Project no. 227161

**BIOBIO**

*Indicators for biodiversity in organic and low-input farming systems*

Thematic Priority: Food, Agriculture and Fisheries and Biotechnology
Funding scheme: KBBE-2008-1-2-01

# Deliverable D7.1 (1)
# Report on Stakeholder requirements for biodiversity indicators for organic and low input farming systems

Due date of deliverable: Month 4 (moved from Month 1)
Actual submission date: 12.06.2009

Start date of project: 01.03.09
Duration: 3 1/2 years (42 months)
Organisation name of lead contractor for this deliverable: SOLAGRO

**Final Version**

| Project co-funded by the European Commission within the Seventh Framework Programme (2009-2012) | | |
|---|---|---|
| Dissemination Level | | |
| **PU** | Public | X |
| **PP** | Restricted to other programme participants (Including the Commission Services) | |
| **RE** | Restricted to a group specified by the consortium (Including the Commission Services) | |
| **CO** | Confidential, only for members of the consortium (Including the Commission Services) | |

## Deliverable

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WP: 7

Date: 12. June 2009

## Executive summary:

The stakeholder advisory board (SAB) consists of 20 experts from major interest groups: NGO Nature protection and environment (5), NGO Consumers' association (1), farmer organisation (3), territorial and national administration (3), farmer adviser and Agrarian Institute (2) and European administration (6).

The SAB accompanies the project from the start (conceptual phase) to the end (dissemination), will support the BIOBIO R&D approach and will formulate their main expectations and criteria for relevant and useful biodiversity indicators for organic and low-input farming systems.
This process has been launched during the kick-off meeting of the project in Zurich and the SAB workshop I (March 25-27, 2009).

The SAB thinks that it is important and necessary to precise the objectives concerning the different uses of biodiversity indicators. Six objectives have been listed during the first meeting:

1. Training and awareness of several types of stakeholders
2. Advice and consultancy for farmers (including environmental reporting and monitoring at farm level)
3. Management plans for protected areas where agriculture plays an important role
4. Assessment and justification of public subsidies for agriculture
5. Calculation of agro-environmental premium
6. Certification of agricultural products or production methods

It is important also to define the biodiversity "level" (or quality) which is expected or to be achieved.

The SAB has proposed 18 recommendations which can constitute a grid to analyse the selected bio-indicators. These recommendations should be weighted and linked to the objectives. They concerned the type of indicators (direct, indirect) but also how indicators are presented / communicated (i.e. score, trend, list of species, etc.). The biodiversity indicators should be easy to develop, to record, to use, be comprehensive and flexible, low cost, integrate emblematic species, appropriated by farmers, consumers and administration. They should assess the farmer progress, management plans and agricultural policies. They should contribute to evaluate all types of farming systems and if possible be common to all Europe. They should take into account existing indicators, tools to assess biodiversity in agriculture and observatories. The biodiversity indicators should be available at different scales, take into account functional biodiversity and also provide information on other environmental issues.

Table: Recommendations of the BIOBIO Stakeholder Advisory Board regarding the selection of biodiversity indicators for organic and low-input farming systems.

| | **Requests** | **Remarks** |
|---|---|---|
| 1 | Easy to develop : indirect indicators | Improve indirect indicators; strengthen the relation between direct and indirect indicators. Indicators based on diversity. |
| 2 | Easy to use, not too expensive to apply | Advisers do not have much time to assess one farm (less than one day). Constraints concerning the season. |
| 3 | Comprehensive and flexible | The methodology must be explained (abundance, rare species, specialist species, number of species, trend, indicative species, set of species, trophic indicator). |
| 4 | Integrate emblematic species | Flagship species, umbrella species. Are they good indicators? If not explain why. |
| 5 | Appropriated by farmers, consumers and administration | Observable and understandable. Common species which people can recognise. Easy interpretation. |
| 6 | Low cost indicators | Applicable by advisers and not only by specialists. |
| 7 | Assess the farmer progress and be appropriated | Sensitive to the practices implemented. Adapted to the duration of the contract (AEM) – 5/7 years-. Linked to agricultural practices. Status indicators probably not practical. |
| 8 | Assess projects managed by the stakeholders | Effectiveness of the project. Compare our experience with others. |
| 9 | Assess the agricultural policy (OF and AEM but not only) and national action plans on biodiversity | Make the difference between the application and the effectiveness of the measures. Not only measure the level of implementation but also results. Contribute to assess the contribution of agriculture to biodiversity action plans. |
| 10 | Contribute to evaluate all types of farming | Be used also in “conventional” or “intensive” agriculture. Measure the environmental efficiency. |
| 11 | Develop common indicators in Europe | Indicators should be recognised by member states and the European Commission. Adapted to the local situation. |
| 12 | Available for different scales: Farm and region | Indicators must be available for the different scales (same indicators or different indicators). |
| 13 | Take into account functional biodiversity | Functional biodiversity explains how the farming system works and shows the contribution which stems from biodiversity. |
| 14 | Provide information on other environmental issues | Contribute to the assessment of other environmental issues (carbon storage, water quality, preserving natural resources, farming sustainability). |
| 15 | Take into account the environmental impact of the production of farm inputs | Think about system boundaries. E.g. integrate the environmental impacts of soya production in America which feed part of our animal. |
| 16 | Define the targets and the objective | What level of biodiversity do we want to achieve (high, medium?). What is the target? |
| 17 | Take into account the existing indicators and observatories | Realize a benchmarking and a state of the art of existing biodiversity indicators and tools or of biodiversity surveys. Give priority to existing indicators and improve them. |
| 18 | Explain how to use the indicators | It is important to describe how the indicators have to be used. |

Table 1 Recommendations of the SAB

# TABLE OF CONTENTS



# TABLES AND FIGURES

# 1. The BIOBIO Stakeholder Advisory Board (SAB)

## 1.1 The objectives of the SAB

The stakeholder advisory board consists of 20 experts from major interest groups (see 1.2). In addition to the central SAB, there will be local stakeholder groups affiliated to each of the case studies. The local stakeholder groups will meet twice and their interests will be reported to the SAB.

