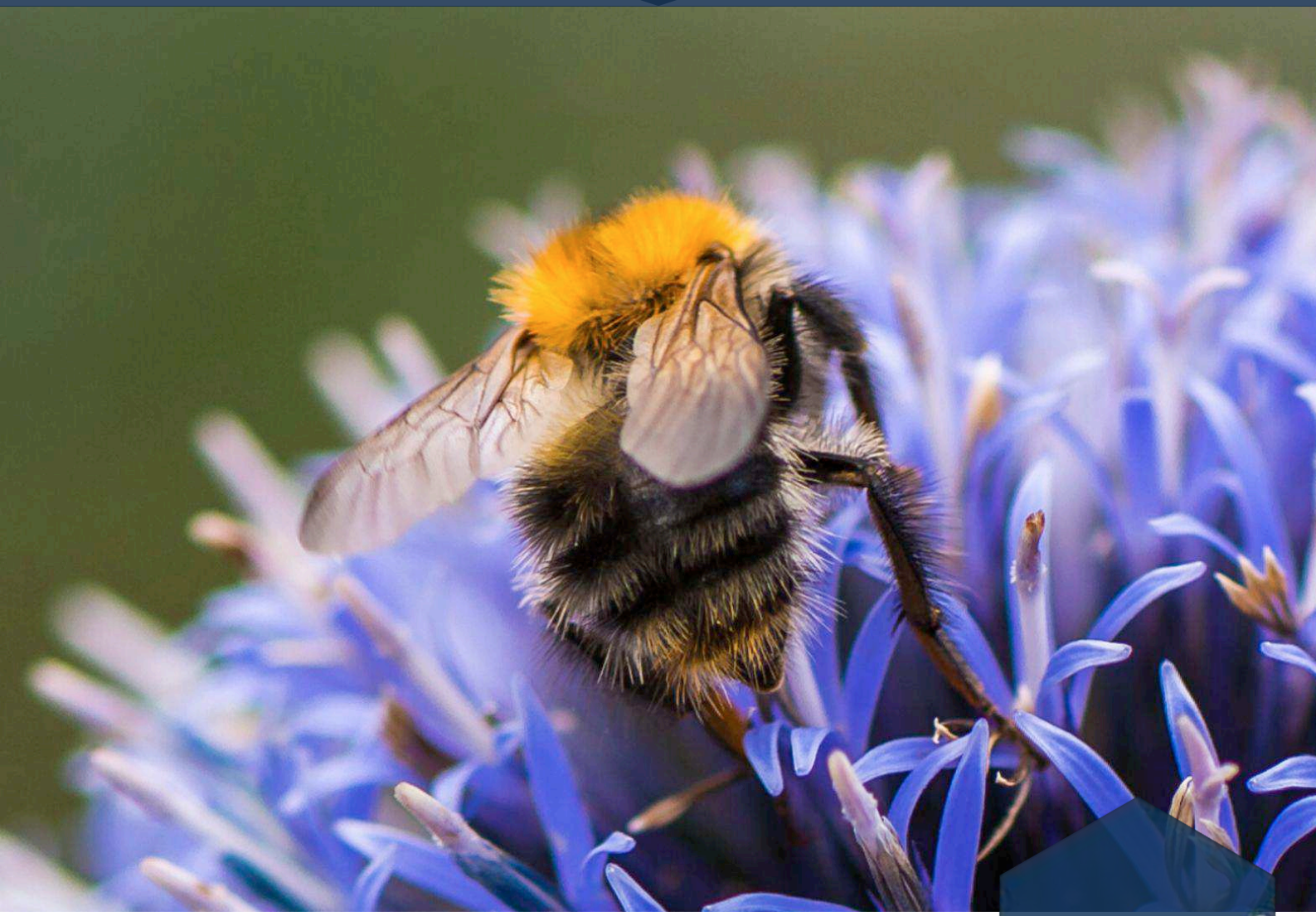
A CAP FOR POLLINATORS

HOW THE NEW CAP MAY SUPPORT POLLINATORS AND POLLINATORS BENEFIT THE NEW CAP



BeeLife
European Beekeeping Coordination

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CONTEXT

European institutions are currently discussing the future of the Common Agricultural Policy (CAP) post 2020. In parallel, regional and national authorities are exploring the possible form of their National Action Plans that will answer to the objectives set for the future CAP.

