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# WHY WE NEED BEES AS INDICATORS IN THE NEXT CAP

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We are aiming towards a more sustainable Common Agricultural Policy in the EU and bees can be one of our greatest allies for this purpose. The value of bees as indicators of the quality of the environment is not easily overstated. By including a Pollinator Index based on bees, we can better measure the impact of policies within the frame of the new CAP

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## COMPETENCES

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- **Pollination Services**
- **Food Security**
- **Maintaining Rural Activity - Beekeeping, Rural Tourism**

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## POTENTIAL

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### Indicator | EU | CAP Post 2020

Bees are the link between Nature and Culture, a key agricultural agent which can provide essential insights to assess results of land management practices.

### Pollinators | EU | Until the end of the world

Bees, wild and honeybees, through their activities, are crucial for our food security. A decrease in their abundance and diversity are putting at stake our way of life and the range of the European food offer.

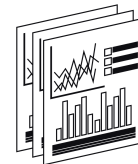
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## OBJECTIVES

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Using a *Pollinator Index* as a proxy indicator for:

- ▶ **Pollination services**
- ▶ **Environment quality and overall health**
- ▶ **Improving result measurements of policies implemented in the CAP**



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## EUROPEAN WORK LINKED TO BEES AND BEEKEEPING SHOULD BE TAKEN INTO ACCOUNT

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- 1/ EFSA Guidance Document on the risk assessment of plant protection products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees) (2013)
- 2/ Initiative report on prospects and challenges for the EU apiculture sector (2017/2115 (INI))
- 3/ EU Pollinator initiative (2018)
- 4/ Report on the implementation of the EU Directive on Sud (2019)

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# WHY SHOULD WE SUPPORT BEES?

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## **1/ Answer the objectives of CAP: EU specific objectives**

a) Supporting bees and beekeeping it is promoting employment, social inclusion and local development in rural areas.

b) Supporting bees is a clear response to the societal demands on food and health, including safe, nutritious and sustainable food.



## **2/ Their presence increase the yield of farmers**

Farmers need bees as they need pollinators (i.e. Rapeseed, sunflower, buckwheat, fruit trees, seeds production, etc.) and put in place a “bee-friendly” agricultural system. If they increase their yield, they will increase their income but also maintain a beekeeping activity within the territory and the well-being of bees (melliferous resources, diversity of diet). In France, the first experiments done by the FOP, association of oilseed producers, showed they have an interest in taking pollinators into account.

## **3/ Preserve a Common Heritage**

Slovenia has succeeded in creating « The World Bee Day » on the 20th of May, date of birth of Anton Janša. Slovenia is a model for green tourism based on the beekeeping sector.

*Apis mellifera* is a key species for all, the local knowledge and know-how of the beekeeping community have to be preserved, increased, transmitted. The activities linked to the beekeeping sector are crucial for rural areas.

## **4/ Doing versus Saying**

As the health crisis that bees and other pollinators are experiencing became widely known to the public opinion, some public authorities recognised the importance of bees and their protection.

DG ENVI worked a lot and already advertised this “Pollinator indicator”, a work fully supported by BeeLife.

Actions have to be coherent with these engagements.

# POTENTIAL INDICATORS

Linked with CAP	PARAMETER	INDICATES	USE AND LEVEL OF SCALE	ADVANTAGES	LIMITATIONS
<b>Article 49 « Beekeeping sector »</b>	Rate of Winter/Summer Honey bee colony losses	Surfaces with frequent high level of winter losses indicate a landscape that is not welcoming to pollinators.	It locates problematic areas.  It indicates that further analyses need to be done in the environment around 5-10 km around the apiary (depending on the season) because there is a combination of factors that render the area unhealthy for pollinators.	Beekeepers keep very good track of the winter losses.Can be linked to varroa	It does not provide any causal considerations.
<b>Specific objective « Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitat and landscape »</b>	Pollen pellets and botanical origin	Indicator of the plant diversity in the surroundings of the apiary, with a specific focus on plants of interest for bees	Possibility to develop a pollen nutritional index of the landscape based on the botanical abundance and richness of pollen.	Easy to collect and low cost analyses.	It requires ground information in order to establish the scale of such an index based on European conditions.
<b>Integrated Pest Management and SUD Initiative</b>	Pollen pellets and pesticides	Indicator of the intensity of pesticide use and, possibly, the appraisal of illegal uses.	USE 1- If this data is created on a monitoring basis, the resulting Dataset could feed EFSA's databases and improve pesticide risk assessment.	Easy to collect	Expensive analyses.  It can requires knowledge on agronomic practices, statistical and GIS analyses.

			USE 2 - By crossing this information with the botanical contamination of the same pollen pellets and the land parcel information system it provides a very good picture of the potential sources of chemical contamination coming from agriculture. E.g. of methodology by Simon-Delso et al. 2017		
<b>Specific objective « Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitat and landscape »</b>	<b>Wild bees abundance and richness</b>	Surfaces with negative trends in wild bee species abundance and richness indicate a landscape that is not welcoming to pollinators.	Such trends need to be established in time. These trends can be combined with the winter colony losses rates in order to identify areas of concern. Can be done through citizen science with a very simple protocol E.g. - Methodology by Biesmeijer et al. 2006 - Methodology developed in France within « vigie-nature » and their agricultural monitoring center for biodiversity ( <a href="http://www.vigienature.fr/fr/agriculteurs">http://www.vigienature.fr/fr/agriculteurs</a> )	It provides an idea of the impact on wild pollinators populations that are not managed by humans, and therefore do not have their support. Reinforce ecological knowledge, win-win partnership	Lack of taxonomists specialised in wild bees within the EU.



<b>Conditionality (GAEC/SMR)</b>	<b>Amount of honey bee colonies per km<sup>2</sup></b>	Indicate the melliferous richness of a certain area along the year and if the weather/environmental conditions was/were good for honey production (availability of nutritional resources).	The evolution in time of this parameter could give an indication of the success of biodiversity friendly measures supported by the CAP, e.g. greening, agro-environmental measures, eco-scheme etc.	<b>Make use of an habitual beekeepers' behaviour. Farmers-beekeepers win-win</b>	There are many colonies already with scales to follow the evolution of the weight along the season, but they are not communicating with each other. An effort should be done to gather all the data and put it together.
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Sources cited :

[Simon-Delso, N., Martin, G.S., Bruneau, E., Delcourt, C., Hautier, L., 2017. The challenges of predicting pesticide exposure of honey bees at landscape level. \*Scientific Reports\* 7, 3801.](https://doi.org/10.1038/s41598-017-03801-1)

Biesmeijer, J. C. *et al.* 2006. Parallel declines in pollinators and insect-pollinated plants in Britain and the Netherlands. *Science* **313**, 351–354.

[http://observatoire-agricole-biodiversite.fr/sites/gabarit-demo.mnhn.fr/files/upload/attached/oab\\_guide\\_utilisateur\\_2013\\_0.pdf](http://observatoire-agricole-biodiversite.fr/sites/gabarit-demo.mnhn.fr/files/upload/attached/oab_guide_utilisateur_2013_0.pdf), for the pollinator issue, see pp. 24-34

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