



UNISECO

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

# Deliverable D3.3 Story Maps of the SES of the Case Studies

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05.12.2019

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DATE OF APPROVAL:

06.12.2019

CALL H2020-SFS-2017-2

Sustainable Food Security-Resilient and Resource-Efficient Value Chains

WORK PROGRAMME

Socio-eco-economics - socio-economics in ecological approaches

Topic SFS-29-2017

PROJECT WEB SITE:

[www.uniseco-project.eu](http://www.uniseco-project.eu)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 773901.

This document was produced under the terms and conditions of Grant Agreement No. 773901 for the European Commission. It does not necessary reflect the view of the European Union and in no way anticipates the Commission's future policy in this area.



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## ACRONYMS

AUA	Agricultural University Athens
BEF-LT	Baltijos Aplinkos Forumas VSI, LT
BEF-LV	Baltijas Vides Forums, LV
BOKU	University of Natural Resources and Life Sciences, Vienna
CREA	Consiglio per la Ricerca in Agricoltura e l'Analisi dell'Economia Agraria
FiBL	Research Institute of Organic Agriculture
GAN	Gestion Ambiental de Navarra, S.A.
GEO	Geonardo Environmental Technologies LTD
HUT	The James Hutton Institute
ISARA	Institut Superieur D'Agriculture Rhone Alpes
LUKE	Luonnonvarakeskus
SES	Social-ecological System
SLU	Sveriges Lantbruksuniversitet
TI	Johann Heinrich von Thuenen Institut
UNIABN	The University Court of the University of Aberdeen
UZEI	Ustav Zemedelske Ekonomiky a Informaci
WWF	Asociatia WWF Programul Dunare Carpati Romania



# 1. INTRODUCTION TO STORY MAPS

Story maps are a specific form of website to tell stories by making use of multimedia elements such as pictures, maps and videos. The purpose of story maps in UNISECO is to share the results of the assessment of social-ecological systems (SES) in the case studies with a wider public.

The SES assessment is used to study systems of high complexity. It conceptually divides these systems into the subsystems *Resources, Resource Units, Transformation* (e.g. processing), *Products, Actors, Governance, Outcomes, Interactions, Action Situation, Social-Economic-Cultural Settings and Related Ecosystems*. The SES provides an understanding how these systems dynamically interact when farmers manage particular resources (e.g. soil, grasslands, and permanent crops). The main purpose of studying the farming systems in UNISECO with the SES approach was to increase the understanding why some systems succeed or fail in their transition from conventional to agro-ecological farming systems. The SES approach was adjusted to the needs of UNISECO, because it was not used frequently in farming context yet. In some cases, this led to a simplification of the framework (Guisepelli *et al.*, 2018).

The story maps also build on the results of sustainability assessments in Task 3.2 (Landert *et al.*, 2019) and the governance and network assessment in Task 5.2 (Vanni *et al.*, 2019). In some cases, graphs were used to express these results, in other cases, qualitative comments provided a richer picture of the status quo in the case.

In order to reach different target groups, it was necessary to translate the results of SES assessment to a form, which is understandable and interactive, but still showing the key messages collected from the SES research. Therefore, it was necessary to avoid research jargon and to use the story map format of showing the key features of the farming system investigated. Based on the provided guidelines, research partners also collected pictures and, in some cases, videos to provide visual experience of the cases. Farmers and other stakeholders were asked to express their views on the topic investigated to illustrate the point of view of different actors in the story maps. As a result, story maps can convey an authentic message. The story maps contain for example information on the main sustainability issues and actors. They describe how the actors cope with these mentioned issues. If applicable, the story maps also contain a description of the process of transition from conventional to agro-ecological farming systems and difficulties experienced in this process. Because the situation in each case is specific, project partners had to be flexible how to express the main features of the case and adjust the common structure of the story maps. Hence the story maps express also the diversity of stages of the transition, differences in contexts and in different proportion of important factors influencing studied transition of the farming systems studied.

The next steps of UNISECO will build on the SES findings and relevant results. They will be the basis for co-constructing strategies to support transition of farming systems towards agroecology. In turn, the expected UNISECO outcomes will inform again the story maps, leading to an update of the maps in 2020 (Deliverable D3.6).

Table 1: Overview of the cases presented in the story maps

Partner Country	Sustainability Issue (examples)	Dilemma
Austria (Ecoregion Kaindorf)	Water scarcity because of climate change, soil quality decline	How to tackle impacts from climate change (e.g., increasing water stress), increase carbon sequestration in soils, prevent soil degradation and reduce soil fertility loss from arable land while maintaining or improving the farm's social and economic sustainability and contributing to climate change mitigation.
Czech Republic	Soil degradation	How to maintain the good performance of arable land management in organic dairy farms in Vysočina region to reduce arable soil degradation and water pollution by pesticides while ensuring economic viability.



