

# BIODIVERSITY ACTION PLANS (BAP)

Guidelines to set up and implement a BAP for farming activities

**VERSION 2.0** 

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These guidelines have been developed through a collaboration between UEBT and the Global Nature Fund (GNF) as part of the EU LIFE Project "Biodiversity in Standards and Labels for the Food Industry." Both organizations have contributed their knowledge and experience with biodiversity conservation and sustainable use of biodiversity. This document will be periodically updated to incorporate experiences from UEBT and its members.

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# I. Introduction

UEBT members commit to innovation and sourcing practices that contribute to a world in which people and biodiversity thrive. Natural ingredient supply chains that comply with the Ethical BioTrade standard (the UEBT standard) should have measures in place that contribute to sustainable use and conservation of biodiversity.

A Biodiversity Action Plan (BAP) provides guidance in designing and implementing concrete practices on sustainable use and conservation of biodiversity when growing and sourcing natural raw materials. Therefore, BAPs contribute to compliance with the UEBT standard in supply chains and set the path to continuous improvement in production and sourcing practices.

The BAP is ingredient-specific. These guidelines present different scenarios and scopes of intervention a BAP may have, identifying roles and responsibilities which are relevant for the set-up and implementation of a BAP. They describe the main elements a BAP should include, such as baseline information, goals, targets and measures, the actual work plan, and a monitoring and evaluation system to assess the BAP's efficiency as well as its effects on biodiversity.

The guidelines also detail the steps that may be followed to define and implement a BAP, and they provide templates that may be used. In addition, they provide specific examples of measures that can be taken by individual farmers, alone or through collaboration, in their own farms or in surrounding areas, either reducing negative impacts or promoting positive impacts.

These guidelines encompass the practices defined in the UEBT standard and are an essential tool for companies wishing to comply with the standard, such as those seeking ingredient supply chain certification.

## **BAP GUIDELINES: PURPOSE AND STRUCTURE**

#### **PURPOSE**

These guidelines have been developed to provide guidance on how to formulate and implement a Biodiversity Action Plan, including measures for biodiversity in farm and surrounding areas, to improve the sustainable use and conservation of biodiversity.

#### Who should use these guidelines?

The decision to develop a Biodiversity Action Plan can be made by different actors in the supply chains of natural ingredients and raw materials in the cosmetics, pharmaceutical and food industries: buying and processing companies, suppliers and farmers. These guidelines are for those interested in formulating a BAP, as well as those assigned with roles and responsibilities involved in its formulation and implementation.

UEBT is available to provide further training and support in implementing these guidelines for UEBT member companies, their suppliers and farmers.

#### **STRUCTURE**

These guidelines contain two sections:

- Biodiversity Action Plans This section describes what a BAP is, the different scopes it might have, the key content it should include, the main roles and responsibilities it should assign, and the adaptive management approach it favours.
- II. BAP Process This section details the steps to be taken when formulating a BAP -(i) conducting a baseline assessment, (ii) setting goals, targets and possible measures, (iii) selecting and planning measures at farm level, (iv) designing a M&E system, and (v) integrating the BAP, as well as some considerations and responsibilities to be considered when implementing the BAP.

The annexes include:

- 1. A BAP Template
- 2. Examples of Measures
- 3. Examples of Monitoring and Evaluation Indicators
- 4. Baseline Assessment Questionnaire Template
- 5. Farm-level Templates
- 6. Glossary
- 7. Further references

# **II. Biodiversity Action Plans**

## **BAP: DEFINITION**

A Biodiversity Action Plan is a **strategic framework** and **road map** to meet the UEBT standard in supply chains. It helps companies, suppliers and farmers define and implement concrete practices to improve the conservation and sustainable use of biodiversity when growing natural raw materials.

A BAP focuses on two main actions, related to two principles of the UEBT standard: **Conservation** and **Sustainable use of biodiversity.**  A BAP includes **goals**, **targets** and **measures**, as well as a **workplan**, to cover both actions. **Baseline information** describing the existing situation with respect to biodiversity in the area where natural resources are farmed and sourced provides necessary input to identify goals and measures. A BAP should also include a **monitoring and evaluation system** that ensures the plan is properly implemented and that the effects and impact on biodiversity are measured.

## **SCOPE OF INTERVENTION**

A Biodiversity Action Plan considers different areas and levels of intervention.

#### A. BIODIVERSITY COMPONENTS

Biodiversity has different components. A BAP can address some or all of them.

- Genetic diversity The diversity of material of plant, animal, microbial or other origin containing functional units of heredity
- **Species diversity** The diversity of plants, animal, microbial and other organisms with the same genetic composition
- Ecosystems and habitats diversity and conditions - The diversity and status of Ecosystems (community of organisms and their physical environment interacting together, including forests, wetlands and mountains) and Habitats (sites where species and populations naturally occur, including fallow land, hedges, shrubs and trees)
- Conditions of natural resources Status of water and soil.

#### **B. ACTION AREAS**

A BAP aims to contribute to the two main actions related to biodiversity. Any BAP should seek to contribute to both.

 Conservation of biodiversity - Includes actions that contribute to conservation through the management of existing ecosystems, habitats, natural resources and other areas important for biodiversity in the farming fields, and at a landscape level in the surrounding areas around farms.

 Sustainable use of biodiversity - Includes actions that promote farming practices and cultivation that allows for the current use of biodiversity while also ensuring its regeneration and future use.

#### C. APPROACHES

A BAP has different ways of contributing to conservation and sustainable use of biodiversity. It can reduce or stop negative impact as well as contribute to generating positive impact. A BAP should include actions that take both approaches.

- Reducing negative impacts Negative impacts include all drivers of biodiversity loss (e.g. the degradation or destruction of ecosystems, habitats and other areas that are relevant for biodiversity; overexploitation and contamination of natural resources; overexploitation and species endangerment). Reducing negative impacts includes all actions that can counteract the drivers of biodiversity loss.
- Promoting positive impacts Positive impacts include all drivers of biodiversity restoration, maintenance and promotion (e.g. regeneration and maintenance of ecosystems, habitats and

other areas that are relevant for biodiversity; sustainable use of natural resources; maintenance of species regeneration rates). Promoting positive impacts includes all that can stimulate the drivers of biodiversity restoration, maintenance and promotion.

#### **D. AREAS OF INTERVENTION**

A BAP focuses on the area where natural resources are farmed and sourced. It includes measures in the cultivation fields – farms - and the surrounding areas landscapes. Because of the systemic nature of biodiversity, measures on farm and in the surrounding landscape influence each other and are interconnected.

- On farms Includes all actions for biodiversity that can be implemented on the farm, generally as part of suitable farming practices or appropriate management of non-farmed areas.
- In landscapes Include all actions for biodiversity that can be implemented in relevant areas around the farm. Actions on-farm can contribute to actions in the surrounding areas when the farm's cultivation areas lie in or near areas relevant for biodiversity, or as part of or near biodiversity initiatives promoted by international,

national and regional organisations.

#### E. RESPONSIBILITIES

A natural ingredients and raw materials supply chain involves different actors: buying and processing companies, suppliers and farmers. Given their different roles and relation to biodiversity, each one of these actors may identify and select specific tasks that will be their responsibility. Some tasks may be under shared responsibility and some tasks may be in collaboration with external organisations working on biodiversity areas, as follows:

- Farmers working alone For tasks that will be the sole responsibility of the farmers it is important that they have the necessary capacities and resources to implement the actions.
- Companies or suppliers working alone For tasks the companies, or their suppliers, may implement directly.
- Companies, suppliers and farmers working together - For tasks in which companies, suppliers, farmers will collaborate with each other in the supply chain or with other organizations to share responsibilities and receive support. Actions in the surrounding areas, as well as actions on-farm that contribute to broader actions, are particularly suitable for collaboration as there are usually other organizations that are suppor-

## **BAP CONTENT**

A Biodiversity Action Plan should include the following elements, defined by those responsible for the BAP in consultation with other stakeholders.



A description of each of these BAP elements follows. See Annex 1 for a template of a BAP final document, containing each of these elements.

# **Baseline Information**

What is the state of biodiversity in the area now? What threats and opportunities does it have?



The baseline is an overview of the context where the BAP is implemented, including additional descriptions of the farm areas that will be part of the BAP. It should answer the following questions:

- 1. What are the areas and species relevant for biodiversity and what is their current state?
- 2. Where are farms located and what does their structure look like?
- 3. Which are main threats and opportunities for biodiversity in the farms and in the surrounding areas?

To answer these questions, the baseline includes the following information.

#### For the landscape (surrounding the farms):

- a. Ecosystems (e.g. wetland, forests, meadows and mountains), (semi) natural habitats (e.g. ecological corridors, fallow land, hedges, shrubs, trees, ravine, streams and ditches), water bodies (e.g. swamps, rivers, and springs) and patches of native species.
- b. Areas managed to promote biodiversity including protected areas, high conservation value areas and natural parks.
- c. Species relevant for biodiversity such as native, protected and endangered species.
- d. Threats to biodiversity from human activities, natural phenomenon and context dynamics with a negative impact on relevant areas and species.
- e. Initiatives (International, national, regional) to tackle the threats and promote biodiversity (e.g. plans for the management of relevant natural areas and animal/plant species, actions to foster the adoption of good agricultural practices and research on biodiversity related topics).

#### For the farm(s):

a. Farm location - with respect to the ecosystems, (semi) natural habitats and other natural areas of value for biodiversity identified in the landscape context.

- b. Species present in the farm (e.g. farmed or spontaneously growing) and relevance for biodiversity considering species identified as relevant in the landscape context.
- c. Structure of the farming areas This includes a description of:
  - Location and size of areas that are used for production
  - Location and size of areas on the farm that are not used for production
  - Type and size of (semi) natural habitats (e.g. biotope corridors, fallow land, hedges, shrubs, trees, ravine, stream and ditches) existing in the farm area
  - Type and size of water bodies (e.g. swamps, rivers and springs) existing on the farm and an indication of which of these are protected by riparian areas or patches of indigenous vegetation, as well as information on the water holding status at different times of year
  - Location and size of other areas of natural vegetation within the farm
  - Location and size of boundary areas (e.g. between fields or at field edges or roadsides) that may already be, or have the potential to become, wildlife corridors
- **d. Farming practices relevant for biodiversity** This includes information on:
  - Use of native, alien and endangered crops
  - Respect of regeneration rates and phenological cycles of the used crops
  - Fertilisation practice
  - Pest control
  - Irrigation practices
  - Waste management
- e. Main contribution to biodiversity From following good agricultural practices (e.g. organic, biodynamic, natural, permaculture and regenerative farming), respecting legislations and participating in plans for biodiversity conservation and sustainable use.
- f. Main threats to biodiversity Derived from not following what is mentioned in the above contributions.

# RELATED CRITERIA FROM THE UEBT STANDARD

1.1.1	Information on biodiversity relevance of cultivation or wild collection areas is available.
1.1.2	Threats to biodiversity in the cultivation or wild collection areas are identified.
1.1.3	Existing strategies, plans, or initiatives – public or private – that contribute to maintaining, regenera- ting, or enhancing biodiversity in the cultivation or wild collection areas are identified.
2.1.8	Characteristics of wild collection sites are identified.
2.1.9	Information is available on the status of the wild collected species within the wild collec- tion site.
2.1.14	Characteristics of the cultivation sites are identified.
2.1.15	Characteristics of the cultivated species are identified.
2.2.1	Information on the potential implications of changes in local climatological conditions for the cultivated or wild collected species is gathered.
2.3.1	Information on the level and quality of ground and surface water in cultivation and wild col- lection sites is gathered.
2.3.4	(For cultivation) Information on soil struc- ture, fertility and nutrient contents, stability, moisture and drainage conditions in cultivation sites is gathered through soil analysis, existing studies and other scientific or local knowledge.
2.4.3	(For cultivation) Monitoring of pest manage- ment is conducted and the results are used to define the integrated pest management practices in cultivation sites.
2.5.1	Information on energy consumption and waste production from cultivation and wild collection activities in cultivation and wild collection sites is gathered.

#### **RELATION TO OTHER BAP ELEMENTS**

The baseline information draws conclusions on the state of biodiversity, its main threats and opportunities. This information will help those responsible of formulating the BAP establish goals the BAP should achieve, define targets and brainstorm possible measures. It will also help the farmers select or identify specific measures to be implemented in their farms and surrounding areas.

# **Goals & Targets**

Goals & Targets

What do we want to achieve with the BAP? What specific targets can we set for each goal?

#### The BAP goals are our **ambitions for biodiversity**:

what we set out to accomplish with our plan. These goals should address the conclusions of our baseline information, tackling main threats and taking advantage of opportunities.

Each goal should specify at least one **SMART target**: Specific, Measurable, Attainable, Realistic and Timely. SMART targets allow one to determine – qualitatively or quantitatively – the achievements of the BAP and its contribution to biodiversity.

