



SHERPA

Rural Science-Society-Policy
Interfaces

SHERPA Position Paper

RURAL POLICIES TO
PROTECT AND ENHANCE
BIODIVERSITY THROUGH
LANDSCAPE FEATURES



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Sustainable Hub to Engage into Rural Policies with Actors (SHERPA) is a four-year project (2019-2023) with 17 partners funded by the Horizon 2020 programme. It aims to gather knowledge that contributes to the formulation of recommendations for future policies relevant to EU rural areas, by creating a science-society-policy interface which provides a hub for knowledge and policy. Find out more on our website:

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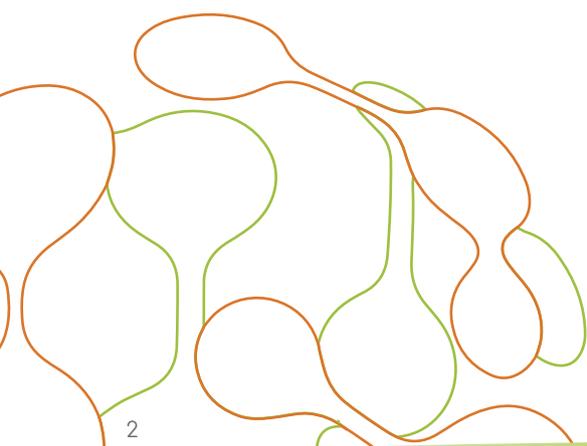


Table of contents

Introduction.....	4
Headline messages.....	4
Problem being addressed and key questions	5
Key scientific evidence	6
Summary of positions of the Multi-Actor Platforms	7
Summary of position of the EU Multi-Actor Platform	8
Concluding remarks.....	8
Annex 1. Links to supporting documents	9
Annex 2. Graphical representation of the overview of the position paper	9



Introduction

During 2020, SHERPA piloted the process through which it identifies knowledge, shares it with MAPs through discussion papers, synthesises the outputs of MAP discussions into a paper for discussion at EU level and produces a position paper for publication following those discussions. Three MAPs took part in this pilot exercise – from Alqueva (Portugal), Emilia-Romagna (Italy) and Slovenia. The topic initially identified for the pilot was whether better indicators could be found to judge the success of interventions, currently being designed in Member States' CAP Strategic Plans to protect and enhance biodiversity, although discussion in the MAPs also focussed on needs and types of intervention. A focus on landscape features was agreed. The pilot was undertaken before SHERPA's repository was fully functional.

Headline messages

Landscape features as part of agricultural ecosystems provide essential habitats that contribute to biodiversity potential, as well as economic (agronomic services, opportunities for value-added marketing), health and cultural benefits. The value of landscape features, e.g. buffer strips, hedges, terrace walls and ponds, is acknowledged in the Biodiversity strategy¹, where a target of at least 10% of agricultural area as high-diversity landscape features is set, in light of providing habitats for wild animals, plants, pollinators and natural pest regulators. Member States will have the obligation to translate this 10% EU target to local level, especially through the CAP instruments and CAP Strategic Plans, in line with the Farm to Fork Strategy², and through the implementation of the Habitats and Birds Directives³.

The Biodiversity strategy also highlights that greater biodiversity may help to support higher agricultural production. However, eligibility rules for Common Agricultural Policy basic payments, along with an insufficient understanding of the positive impacts landscape features can have on production, it leaves farmers with an incentive to remove them. As a result, optimal balance between economic and biodiversity outcomes may not be achieved.

There are knowledge gaps, especially about the interaction of landscape features in agricultural systems in High Nature Value and naturally constrained areas. There are also information failures, whereby existing knowledge – especially of how better management of landscape features can improve economic performance – is insufficiently available to farmers. The development of more suitable policy interventions is also impeded by insufficient monitoring of both the existence of landscape features and the impact on them of current measures.

The opportunity should be taken to bring together existing, dispersed monitoring systems, supplemented with new high-quality information from earth observation platforms (satellite and drone) or innovative techniques (e.g. DNA-based monitoring tools), with interpretation and analysis that makes use of artificial intelligence, to provide high-level indicators of long-term impacts. More scientific research into the economic benefits of landscape features for farmers is needed. Policy needs to ensure that farmers' attention is sufficiently drawn to these benefits, and that public funding is sufficient to incentivise the cost-effective provision of public goods.

Keywords: biodiversity, landscape features, ecosystems services, agriculture, rural policies, policy design, Common Agricultural Policy.