France	Pesticide pollution, economic viability	How to reduce dependency on external fertilisers and to reduce pesticides use (especially glyphosate) through agro-ecological practices increasing soil ecological services (soil biology) while maintaining the economic profitability of farms?
Finland (Nivala region)	Carbon emissions, nutrient recycling.	How to reduce harmful climate, soil and water impacts of dairy farming in Nivala region without sacrificing economic viability of the dairy sector, by means of envisioning and implementing a multipurpose bio-product plant along the lines of circular bioeconomy, with the aim of producing bioenergy and organic fertilizers from manure.
Greece (Imathia)	Pressures due to using agro-chemicals (on soils, water, biodiversity)	How to sustain the long-term economic viability of farms whilst protecting the natural resources? How to protect biodiversity and water quality in orchards whilst also improving competitiveness and market access?
Germany, Lower Saxony	High pressure on biodiversity and water quality	How to integrate agro-ecological practices on arable land (conventional and organic) in highly market-oriented farming systems to reduce biodiversity loss and water pollution threats without significant negative impacts on the economic viability of farms?
Hungary Somogy	Soil degradation, water pollution, biodiversity on arable land	How to integrate agro-ecological practices on arable land in highly market-oriented arable farming systems to maintain and improve soil quality without significant negative impacts on the economic viability of farms?
Italy (Chianti Bio-district)	Nutrients and pesticide pollution, biodiversity	How to promote cropping system diversification in a highly specialised and market-oriented winegrowing area via the adoption of agro-ecological practices, to increase biodiversity and improve landscape management while maintaining the profitability of farming through local value chains.
Latvia (country)	Economic viability and adding value	How to increase the economic viability of conventional and organic, largely grass-based, dairy farms while preserving biodiversity in grasslands and water resource quality? How to ensure that all organic milk is processed into organic dairy products?
Lithuania (country)	Economic viability and adding value	How to maintain and encourage extensive management (grazing) of grassland habitats? How to become (or remain) competitive in the market without intensifying the farming practice?
Romania (Maramures Transylvania)	Economic viability, slowly increasing intensification	How to increase the economic viability of small- scale farming while preserving the cultural landscape and biodiversity?
Spain (Basque country)	Environmental, social and economic viability	How to reduce the fragility of agro-ecological farms while maintaining the social, economic and environmental sustainability?
Sweden	Livestock contribution to climate change	What are the challenges and possibilities to diversify specialised ruminant farms (conventional and organic) to include more crops for direct human consumption while simultaneously integrating more agro-ecological principles to enhance sustainability performance in an economically strained production sector?
Switzerland, lake Sempach region	Lake eutrophication, P increase in water, ammonia emissions	How to reduce the high animal densities and at the same time remaining profitable against the backdrop of important path dependencies (barn constructions, depths, up- and downstream market, knowledge system).
UK (North-East Scotland)	Soil degradation, water pollution	Producing public goods whilst maintaining viable production of private goods, and securing economic and social sustainability at a farm level

## 2. LIST OF STORY MAPS AND ACCESS LINKS

Table 2: List of story maps and how access to them

Country	Story map name	Access link
Austria	Mitigating of climate change by humus formation in arable farming	<a href="https://arcg.is/1vH9ju0">https://arcg.is/1vH9ju0</a>
Czech Republic	Improvements of soil properties on the arable land	<a href="https://arcg.is/18rXXX0">https://arcg.is/18rXXX0</a>
Finland	Reducing environmental impact of milk	<a href="https://arcg.is/1iPvLG">https://arcg.is/1iPvLG</a>
France	Viticulture and agroecology	<a href="https://arcg.is/1WrWOW">https://arcg.is/1WrWOW</a>
Germany	Improving biodiversity and water quality without generating significant negative impacts on the economic viability of farms	<a href="https://arcg.is/0Prjzm">https://arcg.is/0Prjzm</a>
Greece	Transition of peach growers to sustainability	<a href="https://arcg.is/0fia4W">https://arcg.is/0fia4W</a>
Hungary	Taking steps towards sustainable nature resource management to increase economic viability in mid-sized arable grain-protein-oil cropping farms in Hungary	<a href="https://arcg.is/1vHzrS">https://arcg.is/1vHzrS</a>
Italy	Diversifying specialised winegrowing areas	<a href="https://arcg.is/0yPbW">https://arcg.is/0yPbW</a>
Latvia	Improving the sustainability of grassland-based organic dairy farming in Latvia	<a href="https://arcg.is/W9ajb">https://arcg.is/W9ajb</a>
Lithuania	Keeping it small and extensive: the way to a sustainable future in Lithuanian dairy sector	<a href="https://arcg.is/OK4fvy">https://arcg.is/OK4fvy</a>
Romania	Small-scale farming in Transylvania	<a href="https://arcg.is/148Kba">https://arcg.is/148Kba</a>
Spain	Agro-ecological farming systems in Northern Spain	<a href="https://arcg.is/0qL5z1">https://arcg.is/0qL5z1</a>
Sweden	More food from ruminant farms	<a href="https://arcg.is/14GaXy">https://arcg.is/14GaXy</a>
Switzerland	Strategies for reducing stocking densities	<a href="https://arcg.is/0yyqC00">https://arcg.is/0yyqC00</a>
United Kingdom	North-East Scotland	<a href="https://arcg.is/1PO9LS0">https://arcg.is/1PO9LS0</a>

## 3. ACKNOWLEDGEMENTS

This report is compiled for the H2020 UNISECO project (Grant Agreement No. 773901). We would like to thank members of the Case Study MAPs in the partner countries for participating in the interviews and workshops and for their valuable input to the story maps reported in this Deliverable.

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