#### **EXAMPLES OF BAP GOALS AND TARGETS**

#### GOAL

To avoid or minimise the negative impact of farming on semi-natural ecosystems

#### TARGET

- In two years, at least one farming practice to avoid/minimise negative impact on semi-natural ecosystems (such as integrated pest management, creation of buffer zones or semi-natural habitats) is implemented by 100 conventional farmers in the proximity of the Albanian Alps
- > In three years, the presence of beneficial insects and plants reaches optimal conditions over 100 conventional farms in the proximity of the Albanian Alps

#### GOAL

To contribute to rehabilitate and manage areas of natural interest

#### TARGET

- In two years, natural structures (such as ponds, tree lines, flower strips, shrubs and other vegetated zones) are created over 20 hectares in protected natural areas in the surrounding of 100 conventional farms in the Albanian Alps
- > In three years, five endangered habitats are recreated over 20 hectares of protected natural areas in the surrounding of 100 conventional farms in the Albanian Alps

#### GOAL

To ensure the restoration of good soil conditions in farmed land

#### TARGET

- In two years, farming practices that contribute to reduce soil erosion (such as soil analysis, slope parallel crop and ground coverage) are implemented by 100 conventional farmers in the proximity of the Albanian Alps
- In three years, optimal presence of soil aggregates is reached over 100 conventional farms in the proximity of the Albanian Alps

# RELATED CRITERIA FROM THE UEBT STANDARD

1.2.4	Targets are set for concrete actions undertaken under 1.2.2 and 1.2.3 that allow for assessment of progress and impact.
2.1.13	Wild collection practices are assessed for per- formance and impact and adjusted with a view to continuous improvement, changing condi- tions and/or addressing unintended negative effects.
2.1.24	Cultivation practices are assessed for perfor- mance and impact and adjusted with a view to continuous improvement, changing conditions, and/or addressing unintended negative effects.
2.3.8	Practices to conserve or improve soil and water conditions are assessed for performance and impact and adjusted with a view to continuous improvement, changing conditions, and/or addressing unintended negative effects.
2.5.6	Measures to optimise energy use, reduce conta- mination from energy use, and improve waste management in cultivation and collection sites are assessed for performance and impact and adjusted with a view to continuous improve- ment, changing conditions, and/or addressing unintended negative effects.

#### **RELATION TO OTHER BAP ELEMENTS**

The BAP goals must be established as a result of the baseline analysis regarding the state of biodiversity, its threats and opportunities. To achieve these goals, specific measures to be implemented at the farm level – on farm and beyond – must be selected.



## **Measures**

Measures

What will we do to achieve our goals?

Measures are the **concrete actions** that can be taken **by farmers** to contribute to fulfil the BAP's goals. The whole set of measures implemented by farmers, sometimes in collaboration with other stakeholders, should allow the BAP goals and targets to be reached.

#### **TYPES AND EXAMPLES OF BAP MEASURES**

Measures are context specific and diverse. Some types of measures that can help identify specific measures follow.

- a. Protection of natural and semi-natural ecosystems
- **b.** Creation of priority areas for biodiversity
- **c.** Establishment of natural structures to promote relevant species
- d. Establishment of wildlife corridors
- e. Maintenance of good soil conditions
- f. Maintenance of good water conditions

Below are examples of some specific measures for Protection of natural and semi-natural ecosystems.

- Avoid drainage of marshes and extraction of peats
- Cooperate with local experts for monitoring systems and information exchanges with respect to water quality and water equity of lakes, rivers and other water ecosystems
- Apply crop rotation, intercropping, seedbed sanitation, adjusted sowing dates and densities and natural pesticides to reduce pests and the needed pesticide input
- Use of most efficient irrigation techniques and continuous optimisation (e.g. reduced evaporation at evening irrigation) considering the actual water needs of the plants

More examples of specific measures for each type of measure are provided in **Annex 2**.

# RELATED CRITERIA FROM THE UEBT STANDARD

1.2	Concrete actions are taken to maintain, regenerate, or enhance biodiversity in cultivation or wild collection areas.
2.1	Practices are adopted to ensure sustainable use of the species cultivated or wild col- lected, and to prevent or mitigate negative impact on other species.
2.2	Cultivation and wild collection practices promote climate resilience.
2.3	Soil and water conditions are conserved or improved in cultivation and wild collection sites.
2.4	Practices are adopted to prevent and mitigate the negative impact of the use of agrochemicals.
2.5	Measures are taken to improve energy efficiency and reduce waste and contami- nation in cultivation and collection sites.

# **Workplan**

Workplan

How, by whom and when will we implement the measures?

The BAP workplan is the actual plan for biodiversity. It includes all the measures to be implemented as part of the BAP, its relation to the goals and targets set, as well as indication of the following:

- **timeline** when they will be implemented
- **responsibilities** who will implement them
- risks the implementation of measures may have
- **back up actions** to counter those risks
- possible updates as a result of monitoring

#### **RELATION TO OTHER BAP ELEMENTS**

The work plan details how measures will be implemented. The M&E system will allow monitoring of how appropriately the work plan is being implemented.

#### **RELATION TO OTHER BAP ELEMENTS**

The measures should contribute to the achievement of the BAP goals. Even though different measures may be selected by different farmers, the ones responsible for implementing the BAP must ensure the measures will help reach the BAP goals and targets.



# Monitoring and Evaluation System

M&E SystemHow will we measure the progress and<br/>impact of our BAP?

A M&E system provides evidence on the level of fulfilment of the BAP in general, by assessing whether the BAP is being implemented according to the plan, as well as by measuring its effects on biodiversity. Monitoring and evaluation allow reflection on what has been achieved, what hasn't been achieved, and identification of corrective measures when needed.

A M&E system has two levels:

1. Performance monitoring - Monitoring checks the extent to which the measures are implemented with respect to what was planned. This means that the unfolding of measures at farm level is monitored to check the BAP is being implemented properly. As a result, monitoring is conducted often. 2. Impact evaluation - Evaluating assesses the impact on biodiversity of the implemented measures. Since the effects on biodiversity take more time to show or change, evaluating the impact is more complex than monitoring performance, which is why impact evaluation is usually conducted every 3-4 years or at the end of the BAP term.

**Indicators** are a key component of an M&E system. Indicators are **quantitative measurements** or **qualitative criteria** that are defined to provide evidence of the measures' (i) proper implementation (performance monitoring) and (ii) impacts (impact evaluation).

Examples of specific indicators for each level (performance monitoring and impact evaluation) are provided in **Annex 3**.

The M&E system must specify:

- The performance and impact indicators for each measure
- The methods and tools necessary to collect them
- The purposes for which data will be used
- Those responsible for collecting them
- The timeline when they will be collected

# RELATED CRITERIA FROM THE UEBT STANDARD

1.3.1	Critical stepwise Concrete actions in cultiva- tion or wild collection areas are monitored and assessed at least every three years in relation to targets set under 1.2.4.
2.1.13	Wild collection practices are assessed for performance and impact and adjusted with a view to continuous improvement, changing conditions and/or addressing unintended negative effects.
2.1.24	Cultivation practices are assessed for per- formance and impact and adjusted with a view to continuous improvement, changing conditions, and/or addressing unintended negative effects.

2.3.8	Practices to conserve or improve soil and wa- ter conditions are assessed for performance and impact and adjusted with a view to continuous improvement, changing condi- tions, and/or addressing unintended negative effects.
2.5.6	Measures to optimise energy use, reduce contamination from energy use, and improve waste management in cultivation and collection sites are assessed for performance and impact and adjusted with a view to continuous improvement, changing condi- tions, and/or addressing unintended negative effects.

#### **RELATION TO OTHER BAP ELEMENTS**

Through its performance indicators, progress of the BAP implementation may be assessed. Its impact indicators provide evidence of the achievement of the goals and their corresponding targets.



# **BAP ROLES AND RESPONSIBILITIES**

The elaboration and implementation of a BAP requires identifying specific people that will oversee key roles and responsibilities.

The staff responsible for the BAP definition and implementation at all levels – company, suppliers and farmers – should be clearly identified. The persons in charge need some practical and theoretical knowledge about agriculture and biodiversity and some understanding of the UEBT standard and approach to biodiversity conservation and sustainable use of biodiversity.

The recommended roles and their corresponding responsibilities are:

Roles	Responsibilities
Responsible for the entire BAP	<ul> <li>Take up responsibilities for the whole process of BAP definition and implementation <ul> <li>Conducting baseline assessment</li> <li>Defining goals and targets</li> <li>Suggesting measures</li> <li>Defining the M&amp;E system</li> <li>Providing support to implementation of measures</li> <li>Implementing the M&amp;E system</li> <li>Receiving updates on measures' implementation</li> <li>Submitting updates to the BAP supervisor, if they exist</li> <li>Providing recommendations on implementation of measures</li> <li>Redefining the BAP, when necessary</li> </ul> </li> <li>(Supervise tasks when a consultant oversees BAP definition and implementation, or part of it).</li> </ul>
Responsible for Farm level measures	<ul> <li>Select measures to be implemented out of those proposed by the person responsible for the entire BAP</li> <li>Define a work plan for the implementation of measures and submit it to the person responsible for the entire BAP</li> <li>Elaborate factsheets for each measure, as guidelines for implementation</li> <li>Implement the measures and submit them to the person responsible for the entire BAP</li> <li>Submit updates about the measures' implementation to the person responsible for the entire BAP</li> <li>Contribute to measuring impact evaluation following the recommendations from the person responsible for the entire BAP</li> <li>Receive recommendations from the person responsible for the entire BAP Redefine measures, when necessary</li> <li>Receive support for measures implementation, when necessary</li> </ul>
BAP Coordinator <sup>1</sup>	<ul> <li>Initiate the BAP process</li> <li>Assure trainings about BAP to the person responsible for the entire BAP</li> <li>Receive BAP draft and update from implementation from person responsible for the entire BAP</li> <li>Assess the BAP definition and implementation based on the updates</li> <li>Provide feedback on BAP definition and implementation, when necessary</li> <li>Provide support on BAP definition and implementation, when necessary</li> </ul>
BAP Advisory Committee <sup>2</sup>	<ul> <li>Revise and provide recommendations on the BAP definition</li> <li>Assess the BAP implementation based on the updates</li> <li>Provide recommendations for the adaptive management of the BAP</li> </ul>

<sup>1</sup>Optional. A BAP Coordinator will not always be a separate person. In some cases, it overlaps with the person responsible for the entire BAP. In some scenarios, as in when the person or entity responsible for the entire BAP is a buying and processing company, with one or more suppliers in one or more countries, this role of BAP Coordinator is distinguished from other roles.

<sup>2</sup> Optional. A BAP Advisory Committee is a group of people that can support the person responsible for the entire BAP in assuring the BAP is solid and thorough. It can be integrated by biodiversity experts as well as by strategic thinkers in the companies, suppliers and other stakeholders involved.

There are different scenarios in relation to different UEBT certification settings. Depending on which actors in the supply chain are certificates holders, the recommended roles to define and implement a BAP may be different. The following table offers some possibilities.

	Scenarios: Who decides and is responsible for the BAP? When certificate holder is			
Who assumes the	Buying and processing company with one or more suppliers in one or more countries	Local supplier with one or more farmers or farmer's groups	Big Farmer	Farmers group
Responsible for the BAP role? <sup>1</sup>	Supplier	Supplier <sup>2</sup>	Farmer	Farmers group
Responsible for farm level measures role? <sup>3</sup>	Farmer	Farmer	Farmer	Farmer
BAP Coordinator role?	Buying company	Overlap with Responsible	Overlap with Responsible	Overlap with Responsible

#### Notes

<sup>1</sup> A consultant may oversee BAP definition and implementation. In such a case, the role of BAP responsible is shared.

<sup>2</sup> When single farmers or farmer's groups are equipped enough, they can cover the tasks of the person responsible for the entire BAP.
<sup>3</sup> When farmers do not have the capacity, an agronomist can oversee all the responsibilities of this role except "implement measures". The responsible for the BAP person or the BAP coordinator can support farmers in finding an agronomist. When farmers are organised in a group, the group coordinator or the group agronomist can support each farmer.

## **BAP: ADAPTIVE MANAGEMENT**

A Biodiversity Action Plan follows the principles of adaptive management. Although a BAP includes a proposed timeline for implementation following a set of feasibility criteria, companies, suppliers and farmers are not expected to implement the selected measures all at once. A BAP should include a plan for their gradual implementation through continuous improvement.

Moreover, a BAP can be **periodically reviewed**. The **results of a first phase of implementation** can guide the **BAP re-definition** as far as they can provide indications on how far the goals, targets and measures have been fulfilled, are still relevant or need revision.

**Changes in the context** where the BAP is implemented, which can occur anytime, represent another source of inputs for BAP review. When the context changes, the baseline assessment needs to be updated and, as a result, the BAP's content might need to be updated as well.

**New actors** in the supply chain involved in the BAP is another aspect that might prompt BAP updates with the aim of including them in the plan implementation.

The BAP duration is recommended to be **three years**, so that BAP content and implementation can be aligned with the UEBT membership work plan, which considers the Ethical Sourcing commitment of companies, suppliers, and famers.

After the three years of BAP implementation, an **evaluation** is conducted to **assess the effects** on biodiversity and inform the **formulation of a new BAP**, considering these changes.





# **III. BAP Process**

The BAP definition and implementation is a process that involves several steps, levels in the supply chains and expertise. This section describes the steps required to formulate a BAP, as well as some considerations and responsibilities to consider when implementing it. Ideally, all the actors in the supply chains (companies, suppliers and farmers), and possibly other stakeholders, participate in the formulation and implementation of a BAP.

## **FORMULATING A BAP**



# **1. Conduct a Baseline Assessment**

The first step in formulating a Biodiversity Action Plan is to conduct a baseline assessment that will allow understanding of the threats and opportunities for biodiversity from which to develop relevant goals, targets and measures that will be part of the BAP. Conducting a baseline assessment involves gathering information on the landscape **context** and on the **farms**.

#### WHO DOES IT?

Those responsible for the BAP, whether buying and processing companies, their suppliers or farmers, should mobilise the right expertise to conduct the assessment.

A person or group of people with such expertise or an organization (e.g. local institutions, research groups, civil society organisations) can be given the responsibility to carry out the assessment. When the expertise is not available internally, external experts can be hired as consultants to conduct, or support in conducting, the baseline assessment.

#### WHAT HAS TO BE DONE?

#### **1.1 Gather context information**

Those responsible for the baseline assessment revise reports and scientific literature on environment and biodiversity in the areas of production and sourcing where the BAPs will operate. These publications are generally issued by local institutions, universities, research centres and civil society organisations.

Information can also be obtained through interviews with local experts who have worked on the publications. In such cases, a questionnaire or template for information collection can be defined to guide in the information to provide.

#### **1.2 Gather farm information**

Those responsible for the baseline assessment ask farmers and their technical support person for information. A questionnaire or a template to be filled out can be sent to the farmers. Information can also be gathered from documentation available at the companies or their suppliers about the farms they work with. See **Annex 4** for a template of a Baseline Assessment Questionnaire.

