάλη πόρων.
- Με την υψηλή πυκνότητα φύτευσης των δέντρων σε μια συγκεκριμένη περιοχή, η παραγωγή αυξάνεται και είναι πιο αποτελεσματική για τις μηχανικές μηχανές συγκομιδής, μειώνοντας την εργασία.

COURSE 2.7

Example from Course 2, 'Precision Olive Farming: Cultivating Excellence through Advanced Agricultural Techniques.' (English language version)

Example from Course 3, 'Advanced Techniques in Water Management' (Romanian language version)

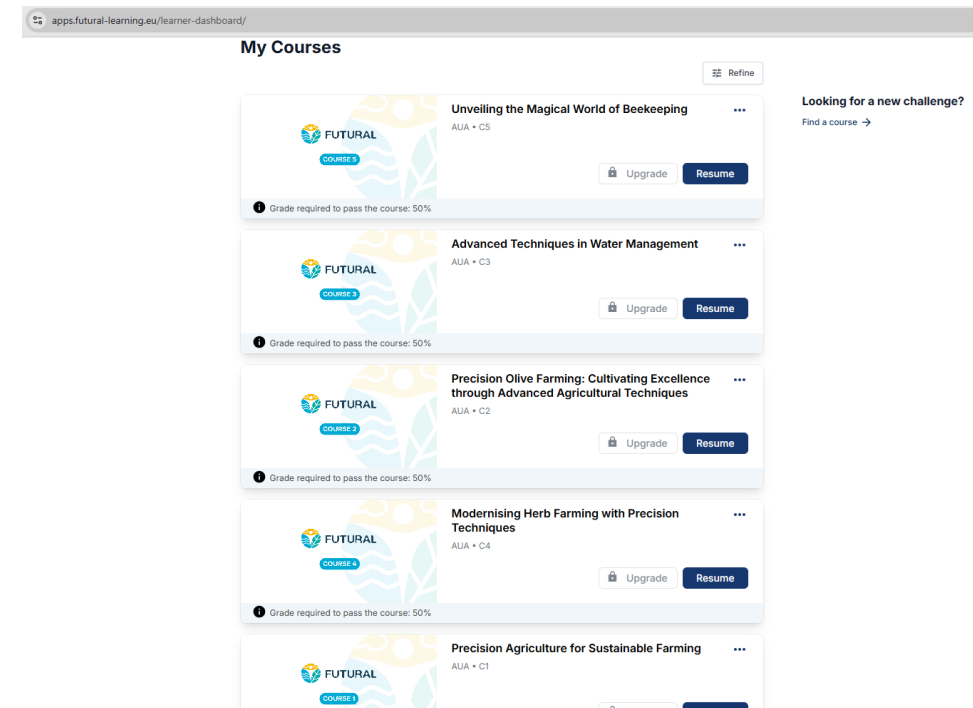
New section "Let's Conclude" in Unit 2.7 (Greek language version)

Lifelong education and training

Key Results

Lists of 5 courses

1. Precision Agriculture for Sustainable Farming
2. Precision Olive Farming: Cultivating Excellence Through Advanced Agricultural Techniques
3. Advanced Techniques in Water Management
4. Modernizing Herb Farming with Precision Techniques
5. Unveiling the Magical World of Beekeeping



The "My Courses" dashboard of the FUTURAL learning platform, displaying a catalog of courses available to users.

Lifelong education and training

Let's collaborate: Reflections & Next Steps

☐ Insights & Lessons Learned

- Co-design with MAP users was essential for relevance but required ongoing iteration.
- Data availability and integration across tools (e.g. wildlife, vacancy building database, residual biomass data, hydrological models, accessibility maps) presented technical challenges
- Translation of local knowledge into digital platforms (e.g. FixMyTrails, Biodiversity Tool) is complex but rewarding

