

Playing for change: gamification and serious games for a sustainable society

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People



Background:

- Software Engineering
- Al
- HCI
- Psychology
- Cognitive Science

Projects overview





































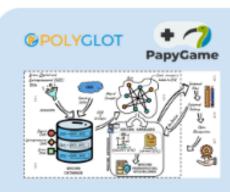




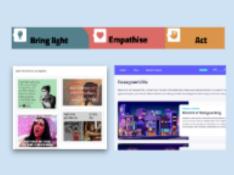








Model-driven engineering and Al techniques to support personalized learning.



Playful education platform for sensitive domains







Gamified platform for sustainable mobility campaigns



More-than-human games, virtual/mixed reality serious games





Gamified phygital toolkit supporting co-design processes

GAMIFICATION FRAMEWORK



Comprehensive framework for designing, deploying, and personalizing gamified systems





EDUCATION

DIGITAL TRANSFORMATION

GREEN TRANSITION

















SMART ERA

The SMART ERA project

- Develop **smart, co-designed solutions** to face socio-economic challenges in rural Europe, and **empower rural communities**.
- Provide scalable, data-driven solutions across Europe's rural contexts.
- Overcome structural issues like limited infrastructure and job opportunities.

Piloting

Currently being used in 6 pilot cuntries:

- Finland (Ostrobothnia)
- Bosnia-Herzegovina (Trebinje)
- Slovenia (Šmarje-Padna)
- Spain (Sóller)
- Italy (Trentino-South Tyrol)
- Bulgaria (Devetaki Plateau)



Question

How do we **engage and guide** people and stakeholders in **co-designing innovation** interventions in a **rural area**?

The toolkit

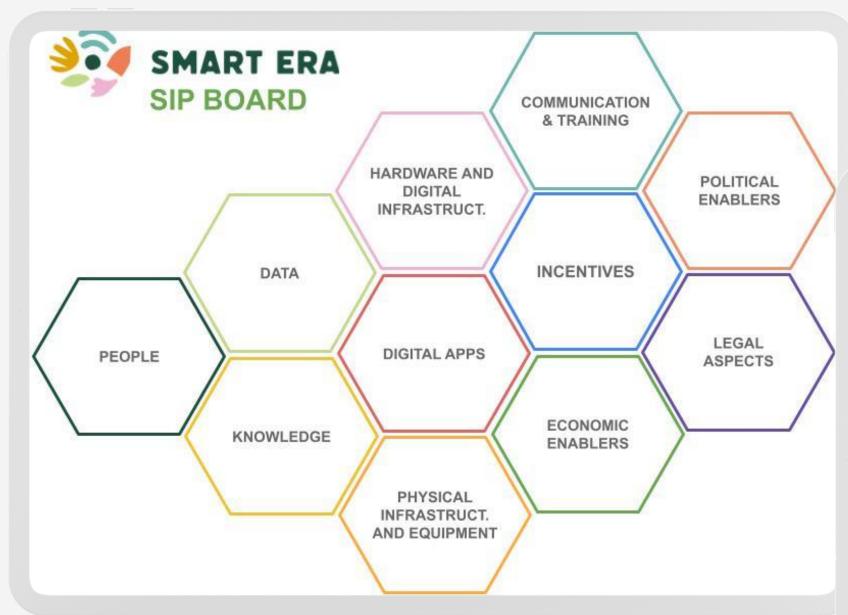




- A phygital co-design toolkit developed by two FBK units.
- Meant for co-designing interventions or Smart Innovation
 Packages (SIPs).
- Structures SIPs as collections of ingredients.

Bassanelli, S., Bonetti, F., Gini, F., Leonardi, C., Mencarini, E., Not, E., Marconi, A. (2025). Design and development of a gameful co-design tool for rural interventions. In *Proceedings of the 9th Annual International GamiFIN Conference 2025*, Ylläs, Finland.