Within the specific objectives (Art.6), the future CAP aims to [...]:

e) foster sustainable development and efficient management of natural resources, such as water, soil and air, **while reducing chemical dependency with the aim of reaching the goals provided for in the relevant legislative instruments and rewarding farming practices and systems that deliver multiple environmental benefits including the halting of desertification**;

f) contribute to **reversing the decline of biodiversity, including by protecting beneficial fauna, including pollinator species promoting agrobiodiversity, environmental services, nature conservation and agroforestry, as well as contributing preventing natural risk and achieving greater resilience, restoring and preserving soils, water bodies, habitats and landscapes, and supporting High Nature Value (HNV) farming systems**.

The 9 CAP objectives. Our proposal to highlight the value of pollinators focuses on Environmental Care and Preserving Landscape & Biodiversity

In this document, BeeLife European Beekeeping Coordination, proposes coherent measures that highlight the value of pollinators in Europe and their potential in helping both farmers and the environment. By improving support to pollinators, we help nature ensure our food security and stabilise crop yields. At the same time, it aids in the protection and recovery of biodiversity in rural areas.

BeeLife European Beekeeping Coordination, an NGO for bees, pollinators and biodiversity. BeeLife works for the improvement of the environment of bees and pollinators in rural and urban contexts. Therefore, we have not commented on the measures linked to the support of the Apicultural sector (Article 49).

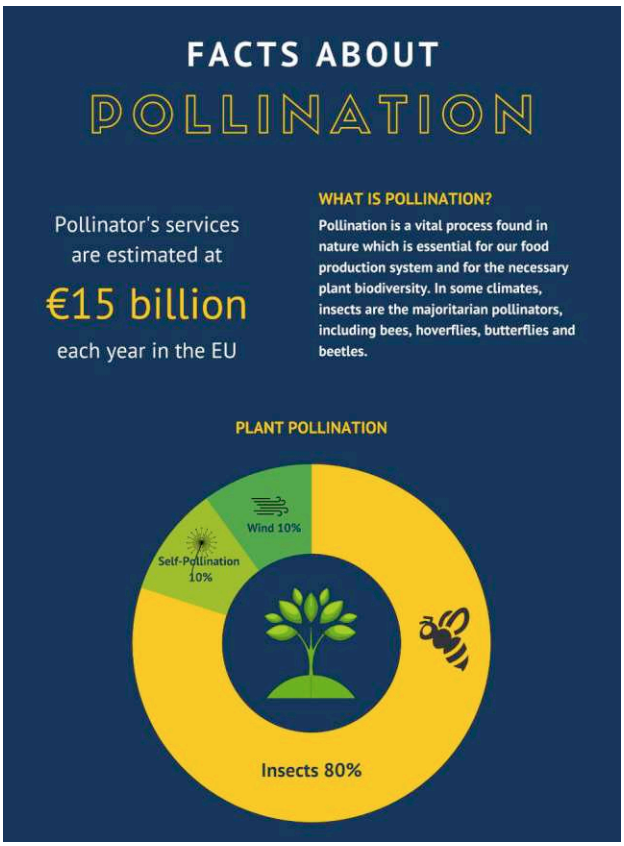
A CAP FOR BIODIVERSITY AND POLLINATORS?

Insects such as bees (both wild and managed), but also other invertebrate and vertebrate species, have an essential role in ecosystems and our food security. We need their pollination activity to ensure an increasingly rich and diverse variety of food on which the European diet increasingly depends. A decrease in them means putting in peril our way of life and the vast range of food offer of which Europeans pride themselves.

Tools Usable in Pillar I

The CAP can help pollinators through the "Enhanced Conditionality" which in the future CAP framework replaces 'greening' and cross-compliance of the current CAP. It is the baseline for a more ambitious and sustainable agriculture through the adoption of "good farming practices and standards by farmers". Conditionality links income support to environment and climate-friendly farming practices and standards known as **'Good Agricultural and Environmental Conditions' (GAECs) and Statutory Management Requirements (SMRs)**. For detailed comments on each condition and requirement, see Annexes Table 1 and 2.