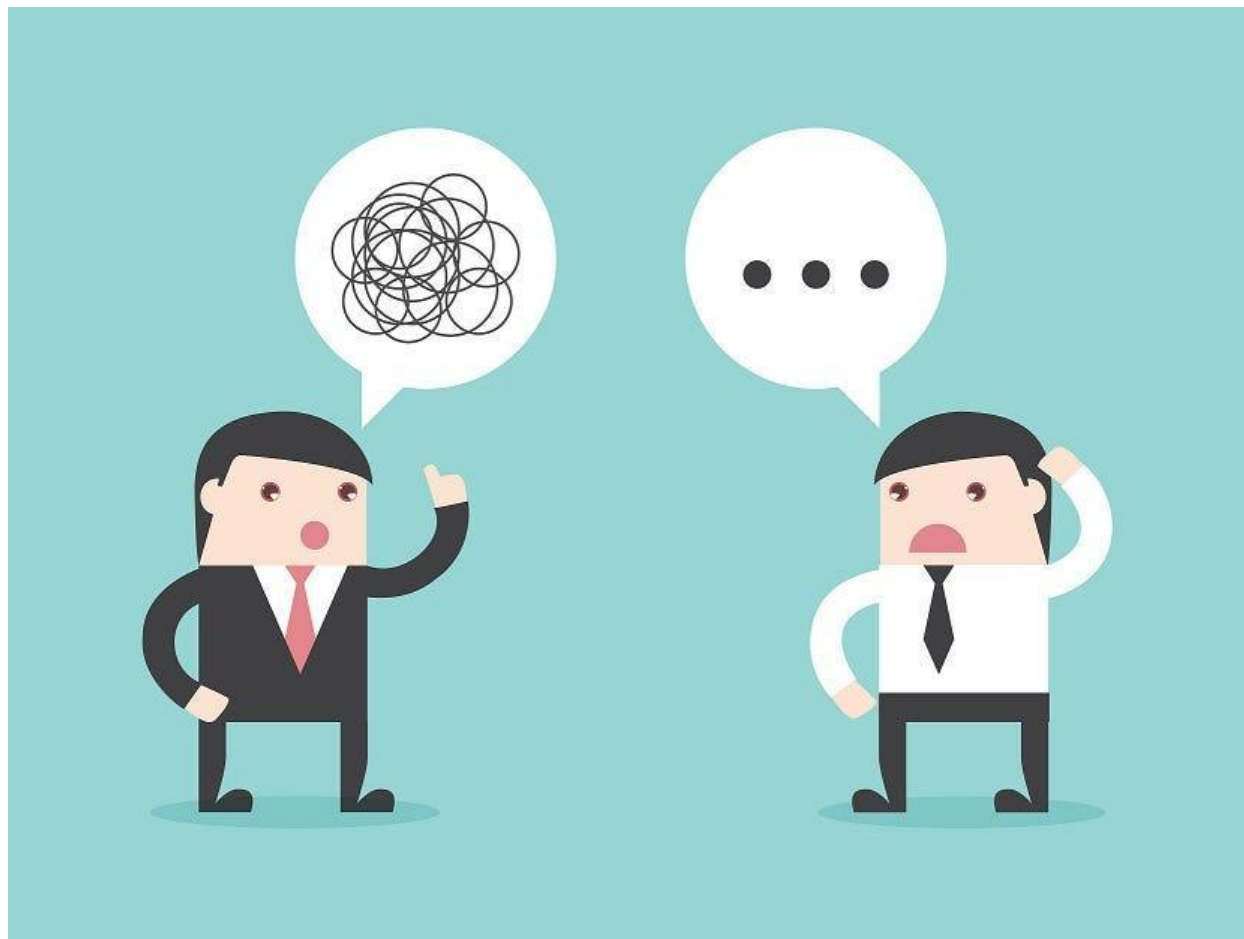
☐ Open Challenges

- Ensuring scalability and sustainability of Smart Solutions post-project
- Harmonising visualization and search functionality across the Metasearch Platform
- Balancing general-purpose usability with MAP-specific customization needs.

☐ Let's Discuss

- Where do you see opportunities to collaborate or align tools?
- How can we make the Smart Solutions more impactful?

Any Questions?





FUTURAL

PARTNERS



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AGRICULTURAL UNIVERSITY OF ATHENS



UNIVERSITÀ DI PISA



tecnal:a

MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE



Institute for
Water Education
under the auspices of UNESCO



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KYTHERIAN
FOUNDATION
FOR CULTURE
& DEVELOPMENT



LANDA GARAPENA
DESARROLLO RURAL
ONURA PUBLIKOKO ALKARTEA
ASOCIACIÓN DE UTILIDAD PÚBLICA



west-vlaanderen
de gedreven provincie



AQUATIM



Partnership for Rural Europe





FUTURAL

Making Smart Solutions accessible with the FUTURAL Meta-Search Platform



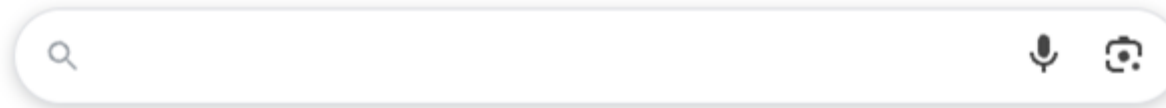
2:15

Matei Popovici, *Natural University of Science & Technology Politehnica of Bucharest*



FUTURAL

Metasearch platform



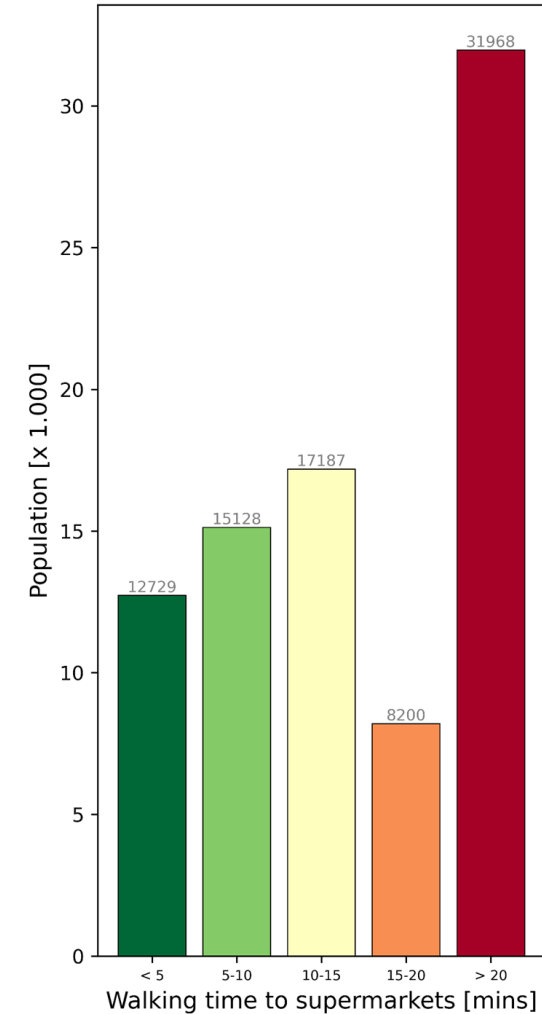
- Discover and explore Smart Services faster
- Access 47+ services in one place

Quality of life Smart Service



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Distance in metres	Time in minutes	latitude	longitude
16814.478	63.11740991	43.06788778	-2.662580103
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16814.478	63.11740991	43.06922005	-2.662869467
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Quality of life Smart Service



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15955.056	59.89135135	43.07877336	-2.6630782
15955.056	59.89135135	43.07854593	-2.664895509

Can end users use such a dataset directly?

Keyword search often requires knowing what you are looking for

Quality of life Smart Service



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15955.056	59.89135135	43.07877336	-2.6630782
15955.056	59.89135135	43.07854593	-2.664895509

Metasearch platform

I am on the bike, what's
the closest hospital to
Etxeazpia kalea in
Abadiño?

Durungaldea Location AI Chatbot

[View
Suggestions](#)[Build
Question](#)

👋 **Hey there!**

I'm your smart assistant for exploring
Durungaldea 📍

Ask me where to find the nearest hospital,
pharmacy, or supermarket — I'll tell you
the best options based on distance or
travel time.

You can specify how you're moving: driving,
walking, or biking — and I'll adapt the
suggestions for you!

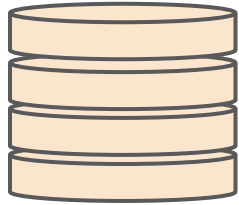


Type your message...



How does it work?

