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# Business and nature working together: action by the apiculture sector to protect wild pollinators

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# Business and nature working together: **action by the apiculture sector to protect wild pollinators**

## Why is this guidance needed?

This guidance document for businesses is part of the broader implementation of the EU Pollinators Initiative<sup>1</sup>. The initiative was adopted by the European Commission (EC) on 1 June 2018, setting the framework for an integrated approach to address the decline of pollinators in Europe through three priorities:

1. Improving knowledge on the decline of pollinators, its causes and consequences;
2. Tackling the causes of such decline;
3. Raising awareness, engaging society and promoting collaboration.

One of the important actions of the initiative is to encourage and enable the business sector to take action for wild pollinators.

This document aims to provide the guidelines to the apiculture sector, i.e. all beekeepers who make money from the activity, regardless of the business size. The scope of this guidance document includes actions that can contribute towards the conservation and restoration of wild pollinator populations. It also informs beekeepers on the risks that stem from the decline of wild pollinators, and opportunities that arise from taking action to reverse this negative trend.

**Pollinators – such as bees, hoverflies, moths, butterflies and beetles – are declining dramatically around the world, and Europe is no exception. With pollinator populations being essential in underpinning the stability of pollinator services over time, this decline of pollinators puts managed and natural ecosystems functioning at risk.**

## Why should your business care?

Threats to wild pollinators are a source of a wide concern, given their role in the preservation of the environment and the production of food. Actions to mitigate the main pressures on wild pollinators will also directly benefit honey bees, such as restoring and creating more flower-rich habitats and reducing pesticide use. Wild bees and other pollinators are considered more sensitive than honey bees to various human-induced pressures. They can act as sentinels and warn beekeepers about negative changes in the environment that will affect honey bee colonies. The environment in which wild pollinators thrive, will also provide an excellent home to honey bees and ensure high-quality bee products.

By protecting wider biodiversity and taking care of wild pollinators, beekeepers protect their own business. The

apiculture sector has a positive reputation as it is seen to have a beneficial relationship with the environment and the protection of biodiversity more generally. Public interest in pollinators has increased greatly in recent years with many pollinator conservation initiatives now taking place across Europe. For many citizens, honey bees are the first contact with pollinators and pollination, which provides the sector with the unique opportunity to educate citizens about the importance of pollinators and biodiversity. Supporting actions such as restoration of pollinator habitats and reduction of environmental pollution, in particular pesticides, will provide environmental and social benefits and assist the business in building/maintaining a good rapport with the public.

<sup>1</sup> COM(2018) 395 final, <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1528213737113&uri=CELEX:52018DC0395>

Beekeepers across the EU have been taking efforts for the conservation of biodiversity, and therefore are an important partner in the EU efforts to conserve wild pollinators. Only by protecting wider biodiversity and ensuring that ecosystems in the EU are in good condition, we will secure a good environment for wild and managed pollinators.

### What can your business do?

Beekeepers are well placed to seize opportunities and act positively and effectively for wild pollinator populations, and help the efforts to reverse their decline. This guidance provides recommendations for actions, illustrated with examples.

Beekeepers can:

- ▶ become ambassadors for wild pollinators and biodiversity;
- ▶ educate the general public about the life of bees and other pollinators, and pollination. They can give advice on how to manage private gardens in a pollinator-friendly way. This can be done through nature tours, lectures and trainings on the conservation of wild pollinators, activities for children, citizen science projects, planting projects etc.;
- ▶ spread environmental knowledge, help hobbyists with best practices and support (novice) beekeepers who have concrete questions about natural beekeeping;
- ▶ ensure pollinator-friendly management of the premises where their beehives are located, or – when they do not own or maintain these areas – promote such management with responsible land managers;
- ▶ avoid competition between honey bees and wild pollinators, by using a precautionary approach when selecting the apiary site;
- ▶ avoid the use of (invasive) alien species;
- ▶ help to reduce environmental pollution (i.e. pesticides, heavy metals, artificial light);
- ▶ support research, including citizen science programmes;
- ▶ collaborate with NGOs, land owners and managers in taking conservation actions and/or monitoring efforts.





# 1. WHAT YOU AS A BUSINESS MANAGER SHOULD KNOW ABOUT POLLINATORS



Pollinator populations are essential to underpin the stability of pollination<sup>2</sup> services in the short- and long-term. Indeed, without pollinators, a large majority of flowering plants will not be able to reproduce and eventually will decline, causing serious cascading effects across ecosystems and business value chains. Many fruits, nuts and vegetables will be lost from our diets, but also other important raw materials and products, such as vegetable oils, cotton and flax, plant-based pharmaceutical and cosmetic products. In essence, pollinators play a crucial role in maintaining terrestrial ecosystems healthy and resilient, which in turn deliver essential services to our businesses and society at large.