#### Examples of Information Sources for the Baseline Assessment

Agronomists and other technical advisors, experts on biodiversity and/or farming at member company or supplier

Local, regional or national authorities with responsibilities for nature, forests, wildlife, waterways or other aspects of biodiversity

Local or national wildlife or nature-protection Non-Governmental Organisations (NGOs)

Local or national academic researchers, research centres and groups that work on biodiversity and environment related topics

Scientific literature, study reports, web sites with information from projects and studies on biodiversity, ecosystems, species and other related topics

Manager or staff of the closest nature reserves.

Farmers and their technical support persons, even those neighbouring with the farmers involved in the BAPs

Local or indigenous communities with customary knowledge of the natural vegetation and fauna in the region

#### WHAT TO DO WITH THIS INFORMATION?

**Those responsible for the BAP** should summarize the information emerging from the baseline assessment in the BAP general description. See Section "2. *Baseline Information*" of **Annex 1.** 

The baseline information will serve as background to justify the BAP and inform the setting of goals and targets.

#### REFERENCES

See **Annex 7** for further references on gathering biodiversity information.

# 2. Set Goals, Targets and Measures

Once the baseline assessment is ready, BAP goals, targets and measures will be defined to tackle the threats and enhance the opportunities identified in the baseline assessment.

#### WHO DOES IT?

The **person responsible for the BAP** assures this step is completed. **Experts** consulted during the baseline assessment can be involved to verify the relevance and feasibility of the defined goals and targets. They might lead or support the process as consultants. Workshops can be organised. Alternatively, consultation can take place in the form of written and oral feedback on draft documents containing baseline results, goals, targets and measures.

#### WHAT HAS TO BE DONE?

#### 2.1 Set Goals

The baseline assessment provides information on what is relevant for, and what is threatening, biodiversity in farms and surrounding areas. Based on this information, **those responsible for the BAP** create a list of goals. The goals should focus on tackling at least one threat and on enhancing at least one opportunity for biodiversity in the farms and surrounding landscape.

#### **2.2 Set Targets**

Each goal should specify at least one **SMART target:** Specific, Measurable, Attainable, Realistic and Timely. SMART targets allow for determining – qualitatively or quantitatively – the achievements of the BAP and its contribution to biodiversity. **Those responsible for the BAP** identify at least two targets per goal, one for performance monitoring and one for impact evaluation. Some targets may be relatively easy to achieve. Other targets may demand more time, effort or diverse actions from different stakeholders.

#### 2.3 Propose Measures

Once goals and targets are set, specific measures that contribute to their achievement must be identified. **Those responsible for the BAP** draft a first list of possible measures. The measures should cover each of the goals and target set. More than one measure might be required for one goal and target.

#### SCOPE OF THE INTERVENTION

When establishing goals, targets and measures, those responsible for the BAP consider:

- Which biodiversity components should the BAP give attention to? (e.g. genetic diversity, species diversity, ecosystems and habitats diversity and conditions, conditions of natural resources)
- What will the BAP contribute to? (e.g. conservation, sustainable use, or both)

- Which approaches will we use? (e.g. reducing negative impacts, promoting positive impacts or both)
- Where will we intervene? (e.g. farm, surrounding areas, or both)
- Who will be responsible for the interventions? (e.g. individual responsibility of farmers, suppliers, buying companies, or collaborations among them and with external organisations)

#### **ASSESSMENT CRITERIA**

When brainstorming targets and measures, it is useful to assess whether they are suitable. Below are examples of assessment criteria that can be used to establish solid targets and measures.

Criteria	Targets	Measures
Ability to close gaps and contribute to existing	Are we targeting what appears to be endan- gered or ignored, according to the baseline assessment? Are the targets building on what is already being done, or magnifying the already existing opportunities for biodiversity?	Will the measures identified contribute to the achievement of the targets? Do they help target what appears to be endange- red or ignored, according to the baseline assess- ment, or building on the existing opportunities?
Context Viability	Can the targets be achieved given the conditions in the context of operation?	Can the measures be implemented given the conditions of the context where farmers will implement them? Can we manage the possible obstacles?
Internal Feasibility	Can the targets be achieved given the resources and capabilities available at the company, supplier, or farmer levels?	Can the measures be implemented given the resources and capabilities available at farm level? Or does the company/supplier have adequate resources to ensure support to farmers implementing the measures?
Opportunities for leverage	Will the goals and targets mobilise consensus and support, stimulating partnership with orga- nisations working on biodiversity related topics?	Will the measures mobilise consensus and support, stimulating partnership within farmers and other organisations working on biodiversity related topics?
Internal coherence	Are measures, targets and goals aligned? Does each goal have specific targets? Are ther goal and target? Can they coexist without con	e measures to ensure the fulfilment of each tradictions?

If even just one of the above criteria is not fulfilled for a given target or measure, they should be redefined. In such case, it may be useful to re-think the scope of the intervention.

Readjustment suggestions in case measures must be redefined	
Area of Intervention	Readjust the area where the measure will be implemented (e.g. on-farm, outside the farm, another site within or beyond the borders of the farm).
Approach	Readjust between actions that reduce negative impacts and actions that promote positive impacts.
Fields of Action and Biodiversity Components	Readjust between actions meant for conservation and actions meant for sustainable use and rethink the components of biodiversity to target (e.g. ecosystems, habitats, species, natural resources).
Responsibilities and Actors involved	Decide between individual and collaborative actions.

#### **EXAMPLES OF GOALS, TARGETS AND MEASURES**

Goals	Targets	Proposed Measures
To avoid or minimise the negative impact of farming on semi-natural ecosystems	In two years, at least one farming practice to avoid/minimise negative impact on semi-natural ecosystems (such as integrated pest management, creation of buffer zones	<ul> <li>Integrated pest management in the form of crop rotation, enhancement of beneficial organisms, trap crops (sustainable use, on farm, positive impact)</li> </ul>
	by 100 conventional farmers in the proximity of the Albanian Alps	<ul> <li>Creation of buffer zones of primarily native vegetation along water bodies (conservation, on farm and surrounding, positive impact)</li> </ul>
	insects and plants reaches optimal conditions over 100 conventional farms in the proximity of the Albanian Alps	<ul> <li>Implementation of a minimum share of semi-natural habitats on farm (conservation, on farm, positive impact)</li> </ul>
To contribute to rehabilitate and manage areas of natural interest	<ul> <li>In two years, natural structures (such as ponds, tree lines, flower strips, shrubs and other vegetated zones) are created over 20 hectares in protected natural areas in the Albanian Alps</li> <li>In three years, five endangered habitats are recreated over 20 hectares of protected natural areas in the Albanian Alps</li> </ul>	<ul> <li>Cooperate with environmental organisations managing protected natural areas to establish the following natural structures:</li> <li>Ponds that are attractive for wildlife</li> <li>Tree lines, flower strips, shrubs with native species</li> <li>Vegetated zone adjacent to aquatic ecosystem (conservation, on farm, positive impact)</li> </ul>
To ensure the restoration of good soil conditions in farmed land	<ul> <li>In two years, farming practices that contribute to reduce soil erosion (such as soil analysis,</li> </ul>	Yearly implementation of soil analysis (sustai- nable use, on farm, reducing negative impact)
	slope parallel crop, ground coverage) imple- mented by 100 conventional farmers in the proximity of the Albanian Alps	Slope parallel crop cultivation (sustainable use, on farm, promoting positive impacts)
	> In three years, optimal presence of soil aggregates reached over 100 conventional farms in the proximity of the Albanian Alps	Ground coverage during nutrient leaching prone periods ( <i>sustainable use, on farm,</i> promoting positive impacts)

More examples of specific measures are provided in **Annex 2**.

#### REFERENCES

**Annex 7** provides further references that may help define goals, targets and measures.

#### WHAT TO DO WITH THIS INFORMATION?

Those responsible for the BAP systematise the goals, targets and proposed measures in the BAP general description. See Section "1. BAP General Description" of **Annex 1**. They may also be represented as a chart. See Section "3. Overview of Goals, Targets & Measures" of **Annex 1**.

The proposed measures will inform the selection of measures at the farm level.

# 3. Measures at farm level

The goals, targets and proposed measures defined in step 2 inform the selection of measures for the farm level. The capacities and interest of those who will be implementing the measures must also be considered when selecting measures at farm level.

#### WHO DOES IT?

This step is undertaken by the **farmers** (and farm support services, if any) with **support of the per-son responsible for the BAP.** 

#### WHAT HAS TO BE DONE?

#### 3.1 Selecting Measures<sup>3</sup>

**The BAP responsible** shares the goals and targets, as well as the list of proposed measures, with the farmers (and farm support services, if any).

**The farmers**, if possible, with support of an agronomist, evaluate the measures and select those that are most appropriate and relevant for their farms, assessing their viability and feasibility. When none of them seems to be appropriate, the farmers can propose an alternative.

The process of selecting measures might be done through farm visits and workshops. BAP goals and farm practices and conditions are discussed together with the measures.

#### Selection Criteria

To select the most appropriate measures, farmers assess the following:

Criteria	Guiding questions
Relevance	Is this measure relevant for my farm? Will it address main threats or enhance opportunities?
Viability	Can the measure be implemented given the context where I farm?
Feasibility	Can the measure be implemented given the resources that I can invest and my skills?

Measures that do not meet one of these criteria may be readjusted in coordination with those responsible for the BAP.

Readjustment suggestions in case measures must be redefined					
Alternative measures	Is there any other measure that might contribute to tackle the same issues and achieve the same or similar results? (Conservation or Sustainable use of Biodiversity/Species or natural resources or habitats-ecosystems/Reduce negative impact or promote positive impact)				
Alternative areas of Intervention	Is there another area – on farm or surrounding landscape – that is more appropriate for the implementation of the measure?				
Alternative responsibilities	Which kind of support do I need, or can I give, to implement the measure? Is there anyone who can support or that I can support to facilitate implementation?				

<sup>3</sup> In cases in which the farmer is the one responsible for the BAP, this step is not necessary.

The farmers share the final list of measures selected for their farm with those responsible for the BAP. The latter check that the list of measures does not break the internal coherence of the BAP. The person responsible for the entire BAP might ask for amendments and clarifications, if necessary. When amendments cannot be addressed, the person responsible for the BAP will accept the list of measures as proposed by the farmers and introduce the necessary adjustments to the BAP internal coherence.

#### 3.2 Elaborate fact sheets for each measure

**The farmers**, possibly supported by their agronomists or by those responsible for the BAP, elaborate a fact-sheet for each selected measure. A fact-sheet is a technical document that guides the implementation of the measures by describing their technical aspects. See **Annex 5** for a template of a Measure Factsheet.

A fact-sheet includes:

- Name of the measure
- Goals and targets the measure contributes to
- Relevance to the UEBT standard
- Description of the measure
- Areas for implementation
- Contribution to biodiversity
- Contribution to farming activities
- Risks and recommendations for implementation
- Responsibilities, resources and time-frame for implementation
- Monitoring indicators and activities (this section may be completed at a later stage, when the M&E System is designed)

#### 3.3. Develop a farm-level work plan

**The farmers**, possibly supported by their agronomists or by those responsible for the BAP, elaborate a work plan for their specific measures. Some measures can be easily implemented, and some may require more time. It may be convenient to start with those more easily implemented and then move on to those more difficult to implement. See **Annex 5** for a template of a farm-level work plan.

The work plan at the farm level should at least include:

- Goal and target the measure contributes to
- Measure

- Timeline
- Responsibilities or support from external actors
- Status (or Update)

The work plan is then sent to the person responsible for the BAP and periodically updated.

#### WHAT TO DO WITH THIS INFORMATION?

The measure fact sheets and the work plan at farm level will be stored by those responsible for the BAP as documentation and used by the farmers as guidance along the implementation of the measure. The farmer work plan will inform the development of the integrated BAP work plan.

# <u>4. Design a Monitoring and</u> <u>Evaluation System</u>

The design of the Monitoring and Evaluation System is done in parallel with the definition of measures to be implemented as part of the BAP. It is informed by the measures, whose implementation must be monitored, and by the goals, whose achievement must be evaluated.

#### WHO DOES IT?

**Those responsible for the definition of the BAP** are also responsible for the definition of its M&E system. The whole process – from definition to implementation – can be delegated to **external experts** that consult and are supported by those responsible for the BAP and the measures implementation.

#### WHAT HAS TO BE DONE?

**4.1 Define indicators** - **Those responsible for elaborating the M&E system** draft a list of indicators for each measure. Farmers and other stakeholders involved in the implementation of the measures can be consulted on the indicators.

Each measure requires at least two indicators: one to monitor performance and one to measure impact. The following questions may help define these two types of indicators:

- **Performance Indicators:** How will we know we are on track with the implementation of the measure?
- Impact evaluation indicators: How will we know we are affecting biodiversity? Which data, piece of evidence or information will help us measure our impact?

The definition of the M&E starts with the definition of indicators. Indicators are defined per each measure and are screened according to the following selection criteria.

#### **Selection Criteria**

To make sure the proposed indicators are appropriate, it may be useful to assess them according to the following criteria.

Criteria	Guiding questions
Completeness	Is there at least one performance indicator and one impact indicator for each one of the selected measures?
Coherence	Are the indicators relevant to assess the targets that the measures are meant to contribute to? Do they measure the biodiversity components (i.e. genetic diversity, species diversity, habitat diversity, soil conditions, water conditions) that have been prioritized?
Context Viability	Can indicators be monitored given the conditions of the farms or of the contexts where measures are implemented? Particularly relevant for impact indicators. Some of them can be monitored anywhere. Other can be monitored just under certain circumstances (e.g. only on small or big farms, only around the farms).
Feasibility	Can indicators be monitored given the resources and expertise available? Particularly relevant for impact indicators. Some impact indicators require simple methods of data collection that can be implemented easily; other indicators require more complex methods, use of specific biodiversity expertise or laboratory analysis.