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**API for
DLR
dataset**

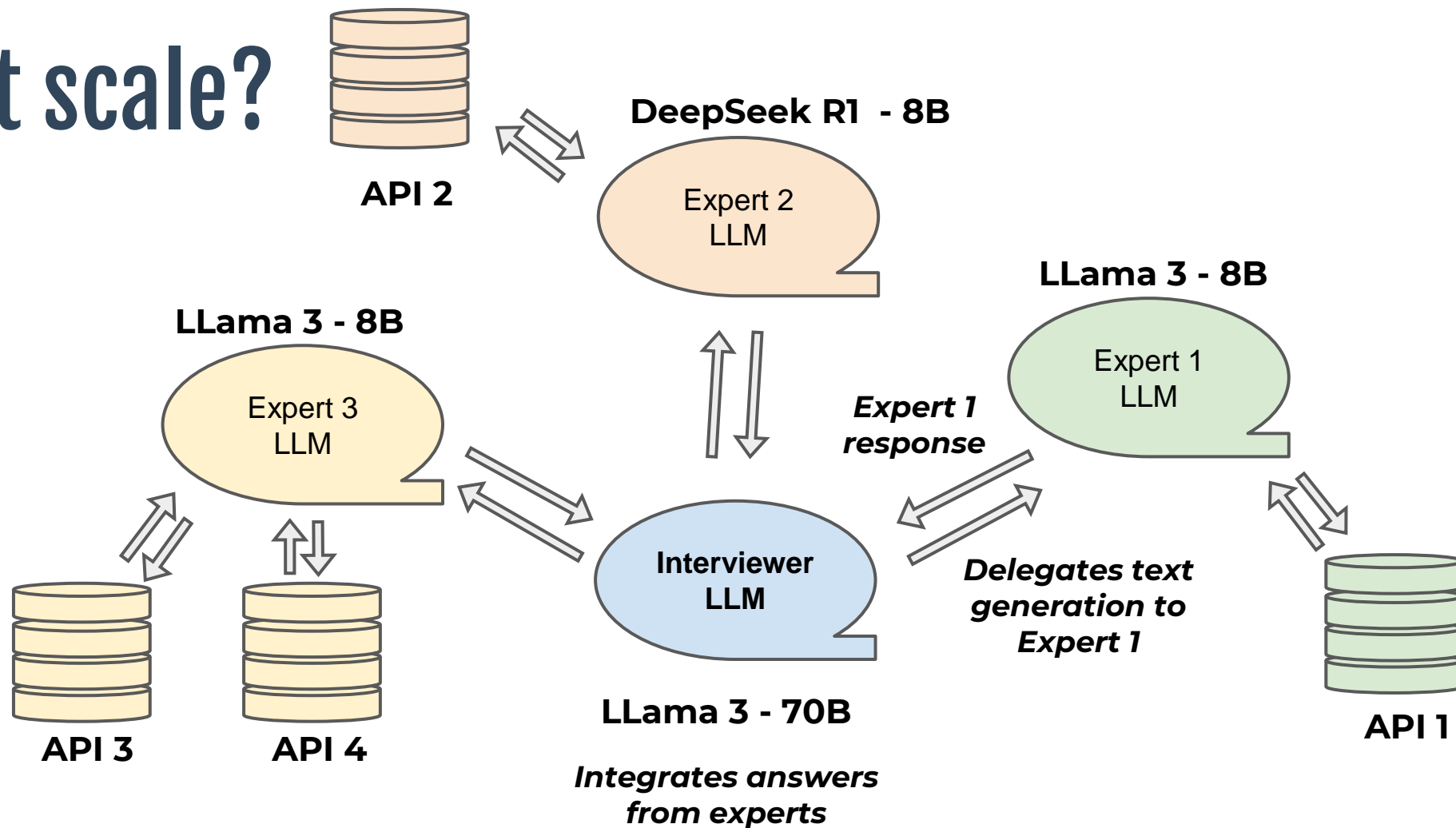
DeepSeek R1 - 8B

**Fine-tuned
Language
Model**

**Form
Search**

**I am on the bike, what's
the closest hospital to
Etxeazpia kalea in
Abadiño?**

How does it scale?





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URKIOLA
LANDA GARAPENA
DESARROLLO RURAL
ONURA PUBLIKOKO ALKARTEA
ASOCIACIÓN DE UTILIDAD PÚBLICA



west-vlaanderen
de gedreven provincie



AQUATIM



Partnership for Rural Europe





FUTURAL

Building Digital Competences for Smart Rural Communities

Tools and Insights



3 – 4.30 PM

Agenda

Time	Duration (min)	Description	Contributor
3:00 - 3:15	15'	Welcome and introduction to the session: digital competences and scaffold tool	Carlo Giua, Brigida Marovelli (UNIFI)
3:15 - 3:20	5'	Organisation of breakout rooms	UNIFI
3:20 - 4:10	50'	Scaffold cards tool to design digital learning experiences in rural areas: application in MAPs contexts	All
4:10 - 4:20	10'	Evaluation of the Workshop	All
4:20 - 4:25	5'	Organisation of breakout rooms	UNIFI
4:25 - 4:30	5'	Wrap-up and conclusion	UNIFI

Introduction to the session

Objective

This Workshop is part of the FUTURAL Capacity Building program. Today trainers and CB program recipients meet to finalize the organization and the structure of the following DELIVERY phase of the program (Training Workshops, to be held from September to December 2025).

More in details, two are the goals of the session:

1. Assisting FUTURAL partners in progressing with the CB program;
2. Showcasing and sharing with the larger rural audience how to design a competence-oriented training session.

Materials and tools.

- Digital Competence Framework for Citizens (DigComp). This framework has been developed by Joint Research Centre (JRC) and provides a common understanding to identify and describe the key areas of digital competences.
- Scaffold Cards tool. Developed by JRC and European Training Foundation aims at assisting educators in designing learning experiences that foster the development of key competences among learners