The analog toolkit - board and ingredients



Ingredients categories were identified via workshops with 6 pilot regions, 50 stakeholders



The analog toolkit - ingredient instances





The analog toolkit - ingredient cards

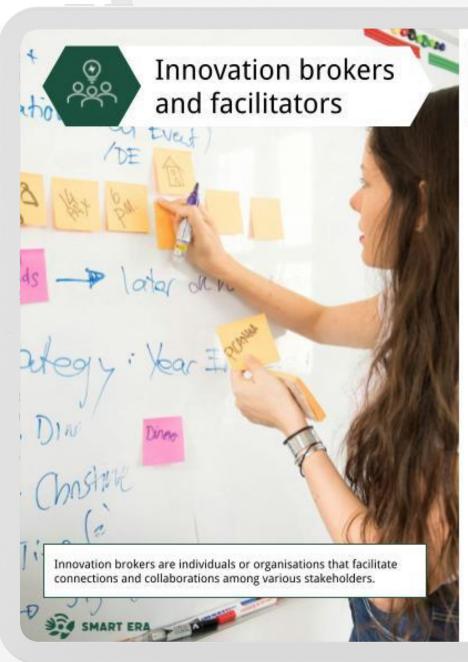


SMART ERA

People are the core of innovation in rebecause they bring local knowledge, and a deep understanding of their corneeds, challenges, and opportun

By engaging different actors - from purepresentatives to residents - we ensuperspectives are considered and collare better equipped to drive meaning lasting change in rural communications.

In a rural innovation initiative, peop change iteratively according to the phase. Ensure that the right expert perspectives are brought in at each



How might this solution benefit rural innovation?

Build networks

They help build networks, develop shared language, and articulate innovation needs. Brokers are crucial in managing relationships and ensuring effective communication among actors, essential for successful innovation processes.

Mobilise community members

They engage and mobilise community members to participate in development initiatives.

Provide insights

They possess deep insights into the challenges and opportunities within their communities. They can help identify local needs, challenges, and potential solutions grounded in rural life's realities.