Pollinators – such as bees, hoverflies, moths, butterflies and beetles (Figure 1) – are declining dramatically around the world, and Europe is no exception [1, 2]. Many species are threatened with extinction creating a pollination deficit [3]. This puts managed and natural ecosystems functioning at risk, with businesses facing possible serious shortages of raw materials, a decline in crop quality and challenges with the security of the supply chain.



Figure 1. A snapshot of the diversity of wild pollinators

In addition to the impact on farmers' crops, the loss of wild pollinators will also lead to serious problems in terms of the benefits to society that our already fragile ecosystems are delivering. The reduced growth of specific pollinator-dependent vegetation on a mountain slope, for example, could lead to an increased erosion effect or flooding. To maintain our ecosystems and

landscapes healthy, wild pollinators are crucial allies. Indeed, we rely on wild pollinators for very important services in maintaining our ecosystems. There are no alternatives to species rich communities, and both businesses and society should therefore increase their efforts for the protection and restoring of wild pollinator populations.

<sup>2</sup> Pollination is the transfer of grains of pollen between flowers which enables the reproduction of flowering plants (both wild and domesticated). Without animal pollinators, many plants cannot set seed and reproduce. When humans benefit directly from this function, pollinators thereby deliver a free pollination service.

Honey bees and wild bees are often both included when bee conservation and campaigns are conducted. Obviously, the two have much in common, including the pressures they are facing such as habitat loss, environmental pollution or invasive alien species. However, there are also differences. While some crops and wild flowers can be pollinated by both honey bees and wild bees, several crops and flowers (such as legumes) can only be pollinated by specific wild bees<sup>3</sup>. In general, wild bees – feeding and making their nests in many different habitats – are more effective and efficient pollinators than honey bees [4, 5], and therefore have a vital ecological role in the protection of biodiversity and ecosystem services. Honey bees certainly have a role to play, especially due to their higher numbers in many areas where pollination service is required. Maintaining a species-rich wild pollinator community is the key to

securing a long-term sustainable pollination service.

Scientific evidence shows that high density of honey bee colonies can negatively impact wild pollinating insects including pollinator-plant networks [6] through competition between honey bees and wild pollinators. This competition is usually expected to occur in flower-poor areas [7] or in areas where the number of honey bee colonies is high compared to the abundance of flowers [8, 9]. In these cases, a cautious approach is called for (see Chapter 3.1).

Furthermore, commercial bumblebees that are bred and traded for release in greenhouses and in covered crops can escape and interbreed with the wild bees in that area, causing genetic pollution [10, 11].

To maintain our ecosystems and landscapes healthy, wild pollinators are crucial allies. Indeed, we rely on wild pollinators for very important services in maintaining our ecosystems. There are no alternatives to species rich communities, and both businesses and society should therefore increase their efforts for the protection and restoration of biodiversity, which will ensure thriving wild pollinator populations as well as healthy and resilient honey bee colonies.



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<sup>3</sup> Some wild bees species can be as generalists as honey bees, feeding on many different types of flowers, whilst others are specialists and exclusively feed from one or a small number of flowering plant species.

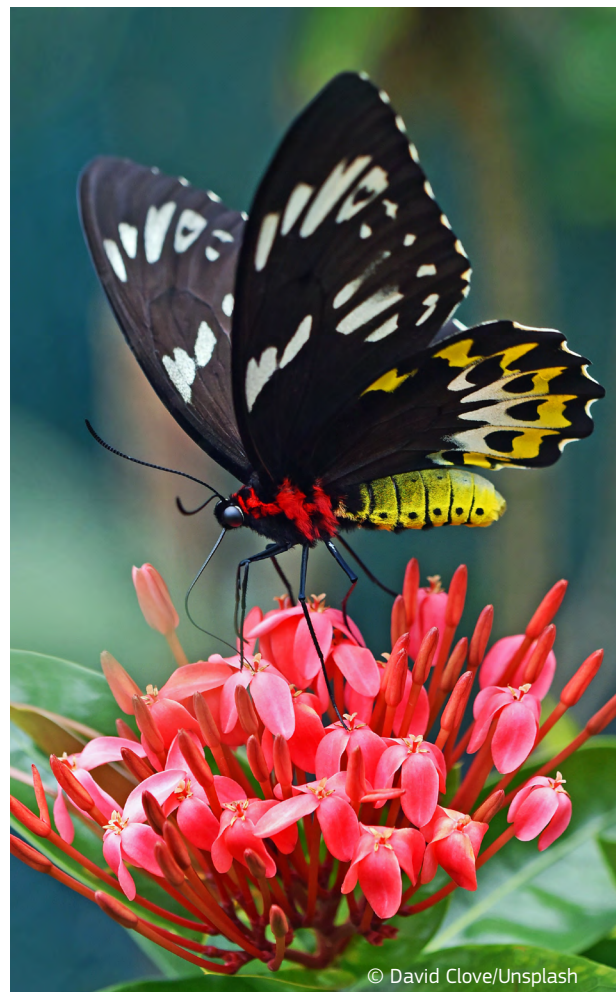


## 2. WHY DO POLLINATORS MATTER TO YOUR BUSINESS?

Managing a business at any value chain level and the ecosystem services involved implies evaluating risks and opportunities against the various aspects of running a business: operational, regulatory and legislation, marketing and reputation, financial and societal. Table 1 shows the risks and opportunities that are relevant for the apiculture sector.