The SAB accompanies the project from the start (conceptual phase) to the end (dissemination). The SAB will work through three workshops, and will be joined to scientific project meetings when possible. Both types of meetings will be open to both, researchers and members of the SAB in order to foster mutual exchange and understanding for their respective requirements.

The SAB will support the BIOBIO R&D approach and will formulate their main expectations and criteria for relevant and useful biodiversity indicators for organic and low-input farming systems. This process has been launched during the kick-off meeting of the project in Zurich (March 25-27, 2009), the first project meeting of BIOBIO being the SAB Workshop I, attended by 11 members of the SAB and representatives of all partner institutions.

In the first phase of the project, stakeholders will be strongly involved in order to make sure that their needs are adequately taken into consideration in the selection of candidate biodiversity indicators.

The SAB will discuss the proposed list of indicators and will conduct a critical review of the scientifically assessed indicators for stakeholder purposes (SAB Workshop II, which will be held in Brussels, October 21st). The SAB will cross- check if the indicators comply with the criteria laid down in the Minutes of the SAB Workshop I and make recommendations as to which indicators should actually be taken into consideration in the set of candidate indicators to be tested in WP3. The resulting report will also take into account the feedbacks from national CS stakeholder groups as well as of the stakeholder groups from the ICPC countries.

Once the indicators have been evaluated in the field (case studies in WP3), the SAB will conduct a stakeholder audit of the proposed final indicator set and will critically assess their practicability and relevance (SAB Workshop III). Major criteria will be the attractiveness of indicators to specific stakeholder groups and the feasibility of individual indicators.

The SAB will play an important role in the dissemination of project results. Its members will serve as multiplicators in their respective institutions and ensure a communication which meets the needs of future users of the BIOBIO indicator set. They will be asked to attend the final conference, to introduce their point of view there and play a prominent role.

## 1.2 The composition of the SAB

The SAB is composed of 20 members coming from:

- NGO Nature protection and environment (5)

- NGO Consumers' association (1)
- Farmer organisation (3)
- Territorial and national administration (3)
- Farmer adviser and Agrarian Institute (2)
- European institution (6)

The SAB operates as a full work package of the BIOBIO project (WP7), it is lead by Philippe Pointereau (SOLAGRO, Toulouse).

| COUNTRY | NAME | ORGANISATION | DESCRIPTION |
|---|---|---|---|
| GERMANY | RÔSLER Markus + SCHUBOTH Jörg PGI | NABU | NGO, Nature protection and environment |
| SPAIN | DE MIGUEL BEASCOECHA Eduardo | Fondation Global Nature | NGO, Nature protection |
| ENGLAND | STILL Kate | Plantlife International | NGO, Nature protection |
| BELGIUM | BRUNER Ariel | Bird Life International | NGO, Nature protection |
| BULGARIA | NIKOLOV Hristo + MARIN Simeon | Green Balkans | NGO Nature Protection |
| SWITZERLAND | OPPLIGER Barbara | Consumer Forum | Consumers' association |
| Europe | FABIAN Thierry | INAO/OriGIn | Farmer organisation (PGI and OF) |
| Europe | CORRAL Eva | Copa-Cogeca | Farmer organisation (OF) |
| Europe/World | RUPPOL Patrick | IFOAM/BioForum Wallonia | Farmer organisation (OF) |
| AUSTRIA | MAYRHOFER Peter | Department for Rural Development of Lower Austria | Territorial administration, Agro-environment Policy |
| ITALY | DE PAOLA Claudio | Parco del Ticino - Team Europe | Territorial administration, Agro-environment actions |
| UK | BAYLIS Mark | DEFRA | Agri-environmental Policy - ELS |
| BELGIUM | WALOT Thierri | GIREA-UCL | Farmer adviser on biodiversity AEM |
| LITHUANIA | ZEMECHIS Romualdas | Lithuanian Institute of Agrarian Economics | Agrarian Institute |
| Europe | CEBRIAN CALVO Elena | European Environment Agency | European Agency (Biodiversity) |
| Europe | SELENIUS Johan | DG ESTAT | European administration, (Agri-environmental indicators) |
| World | PARACCHINI Maria Luisa | JRC/EIS | European administration (LIFS, HNV), |
| Europe | ZAUNBERGER Karin | DG Environment | European administration (Nature and Biodiversity) |
| Europe | CANENBLEY Christiane | DG agriculture | European administration (Environment, GMO and genetic resources) |
| Europe | CINTI Stefano | DG agriculture | European administration OF |

Table 2 SAB List

# 2. SAB I meeting

## 2.1 Participants

*SAB Stakeholders:*

| | |
|---|---|
| Barbara Oppliger- Frischknecht | Present |
| Claudio de Paola | Present |
| Eduardo de Miguel | Present |
| Eva Corral | Present |
| Jörg Schuboth | Present |
| Peter Mayrhofer | Present |
| Romualdas Zemeckis | Present |
| Ruppol Patrick | Present |
| Thierri Walot | Present |
| Thierry Fabian | Present |
| Simeon Marin | Present |