Indicators that do not meet one of these criteria may be readjusted considering the following suggestions.

Readjustment suggestions in case indicators must be redefined					
Level of M&E	Readjust the indicators by including performance monitoring or impact indicators, depending on what is missing, for each measure and at an aggregated level for the overall BAP.				
Biodiversity components	Readjust indicators so to cover the biodiversity component that the measures monitored and evaluated are mean to contribute to. Per each component several indicators are possible. Read- justments might also require changes in the indicators within the same biodiversity component.				
Context Viability and Feasibility	Readjust the indicators depending on their methods of collection by selecting those that are more feasible to collect given conditions of operation and capacities of those in charge with the monitoring and evaluation.				

## **Examples of Indicators**

Goals	Targets	Proposed Measures	Indicators
	Performance monitoring: • In two years, at least one far- ming practice to avoid/minimise negative impact on semi-natural ecosystems (such	Integrated pest management in the form of > crop rotation > enhancement of beneficial organisms > trap crops (sustainable use, on farm, positive impact)	<ul> <li>Performance monitoring</li> <li>Number of farmers implementing: <ul> <li>crop rotation</li> <li>enhancement of beneficial organisms</li> <li>trap crops</li> </ul> </li> <li>Size in hectares covered by: <ul> <li>crop rotation</li> <li>enhancement of beneficial organisms</li> <li>trap crops</li> </ul> </li> </ul>
To avoid or minimise the negative impact of farming on semi-natural ecosystems	as integrated pest management, creation of buffer zones or semi-na- tural habitats) is implemented by 100 conventional farmers in the		<ul> <li>Impact evaluation</li> <li>Number of different species of primary producer plants per farm with integrated pest management</li> <li>Number of different species of predator per farm with integrated pest management</li> </ul>
	proximity of the Albanian Alps <i>Impact:</i> • In three years, the presence of beneficial insects and plants reaches	Creation of buffer zones of primarily native vegetation along water bodies (conservation, on farm and surrounding, positive impact)	<ul> <li>Performance monitoring <ul> <li>Number of farmers that have created buffer zones along water bodies</li> <li>Size in hectares of the buffer zones created along water bodies</li> </ul> </li> <li>Impact evaluation <ul> <li>Density and species composition of flora and fauna typical of the protected</li> </ul> </li> </ul>
	optimal conditions over 100 conven- tional farms in the proximity of the Albanian Alps	Implementation of a minimum share of semi-natural habitats on farm (conservation, on farm, positive impact).	water bodies  Performance monitoring  Number of farmers that have created semi-natural habitats  Impact  Type and number of semi-natural habitat created  Size in hectares of the semi-natural habitat created on farm

See **Annex 3** for more examples of indicators for each level (performance indicators and impact evaluation), as well as an indication of monitoring methods and other considerations.

**4.2 Develop the M&E Protocol** - Once the list of indicators is defined for each measure, **those responsible for elaborating the M&E system** elaborate the M&E protocol. The M&E Protocol is a table that explains how the data collection, analysis and reporting works.

The M&E Protocol should include the following information:

- A general description of the M&E System
- Name and description of the Indicators
- Measures, targets and goals each indicator relates to
- Type of each indicator (e.g. performance or impact)
- Data collection methodology for each indicator
- Use: For which purposes they will be used (e.g. external communication or internal learning)
- Responsible: Who is responsible for the process of ascertaining them.

#### **Considerations**

General guiding principles to consider when elaborating the M&E system:

- Performance monitoring indicators are set to be monitored yearly. On the other hand, biodiversity impact indicators should be assessed at the beginning of the intervention and every three years. The general description of the M&E system should specify when these will occur.
- Farmers can be responsible for the collection of some of the data. They might be supported by their agronomists and other technical persons or conduct the activity as part of broader projects and studies to monitor biodiversity. In other cases (e.g. when special skills or tools are required), the collection of information can be delegated to experts.
- The updates of the farm-level work plan describing implementation of measures should contribute with data that measures performance monitoring indicators.
- Methods and tools for the collection of information related to impact indicators will depend on the indicators selected. Existing projects and studies may show how indicators of biodiversity conditions can be assessed.

• The person responsible for the BAP oversees receiving, verifying and analysing the information collected. When M&E is part of broader projects and studies or conducted by external experts, the person responsible for the BAP might receive the results of the final analysis rather than the raw data.

Indicators and the M&E protocol should be shared with farmers and other actors required to collect or analyse the data, for final approval or further revision.

#### **Example of M&E Protocol**

Below is an example of an M&E Protocol for one goal.

#### WHAT TO DO WITH THIS INFORMATION?

Once indicators and the M&E system are defined, the person responsible for the BAP will provide a general description of the M&E System in the BAP document. See Section *"1. BAP General Description"* and Section *"5. M&E System"* of **Annex 1**). The person responsible for the BAP also includes the M&E Protocols in the BAP document and makes sure the measures fact sheets include information on its indicators and how to monitor them.



## Example of an M&E Protocol

Goals	Targets	Measures	Name of indicator	Definition of the indicator	Type of indicator	Data collection methods	Use								
	Performance:	Integrated pest management - crop rotation	Nr farmers_ crop rotation	Number of farmers implementing crop rotation											
	least one farming practice to avoid/ minimise negative	Integrated pest management -enhancement of beneficial organisms	Nr farmers_ enhance benef org	Number of farmers implementing enhancement of beneficial organisms											
	natural ecosystems (such as integrated	Integrated pest management - trap crops	Nr farmers_ trap crops	Number of farmers implementing trap crops		Yearly									
sma	creation of buffer zones or semi- natural habitats)	Integrated pest management - all practices	Ha_Integrated pest management	Size in hectares covered by the integrated pest management	Performance monitoring	Farmers reporting on work-plan templates provided									
atural ecosyste	is implemented by 100 conventional farmers in the proximity of the Albanian Alps <i>Impact:</i> In three years, the presence of beneficial insects and plants reaches optimal conditions over 100 conventional farms in the proximity of the Albanian Alps	Creation of buffer zones of primarily native vegetation along water bodies	Nr buffer zones	Number of buffer zones created along water bodies		by the person responsible for the BAP	Internal learn and external communicat								
ng on semi-na			Ha_buffer zones	Size in hectares of the buffer zones created along water bodies											
npact of farmi		Implementation of a minimum share of semi-natural habitats on farm	Nr farmers_ se- mi-natural habitats	Number of farmers implementing a minimum share of semi-na- tural habitats on farm											
: negative ir		and plants reaches optimal conditions over 100 conventional farms in the proximity of the	and plants reaches optimal conditions over 100 conventional farms in the proximity of the Albanian Alps	and plants reaches optimal conditions over 100	optimal conditions over 100	optimal conditions	optimal conditions	optimal conditions over 100	optimal conditions over 100	Integrated pest management (IPM)- all practices	Vascular Plants	Number of different species of primary producer plants per farm with IPM			
inimise the				Beneficial insects	Number of different species of predator per farm with IPM										
To avoid or m		Creation of buffer zones of pri- marily native vegetation along water bodies	Amphibia	Density and species composition of amphibia per protected water bodies		Baseline study beginning of the BAP action Follow up study									
		Creation of buffer zones of pri- marily native vegetation along water bodies	Algae	Density and species composition of algae per protected water bodies	Impact	after three-four years from measures implementation									
		Implementation of a minimum share of semi-natural habitats on farm	Ha_habitat 1 Ha_habitat 2 Ha_habitat 3	Size in hectares of the semi-natural habitat created on farm (per type of habitat)											
		Implementation of a minimum share of semi-natural habitats on farm	Nr_Habitat 1 Nr_Habitat 2 Nr_Habitat 3	Number of semi-natural habitat created per type of habitat											

#### Responsibilities

Person responsible for the BAP defines information collection templates and send them to farmers Farmers fill out the template and send them back

The person responsible for the BAP verifies data and organises them in database, presents information during BAP redefinition meetings And makes information available for communication purposes.

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Person responsible for the BAP identifies and finances consultant to implement the study.

Consultant implements studies and provide information to the person responsible for the BAP who stores information and presents information during BAP redefinition meetings and makes information available for communication purposes.

# 5. Integrate the BAP<sup>4</sup>

Once farmers have selected the measures and planned their implementation, and the indicators and M&E system have been agreed upon, it is time to integrate the BAP into one document.

#### WHO DOES IT?

The person responsible for the BAP integrates the different farm-level workplans into one single BAP workplan, revises the consistency and coherence of the BAP's different elements, and finalizes the BAP document.

#### WHAT HAS TO BE DONE?

#### 5.1 Develop the integrated BAP work plan

The **person responsible for the BAP** must integrate all farm-level work plans submitted by farmers into one single BAP work plan that aggregates all farm-level measures and connects all measures to the goals and targets, adding, if necessary, some additional measures that may be implemented at a broader level or under responsibility of other actors of the supply chain (e.g. companies or suppliers).

See Section "4. BAP work plan" of **Annex 1** for a template of a BAP work plan.

The integrated BAP work plan should include the following information:

- Goal and corresponding target
- Measures
- Timeline
- Responsibilities
- Risks
- Back-up actions
- Status or Updates

When integrating into a single BAP work plan, the **person responsible for the BAP** must assure the consistency between measures, targets and goals, which means making sure the measures selected by the farmers will allow to reach the targets and contribute significantly to the goals.

#### 5.2 Finalize the BAP document

The **person responsible for the BAP** revises the different information generated and includes it in the final BAP document.

The final Biodiversity Action Plan should have a starting date, which can be the date of approval or a given date in which it starts its official implementation.



<sup>&</sup>lt;sup>4</sup> In cases in which one farmer is the one responsible for the BAP, this step is not necessary as information will be, by then, complete.

## **IMPLEMENTING A BAP**

Once the BAP is ready, implementation can begin. This section suggests considerations and responsibilities to consider during implementation.

#### **Considerations**

These are some points to consider when implementing the BAP:

- A BAP is a process It allows for adaptive management. It creates a reality check on the status of the context and of the farms involved as well as monitors and evaluates the implementation to make sure that the BAP is adapted to fit the possible changing reality.
- A BAP is a gradual effort Measures shall be fit and appropriate to the capacity of the actors and implemented gradually.
- A BAP has a view on the landscape A BAP is more effective when it can have a multiplier effect of its actions. It is important to seek collaboration and include new farmers in implementation, and to provide a bridge from what is done on farm to what is done beyond the farm.
- A BAP is a source of information It shows the path to biodiversity-friendly farm systems. It is important to collect and share information to raise awareness and attract the interest of relevant stakeholders.

# Responsibilities during BAP implementation

#### PERSON RESPONSIBLE FOR THE BAP

- Check and update baseline assessment information on the landscape context and on the farms, yearly.
- Receive and assess information about the implementation of the measures (performance monitoring yearly) and their effects on biodiversity (impact every 3 years).

- ✓ Coordinate meetings with relevant people or organisations to discuss the information about the BAP implementation and the context, yearly.
- ✓ Guide new suppliers or farmers so they can also be included in the BAP.
- ✓ Coordinate BAP redefinitions, when necessary.
- Provide support to farmers implementing the BAP measures, when necessary.

# PERSON RESPONSIBLE FOR ON-FARM MEASURES

- ✓ Implement measures.
- ✓ Provide M&E information (performance monitoring – yearly, impact – every 3 years) to the person responsible for the BAP or allow competent people to collect and provide this information.
- Provide any relevant update on the farm and surrounding, when available.
- ✓ Seek support from person responsible for the BAP or experts to implement BAP measures, when necessary.
- ✓ Participate in processes of BAP re-definition and adapt their measures, when necessary.

#### **BAP COORDINATOR, WHEN EXISTING**

- $\checkmark\,$  Assess the BAP implementation based on the updates.
- Provide feedback to the BAP implementation, when necessary.
- Provide support to the BAP implementation, when necessary.

#### TECHNICAL SUPPORT TEAM AND FARMER ADVISORS, WHEN HIRED

✓ Support or replace the persons responsible for the BAP or for farm-level measures in the BAP as required.

# **ANNEX 1. BAP Template**

# **1. BAP GENERAL DESCRIPTION**

Title	(Indicate the name of the BAP)
Date	(Indicate the date of approval or start of implementation)
Background	(Reason for the BAP and summary (e.g. organisations involved, contexts of operation, main aspects of biodiversity concerned, actions and time line)
Context	(Description through map and summaries of the baseline assessment. Extended information, in the form of Annexes 2 and 3 can be reported as attachments)
Goals, targets and measures	(General overview of the goals, targets and measures in the BAP. Detailed description of the measures, including timeline, responsibilities, contexts of implementation and functioning can be provided as attachments)
Monitoring and Evaluation	(Description of the monitoring and evaluation framework used for the BAP. Detailed lists of indicators and M&E protocol can be provided as attachment)

## **2. BASELINE INFORMATION**

Baseline date: (Indicate when this information was gathered: Month, Year)

#### **2.1 Context information**

Fill out with the name of the context where BAP's measures will be implemented					
Relevant Sites	(Indicate in words or with satellite maps relevant ecosystems, (semi)natural habitat, areas of natural interest (e.g. protected, with endogenous vegetation))				
Species	(Indicate relevant species – endangered, protected, native)				
Threats	(Indicate the threats to biodiversity in the context)				
Opportunities	(Indicate possible solutions for the threats and possible initiatives already wor- king on biodiversity in the context and their priorities)				

#### **2.2 Farm information**

Fill out with the name of the farm						
Location	(Indicate in words or with satellite maps)					
Crops and other species	(Indicate farmed and wild species present on the farm)					
Farm structure and activities	(Indicate activities conducted in farm and structure of the farm in terms of production and non-production area, presence of (semi)natural habitat, water bodies and similar, areas of natural vegetation, boundary areas and wildlife corridors)					
Farm practices	(indicate farming practices with respect to the use of species, irrigation, soil, agro-chemicals, water management)					
Environmental threats	(indicate possible environmental aspects that are impacted negatively by farming activities)					
Environmental contribution	(indicate possible environmental aspects that are impacted positively by farming activities)					

# **3. OVERVIEW OF GOALS, TARGETS & MEASURES**

(Present a graph that summarizes the link between goals, targets, and measures). For example:



## **4. BAP WORKPLAN**

Goals	Targets	Measures	Т	Timeline		Responsibilities*	Risks	Back up measures	Updates
			Y1	Y2	Y3				
: Target 1.1: 더 Target 1.2: 편	Measure 1.1:								
	Measure 1.2:								
	Measure 1.3:								
2:	Image: Target 2.1:       Image: Target 2.2:	Measure 2.1:							
		Measure 2.2:							

\* Farmers or other actors implementing the measures.