A variety of natural and human factors affects productivity in a beekeeping business. These include outbreaks of diseases and parasites that affect honey bees, inbreeding of farmed honey bees [12, 13], including new introductions of alien pests, diseases and predators, exposure to chemicals including pesticides and veterinary products, low food provisioning due to the loss of wild flowers from landscapes, poor diets due to losses in plant diversity, and adverse climatic conditions including the effects of climate change. All these factors contribute to the high bee mortality rates that have been registered in recent decades. Most of these factors are also affecting wild pollinator populations (including wild bees, hoverflies, butterflies, moths and other invertebrates). Wild bees and other pollinators are considered more sensitive than honey bees to various human-induced pressures. They can act as sentinels and warn beekeepers about negative changes in the environment that will affect honey bee colonies. It can be generally said that the environment where wild pollinators thrive, will also provide an excellent home to honey bees and ensure high-quality bee products.

Threats to wild pollinators are a source of a wide concern, given their role in the preservation of the environment and the production of food. Actions to mitigate pressures on wild pollinators will also directly benefit honey bees, such as restoring and creating more flower-rich habitats and reducing pesticide use. By protecting wider biodiversity and taking care of wild pollinators, beekeepers protect their own business and ensure the quality of their products (e.g. honey content or pesticide residue). This, however, requires due considerations and good practices to secure co-existence between beekeeping operations and biodiversity conservation, in order to avoid negative impacts on wild pollinators. The apiculture sector has a positive reputation as it is seen to have a beneficial relationship with the environment and the protection of biodiversity more generally. Public interest in pollinators has increased greatly in recent years with many pollinator conservation initiatives now taking place across Europe. For many citizens, honey bees are the first contact with pollinators and pollination, which provides the sector with the unique opportunity to educate citizens about the importance of pollinators and biodiversity. Supporting restoration of pollinator habitats and mitigation of other pressures like pollutants will provide environmental and social benefits and assist the company in building/maintaining a good rapport with the public. The latter can also translate into direct benefits, such as hiring and maintaining workforce.



Most importantly, the sector is well placed to act positively and effectively, as beekeepers can turn the reversal of wild pollinator decline into opportunities (See Table 1). Beekeepers across the EU have been taking efforts for the conservation of biodiversity, and therefore are an important partner in the EU efforts to conserve wild pollinators. Only by protecting wider biodiversity and ensuring that ecosystems in the EU are in good condition, we will secure a good environment for wild and managed pollinators.

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<sup>4</sup> [http://www.europarl.europa.eu/RegData/etudes/ATAG/2017/608786/EPRS\\_ATA\(2017\)608786\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/ATAG/2017/608786/EPRS_ATA(2017)608786_EN.pdf)

The Dutch Beekeepers Association offers training to its members, land and green space managers as well as the general public, on the impacts of invasive alien species such as the Himalayan Balsam.

**Interested in what other front-runners are doing? See Chapter 4**

Meli cooperated with a local NGO to distribute bags of flower seeds and create 7,000 m<sup>2</sup> of wildflower areas. The NGO selected a seed mixture with native flowers attractive to bees that were grown organically and did not contain harmful substances.

**Interested in what your business can do? See Chapter 4**

The brand Beeactive has developed a “Bee Activist” awareness raising campaign, in order to communicate about the pollinator deficit and to convince the local community to act for the protection of wild pollinators.

**Interested in what benefits this has created for the company? See Chapter 4**



Table 1. **Why** pollinating insects matters to your business and **what** to do (risks & opportunities for the horticulture sector that are of key importance and sector-specific are highlighted in **bold**).