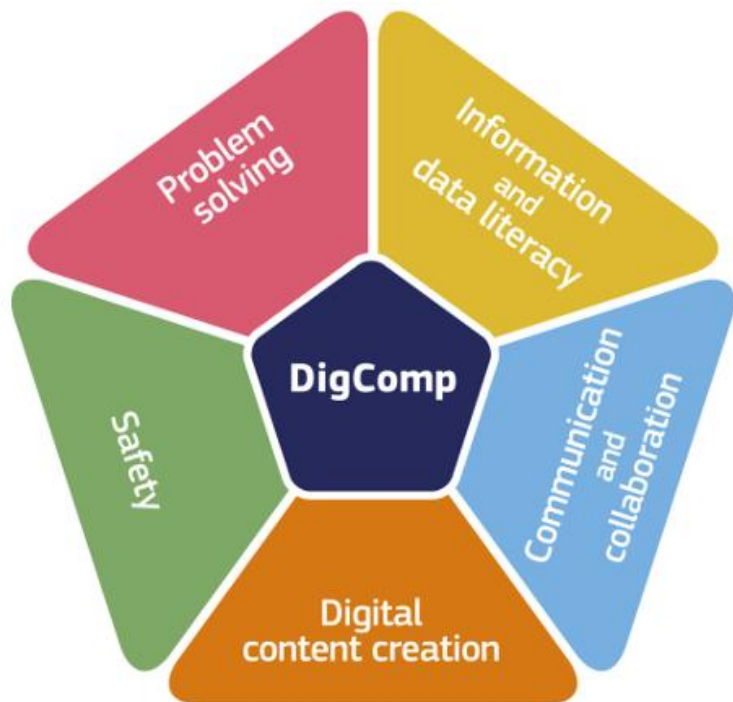
FUTURAL Capacity Building Program

	Testing M13-M24		Piloting: M25-M39		Demonstration: M40-M47
		1° EU-RIF event (by May 2025)		2° EU-RIF event (by May 2026)	3° EU-RIF event (by April 2027)
	Capacity Building phase: assess and analyse (M13-M17)	Capacity Building phase: design (M24)	Capacity Building phase: deliver (M25-M29)		Capacity Building phase: evaluate (M40-M47)
Object of Capacity building Workshop (UNIPI+ ERCA+ PREPARE)	<i>1° STEP - Community engagement</i> CB Workshops to: •define target groups and learning needs (AUA, ERCA, PREPARE, MAPs and UNIPI) •train facilitators (UNIPI)	<i>3° STEP - Creating value for the community</i> CB Workshop to: • present the MVP version of the SS (both developed at MAP level and OC funded) • present the preliminary CB evidence through the first draft of the Digital Portfolio; • selection/refinement of learning needs/competences that MAPs would like to develop in next CB Workshops	<i>5° STEP - Taking action</i> CB Workshops to: •share training module on skills, competences needed to make the best use of the Alpha versions; •transfer and share capacities acquired to the extended rural community;	<i>6° STEP - Reflections and feedbacks</i> CB Workshops to: •present the Alpha version of the SS (both developed at MAP level and OC- funded) •share an overview of the main typologies of skills, competences (specific and transversal) needed to deal with the overall Smart Solutions funded by OC call •Reflect on the CB process and report feedback on the learning experience (from MAPs target groups and MAP leaders) - presentation of the first draft of the MAPs CB digital portfolio	<i>7° STEP - Demonstrations and progress sharing</i> Final CB Workshop to: •demonstrate Beta version of the SS (both developed at MAP level and OC-funded) •evaluate capacities developed by MAP and show progresses made by sharing CB output/evidences - presentation of final version of MAPs digital portfolios
Training: material content (AUA)	<i>2° STEP</i> On the base of the learning needs defined in Step 1, AUA coordinates the training content creation/ assembling		<i>4° STEP</i> •On the base of the learning/competence needs defined in Step 3, AUA coordinates the training content creation/ assembling for the 2nd Co-creation Workshop (5° step)		

DESIGN Phase

EU Digital Competences Framework for citizens

5 Competence areas



21 Digital competences



DESIGN Phase

EU Digital Competences Framework for citizens



Information and data literacy

To articulate information needs, to locate and retrieve digital data, information and content.

To judge the relevance of the source and its content.

To store, manage, and organise digital data, information and content.



Communication and collaboration

To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity.

To participate in society through public and private digital services and participatory citizenship.

To manage one's digital presence, identity and reputation.



Digital content creation

To create and edit digital content.

To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied.

To know how to give understandable instructions for a computer system.



Safety

To protect devices, content, personal data and privacy in digital environments.

To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion.

To be aware of the environmental impact of digital technologies and their use.



Problem solving

To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments.

To use digital tools to innovate processes and products.

To keep up-to-date with the digital evolution.

DESIGN Phase

Scaffold Cards Tool – by JRC

Scaffold cards can be used by educators to design both short lessons and longer educational activities. It can be used individually or in groups.

In today's workshop, we will be using (in sequence):

1. Setting cards
2. Planning cards
3. DigiComp Cards




Source: Scaffold deck of cards booklet



Source: Scaffold deck of cards booklet

SEARCHING INFORMATION AND DIGITAL CONTENT d.1



GOOD WITH
e.1 g.5 ★ □

Develop personal strategies to identify information needs, search and navigate information in digital environments.

Search the internet for information about a topic.

DESIGN Phase

Scaffold Cards Tool – by JRC



Scaffold cards will guide us (in working groups) in following the phases to develop a competence-oriented training session.

- Cards typology (Setting, Planning, Digital competences) will support in focusing on separate training design phases;
- Specific cards (*Target or Competence card d.1 - Searching information and digital content*) will support working group participants on how to define content and organizational aspects:
 - ◆ Select the cards you want to focus on to organize the next Workshop training;
 - ◆ Discuss the training content and organizational aspects to be defined
 - ◆ Write down notes deriving from groups discussion alongside cards

Outline of the Workshop

Phases at the Working Tables – 50'

1. Introduction to MAP learning context - 15'. MAP leaders will recap the learning context and training inputs (already collected during the first CB Workshop)
2. Planning the learning experience - 30'. MAPs and SS choose the digital competences' areas that they want to deepen during the next CB training Workshop
3. Finalisation of the learning experience organization - 15'. Once defined the training Workshop structure and content, its organization should be refined and finalised.
4. Workshop evaluation - 10'. Workshop is evaluated by all participants (survey filling)