1 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380>

2 [Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora](#)

3 https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf

Problem being addressed and key questions

The SHERPA Discussion Paper on Biodiversity and Landscape Features explored the issues mentioned above and built on relevant findings from several EU-funded projects. The latter confirmed that the conservation of heterogeneous landscapes, characterised by a high proportion of semi-natural habitats, such as pastures and field margins, enhances and stabilises pest control by natural predators and pollination by wild insects, and decreases sensitivity to climate change. Moreover, it reflects on the availability of indicators to monitor biodiversity and landscape features, fundamental in the architecture of the delivery model of the new CAP.

The three MAPs discussed the content of the Discussion Paper at local level and identified similar problems: intensification and/or specialisation on one side, and land abandonment on the other, leading to loss of landscape features; inadequate monitoring data; and gaps in knowledge or understanding. The questions addressed by the three MAPs – which were individually designed to take into account local needs – fell into three main groups:

- 🌻 Questions about policy targets: Which sort of target is more effective for biodiversity – an area-based target for protecting a proportion of agricultural land; a target based on landscape structure or habitat types; or, one based on encouraging or restricting certain types of farming? Are some types of landscape feature more important to protect than others?
- 🌻 Questions about the effectiveness of interventions: Which interventions work best for different types of landscape features? For which types of feature is more research needed to establish the most effective interventions?
- 🌻 Questions about how to improve monitoring, including monitoring of impact, and how to design indicators which could better assist policy-makers.

All three MAPs considered how scientists could better interact with policy-makers to develop answers to these questions.





Key scientific evidence

The Slovenian and Emilia-Romagna MAPs considered that the key scientific evidence (of that summarised in the Discussion Papers) was that biodiversity is linked to the presence of habitats and their structure; habitat fragmentation and loss has a negative impact on biodiversity; and that agricultural management in adjacent areas can have a significant impact. Benefits to biodiversity, pest control and pollination are greater in landscapes with smaller rather than larger fields for the same area of habitat provided. In addition, the Slovenian MAP identified a national study (Golobic et al., 2015) which had characterised landscape feature types and shown that many were underprotected or even harmed by the existing agricultural policy. The MAPs drew attention to the fact that the current options available within Ecological Focus Areas for biodiversity conservation included some with insufficient effectiveness for this purpose, such as cover crops and legumes, and that these options were widely taken up.

Knowledge gaps identified include:

-  the ecological needs of keystone species and habitat types in agricultural landscapes that depend on landscape features;
-  the relationship between the extent of landscape features in agricultural landscapes and biodiversity, and between such features and ecosystem services (especially provisioning);
-  the design and structure of policy instruments best suited to stimulate/ensure connectivity between landscape features at the landscape level;
-  production models and technological and social innovation that can ensure long-term landscape features and associated biodiversity conservation; specifics of High Nature Value and other marginal areas; the contribution of modern technology to cost-effective monitoring and evaluation of landscape features, such as remote sensing and artificial intelligence.