|  | <b>Risks</b>   | <b>Opportunities</b>   |
|--|--|--|
| <b>Operational</b><br>Regular business activities, expenditures, and processes                         | <ul style="list-style-type: none"> <li>▶ Decline of wild pollinator populations is an indicator of a reduced quality of the environment and degradation of wider biodiversity, and thus act as an early warning to beekeepers with regard to honey bee health and risks to the quality of bee products.</li> </ul> | <ul style="list-style-type: none"> <li>▶ By taking action for wild pollinators, benefits are simultaneously created for honey bee health, as well as assurances regarding the quality of honey and other bee products.</li> <li>▶ Provision of other ecosystem services and associated benefits (e.g. by linking water and carbon management with pollinator-friendly actions).</li> </ul>   |
| <b>Legal and regulatory</b><br>Laws, public policies, and regulations that affect business performance | <ul style="list-style-type: none"> <li>▶ Enforcement of stricter environmental requirements affecting apiculture, for example regarding the quality of honey and other bee products, or the importation and exportation of managed pollinators.</li> </ul>   | <ul style="list-style-type: none"> <li>▶ Reduce compliance costs and/or other costs by anticipating negative impacts on both managed and wild pollinators.</li> <li>▶ Increased policy attention for wild pollinators, as evidenced by several countries that are already implementing national pollinator strategies<sup>5</sup>. Actions resulting from this, such as pollinator-friendly planting, are beneficial to managed pollinators as well.</li> </ul>  |
| <b>Financing</b><br>Costs of and access to capital including debt and equity                           | <ul style="list-style-type: none"> <li>▶ Financial risks are mainly related to the operational and legal risks, as described above.</li> </ul>   | <ul style="list-style-type: none"> <li>▶ Gain and/or maintain confidence of consumers, which can ensure stable revenue base.</li> <li>▶ New «green funds» may become available.</li> <li>▶ New environmental markets might emerge (e.g. carbon offsets, habitat credits etc.).</li> </ul>  |
| <b>Reputational and marketing</b><br>Company trust and relationships with direct business stakeholders | <ul style="list-style-type: none"> <li>▶ Reputational risk due to negative impacts of (large-scale) beekeeping activities on wild pollinators<sup>6</sup>.</li> </ul>  | <ul style="list-style-type: none"> <li>▶ Improve and/or maintain a good relationship with customers by ensuring that beekeeping practices respect the ecosystem capacity, biodiversity and needs of wild pollinators.</li> <li>▶ Good reputation also helps beekeepers to strengthen partnerships with NGOs, farmers, foresters and other land managers.</li> <li>▶ Biodiversity-friendly beekeeping offers a competitive advantage in the market due to growing demand for credibly certified products (e.g. eco-labels, pollinator-friendly production labels, etc.).</li> </ul> |
| <b>Societal</b><br>Relationships with the wider society  | <ul style="list-style-type: none"> <li>▶ Social risks due to negative impacts of (large-scale) beekeeping activities on wild pollinators.</li> </ul>   | <ul style="list-style-type: none"> <li>▶ Maintaining a good public image by ensuring that beekeeping practices respect the ecosystem capacity, biodiversity and needs of wild pollinators.</li> <li>▶ Local communities may benefit from the higher quality environment that accompanies the implementation of pollinator-friendly measures, e.g. improved recreational access to green areas, higher biodiversity, cleaner air and water.</li> </ul>  |

<sup>5</sup> Promote Pollinators, Coalition of the Willing on pollinators (<https://www.promotepollinators.org/>)

<sup>6</sup> For example: <https://www.independent.co.uk/environment/beekeepers-honeybees-wild-bumblebees-pollinator-decline-a8976101.html>



### 3. WHAT CAN YOU DO?

## Raise awareness and educate the general public about wild pollinators

Beekeepers are in a great position to proactively increase public awareness on pollinator decline and encourage citizens to take action that contributes to protect wild pollinators.

As many citizens learn about pollinators through honey bees, beekeepers are indeed an important source of information. They can act as ambassadors for wild pollinators and biodiversity, especially since their business very much depends on the latter. Beekeepers can educate the general public about pollination, a key ecosystem process, and an indispensable role of wild pollinators. They are well placed to educate the public about the life of bees, including the similarities and differences between managed and wild species. In addition, beekeepers can give advice on how to manage private gardens in a pollinator-friendly way (see conservation actions) and promote the construction of green roofs and walls to citizens, as these can promote appropriate feeding ground for wild pollinators. Educating the public can be done through nature tours, activities for children, citizen science projects, or support to schools or local authorities in the organisation of workshops/training on the conservation of biodiversity and wild pollinators. At the same time, beekeepers will build a good public and business image.

In addition to educating the general public, beekeepers can spread environmental knowledge, be informative to hobbyist on best practice and support (novice) beekeepers who have concrete questions about natural beekeeping (See example of Dutch Beekeepers Association in Chapter 4). They can share their experiences regarding the implementation of pollinator-friendly measures with the EU Business @ Biodiversity Platform<sup>7</sup>, at relevant conferences or seminars, and/or through social media using the #EUPollinators.