Participants & roles

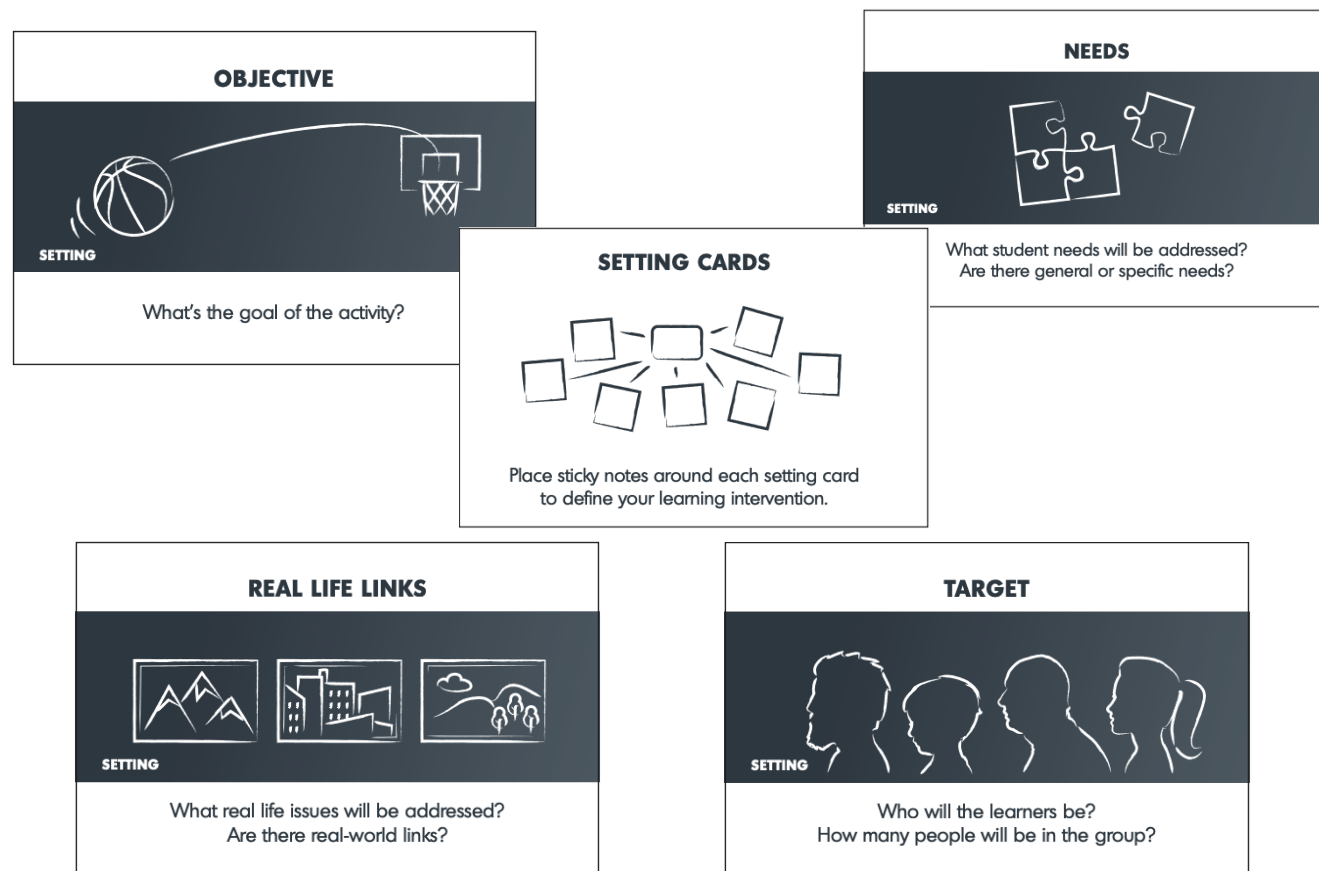
- MAP leaders provide the local learning context and give inputs to define the next CB Workshop learning content
- SS Providers support the MAP leaders in selecting the competences to develop and in the definition of the learning content material;
- Note-taker (on the A3 poster). MAP leader/SS Providers or a facilitator will take notes in forms of key words associated at each aspect evoked by the cards.
- Facilitator. This figure has the responsibility to favor and manage the interactions between the FUTURAL project's insiders (directly working at the table) and the external participants as active participants to the discussion;
- Other participants might give inputs to the session, asking questions and/or suggesting alternative approaches, additional aspects to consider, etc.

1. Introduction to MAP learning context

Objective. MAP leaders recap the context and training inputs already collected by referring to the Scaffold cards available:

Activities. MAP leaders report the information available with reference to the following setting cards:

- **Objective.** The goal of the training activity (e.g. to use a SS or wider)
- **Real Life links.** Examples of real life issues connected (e.g. MAP challenges and related potential use of SS)
- **Target groups.** Categories of local stakeholders recipients of the training
- **Learning Needs Expressed** needs related to the content of the training (if available, make reference to the digital competences)




2. Planning the learning experience

Objective. MAPs and SS will select the digital competences they are and will be working on during the following CB Workshop.

Activities.


- MAPs and SS choose the digital competences they are and will be working on (among the list of the outlined in the DigiComp framework). Focus on the competences needed to use the Smart Solutions.
- Starting competence level. If previously collected by MAP leaders (CB Workshop 1) are discussed, otherwise for each competence chosen one of the 4 proficiency categories are assigned (basic, intermediate, advanced, highly advanced).
- Training content of the future CB Workshop is discussed among MAPs and SS providers on the base the competences selected

CHOOSE COMPETENCES1




PLANNING
 What competences will learners work on?
 Pick from the competences cards and place them here.



DEFINE COMPETENCE LEVEL2



PLANNING
 How proficient are the learners? Pick a method to
 evaluate their starting level among the Assessment cards.

SEARCHING INFORMATION AND DIGITAL CONTENTd.1






GOOD WITH
 e.1 g.5
 


Develop personal strategies to identify information needs, search and navigate information in digital environments.

Search the internet for information about a topic.

EVALUATING DIGITAL CONTENTd.2






GOOD WITH
 g.5
 


Critically evaluate the sources of data and content.

Identify who is behind the information to spot and verify fake news.

ENGAGING IN CITIZENSHIP DIGITALLYd.6



GOOD WITH
 g.10 g.11 g.12
 


Use public and private digital services to empower yourself and participate as a citizen.

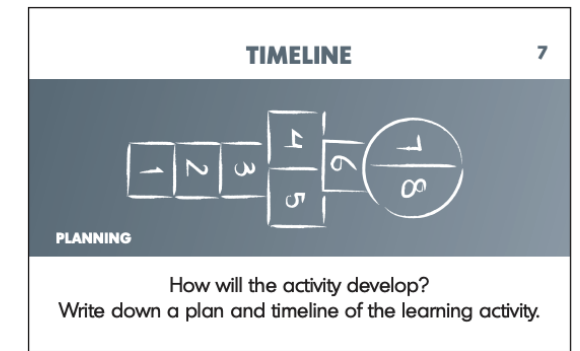
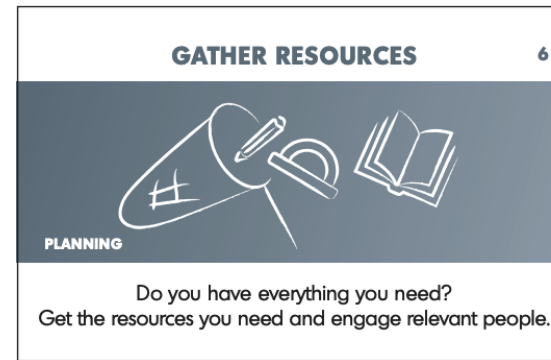
Use digital technologies to contribute responsibly and participate respectfully in your community.

3. Finalising the learning experience organization

Objective. MAPs and SS Providers finalise the Workshop organization and outline a precise schedule and plan to get to the Workshop

Activities.

- The resources needed should be outlined, with reference to both supporting materials (spaces) and external speakers/trainers to be invited (Resources card).
- Workshop plan is outlined, making use of the Timeline and Duration cards.
- MAPs and SS will outline the list of activities that will need to be followed (e.g. collection of starting level's evidence, organise the Alpha version showcase, gathering materials, etc.)



4. Evaluation

- Every participant is expected to fill the evaluation survey (QR code will be shown);
- Facilitators will collect evidence on the learning experiences (e.g. Workshops outputs, participation lists, media from the event).