## 2.2 Agenda of the first meeting

The meeting (SAB I) took place in Zurich the **25.03.09 (14.00) – to 26.03.09 (12.00)**

- ❏ Welcome by Michael Winzeler (Short presentation of ART Research Station)
- ❏ Short presentation about the kick-off meeting (Felix Herzog)
- ❏ Programme presentation (Jerylee Wilkes)
- ❏ Block1: Organic and low-input farming: Definitions, common denominator, differences, major systems (Jürgen Friedel)
- ❏ Block2: Biodiversity and biodiversity indicators: Definitions and state of the art (Philippe Jeanneret)
- ❏ Block3: Stakeholders and scientist in international research collaboration: Challenges (Philippe Pointereau, Felix Herzog)
- ❏ Block4: Stakeholders expectations: 5' short statement by each stakeholder, discussion (Stakeholders)
- ❏ Block5: The BIOBIO project: Overview and major challenges (Felix Herzog)
- ❏ Block6: Working groups
  - ❏ WG1: Scientist (Peter Dennis)
  - ❏ WG2: Stakeholders (Philippe Pointereau)
- ❏ Block7: Plenum: Stakeholders consolidated requirements
- ❏ End of SAB I meeting

## 2.3 Presentation and discussion

### 2.3.1 Block1: Organic and low-input farming: Definitions, common denominator, differences, major systems

Maps of farm areas of High Nature Value (HNV) are available. This could be useful for the BIOBIO project. The JRC GIS data will be provided to the members. It is important for the

project to define what Low-input farming and HNV are. HNV are the primary research areas (case study areas as defined in the contract with the EC) for the project.

$CO_2$ sequestration in organic/low input farming may be important to address e.g. climate change.

The new EC regulation for organic farming has to be taken into account in the project.

### 2.3.2 Block2: Biodiversity and biodiversity indicators: Definitions and state of the art

If vegetation classes are used as habitats, this can lead to misunderstandings. Therefore plots, vegetation and habitats have to be specified or defined for BIOBIO. The effect of indirect indicators on direct indicators has to be investigated. Indicators **for** biodiversity will have to be defined and not only indicators **of** biodiversity.

Clarify: How will the indicators be evaluated? Which kind of biodiversity do we want for BIOBIO?

### 2.3.3 Block3: Stakeholders and scientist in international research collaboration: Challenges

Indicators selected have to fulfil the following criteria:
- Scientific and analytical soundness
- Generic at the European scale
- Relevance and usefulness for stakeholders

SAB meetings:
- March 2009: collect Stakeholders expectations
- October 2009: List of indicators selected by BIOBIO scientists will be presented to the SAB. Thereafter, the candidate indicators to be tested in case studies will be chosen.
- February 2012: Results and experience from case studies will be presented to the SAB, as well as the final set of BIOBIO indicators as proposed by the BIOBIO scientists. This indicator set will be subject to a Stakeholder Audit and – if needed – it will be corrected.

Needed: After SAB I a consolidated list of expectations and recommendations from stakeholders is needed.
Some questions to Stakeholders:
- is biodiversity decreasing in agriculture?
- are organic agriculture and low input farming preserving biodiversity?
- are agricultural policies efficient?
- can biodiversity contribute to the farm output and farm incomes?
- what are the links between biodiversity and other environmental issues?
- can I manage alone indicators or do I need an expert?
- what level of biodiversity do we want? Like “before”?

### 2.3.4 Block4: Stakeholders expectations: 5' short statement by each stakeholder, discussion (Stakeholders)

How appropriate are the farming systems to maintain biodiversity? How to evaluate the environmental impact of our geographical indication products? (Thierry Fabian)

Why is my organisation interested in low input or organic farming? The Ecopoint system is developed as a subsidy system for farmers for the upkeep of cultivated landscape and for the promotion of environmentally friendly farming methods and low intensive farming, including biodiversity in the countryside and quality of landscape elements. Can we measure the direct impact on biodiversity of our scheme? (Peter Mayrhofer)

Indicators should not only measure the level of implementation but we also need a direct measure of nature. Efforts to collect data have to be low or moderate. The same data or methods should be used as used in conservation habitats guidelines. Indicators should mean something practical (obvious, that could be seen or touched) for the farmers. (Thierry Walot)

How we can compare our experience with others through indicators? How to link indicators with agri-environmental measures (AEM)? Indicators must not be used as a rule. Select indicators simply to use and maintain a simple system. (Claudio De Paola)

Indicators should be simple to understand, easy to measure and cheap to measure. Can we compare the biodiversity of a farm and the same area abandoned? (Romualdas Zemeckis)

Our objective is to give the farmers a tool to measure their sustainability.
Important: indicators chosen have to be applicable at the European level and recognised by the member states (MS). Existing tools have to be used. (Patrick Ruppol)

Organisation working directly in the field, results of BIOBIO will be applicable by them. European countries have different definitions of low impact farming systems, so this issue has to be taken into account. Response indicators are very important. It is important to measure what efforts farmers have been doing to reach it. The situation between MS is different. How to take into account this diversity?
Assessment and analysis of national action plan on biodiversity. (Eva Corral)