## Support maintenance and restoration of pollinator habitats

Beekeepers should ensure pollinator-friendly management of the premises where their bee hives are located, or – when they do not own or maintain these areas – promote such management with responsible land managers and/or other stakeholders. Examples of such actions include:

- ▶ Maintenance and protection of important pollinator habitats such as flower-rich meadows, woodlands, hedgerows, bare soil patches, dy-stone walls etc.;
- ▶ Restoration of pollinator habitats. **Here, the main guiding principle is to let nature regenerate on its own.** This can be complemented by additional planting of native flowers seed mixes, clovers, bulbs, trees and shrubs if/when needed. Ensure that wild pollinators have foraging resources during the whole vegetation season;



Bee shelter in bare soil © Dominik Linhard/www.bundesforste.at



Reducing mowing frequency © Joe Gough/Shutterstock

<sup>7</sup> <https://ec.europa.eu/environment/biodiversity/business/>



- ▶ Reduction of mowing frequency to create species-rich grasslands. Natural habitats can be further supplemented by artificial ones (for instance, bee hotels);
- ▶ Ensuring connectivity with surrounding areas of green infrastructure and nature importance by creating grasslands and other types of vegetation that support rich biodiversity.

When selecting an apiary site, it is important to consider potential negative impacts on biodiversity, in particular wild pollinators. This is especially important when considering placing hives in protected and ecologically-sensitive areas. It is also important when areas in question are biodiversity poor – such as urban areas – as that can aggravate the already scarce forage situation for wild pollinators. Recommendations on aspects to be considered when deciding whether to install beehives in protected and ecologically-sensitive areas is given in Box 1.

In recent years, conservation biologists have raised awareness about the risk of ecological interference between massively introduced managed honey bees and the native wild bee fauna in protected natural areas. Studies by Henry & Rodet (2017) [14], Vanormelingen (2020) [15] and Herrera (2020) [16] point to the fact that the placing of high-density beehives may harm and/or displace wild bee populations due to competition for resources (nectar and pollen) and transfer of diseases.

When deciding whether or not to install bee hives in protected areas, it is recommended to limit the total amount of bee hives in the area if installed in protected areas, based on the carrying capacity for bees. The latter can be estimated, for example, by comparing the intensity of colony-level honey bee foraging to individual native bee foraging using the Hive Units Monthly (HUM)-metric [17]). Managed honey bees should not be introduced into pristine areas or areas with sensitive or endangered plant or bee species [14], such as bumble bee populations [18]. When introducing beehives into protected areas like Natura 2000 network, relevant authorities should be consulted and an adequate impact assessment should be carried out in order to prevent any potential negative impacts, in particular if the area in question is part of the Natura 2000 network.

Regulating colony density will also benefit the honey bees. Exploitative competition may constrain honey bee foragers' lifespan and trigger a cascade of problems that eventually may lead to colony weakening or collapse later in the season, long after the migration period has ended [19].

For beekeepers who migrate their beehives seasonally (also called temporary transhumance) due to the increase of landscapes that can no longer sustain apiaries all year round (i.e. intensive agricultural fields), it is important to take into account the potential consequences of this activity for the integrity of the native pollinators' interaction networks [20, 21]. This could be facilitated by measures such as identifying beehives and frames appropriately, maintaining a register, investing in material facilitating transhumance and mapping of flower varieties.

Also in residential areas with multiple hobbyist beekeepers, the carrying capacity may become limiting so it is critical to limit the total number of managed bee hives in line with the amount of foraging area and natural food available. It is therefore very important to plant plenty of floral resources when placing honeybee hives in order to provide additional food resources for wild pollinators which helps counteract this increased competition. Beekeepers could work with local authorities to improve green infrastructure which will benefit wild and managed pollinators alike<sup>8</sup>.

Beekeepers should always be encouraged to provide additional native flora in the surroundings of the bee hives, especially in urban areas, and should be active in raising the awareness of the local community to take action as well.

Box 1: Location of beehives in protected and ecologically-sensitive areas.

<sup>8</sup> See also 'A guide for pollinator-friendly cities: How can spatial planners and land-use managers create favourable urban environments for pollinators?' by Wilk et al. (2019), guidance prepared by ICLEI Europe for the European Commission.

## Avoid the use of (invasive) alien species<sup>9</sup>

The use of alien (non-native) bee species could negatively impact overall functioning of ecosystems through decreased transfer of pollen per visit and increased competition for floral resources and exclusion of native pollinators, due to similar ecological requirements of native and alien bees [22]. In addition, non-native bee species can transmit exotic diseases and parasites to wild bees, such as the non-native parasite *Nosema ceranae* [23], [24], [25].



The sowing and propagation of alien plant species that have abundant nectar can be popular with beekeepers, but such plants also pose risks to biodiversity. Typical examples are Japanese Knotweed (*Reynoutria japonica*) and Himalayan Balsam (*Impatiens glandulifera*) (See example of Dutch Beekeepers Association in Chapter 4), both of which readily grow in disturbed habitats and are easily spread by moving bits of the plant around. These plant species have a significant negative impact on biodiversity, particularly on wild pollinators<sup>10</sup>, especially in natural areas.

Beekeepers can be informative to hobbyist on invasive alien species and support (novice) beekeepers who have concrete questions on the subject (See example of Dutch Beekeepers Association in Chapter 4).