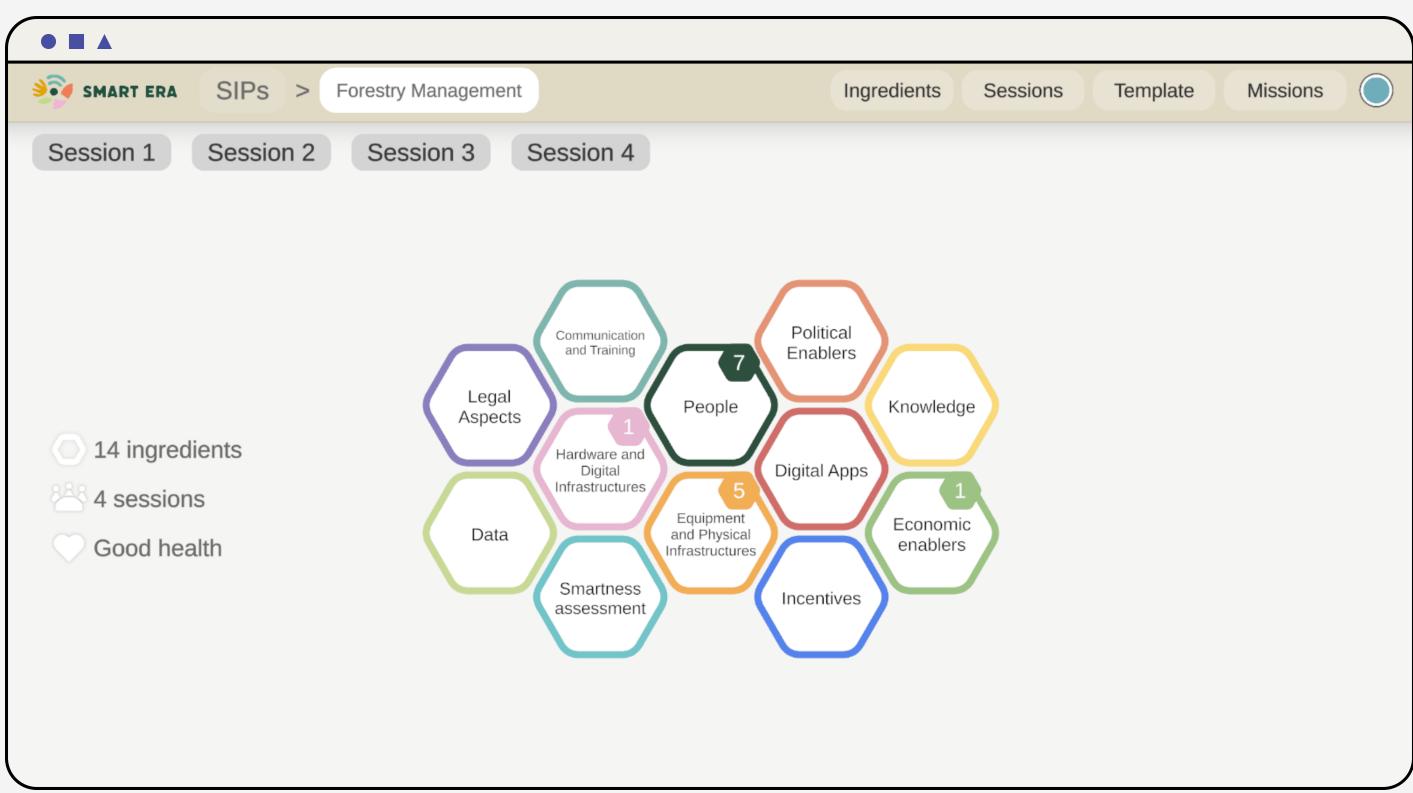
Champion innovative ideas

Supporting and promoting new practices, technologies, or business models, they help create an enabling environment for rural innovation.