Expected outputs

- MAP leaders knows why, how and when to organize the CB Workshop in phase 3 (deliver). Preparatory actions are planned (data collection finalisation on target groups, learning needs, starting competence level, etc.);
- SS Providers knows on which topics and competences (areas and dimensions) they have to structure the next training;
- All understand the functionality of the Scaffold cards tool and observe its live implementation.

Let's start!

<i>Participants categories</i>	Room1	Room 2		Room 3	
MAPs	Westhoek	Kythira	Jonava	Pongau	Durangaldea
MAP leaders	Jan Leicher	Antonia Fatsea	Aksana Zacharova	Josef Fannninger	Irene Zuazo
SS Providers	IHE Delft	Lisbon Council	ART21	Alchemia	DLR & Technalia
Smart Solutions	Hydrological model	Hiking trail platform	Biodiversity score	Bioeconomy platform	Accessibility platform
Note taker	Louise Lennon	Brigida Marovelli	Leotrim Gërmizaj	Kim Smedlund	SS providers
Facilitator	Vanessa Halhead	Ari Lomis	Miodrag Matavulj	Tom Jones	Carlo Giua

Working tables timeline – 60 mins

Working tables activities	Timeline
1. Introduction to MAP learning context	15 Mins 3:20 - 3:35
2. Planning the learning experience	30 Mins 3:35 - 3:55
3. Finalisation of the learning experience	15 Mins 3:55 - 4:10
4. Workshop evaluation	10 Mins 4:10 - 4:20



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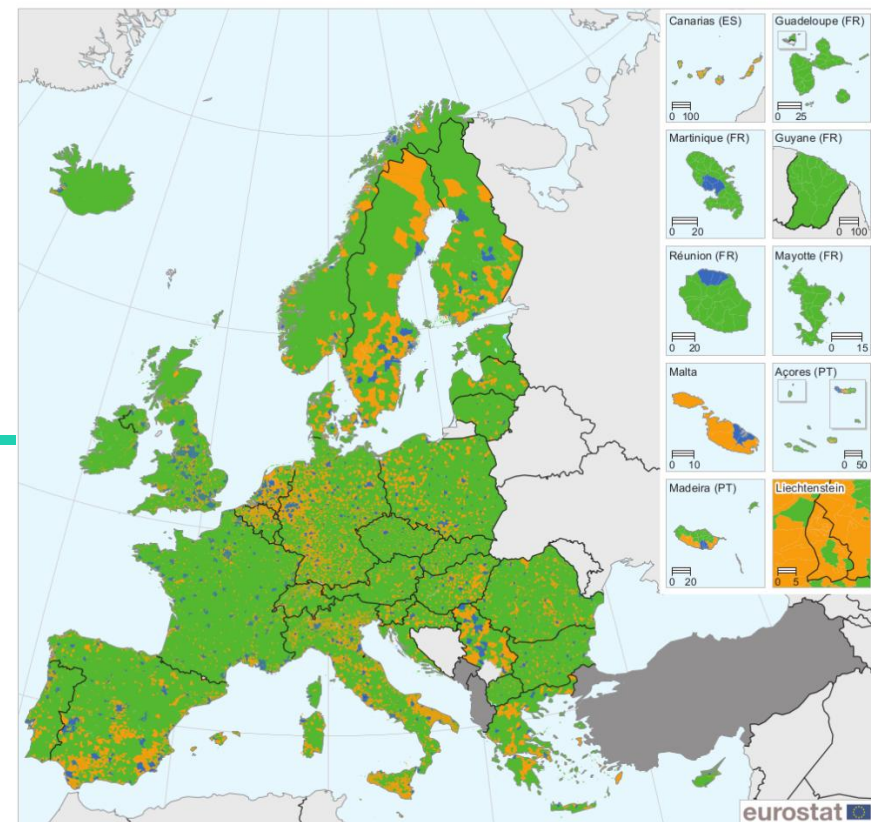


FUTURAL

Rural Innovation in Policies: Are Policies less smart than smart rural areas?

Carla Lostrangio, *European Association for
Innovation in Local Development (AEIDL)*

Degree of urbanisation for local administrative units (LAU)

