



GLOBALG.A.P.

BioDiversity

Guidance Document

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1 INTRODUCTION

This guidance document supports producers and auditors in understanding, implementing, and auditing the GLOBALG.A.P. BioDiversity add-on.

The add-on has the intention of tackling one of the most pressing issues on earth – the loss of biodiversity. The role of agriculture in biodiversity protection and enhancement is twofold. On the one hand, it is a major contributor to the loss of species, habitats, and ecosystems. On the other hand, it is dependent on functioning ecosystems and plays a key role in preserving and enhancing biodiversity.

Biodiversity is a highly complex topic that encompasses everything from the micro level in soil biodiversity, to the macro level, e.g., in the interaction of species in vast landscapes and ecosystems. In the long term, biodiversity will be essential not only for the environment but will also play an important role in, e.g., climate change resilience and, ultimately, in sustaining food production levels. It also needs time and space, which means that – in combination with extensification – biodiversity-promoting agriculture is usually associated with a decline in yield. Therefore, there is often a perceived trade-off between food production and the promotion of biodiversity, and finding a balance is a dynamic process. With the requisite knowledge and relevant tools, agriculture can contribute to the prevention of the loss of biodiversity and even enhance biodiversity while balancing food production and yield.

With this add-on, GLOBALG.A.P. aims to support producers in integrating biodiversity management as part of their daily operational farming. The core elements of this add-on and how it supports producers are described on the following page.

2 USE OF THIS GUIDANCE DOCUMENT

This guidance document is a support document for the GLOBALG.A.P. BioDiversity add-on checklist. It aims to support users of the add-on by clarifying terms and outlining procedures to comply with the add-on.

This document will be updated based on new results and practical experience.

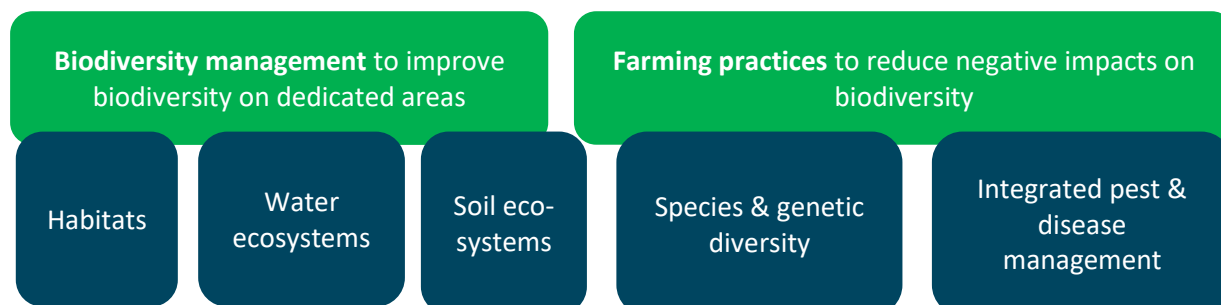
3 ABOUT THE ADD-ON

The add-on builds on two main fields of activity through which producers can influence biodiversity on the farm – farming practices and biodiversity management¹. These fields of activity address five key topics essential to biodiversity in agricultural areas.

¹ <https://www.business-biodiversity.eu/en/knowledge-pool/biodiversity-action-plan>

Whole-farm and landscape approach

The BioDiversity add-on considers the entire farm, not individual plots and cultures. Biodiversity is everywhere, from small plots of earth to larger areas beyond the actual borders of plots and farms. Therefore, the add-on focuses on fruit and vegetables production and includes the entire farm and off-farm elements with a landscape perspective.



Introduction of management tools and requirements to improve knowledge

Biodiversity is based on complex processes that happen over time in various spatial dimensions and are knowledge intensive. This requires knowledge and good spatial and temporal planning. Therefore, the add-on introduces tools, e.g., the self-assessment and the biodiversity action plan (BAP), that support producers in tackling the aspects of time and space, while the requirements provide input on topics relevant to biodiversity.

To ensure knowledge is available, the add-on requires a certain level of knowledge at the producer (group) level to be provided by a BioDiversity representative and training. In addition, it encourages calling in experts from outside the farm and an exchange of knowledge with neighboring and other producers from the region.

4 USEFUL LINKS

The Business and Biodiversity Initiative has developed the following guidelines and documents that help producers and advisers implement biodiversity on the farm.

Guidelines for the development of a BAP	https://www.business-biodiversity.eu/en/biodiversity-training/advisors#biodiversitymanagement
Description of measures such as flower strips, reduced tillage, nesting facilities, etc.	
Farm self-assessment online tool	https://bpt.biodiversity-performance.eu/
Monitoring tool for larger producer groups and food companies	https://bms.biodiversity-performance.eu/
Protected areas under the EU directive <ul style="list-style-type: none"> Information on the Natura 2000 Network Map of the areas protected by the network 	<ul style="list-style-type: none"> https://ec.europa.eu/environment/nature/natura2000/sites/index_en.htm https://natura2000.eea.europa.eu/

5 GLOSSARY

adviser	An adviser is an expert within a specific field who is hired by the producer to consult where additional knowledge is needed. In the BioDiversity add-on, this advice is related to improvements in the farm's biodiversity performance. Such advice may impact biodiversity directly, e.g., species protection, or more indirectly, e.g., by reducing pesticides that negatively affect habitats and animal and plant species.
agricultural business area	The total agricultural business area is the entire area managed by the farm with a farming purpose, including arable land, grassland, or permanent crops. The agricultural business area does not include woodland, but does include landscape elements containing woody plants, e.g., riparian buffers or groups of trees. The agricultural business area also includes leased land.
alternative measures	In this add-on, alternative measures refer to control points 7.1.1 and 7.1.3, which define "alternative measures" as areas dedicated to biodiversity. If on-farm measures to comply with control point 7.1.1 are not possible in the short term, alternative off-farm measures may (temporarily) compensate for the on-farm measures.
areas dedicated to biodiversity	Areas dedicated to biodiversity promote the number and variety of species on the agricultural land of the farm by providing habitats and refuge for plants and animals. These areas therefore contribute directly to the protection or enhancement of biodiversity on managed and unmanaged land. Under the current BioDiversity add-on, a farm must dedicate 3% of the total agricultural business area to such areas. Further descriptions of areas dedicated to biodiversity can be found in this guidance document (see section "Areas dedicated to biodiversity (referring to control point 7.1)").
biodiversity	The variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are a part. This includes variation in genetic, phenotypic, phylogenetic, and functional attributes, as well as changes in abundance and distribution over time and space within and among species, biological communities, and ecosystems. (IPBES)