## **5. MONITORING & EVALUATION SYSTEM**

#### 5.1 General description of the system

(Describe the system in general terms: key performance and impact indicators, how often are farmers expected to collect and update monitoring performance information, how often impact information will be gathered, who will be collecting and analysing the information, etc.)

#### 5.2 M&E Protocol

(Fill in the following table with information of the indicators, how they will be collected, reported, analysed and communicated)

Goals	Targets	M&E Level	Measures	Name of indicator	Definition of the indicator	Data collection methods	Use	Responsibilities
		ing (PM)	Measure 1.1	PM Indicator 1 PM Indicator 2 	Description of PM Indicator 1 Description of PM Indicator 2 	Describe how indicators are monitored – methods of	Describe how data analysed will be used	Describe who does what for data collection, analysis and communication.
:		Performance monitori	Measure 1.2	PM Indicator 1 PM Indicator 2 	Description of PM Indicator 1 Description of PM Indicator 2 			
			Measure 1.3	PM Indicator 1 PM Indicator 2 	Description of PM Indicator 1 Description of PM Indicator 2 	data collection and reporting and frequency		
=	Target 1.a:							
Goa	Target 1.b:		Measure 1.1	PM Indicator 1 PM Indicator 2 	Description of PM Indicator 1 Description of PM Indicator 2 			
		t (Imp)	Measure 1.2	PM Indicator 1 PM Indicator 2 	Description of PM Indicator 1 Description of PM Indicator 2 			
		Impad	Measure 1.3	PM Indicator 1 PM Indicator 2 	Description of PM Indicator 1 Description of PM Indicator 2 			

# **ANNEX 2. Examples of Measures**

This section details a wide array of possible specific measures that can be identified. They are organized in the following typology of measures, according to what they focus on:

- A. Protection of natural and semi-natural ecosystem
- B. Creation of priority areas for biodiversity
- **C.** Establishment of natural structures to promote relevant species
- D. Establishment of corridors for wild life
- E. Maintenance of good soil conditions
- F. Maintenance of good water conditions
- **G.** Sustainable use of cultivated/collected and interdependent species

## A. PROTECTION/RESTORATION OF NATURAL AND SEMI-NATU-RAL ECOSYSTEMS

# Related criteria from the UEBT standard2.3.2-3<br/>1.2.1Avoid conversion/deforestation of intact<br/>ecosystems, from 1 January 2014.1.2.2-3Concrete actions to maintain, regenerate of<br/>enhance biodiversity are initiated or supported.2.1.2-3Cultivation and wild collection do not take place<br/>in protected areas where they are not allowed<br/>or take place in line with official management<br/>plans.2.1.18-19Purchase of seed and planting material is done<br/>through trusted and/or certified organisations.<br/>In case of on-site production, measures are<br/>taken to ensure new plants are free from pests,<br/>fungal infections, and toxic weed seeds.2.3.1Information on the level and quality of ground<br/>and surface water in cultivation and wild collec-<br/>tion sites is gathered.2.3.2-3Practices are adopted in cultivation, wild<br/>collection and related activities to conserve<br/>and enhance the quality of surface and ground<br/>water as well as to maintain the levels.2.4Practices are adopted to prevent and mitigate<br/>the negative impact of the use of agrochemicals

2.5.1	Information on energy consumption and waste production from cultivation and wild collection activities in cultivation and wild collection sites is gathered.
2.5.4	Measures are adopted to reduce waste and any contamination produced by waste from cultivation, wild collection, and related acti- vities through minimizing waste generation, reuse and recycling.

#### Relevance of this type of measure:

Semi-natural ecosystems may range from unchanged species composition to just using the natural background-soil and/or water by man. Neither species composition nor soil- and water-management is changed by man, but man has to a limited extend influenced the natural processes. Conserving semi-natural ecosystems contributes to the protection of habitats and thereby biodiversity. Ecosystems provide important services including food, breathable air and clean water. Disrupting the balance between the organism in an ecosystem and their interaction with the environment can result in significant and irreversible damages for biodiversity. Moreover, beneficial insects like pollinators often depend on ecological structure for breeding. Hence, the more semi-natural ecosystems are in cultivation/wild collection areas, the more beneficial insects can be found, which help to reduce pests and promote crop yields.

#### **Examples of measures:**

Pesticides have a major effect on ecosystems loss. Pesticides can have short-term toxic effects on directly exposed organisms but also long-term effects from changes to the habitats. Pesticides reduce biodiversity and with this environments ability to regulate itself. The reduction of the amount of pesticides used and the exclusion of very harmful substances are the main strategies to reduce the negative impacts on ecosystems. Overexploitation of water sources by human activities and water pollution from nutrients run-off, pesticides and other pollutants is the main driver for the destruction of aquatic ecosystems such as rivers and wetlands. Sustainable management of water in cultivation/wild collection is critical to secure the sustainability of those activities as well as intact ecosystems.

EXAMPLES OF	BIODIVERSITY MEASURES							
	Conservation	Sustainable use						
	Reducing negative impacts							
On cultiva- tion/ collection sites	<ul> <li>Stop or do not undertake activities that imply the use/conversion of natural ecosystems.</li> <li>Undertake screenings of the water quality of own water sources, streams and ponds every year and ensures that nitrate and pesticide levels are in accordance with legal compliance.</li> </ul>	<ul> <li>Use semi-natural ecosystems in a way that supports natural processes and</li> <li>Avoid the preventive use of pesticides and reduce the general use,</li> <li>When using pesticides, other agrochemicals or heavy machineries, good known and followed as applying the lowest practical rate, avoiding doul sistances, no use of agrochemicals banned under official documents, creative edges of aquatic ecosystems such as streams, rivers or wetlands, do guidelines, allow application to just trained and authorised staff, do not</li> <li>Water is used strictly conformable to legal requirements and withdraw</li> </ul>						
Surrounding areas		✓ Prevent negative impacts to adjacent natural ecosystems and protected area support natural processes (see above and below).						
Both	<ul> <li>Avoid drainage of marshes and extraction of peats.</li> <li>Do not dispose materials and substances inappropriate for the environment and biodiversity such as oil, CPPs, CPP packaging or containers, medicines, animal manure in rivers, streams or other surface or ground waters.</li> <li>Do not burn vegetation to create new agricultural land.</li> </ul>							
		Promoting positive impacts						
On cultiva- tion/ collection sites		<ul> <li>Application of preventive and alternative measures to reduce pests and the pest management: crop rotation, intercropping, seedbed sanitation, adjuster promote beneficial protection and enhancement of important beneficial or root rots and leaf diseases, respect biological pest management guidelines, border crops and trap crops, use sticky traps and pheromone traps, promote ding, document application of preventive and alternative measures.</li> <li>Balance soil fertility and water management, making optimum use of organ Use of most efficient irrigation techniques and continuous optimisation (e.g. ring the actual water needs of the plants. Decision support tools (meteorologietc.) can be used for improving the irrigation performance.</li> <li>Use natural soil drainage rather than installed water canals and pipes. Only</li> <li>Use of local species so that they are adapted to the regional and climatic comparison.</li> </ul>						
Surrounding areas	<ul> <li>Cooperation between producers and local experts on monitoring systems and information exchanges with respect to water quality and water equity of lakes, rivers and other water ecosystems.</li> <li>Collaboration with regional nature protection authorities and authorities responsible for the management of watersheds on the elaboration of sound and realistic watershed management plans (or similar), which considers the impact of climate change.</li> <li>Pass on to other producers information from those management plans with relevance for agriculture – such as the maximum volume of water per year as well as per certain time periods.</li> </ul>	$\checkmark$ Inform yourself about the use of pesticides and participate in capacity bui $\checkmark$ Collaborate with your community to find general solutions for common (p						
Both		<ul> <li>Keep and support natural processes in semi-natural ecosystems and areas of high v</li> <li>Water drainage canals are build-back wherever possible, and restoration of former</li> <li>Keep a buffer zone of primarily native vegetation, free of fertilisers and pesticides a</li> <li>Implement a minimum share of semi-natural habitats on the cultivation/wild collection</li> <li>If cultivation/wild collection occurs on peatland, make sure that practices are comp farming is not possible, set aside this land. Check for subsidies to take this area out</li> </ul>						

#### d prevents damages caused by the use:

d practices and recognised guidelines/requirements are ble coverage, rotating herbicides to prevent weed reeates and maintains specific riparian buffer zones along cument every application, respect storing and cleaning burn vegetation as method for pest/disease reduction, val limits.

as. By using cultivation/wild collection practices which

e needed pesticide input. These include integrated ed sowing dates and densities, conservational tilling, ganisms, support active organic matter, which reduces use natural pesticides and botanical preparations, use e beneficial organisms (see also C), mechanical wee-

nic matter (see E, F).

g. reduced evaporation at evening irrigation) consideogical stations, dedicated software, tensiometric probes

drain if it is inevitable. Inditions and overuse of water, pesticides are avoided.

ilding activities on the topic of pesticides. pest) problems.

*r*alue for biodiversity and prevent damages caused by the use. • wetlands is supported.

along seasonal and permanent water bodies.

ection sites, which lies above legal requirements (if any).

patible with biodiversity protection. If biodiversity friendly of production.

## **B. CREATION OF PRIORITY AREAS FOR BIODIVERSITY**

Related criteria from the UEBT standard		
1.2.1	Avoid conversion/deforestation of intact ecosys- tems, from 1 January 2014.	
1.2.2-3	Concrete actions to maintain, regenerate of enhance biodiversity are initiated or supported.	
2.1.2-3	Cultivation and wild collection do not take place in protected areas where they are not allowed or take place in line with official management plans.	
2.1.10	Wild collection practices avoid negatively affec- ting the long-term survival of the population of wild collected species or its interdependent species.	
2.1.21	Cultivated species are managed to ensure optimal yields and avoid conflict with other cultivated and interdependent wild species.	
2.4	Practices are adopted to prevent and mitigate the negative impact of the use of agrochemicals.	

#### Relevance of this type of measure:

Priority areas are important elements to promote biodiversity. They provide habitat / refuge for animals and plants. Sufficient size and a well-designed implementation of priority areas can compensate for the loss of biodiversity caused by human activities. Maintenance and recovery of priority areas within and around cultivation/wild collection sites guarantees ecosystem services provided by biodiversity which underpin production. Consequently, it ensures cultivation/wild collection viability for current and future generations, making them ecologically and economically sustainable in the long term.

#### **Examples of measures:**

Priority areas can be set aside of land and let them evolve to natural succession. Alternatively, they can be restored following the characteristics of adjacent natural areas and the key elements of habitats for endangered species. Priority areas should not undergo a certain size. Single plots should be connected with biotope corridors to increase the potential for biodiversity.

EXAMPLES OF BIODIVERSITY MEASURES		
	Conservation	
	Reducing neg	gative impacts
On cultivation/ collection sites	<ul> <li>✓ Carry out independent environmental impact assessment prior the conversion of areas in other uses.</li> <li>✓ Identify barren areas and take some out of production (e.g. those hard to reach). Subsidies might be available for this kind of measure.</li> </ul>	
Surrounding areas		
Both	$\checkmark$ If areas are converted into other use, act to compensate/restore the loss of biodiversity (see A, C and D). $\checkmark$ Conserve semi-natural habitats/ecological structures (see also A).	
	Promoting po	ositive impacts
On cultivation/ collection sites	<ul> <li>Grow native vegetation and endangered species on parts of the cultivation/ wild collection sites (see C, D).</li> <li>Provide services such as water table management, flood control, nesting and foraging sites for insectivorous birds or plants used by species that predate on pests.</li> </ul>	
Surrounding areas	✓ Cooperate with local experts regarding the conservation and restoration of degraded habitats and the quality of priority areas for biodiversity.	
Both		<ul> <li>✓ Manage fallow land to e services. This includes:</li> <li>&gt; Do not use pesticides</li> <li>&gt; Plant or manage nati value (see also C and</li> </ul>

Sustainable use		
hance biodiversity or the provision of ecosystem		
and fertilization (on these areas),		
e species to create habitats of high biodiversity		

ting and foraging sites for insectivorous birds or plants used by species

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# C. ESTABLISHMENT OF NATURAL STRUCTURES TO PROMOTE RELEVANT SPECIES (REGIONAL, BENEFICIAL, PROTECTED AND ENDANGERED)

#### Related criteria from the UEBT standard

1.2.2-3	Concrete actions to maintain, regenerate of en- hance biodiversity are initiated or supported
2.1.4	Cultivation and wild collection activities do not in- tentionally introduce invasive species, as defined in the 'Global Register of Introduced and Invasive Species,' other scientific information, and local knowledge.
2.1.5	If cultivation and wild collection activities involve invasive species, which as per 2.1.4 have not been intentionally introduced, measures are taken to avoid the spread of these species beyond cultiva- tion and wild collection sites.
2.1.6	The species cultivated are not genetically modi- fied organisms.
2.1.7	Cultivation and wild collection activities do not introduce genetically modified organisms into cultivation and wild collection sites.
2.1.10	Wild collection practices avoid negatively affec- ting the long-term survival of the population of wild collected species or its interdependent species
2.1.21	Cultivated species are managed to ensure optimal yields and avoid conflict with other cultivated and interdependent wild species.
2.4.4	Integrated pest management includes practices suitable to the cultivated species and cultivation conditions that prevent the occurrence of pests and enhance the use of biological control.