## Help to reduce environmental pollution

A large body of scientific studies have shown that pesticides (including fungicides, insect growth regulators, herbicides, and adjuvants) and other pollutants (for example heavy metals) directly and/or indirectly harm honey bees and wild pollinators alike. An increasing body of research has also showed the significant negative impacts of light pollution on insect populations [27].

Beekeepers should liaise with key stakeholders such as land managers, industry, city and large infrastructure planners to promote actions that can mitigate the negative impacts of the environmental pollution. More recommendations on this can be found in the guidance documents specific to farmers<sup>11</sup>, horticulture<sup>12</sup> and local authorities<sup>13</sup>.

## Prevent spread of diseases and parasites to wild pollinators

Honey bees can transmit diseases and parasites to wild pollinators, so hives with a poor sanitary condition (e.g. a high prevalence of *Varroa* mite infestation) are a potential threat to neighbouring wild pollinators. Beekeepers should undertake necessary measures to prevent spread of diseases and parasites to wild pollinators.

<sup>9</sup> See also 'Managing invasive alien species to protect wild pollinators', technical guidance prepared by IUCN (2019) for the European Commission.

<sup>10</sup> See also IUCN (2019) under Chapter 5.

<sup>11</sup> Keenleyside, C. 2020. A guide to pollinator-friendly farming. Guidance prepared by the Institute for European Environmental Policy for the European Commission.

<sup>12</sup> See also Arcadis Belgium. 2020. Business and nature working together: Action by the horticulture sector to protect wild pollinators. Technical guidance prepared by Arcadis for the European Commission under contract No 07.0202/2018/79538/SER/ENV.D.2 "Technical support related to the implementation of the EU Pollinators Initiative".

<sup>13</sup> See also 'A guide for pollinator-friendly cities: How can spatial planners and land-use managers create favourable urban environments for pollinators?' by Wilk et al. (2019), guidance prepared by ICLEI Europe for the European Commission.

In order to help protect both honey bees and wild bees, beekeepers can get professional advice on how to<sup>14</sup>:

- comply with the regulations when importing honey bee stocks;
- practice good honey bee husbandry, including pest and disease surveillance, integrated pest management and provision of sufficient winter stores to maintain strong colonies;
- be vigilant for declines in colony health and look for signs of new or exotic pests and pathogens;
- manage colonies to minimise Varroa mite levels and the spread of virulent strains of deformed wing virus, thus improving colony health and reducing risks to other colonies and wild bees;
- avoid high colony densities, which promote pest and pathogen transmission.

For the same reasons, it is also important to avoid the use of non-authorised chemical substances within the beehives, e.g. with regards to the treatment of diseases such as the Varroa destructor.

When considering treating honey bees that are affected by disease it is recommended to have a diagnostic made by an expert, as well as their advice on the measures to be taken.



### Support research

Studying changes in pollinator populations is often challenging. Turning to the public to volunteer in the monitoring of pollinators, provides the opportunity for large-scale, cost-effective collection of abundance and distribution data that can inform conservation efforts. Simultaneously, citizen science programmes allow scientists and beekeepers to educate the public about ecological issues such as pollinator decline and the loss of biodiversity. Beekeepers can actively engage with the public to support such citizen science programmes<sup>15</sup>, or can participate directly in the monitoring of pollinators as well as the pressures they are facing (e.g. collection of pollen samples from honeybee colonies for analysis for pesticide residues and botanical origin<sup>16</sup>).

Beekeepers can also contribute in research, for example on:

- the natural behaviour of bee species;
- the efficacy of pest management in pesticide-free and pesticide-minimized farming systems;
- the role of green infrastructure in improving biodiversity while assuring farm profitability;
- the development of a public reporting platform<sup>17</sup> (e.g. for the Asian Hornet, which is an invasive alien species that might become a threat to bumblebees as well as honey bees<sup>18</sup>).

<sup>14</sup> <https://nerc.ukri.org/research/partnerships/ride/lwec/ppn/ppn17/>.

<sup>15</sup> See also 'Citizens for pollinator conservation: a practical guidance', guidance prepared by the Institute for European Environmental Policy (2020) for the European Commission.

<sup>16</sup> <https://www.insignia-bee.eu/>

<sup>17</sup> <https://www.honeybeevalley.eu/>

<sup>18</sup> See also IUCN (2019) in Chapter 5.

### **Collaborate with NGOs, land owners and managers, and other stakeholders**

Beekeepers can collaborate with farmers<sup>19</sup>, forest owners<sup>20</sup>, and other land managers (e.g. public authorities<sup>21</sup>) by drawing attention to the benefits of nature-based solutions and ecosystem-based land management, such as agroecology close-to-nature forest management. This will in particular entail liaising with land managers to promote full implementation of Integrated Pest Management, in order to ensure that the impacts of pesticides on pollinators are effectively mitigated.