Summary of positions of the Multi-Actor Platforms

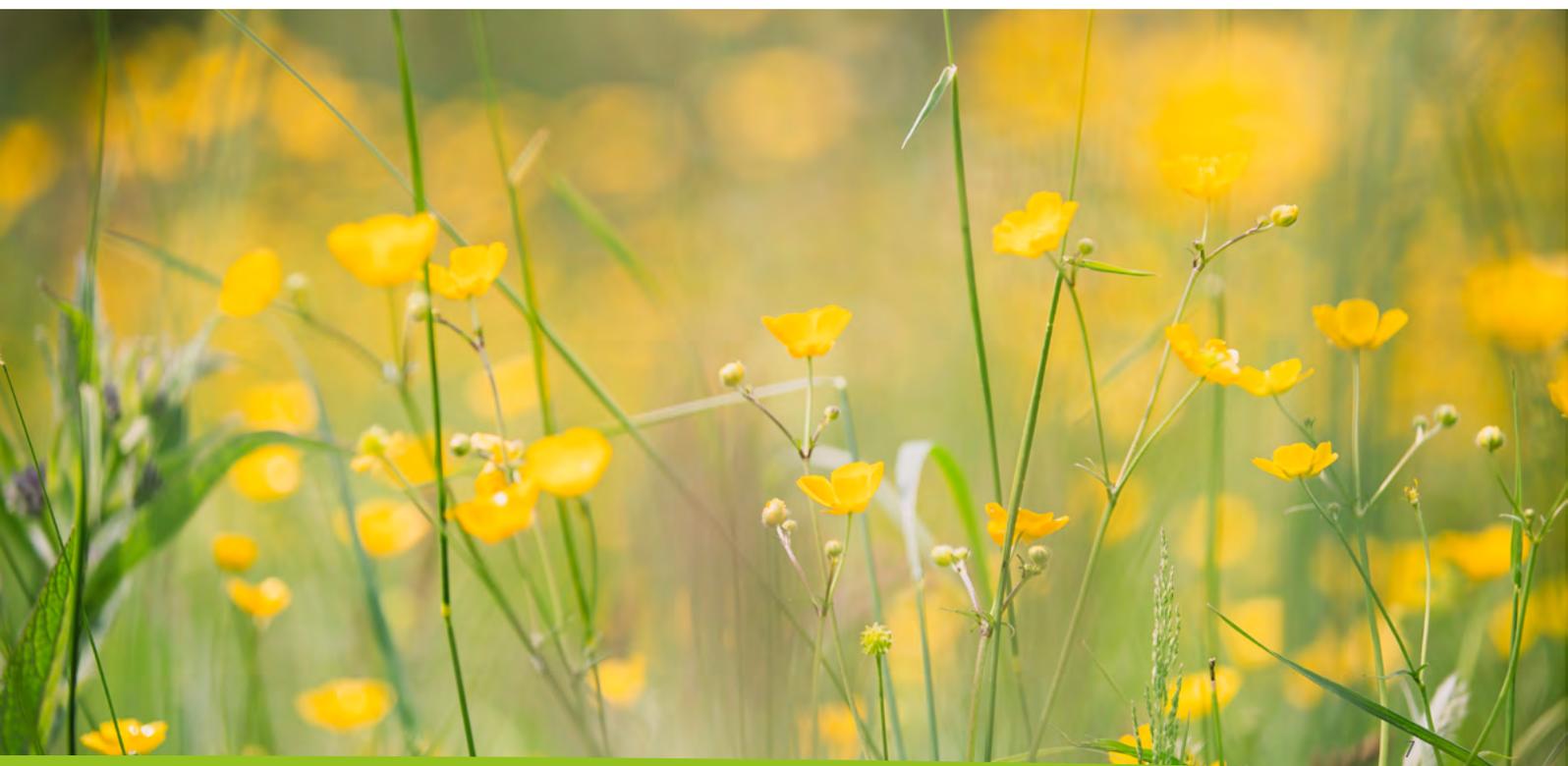
On policy design, the key points are that current policy is too focussed on the farm scale rather than landscape or regional scale. This is illustrated by the trend of moving away from rain-fed arable systems towards irrigated permanent crops in Alqueva (Portugal), where ecological corridors could help to preserve the steppe habitats, but are not being put in place. In addition, policy is failing to achieve an appropriate balance between economic and ecological objectives. This is partly the result of information failure/knowledge gaps, and partly due to insufficiently strong financial incentives.

Administrative simplification and a better understanding of (and willingness to fund) public goods, for which farmers are not remunerated by the market, are needed. Better communication to farmers to reduce information failure is also needed. The policy process needs to become more inclusive, with greater involvement of scientists, conservationists and other stakeholders. In turn, scientists need to make their work more accessible to policy-makers and timely to be useful to informing decisions.

Given that habitat fragmentation is a driver of biodiversity loss, public support for land consolidation should be re-evaluated.

Monitoring and indicators are needed to support policy design by integrating landscape- and regional-level information about land cover, market trends, environmental impact and human wellbeing with data on the distribution of habitats and species. Such information should aim to depict transitions as well as possible causal relationships (e.g. between fertiliser use and downstream water quality). The use of data on land cover could be used to relate landscape types with species likely to be present, in turn enabling an approximation of the impacts on biodiversity of changes in landscape features. Monitoring on the ground needs adequate funding and innovative approaches – perhaps through an expansion of the role of citizen scientists.

Additionally, research into how the value consumers place on biodiversity can be valorised by the supply chain.





Summary of position of the EU Multi-Actor Platform

Scientists, practitioners and citizens should be better involved in policy design and the MAPs have shown good potential as a tool to achieve this. Their role should be to provide inputs to a policy process in which national and local authorities have primacy.

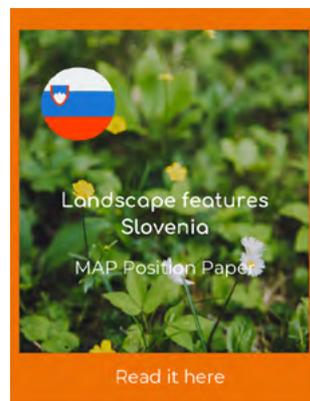
Interventions should be made more frequently at landscape level. Mapping tools are needed to facilitate this, identifying natural capital in need of protection, along with opportunities to enhance it. The MAPs' proposal for a digitised tool which integrates a variety of information should be further researched.

When prioritising further research, it is important to take a holistic approach. For instance, it is equally important to understand the health benefits of biodiversity features and their importance to farm profitability.