These measures, if well designed and implemented, can assure a proliferous future to the bees.



GAECs

The Good Agricultural and Environmantal Conditions (GAECs) set standars for:

1. Mitigating and adapting to climate change.

2. Addressing water challenges.

3. Soil protection and quality.

4. Land management.

5. Protection and quality of the environment.

SMRs

The Statutory Management Requirements (SMRs) link the CAP to other EU legislation:

1. "Conservation of natural habitats and of wild fauna and flora Directive".

2. "Conservation of Wild Birds Directive".

3. "Nitrates Directive".

4. Elements of the "Water Framework Directive".

5. Elements of the "Sustainable Use of Pesticides Directive".

GAEC and SMRs for favourable agroenvironmental conditions in rural areas

Providing high-quality food resources (pollen & nectar): diversified & “continuous”

Three measures included into the enhanced conditionality can play a specific role in supporting the presence of bees, pollinators and biodiversity in the fields: GAEC 1 “Permanent pasture”, GAEC 8 “Crop rotation” (replacing crop diversification) and GAEC 9 “Non-productive areas” (replacing Ecological Focus Areas). We find the “non-productive areas” term counterproductive and misleading for communication to farmers. GAEC 8 and 9 are key factors for pollinators.

Maintaining a permanent grassland ratio to agricultural area is a good measure but certain related risks need to be taken into account. For instance, veterinary products used in animal husbandry have been shown to have a negative effect on pollinators, particularly on bees[1]. Overgrazing due to high livestock density in grassland can also have negative impacts on pollinators. These risks are relevant and must be taken into account to properly guide the measure since an increase in grasslands may expand the use of land for cattle ranching. This comment is relevant for GAEC 1.

We encourage all measures multiplying the nutritional and habitat resources for biodiversity BUT they need to be implemented in parallel with a reduction of pesticide use. The importance of the drift of pesticide residues is well documented. Should pesticide use not be reduced, these measures could be converted into insect traps. Besides, without paying special attention to the plants used in the proposed buffer strips, pollinators could be largely put at risk. Authorities need to pay attention so that these measures do not backfire by further endangering pollinators and biodiversity. This comment is relevant for GAECs 4 and 7, as well as for SMRs 2 and 4.

Non-Productive Areas

The concept of "Non-productive areas" is erroneous and hampers the development of this measure by fostering a negative motivation in farmers. If well managed or designed, these "non-productive areas" can be planted with trees, bushes or include flowering plants or points of water. These provide habitat and resources for beneficial fauna that contribute to the pollination of crops, pest control or nutrient recycling. If the farmer plants melliferous or polliniferous plants, he or she can produce hir or her own honey. If he or she plants nut trees, it is possible to produce nuts, nut-oil, or use the trees for timber. **"Non-productive areas" contribute to ecosystem services such as pollination, nutrient recycling or pest control. Therefore, they are productive.**

[1] UNAF and BeeLife (2018) How Pesticides Used in Livestock Farming Threaten Bees. Available at: https://link.bee-life.eu/reportpesticideslivestock

The GAEC 8 “Crop rotation” may directly contribute to improving food resources for pollinators in general and honeybees in particular, but more than that, it can help farmers reduce their dependence on fertilizers and pesticides. It should include cycles of minimum 4 years, ideally 7 years, with a maximum of two tuber crops heavily impacting the soil[2] during the duration of the rotation, e.g. sugarbeet, potatoes, carrots, root chicory, etc. Among crops that have special interest for pollinators and could be included in the rotation, we can mention: oilseed rape, sunflower, flax, vitacea plants, cameline, alfalfa, lupin clover, bird's-foot trefoil, buckwheat, corn, aromatic plants, as well as crops of intercropping such as phacelia, sunflower, mustard, radish, cabbage, pulses, vetch, tuberous pea, etc. **Special attention needs to be put on these intercropping cultures with interest to pollinators, which should only be supported IF a continuous nectar and pollen flow exist in the area all year long.**

