

Publishable summary

Organic and low-input farming systems provide habitats for wildlife on farmland. Prominent examples include the Black Vulture in the Spanish Dehesas, orchids in extensively managed mountain grassland and wild bees in traditional orchards. Furthermore, these farming systems often make use of old breeds, such as the Welsh Black Cattle as well as traditional varieties of cereals or vegetables. Thus, organic and low-input farming systems contribute significantly to the maintenance of biodiversity in Europe and have been shown to benefit farmland biodiversity.

A generic indicator system to assess these benefits at the European level is, however, lacking. Therefore BIOBIO pursues the following objectives:

1. Conceptualization of criteria for a scientifically-based selection of biodiversity indicators for organic/low-input farming systems (2009);
2. Assessment and validation of a set of candidate biodiversity indicators in representative case studies across Europe (2010) (and in ICPC countries in 2011);
3. Preparation of guidelines for the implementation of biodiversity indicators for organic/low-input farming systems for Europe and beyond (2011/2012).

The project started in March 2009 and up to August 2011 the below mentioned activities have been carried out.

- During the first months of the project 28 candidate indicators for genetic, species and habitat diversity were identified as well as 14 farm management indicators that are known to relate to biodiversity. These indicators were assessed in 2010 on 150 farms in 12 case study regions across Europe. Each case study region represents a typical production system (i.e. specialist field crops, horticulture and permanent crops; specialist grazing with cattle and other livestock types; mixed crop and livestock farming). In each region, 8 – 20 farms were randomly selected, mostly within the two groups of organic and non-organic farms, to obtain a gradient of farming intensity. Indicators were measured applying standardized sampling procedures and farm interviews.
- A handbook with harmonised methods for the measurement of the candidate indicators, applicable across Europe, also including farm management parameters and the recording of the cost of indicator measurement has been written.
- In 2011 for each case study region, biodiversity indicators are being evaluated in conjunction with management indicators. The focus unit in exploring data are the eight to twenty farms in each case study region. Furthermore genetic, species and habitat diversity information is being related to farm management indicators on the individual plots on which plants, earthworms, spiders and bees were observed. In addition, data are being explored across the case study regions for comparable farming systems. Surrogate indicators will be



Fig. 1: Case study in Bulgaria- Alpine pasture situated at 1800 m elevation



Fig. 2: Case study in Bulgaria- old walls as part of the landscape

proposed when possible and indicators will be prioritized taking into account their validity, practicality, cost and priority for stakeholders.

- In parallel, the Economics Cross Cutting Theme (ECCT) deals with evaluating the costs of indicator measurement. For this purpose sampling effort was recorded in all case studies. The results are presently being analysed.
- ECCT is also assessing the private and public economic benefits, and non-monetary value of biodiversity promoted by organic and low-input farming. This task is aiming at setting biodiversity findings into a broader socio-economic context. This was investigated by applying qualitative methods (focus group discussions with farmers) in five selected case study regions (Wales, France, Italy, Hungary and Uganda).
- In early 2011 investigations in the Ukraine, in Tunisia and in Uganda have started. Sampling procedures were adapted to account for the different farming systems in these case study regions.
- At the beginning of the project a structure was established to allow for stakeholder involvement and consultation. In each case study region, a national stakeholder group was formed and has discussed the project's objectives and possible outcomes for the case study region. The national stakeholder groups report to the BioBio stakeholder advisory board (SAB), which 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). In the first reporting period, the SAB was instrumental in the selection of candidate indicators to be tested in the case study regions.



Fig. 3: An illustration for the complexity of concept maps: the French example



Fig. 4: Concept mapping exercise with organic farmers in Hungary



Fig. 5: Focus groups: Discussion among Italian farmers

The major Deliverable of BioBio will consist of a handbook with detailed descriptions of the final set of indicators: validity, method and cost of measurement, interpretation, etc. Also, an approach will be proposed for a systematic and representative application of the indicators for the purpose of biodiversity measurement and monitoring. We expect the indicators to be applicable not only in organic and low-input farming, but also for the evaluation of agri-environmental schemes, etc.

Find further information on the website of the project: www.biobio-indicator.org



Fig. 6: Case study in Tunisia – olive groves



Fig. 7: The BioBio coordinator visiting the Ugandan Partner