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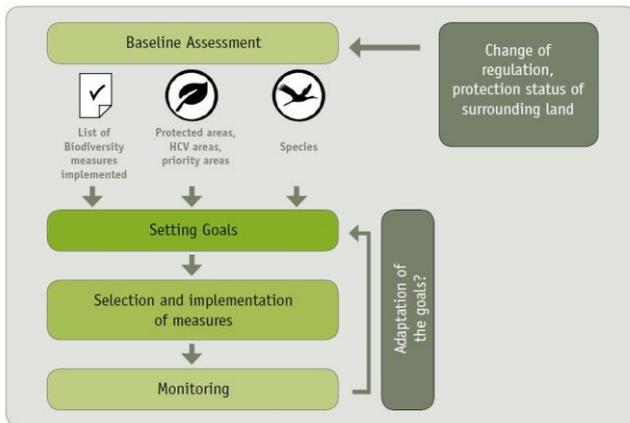
# Methodological Guideline for a Biodiversity Action Plan

## Monitoring of potential for biodiversity

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## The Biodiversity Action Plan



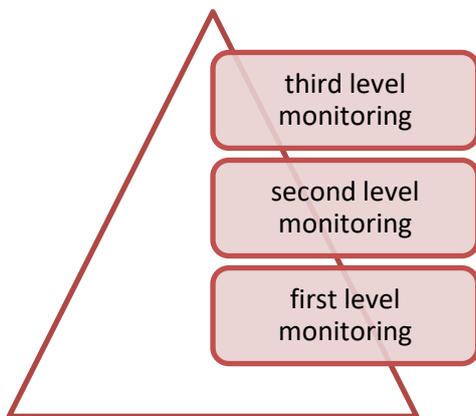
Graphic 1: The four steps of a Biodiversity Action Plan

The Biodiversity Action Plan consists of four main steps. Within this methodological guideline, we focus on the monitoring of impacts on biodiversity and its function for the adaptation of implemented measures. As shown in the graph on the left side, adaptations to the set goals may fall back on the strategic framework of setting goals. Thus, farmers and advisors, who use this guideline, may also be interested in the methodological guideline on Setting Goals and Priorities.

All methodological guidelines with relation to the Biodiversity Action Plan can be accessed here:

[www.business-biodiversity.eu/en/biodiversity-training/advisors](http://www.business-biodiversity.eu/en/biodiversity-training/advisors)

## The Biodiversity Monitoring



Having the aim to benefit biodiversity, agroecological measures as well as measures of biodiversity management rely on an impact assessment. To create the greatest potential for biodiversity means to adapt measures to the local reality. Thereby, theory and practices, but also the planned activities and their translation in action may differ. Thus, it is important to implement a biodiversity monitoring to keep track of the developments on the farm and of the impacts that the measures have. Such monitoring does not necessarily need to be complex but has to follow a stringent timetable.

Thus, a three level monitoring was developed to help farmers and companies/standards. All three levels depend on first-hand information from the farmer. The farm management is the unit to perform the first two levels of monitoring and may get back to the related food company or food standard in case of questions. However, the third level of monitoring requires more attention of the standards and companies as only a few farmers are expected to be able to handle this level on their own.

### The first level of monitoring

The first level monitoring is a simple approach of verifying the actions taken on the farm. The aim is to keep track of the development of the biodiversity measures on the farm. It shall help to identify whether farmers stick to the timeframe given in the Biodiversity Action Plan as well as to adapt the set measures, if necessary.

