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UNDERSTANDING & IMPROVING  
THE SUSTAINABILITY OF AGRO-  
ECOLOGICAL FARMING SYSTEMS IN THE EU

# Small-scale farming in Transylvania and Maramures

*Preserving the high farmland biodiversity while  
improving economic viability*

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HNVF landscape in Biertan, Transylvanian Highlands  
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# Farming system

-  The Transylvanian Highlands spreads over 3 counties, with an area of approx. 270.000 ha, of which cca. 155.000 ha farmland; Maramures has 257.000 ha of farmland, with cca. 106.000 farms. The average size of farms for the whole case study area is cca. **3.9 ha** (the last General Agricultural Census 2010).
-  The case study area is a **High Nature Value Farmland (HNVF)**, with a fragmented agricultural landscape consisting of mosaic patches of semi-natural grasslands created and maintained by traditional livestock grazing systems: sheep, cattle, small plots of cultivated land with rather **low intensity/extensive management**. This mosaic cultural landscape results from the long-term, still surviving traditional farming practices.
-  **Semi-subsistence family farms**, typically producing a mixed range of food and feed, and combining grazing livestock with temporary and permanent crops.



Manual hay-making with the family in Maramures  
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# Research dilemma

*How to increase the economic viability of the small-scale farming system while preserving the cultural landscape and biodiversity?*

## Research questions:

- 1) How do farms, including small-scale farms, perform on the three dimensions of sustainability - economic, social and environmental, in the two study areas?
- 2) How can Transylvania and Maramures continue to provide their people and consumers in general with quality food, a cultural identity, and to harbour ecological treasures with wide societal value?
- 3) How can we reward smallholders for their contribution to biodiversity and landscape custodianship and increase their economic viability through (better) targeted market and policy measures and incentives and better regulations?

**Farm sample:** 10 farms, from organic and traditional to transition farms and conventional farms. Four farms raise cattle for dairy, another four raise cattle for meat, and there are two other mixed farms with livestock and crops.

# Other research elements

**Stage of transition examined:** ensuring long-term sustainability and upscaling of an already strong agro-ecological system.

**Main sustainability issues:**

-  social dynamics - depopulation and ageing of villages, with land abandonment and a gradual loss of indigenous knowledge
-  market pressures and negative factors pertaining to public policies, which push small and family farms out of the market and favour the intensification of practices and simplification of habitats and homogenisation of foods
-  decent local incomes, as a consequence of the point above and because of insufficient entrepreneurial skills, lack of/insufficient information regarding (funding) opportunities, bureaucracy and administrative complications constraining entrepreneurial initiatives

# Local Multi-Actor Platform & selected agro-ecological practices

**Key actors involved in the local MAP:** farmers and farmer associations, public institutions (local town halls, the Agency for Payments and Interventions in Agriculture, the Sanitary-Veterinary and Food Safety), Ministry of Environment, consultants, research institutions (Pastures Research and Development Centre Brasov, Leuphana University Lueneburg), Local Actions Groups and NGOs.

## **Agro-ecological practices identified and shortlisted for analyses:**

-  Crop rotation including cover crops & N fixing crops on arable land, in conventional cattle farms (and combining production of feed with grazing)
-  Producing and using compost
-  Agro-ecological landscape elements: orchard meadows and wood pastures
-  Mixed farming (livestock, pasture and crops)
-  Extensive grazing

# Agro-ecological practices (1)

 **Crop rotation** on arable land, in conventional cattle farms, which ensures half or most of the animals' diet. The crop rotation practice includes legumes, with lucerne/alfalfa or a combination of lucerne and common vetch. Three farms in our case study are applying this method.

**Trade-offs:** The main benefits are for soil quality and a reduced need for pesticides and chemical fertilisers and self-sufficiency in animal feed, while there could be an increased need for labour and/or machinery/equipment and facilities.

 **Producing and/or using compost.** Traditionally, in Romania and in the case study, compost is made from manure and it is sourced from one's own farm and/or from neighbouring farms. The compost has also been treated in the study as an opportunity of extra income generation at farm level.

**Trade-offs:** The compost promotes the growth and health of plants and roots and adds organic matter to the soil, while reducing dependence on external, synthetic fertilisers, but there are also disadvantages associated with emissions and water pollution from the improper storage of manure during fermentation.

# Agro-ecological practices (2)

 **Orchard meadows** (especially in Maramures) **and wood pastures** (especially in Transylvania). These agro-ecological habitats, with their corresponding management practice through extensive grazing, traditional hay-making, fruit harvesting have been found explicitly in four of the farms analysed in the case study. However, they are emblematic features of the landscape.