Encouraging sustainable farming practices to ensure a healthy environment for pollinators and biodiversity

As mentioned above, **all measures multiplying the nutritional and habitat resources for biodiversity need to be implemented in parallel with a reduction of pesticide use.** The importance of the drift of pesticide residues is well documented[3]. Should pesticide use not be reduced, these measures could be converted into insect traps. Besides, without paying special attention to the plants used in the proposed buffer strips, pollinators could be largely put at risk. If plants are of interest to pollinators or key for biodiversity, they could become insect traps. Authorities need to pay special attention to pairing pesticide use and plant selection, so that these measures do not backfire by further endangering pollinators and biodiversity. This comment is relevant for GAECs 4 and 7.

The protection of soil is also an important subject covered by several GAECs. First, looking for a reduced soil tillage is an important beneficial measure. Reducing tillage protects biodiversity in the soil, avoiding the destruction of nests of insects, including pollinators. Second, avoiding bare soil in sensitive periods is also a positive measure for pollinators and bees so to avoid that erosion mobilises pesticide residues remaining in the field. However, locations where highly persistent or systemic products have been previously used require special attention. Plants that are attractive to pollinators need to be carefully placed so as not to absorb the toxicity of previous contaminants. In addition, systematic use of plant protection products and the burning of arable stubble should be avoided. Both have a direct impact on soil organic matter, also affecting nests. These comments are relevant for GAECs 3, 6 and 7.

One of the key points to highlight is **the inclusion of Integrated Pest Management (IPM) as a criterion for payment under the first pillar.** IPM "emphasises the growth of a healthy crop with the least possible disruption to agro-ecosystems and encourages natural pest control mechanisms"[4]. Under the principles of IPM, farmers are encouraged to apply sustainable mechanisms of pest control, which excludes the prophylactic use of pesticides. The same holds for livestock farmers in the case of vector/parasite control and the application of biocides and veterinary products. This should be paired with the inclusion of other measures in the Sustainable Pesticide Use directive, such as registration and public availability of information on used pesticides by farmers. These comments are relevant for SMRs 11, 12 and 13.

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[2] Soil loss due to crop harvesting is a soil erosion process that significantly contributes to soil degradation in croplands: losses of soil organic carbon, nitrogen, phosphorus etc.

[3] Siebers J, Binner R, Wittich K-P. Investigation on downwind short-range transport of pesticides after application in agricultural crops. Chemosphere 2003; 51(5): 397–407.

Sánchez-Bayo F, Yamashita H, Osaka R, Yoneda M, Goka K. Ecological effects of imidacloprid on arthropod communities in and around a vegetable crop. J Environ Sci Health B 2007; 42(3): 279–86

Poquet Y, Kairo G, Tchamitchian S, Brunet J-L, Belzunces LP. Wings as a new route of exposure to pesticides in the honey bee. Environ Toxicol Chem 2015; 34(9): 1983–8.

Francisco Sanchez-Bayo and Koichi Goka (May 20th 2016). Impacts of Pesticides on Honey Bees, Beekeeping and Bee Conservation - Advances in Research, Emerson Dechechi Chambo, IntechOpen, DOI: 10.5772/62487. Recovered from: https://www.intechopen.com/books/beekeeping-and-bee-conservation-advances-in-research/impacts-of-pesticides-on-honey-bees

Simon-Delso, N., Martin, G. S., Bruneau, E., Delcourt, C. & Hautier, L. The challenges of predicting pesticide exposure of honey bees at landscape level. Scientific Reports 7, 3801 (2017).

[4] Integrated Pest Management, as defined by the European Commission: https://ec.europa.eu/food/plant/pesticides/sustainable_use_pesticides/ipm_en

Providing good quality, uncontaminated water

SMRs that focus on the protection of water should take into account two key components to ensure its effectiveness and avoid producing undesired effects. First, an enhanced conditionality would involve avoiding water pollution not only from phosphates, but also from other synthetic chemicals, such as pesticides, biocides or veterinary products. Second, the use of catch and cover crops to avoid the contamination of water may entail other side effects on pollinators. They mobilise pesticide residues contained in the soil and they may get contaminated by neighbouring crops. For plants that are attractive to pollinators, this means an increased risk of toxicity exposure for pollinators. The implementation of catch and cover crops with interest for pollinators deserve some considerations related to the history of chemicals used in the parcel and the resource richness of the landscape surrounding the parcel. These comments are relevant for SMRs 1 and 2.