#### Relevance of this type of measures

Regional characteristic species can be iconic for a landscape or habitat type. If conditions are good, these species will occur regularly in their typical habitat, building an umbrella for numerous other species inhabiting the same habitat as well. All this has a direct benefit on biodiversity. The state of biodiversity can be detected on the status of these species. On the other hand, diverse vegetation – natural or planted - including characteristic species provide habitats, shelter and food for beneficial organisms (e.g. ladybugs or wasps). Beneficial organisms - by parasitism or predation - reduce occurring pest species and, in turn, the need for plant protection products with their negative impacts on ecosystem. This high functionality benefits farm management by reducing input costs and increasing productivity.

#### **Examples of measures:**

Often, natural structures like flower stripes, hedges, single trees support the population of characteristic species and beneficial organisms as they recreate the habitats where they naturally live. With respect to the beneficial organisms, the implementation of nest boxes supports insectivorous birds or bats to remain in the cultivation/wild collection area, contributing to the reduction of pests as well.

Some of the mentioned species are at risk of extinction and, in some cases, protected. Protected animals and plants are often decreasing. Measures to counteract the main causes of decrease and to protect and conserve those species can be put in place. It is often difficult to identify species to intervene on and the right measures. Collaborating with local experts can help in the initial phases. Introduction of invasive species and GMOs should be avoided since they are organisms not native to a given place and their presence or introduction might causes harm to characteristic species, including beneficial organisms, directly or by harming their natural environment.

#### EXAMPLES OF BIODIVERSITY MEASURES

	Conservation	
	Reducing negative imp	pacts
On cultivation/ collection sites	<ul> <li>✓ Identify of invasive species on the cultivation/wild collection site. Use local experts for guidance or consult the 'World's most adverse Invasive Alien Species' www.issg.org/worst100_species.html</li> <li>✓ Manage identified invasive species with appropriate actions (e.g. report cases of presence of alien species to competent authorities, following their advice).</li> <li>✓ Do not dispose invasive plant species and any of their parts or remnants in aquatic ecosystems.</li> </ul>	<ul> <li>Avoid the use of GM</li> <li>Avoid entering invasion</li> <li>In case GMOs or invacion of the contamination of the Avoid monoculture.</li> <li>Seek traditional infoccies and ingredientss</li> <li>Take measures to proto sourcing of species biodiversity.</li> </ul>
Surrounding areas		
Both	<ul> <li>Restoration and maintenance of zones (including vegetated zone) adjacent to aquatic ecosystem.</li> <li>Protect or restore linear structures in the landscape (e.g. trimming of hedgerows, clearing /cleaning of drainage channels, (re)implant hedges, stone walls or water ditches).</li> <li>Do not fell trees or cut hedges during mating/nesting season for birds or mowing/haying fields during optimal pollination conditions.</li> <li>Never kill or collect endangered and protected species.</li> <li>Identify protected and endangered animal and plant species in cultivation/wild collection areas.</li> <li>Manage identified protected/endangered species with appropriate actions (e.g. report cases of presence to competent authorities, follow their advice).</li> </ul>	
	Promoting positive im	pacts
On cultivation/ collection sites	<ul> <li>✓ Incorporate native species in existing and new hedges, tree lines, flower strips, shrubs on areas not used for production.</li> <li>✓ Incorporate species that promote the proliferation of beneficial organisms in new and existing hedges, tree lines, flowers strips, shrubs.</li> </ul>	<ul> <li>✓ Implement forms of predators to help re</li> <li>✓ Farm traditional, rate</li> </ul>
Surrounding areas	✓ Exchange information and raise awareness among the local population on potential risks and trends regarding alien species and GMOs, protected species loss as well as on the positive effects of protecting characteristic species and beneficial organisms.	
Both	<ul> <li><math>\checkmark</math> Promote nesting places for birds or bats.</li> <li><math>\checkmark</math> Create of ponds that are attractive for wildlife.</li> </ul>	

 $\checkmark$  Installing solitary bee nest boxes to support bee populations.

#### Sustainable use

- 1Os in all stages of production.
- sive species through operations.
- rasive species are used, install buffer zones to prevent lose areas where they are not.
- prmation on practices linked to the sourcing of spes.
- reserve and restore the traditional practices linked es and ingredients that promote sustainable use of

f natural pest control as planting vegetation to attract educe pest-pressure (see also A).

re plant and animal species and breeds.

## D. ESTABLISHMENT OF WILDLIFE CORRIDORS / ECOSYSTEM CONNECTIVITY

Related criteria from the UEBT standard		
1.2.2-3	Concrete actions to maintain, regenerate of en- hance biodiversity are initiated or supported.	
2.1.10	Wild collection practices avoid negatively affecting the long-term survival of the population of wild collected species or its interdependent species.	
2.1.21	Cultivated species are managed to ensure optimal yields and avoid conflict with other cultivated and interdependent wild species.	

#### Relevance of this type of measure:

Ecosystem connectivity ensures interconnections between habitats and, in turn, the exchanges of individuals between specie populations. This is relevant for the maintenance of biodiversity. Small patches of habitat support smaller populations and if individuals are unable to move to other suitable areas of habitat, populations become isolated. This can make them more vulnerable to extinction. Habitats destruction and fragmentation is, therefore, an important factor in the decline of population that can be tackled through ecosystem connectivity.

#### Examples of measures:

Wildlife corridors connect habitats separated by human activities or structures, allowing an exchange of individuals between specie populations. Wide corridors provide for greater diversity and are affected less from adjoining land uses and associated edge effects. In general, the wider the corridor is, the better for biodiversity.

#### **EXAMPLES OF BIODIVERSITY MEASURES**

	Conservation	
Reducing negative impacts		
On cultivation/ collection sites		✓ Minimize disruption of habita ties (see also A and B).
Surrounding areas		
Both	✓ Gather information about habitat corridor networks, migratory routes and wildlife corridors in the cultivation/wild collection area.	
Promoting positive impacts		
On cultivation/ collection sites	✓ Connect areas specified for biodiversity in cultivation/wild collection sites to one another via habitat corridors.	
Surrounding areas		
Both	<ul> <li>✓ Connect areas specified for biodiversity in cultivation/wild collection sites with protected areas outside the areas bordering.</li> <li>✓ Create, maintain and enhance a network of natural vegetation along live fences, hedges, ditches, riparian strips, roadside and sites margins across the landscape.</li> </ul>	



## **E. MAINTAIN GOOD SOIL CONDITIONS**

Related criteria from the UEBT standard		
2.1.17	For new planting, including propagation, plant varieties are selected and used, based on consi- deration such as yield, resistance against pests, diseases and drought, inputs required, product quality, genetic diversity and adaptation to local conditions.	
2.1.20	New plantings follow cropping patterns that take into account issues such as varietal requirements; geographical, ecological and agronomic conditions; diversification and intercropping; planting density; crop rotation; and fallow periods	
2.3.4	Information on soil structure, fertility and nutrient contents, stability, moisture and drainage condi- tions in cultivation sites is gathered.	
2.3.5	Practices are adopted to maintain or improve soil fertility and nutrient contents.	
2.3.6	Practices are adopted to conserve and improve soil stability and drainage.	
2.4.6	Practices are adopted to minimise the use of synthetic fertilisers and enhance the use of alternatives.	

#### Relevance of this type of measure:

Good soil conditions are a resource for biodiversity as soil organisms act as the primary driving agents of nutrient cycling. They regulate the dynamics of soil organic matter, soil carbon sequestration and greenhouse gas emission, modify soil physical structure and water regimes, enhance the amount and efficiency of nutrient acquisition by the vegetation and enhance plant health. A fertile soil can provide adequate amounts of nutrients for plant growth. This results in better yields and quality.

#### Examples of measures:

Soil conditions can be altered by erosion, nutrients unbalance and similar. Human activities can contribute to alter soil conditions using chemical inputs and intensive production practices, to mention some. Measures should be taken to avoid this and promote good soil conditions through natural soil amendments and other practices that ensure balanced soil conditions.



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#### Sustainable use

 $\checkmark$  Inspect soil conditions before starting any activities and repeat inspections regularly (e.g. post-harvest nutrient balances, every three years nutrient

 $\checkmark$  Apply fertilizers in a way that is proportionate to the growth stage of the

 $\checkmark$  Implement soil protection measures to reduce or prevent the risk of erosion. Measures include reduced tillage, terracing, slope parallel crop cultivation, perennial vegetation, keep the ground cover on agricultural land as long as possible, at least during the periods prone to nutrient leaching and erosion

Implement soil protection measures to maintain or improve soil fertility. Measures include use mulching (green leaf manure), vermicompost and neem cake to enrich the soil with nutrients, follow crop rotation plans and include legumes, do intercropping, use cover crops or inter-tillage such as grasses, oilseeds to enhance humus in the soil, use of organic fertilizer and reduce mineral fertilisers to a minimum level, no fertilization of semi-natural

/ Inspect the soil protection measures annually to fix them in case of damage.

## F. MAINTAIN GOOD WATER CONDITIONS

Related criteria from the UEBT standard		
1.2.2-3	Concrete actions to maintain, regenerate of en- hance biodiversity are initiated or supported	
2.1.17	For new planting, including propagation, plant varieties are selected and used, based on consi- deration such as yield, resistance against pests, diseases and drought, inputs required, product quality, genetic diversity and adaptation to local conditions.	
2.3.1	Information on the level and quality of ground and surface water in cultivation and wild collection sites is gathered.	
2.3.2-3	Practices are adopted in cultivation, wild collection and related activities to conserve and enhance the quality of surface and ground water as well as to maintain the levels	
2.4	Practices are adopted to prevent and mitigate the negative impact of the use of agrochemicals	

#### Relevance of this type of measure:

Water is crucial to agriculture but also to biodiversity. Farming accounts for around 70% of water used in the world today. Aquatic ecosystems, such as rivers and wetlands, are natural environments for the proliferation of species.

#### **Examples of measures:**

Human activities contribute to water pollution from nutrients run-off, pesticides and other pollutants. Overexploitation of water sources by production activities is the main driver for the destruction of aquatic ecosystems. Sustainable management of water is critical to secure the sustainability of the production as well as intact ecosystems and biodiversity.

#### EXAMPLES OF BIODIVERSITY MEASURES

	Conservation		
Reducing negative impacts			
On cultivation/ collection sites	$\checkmark$ Identify negative impacts on water resources from production activities.	<ul> <li>Only use water strictly confor</li> <li>Record the amount of water</li> <li>Screen the water quality of or and ensures that nitrate and pliance.</li> </ul>	
Surrounding areas			
Both			
Promoting positive impacts			
On cultivation/ collection sites		<ul> <li>Use the most efficient irrigat methods (e.g. reduced evapor water needs of the plants. Us dedicated software, tensiom</li> <li>Adopt the cultivation and an conditions, so that no overus natural wetlands or regional</li> <li>Plant trees in the production</li> </ul>	
Surrounding areas	<ul> <li>✓ Inform yourself about the water ecosystem in the relevant watershed.</li> <li>✓ Cooperate in a regional water monitoring system and participate in regular information exchange with regional water experts to support the sustainable use of water and to ensure water quality and water equity of lakes, rivers and other water ecosystems.</li> <li>✓ Collaborate with regional nature protection authorities and authorities responsible for the management of watersheds and request the elaboration of sound and realistic watershed management plans (or similar), which consider the impact of climate change.</li> </ul>		
Both			

#### Sustainable use

- rmable to legal requirements and withdrawal limits. used for irrigation (time and flow rate).
- own water sources, streams and ponds every year nesticide levels are in accordance with legal com-

- tion techniques and continually optimize irrigation loration at evening irrigation) considering the actual Jse decision support tools (meteorological stations, netric probes etc.).
- nimal husbandry to the regional and climatic
- se or damage to local or regional water resources, I protected areas occurs.
- n area that keep water in the soil.

# G. SUSTAINABLE USE OF CULTIVATED/COLLECTED AND INTERDEPENDENT SPECIES

#### Related criteria from the UEBT standard

2.1.1	Cultivation, wild collection and trade in cultivated and wild collected species comply with laws and regulations implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and other national or local rules on rare, threatened or endangered species.
2.1.9	Information is available on the status of the wild collected species within the wild collection site and interde- pendencies with other species.
2.1.10	Wild collection practices are based on scientific information or local knowledge to avoid negatively affecting the long-term survival of the population of wild collected species or its interdependent species.
2.1.15	Characteristics of the cultivated species are identified and interdependency with other crops and species.
2.1.16	Cultivated species are rejuvenated or renovated as needed to maintain yields and plant health.
2.1.17	For new planting, including propagation, plant varieties are selected and used, based on consideration such as yield, resistance against pests, diseases and drought, inputs required, product quality, genetic diversity and adaptation to local conditions.
2.1.20	New plantings follow cropping patterns that take into account issues such as varietal requirements; geogra- phical, ecological and agronomic conditions; diversification and intercropping; planting density; crop rotation; and fallow periods.
2.1.21	Cultivated species are managed to ensure optimal yields and avoid conflict with other cultivated and interde- pendent wild species.

#### Relevance of this type of measure:

The species used for cultivation and wild collection are part of biodiversity. They interact with other species and contribute to ecosystems functioning. Their sustainable use is crucial to ensure that they are maintained over time and that, with them, all interdependent species and ecosystem processes are.

#### **Examples of measures:**

Overexploitation or other cultivation/collection practices that may hamper the health, performance or reproductive capacity of cultivated/collected species harm their persistence over time and alter ecosystems and interdependent species composition and survival. Examples of practices to ensure sustainable use of cultivated/collected species include the use of varieties that are adapted to local conditions, the use of different varieties of the same species, respecting the harvest thresholds, frequency and season, the adoption of appropriate crop cycle, the preservation of habitats from negative impacts of cultivation/collection activities and similar.