**Trade-offs:** These habitats present a higher carbon stocking potential, better animal welfare and health,

better conditions for cross-pollination and maintenance of plant genetic diversity, high biodiversity (e.g. birds and insects); these also allow for the diversification of farm produce and related incomes (e.g. beekeeping, selling fruits), but this involves labour and investment costs, and having good entrepreneurial skills.



# Agro-ecological practices (3)

 **Extensive grazing.** This system is one that is characteristic of the hilly lands, where cattle have been raised from generation to generation in family farms according to certain customs. Three farms in the study are using this practice. Moreover, one of them is certified organic, although currently it doesn't bring a market advantage.

**Trade-offs:** higher carbon stocking potential, better water quality and soil quality, high biodiversity specific



of HNV grasslands, pollination services, better animal welfare/animal health, food quality, but potential issues with farm profitability depending on structure of market and consumer willingness to pay a premium, investment in processing and marketing needed to create a market position based on differentiation from standard/conventional produce and to maintain the value of produce.

# Agro-ecological practices (4)

 **Diversification/Mixed farming (livestock, pasture and crops).** Almost all farms studied in the project are mixed farms, combining livestock with crops cultivated on farm owned/managed arable land, and/or grasslands for grazing or hay-making; however, the level of diversification varies and the combination of activities from farm to farm is different.

**Trade-offs:** Although more complex and labour intensive, it allows for resources to be recycled in the farm, minimising the use of external inputs, and allows for better risk management and economic resilience because of the diversified income streams provided by the various farm produce. Mixed farms also provide the context for the perpetuation of indigenous knowledge associated with managing self-sufficient farms.



# Barriers of economic viability of AEP

-  Lack of public funding and public infrastructure to support proper management, production, sale and usage of compost
-  Lack of information and advisory services for the use of agro-ecological practices and a lack of a differentiated support system for small, medium and large farms
-  Agricultural education not adapted to the present and future challenges related to climate change and biodiversity loss
-  A preference for the easily accessible synthetic fertilizers
-  The insufficient or even lack of storage and processing facilities/infrastructure to create finite food products from raw ingredients
-  Hygiene and food safety standards/regulations that are too strict, complex and bureaucratic for small producers
-  Insufficient or even lack of market access for local and small producers
-  Eligibility criteria for (CAP) area-based direct subsidies which come with an obligation to clear (woody) vegetation from the agricultural land if it exceeds 100 sqm
-  Public subsidies (CAP) calculated and allocated per animal head, without limits, which can lead to overgrazing

# Key actions and instruments to address barriers (1)

-  An integrated package of new tools for mainstreaming compost and enhancing nitrogen use efficiency - incl. a dedicated EAFRD funding measure for farm manure storage platforms and equipment, which can be also turned by the farms into an additional business avenue, investments to be made also by town halls for public composting facilities including through EAFRD, a wide-scale use of a simplified fertilisation plan in small farms, and the mandatory coupling of fertilisation plans with regular soil testing and monitoring in large farms
-  Transfer of knowledge and good practice through AKIS and a national information and consultancy service system catering to different classes of farms and supporting the achievement of economic efficiency through the use of various agro-ecological practices
-  Cooperation, incl. in AKIS, between all actors in the field and beyond (nutrition and health), from research institutes, NGOs/associations, universities, consultants/advisors and experts, and public administration and institutions, combining theory and information with the practical part

# Key actions and instruments to address barriers (2)

-  Promotion and awareness campaigns about the quality and provenance of food products
-  Provisions regarding vegetation cover on agricultural land should be changed to allow a higher limit and flexibility depending on the biogeographical area and the typology of vegetation
-  Mobile processing units and common cold storage and processing units - collective storage, processing, slaughterhouse infrastructures at local level created by town halls and/or county councils
-  The public procurement legislation should be improved to favour local produce coming from extensive farms, smallholders and agro-ecological food systems in public food programmes (e.g. school food programmes) and in the supply of public institutions
-  There should be a balance/equivalence between subsidies in the Member States, as the subsidy has an impact on the market price, creating unfair competition for local producers who cannot price-match

# Key lessons learnt

Agro-ecological practices require **additional effort - which is not valued by the market and not properly supported by policy-makers, understanding the complexity of the system**, the need to integrate the various components of the system and to acknowledge the fact that economic benefits are not immediate.

**Consumers need to be more educated** to open up towards local producers and **traditional or alternative food distribution channels**.

**The small, medium-sized and mixed farms must be preserved for an integrated landscape level** approach, part of the rural tourism concept and part of a regional/territorial strategy. To ensure small and medium-sized farms survive, there is **a need for strong advocacy and political will** on a national and European level, for **a necessarily better policy and market framework**.

**Farmers/producers need to set-up or join associative structures** in order to gain visibility and power in the food chain and in policy-making.

# Thank you for your attention!

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