When taking conservation actions for pollinators, it is strongly recommended to partner with local NGOs/authorities or experts (See also the example of Meli in Chapter 4). They could help monitor the impacts of different land management activities on pollinator populations and wider biodiversity in the area where the bee hives are located. Also, good partnerships can align conservation activities in order to ensure they contribute to general biodiversity conservation efforts, including policy objectives (e.g. work within general frameworks).



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<sup>19</sup> Keenleyside, C. 2020. A guide to pollinator-friendly farming. Guidance prepared by the Institute for European Environmental Policy for the European Commission.

<sup>20</sup> See also Arcadis Belgium. 2020. Business and nature working together: Action by the forestry sector to protect wild pollinators. Technical guidance prepared by Arcadis for the European Commission under contract No 07.0202/2018/795538/SER/ENV.D.2 "Technical support related to the implementation of the EU Pollinators Initiative".

<sup>21</sup> See also 'A guide to pollinator-friendly cities: How can spatial planners and land-use managers create favourable urban environments for pollinators?' by Wilk et al. (2019), guidance prepared by ICLEI Europe for the European Commission.



## 4. WHAT ARE FRONT-RUNNERS ALREADY DOING?

This section presents a limited, non-exhaustive set of examples of businesses taking action for pollinators, to illustrate the diversity of potential actions that could be uptaken by the apiculture sector. The list has been generated by consulting the members of the EU Business and Biodiversity Platform<sup>22</sup>, and through literature review.

### Dutch Beekeepers Association (Nederlandse Bijenhoudersvereniging (NBV))

**Company:** The Dutch Beekeepers Association (NBV) is a national association of more than 8,000 affiliated beekeepers. In addition, it represents beekeepers before the Dutch government and maintains contacts with organisations of beekeepers in neighbouring countries.

**Action:**

- The NBV offers training to its members who are interested in biodiversity. The first 40 ambassadors in biodiversity were trained in 2017 – 2018 through an intensive course not limited to pollinating insect knowledge, but also focusing on political, administrative and project-related aspects. The ambassadors are trained in advising small-scale (garden) pollinator-aimed actions such as for housing, habitats above and below ground, but also for large-scale projects such as agriculture, landscaping of gardens in schools, landscape and nature conservation. The ambassadors were trained to have adequate knowledge on landscape design with native floral species.
- In addition, some ambassadors were trained as Bee Health Coordinators, being knowledgeable on the transmission of diseases between honey bees and solitary bees.
- The ambassadors are educating not only hobbyist beekeepers, but also land managers, the public sector, green space managers and the general public, on the impacts of invasive alien species such as the Himalayan Balsam.

**More info:**

<https://bijenhouders.nl>

### Meli Belgium

**Company:** Meli is a Belgian producer of honey products based in Veurne. It is the largest producer of honey in the BeNeLux. Raw honey is produced abroad, especially in Central and South America.

**Action:**

- In order to protect wild bees, Meli decided to install a maxi bee hotel in four of a local NGO's (Natuurpunt) visitor centres. In addition, the family business decided to sell smaller, individual bee hotels with the Meli logo. The return from selling the bee hotels will be invested in the further development of local nature reserves.
- In 2019, Meli cooperated again with the local NGO to distribute bags of flower seeds to create 7,000 m<sup>2</sup> of wildflower areas. The NGO selected a seed mixture with native flowers attractive to bees that were grown organically and did not contain harmful substances. The flower seed bags were:
  - distributed for free to the first 2,000 honey buyers of Meli products at a local supermarket;
  - distributed for free to new members of the local NGO;
  - for sale at the NGO's visitor centres. For every bag sold, the NGO also committed to buying and managing 1 m<sup>2</sup> of new flower-diverse grasslands.

<sup>22</sup> [https://ec.europa.eu/environment/biodiversity/business/index\\_en.htm](https://ec.europa.eu/environment/biodiversity/business/index_en.htm)

**Benefits for the company:**

- By giving the bees a suitable place to nest and hibernate, Meli, together with Natuurpunt, contributes to bee diversity, habitat protection and general nature protection in Belgium.

**More info:**

<https://www.natuurpunt.be/nieuws/natuurpunt-en-meli-zaaien-samen-wilde-bloemen-voor-wilde-bijen-20190409>

<https://www.natuurpunt.be/nieuws/natuurpunt-en-meli-helpen-de-wilde-bijen-met-de-installatie-van-maxi-en-mini-bijenhôtels>



## Consorzio Nazionale Apicoltori (CONAPI) (Italian National Consortium of Beekeepers)

**Company:** CONAPI, Consorzio Nazionale Apicoltori (Italian National Consortium of Beekeepers) is the largest national beekeeper's cooperative in Italy. CONAPI represents 279 individual or collective businesses, with over 600 beekeepers and about 100,000 hives across Italy. Over 20% of Italian organic honey is produced by beekeeping companies that belong to the cooperative. The main brands are: Mielizia, Cuor di Miele and Beeactive.