biodiversity action plan (BAP)	Managing biodiversity on a farm is a continuous improvement process with short- and long-term goals. A biodiversity action plan (BAP) helps the producer to structure the improvement process and keep an overview of goals, improvements, and goal achievements.
biodiversity measures	Biodiversity can be increased by diversifying the range of habitats or vegetation structures available on a farm to provide habitats, migration paths, possibilities for wintering, and feeding. Measures are manifold and include providing habitats such as fallow land, flower strips, or landscape elements such as trees, small ponds, or hedgerows, which also provide habitat connectivity. But increasing biodiversity is also a result of reducing adverse effects on biodiversity of management operation, such as soil and fertilizer management, or plant protection.
BioDiversity representative	Person responsible for the implementation of the BioDiversity add-on on the farm. The BioDiversity representative is also responsible for ensuring compliance with this add-on.
conflict of interest	A conflict of interest exists when a person is in a position to derive personal benefit from actions or decisions made in their official capacity. For example, in the context of the BioDiversity add-on, agribusiness linked advisory services are not considered free of conflicts of interest.
connectivity	Connectivity or habitat connectivity is a crucial concept in biodiversity. It explains the necessity of connecting habitats to ensure barrier-free movement and the exchange of species. Connectivity is highly dependent on which species (or group) is the target. Linear elements such as wildlife corridors, hedgerows, and riparian vegetation increase connectivity for certain species. Other examples include small ponds or small landscape elements such as a pillar of stones to enable the movement of amphibians and reptiles.
ecosystem	A system that includes all living organisms (biotic factors) in an area, as well as its physical environment (abiotic factors), functioning together as a unit. (https://www.biologyonline.com/dictionary/ecosystem)
endangered species	Endangered species are any species listed on the IUCN Red List. This includes all species categorized as critically endangered, endangered, or vulnerable. (IPBES)
field records	Field records are the regular documentation of on-farm/field activities such as soil treatments, or the application of fertilizer or plant protection products.

habitat	The place or type of site where an organism or population naturally occurs. Also used to mean the environmental attributes required by a particular species or its ecological niche. (IPBES)
invasive alien species	Species whose introduction and/or spread by human action outside their natural distribution threatens biological diversity, food security, and human health and well-being. <i>Alien</i> refers to the species having been introduced outside its natural distribution (<i>exotic</i> , <i>non-native</i> and <i>nonindigenous</i> are synonyms for <i>alien</i>). <i>Invasive</i> means <i>tending to expand into and modify ecosystems to which it has been introduced</i> . Thus, a species may be alien without being invasive, or, in the case of a species native to a region, it may increase and become invasive, without actually being an alien species. (IPBES)
integrated pest management	Also known as integrated pest control, it is a broad-based approach that integrates various practices for the economic control of pests. Integrated pest management aims to suppress pest populations below the economic injury level (i.e., to below the level at which the costs of further control outweigh the benefits derived). It involves careful consideration of all available pest control techniques and then the implementation of appropriate measures to discourage the development of pest populations, while keeping pesticides and other interventions to economically justifiable levels with minimal risks to human health and the environment. Integrated pest management emphasizes the growth of a healthy crop with the least possible disruption to agroecosystems and encourages natural pest control mechanisms. (IPBES)
justification/justify	In the BioDiversity add-on, this explains why a producer cannot comply with specific criteria. This only applies to control points, where justification is necessary in certain cases (e.g., exceptions).
landscape elements/landscape structures	Landscape elements are punctual or areal components of the landscape that are distinguishable from their surroundings and have the same use, common ecological function, and uniform structure. Examples include hedgerows, alleys, small ponds, dry stone walls, single trees, etc.
landscape level	Perspective that considers a larger area containing various land-use types (managed and unmanaged) such as agricultural fields, forests, and habitats. A landscape is an area that contains a mosaic of ecosystems, including human-dominated ecosystems.
off-farm biodiversity	Biodiversity activities that are outside the legal range of the actual producer's farming area. Such activities influence either the actual farming or biodiversity status of the farm, or

	are activities that contribute/are detrimental to biodiversity on a larger scale.
off-farm collaboration	Activities with partners outside the farm to promote and protect biodiversity on a landscape and regional scale. Collaboration partners include local to national authorities, conservation and environmental organizations, neighboring producers, or other interested groups and nature conservation bodies.
on-farm biodiversity	Biodiversity activities that are within the legal range of the actual producer's farming area.
primary habitats (or: natural habitats)	Land areas that are and have always been naturally occurring and without human influence. These are naturally occurring flowing and still water bodies (streams, rivers, pools, and ponds), all naturally occurring wetlands, forests (rainforest, lowland, montane, broadleaf forest, and needle leaf forest), and other native terrestrial ecosystems like woodlands and scrublands. ²
protected areas	A protected area is a clearly defined geographical space, recognized, dedicated, and managed through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. (IPBES)
protected species	A type of animal or plant that it is illegal to harm or destroy. (IPBES)
self-assessment	In a self-assessment a producer assesses their status quo of biodiversity. It helps them to understand biodiversity on their land and builds the baseline for a BAP.
Semi-natural habitats	Areas that have been and/or are being influenced by human activities but did not lose their natural structure. Further explanations and examples can be found in this document in section 7.1 "Areas dedicated to biodiversity".
total area of the farm	The total area of the farm comprises all elements that legally belong to the farm and are under the active management of the farm. This includes leased and exchanged land. Land that is leased or exchanged to other operations does not count as part of the farm.
wildlife corridors	See entry for <i>connectivity</i> .

² https://www.business-biodiversity.eu/bausteine.net/f/9101/LIFEFoodBiodiversity_GuidelineEcosystems.pdf?fd=3

6 ADDITIONAL INFORMATION RELEVANT FOR COMPLIANCE WITH CONTROL POINTS AND COMPLIANCE CRITERIA

6.1 Biodiversity representative (referring to control point 1)

Why?/What is it?		
<p>A BioDiversity representative is responsible for implementing the BioDiversity add-on on the farm, or on the farms of cooperatives in Option 2 structures.</p> <p>The BioDiversity representative is accountable for the successful implementation of the BioDiversity add-on.</p>		
How do I proceed?		
<p>1. Designate a relevant person</p> <p>The person complies with the requirements for a BioDiversity representative</p>	<p>2. Define goals and targets</p> <p>The goals and targets for the BioDiversity representative are part of their work, e.g., compliance with the BioDiversity add-on.</p>	<p>3. Define resources to support the representative</p> <p>The BioDiversity representative identifies where additional support or knowledge is needed to achieve the previously defined targets, e.g.:</p> <ul style="list-style-type: none"> • Additional training • Support from internal experts • External experts • Financial resources
We are an Option 2 producer group. What do we need to do?		
<ol style="list-style-type: none"> 1. Designate a BioDiversity representative who has a supervising role for the implementation of the BioDiversity add-on towards all producer group members. 2. If necessary, identify further internal and external experts to support the BioDiversity representative and the implementation of the BioDiversity add-on on the farm. 3. Collect information from producer group members about their designated BioDiversity representatives. 		
I am an Option 2 producer group member. What do I have to do?		
<ol style="list-style-type: none"> 1. Designate a BioDiversity representative on your farm and provide their information to your producer group. 		