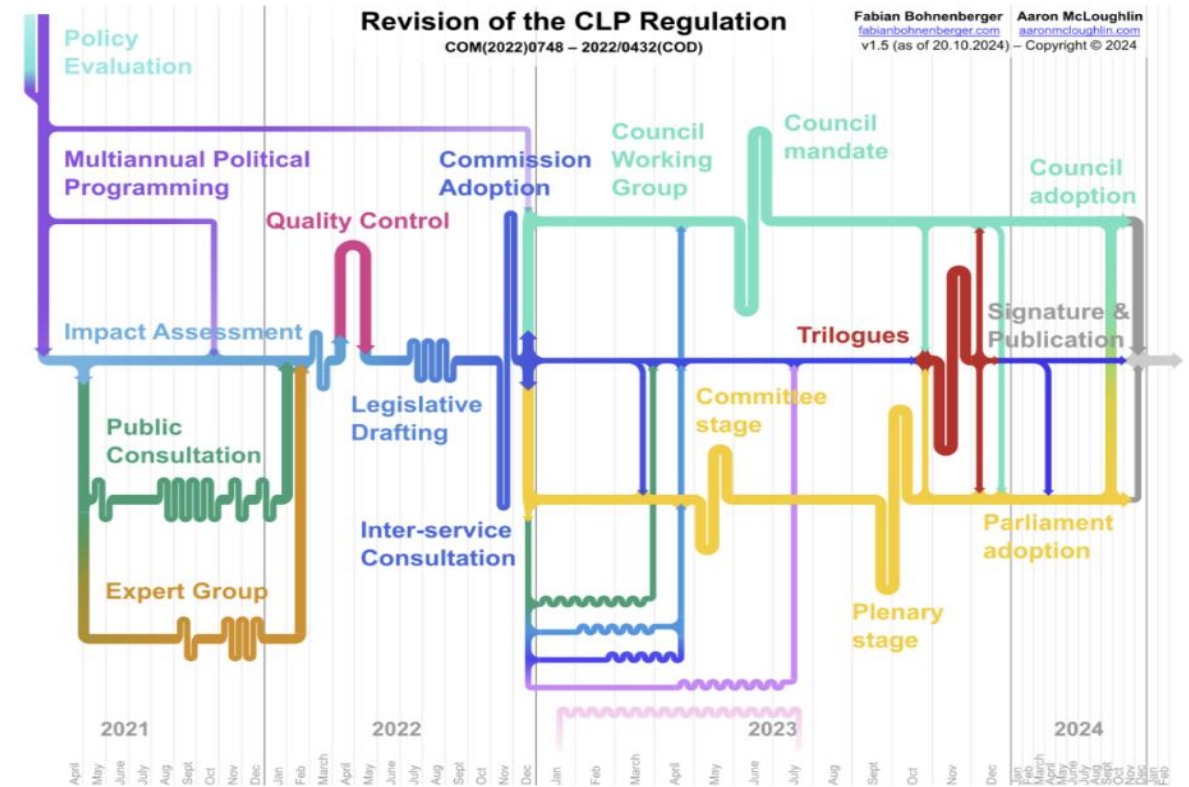
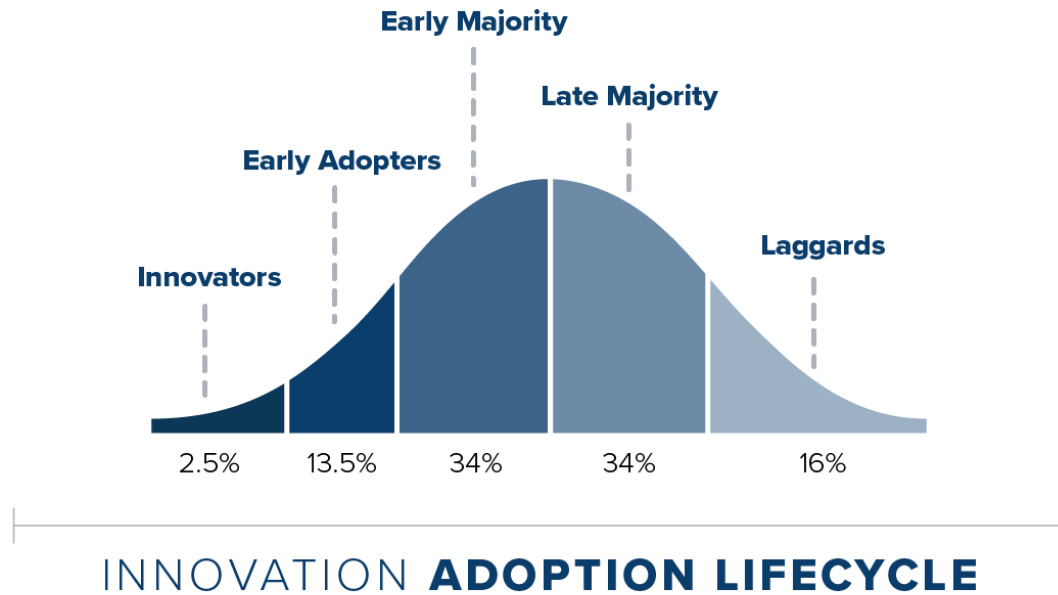


- Cities**
(Densely populated areas: at least 50 % of the population lives in urban centres)
- Towns and suburbs**
(Intermediate density areas: less than 50 % of the population lives in rural grid cells and less than 50 % of the population lives in urban centres)
- Rural areas**
(Thinly populated areas: more than 50 % of the population lives in rural grid cells)
- Data not available**

0 200 400 600 800 km

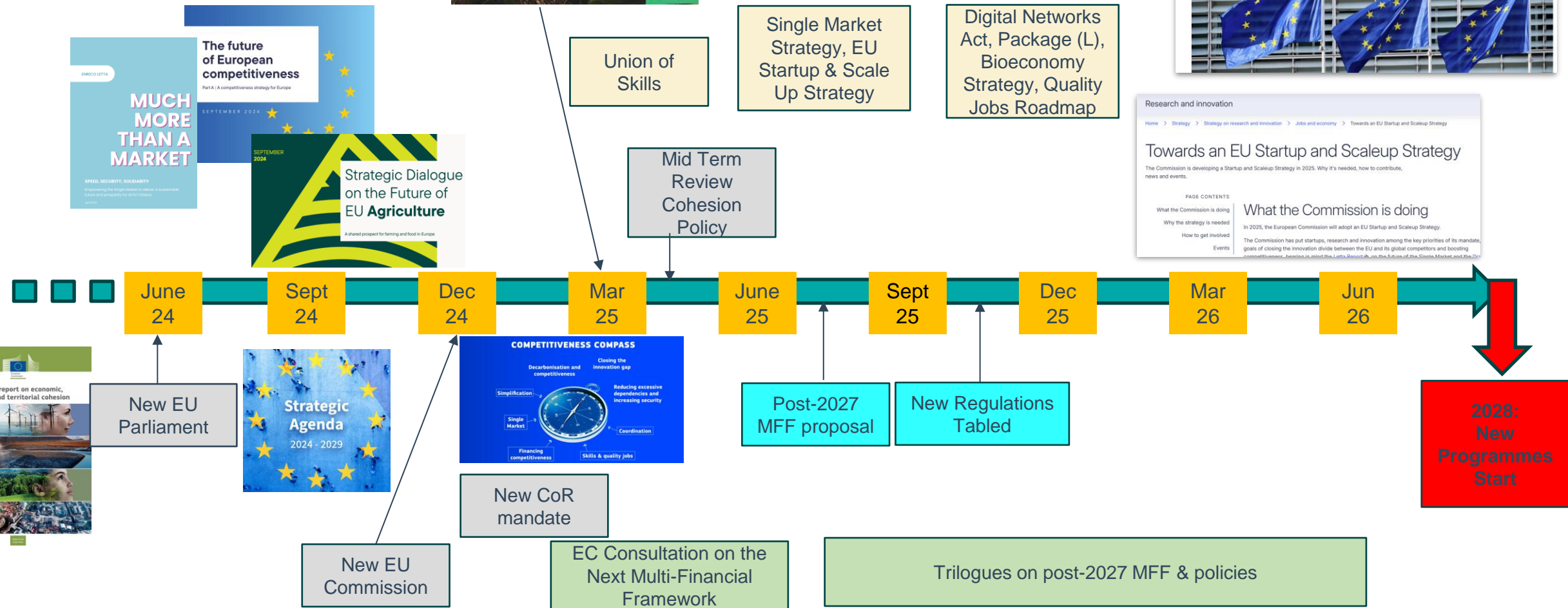
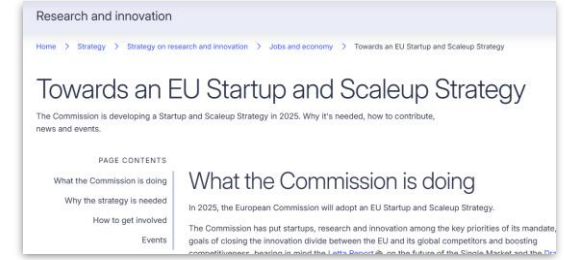
Note: based on population grid from 2011 and LAU 2016.
Source: Eurostat, JRC and European Commission Directorate-General for Regional Policy

Innovation vs. Policy process



A detailed Map of EU Law-Making: Explained. Source: Fabian Bohnenberger, 2024.

