

Protecting the biodiversity of Estonia's agricultural landscapes

Photo: Neal Rylatt via Canva



The biodiversity of Estonia, and indeed of Europe as a whole, is fundamentally linked to its agricultural landscapes. While the well-being of many species depends on food production practices, the quality and sustainability of food production also depends on the biodiversity of agricultural landscapes, soil health, and our ability to mitigate and adapt to climate change. Unfortunately, agriculture is the main threat to habitats in Estonia.¹ Due to intensive agricultural practices, Estonia's diverse landscapes have been replaced by monoculture fields where pesticides are used in abundance.²

Launched in 2020, the LIFE-IP ForEst&FarmLand³ project is dedicated to the comprehensive management of Estonia's forest and farming landscapes. Its aims are to improve the conservation status of Estonia's Natura 2000 habitats and species, and to protect and restore its ecosystems and landscapes. The project covers four key areas: forests, semi-natural grasslands, agricultural landscapes and species protection. This case study focuses on the biodiversity of agricultural landscapes.

According to Estonia's last Article 17 report of the Habitats Directive, about half of the EU-protected habitats and species in Estonia have an unfavourable conservation status.⁴ The main pressures and threats to farmland species and habitats have evolved due to changes in agricultural practices, a decline in traditional and extensive land use, climate change, alterations to natural hydrological regimes, and urbanisation. The increasing migration of people to urban centres has left rural areas sparsely populated, and mainly inhabited by older people who are relatively inactive. Farmland is being increasingly used by large profit-driven companies and farmers engaged in extensive monoculture cultivation. This means that small-scale farming is not as popular or as necessary as it once was.⁵

¹ European Environment Agency, [Main pressures and threats](#), *European Environment Agency*, 19 December 2019.

² Loodusriikas Eesti, [Põllumajandusmaastike elurikkus](#), *Loodusriikas Eesti*, accessed 27 October 2023.

³ Loodusriikas Eesti, [LIFE IP ForEst&FarmLand](#), *Loodusriikas Eesti*, accessed 13 November 2023.

⁴ Eionet: Central Data Repository, [Article 17 National Summary Factsheet – Estonia](#), *European Environment Agency*, accessed 10 November 2023.

⁵ European Commission, [Adaptive community based management of forest and farming landscapes to improve the conservation status of Natura 2000 habitats and species](#), *European Commission*, accessed 27 October 2023.

The ForEst&FarmLand project, which runs until 2029, has been created to meet the need for a streamlined approach to landscape management, foster cross-sectoral cooperation in the field of nature conservation, and develop a common set of guidelines and actions that stakeholders can follow. The project is particularly important in the context of the recently agreed EU Nature Restoration Law, which emphasises the importance of restoring biodiversity-rich landscapes on agricultural land, and outlines concrete requirements to increase nature on farmlands.

Enriching biodiversity through targeted interventions

Despite a growing appreciation for the natural environment, studies show that there is a lack of practical knowledge of nature conservation and environmentally sustainable activities among citizens, farmers and forest owners. To address this gap, the ForEst&FarmLand project brings together scientists, farmers, land managers and local communities to test out a range of nature conservation activities and methods, including traditional and innovative approaches. The project aims to provide practical guidance on how citizens can act in ways that cause the least possible harm to nature and instead contribute to the conservation and restoration of biodiversity.⁶

As part of the project, agricultural producers along with researchers from the University of Tartu worked together on various demonstration fields with the aim of monitoring the impact of different agro-ecological methods on yield and biodiversity. The activities for each field were selected based on the preferences of the individual producer and the characteristics of the given landscape. The work involved experimenting with techniques that increase soil carbon sequestration, measures that improve pollination and natural pest control, and practices that improve food production and nature conservation. The data obtained from these experiments will be used to inform the design of future agricultural support schemes and to identify agro-ecological methods best suited to Estonian farming conditions.⁷

Similarly, in spring 2023, agricultural company Sadala Agro OÜ and Järvamaa Vocational Education Centre established a demonstration field incorporating various strips of grassland (Figure 1).



Figure 1. Strips of grassland at the Sadala demonstration field. The strips help both pollinators and the natural enemies of pests reach the innermost areas of the larger field sections. *Photo: Remek Meel*

⁶ Loodusriikas Eesti, [Eesmärgid ja tegevused](#), *Loodusriikas Eesti*, accessed 10 November 2023.