What are best practices?

Examples:

A farm in Spain hired an external biologist to develop a BAP.

An Option 2 producer group has designated a BioDiversity representative. They are supported by several internal experts within the producer group. Each member of the producer group has designated a BioDiversity contact person. The BioDiversity representative for the producer group has a list of the BioDiversity contact persons for each member, and therefore knows who to contact.

6.2 Farm self-assessment on biodiversity (referring to control point 2)

Guiding questions for the self-assessment can be found on the next page.

The self-assessment is a short or longer description of biodiversity relevant **areas** and **farming practices** on a farm or a producer group's area.

To get an overview of the biodiversity performance of a farm or even a producer group, it is recommended to start with the self-check (see template). Through the self-check, you find out which topics are relevant to biodiversity, the requirements of, and your status on compliance with the add-on.

For the initial self-assessment, it is recommended to ask for support from a qualified adviser.

How to conduct a self-assessment on biodiversity

In the self-assessment for this add-on two main dimensions are assessed:

1. Areas on and surrounding the production land
2. Farming practices that support or have negative effects on biodiversity

Additionally, the self-assessment should cover at least the following topics:

1. Overview of the farm/production area
2. Farm areas and infrastructure
3. Plant and animal species on the farm (native, protected, endangered, and invasive)
4. Measures and practices that support or pose a risk to biodiversity
5. Summary and conclusion

In the table on the following page, you will find a summary of guiding questions for each of the five topics. These questions should all be addressed in the self-assessment in order to establish a useful baseline for setting goals and deriving measures.

Online tools

Alternatively, there are online tools that can help you gain an overview of biodiversity performance at farm level, indicating strengths and weaknesses, and suggesting measures. One example is the Biodiversity Performance Tool developed by the EU LIFE Initiative *Biodiversity in Standards and Labels for the Food Sector*. <https://www.biodiversity-performance.eu/>. For Option 2 producer groups, it is possible to perform an accumulated assessment.

GUIDING QUESTIONS FOR SELF-ASSESSMENT
1 Overview of the farm/production area
<p>What is the general geographic (hills, flats, aquatic zones, elevation, soil, etc.) and climatic (dry, mixed, wet, cold, etc.) situation of the farm?</p> <p>What are the general natural vegetation, fauna, and biogeographic characteristics in the area where the farming plots are located?</p>
2 Farm areas and infrastructure
<p>Which plots are used for agricultural production?</p> <ul style="list-style-type: none"> • Are there any restrictions on farming (e.g., on protected areas)? • Is there any land that has been converted to farmland since 2014?
<p>Which areas on or surrounding the production areas are:</p> <ul style="list-style-type: none"> • Natural or primary habitats? • Semi-natural habitats? • Protected areas (containing natural and primary habitats)? <p>Which of these areas are allowed to be used for agricultural production?</p> <ul style="list-style-type: none"> • If allowed, what are the conservation goals? • What are the allowed farming practices?
3 Plant and animal species on the farm (native, protected, endangered, and invasive)
<p>What native plant and animal species occur in the region?</p>
<p>What is their conservation status?</p> <ul style="list-style-type: none"> • Endangered, protected, or vulnerable.
<p>How are the species represented within the relevant farming areas?</p> <ul style="list-style-type: none"> • Flora: What are the dominating types of flora within each area? (Bushes, flowers, grass, herbs, trees, etc.) • Fauna: Birds, insects, mammals, aquatic fauna, reptiles, and invertebrates
<p>Which of the species occurring on the farm can be used as indicator species for monitoring biodiversity?</p>
<p>Are there any invasive species in these areas putting pressure on native species?</p>

4 Measures and practices that support biodiversity
<p>What measures and farming practices have been implemented to support biodiversity?</p> <ul style="list-style-type: none"> • Buffer zones with native plants, shelters and boxes for animal species, active management of biodiversity areas, watering areas for animals, etc. • Drift-reduced spraying, considering beneficial species in plant protection measures, crop rotation, etc.
5 Measures and practices that pose a risk to biodiversity
<p>What measures and farming practices have been implemented that pose a risk to biodiversity?</p> <ul style="list-style-type: none"> • Converting land to agricultural production, nocturnal light emissions, busy roads, etc. • Monoculture, etc.
6 Summary and conclusion
<p>Where are the strengths of the farm?</p> <ul style="list-style-type: none"> • Within which topics are the greatest risks for biodiversity? • Which of the topics have potential for improvement? • Suggestion: Use a so-called SWOT-Analysis for biodiversity management on the farm.

6.3 Biodiversity action plan (referring to control point 3)

A separate document will outline a possible approach to developing a BAP, including suggestions on tables, use of maps, etc.

The biodiversity action plan (BAP) is a management tool to help producers improve biodiversity on the farm over time. With a BAP, a producer or producer group links the planning of its farming area and farming practices with biodiversity improvements.

Biodiversity improvements do not happen overnight. Short- and long-term planning is therefore essential. Planning with a BAP helps to ensure ongoing operational processes without compromising on economic continuity.

