

CAP Evaluation Expert Insights – Biodiversity

Biodiversity refers to the variety and variability of genetic resources, species and ecosystems. In farmland, evaluating this abundant range of life can be a significant challenge since it must consider how it interacts with a range of agricultural practices and policies, often with limited data available. To help find a path forward, the [European Evaluation Helpdesk for the CAP](#) is working with experts to extract best practices from existing Rural Development Programme (RDP) evaluations. In this edition, Professor Dimitris Skuras, an evaluator from Greece with 35 years of experience, appraised six RDP evaluations from five EU Member States during 2014-2020 and identified several steps towards success.

Frame the evaluation mission

The issues surrounding biodiversity evaluations are complicated and diverse. An evaluation may start from a single precise instrument to a whole set of heterogeneous measures under an entire focus area or policy objective. However, framing the evaluation will set a comprehensive spatio-temporal extent and refined judgment criteria along with their associated indicators.

In Latvia, the RDP aimed to enhance biodiversity in protected grasslands which the evaluators defined as “grassland habitats listed in Annex I of the Habitats Directive”. This careful framing prompted the adoption of an additional composite indicator reflecting “botanical diversity” and saw new judgement criteria for the status and change of grasslands’ botanical diversity and the effect of farm management. Elsewhere, in Brandenburg, the evaluators utilised local scientific resources to frame how Ecological Focus Areas (EFAs) supported the use of fallow land. As a result, the judgment criterion was “the extent to which ecologically valuable agricultural areas have been improved” due to the EFAs. Consequently, the indicator measured the absolute and percentage share of fallow land within High Nature Value (HNV) delimited land.

Evidently, a precise definition clarifies the link between the environmental context and the identified needs to the expected outcomes. It permits evaluators to elicit a detailed, transparent and robust intervention logic, if not already present, and adopt the most appropriate indicators.

Recommendations

- Define contested terms in the evaluation mandate, e.g. what is a ‘European Landscape’?
- Show clearly how the cause (e.g. the EFA scheme) affects the indicator (e.g. fallow land within HNV) and how this indicator is linked to biodiversity (e.g. based on local scientific knowledge).
- Specify the judgment criteria (e.g. grasslands are preserved and enhanced) and introduce additional indicators if needed (e.g. biological diversity of grasslands).
- Delineate the spatio-temporal extent of the study.



1 - Belgium: [Effects of management agreements on populations of agricultural birds in Flanders \(2019\)](#)

2 - Finland: [Assessment of the significance of the RDP 2014-2020 of mainland Finland for biodiversity and the landscape \(2019\)](#)

3 - Germany: [RDP 2014-2020 of Lower Saxony and Bremen – Contributions to the evaluation of the Focus Area 4A Biodiversity \(2020\)](#)

4 - Germany: [Evaluation of biodiversity effects of ecological priority areas in Brandenburg \(2018\)](#)

5 - Latvia: [Impact of the Latvian RDP on Biodiversity - Botanical diversity of protected grassland habitats of EU importance](#)

6 - Slovakia: [Evaluation of the development of areas with high nature value on agricultural land \(2019\)](#)

Data reigns supreme

Each and every examined evaluation highlighted how data is essential to the assessment process and described the importance of establishing and maintaining a biodiversity monitoring system. The most crucial data characteristics for such systems include the appropriate choice of the





observation unit, the spatio-temporal coverage of the study, the ability to connect and utilise data and information stored in other databases – especially monitoring data from the **Integrated Administration and Control System (IACS)** – and the extent of data gaps, along with the opportunity to fill them.

Additionally, the farm, or the farmer as the beneficiary's observation unit, does not always have to be the focus. In Flanders, an evaluation of the impact of management agreements on populations of agricultural birds compared whole territories under different management contracts. In Latvia, the evaluators examined the effect of management practices on the botanic diversity of grasslands using individual plots, a spatial unit below the level of the farm. The temporal coverage of the evaluation data is decisive since the generative causes of biodiversity degradation depend on slow processes. The Latvian evaluation addresses the issue of the lasting effects of support from previous programming periods. In Flanders, the appraisal of RDP measures' impact on the abundance and diversity of breeding birds utilised trend analysis across two programming periods.