How are you going to classify low input farming systems in Europe? We work with scientists and we have a lot of data. But we don't have a clear set of indicators. Bigger areas should be analysed to have a better view of the biodiversity impact. We observed that intensive agriculture can impact surrounding extensive agriculture (arthropod decline?). Are you going to consider climatic regions? Artificial habitats are a new priority in Spain. How are you going to handle this issue? Low input farming is conventional (or traditional) farming for our organisation. We observed an intensification of the Dehesa management. Some biodiversity is not linked to agriculture but to wetlands. Birds have increased because of a change in the agriculture system (monoculture). For example Mole plague caused by agrarian practices (irrigation) can increase the number of birds of prey. So in this case bird of prey is not a good indicator of extensive farming. Do they serve as a good biodiversity indicator? Organic farming was mainly made to produce healthy food. But it has to be taken into account that some of them have changed the whole system in the area (not always positive). (Eduardo de Miguel)

We observed a decrease of fruits varieties. Biodiversity indicators: Flora and fauna (specific species). Impairment of nature and landscape (locally). We want the abolition of criteria such as colour, size and forms which is in favour of intensive production. (Jörg Schuboth)

Right of the consumer to choose, therefore the consumer has to be informed (ask for declaration, transparency). Awareness of preserving an intact nature is very high, but what is an intact nature? High Biodiversity allows a stable environment. Consumer's organisation is not using indicators for biodiversity. But there are some labels used. Find something that is easily recognisable, so that everyone can use it, if not only scientist will have this possibility. Must be easy to communicate and understand. (Barbara Oppliger)

Low input farming systems are the most frequent agricultural system in Bulgaria. Large decrease of sheep heard: abandonment and natural afforestation. (Simeon Marin)

# 3. Recommendations

## 3.1 Concerning the management of the project

### 3.1.1 Precise the objectives concerning the different uses of the biodiversity indicators

Six objectives are listed:

Biodiversity indicators (BI) can be used for different objectives:

1. Training and awareness of several types of stakeholders (farmers, trainers, advisers, agronomic school teachers, etc.). BI may indeed provide a means of approaching the agriculture-environment relationship.
2. Advice and consultancy for farmers (or groups of farmers) who have already chosen to take biodiversity into account in their decision-making procedures (OF, LIFS, farms located in protected areas). They therefore have a need for indicators to enable them to evaluate the environmental impact of agricultural systems and practices. BI may be used on the one hand to introduce changes in practices and systems aimed at the protection of the environment and specially biodiversity ; and on the other hand, to organise monitoring in order to check and to evaluate the improvements introduced (example : monitoring of AEM, etc.).
3. Management plans for protected areas where agriculture plays an important role. The biodiversity indicators can be used to know whether certain agricultural systems should be maintained, modified, promoted or eliminated.
4. The justification of public subsidies for agriculture in conjunction with agricultural criteria (cross-compliance). In this context, the BI becomes a tool aimed specifically at the needs of farmers and is essential to the contracting and monitoring of farms.
5. The indicators and their scores could be used to calculate AE premium similar to the Austrian Ecopoints programme (surface of landscape elements per ha and extensive practices) or to give the payments as the measure "flowered grassland" in Germany (Baden-Wurttemberg) and in France (presence of a minimum species taken in a short list)
6. The certification of agricultural products or production methods (OF, Protected Designation of Origin, Integrated Production (IP), produced in mountainous areas,

private certification on the topic of nature protection, e.g. “apple juice coming from traditional orchards”). The BI in this case are aimed at the consumer and may be used as a guarantee of the quality of the products and their methods of production. Currently only organic farming is subject to environmental evaluation in the context of application of an approved set of specifications. It is to be expected that in the coming years this environmental approval will spread throughout the agricultural sector for quality products and in order to guarantee the implementation of long-term agricultural practices. These products have everything to gain from showing that the production systems which generate them have limited impact on the natural resources and cycles, and even result in high quality landscapes.

### 3.1.2 Adapt a common language between scientists and stakeholders

It is important to realize a glossary that includes the main terms used in the project. This concerns particularly:

- Landscape elements (what is included? E.g. trees, hedgerows, fallow lands, grassy strips,…?)
- Low Input Farming System (LIFS)
- High nature value farmland (HNV)
- Organic farming
- Integrated production
- Conventional agriculture
- Intensive agriculture

The project should also contribute to a better definition of LIFS and HNV farms.

### 3.1.3 Information on the project

The SAB members would like to be informed about the main results of the project.

The newsletter will be sent to the SAB members and information will be available on the BIOBIO website **www.biobio-indicator.org**.

## 3.2 Concerning the biodiversity indicators

### 3.2.1 Indicators easy to develop

The project should **improve indirect indicators** actually implemented and used in different EU countries as “surface of landscape elements” (ecological infrastructures) or “grassland management” (mowing period, stocking density, N quantity used). These indicators are easy to measure and to collect (independent of the season).

The project could establish and strengthen the relation between these elements (surface, quality, shape, network, diversity, connection …) and biodiversity (see figure 1).

*For example*
*The long range UNESCO MAB (Man and Biosphere) project, titled "landscape and agriculture in change – grassland in the mountains of Austria" checked and elevated 1800 sites (samples) during 3 years (from 1997 to 2000) with 15 different types of used grassland (from 1 cut meadow to 4 cut meadows, from low areas to the high mountains,… ) .*
*The following relationships were analysed:*
*- number of species and livestock units (LU) of the farms (LU/ ha),*
*- the number of species and sea level,*
*- the comparison of the number of species of the types of grassland: extensively and intensively used pastures, from 1 cut to 4 cut meadows, grassland with both - cut and grazed, and also ley grass and forage plants.*

