

Possible add-on: Biodiversity data collection methodology

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Highlights



1. Why assessing policy benefits for biodiversity
2. How to measure benefits for biodiversity
3. Possible indicators from LPIS
4. Missing information



Why assessing policy benefits for biodiversity

What follows is not a requirement of the CAP

Ecological focus areas should be established, in particular, in order to **safeguard and improve biodiversity on farms** - Reg. (EU) No 1307/2013

Features and areas that can be applied as EFA are listed by the Regulation.

Further criteria to qualify those features and areas as EFA need to be laid down.

In order to meet the **biodiversity objective**, those criteria should ensure the safeguarding and improvement of biodiversity on farms

Commission Delegated Regulation DP

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Why assessing policy benefits for biodiversity

Our life insurance, our natural capital: an EU biodiversity strategy to 2020
- COM(2011) 244 final

Target 2: By 2020, ecosystems and their services are maintained and enhanced by **establishing green infrastructure** and **restoring at least 15 % of degraded ecosystems**

Key Actions:

- Set priorities to restore and **promote the use of green infrastructure**
- Ensure **no net loss** of biodiversity and ecosystem services

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Why assessing policy benefits for biodiversity

Our life insurance, our natural capital: an EU biodiversity strategy to 2020
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Target 3

A) Agriculture: By 2020,

maximise areas covered by biodiversity-related measures under the CAP across grasslands, arable land and permanent crops

bring about a measurable improvement in the conservation status of species and habitats and in the provision of ecosystem services as compared to the EU2010 baseline

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Why assessing policy benefits for biodiversity

For Rural Development the Court of Auditors stressed that the policy was not designed and monitored so as to deliver tangible environmental benefits. Moreover, that financial support needs to match policy objectives.

(European Court of Auditors, 2011. Is agri-environment support well designed and managed? Special Report No 7)

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How to measure benefits for biodiversity

A full assessment of policy effectiveness for biodiversity would require an **extensive biodiversity monitoring** (e.g. vascular plants, red list species, carabids, bees, spiders, birds).

Initiatives in regions/countries may provide the information to do so

When not possible ->

assessment **based on variables** that are known to have positive correlation with on-farm biodiversity

QUANTITY

QUALITY

CONNECTIVITY

LPIS

1. QUANTITY

Features relevant for biodiversity EFA elements that can be defined as "**semi-natural habitats**":

multi-annual (permanent) features such as hedges, wooded strips, isolated trees, groups of trees, field margins, ponds

Annual crops under EFAs are considered less valuable for biodiversity



1. QUANTITY

Indicators that could be derived from LPIS:

Share of semi-natural features in the UAA (degree of semi-naturalness)

Length of linear elements

Indicators more demanding in terms of data acquisition:

- Habitat* Richness
- Habitat* Diversity

* natural habitats means terrestrial or aquatic areas distinguished by geographic, abiotic and biotic features, whether entirely natural or semi-natural

2. QUALITY

Elements are important for biodiversity because they host flora and fauna species.

Their ecological value is not constant (i.e. hedges can host native or non native species, grasslands can be poor in species or very rich)

A classification of EFA based only on the type of the element as in the legislation is not sufficient



Pollen & Nectar Field Margin at Upton Farm Oxfordshire

2. QUALITY

Assessments of an improved ecological quality should be coupled to data deriving from surveys –where available- (insects, birds, amphibians, mammals) and relevées (floristic species).

The criteria to identify environmentally valuable permanent grasslands show how this can be done.

- (a) covering organic soils with a high percentage of organic carbon, such as peat land or wetlands;
- (b) hosting habitats listed in Annex I to Directive 92/43/EEC or protected under national legislation;
- (c) hosting plant species listed in Annex II to Directive 92/43/EEC or protected under national legislation;
- (d) being of significant importance for wild bird species listed in Annex I to Directive 2009/147/EC;
- (e) being of significant importance for wild animal species protected under Directive 92/43/EEC or protected under national legislation;
- (f) covering permanent grassland of high nature value as defined by objective criteria to be established by the Member State;
- (g) covering soils with a high risk of erosion;
- (h) being located in a sensitive area designated within the river basin management plans pursuant to Directive 2000/60/EC.

(Commission Delegated Regulation DP)

2. QUALITY

Regarding EFA ecological quality, LPIS best practice indicates to distinguish:

permanent features (and annual)
grassland/shrub/tree habitats
features directly or indirectly affected by farming

(see <http://www.biobio-indicator.org/deliverables/D22.pdf> for more info)

2. QUALITY

Basic indicators:

Tree / shrub / grassland habitat

Linear or point features on, or adjacent to, farmland that are managed directly or are likely to be highly influenced by farming activities (e.g., hedges on farmland and grass strips between fields)

Linear or point features on, or adjacent to, farmland that are indirectly influenced by current agriculture but are not managed actively (e.g., field corners and small woodlands surrounded by agricultural land)

Indicators more demanding in terms of data acquisition (e.g. to identify the degree of semi-naturalness):

Presence and/or number of Red List species

Species richness

Common species related to agriculture (farmland birds, grassland butterflies)

3. CONNECTIVITY

Habitat connectivity is the degree to which the landscape facilitates species dispersal (flora and fauna) and other ecological flows.

Connectivity can be enhanced in different ways:



in simplified landscapes, better to introduce
connected elements



if habitat patches already exist (i.e. existing
woodlots / hedges / buffer strips) EFA elements
should connect these patches (e.g. through
collective implementation)



3. CONNECTIVITY

Landscape types and connectivity principles justify the EFA collective and regional implementation

Best practice

Region= strategic planning of major elements of the green infrastructure (based on the enhancement of the ecological function independently from administrative boundaries)

Collective= higher effectiveness of EFA implementation (e.g. planned connectivity)



3. CONNECTIVITY

Consolidated literature on connectivity indicators (more or less complex):
e.g. Euclidean distance, cost distance, connectance index etc.

many of these can be derived from LPIS

LPIS Best practice:
Geolocation of EFA elements



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In summary

Need to prove effectiveness of policy measures on biodiversity in measurable terms

No data currently available to assess the role for biodiversity of micro-structures maintained by farming

Achievement of multiple policy targets can be demonstrated

LPIS information is fundamental -> depends on how elements are registered (attributes, geolocation) and on the level of best practices introduced

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LPIS best practices for biodiversity

Quantitative aspects (permanent EFA types in EFA layer) available in LPIS

Qualitative elements: attribute characteristics associated to EFA elements
(e.g. features actively/non actively managed, degree of semi-naturalness)

Collected during controls

Sample surveys

Connectivity:

EFA elements geolocation

Interoperability with GIS layers coming from other datasets (e.g. High Nature Value Farming, Copernicus high resolution layers, landscape units) -> JRC can provide expertise and facilitate identification of key datasets

Thanks for your attention!