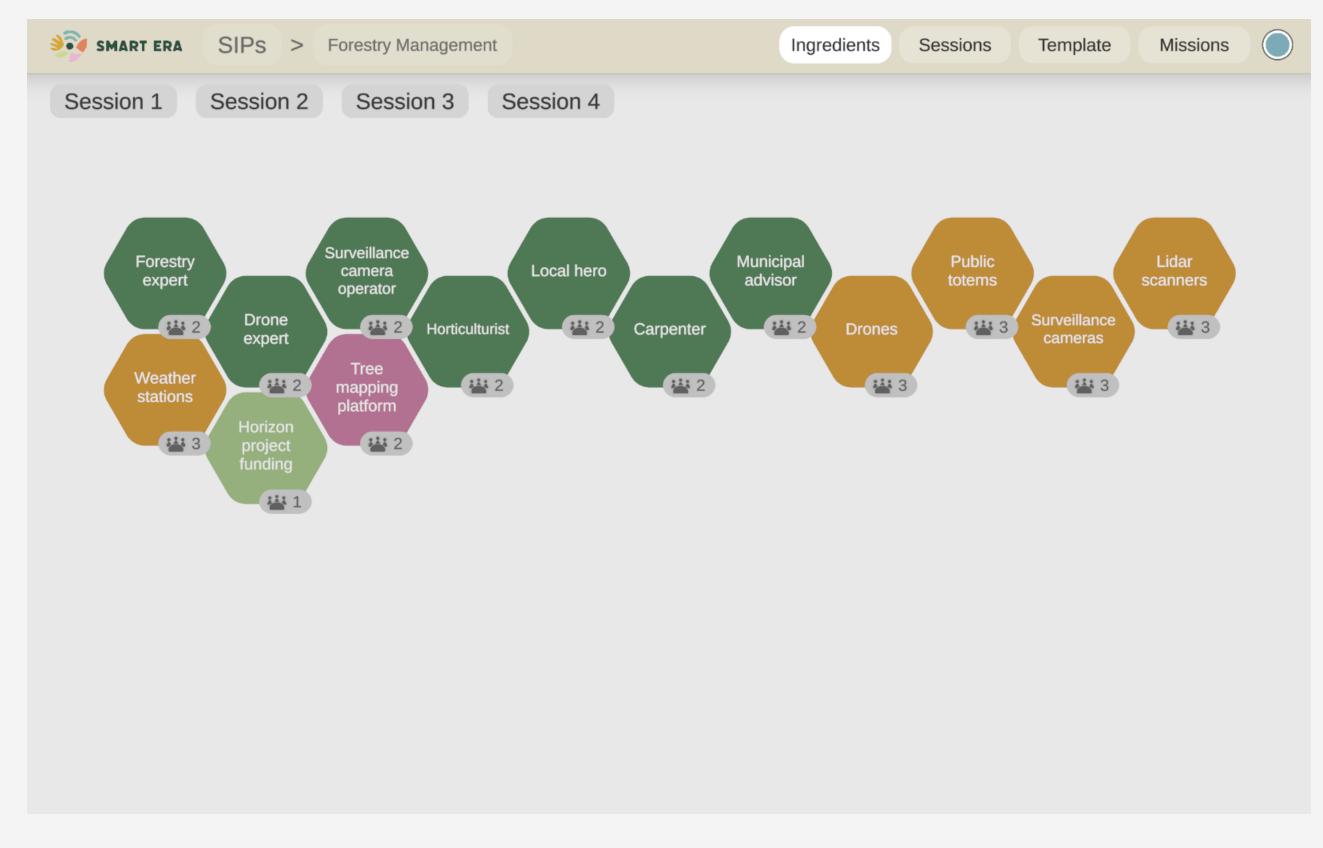
They are local heroes

Local heroes in rural areas act as bridges between local communities and external stakeholders such as government agencies, NGOs, and private sector actors. A local hero inspires and brings ideas to the community and serves as a catalyst for change. With charisma and influence, they bring visibility to important issues and have the power to engage and motivate others.