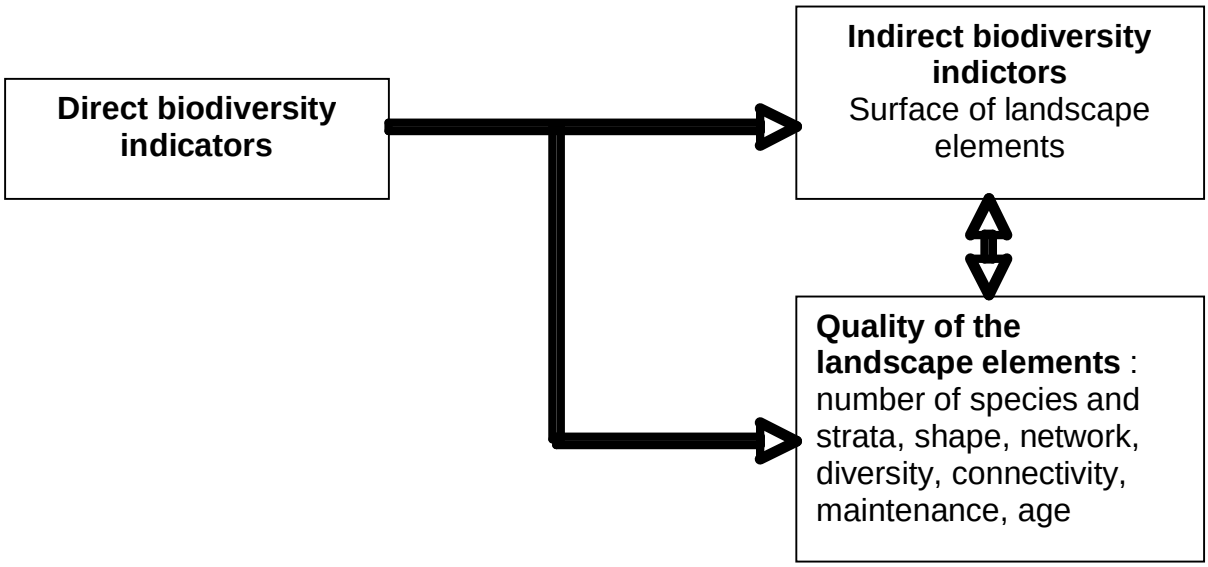


Figure 1 Improve the relations between direct and indirect indicators

The rule of 5% of the Utilised Agricultural Area (UAA) occupied by "ecological compensation areas" is required for Integrated Production (IOBC). But the optimum total surface to maintain an adequate diversity of species is estimated to be close to 15% (Boller, 2004). This indicator is also a criteria used for cross-compliance (For example: minimum 3% of arable lands with direct payments in grassy strips in France) and supported by a large number of AEM (The Entry Level Stewardship in England, the Ecopoint program in Lower Austria).

***Definition of landscape elements***
*Different terms are used: landscape elements (LE), natural or semi-natural element or vegetation, ecological infrastructures (EI), unfarmed features (UF), ecological compensation areas ...*

*What is a landscape element? The benefits of LE are generally not only focused on biodiversity and can affect soil conservation, nutrient recycling, water regulation, landscape character and also contribute to forage, fruit, firewood and honey production and have a social role (walking, hunting,...).*
*Concerning biodiversity, LE are habitats for wild flora and fauna and contribute to wildlife corridors.*
*Is an oak in a dehesa or an old apple tree in a traditional orchard a natural element or a productive element? This is sometimes a tricky question.*
*Generally LE include hedgerows, in-field trees, grassy strips, wildflower strips, ponds, extensive permanent grasslands, ecological fallows, ditches, stone walls and agroforestry systems (as dehesas and montados, traditional orchards / prés-vergers).*

For example the BIOBIO project could **contribute to a better definition of landscape elements from the biodiversity point of view and propose if it is relevant to add some quality indicators** to the landscape elements surface as **good management practices** (minimum length and width, period of pruning, connection, diversity of species). A weighting of the surface could be introduced (as for small pounds or stone walls) to calculate a score.

The calculation methodology should be adapted to the different European regions if necessary. Is this indicator ("surface of landscape elements") relevant for all types of landscape such as open fields? Does this indicator need an adaptation to the situation (lowlands, highlands)? As it is proposed in the IP, is a minimum percentage of LE (taken in a short list) convenient for each region?

The use of the traditional varieties and landraces can be good criteria which are easy to measure. How can we build such indicators? Number of different varieties? Can we consider an indicator based on diversity (Landscape diversity, diversity of crops)?

### 3.2.2 Easy to record, to use, not too expensive to apply

Farm advisers / extension officers do not have much time to assess a specific farm (less than one day and not only for biodiversity). BIOBIO should investigate whether direct indicators can be easily used, or whether the solution is to use only indirect indicators. Indicators must be easy to record by a range of people (farmers to skilled advisors) – minimal range of variation – minimal margin of error.

Can we imagine different levels of advices? The "higher" level corresponding to direct indicators, assessment of specific biodiversity measures or hot spot territories. Can direct indicators be recorded throughout the year or only during a specific season? This is an important consideration for the time management of farm advisors.

### 3.2.3 Be comprehensive and flexible

Explain the different criteria. How to calculate the indicator? Can the scientists explain the terms:

- abundance
- rare species

- specialist species
- number of species
- indicative species
- set of common species
- trophic indicator
- …

The indicator should ideally allow any user to understand the way it is set up, be flexible enough to meet the changing needs at all levels.

### 3.2.4 Integrate emblematic species

It is important to consider and include patrimonial/emblematic species (flagship species, umbrella species): population of bustards, butterflies, rare arable plants (weeds), hamster, swallows. If not explain why.

Are they good indicators? How to produce a relevant indicator (density, trend, set of birds,…). Explain why.