EXAMPLES OF BIODIVERSITY MEASURES			
	Conservation	Sustainable use	
		Reducing negative impacts	
On cultivation/ collection sites		<ul> <li>✓ Do not introduce invasive species</li> <li>✓ Do not use GMOs</li> <li>✓ Characteristics of the cultivated species are identified, including the plant variety, production cycle, yields, propension to pests and</li> </ul>	
Surrounding areas			
Both	<ul> <li>Avoiding contamination or degradation of habitats, food sources, and water provi- sion for wild animals, insects, and other plants</li> <li>Resolving human-wildlife conflicts in a way that does not harm wildlife (e.g. no hunting)</li> </ul>	<ul> <li>✓ Information is available on the status of the wild collected species within the wild collection site, population location and structur with other species.</li> <li>✓ Contain the spread if cultivated or collected species are invasive.</li> <li>✓ Use synthetic agrochemicals with care, through measures such as:         <ul> <li>Preference for low-toxicity chemical and selective chemicals</li> <li>Use of chemicals sold by authorized vendors, in original and sealed packaging</li> <li>Rotation of chemicals to reduce resistance (e.g. alternating chemical family)</li> <li>Application only if on need and if threats exceeds levels defined for specific species and area (no calendar or preventive application) and never in non-farmed areas</li> <li>Application following threshold levels, application intervals and conditions advised by labels, scientific information, or competent P Regular calibration and maintenance of equipment for application</li> <li>Creation of buffer zones to limit cross contamination</li> </ul> </li> </ul>	
		Promoting positive impacts	
On cultivation/ collection sites		<ul> <li>✓ Use a diverse set of varieties of spices</li> <li>✓ Include traditional varieties adapted to the local soil and climatic conditions that are resistant or tolerant to diseases and pests</li> <li>✓ In agroforestry systems associate various types of spices and timber and fruit trees.</li> <li>✓ Cultivated species are rejuvenated or renovated as needed to maintain yields and plant health.</li> <li>✓ New plantings follow cropping patterns that take into account issues such as varietal requirements; geographical, ecological and planting density; crop rotation; and fallow periods.</li> <li>✓ Pruning of cultivated species that ensures access to beneficial organisms, wind and sunlight</li> <li>✓ Soil and water management as described in E and F</li> <li>✓ Consideration of pollinator and bird life cycle to avoid negatively affecting their populations</li> <li>✓ Consideration of weed life cycle to reduce competition with cultivated species and need of herbicides</li> <li>✓ Harvest conducted in time and with methods for optimizing quality and plant health</li> </ul>	
Surrounding areas			
Both	<ul> <li>Support local, national seed banks by sharing seed materials</li> <li>Support research on indigenous varieties, local varieties</li> <li>Support research on varieties and their resilience to climate change</li> </ul>	<ul> <li>Monitoring of pest management is conducted and the results are used to define the integrated pest management practices in of Integrated pest management includes practices suitable to the cultivated species and cultivation conditions that prevent the or Alternation or mix of different species and plant varieties to disrupt pest cycles</li> <li>Regular cleaning of equipment to prevent spreading of harmful organisms</li> <li>Preference for the use of physical and other non-synthetic methods and substances (e.g. neem and other natural extracts) for</li> <li>Practices are adopted to reduce the use of herbicides, following a pre-established, annually monitored plan:</li> <li>Cultivation practices suitable to cultivated species and cultivation conditions that prevent the occurrence of weeds and enhance</li> <li>Preference for the use of physical and other non-synthetic methods and substances (e.g. meam and other natural extracts) for</li> <li>V Practices are adopted to reduce the use of herbicides, following a pre-established, annually monitored plan:</li> <li>Cultivation practices suitable to cultivated species and cultivation conditions that prevent the occurrence of weeds and enhance</li> <li>Annual monitoring of: occurrence of types of weeds, frequency of applications and typology of treatments for weed control, experiment for weed control</li> <li>Practices are adopted to minimise the use of synthetic fertilisers and enhance the use of alternatives:</li> <li>Analysis and management of soil conditions as per E</li> <li>Preference for reganic fertilisers on by-products available at farm level</li> <li>Use of synthetic fertilisers on by products available at farm level</li> <li>Frequency of collection should at least not exceed replacement rate</li> <li>For plants that reproduce by seed or spore, sufficient plants are allowed to reach reproductive age</li> <li>For plants that reproduce by seed or spore, sufficient plants are allowed to reach re</li></ul>	

#### d diseases, and interdependency with other crops and species

#### e, reproduction and replacement rates, and interdependencies

ons)

t experts

d agronomic conditions; diversification and intercropping;

cultivation sites

ccurrence of pests and enhance the use of biological control: voir for pest antagonists (e.g. natural enemies)

pest control

ce the use of biological control

control

ffects of weeds on crops safety, quality, and yields, climatic

nk of living trees

# **ANNEX 3. Examples of monitoring and evaluation indicators**

	Examples of Indicators	Method of monitoring	
Performance monitoring	<ul> <li>Number and type of measures implemented</li> <li>Level of compliance with the work plan</li> <li>Number of countries and geographic regions covered</li> <li>Extension and type of areas concerned</li> <li>Type and number of people/organisations involved</li> </ul>	<ul> <li>✓ Information gathered once a year</li> <li>✓ Focus on farm</li> </ul>	<ul> <li>✓ Useful sources of inform</li> <li>✓ Farmers or agronomists</li> <li>information</li> </ul>
Impact evaluation	Genetic diversity <ul> <li>Number and volumes of different varieties,</li> <li>Number and volumes of landraces</li> <li>Number and volumes of different crops</li> </ul>	<ul> <li>✓ Information gathered at the beginning of the measure implementation and every three years</li> <li>✓ Farmer questionnaires and/or photos to gather information and atlas that show and describe varieties to be monitored and facilitate the collection of information</li> <li>✓ Focus on farm</li> </ul>	<ul> <li>✓ Provide useful information</li> <li>✓ But proxy rather than a</li> <li>✓ Easy to implement. farm to collect information</li> <li>✓ Difficult to compare</li> </ul>
	<ul> <li>Species diversity</li> <li>Number of vascular plants</li> <li>Number of endangered and protected species</li> <li>Presence of pollinators</li> <li>Presence of predators</li> </ul>	<ul> <li>✓ Information gathered at the beginning of the measure implementation and every three years</li> <li>✓ Mapping of habitat and sampling of monitoring areas is precondition</li> <li>✓ GIS/GPS technology is needed</li> <li>✓ Field and lab work is necessary</li> <li>✓ Focus on farm and surrounding</li> </ul>	<ul> <li>✓ Provide useful information</li> <li>✓ Synergy with other biology</li> <li>✓ Good for comparisons</li> <li>✓ Farmers and agronomiss of species and monitor</li> <li>✓ Expertise on species and partnerships with University</li> </ul>
	<ul> <li>Habitat diversity</li> <li>Presence of patches and extension</li> <li>Presence of linear habitats and extension</li> <li>Presence and extension of semi-natural habitats</li> <li>Presence and extension of perennial abundant fields</li> <li>Presence and extension of biotope corridor</li> <li>Presence and extension of hedgerows</li> <li>Presence and extension of protected water sources</li> </ul>	<ul> <li>✓ Information gathered at the beginning of the measure implementation and every three years</li> <li>✓ Mapping of habitat is precondition</li> <li>✓ GIS technology improves rigor, however photos, hand mapping and descriptions can be used too</li> <li>✓ Questionnaires and templates can be used to guide on the information to gather and methods for the monitoring of the mapped habitats</li> <li>✓ Focus on farm and surrounding</li> </ul>	<ul> <li>✓ Provide useful information</li> <li>✓ Farmers and agronomis</li> <li>✓ Ecological and botanication</li> <li>✓ partnerships with Univ</li> <li>✓ Once the mapping is available</li> </ul>
	Soil quality  Chemical components of the soil  Electrical conductivity  Nitrate contents  Soil reaction  Physical components of the soil  Stability  Water capacity  Structure & Macropores  Biological components of the soil (especially relevant for the implications for biodiversity)  Earthworms  Particulate organic matter  Organic carbon Enzymes	<ul> <li>✓ Information gathered at the beginning of the measure implementation and every three years</li> <li>✓ Sampling of monitoring areas is precondition</li> <li>✓ Laboratory analysis required or analysis on the fields to be taught</li> <li>✓ Focus on farm</li> </ul>	<ul> <li>✓ Provide useful information</li> <li>✓ Guidance is available at Guidance is available at Guidance is available at Guidance componitored</li> <li>✓ Farmers can include collocation</li> <li>✓ Farmers can include collocation</li> <li>✓ companies/suppliers normal</li> </ul>
	Water quality Physico-chemical > Dissolved oxygen > pH > Temperature > Salinity and nutrients > Toxicants Biological > Macroinvertebrates > Fishes > Amphibias > Algae Habitat > Fringing (riparian) habitats > Instream habitats	<ul> <li>✓ Information gathered at the beginning of the measure implementation and every three years</li> <li>✓ Sampling of monitoring areas is precondition</li> <li>✓ Laboratory analysis required or expert analysis on the fields</li> <li>✓ Focus on farm and surrounding</li> </ul>	<ul> <li>✓ Provide useful information</li> <li>✓ Under explored area of</li> <li>✓ Collaborations with Unition</li> </ul>

Considerations
mation to up-date the work plan s or suppliers as responsible for collection of
tion on the impact of measures on genetic diversity actual assessment of genetic diversity ners and agronomists, guided by questionnaires and atlas,
tion on the impact of measures on species diversity diversity indicators (habitat/soil)
sts can be trained for the monitoring on the field – atlas ing guidelines to be defined nd habitats is required for the analysis on the lab – ersities and local experts can be set up
tion on the impact of measures on habitat conditions sts can collect information if guided al skills required to interpret the information - ersities and local experts can be set up ailable and interpretation done, the indicator is easy to read

ion on the impact of measures on soil conditions

nd can be passed on to farmers

are the most relevant for biodiversity but also the least

lection of information as part of their usual soil analysis can support costs when extra analysis are required than

ion on the impact of measures on water conditions impact and not well known methods

ersities and local experts can be set up for data collections

# **ANNEX 4. Baseline Assessment Questionnaire Template**

QUESTIONNAIRE: CONTEXT AND FARMS BASELINE ASSESSMENT

Date this questio	nnaire was completed	l:			By who	om:			
Context									
1. Country where farm is located									
2. Areas of high natural value in the proximity of the farm	Ecosystems (e.g. wetland, forests, meadows, mountains)       (Semi) natural habitats (e.g. ecological corridors, fallow land, hedges, shrubs, trees, ravine, streams, ditch)			Water bodies (e.g. swamps, rivers, and springs)			Patches of I	native specie	
3. Species relevant for biodiversity in the proximity of the farm	Characteristic				Protected				
4. Main threats for					Caı	ises			
the proximity of the farm		Human ad	ctivities		Natural ph	enomenon		Context dynamics	
	Det	orieration of p			Effects			Deterioration of natural of	
5. Initiatives for	Legislations Plans for protection of natu			tion of natu	ural areas and species Research projects				
biodiversity in the farm proximity									
Farm structure									
6. Ownership of the	Private property of the farmer			Renting from private/public Licence to use from private/publi				/public/comr	
7. Original use of the			Farming						Oth
8. Year of conversion or beginning of farming activities									
9. Size of the farm	Total area			Farming area					
10. Sites of natural interest on farm	Ecosystems (e.g. wetland, forests, meadows, r	mountains)	(Semi) natural habitat (e.g. ecological corridors, fallow lan shrubs, trees, ravine, streams,	habitats     Water bodies     Pa       allow land, hedges,     (e.g. swamps, rivers, and springs)       streams, ditch)		Patches of na	Patches of native species		

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11. Type of farms in the proximity	Dimension						
12. Comparison with	Simila	arities			Differ		
Own farm							
Crops and practices in	n the farming						
13. Crops and size	Name of the crops				Ha farmed		
14. Crops performance	Tendencies of yields		Pests/Disea	ises	Treatments		
15. Other species on farm (farmed or spontaneously)							
16. Seeds	Type and origins of genetic material			Use of GMOs			
17. Use of agrochemicals	Турез		l l	How	Why		
18. Water	Availability & permittee to use	Q	uality	Management			
19. Soil	Soil Analysis Quali		uality	Management			
20. Energy	Used sources		Q	uality	Management		
21. Wastes	Тур	pes			Management		

Conclusions		
22. Summary of environmental threats to act upon	Context	Farms
		:
23. Summary of	Context	Farms
opportunities to pursue		



# **ANNEX 5. Farm-level Templates**

#### 1. MEASURE FACTSHEET (One for each measure)

MEASURE: (Indicate the name of the measure and place where it is implemented)						
Goal	(Indicate the BAP goal(s) that the measure contributes to)					
Target	(Indicate the corresponding target(s) the measure contributes to)					
Relevance for UEBT Standard	(Indicate which indicators or criteria of UEBT standard are fulfilled by implementing the measures)					
Description of the measure	(Indicate what the measure entails)					
Areas of intervention	(Indicate areas, on-farm or surrounding, where the measure will be implemented)					
Responsibilities	(Indicate who will be in charge with implementing the activity)					
Timeframe	(Indicate the timeframe for implementation)					
Resources needed	(Equipment, skills, money)					
How a good implementation looks like	(What can be seen when the activity is well implemented)					
Relevance of the activity for biodiversity	(Indicate the positive effect that the activity might have on biodiversity)					
Relevance of the activity for farming	(Indicate the contribution to farm management: (e.g. reduced costs because reduced inputs or increased yields because of increased fertility))					
Risks and recommendations	(Indicate possible obstacles during the implementation and how they can be overcome)					
Monitoring indicators and activities	(Indicate indicators used for the monitoring, how often information is collected, by who)					

#### 2. FARM-LEVEL WORKPLAN

Goals	Targets	Measures	Activities	Timeline*	Responsibilities	Risks	Back up measures	Updates
Goal 1:	Target 1.1: Target 1.2: 	Measure 1.1:	Activity 1.1.1					
			Activity 1.1.2					
			Activity 1.1.3					
		Measure 1.2:	Activity 1.2.1					
			Activity 1.2.2					
			Activity 1.2.3					
		Measure 1.3:	Activity 1.3.1					
			Activity 1.3.2					

\* The timeline can be divided in quarters or semesters, for the 3 years duration of the BAP.

