

Integrate a network of participatory science

Goal	<p>Implement easy protocol to better understand the local and common biodiversity (targeted species: earthworms, wild bees, butterflies, invertebrates)</p> <p>Increase biodiversity awareness of farmers with participatory science</p>
Target group	<p>All farmers</p>
Description of the measure	<p>Earthworms, wild bees, butterflies, invertebrates are interesting indicators because of the importance in provision of many ecosystem services:</p> <ul style="list-style-type: none"> ▪ Earthworms: soil functioning, soil fertility, organic matter recycling, water infiltration etc. ▪ Invertebrates: biological control of organisms (pest management). ▪ Butterflies: Sensitive to landscape change, to weeds / wild plants, pollination ▪ Wild bees : pollination <p>4 protocols have been designed by the biodiversity farming observatory (complete description in reference). The indicators are mainly the number of species or families identified.</p>  <p style="text-align: center;">Pic. 1: Indicators for ecosystem services</p>
Suitable sites	<ul style="list-style-type: none"> ▪ All farm types
How a good implementation looks like	<ul style="list-style-type: none"> ▪ The implementation of the protocol needs a short training session for the farmer and some specific material (easy to find). The climatic conditions that are advised in the detailed action (see references) are important (For example, the earthworms protocol should be implemented only if the soil is dry (wait 2 days after a big rain), and others)
Effects on biodiversity (ecosystems, species, soil biodiversity)	 <ul style="list-style-type: none"> ▪ Better understanding of local and common biodiversity (air and soil biodiversity) and of ecosystem services provided (pollination, soil fertility, biological control of organisms...)
Other positive effects/benefit for the farmer	<ul style="list-style-type: none"> ▪ This is a rewarding action for the farmer on which he can communicate to its consumers or others clients.

Indicator/key data	<ul style="list-style-type: none"> ▪ Number of protocol implemented ▪ Wild bees, butterflies, invertebrates, earthworms diversity and abundance
Risk and further recommendations	It is hard for a farmer to implement alone the protocol and to keep the motivation during the whole protocol season and during several years. It is much more interesting to carry out this action in a collective dynamic with an advisor coordinator.
Timeframe (When to start a measure and anticipated time for implementation)	The implementation of the protocol starts ideally in March. Materials need to be prepared during the winter. The added value is to do the protocol for a long-term period (a minimum of 5 years) as the climatic conditions or farming practices can impact strongly the results.
Additional special resources/equipment/skills needed	Equipment : invertebrates: 3 poplar planks (50 * 30 cm) ; butterflies: none ; wild bees: 64 cardboard tube, plastic bottle ; earthworms: mustards, water, watering can
Reference	<ul style="list-style-type: none"> ▪ Observatoire Agricole de la biodiversité http://observatoire-agricole-biodiversite.fr/ http://oab.mnhn.fr/sites/observatoire-agricole-biodiversite.fr/files/upload/attached/postersoab.pdf ▪ OPVT, participative earthworm observatory, Université de Rennes https://ecobiosoil.univ-rennes1.fr/page.php?93 https://ecobiosoil.univ-rennes1.fr/e107_files/downloads/poster_OPVT_GSBI_2014.pdf

Further information: [Knowledge Pool](#)

This Action Fact Sheet belongs to the training package for advisors of standard organisations and companies and was developed within the project LIFE Food & Biodiversity (Biodiversity in Standards and Labels of for the Food Industry). The main objective of the project is to improve the biodiversity performance of standards and sourcing requirements in the food industry by helping standard organisations to integrate efficient biodiversity criteria into their schemes and motivating food processing companies and retailers to include comprehensive biodiversity criteria into their sourcing guidelines.

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