It is necessary not to focus on one species. Why not on a combination of species: birds and weeds for example.

### 3.2.5 Indicators appropriated by farmers, consumers and administration

Farmers are key players because they decide their agricultural practices.

If possible indicators (or part of the indicators) should be:

- Observable (seen) and/or known by the farmer (some common species of birds, plants or the presence of earthworms…).
- Understandable (score/index, number of species…).

Easy to interpret by the consumers.

Can the indicators be the same for farmers and consumers? Can we imagine to assess different indicators or can the same data be used to address both, farmers and the wider public?

Easy to use by the Administration (European, National, Regional) to modulate or calculate grants or assess different policies.

### 3.2.6 Low cost indicators

Applicable per stakeholder (mainly farm advisers or NGO advisers) or only by specialists? The cost of indicator measurement has also to be taken into account (time, expertise). A guideline will be necessary to explain and apply the indicators.

It is clear that indirect indicators should be proposed because stakeholders mainly apply them.

### 3.2.7 Indicators to assess the farmer progress (driving force – not status) and to be appropriated

Farmers need to **quantify their progress** (the effort). Indicators must be sensitive to the practices implemented. The time **period of 5 years or 7 years now** (2007-2013) corresponds to the duration of a farm contract for AEM. How can we measure a progress on biodiversity in a period of 5/7 years?!

We have to be sure that what is observed is **linked to agricultural practices.** The biodiversity observed has to be linked to the farming system and not to other natural features (for example presence of Laguna, lake, pounds, forest…). Some birds, as wetland birds or migrating birds, are not always good indicators of agricultural practices.

The indicator must reflect the 'natural' biodiversity condition of a farm – e.g. 'natural' wild plants – farmland birds can be supported by providing 'artificial' food sources and nesting habitats therefore bird numbers are not necessarily the best reflection of biodiversity condition even though they sit near the top of the food chain.

It is necessary to measure the impact on the intensive agriculture surrounding the extensive areas (via the decline of arthropod population for example). Is the biodiversity observed linked to the farm observed or to the dominant agriculture?

### 3.2.8 Indicators to assess projects managed by the stakeholders (NGO, Advisers, Farmer organisations…)

We want to compare our experience with others (measure the effectiveness of the project). Are the things we are doing correct?

### 3.2.9 Indicators to assess the agricultural policy as support to OF or AEM and European and national action plans on biodiversity

- Make the difference between the **application** of AEM and the **effectiveness** of the measures. Biodiversity indicators should be focused on the effectiveness of measures. Indicators should not only measure the level of implementation but also results. (note: This requirement is contradictory to 3.2.7)

- Link indicators with agro environmental measures. Could the indicators assess the main agro-environmental measures implemented in Europe? And not only the measures focused on biodiversity?

- Appropriate to the different measures of biodiversity actions plans.

For example, Eurostat have to provide agro-environmental indicators (AEI) to track the impact of agriculture on biodiversity (and the environment in general) and to assess the impact of agriculture and environmental policies. 28 AEI (IRENA) have been identified but only 2 directly concern biodiversity.

### 3.2.10 Contribute to evaluate all types of farming

Even if the main target is OF and LIFS, it is important to see if these indicators can be used as well in "conventional" or "intensive" agriculture. High Nature farmland (IRENA indicator N°23) and population trends of farmland birds (IRENA indicator N°25).

Indicators should be able to compare:

- different organic systems.
- organic farms and traditional farms. Which practice is more environmentally friendly?

The indicators must be the same between OF and LIFS.

### 3.2.11 Develop common indicators in Europe – whilst accounting for regional specificities

Farmland bird indicator is a good example of a common European indicator (the only one with HNV). This indicator measures a trend at country scale (NUTS1) and at a European scale with a list of species which differ from one country to another.

Eurostat wants harmonised indicators at European level (IRENA project).

Other stakeholders do not know if it is necessary to have the same set of indicators used everywhere in Europe.

But these indicators should take into account the local situation and be adapted to the environmental region.

Indicators should be recognised by member states and the European Commission.

### 3.2.12 Available for different scales: Farm and region

The scale will depend of the project and stakeholders.

**Plot**: mainly for research or survey (administration), reporting and evaluation of AEM
**Farm**: main scale used by advisers, the scale of the farmers
**Landscape/region**: for example for products coming from a specific region, some territorial project. Also used for HNV areas. Could this be the scale of the consumers?

The SAB thinks that it is important to work at different levels. Develop a set of indicators corresponding to 2 main scales: plots/farms and region.

Can we compare Low input farms and abandoned farmland? Concerning the biodiversity issue is it necessary to cultivate abandoned farmland?

### 3.2.13 Take into account functional biodiversity

Consider also functional biodiversity (as predators, parasitoids, pollinators, fungi …). Species which describe how the system works.

### 3.2.14 Provide also information on other environmental issues

Indicators can also provide information on other environmental issues (carbon storage, water quality) and in general the sustainability of the farm. Preserve the natural resources.

### 3.2.15 Take into account the environmental impact of the production of farm inputs (think about system boundaries)

It is important to take into account the impact of the input production on biodiversity which can be located elsewhere.

For example how can we take into account the environmental impacts of soya production in America, which feed part of our animals?

### 3.2.16 Define the level of biodiversity we want to achieve

It is important to define which level of biodiversity we want to achieve. This point is fundamental: we have to underline that these indicators do not necessarily assess the global biodiversity. If we want to assess the whole biodiversity we would need to make a huge study of insects, weeds, birds, etc., in every case.