"An enhanced conditionality would involve avoiding water pollution not only from phosphates, but also from other synthetic chemicals."

Eco-schemes: an innovation and an opportunity within the CAP

The future CAP incorporates a new and innovative system, the eco-schemes. They have been conceived “to increase national environmental and climate-care action based on regional or local needs”. It is mandatory for Member States (MS) to design and offer one or more eco-schemes. Up to now, they are voluntary for farmers to join, but this point remains in negotiation. These schemes involve an annual ‘one-year-at-a-time’ commitment which is supposed to make them flexible and attractive for farmers. Indeed, farmers can after one-year time continue in those schemes that worked best for them and cease those that did not.

Eco-schemes present a unique opportunity for MS to invest, incentivise and reward farmers for going beyond the mandatory requirements of the new “enhanced conditionality” and increase environmental and climate performance.

This new measure, which should represent 30% of the direct payments within the CAP, is the opportunity for all (MS, NGO and also professional or farmers’ organisations) to think outside the box and propose new action schemes for a win/win relationship between agriculture and nature.

As BeeLife, we propose and promote a “Pollinator Eco-Scheme”. Our objective is that this money does not go on “green - or beewashing”, but for rewarding effective good practices developed by farmers motivated to do better for themselves and for the environment.

"A pollinator eco-scheme to reward effective good practices."

Some of the obligatory practices under a pollinator eco-scheme:

- 1 or more crops interesting to pollinators in at least 10% of agricultural surface.
- Crop varieties that provide resources to pollinators.
- Diversification.
- Education.
- Inter -stakeholder engagement.
- Landscape features.
- Sustainable use of pesticides.

What is a "Pollinator Eco-Scheme"?

We propose a "package" of good pollinator practices that are considered the eligibility criteria for a farmer to benefit from the pollinator eco-scheme. There are a number of obligatory practices to be applied by the farmers, and a couple of practices that Member States may wish to add to the "Pollinator package". These practices are shaped differently for annual and perennial crops.

Obligatory Measures (Annual Crops)

- **A farmer includes one or more crops interesting to pollinators in at least 10% of his/her agricultural surface every year.** Among the crops that could be included and have special interest for pollinators are: oilseed rape, sunflower, flax, vitacea plants, cameline, buckwheat, corn, pulses such as alfalfa, lupin clover or bird's-foot trefoil, aromatic plants, crops of intercropping: phacelia, sunflower, mustard, radish, cabbage, pulses, vetch, tuberous pea, etc.

  One of the big problems faced by pollinators and animal biodiversity in agricultural areas is the homogenization of the landscape, with moments in the year where there are no resources at all in the surroundings. This is typical, for example, in areas with arable crops producing cereals and sugar beet. In these green deserts, pollinators cannot find resources or habitat to develop, and they perish. The logic of this measure is that as far as possible, a patchwork and network of resources appear at landscape level and availability of resources can be ensured all year long.

- **Chosen crop varieties need to provide resources to pollinators,** with proven melliferous and polliniferous capacity[5] and with prolonged flowering periods (e.g. oilseeds, pulses, etc.).