The evaluation data consist of the records of the value of the proposed indicators at the observation unit level, such as the number of nesting birds within a square kilometre or the botanical diversity indicators in the randomly sampled square meter of a plot of land. The ability of these data to connect with databases, especially with IACS and the Land Parcel Identification System (LPIS), is of primary importance. In Brandenburg, the IACS helped evaluators identify fallow land before and after applying the EFAs and locate it within HNV because the latter was spatially delineated. This case demonstrates the unprecedented opportunities emerging by linking evaluation data with national and EU environmental databases. The Slovakian case study highlights the gradual transition of an experimental field monitoring exercise to a mature and fully grown observatory of HNV land, which combines detailed field-collected data with data from the IACS/LPIS, aerial and ground-level photographs and earth observations. Gaps in data were filled in by a proxy indicator in the Brandenburg evaluation, older data in the Finnish case, and references to published scientific literature in other instances and for selected indicators.

Recommendations

- If possible, extend the spatial and temporal coverage of the evaluation data to include the whole territory under evaluation or the previous programming period if needed.
- Link the evaluation database with IACS/LPIS, national and EU environmental databases.
- Record the data gaps and adopt a strategy to address them by, for example, using proxy indicators or other approaches.
- Invest in creating long-term environmental evaluation databases targeting the most prominent biodiversity issues for which ad-hoc data collection is not recommended.

Pursue rigorous evaluation methodologies

All reviewed evaluations attempt to use the most suitable methods to estimate the impacts and, if possible, isolate net effects on biodiversity indicators. Still, three intertwined factors generally stood in the way. The lack of observations on non-beneficiaries, the concurrent operation of different treatments involving cropping practices, agri-environmental measures or the presence of considerable influences outside the program, and the effect of historical path dependence of each site or plot relative to the previous programme.

In Flanders, the lack of observations from control sites led to a comparison of the relative effectiveness of alternative interventions. The study provided excellent insights using territory mapping from 2010 to 2018 and employing simple trend analysis. In Lower Saxony and Bremen, many measures were evaluated following a counterfactual methodology, even though many farms

participated in more than one measure creating a complex sampling design. Evaluators often encounter a challenge when the evaluation question is at an aggregate level and refers to the combined effect of a whole focus area or a bundle of sub-measures. The Lower Saxony and Bremen paved an intelligent way to quantify and synthesise the aggregate impact of focus area 4A by adding up the effects of each sub-measure based on grades assigned in three criteria reflecting contribution to biodiversity.

Recommendations

- Be bold and search for a methodology that can produce estimates of net effects while suitable to the available evaluation data. For example, specific quasi-experimental methods may be suitable for analysing sampled plots or nesting bird observation squares.
- Do not hesitate to consider new evaluation approaches based on AI, geospatial analysis or Earth observations if they provide better data and support the application of more sophisticated and accurate evaluation methodologies, and acknowledge their limitations.
- Report on what would have been needed to apply a more elaborate methodology e.g. more or better data, a carefully designed experiment, establishing links with other databases, etc.

The day after evaluation: policy recommendations and lessons learned

The evaluation must be helpful to stakeholders and decision-makers. Evaluations usually pay less attention to appraising other criteria than effectiveness, such as efficiency, or issues related to barriers to adoption, targeting, additionality and even coherence with other measures or policies. Such analyses may assist the authorities in adapting the measures or in considering the shortcomings in the future design of measures. In addition to impact evaluation, the Lower Saxony and Bremen evaluation attempted a simple assessment of the cost efficiency of actions and reviewed their adoption rates and additionality. Also, it provided hints about coherence when the adoption rates of low compensation voluntary agri-environmental measures were considered against attractive Pillar I payments. The Latvian evaluation put forward some very concrete proposals for the design of measures. At a higher policy level, the Brandenburg evaluation concluded, long before the adoption of CAP Strategic Plans, that EFAs and agri-environmental measures “should be synchronised to the same goals under the same plan”.

Recommendations

- If the results allow, proceed to recommendations concerning the design, delivery and targeting, field support or other features of a measure or the whole conservation policy.
- Extend the evaluation beyond effectiveness to efficiency, coherence and targeting or other processes and evaluation criteria supported by concrete evidence.
- Report on the lessons learned from the evaluation process and its results and highlight specificities in evaluating measures for biodiversity that should be considered in future evaluation plans.

Do you have any questions on CAP evaluations or have an interesting study to share?

Please send them to the European Evaluation Helpdesk for the CAP:
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