### 3.2.17 Take into account the existing indicators and observatories

Stakeholders already use biodiversity indicators. Observatories exist in some countries.
BIOBIO should realize a benchmarking and a state of the art of existing biodiversity indicators and tools or survey associated. Give priority to existing indicators and improve them.

BIOBIO could deliver more information and more references (rare species, trends…).

### 3.2.18 Describe how to use the indicators

It is important to describe how the indicators have to be used.

| | Requests | Remarks |
|---|---|---|
| 1 | Easy to develop : indirect indicators | Improve indirect indicators; strengthen the relation between direct and indirect indicators. Indicators based on diversity. |
| 2 | Easy to use, not too expensive to apply | Advisers do not have much time to assess one farm (less than one day). Constraints concerning the season. |
| 3 | Comprehensive and flexible | The methodology must be explained (abundance, rare species, specialist species, number of species, trend, indicative species, set of species, trophic indicator). |
| 4 | Integrate emblematic species | Flagship species, umbrella species. Are they good indicators? If not explain why. |
| 5 | Appropriated by farmers, consumers and administration | Observable and understandable. Common species which people can recognise. Easy interpretation. |
| 6 | Low cost indicators | Applicable by advisers and not only by specialists. |
| 7 | Assess the farmer progress and be appropriated | Sensitive to the practices implemented. Adapted to the duration of the contract (AEM) – 5/7 years-. Linked to agricultural practices. Status indicators probably not practical. |
| 8 | Assess projects managed by the stakeholders | Effectiveness of the project. Compare our experience with others. |
| 9 | Assess the agricultural policy (OF and AEM but not only) and national action plans on biodiversity | Make the difference between the application and the effectiveness of the measures. Not only measure the level of implementation but also results. Contribute to assess the contribution of agriculture to biodiversity action plans. |
| 10 | Contribute to evaluate all types of farming | Be used also in “conventional” or “intensive” agriculture. Measure the environmental efficiency. |
| 11 | Develop common indicators in Europe | Indicators should be recognised by member states and the European Commission. Adapted to the local situation. |
| 12 | Available for different scales: Farm and region | Indicators must be available for the different scales (same indicators or different indicators). |
| 13 | Take into account functional biodiversity | Functional biodiversity explains how the farming system works and shows the contribution which stems from biodiversity. |
| 14 | Provide information on other environmental issues | Contribute to the assessment of other environmental issues (carbon storage, water quality, preserving natural resources, farming sustainability). |
| 15 | Take into account the environmental impact of the production of farm inputs | Think about system boundaries. E.g. integrate the environmental impacts of soya production in America which feed part of our animal. |
| 16 | Define the targets and the objective | What level of biodiversity do we want to achieve (high, medium?). What is the target? |
| 17 | Take into account the existing indicators and observatories | Realize a benchmarking and a state of the art of existing biodiversity indicators and tools or of biodiversity surveys. Give priority to existing indicators and improve them. |
| 18 | Explain how to use the indicators | It is important to describe how the indicators have to be used. |

Table 3 Request table for selection of biodiversity indicators

# Annex 1: Short presentation of the organisations

## a. NABU (GERMANY)

Contact: RÖSLER Markus

**NABU (Na**turschutz**bu**nd Deutschland) - **Na**ture and **B**iodiversity Conservation **U**nion
- Work for threatened habitats, flora and fauna, climate protection and energy policies
- 450.000 members, 30.000 volunteers in practical work and 1.500 local groups (district and region)
- 75.000 young members - NAJU

## b. Niederosterreichische Agrarbeziksbehörde (AUSTRIA)

Contact: MAYRHOFER Peter

N A is the "administration for agriculture and rural development" of the provincial government of Lower Austria (LA). There we try to develop, implement and realize subsidies and payments for LA farmers.
Since 1990, this is since almost 20 years; we develop(ed) the Ecopoint system as a subsidy system for farmers for the upkeep of cultivated landscape and for the promotion of environmentally adequate farming methods and low intensive farming. Since Austria joins the EU, since 1995, the Ecopoint system is part of the Austrian environmental program (called ÖPUL), it is an independent program in LA – the farmers can choose to take part in the overall program ÖPUL or in the Ecopoint program. Now, in this year 2009, around 6700 farmers are part of the Ecopoint program (from around 34000 farmers in LA).

## c. Foundation Global Nature (SPAIN)

Contact: DE MIGUEL BEASCOECHA Eduardo

Global nature is a non-profit organisation founded in Spain in 2001. It develops pilot projects such as transhumance routes, sustainable management of dehesas in Caceres and restoration of wetlands in la Nava and Villacanas, in Palencia and Toledo.

Global Nature works mainly on habitat restoration (9,000 ha) with farmers and landowners (public and private). The strategy is to sign agreements with land owners so that they take care for the land and preserve its ecologic value.

## d. GIREA-UCL (BELGIUM)

Contact: WALOT Thierri

GIREA (Inter-Universities Group for Research in Applied Ecology) is a study Group (NGO) that mainly help regional authorities developing and applying environmental legislation (Impact assessment, management plans for natural sites, N2000, Ecological maintenance of road verges, agro-environment, …).
In the field of agro-environment GIREA coordinate the assessment and the development of the scheme and also contribute to the coordination of the advisers who help farmers taking contracts (targeted part of the AES).

### e. Plantlife International (ENGLAND/Europe)

Contact: STILL Kate

Plantlife International is a charity dedicated exclusively to conserving all forms of plant life in their natural habitats, in the UK, Europe and across the world.