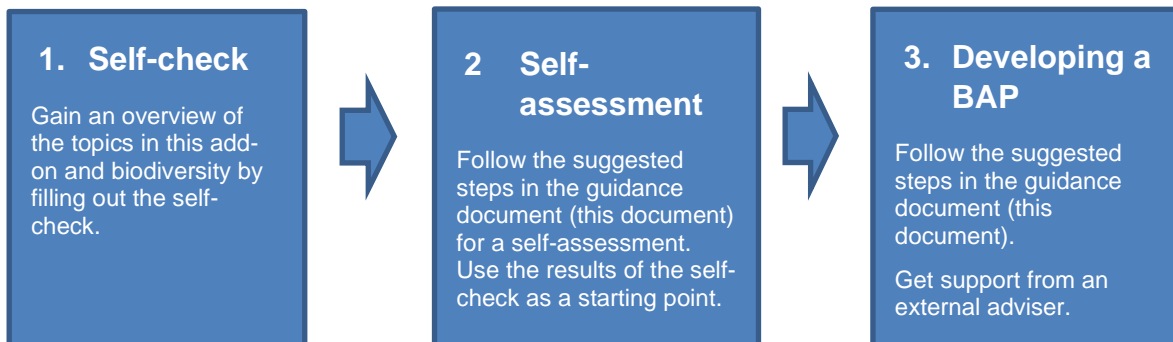
Structure of a BAP

1. Evaluate the biodiversity status of a farm (self-assessment)
2. Identify relevant topics, then define and prioritize goals for the relevant topics
3. Identify and prioritize measures and strategies, and develop an implementation roadmap
4. Implement measures
5. Monitor the implementation process and review the BAP at least every three years

Some considerations

- Depending on the type of farm (large, small, producer group, single crop, region, etc.) BAPs are very individual and different.
- For larger operations, a full BAP (including a self-assessment) can be a longer report. As biodiversity often has regional aspects (e.g., plant and animal species), a joint assessment with neighboring farms coordinated by an adviser can be useful.
- When developing a BAP, it is recommended that producers consult an external adviser.
- A regular review is recommended and mandatory every three years.
- The initial development of a BAP can take time. Regular follow-up updates will take less time.
- The BAP and the self-assessment should go beyond the control points and compliance criteria in the BioDiversity add-on. The BAP should focus on:
 1. Protecting existing biodiversity and the creation of potential for improving biodiversity on the farm and its surrounding areas
 2. Continuously reducing (minimizing) adverse effects on biodiversity linked to agricultural production

Suggested procedure for developing a BAP



6.4 Training (referring to control point 4)

Why?/What is it?
To get an overview of the complex topic of biodiversity, the BioDiversity representative and/or employees whose work has an impact on biodiversity need to understand biodiversity and related practices. Regular training is therefore essential.
What counts as training?
<p><i>Control point 4.1.1 BioDiversity representative trainings</i></p> <p>Trainings are all types of workshops that cover a specific, or various, topic(s) relevant to compliance with this BioDiversity add-on.</p> <p>The training shall be provided by an external institution that has a track record working with and training biodiversity. The institution is ideally familiar with local idiosyncrasies on biodiversity. Trainings can be provided by a local NGO, an advisory office, or educational institutions.</p> <p>A certificate demonstrates the successful completion and details the content of the training.</p> <p><i>Control point 4.1.2 Internal staff trainings</i></p> <p>Internal staff trainings have the main aim of informing those staff members that need to implement planned measures or be aware of certain practices and changes. The trainings or the information on internal trainings that is distributed can be in the form of regular information sessions, informational material (e.g., flyers, posters), or informational emails.</p>
How often are trainings necessary?
<p><i>Control point 4.1.1 BioDiversity representative trainings</i></p> <p>Currently, no timing is prescribed. However, the BioDiversity representative or internal experts need to ensure that they are up to date.</p> <p><i>Control point 4.1.2 Internal staff trainings</i></p> <p>Trainings or information sessions should take place at least once a year. This ensures the sensibilization of the staff and ensures they are up to date.</p>
Who can provide such trainings?
<p>For BioDiversity representative trainings, this might differ from country to country, and region to region. Contact local wildlife or conservation NGOs, advisers, authorities, or educational institutions.</p> <p>For internal staff trainings, the BioDiversity representative provides and/or organizes trainings.</p>

6.5 External experts and advisers (referring to control point 5)

The following table covers the three related control points 5.1.1–5.1.2.

Why?/What is it?
<p>As biodiversity is a diverse and complex topic, it is recommended to consult external experts and advisers on selected topics, e.g., on conducting a self-assessment or developing a BAP, on integrated pest management (IPM), or for information on invasive or protected species.</p>
How do I comply?
<p>5.1.1 Obtaining and implementing advice</p> <ul style="list-style-type: none"> It is documented on which topic external advice is needed and/or used (e.g., in an overview table listing the topics that are relevant in the BioDiversity add-on and on which ones the producer needs or has used advice.). <p>5.1.2 Requirements for external experts and advisers</p> <p>The external experts and advisers are qualified to advise on required topics.</p> <p>EITHER</p> <ul style="list-style-type: none"> The external experts and advisers are employees of an organization that has proven expertise within the required area of biodiversity. <p>OR</p> <ul style="list-style-type: none"> Certificates of education and/or proofs of regular training on biodiversity with active participation of the external experts and advisers are available. <p>5.1.3 External experts and advisers free of conflicts of interest</p> <ul style="list-style-type: none"> External experts and advisers are free of conflicts of interest: The external expert or adviser is not affiliated with the distribution of on-farm agricultural inputs, services, and/or equipment.
When do I need advice?
<p>This depends on the existing expertise of the producer and there might be cases where no external expert or adviser is needed. If you comply with most or all of the control points in the add-on, you probably do not need an external expert or adviser. However, external experts and advisers can give a lot of additional insights into certain topics.</p>

Who counts as external experts and adviser?/Who can I contact?

As listed above in “How do I comply?”: Any person that has proven experience on biodiversity. Either the person is employed by an organization with proven expertise on biodiversity (and farming). Or the person can demonstrate proven work experience and/or proofs of trainings. External experts and advisers shall be free of conflicts of interest (see below).

Authorities (local, regional, or national) with responsibility for conservation, nature, forests, wildlife, waterways, or other aspects of biodiversity

- a) Baseline information on areas dedicated to biodiversity, protected species, etc.
- b) Support on measures and implementation strategies

Private local or national wildlife, conservation, or nature-protection organizations

- a) Baseline information on habitats, species, etc.
- b) Can potentially give site-specific recommendations for measures and implementation strategies

Educational institutions related to agriculture and biodiversity

- a) Identifying measures
- b) Implementing measures (e.g., techniques, fertilizer application, nutrient requirements of plants, etc.)

Independent experts and agri-consultants with proven experience

“Free of conflicts of interest” – what does this mean?

A conflict of interest exists when a person or organization is involved in multiple interests. In this case, external experts and advisers shall be free from any commercial interest in specific farm measures beyond their actual advisory role, e.g., a consultant who offers their work for free but is sponsored by a farm-equipment supplier.

6.6 Off-farm synergies, communication, and collaboration (referring to control point 6)

Why?/What is it?

Biodiversity activities that are outside the legal range of the actual producer’s farm. Such activities either influence the actual farming or biodiversity status of the farm or are activities that contribute/are detrimental to biodiversity on a larger scale.