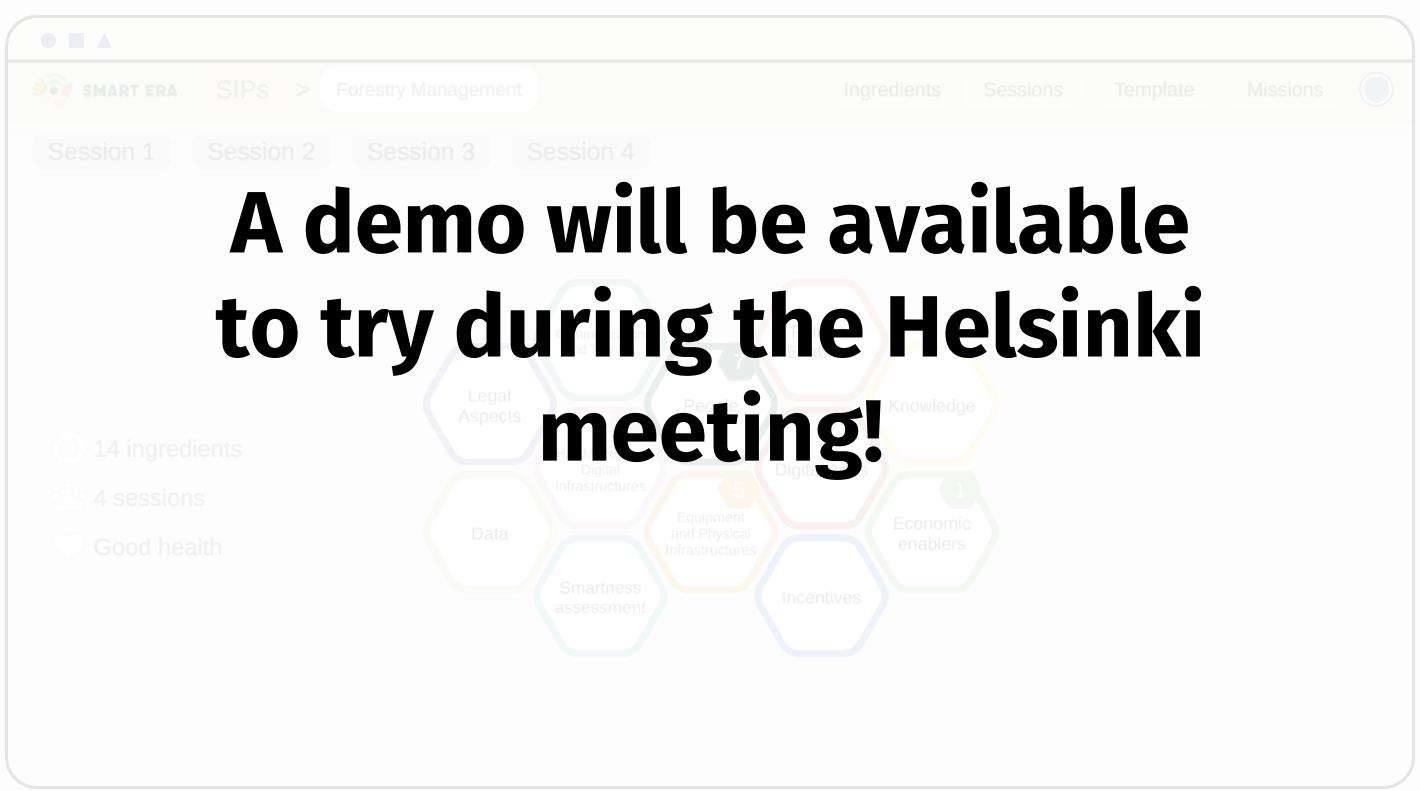
The digital tool - board and ingredients



The digital toolkit - ingredient instances



The digital tool - board and ingredients



Project future



June - 2025

Feedback implementation Scientific communication **July 2026**

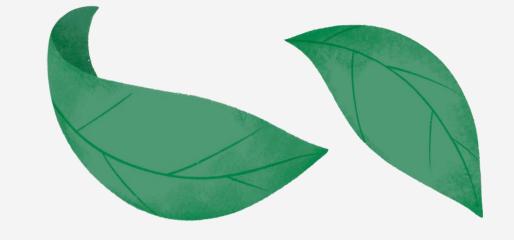
Open call for 4 micro pilots



"Untitled Bee Game": A serious game for eco-sustainability education

Bonetti, F., Bassanelli, S., Bucchiarone, A., Gini, F., Marconi, A. (2024). Untitled Bee Game: Be(e)ing Mean to Learn More About Eco-sustainability. In *Proceedings of the 8th Annual International GamiFIN Conference 2024*, Ruka, Finland.