### f. Parco del Ticino (ITALY)

Contact: DE PAOLA Claudio

Goal of Parco del Ticino was to have a new approach in farming systems, maintain a good level of income, as well as diversify their production. We support 437 farms involved in sustainable agriculture (integrated agriculture, landscape management, product labelling and direct marketing). We develop the multifunctionality of the farms.

### g. Bird Life International (Europe)

Contact: BRUNER Ariel

BirdLife International is a global Partnership of conservation organisations that strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.
BirdLife Partners operate in over one hundred countries and territories worldwide. Learn more in BirdLife Partners. BirdLife Partners collaborate on regional work programmes in every continent. Learn more in Regional Work.
Global Partnership explains how BirdLife International is organised.

### h. Green Balkans (BULGARIA)

Contact: NIKOLOV Hristo and MARIN Simeon

Green Balkans is a leading organization in the field of conservation of rare species and habitats in Bulgaria. The Organization was established in 1988 being Bulgaria's oldest nature conservation NGO. For its almost 20 years' existence, Green Balkans has won recognition

from international and national institutions, authorities, and donors as a welcome partner and a highly reputable and competent organization. This is proven by the public confidence in the Organization and its almost 4,500 Bulgarian and foreign members. Thanks to Green Balkans' hundreds of volunteers and experts, as well as the international and national support, the Society achieved significant results in the preservation of Bulgaria's unique natural heritage. More than 110 projects have been implemented, as their investment in nature conservation exceeds $ 3,5 million.

Green Balkans operates in accordance with the Non-Profit Legal Entities Act. Green Balkans is a NON-profit, NON-governmental, and NON-political organization. For that reason, and based on the principles set out in the Organization's Statutes, Green Balkans does not deal with political issues, neither does it participate in the political forces' campaigns.

For its almost 20 years' history, Green Balkans has proven to be a genuine and impartial defender of Bulgaria's nature, regardless of the political parties in power and the policy they proclaim, and despite the risks of collisions with the political forces or the managing institutions.

### i. DEFRA (United Kingdom)

Contact: BAYLIS Mark

Defra (the Department for Environment, Food and Rural Affairs) is a Government Department in the UK. The overarching challenge for Defra is to secure a healthy environment in which we and future generations can prosper.

As we build a low carbon, resource efficient economy, Defra helps people to adapt to changes, deals with environmental risks and makes the most of the opportunity we now have to secure a sustainable society and a healthy environment. This will help see us through the difficult economic times, volatile food and energy prices and a changing climate which all make us more aware that we can't take our environment for granted.

Defra's strategy has been formalised in the Comprehensive Spending Review. The creation of the Department for Energy and Climate Change in October 2008 gave rise to our revised set of Public Service Agreements and Departmental Strategic.

Policy is developed by the core Department and delivered through Defra's delivery network partners, both working together. Defra delivers its services working in partnership with our delivery network.

### j. Consumer Forum (Switzerland)

Contact: OPPLIGER Barbara

We belong to the regional group of the Swiss consumers association from 1992-1996 and in that capacity also member of the Swiss board of the consumers association. Since the year 2001 we participate to the advisory expert committee of the research agronomic station, and member of the the FECB (federal expert commission on Biosafety), a permanent federal advisory committee, that advises the Federal Council and the federal agencies on the drafting of laws, ordinances, guidelines and recommendations.
It advises the federal and cantonal authorities on the enforcement of these regulations.
It issues statements on license applications and publishes recommendations on safety measures for studies using genetically modified or pathogenic organisms.

## k. Lithuanian Institute of Agrarian Economics (LITHUANIA)

Contact: ZEMECHIS Romualdas

The Lithuanian Institute of Agrarian Economics was founded in 1990 after reorganisation of the former Lithuanian Research Institute of Agricultural Economics, establishment of which comes back to 1959. The founder of the Institute is the Ministry of Agriculture. 40 researchers are engaged in scientific work including 19 doctors.
High importance is determined to analysis and prognosis of micro and macro processes in the field of scientific research and information management. The Institute is also working on important issues of agricultural and rural development.
During last years the researchers pay special attention to agricultural policy survey, taking into consideration Lithuania's integration into the EU.

## l. Institut National des Appelations d'Origine contrôlée – INAO (France) /Origin (Europe)

Contact: FABIAN Thierry

The French National Institute for Origin and quality products (INAO) is responsible for the management of quality and origin signs (***AOC/PDO; PGI; Organic Farming; TSG; Label Rouge)***. INAO is a public sector organisation operating under the aegis of the Ministry of Agriculture

## m. Copa-Cogeca (Europe)

Contact: CORRAL Eva

COPA (Committee of Professional Agricultural Organisations) is made up of 60 farmer organisations from the countries of the European Union and 36 partner organisations from other European countries such as Iceland, Norway, Switzerland and Turkey.
This broad membership allows COPA to represent both the general and specific interests of farmers in the European Union. Since its inception, COPA has been recognised by the

Community authorities as the organisation speaking on behalf of the European agricultural sector as a whole.
COGECA (General Committee for Agricultural Cooperation in the European Union) – which also includes fisheries cooperatives. COGECA's Secretariat merged with that of COPA on 1 December 1962.
COGECA is made up of 35 full members and 4 affiliated members from the EU. COGECA also has 36 partner members.
The objectives of COPA-COGECA are:

- to examine any matters related to the development of the Common Agricultural Policy
- to represent the interests of the agricultural sector as a whole
- to seek solutions which are of common interest, and to maintain and develop relations with the Community authorities and with any other representative organisations or social partners established at European level.

## n. BioForum Wallonia/IFOAM (Europe)

Contact: RUPPOL Patrick

Our goal is to assess the organic production as a sustainable production.