  Beekeepers increasingly observe lack of production when their colonies participate in the pollination of typically melliferous crops, such as sunflower and oilseed rape. In fact, plant breeding does not include melliferous/polliniferous capacity or flowering period as selection criteria and the number of varieties not requiring pollination that arrive into the fields is increasing. When undergoing plant selection, the "resources' allocation" of the plants is a trade-off between different activities: growth, reproduction, or oil production in oilseed crops, for example. Each of these tasks are resource-intensive which the plant seeks for its "survival". If selected for a performant oil-production, the plant may be less effective in nectar production

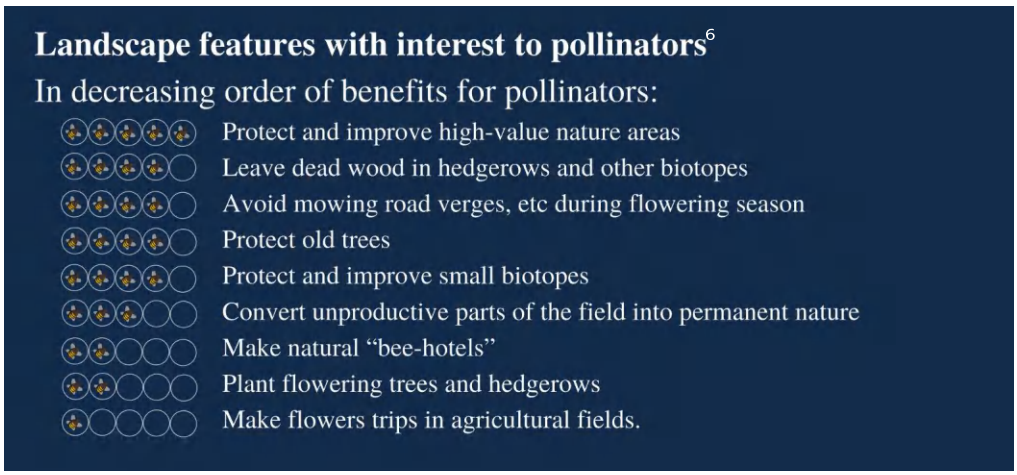
[5] A study conducted in Romania on sunflower showed clearly the difference between nectar production among the tested varieties, between 0,07mg nectar per flower and 0,18mg/flower which makes a huge difference if you are expecting to produce honey. (Source: *Caracteristicile agronomice si melifere ale principalilor hibrizi de floarea-soarelui comercializati in Romania in anul 2016-* Bucuresti: Lumea apicola, 2016)

"One of the big problems faced by pollinators and animal biodiversity in agricultural areas is the homogenization of the landscape, with moments in the year where there are no resources at all in the surroundings. This is typical, for example, in areas with arable crops producing cereals and sugar beet."

in the same period of time.

A brand new BEE-FRIENDLY PLANT BREEDING certification could be available for those who want to develop it, including as selection criteria the amount of pollen/nectar produced and the flowering period. BeeLife would be supportive of plant breeders willing to start a business in this direction.

- **Diversify the crop varieties planted in field**, including at least 3 different varieties for each crop in each cropping period.
- **Continuous education for farmers on beneficial insects** (incl. pollinators and their role in pollination and pest control) min. 10 hours (e.g. biology, functionality, recognition, risks, etc.)
- **One - to - one beekeeper-farmer/naturalist-farmer engagement** (e.g. contract between farmers and beekeepers; active membership of the farmer to a conservation association, who may participate to biodiversity counts, etc.).
- **Presence of landscape features** (hedges, trees, flower strips, ponds, stone walls, extensive/natural/high ecological value prairies), with certain listed species (traditional, good for pollinators, …). At least 5% of the agricultural area of a farmer needs to contain landscape features, 7% being the threshold to receive the payment). As far as possible, the flowering calendar of the features should be taken into account so that there are year-long nutritional resources available.
- **No preventive use of pesticides** (incl. seed treatment) **and no use of persistent pesticides** (DT50 lower than 15 days), with metabolites that are not dangerous for insects.
- **If pesticides treatment needs to be applied** (proved IPM approach), **apply only after sundown** (when flying activity of pollinators is reduced).



[6] Landbrug & Fødevarer F.m.b.A. SEGES - From presentation by Anne Eskildsen on "The role of farmers in promoting pollinator conservation in the Natura 2000 network" during Workshop on conservation measures that benefit pollinators applied under the Nature Directives in Natura 2000 sites. Brussels (Belgium), 13/11/2019.

Optional Measures (Annual Crops)

- For countries that do not want to impose GAEC 8 as 4-7 years' rotation, with rotations including crops and varieties mentioned above, member states should reward those farmers who take this approach.