# **ANNEX 6. Glossary**

#### **Alien species**

A species, subspecies or lower taxon, introduced outside its natural past or present distribution; includes any part, gametes, seeds, eggs, or propagates of such species that might survive and subsequently reproduce (Convention on Biological Diversity, 1992).

#### **Beneficial insects**

Beneficial insects are insects that have positive effects on a garden or landscape, as they aid in pollination and in some cases serve as natural pesticides.

#### **Biodiversity/ Biological Diversity**

Variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. (Convention on Biological Diversity, 1992).

#### **Biodiversity Action Plan**

A plan to conserve or enhance biodiversity.

#### **Buffer zones**

The region adjacent to the border of a protected area; a transition zone between areas managed for different objectives. *(Convention on Biological Diversity – Glossary)* 

#### **Carbon dioxide**

Carbon dioxide is a colourless gas formed during the combustion of any material containing carbon, an important "greenhouse gas" and one of the primary causes of human-induces climate change. (*OECD* – *Glossary*)

#### **Climate change**

A change in global or regional climate patterns, a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced using fossil fuels. It is also one of the drivers of biodiversity loss. (Oxford dictionaries)

#### **Community seedbank**

An approach to conserve and manage agricultural biodiversity at the community level. Community seedbanks tend to be small-scale, the local institutions, which store seed on a short-term basis, serving individual communities or several communities in surrounding villages. (*Biodiversity international*)

#### Conservation

The management of human use of nature so that it may yield the greatest sustainable benefit to current generations while maintaining its potential to meet the needs and aspirations of future generations. (Convention on Biological Diversity – Glossary)

#### Corridor

Is a gallery, passage or area connecting other areas with each other.

#### **Cover crops**

Crops which are sown for agroecological purposes, such as containing soil erosion, controlling pests or enriching the soil with nutrients. Green manure is one specific instance of a cover crop. Nutrient-rich plants (usually legumes) are planted and then ploughed into the earth to improve soil quality. *(Biodiversity international)* 

#### **Crop rotation**

Different crops grown in succession in the same field (e.g. cereal followed by legume), often to reduce risks of pests and diseases or to add nitrogen to the soil. (*Biodiversity international*)

#### **Corridors (ecological corridors)**

*Synonyms: ecological corridors, biological corridor, biotope corridor, wildlife corridor, corridor of conservation, habitat corridor* 

It is an area of habitat connecting wildlife populations separated by human activities or structures (such as roads, development or logging, production sides on farms etc.). This allows an exchange of individuals between populations, which may help prevent the negative effects on inbreeding and reduced genetic diversity that often occur within isolated populations.

Corridors can be categorized according to their width. Typically, the wider the corridor, the more use it will get from species. Wider corridors provide for greater diversity, have less impact from adjoining land uses and associated edge effects (e.g. predators) and provide habitat. There are three divisions in corridor widths:

*Regional (>500m):* connect larger important areas of habitat. They connect major ecological gradients such as altitudinal and/or latitudinal migratory pathways. In Ghana this type of corridors is called wildlife corridor.

*Sub-regional (>300m):* connect larger vegetated landscape features such as ridgelines and valley floors.

*Local (<50m):* connect remnant patches of vegetation and landscape features such as wetlands, creek lines etc. Local corridors are an important component of an overall regional landscape conservation framework. Ecological corridors are belonging to this category.

(http://www.environment.nsw.gov.au/resources/ nature/landholderNotes15WildlifeCorridors.pdf)

#### **Ecosystem**

A dynamic complex of plant, animal and micro-organism communities and their non-living environment – like forests, wetlands, mountains - interacting as a functional unit. (Convention on Biological Diversity 1992)

#### **Ecosystem connectivity**

See ecological corridor

#### **Ecosystem services**

The direct and indirect contributions of ecosystems to human wellbeing, such as clean water, habitats for pollinators and waste decomposition. (*Biodiversity international*)

#### **Fallow land**

A piece of land that is normally used for farming but

that is left with no crops on it for a season to let it recover its fertility is an example of land that would be described as fallow.

#### Fauna

All the animals found in a given area. (Convention on Biological Diversity – Glossary)

#### Flora

All the plants found in a given area. (Convention on Biological Diversity – Glossary)

#### **Food biodiversity**

The diversity of plants, animals and other organisms used for food, covering the genetic resources within species, between species and provided by ecosystems. (*Biodiversity international*)

#### GMO

an organism that has been transformed by the insertion of one or more transgenes. (FAO – Food and Agriculture Organisation, Biotechnology in Food and Agriculture1)

#### Habitat

It is a place or type of site where an organism or population naturally occurs. (Convention on Biological Diversity 1992).

#### **High Conservation Value Areas**

High Conservation Value Areas (HCVAs) are natural habitats, which are of outstanding significance or critical importance due to their high biological, ecological, social or cultural values. These areas need to be appropriately managed to maintain or enhance those identified values. (https://www.hcvnetwork.org/)

#### **Humus balance**

The comparison of the input and exit of humus/organic matter on a field, including the natural depletion of humus in the soil. Considering the organic fertilizer applied, the left overs of crops and the removal of crop material by the farmer in a calculation scheme.

#### **Indicator species**

A species whose status provides information on the overall condition of the ecosystem and of other species in that ecosystem. They reflect the quality and changes in environmental conditions as well as aspects of community composition. (United Nations Environment Programme (1996))

#### Intertillage

The practice or act of intertilling, while intertilling means the cultivation between rows of a crop

#### **Invasive alien species**

alien species, which becomes established in natural or semi-natural ecosystems or habitat, is an agent of change, and threatens native biological diversity. (IUCN)

#### Natural (primary) ecosystems

Ecosystems that can or would be found in a given area in the absence of significant human management impacts. This includes all naturally occurring flowing and still water bodies (streams, rivers, pools, ponds...), all naturally occurring wetlands, and forests (rainforest, lowland, montane, broadleaf forest, needle leaf forest....) or other native terrestrial ecosystems like woodlands, scrublands ....

#### **Mitigation hierarchy**

A tool guiding users towards limiting the negative impacts on biodiversity. It emphasizes best-practices of avoiding and minimizing any negative impact, restoring sites no longer used and finally considering offsetting residual impacts

#### **Overexploitation of natural resources**

It is one of the drivers of biodiversity loss. It means that we consume too much of a species or of goods that ecosystems provide. It also includes excessive hunting, collecting and trade in species and parts of species. (Convention on Biological Diversity – Glossary)

#### **Pre-emergence herbicides**

Herbicides that are applied before the weed germinate. They prevent the germination of seeds by inhibiting a key enzyme without affecting the established crop.

#### **Protected areas**

clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (IUCN – World Heritage definition4)

#### **Protected/endangered species**

Species of plants, animals, and fungi designated as threatened and endangered by national laws or classification systems or listed as endangered or critically endangered by the IUCN Red List of Threatened Species<sup>™</sup> and/or listed in Appendices I, II, or III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

#### **Rehabilitation**

The recovery of specific ecosystem services in a degraded ecosystem or habitat. (Convention on Biological Diversity – Glossary)

#### **Restoration**

The return of an ecosystem or habitat to its original community structure, natural complement of species, and natural functions. (Convention on Biological Diversity – Glossary)

#### Seedbank

A facility designed for the ex situ conservation of individual plant varieties through seed preservation and storage. (Convention on Biological Diversity – Glossary)

#### Semi-natural habitats

Are habitats which are influenced by human activities but haven't lost their structure and are very similar to natural habitats e.g. reforested areas. Semi-natural habitats are also artificially created habitats that have been largely left to develop naturally and host typical native plant and animal species.

Examples could be but are not limited to:

- Hedges
- Shrubs
- Tree line, alley
- Single trees (living and dead)
- Buffer stripes
- Fallow land
- Flower stripes
- Slope, balk

- Reforested areas
- Water elements (ravine, stream, ditch)
- Riparian galleries
- Unmanaged edges or stripes not used for grazing

#### **Species**

A group of organisms capable of interbreeding freely with each other but not with members of other species. (WCMC – World Conservation Monitoring Centre)

#### Surrounding area

Area in the immediate vicinity of the production side of the farm or the farmhouses.

#### Tensiometer / tensiometric probe

Measuring instrument used to determine the matric water potential (soil moisture tension)

#### **Total herbicides**

Non-selective herbicides killing all plant material with which they come in contact.

#### **Unproductive area**

In general, these are areas where the effort of cultivation is greater than the yield/profit one gets out of it. Unproductive areas could be for example very stony areas or steep slopes etc.

#### Watershed

The entire region draining into a river, river system, or other body of water.

#### Wild species

organisms captive or living in the wild that have not been subject to breeding to alter them from their native state. (WCMC)



# **ANNEX 7: Further References**

This annex details links and references that may help in the formulation and implementation process of a BAP.

Within the EU-LIFE Project Food & Biodiversity, a Knowledge-Pool with information linked to agriculture and biodiversity will be established. You will find further leading information under:

www.food-biodiversity.eu/en/knowledge-pool (currently under construction as of January 2019)

#### FURTHER REFERENCES TO GATHER INFORMATION ON BIODIVERSITY RELATED ASPECTS

Areas protected by public, national and regional laws or programs	www.protectedplanet.net http://natura2000.eea.europa.eu https://uc.socioambiental.org/mapa https://inpn.mnhn.fr/zone/sinp/espaces/viewer/
High Conservation Value areas	www.hcvnetwork.org https://www.unep-wcmc.org/featured-projects/mapping-the-worlds-special-places
Lists of protected, native species	IUCN Red List of Protected and Endangered Species www.iucnredlist.org/
Environmental Performance Index	National List Brazil http://www.mma.gov.br/port/conama/processos/174D441A/AP_Lista_CONAMA.pdf http://www.icmbio.gov.br/cepsul/images/stories/legislacao/Portaria/2014/p_ mma_443_2014_lista_esp%C3%A9cies_amea%C3%A7adas_extin%C3%A7%C3%A3o.pdf http://www.spvs.org.br/projetos/parceriasbiodiversidade/
	National inventory natural heritage France https://inpn.mnhn.fr/accueil/index
World biodiversity maps	https://epi.envirocenter.yale.edu/epi-topline
World forest maps	http://biodiversitymapping.org/wordpress/index.php/usa-priorities/ https://mol.org/ https://canopyplanet.org/

#### FURTHER REFERENCES TO DEFINE GOALS, TARGETS AND MEASURES

International treaties on biodiversity related topics	https://www.cbd.int/ https://www.cites.org/ https://www.ramsar.org/about-the-ramsar-convention
Regional, national and local strategies for biodiversity related issues	http://ec.europa.eu/environment/nature/info/pubs/docs/brochures/2020%20biod%20bro- chure%20final%20lowres.pdf http://ec.europa.eu/environment/nature/biodiversity/strategy/index_en.htm https://www.cbd.int/doc/world/fr/fr-nbsap-v2-en.pdf Programa Bioclima (SEMA-PR) Programa Corredores Ecologicos (FATMA-SC) Programa Nascentes (SMA-SP) Programa Bolsa Verde (IEF-MG) Programa Reflorestar (IEMA-ES) Projeto RS Biodiversidade (Rio Grande do Sul) http://biodiversityadvisor.sanbi.org/planning-and-assessment/mapping-biodiversity-priorities/ UN Global Compact and the Consumer Goods Forum Global Platform for Business and Biodiversity Coalition on Climate, Forests, and Agriculture and the Soy Moratorium https://www.bioversityinternational.org/news/detail/a-global-strategy-for-the-conserva- tion-and-use-of-coconut-genetic-resources/ http://nbaindia.org/uploaded/pdf/PPT_PBRs_Guidelines.pdf
Tools and case studies	https://www.conservationgateway.org/pages/default.aspx https://www.tandfonline.com/doi/full/10.1080/23766808.2017.1295705 https://www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/aesa8685 https://www.ibatforbusiness.org/login https://www.biodiversidad.gob.mx/pais/cien_casos/pdf/cien%20casos.pdf file:/downloads/mitigation%20hierachy%20guidance.pdf http://www.imaflora.org/codigoflorestal/aplicativo/simulador.html#/ http://peoplefoodandnature.org/

#### FURTHER REFERENCES TO DEFINE GOALS, TARGETS AND MEASURES

#### **Examples of decision-making approaches to select measures**

http://appvps6.cloudapp.net/sigam3/Repositorio/222/Documentos/FEHIDRO/chave\_decisao.pdf http://www.esalqlastrop.com.br/img/aulas/Chave\_Trabalho%20Restaura%C3%A7\_o.pdf http://www.agenciapcj.org.br/novo/images/stories/roteiro-recup-florestal.pdf http://site.sabesp.com.br/uploads/file/sociedade\_meioamb/Confer%C3%AAncias%20de%20Gest%C3%A3o%20 Ambiental/Produ%C3%A7%C3%A3o%20de%20Sementes%20de%20Esp%C3%A9cies%20Nativas%20para%20Recupera%C3%A7%C3%A3o%20de%20Mata%20Ciliar.pdf https://www.conservationevidence.com/

#### Examples of financial support & collaboration for farmers implementation of biodiversity measures

https://ec.europa.eu/agriculture/envir/measures\_en Pronaf Eco Pronaf Floresta www.spvs.org.br/parceriasbiodiversidade http://awsassets.wwf.es/downloads/presentacion\_proyecto\_bpa\_cuestionario\_felipewwf.pdf

#### FURTHER REFERENCES TO DEFINE M&E SYSTEMS





UEBT is a non-profit association that promotes sourcing with respect. We work to regenerate nature and secure a better future for people through ethical sourcing of ingredients from biodiversity. We aim to contribute to a world in which all people and biodiversity thrive.

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