⁷ Heapõldi, [Põllumajandustootjale](#), *Heapõldi*, accessed 10 November 2023.

Both groups planted 12-metre-wide grassland strips to support field biodiversity and enhance pollination and pest control. Future activities aimed at increasing the biodiversity of the landscape on the site will include planting tree strips, adding rock piles, and retaining winter cover crops, among other interventions.

Governance, stakeholder collaboration and financing

The lead partner of the project is the Ministry of Climate. In addition, 10 other partners from universities, the forestry and nature conservation sectors, as well as non-governmental organisations are taking part.

The total cost of the project is EUR 19.5 million, with EUR 11.6 million coming from the EU's LIFE programme. In addition to the LIFE budget, EUR 70 million in complementary funding aimed at supporting green farming actions will be used. These funding instruments include the European Agricultural Fund for Rural Development (EAFRD), the Cohesion Fund, Horizon 2020, the European Economic Area Mechanism, the Norwegian Financial Mechanism, and Estonian state funding.

Reaping the benefits

Conservation practices on agricultural land play a crucial role in maintaining biodiversity and ensuring sustainable production. Increasing the biodiversity of agricultural landscapes enhances their resilience to unexpected events caused by the climate crisis. Enriching the variety of flora and fauna also helps to protect yields through natural pest control, maximise the benefits of pollination, and preserve the diversity of soil life.



Figure 2. Illustration of an eco-friendly agricultural landscape. *Photo: Maria Välja*

Since the methods, processes and technologies are still being trialled, it is still too early for the project to generate wider economic benefits. The objective of this initial testing phase is to determine which agro-ecological techniques most effectively promote biodiversity without resulting in significant yield loss. Based on these findings, an overview of the most suitable techniques for the Estonian environment will be provided. As we have seen, the introduction of grassland strips – a technique that improves pest control and pollination, leads to higher quality crops, and reduces the need for pesticides – could be one of many techniques to be recommended.⁸

Given that one-third of Estonia's Natura 2000 network sites are located on private land, the proactive involvement of landowners is crucial for achieving nature conservation objectives.⁹ Engaging with landowners helps to build trust and understanding about the need to implement nature conservation measures, helps them transition from biodiversity-damaging activities to more positive interventions, such as ecotourism, and provides them with a platform to discuss their fears of possible income loss as a result of implementing these actions. Similarly, the farmers taking part in the project discover the most suitable activities for their fields and learn that a productive farm need not come at the expense of biodiversity. They also receive a comprehensive overview of the biodiversity of their fields and learn how the practices they employ affect soil biodiversity and carbon sequestration. Based on these experiences, they will have more of an opportunity to have a say on the directions and activities of the European Green Deal and to exchange knowledge with other producers across Europe, where various agro-ecological techniques are increasingly being applied.¹⁰

Beyond these large-scale nature conservation efforts, there are also plans to update the existing Nature Conservation Act¹¹ and Estonian Environmental Data Portal.¹² Additionally, measures will be taken to enhance overall public awareness of environmental issues and to promote individual and community-based environmental protection. The hope is that future generations will also have the opportunity to enjoy the best of local produce and experience Estonia's plants and animals in all their diversity, thus preserving a vitally important part of Estonia's culture – its deep-rooted connection to nature.



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⁸ Voldemar Rannap, [Interim Report: Covering the project activities from 01/01/2020 to 30/06/2022 corresponding to Phase I](#), Ministry of the Environment of the Republic of Estonia, 18, 30 September 2022.

⁹ European Commission, [Adaptive community based management of forest and farming landscapes to improve the conservation status of Natura 2000 habitats and species](#), European Commission, accessed 27 October 2023.

¹⁰ Äripäev, [Ettenägelik põllumees on elurikaste maastike hoidja ja looja](#), Äripäev, 9 March 2021.

¹¹ Riigiteataja, [Nature Conservation Act](#), Riigiteataja, 16 July 2023.

¹² Keskkonnaportaal, [Eesti keskkonna andmete portaal](#), Keskkonnaportaal, accessed 21 November 2023.