Obligatory Measures (Perennial Crops)

- **Apart from the flowering period of the crop, the farmer plants at least 2 plant species interesting for pollinators between the lines of production plants.** These species need to flower in different periods of the year to ensure availability of resources as much as possible.
- **Chosen crop varieties need to provide resources to pollinators** (same as for annual crops)
- **Diversify the crop varieties planted in field** (same as for annual crops, if technically possible depending on the sector)
- **Continuous education for farmers on beneficial insects** (same as for annual crops)
- **One-to-one beekeeper-farmer/naturalist-farmer engagement** (same as for annual crops)
- **Presence of landscape features** (same as for annual crops)
- **No preventive use of pesticides** (same as for annual crops)
- **If pesticides treatment needs to be applied** (proved IPM approach), **apply only after sundown** (when flying activity of pollinators is reduced)

Because we want as many farmers to adhere to these good practices that we promote, BeeLife would propose farmers to receive between 150-450 euros/ha/year if they fulfill the criteria described above. Beekeepers/naturalists engaging with farmers could receive between 100-300 euros/year.

These eco-schemes need to go hand in hand with measures in pillar II dealing with Observatories of the efficacy of the measures (indicators, see below).

Tools Usable in Pillar II

Meet the needs of pollinators through Agri-Environment-Climate Measures (AECMs)

The Agro-Environmental and Climatic Measures (AECMs) of the future CAP are designed to ensure best environmental and climate practices under the Rural Development framework. They aim to "restore, preserve and enhance ecosystems; promote resource efficiency; and move towards a low-carbon and climate-resilient economy". It is important to ensure the types of interventions put in place support specific national, regional, and local needs and, in certain cases, can build on those funded in the eco-schemes.

As with the eco-schemes, the AECMs are mandatory for MS to offer and design but are voluntary for farmers and beneficiaries to join. Member States will be required to commit at least 30% of their rural development budget to support environment and climate change action.

AECM interventions could include: environmentally friendly production systems such as agroecology and agroforestry; forest environmental and climate services; forestry conservation and resilience based on native species; precision farming methods; organic farming; renewable energy and the bio-economy; animal welfare; and sustainable use and development of genetic resources (free of GMOs, due to the potential pollution of beekeeping products). Should countries want, these kind of measures can as well be in the form of Eco-Schemes.

Farm Advisory Services (FAS)

Farm advisory services (FAS) have an important role in achieving the healthiest environment possible. Services from stakeholders with some relation to phytopharmaceutical firms continue to work with/for cooperatives. The missions of these FAS are defined in Article 13. The text states that FAS must advise on agricultural practices “which makes it possible to reduce the use of fertilizers and plant protection products by promoting natural methods of soil fertility improvement and pest control”. BeeLife underlines its role in achieving the healthiest possible environment. FAS experts need to be trained into pollinators needs and threats so they can provide the best advice possible to farmers in terms of pollinator and environmental sustainability.

Investment subsidies

The biggest item of Rural Development spending is currently on-farm physical investments. This new rule can be seen as a way of prolonging ‘business as usual’ for investments whose consequences for biodiversity are unknown. This can be tackled by focusing on techniques that are harmless or that benefit the conditions and overall health of bees and pollinators in general. We encourage authorities to recognise this as an opportunity for investment in techniques that are non-harmful for bees and pollinators (i.e. droplegs techniques, autonomous robots instead of herbicides, Big Data, RFID sensors, pheromones, satellite imaging, precision agriculture…).

AKIS

Intersectoral cooperation within farming communities (farmers of different productions and beekeepers) should get more support and in this sense, improving agri/apicultural practices.

AKIS programs should include efficacy tests to evaluate the level of penetration of the knowledge shared into different sectors.