EU Context



EU-Level Support

Analysis of existing policy and governance frameworks impacting smart community-led innovation

41 Policy Frameworks, Measures, Programmes

54 Governance frameworks

Table 1 Policy Instruments, Measures and Programmes relevant to smart community-led innovation in rural areas.

	Steering	Instrument type	Support to				Support Type		
			DI	SI	CLLD	RD	PL	ECO	TCB
CAP 2023-2027	DG AGRI	Legislation & Regulatory Frameworks	X	X	X	X	X	X	X
CAP Strategic Plans 2023-2027		Legislation & Regulatory Frameworks	X	X	X	X	X	X	X
EU LTVRA		Strategies, Plans, Guidelines	X	X	X	X	X	X	X
Farm Sustainability Data Network		Information & Knowledge Platforms	X		?	X			X
Common Provision Regulation 2021-2027	DG REGIO	Legislation & Regulatory Frameworks	X	X	X	X	X	X	X
ERDF/CF 2021-2027		Legislation & Regulatory Frameworks	X	X	X	X	X	X	X
Interreg projects		Funding Instruments	X	X	X	X	X	X	X
Communities for Climate		Other	?	X	X				X
New European Bahahaus	DG REGIO with other DGs	Funding Instruments	X		X	X			X

Support To:
Digital/Social Innovation
CLLD, Rural Development

Support Type

Compliance rules & processes

Cooperation Frameworks

Working Groups

Networks & Initiatives

Specialised Agencies & Bodies

Information & Knowledge
Platforms

EU-Level Support

LEADER in the CAP

- 2,678 Local Action Groups (vs. 217 LAGs in 1991)
- 5 bln EUR (7.7% of EAFRD)
- Approximately 65% of the rural population in the EU-27

Smart Villages

- 2,624 Smart Villages foreseen
- 18 CAP SPs planned interventions via LEADER
- 5 CAP SPs planned dedicated interventions
- 6 CAP SPs more than 1 rural development interventions

CLLD in Cohesion Policy

€ 750 million planned to support bottom-up community-led local development strategies (CLLD) via the ERDF and ESF+,

Other policy & policy instruments

Horizon Europe
EU's Long-Term Vision for Rural Areas
Social Economy Action Plan
New European Bauhaus, CERV programme
Digital Decade Programme

National and regional level support

Analysis of rural innovation policies in 6 countries (Austria, Belgium, Greece, Lithuania, Romania, Spain)

CAP Strategic Plans

- LEADER funding: 5/6 countries >5% mandatory earmarking (ES- 10% of EAFRD to LEADER)
- *But quite uneven approach!*
- Digitalisation in agriculture (R3)- from >80% in Flanders-BE to <1% in Wallonia-Be and RO
- EIP Group Projects: approx. 400 in GR to <10 in Wallonia-BE
- **GP:** Smart Village: LT- KP21sum intervention for 15 mln EUR (600k EUR for SV strategy)- 25 total strategies

Cohesion Policy

- ERDF- Smart Regions using CLLD (AU), local economic development in marginal areas (ES)
- ESF+- Community-based services (LT), social economy (LT, RO)
- *Most interventions target innovation but not explicitly rural communities!*

Other policy & policy instruments

- Interreg Italy-Austria: financed CLLD via 4 projects - Terra Raetica, Wipptal, Dolomiti Live, HEurOpen
- Digibanks in Flanders (BE):350-500k EUR run by local partnerships
- Smart Village Kit (RO) proposed to municipalities by the Association for Smart City and Smart Villages

EU Rural Innovation Forum | Amorebieta Etxano, Basque Country, Spain | 14 May

Key Take-Aways on Policy

- **Cohesion Policy's Role:** Allocates more funds to rural development beyond farming than CAP Pillar II, but LEADER (under CAP) is by far more relevant to finance community-led initiatives.
- LEADER's popularity and limitations: yet facing structural, bureaucratic limitations and incomplete territorial coverage.
- **Smart Villages:** offers a targeted approach for community-led innovation within both CAP and Cohesion Policy, but its uptake and budgetary allocation remain limited.
- Beyond CAP/Cohesion: Sectoral programs (e.g., Horizon Europe, New European Bauhaus, Social Climate Funds) offer valuable alternatives to diversity fund for rural innovation but are often spatially blind or less accessible to local initiatives.
- **Lack of Ad-hoc strategies and policy misalignment:** lack specific policies for community-led innovation, and poor integration into sectoral digital and social innovation policies as well as innovation and industrial policies/strategies at national and EU level (e.g. EU Competitiveness Compass).

Key Take-Aways on Governance

- Multi-Level Governing Landscape: Rural innovation is influenced by policies developed both at EU and Member State levels. EU Funding Treaties and existing governance mechanisms offer (*in theory*) legislative and operational basis for advocate for stronger support for community-led rural innovation, but (*in practice*) they are too complex for communities to understand and engage with.
- **Constrained national space for communities:** Local authorities and civil society networks are increasingly financially constrained, facing imbalance between local duties and municipal size (e.g. 'right on municipal uniformity' in Spain), geopolitical instability.
- Technical and Financial Needs: is a major barrier to civil society representatives (e.g. rural networks, associations). Excessive bureaucracy or rigid regulations harshen this.

Our Recommendations

1

Formal Recognition of the transformative role of community-led innovation

2

Mainstream Political & Financial Support with 8% Mandatory Earmarking and Territorially Proof all EU Policies

3

Apply the 'Do not harm to EU Cohesion' principle across all territorially relevant EU policies

4

Align Rural Development with Sectoral Policies reinforcing existing Governance mechanisms

5

Shift the Focus to Rural Innovation Ecosystems rather than individual Solutions

6

Allow Regulatory Flexibility to allow innovation to happen now

7

Enhance Digital Skills & infrastructures, with caution on marginalised communities

8

Systematise Inclusion of Local Voices beyond Token Approaches



POLICY WEBINAR

Smarter, Stronger and More Competitive Rural Areas: The Way Forward for EU policies

21 May 2025 | Online | 9.30 - 11.30 AM



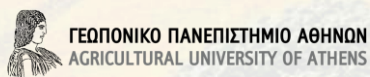
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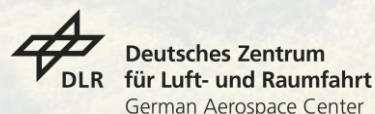


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