### **Action:**

The brand Beeactive has developed a “Bee Activist” awareness raising campaign, in order to communicate about the pollinator deficit and to convince the local community to act for the protection of wild pollinators. It has distributed 10 tips for the public on how to become “Bee Active”.

In addition, the brand Mielizia has set up different projects, in cooperation with local NGOs and academics:

- “Api e orti Urbani” (urban bees and gardens) in cooperation with the University of Bologna: Using bees and hive fresh honey to test the presence of 400 pesticide and 10 heavy metal residues in different Italian cities;
- “Urban Green” in cooperation with CAA (Centro agricoltura Ambiente) provides useful information to public Administrations on how to take care of urban green spaces without using pesticides.
- Milli's world: an educational project, created to promote the sense of responsibility of the younger generations towards the community and the environment and the protection of pollinators;
- The Park of Bees and Honey: an attraction park to educate about bees and honey.

### **Benefits for the company:**

The undertaken actions have contributed to the recognition at the institutional level of the cooperative as an important subject of public utility. In addition, the messages the cooperative communicated through these actions were a way to address customers, encouraging them to buy healthy products compatible with a lower exploitation of the environment.

#### **More info:**

<https://conapi.it/en/about-us/the-company/>

<https://mielizia.com/en/about-us/projects/>

<https://beeactive.it/diventa-bee-activist/>







## 5. FURTHER READING

#### EU Pollinators Initiative:

- <https://ec.europa.eu/environment/nature/conservation/species/pollinators>
- <https://wikis.ec.europa.eu/display/EUPKH/EU+Pollinator+Information+Hive>
- [https://ec.europa.eu/environment/biodiversity/business/news-and-events/news/news-84\\_en.htm](https://ec.europa.eu/environment/biodiversity/business/news-and-events/news/news-84_en.htm)

#### IPBES reports:

- <https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services>
- <https://ipbes.net/assessment-reports/pollinators>

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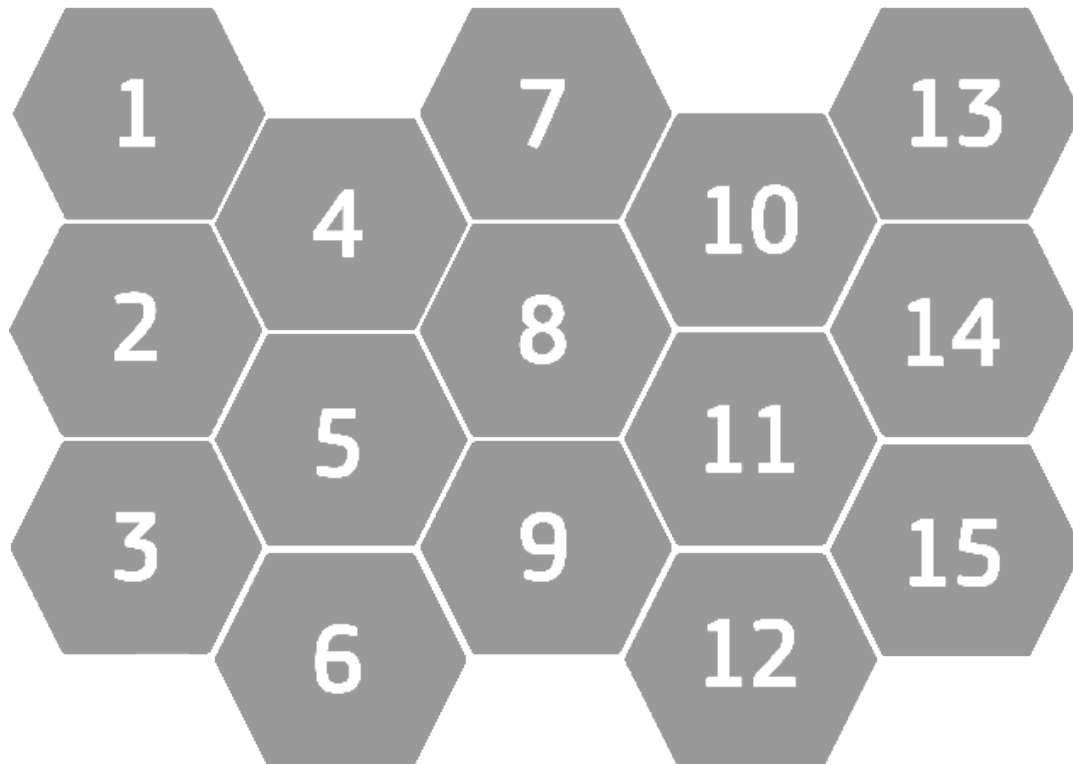
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