Game loop



EXPLORE AND PUNISH HUMANS WHO EXHIBIT BAD BEHAVIORS

2 LEARN FACTS FROM FLOWERS



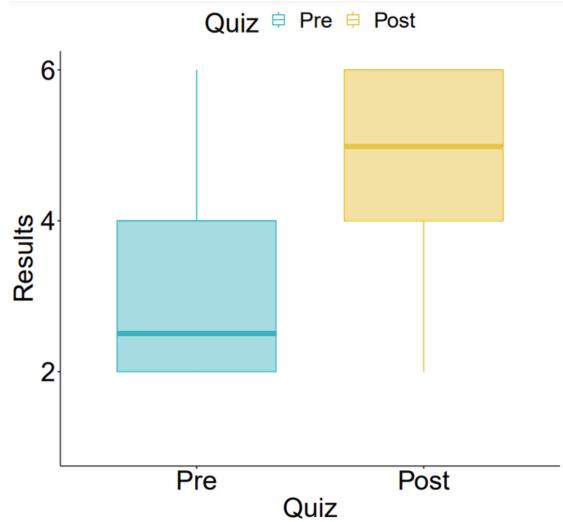


pollination, which means they help plants

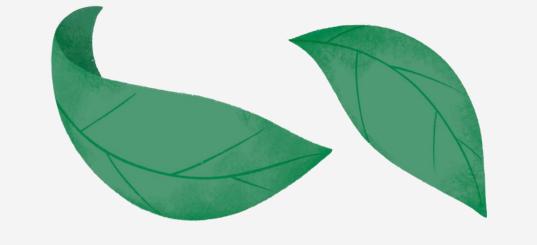




ECO-QUIZ



One-tail Wilcoxon signed-rank test: (V = 11, p < .01)



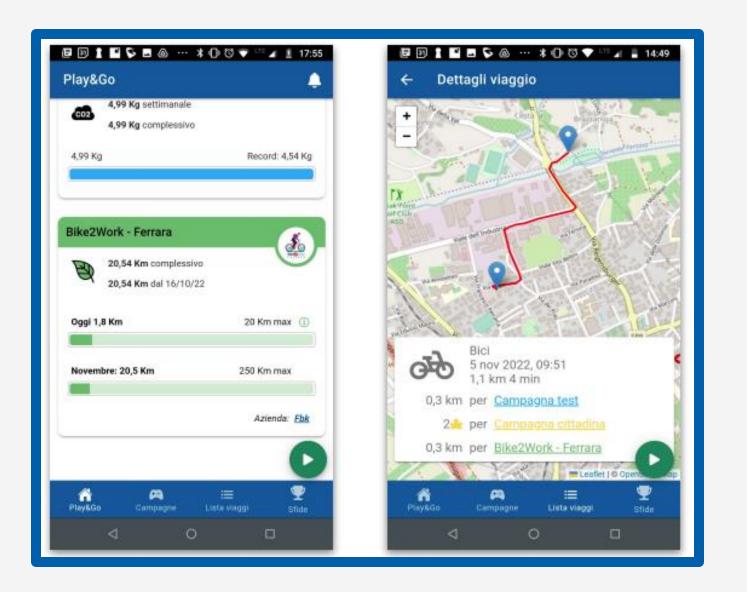




 Green mobility and positive behavior change through gamification



 Green mobility and positive behavior change through gamification



Play&Go (Citizens, employees, students)

Almost **250k** sustainable Km and **57t of CO2** saved in 2022 in Ferrara (6 months). And other cities!

www.playngo.it PLAY & GO



 Green mobility and positive behavior change through gamification



Kids Go Green

Almost **3k** children involved in 2023 and **872k** sustainable Km since 2016

www.kidsgogreen.e

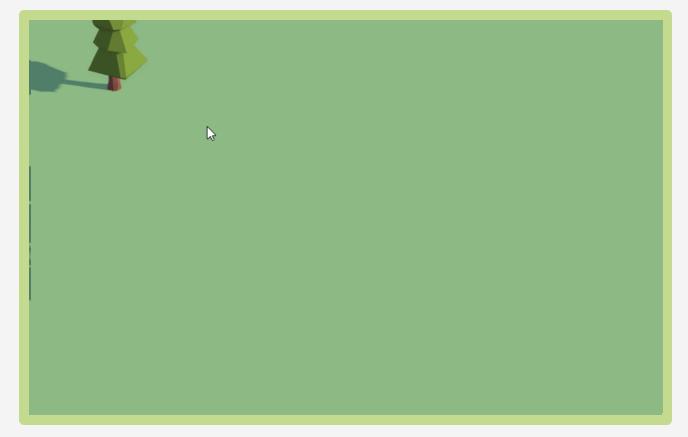




More-than-human themes in serious games



More-than-human themes in serious games



Bark Beetle Game

A video game about managing forest, biodiversity, and balancing different natural agents

Thank you!

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