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Empowering Small Landowners with a Digital Platform for Adaptation Planning

Bridging the knowledge gap for enhanced resilience in Slovenia

The European Innovation Partnership project used capacity building and improved access to crucial information empowering landowners to implement climate change adaptation measures which contribute to biodiversity conservation, recreation and CO₂ sequestration in forests.

Key Learnings

- Engagement with multiple stakeholders: Understanding the issues that landowners (farmers and foresters) face, their language, and what knowledge they need is essential for designing tailor-made, capacity-building programmes. Involving experts and space for open discussions is important for learning and improving on-farm resilience.
- **Multi-level governance**: The project bridges the gap between decision-making on the national level and implementing the measures at a local level to achieve Green Deal goals by involving landowners.
- Access to information: Information related to land use, environmental protection, forestry and other relevant data is available online, but often scattered across various platforms, making it difficult to access for small-scale landowners. Compiling it on <u>one common</u> <u>platform</u> was important for landowners to find the information they needed.
- Adaptation is a case-by-case story: As each farm and landowner are a separate story and business, suitable adaptation measures need to be tailored to individual needs. Knowledge is key to deciding what measures improve site-specific resilience.

About the region

Slovenia is located between the Mediterranean, the Alps, and the Panonian Basin and is unique in its potential for nature-based sustainable tourism. However, due to the warming of the sea, summer droughts, and 58% forest cover, the location also has the potential to develop severe storms with intense flooding, windfalls and damage to infrastructure (as it happened in summer 2023). Around 44% of the population lives in rural areas. There are more than 68,000 registered agricultural estates, of which the majority are family farms, averaging six livestock units.

Climate Hazards

Droughts, Storms, Extreme Temperatures,

Flooding, Water Scarcity

Sector

Agriculture, Forestry, Biodiversity, Tourism,

Key system

Ecosystem and Nature-based Solutions

Land-use and Food Systems



Climate Threats

In Slovenia, landowners and small family farms face significant climate threats, including unpredictable weather patterns and increased frequency of extreme events such as droughts, floods, and strong winds. These challenges threaten agricultural productivity and require adopting adaptive practices to ensure the sustainability and resilience of local farming systems.

Farm and forest owners are crucial in adapting Slovenia's landscapes

36% of the land in Slovenia is managed primarily by small family farms, while 58% of the country is covered by forests, of which more than 77% are privately owned. Therefore, landowners are crucial in implementing the political pledges connected to the <u>European Green Deal</u>.

However, as the average farm operates on about eight hectares and the average size of a forest estate is only 3 hectares, small-scale landowners bear most of the work. A significant number of family farms are subsistence holdings, meaning they rely on non-agricultural and/or non-farm income sources, supporting the farm operations, and are even more vulnerable to the impacts of climate change. For them, it is more difficult to cover climate change-related damages, build capacity, diversify income sources and build resilience due to limited resources (financial, labour and time).

Enabling easy access to information

The <u>project</u> addresses one of the key issues of transferring mitigation and adaptation to climate change from the strategic (national) to the implementation level of agricultural holdings by providing access to relevant information and data.



Figure 1: Slovenia including layers from forestry, the Environmental Agency, Land use and Land Use in Agriculture. Image Credit: Slovenia Forest Service (ZGS), Environmental Agency (ARSO), Raba tal and GERK.

The project team chose three key ecosystem services that all pilot farms contribute to – biodiversity, recreation and carbon sequestration in forests. These three ecosystem services were chosen because the project partner farms, which helped develop and test the platform, focus on activities like tourism, education and dairy products, rather than conventional, high-volume meat and milk production. By selecting these three ecosystem services, the project aimed to stay ahead of <u>European legislation</u> and landowner requirements in agriculture and forestry.

An understanding of where to find relevant information on these three topics was lacking as relevant government agencies and institutions have individual online data viewers, which are often not adapted to users outside of the sector.

To solve this issue, the project team collected publicly accessible data (layers) from various public institutions and made them available on a single online platform. The tool gives users easy access to farm-level relevant data, such as various biodiversity-related Common Agriculture Policy schemes present in the area they can sign up for, making its interpretation and corresponding climate action easier to understand. Additionally, the platform allows landowners to add their own data and observations, using it as a personal online diary while researchers can use it for citizen science. Once landowners gain access, they can interpret the information to suit their individual farm needs and take informed steps for climate change adaptation.



Figure 2: Overlapping layers that allow landowners to make better-informed decisions. Image Credit: Slovenia Forest Service (ZGS), Environmental Agency (ARSO), Raba tal and GERK.

Capacity building fit for purpose

Recognising that each landowner encounters unique challenges and has limited time for capacity building, the project team developed customised training sessions alongside the platform design. Experts in climate change, agriculture, forestry, protected areas, and tourism collaborated with pilot farms, fostering shared learning and insights. The sessions emphasised understanding climate-related technical terms but also highlighted the importance of open dialogue, encouraging participants to exchange ideas and ask questions. This approach tailored the training to practical needs while facilitating a community of support and knowledge-sharing.

Pilot measures: Addressing each farm's unique needs

Capacity-building activities were designed with each farm's needs in mind, making sure all farmers understood how they could contribute to national adaptation goals. After the farms applied and tested the online tool, lessons learnt from the capacity-building activities and the tool application were crucial in defining on-farm adaptation measures. The measures contributed to one or more of the selected ecosystem services the project focused on. The measures range from clearing overgrown agricultural land to expanding grazing areas and supporting biodiversity conservation, planting better-adapted crops, monitoring protected species and developing tourist nature trails as additional tourism offers. The project team designed financially viable measures to ensure the diversification of income sources while building resilience.

Lessons learnt

• Collaboration between climate change and agricultural experts is crucial, as neither fully understands the other's domain, which can hinder the implementation of effective climate change adaptation in agriculture.

• Digital tools that simplify processes, reduce bureaucracy, and are affordable for small farms are essential for supporting tailored resilience strategies, especially when aligned with public agricultural consultancy services.

"Digitalisation in agriculture and adaptation mean different things to each landowner. Knowledge is key in understanding what solutions are best for each farm and forest owner to build resilience and ensure Slovenia`s landscape remains full of life."

Katarina Mulec, Stritih Sustainable Development

Summary

Knowledge exchange is essential for effective on-farm climate adaptation. A European project, successfully united pilot farms with experts across climate change, forestry, agriculture, and tourism. By centralising scattered online information into a user-friendly platform, they provided a valuable resource on relevant topics, which also serves as a digital diary for landowners and a citizen science tool for researchers. Capacity building, designing measures contributing to various ecosystem services and building on-site resilience is a combination of approaches that is easily transferable to other contexts.

Further information

<u>The contribution of agricultural holdings to mitigation and adaptation of climate change through the</u> <u>concept of ecosystem services | EU CAP Network (europa.eu)</u>

Read more about other European Innovation Partnership projects here: <u>https://eu-cap-network.ec.europa.eu/projects_en</u>

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Submeasure 16.5: Support for joint action for climate change mitigation or adaptation and for a joint approach to environmental projects and common environmental practice for EIP projects

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