The farmer shall answer the following questions and fill in the table below:

- |   |        |
|---|--------|
| ■ Have the selected measures been implemented on time?      | Yes/No |
| ■ Have they been implemented according to these guidelines? | Yes/No |
| ■ Have corrections been agreed in case the measures         |        |
| ■ have not been implemented?                                | Yes/No |

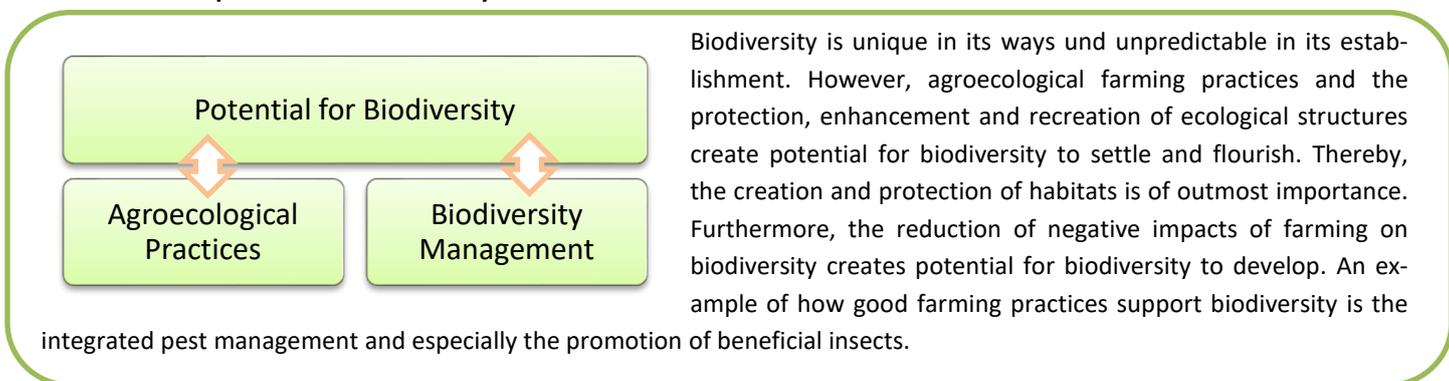
*This level of monitoring should be carried out every year.*

List the measures that have been selected for the next 3 years with their priorities				
<b>Measures for biodiversity management</b>	Priority of the measure according to the BAP A / B / C	Have the selected measures been implemented on time? (Yes/No) If not, why?	Have they been implemented according to these guidelines? (yes/no) If not, why?	Have corrections been agreed in case the measures have not been implemented?
x				
y				
z				
<b>Measures for agroecological practices for more biodiversity</b>	Priority of the measure according to the BAP A / B / C	Have the selected measures been implemented on time? (Yes/No) If not, why?	Have they been implemented according to these guidelines? (yes/no) If not, why?	Have corrections been agreed in case the measures have not been implemented?
x				
y				
z				

## The second level of monitoring

The second level of monitoring focuses on the potential created for biodiversity. Key data and indicators are collected according to the biodiversity goals of the farm. In general, this level of monitoring keeps track of the development of ecological structures as well as agroecological practices that are implemented on the farm.

### The creation of potential for biodiversity



*The second level of monitoring should be carried out every 2 – 3 years.*

The farmer is asked to give the number of agroecological measures implemented but also the area of new habitat/ecological structures created as well as the changes in the size of areas of high value for biodiversity. The changes shall be documented in the list below:

Potential for biodiversity created		
	Number and size in m <sup>2</sup> /ft <sup>2</sup> or acre/ha	Difference to the baseline or previous monitorings
<b>Biodiversity Management</b>		
a		
b		
<b>Agroecological Measures</b>		
a		
b		

The following list gives examples of potentials for biodiversity created and their related measurement. Note that this list is not complete.

- Semi-natural habitats on the farm or in the immediate surroundings (number, size or m<sup>2</sup>)
- Perennial abundant fields on the farm (m<sup>2</sup>)
- Ecological corridor created (m<sup>2</sup>)
- Buffer zones created to protect aquatic ecosystems from erosion and agrochemical drift and runoff (m<sup>2</sup>)
- Herbicide and pesticides untreated spots or stripes at the edge of the field to support the growth of local herbs (m<sup>2</sup>)
- Perennial flowering stripes at the edge of the field (m<sup>2</sup>)
- Hedgerows (metre)
- Number of shade trees per hectare
- Number of water sources protected
- Continuous reduction of chemical plant protection substances (pesticides, herbicides) (Comparison of yearly consumption)
- Continuous reduction of synthetic fertilizers (Comparison of yearly consumption)
- Continuous reduction of water consumption for irrigation (m<sup>3</sup>)