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What counts as an off-farm biodiversity activity

This is relatively open to the producers. Examples:

- Informing the local or neighboring community or other interested groups about the biodiversity work of the producer
- Cooperation with other producers or regionally active groups to protect and promote biodiversity or pass on or improve knowledge about biodiversity-promoting agricultural practices
- Participation in joint projects with other producers (wildlife corridors, establishing areas dedicated to biodiversity, reducing pesticide drift, etc.) through e.g., financial resources, person-hours
- Participation in research projects to plan and implement biodiversity management in the region
- Others

6.7 Areas dedicated to biodiversity (referring to control point 7)

Why?/What is it?

Areas dedicated to biodiversity promote the number and variety of species on the [agricultural business area of the] farm by providing habitats and refuge for plants and animals. To a certain extent, these areas may compensate for the loss of biodiversity caused by intensive agricultural activities.

Areas dedicated to biodiversity usually means land where no farming takes place. However, an area dedicated to biodiversity may be managed land (e.g., semi-natural habitats) and even farmland (ground cover mixture) as outlined in control points 7.1.1 and 7.1.2. Furthermore, the implementation of wildlife corridors (control point 7.1.5) can further increase the connectivity between single (isolated) habitats.

6.8 Areas dedicated to biodiversity (referring to control points 7.1.1 and 7.1.2)

What counts as an area dedicated to biodiversity?

Primary and natural habitats

Land areas that are and have always been naturally occurring and without human influence. These are naturally occurring flowing and still water bodies (streams, rivers, pools, and ponds, etc.), all naturally occurring wetlands, forests (rainforest, lowland, montane, broadleaf forest, and needle leaf forest, etc.), and other native terrestrial ecosystems like woodlands and scrublands that are part of the legally recognized agricultural production area.

Semi-natural habitats

The definition of semi-natural habitats is somewhat fluid. Semi-natural habitats can be actively managed with the goal of hosting typical native plant and animal species. Semi-natural habitats can also be areas that have been restored and then left uninfluenced by humans to allow natural ecological processes to develop.

Examples include semi-natural extensive grasslands (meadows and pastures), hedges and hedgerows, and other wildlife corridors, ponds and open water, ruderal areas, wooded banks, unutilized dry riverbeds and banks, and thickets with native species.

Partially protected areas with legally recognized ecological value

- Natura 2000 areas
 - Natura 2000 is a network of sites selected to ensure the long-term survival of Europe's most valuable and threatened species and habitats. Natura 2000 was established by the European Union (EU) and areas are defined by countries. More information and a map can be found here: https://ec.europa.eu/environment/nature/natura2000/data/index_en.htm
- High nature value (HNV) farmland areas
- Other conservation areas (defined by local authorities)

Other usage-integrated areas that are dedicated to or promote biodiversity

- Annual to perennial fallow areas (not including bare fallow)
- Annual flower and grass strips on arable land
- Mid- to long-term flower and grass strips on arable land
- Old grass strips in grasslands
- Extensively used grass strips and buffer zones with more natural vegetation along rivers and ditches
- Utilization windows and islands for breeding birds (e.g., skylark and lapwing)
- Natural vegetation strips along roads and field margins (if not utilized), with a minimum width of one meter and which remains the whole production year
- Ruderal sites and tall herb corridors
- Sunken roads (especially in loess)
- (Wind) shelterbelts
- Unsurfaced field tracks
- Other areas and linear structures with positive biodiversity effects

Other (small) landscape structures

- Single trees or standard fruit trees (if not part of an orchard, see below) count up to 30 square meters
- Branch piles and stone heaps with a minimum height of one meter
- Arable field corners with natural vegetation and extensive management
- Beetle/Bee banks
- Dry stone walls
- Other landscape structures with positive biodiversity effects

Ground cover mixture (green manure)

The ground cover only can be considered if a seed mixture with diverse locally adapted plants is sown, including leguminous and flowering plants. If so, the actual area of ground cover can be offset against the cover crops' vegetation period (e.g., 5ha catch crops for 90 days result in 1.23ha biodiversity hot spot area - $5\text{ha} \times 90\text{days} / 365\text{days} = 1.23\text{ha}$).

Wetlands and riverine not being used for agricultural purposes

- Wetland which belongs to the farm
- Ponds and open water reservoirs (if accessible to birds)
- Reed areas and wooded riparian zones
- Dikes (if extensively managed)
- Waterlogging areas
- Dry riverbeds (including banks)
- Other water and wetland areas that have a positive effect on biodiversity

Agroforestry structures

- Agroforestry systems with at least a tree/shrub layer among crops or pastures

Other areas promoting biodiversity

- Unproductive land and unused areas (fallow, see above)
- Green and natural facades and roof coverings
- Natural garden elements and unused eco-space around buildings

6.9 Alternative measures to areas dedicated to biodiversity (referring to control point 7.1.3)

Why?/What is it?

Biodiversity compensation areas become relevant when all possible measures to establish areas dedicated to biodiversity on the agricultural business area are exhausted and the producer is still below the required 3%. The producer then looks for land outside their area where compensation measures can be implemented. If biodiversity compensation areas can be established, the producer may still be able to comply with the add-on.

How do I proceed?

1. The exhaustion of the total agricultural business area to comply with control point 7.1.1 shall be described.
2. Count the total amount of possible areas dedicated to biodiversity on the farm and make sure these areas are compliant with control point 7.1.1.
3. Identify and select potential areas prioritizing a) before b) before c). The areas on the agricultural business area as well as areas outside (e.g., additional flowers fields) shall add up to the required amount of areas dedicated to biodiversity outlined in control point 7.1.1 (3%).
 - a) Areas that are adversely affected by the producer’s activity
 - b) Areas dedicated to biodiversity in the immediate neighborhood to fields
 - c) Biodiversity on areas closest to the agricultural business area. In this case, justify why measures closer to the producer’s land/fields are not possible.
4. Identify possible measures to compensate for the non-compliance showing active involvement, e.g.:
 - a) Financially supporting the improvement of selected areas
 - b) Providing workforce or machines to (re)establish and actively improve biodiversity areas
5. Connect with required partners (landowners, experts, authorities, etc.).
6. Define measures (structures, elements, financial, etc.) by setting clear goals, assessing technical, operational, timing, financial, and legal feasibility.
7. Select and plan a timeline for implementation.
8. Describe and summarize possible impacts of off-farm alternative measures in the BAP (as requested for on-farm under control point 7.1.1).
9. Implement alternative measures according to plan (justify in writing in the BAP).

We are an Option 2 producer group, what do we need to do?