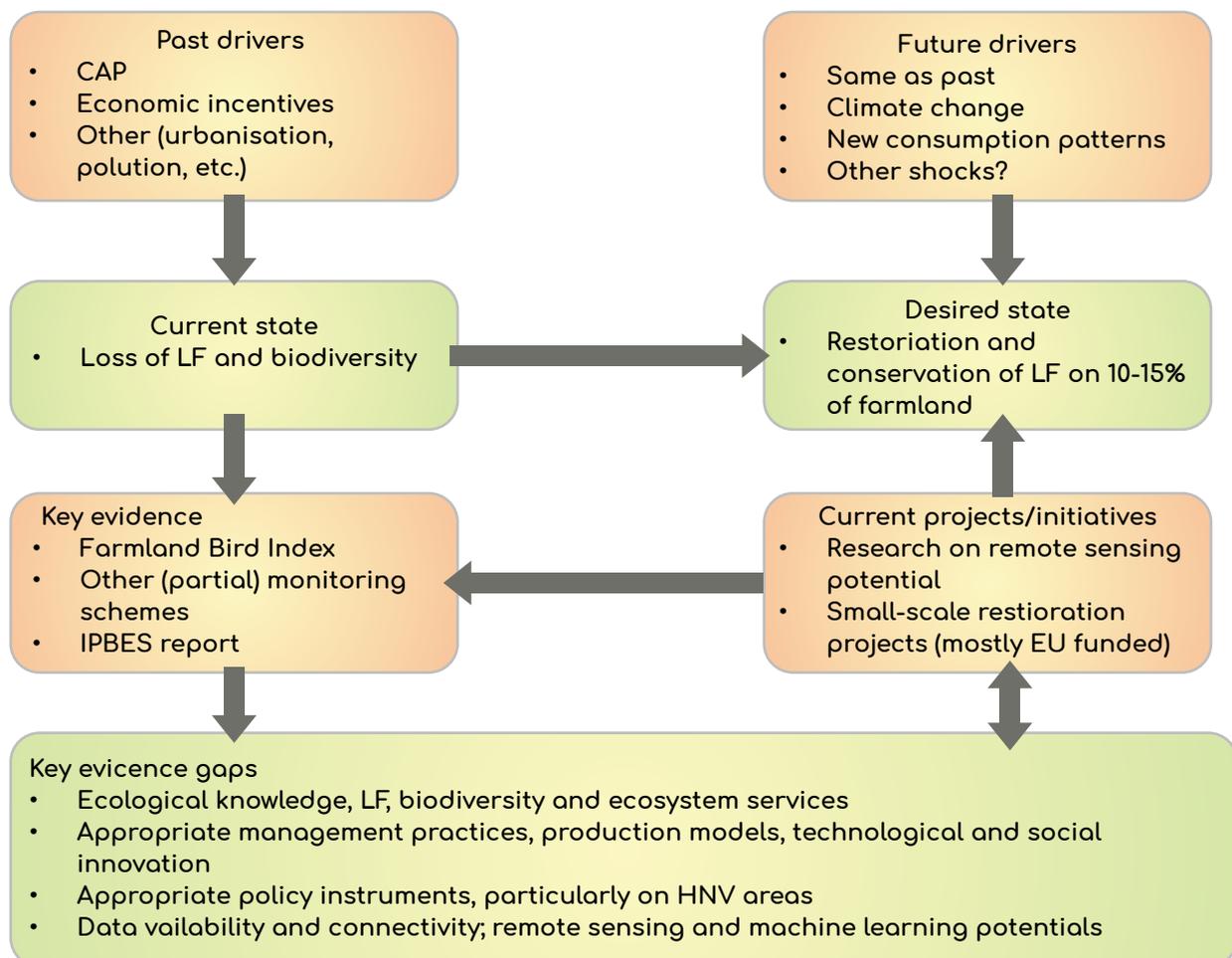
Concluding remarks

The pilot process identified a clear need for further measures to support interventions at landscape level on agricultural land. There are opportunities to reduce the pressure of competitiveness on the mosaic of smaller farms, with a greater density of landscape features, by helping farmers to better understand the economic benefits of their landscape features (both in terms of improved productivity and reduced costs; and of exploiting the value-added potential) as well as removing any policy-driven financial incentives which make their removal attractive. To intervene more at landscape level, further development of appropriate social and technical infrastructure should take place. Policy must be driven by inputs from scientists and citizens as well as farmers. The MAPs have begun to demonstrate that they have a role in this. Technical support should include further development of open-access, user-friendly digital mapping tools, which integrate increasingly available data about natural capital.

Annex I. Links to supporting documents



Annex II. Graphical representation of the overview of the position paper





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