## The third level of monitoring

The third level of monitoring focuses on the development of endangered or indicator species on the farm and its surroundings. It requires knowledge on the state of biodiversity and taxonomic skills to identify plant and/or animal species. Depending on the knowledge and training of farmers this advanced monitoring may lie within their abilities or not. Hence, a sample monitoring is best suited for this task. The standard/company may identify a representative amount of farms that carry out the monitoring that focuses on population development.

*The third level of monitoring should be carried out every 3-5 years.*

Together with the standard/company advisor, the farmers shall search for the following aspects:

- Endangered/protected species on farm (number of species)
- Development of the population of 2 – 3 regional characteristic species (plants and/or animals) as indicators for the health of ecosystems and biodiversity increase

In collaboration with local NGOs and nature conservation experts, standards and companies identify characteristic species with a high bioindicator value. Often endemic species of a region serve this purpose well and are likely to belong to one of the following taxonomic groups

- a) vascular plants
- b) butterflies
- c) breeding birds

Besides the value for biodiversity, it is of importance to choose a characteristic species for monitoring that suits the interests of the farmer as well as the availability of expertise within the company and standard.

Vascular plants bear the benefit of being immobile. This eases the need of keeping track of their whereabouts.

Information on endangered species can be gathered from national Red Lists and/or the Red List of IUCN ([www.iucnredlist.org](http://www.iucnredlist.org)). If such species occur on the farm, they should be subject to monitoring.

The farmer in collaboration with the standard/company advisor shall fill in the following list and report the population changes of the monitored animals/plants.

List animal and plant species	List number and names of known species. (You may use names used commonly for the species)	Changes in the area with regard to earlier measurements
Endemic <sup>1</sup> animal and plant species, characteristic species on the farm or adjacent to it		
Animal and plant species classified by the government as a protected species or placed on a national Red List and/or the Red List of IUCN ( <a href="http://www.iucnredlist.org">www.iucnredlist.org</a> ) (number of species)		

The simplest way to document the monitoring information is to list the population changes in a table. For this purpose an excel sheet was elaborated. Farmers may either use the document directly or fill in a printout version. In any case, the standard/company will provide the farmer with thee needed documents.

<sup>1</sup> Endemic species are native species that are found solely in a particular region or location. This can be a solitary tree, a particular mountain range at a certain elevation zone, a particular lake, an island or a region.

## Overview of the Project EU LIFE Food & Biodiversity

Food producers and retailers are highly dependent on biodiversity and ecosystem services but also have a huge environmental impact. This is a well-known fact in the food sector. Standards and sourcing requirements can help to reduce this negative impact with effective, transparent and verifiable criteria for the production process and the supply chain. They provide consumers with information about the quality of products, environmental and social footprints, the impact on nature caused by the product.

The LIFE Food & Biodiversity Project “Biodiversity in Standards and Labels for the Food Industry” aims at improving the biodiversity performance of standards and sourcing requirements within the food industry by:

- A) Supporting standard-setting organisations to include efficient biodiversity criteria into existing schemes; and encouraging food processing companies and retailers to include biodiversity criteria into respective sourcing guidelines;
- B) Training of advisors and certifiers of standards as well as product and quality manager of companies;
- C) Implementation of a cross-standard monitoring system on biodiversity;
- D) Establishment of a European-wide sector initiative.

Within the EU-LIFE Project Food & Biodiversity, a Knowledge-Pool with background information linked to agriculture and biodiversity is provided. You can access the Knowledge Pool under the following link:

[www.business-biodiversity.eu/en/knowledge-pool](http://www.business-biodiversity.eu/en/knowledge-pool)

**Editor:** LIFE Food & Biodiversity; Lake Constance Foundation

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