1. Check whether all options to establish areas dedicated to biodiversity on the agricultural business area of all associated farms totaling 3% are exhausted.
2. If this is the case, follow the procedure prescribed in “How do I proceed?”.

6.10 Evidence of nontreatment of areas dedicated to biodiversity with pesticides or fertilizers (referring to control point 7.1.4)

What is it?

Pesticides and fertilizers have a major impact on natural processes that take place on areas dedicated to biodiversity. Therefore, direct treatment of areas dedicated to biodiversity with such products is not allowed and drift should be reduced to a minimum.

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How can I comply?
<p>Field records show that areas dedicated to biodiversity are not part of the treatment plan for pesticides and fertilizers. Ideally, the BAP outlines how treatment can be avoided and drift reduced to a minimum.</p> <p>In addition to the field records, a signed statement from the producer that no treatment of areas dedicated to biodiversity has taken place can be added.</p>

6.11 Wildlife corridors and small landscape structures (referring to control point 7.1.5)

Why?/What is it?
<p>Wildlife corridors connect areas dedicated to biodiversity that are otherwise separated by human activity, such as fields for agricultural production, roads, etc. Wildlife corridors facilitate the exchange of individuals within species and facilitate and increase biological diversity on areas dedicated to biodiversity.</p> <p>Landscape structures and elements that are wildlife corridors count as areas dedicated to biodiversity (control point 7.1.1)</p>
What counts as wildlife corridors?
<ul style="list-style-type: none"> • Hedgerows • (Woody) riparian buffers • Field borders, perennial buffers, and filter strips in fields • Grassed and vegetated waterways • Vegetated terraces and dry-stone walls • Windbreaks and shelterbelts • Wetlands, small ponds, and water-filled ditches • Scattered piles of branches, roots, and stones • Scattered areas dedicated to biodiversity
How do I proceed?
<ol style="list-style-type: none"> 1. Identify habitats to be connected on- and potentially also off-farm (use a map) 2. If possible, determine which umbrella species are targeted to settle, migrate, winter, or reproduce in such corridors 3. Evaluate structural needs for target species 4. Evaluate production and potential economic consequences of establishing (smaller or larger) wildlife corridors 5. Draw corridor elements on a map

6.12 Primary, natural, and semi-natural ecosystems and habitats and protected areas (referring to control points 8.1.1–8.1.5)

This section covers control points 8.1.1–8.1.5.

What are primary, natural, and semi-natural ecosystems and habitats and protected areas

Primary and natural habitats

Land areas that are and have always been naturally occurring and without human influence. These are naturally occurring flowing and still water bodies (streams, rivers, pools, and ponds), all naturally occurring wetlands, forests (rainforest, lowland, montane, broadleaf forest, and needle leaf forest, etc.), and other native terrestrial ecosystems like woodlands and scrublands that are part of the legally recognized agricultural production area.

Semi-natural habitats

The definition of semi-natural habitats is somewhat fluid. Semi-natural habitats can be actively managed with the goal of hosting typical native plant and animal species. Semi-natural habitats can also be areas that have been restored and then left uninfluenced by humans to allow natural ecological processes to develop.

Examples include semi-natural extensive grasslands (meadows and pastures), hedges and hedgerows, and other wildlife corridors, ponds and open water, ruderal areas, wooded banks, unutilized dry riverbeds and banks, and thickets with native species.

Semi-natural habitats with (high) conservation value

Such areas are not clearly defined. For this add-on and in the context of Europe, it is recommended to use areas under the Natura 2000 Network as a starting point. However, such areas go beyond Natura 2000. It is therefore recommended to get in touch with local authorities to identify Semi-natural habitats with high conservation value.

The concept of high conservation value areas (HCVA) largely finds application in a global context. HCVA are defined as natural habitats where ecological values are considered to be of outstanding significance or critical importance for species diversity, landscapes, ecosystems, habitats, ecosystem services, community needs, and cultural values.

In the EU, a similar concept has been developed that is directly related to farming, known as high nature value farmland (HNVF) or areas. The goal is to maintain a high level of biodiversity. In the EU, there is no clear categorization of such areas.

In general, HNVF contains a high proportion of semi-natural vegetation, and/or rare species, or a large proportion of a species on a European or global scale. HNVF are also often areas with low intensity farming with small scale features, semi-natural and cultivated land (mix of permanent crops, arable fields, and pastures) (→ see also www.food-biodiversity.eu).

Partially protected areas with legally recognized ecological value

- Natura 2000 areas
- High nature value (HNV) farmland areas
- Other conservation areas (defined by local authorities)

How do I proceed?
<ol style="list-style-type: none"> 1. Check where protected natural areas with legally recognized value (or areas protected via other effective means), primary or natural ecosystems, semi-natural ecosystems, primary or natural habitats, and semi-natural habitats are either on your farm or surrounding your farm. 2. Identify whether habitats/ecosystems have been converted to agricultural land after 1 January 2008. 3. Identify whether the damage or conversion of semi-natural habitats with high conservation value took place after 1 January 2014, and whether the producer was responsible. 4. Plan and start the restoration process as soon as possible (control point 8.1.5). 5. An area counts as restored once it achieves the classification as an area dedicated to biodiversity as outlined in this document under control points 7.1.1–7.1.4.
What is direct or indirect responsibility for conversion or damage?
<p>Indirect and direct refer to actions of producers that led to a change to the natural and intended characteristics of an area dedicated to biodiversity. Directly refers to actions ON the actual area, while indirectly refers to actions of producers outside the affected areas.</p> <p>Examples of direct responsibility: The producer has actively converted areas dedicated to biodiversity for agricultural use or damaged semi-natural habitats with (high) conservation value, e.g., removing hedges and trees, or destroying other landscape elements, draining bogs, overexploitation, or degradation of semi-natural grasslands and surface water.</p> <p>Examples of indirect responsibility: Drift of pesticides or fertilizers, influence of aquatic ecosystems through, e.g., draining fields, building canals, or intensive use of ground or surface water bodies that are relevant for the respective semi-natural habitat with (high) conservation value.</p>

6.13 Other biodiversity protection and management practices (referring to control points 8.2.1–8.2.3)

Protected, endangered, and invasive species (plant and animal)
<p>Endangered species are any species listed on the IUCN Red List. This includes all species categorized as critically endangered, endangered, or vulnerable (IPBES).</p> <p>Protected species are species (animal or plant) that it is illegal to harm or destroy. These are often nationally defined.</p> <p>Invasive species are species whose introduction and/or spread (by human action) outside their natural distribution threatens biological diversity, food security, and human health and well-being.</p>
Which species are to be protected, promoted, or contained?
<p>For all three types of species (protected, endangered, and invasive), occurrences are often local and sometimes species occur only on small patches in a landscape or habitat.</p> <p>It is recommended to get in touch with local organizations that are involved in nature conservation or wildlife protection (authorities, NGOs, or even agricultural advisers. See also</p>

section on “External experts and advisers” in this document). They often have a good overview of species and their management within regions or landscape characteristics. It is valuable to ask specifically for beneficial species that can be relevant for plant protection (integrated pest management).

6.14 Integrated pest management (referring to control point 9)

What is IPM?

Integrated pest management (IPM) is a concept for low-pesticide-input pest management. It is a step-by-step approach for controlling pests in agricultural production with the goal of reducing the use of (toxic synthetic) pesticides.

The basic principle of the IPM concept is that all possible options shall be considered and applied to prevent, reduce, or fight pests, diseases, or weeds before chemical pesticides are used.

There are various approaches to IPM. However, the basic step-by-step process is similar for all approaches. In the GLOBALG.A.P. standards a three-step process has been defined³:

1. Prevention
2. Monitoring of crops/area/pests, evaluation, and decision-making
3. Intervention (mechanical, biological, and chemical)

The concept is described in the IPM pyramid (see below). A key element in deciding on intervention are threshold levels.

Threshold levels – what are they and how do I define them?

The *economic threshold* describes the pest density level at which it becomes necessary to take action before an economically significant crop loss occurs.

Economic threshold levels are very individual for each pest, crop, and region. Therefore, it is recommended to get in touch with a local IPM expert (e.g., cultivation adviser) who will support you in your decision-making.

IPM pyramid – what is it?

The IPM pyramid (see below) illustrates the principles of IPM. Before chemical methods are used, all other options shall be considered:

1. **Prevention** methods are mainly cultural methods, such as the immediate and adequate removal of diseased host plants, preventing weeds, creating suitable areas and conditions for crops, site-specific crop rotation, and crop diversity to break pest cycles, clean plants and equipment, and growing healthy and resistant plants.
2. **Monitoring** of crop and area through direct visual control, especially for pest infestation and the occurrence of plant diseases, must take place regularly. In addition, predictive

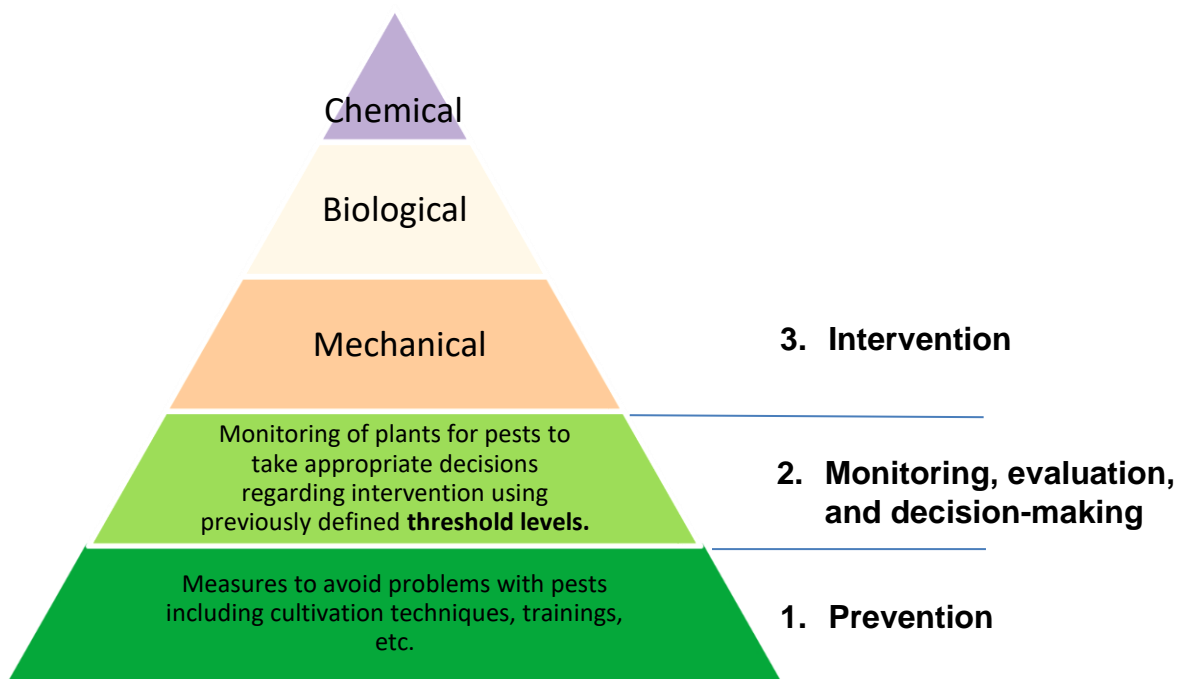
³ See GLOBALG.A.P. (2019) INTEGRATED FARM ASSURANCE v5.2. All Farm Base – Crops base – Fruit and vegetables – Control points and compliance criteria – Annex CB 2, page 87

information from independent forecasting and warning services regarding crop protection may assist specific on-site monitoring phases.

3. Intervention is necessary if threshold levels are reached. Three elements shall be considered. Mechanical methods shall be prioritized over biological methods. Chemical methods shall be used as a last resort when none of the previous methods leads to the desired containment of the pest, and when ultimate damage thresholds (see below) have been passed.

Examples of mechanical and biological methods:

- **Mechanical methods:** e.g., removal and killing of pests by mechanical means, pest traps, pheromone traps, nets, irrigation practice, or mulching with (fully biodegradable) materials, thermic methods
- **Biological methods:** e.g., introduction of natural enemies (e.g., through multifunctional biodiversity), nonsynthetic biological pesticides, mineral inputs



How do I proceed?

A successful IPM approach varies depending on production and region. To start, a farm shall have an IPM plan that covers information on integrated strategies per crop or crop group and economic relevant pests, fungi, weeds, or other harmful organisms that may cause disease in crops. An IPM plan covers descriptions such as*):

1. Crop or crop group targeted by IPM
2. Pest, disease, or weed, including symptoms and identification characteristics
3. Threshold levels at which chemical intervention becomes necessary due to economic risks resulting from potential damage and yield reduction, or further infestation spreading
4. Possible and implemented preventive methods

5. Monitoring and evaluation methods
6. Possible mechanical and biological methods and information necessary for their implementation (timing, etc.)
7. Possible chemical methods and information necessary for their implementation (timing, etc.)
8. Additional comments, e.g., the reduction of potential resistance developments
 - For Option 2 producer groups: A centralized document/IPM structure should be established.
 - Option 1 or 3 producers: Your local consultant often has such information available.
 - For a possible approach, see Annex I of this document.

6.15 Neonicotinoids (extreme emergency case Acetamiprid) (referring to control point 9.2)

Why?/What is it?
<p>Neonicotinoids are a highly toxic pesticide class and detrimental to insects and, in consequence, to insect-eating animals such as birds. The use of neonicotinoids is highly contested due to environmental and health aspects. In many countries, especially in European countries, it is already highly regulated. Further regulations are to be expected. Control point 9.2 is therefore not only to reduce the negative impact of neonicotinoids on biodiversity but also to prepare producers for future regulations.</p>
How do I proceed (emergency use of acetamiprid)?
<p>GLOBALG.A.P. has set up an approval process for the application of acetamiprid that shall be followed prior to application. The authority for approval is the local certification body.</p> <ol style="list-style-type: none"> 1. Contact your local certification body if you see a need to apply acetamiprid. 2. The application of acetamiprid is only allowed in extreme emergency cases. Further information on extreme emergency cases can be found on the GLOBALG.A.P. website. Examples of extreme emergency cases are: <ul style="list-style-type: none"> • Actual and evident risk of total crop loss • Natural disasters e.g., locust plague 3. The use of acetamiprid shall be approved by the certification body prior to application.

6.16 Soil management (referring to control point 10)

Why?/What is it?
<p>Soil is a fundamental element of life on our planet. Healthy soil is not only a nutrient provider for plants, it is also home to hundreds of species. Soil is therefore a living ecosystem and must be protected and developed.</p> <p>Soil today is at risk. Intensive agricultural production, contaminations, building of infrastructure, etc., threaten soil and its natural processes. Effective soil management not only improves biodiversity (in soil) but is also valuable for agricultural production in the long term.</p>

How do I comply?
Various control points apply. Please consult the self-check template or the respective control points in IFA v5.2 for compliance requirements.
What are techniques to improve and maintain soil structure?
Green manure crops, rest crops, reduced tillage (no-till/on-land ploughing, etc.), low pressure tires, crop rotation, etc.
What are techniques to reduce soil erosion?
Maintaining a perennial cover: rest crops, cover crops, mulching, green manure crops, crop rotation, rain gardens, terracing, etc.
How do I measure the NPK (nitrogen, phosphorus, and potassium) content in organic fertilizers?
Organic fertilizers are either analyzed for their NPK content prior to application or, if no analysis has taken place, recognized standard values are used. ⓘ Ask local agricultural experts or advisers/educational institutes, etc., for standard values for organic fertilizers.
Where can I find more information?
<i>Soil management plan: Depends on expectations from CP 3.1</i> For soil erosion prevention and maintaining soil structure as well as background on soil and fertilizer application for biodiversity, information from the business-biodiversity initiative is available online here .

6.17 Water management (referring to control point 11)

The control points 11.1.1, 11.1.2, 11.2.2, and 11.2.3 all refer to the SPRING add-on. For more information, go to the [GLOBALG.A.P. SPRING webpage](#).

6.18 Buffer zones (referring to control point 11.2.1)

Why?
The main purpose of buffer zones for surface water structures is to reduce and/or prevent drift from agricultural production into water bodies. Buffer zones are kept pesticide and fertilizer free. The area between the field and the surface water is maintained and ideally planted with native vegetation.

How do I comply?

- A 5-meter buffer zone is established for all areas surrounding surface water areas.
- No pesticides or fertilizers are used in the buffer zone.

- 5-meter buffer zones are not established in all areas:
 - The BAP outlines measures to establish buffer zones within the next three years.
 - These areas shall be managed differently. The BAP outlines measures to reduce the impact on surface water until the buffer zone is established.

 Buffer zones count as areas dedicated to biodiversity.

For perennials where 5-meter buffer zones cannot be established

- Specific farming practices in areas close to surface water are applied to reduce impact.
 - The practices applied are described (in the BAP).
 - The guidance document has been consulted for possible measures.
- The buffer zone will be established at the latest when plantation is replanted.

Management exception for perennial crops with less than a 5-meter buffer zone to surface water

For an established perennial plantation and a riparian buffer to a surface water body of less than five meters, the following management shall apply:

1. No application of inorganic or organic fertilizer within the 5-meter buffer zone
2. Spraying pesticides towards the body of water within the 5-meter buffer zone is not permitted.
3. If an infestation of disease or pests threatens crop production, spraying is only allowed from the outside to the inside of all rows within the 5-meter buffer zones.
4. Weather conditions must be considered to prevent the pesticide from drifting into the water body.

Where can I find more information?

[Business-Biodiversity Initiative on Riparian Strips \(Buffer zones\)](#)

ANNEX I EXAMPLE APPROACH FOR IPM CROP AND PEST EVALUATION

Example: Table for possible IPM crop and pest evaluation. This is only an example of a possible structure/content to be included in an IPM plan. Possibilities to comply are manifold.

Information to be included in an IPM plan	Example on cauliflower
1 Crop (or crop group) Overview of crops that you plant	Cauliflower
2 Pests a) List of relevant pests for each crop and your region b) Dates of appearance c) Development requirements d) Overwintering places e) Photo guides on pests, diseases, and weeds for identification	Whiteflies
3 Economic threshold level and justification Define an economic threshold level that helps you take the decision on chemical methods when all other interventions (preventive, mechanical, and biological) fail	5 flies per day and plant
4 Preventive measures (preplanting)	<ul style="list-style-type: none"> • Check winter plants
5 Monitoring Define practices to monitor the pest, disease, and weeds	<ul style="list-style-type: none"> • Yellow sticky cards
6 Mechanical methods (preharvest)	<ul style="list-style-type: none"> • Wind • Irrigation
7 Biological methods (preharvest)	<ul style="list-style-type: none"> • Neem oil • Natural enemies (<i>Encarsia formosa</i>) • After testing: alkaline soaps, adding 2% methylated spirits • In emergency cases when beneficial organisms are not used: Pyrethrin

<p>8 Chemical methods (preharvest)</p> <p>a) List of chemical products to fight pest/disease</p> <p>b) At which threshold level shall the measure apply</p> <p>c) Various information, appropriate application of product (timing, weather conditions, application intervals, etc.)</p>	<ul style="list-style-type: none"> • Spirotetramat (at the latest 40 days before harvest (residues)) • 5 flies per day and plant • Example: dry, low wind, every 2 days, x-amount * Water/ha
<p>Comments</p>	