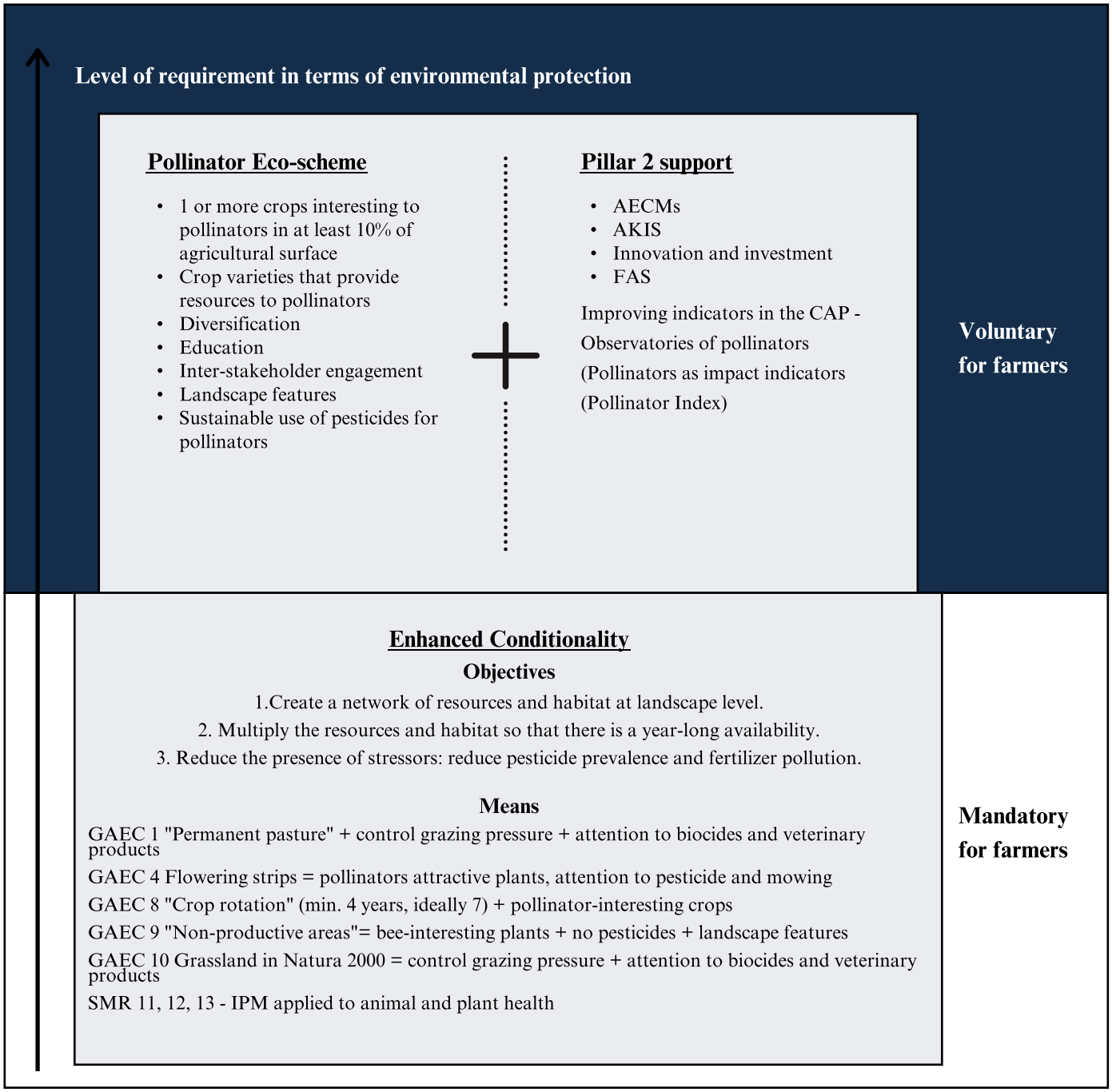


Figure 1. Global vision of the pollinator-friendly decisions a farmer specialised in arable crops could make. Integration of all CAP elements with potential to help the improvement of the situation of pollinators as proposed by BeeLife.

POLLINATORS FOR THE CAP

Being sure of the efficacy of a public policy: indicators in the CAP

Bees are the link between Nature and Culture, a key agricultural agent which can provide essential insights to assess results of land management practices. Measuring the effectiveness of any public policy is a big challenge that is full of complexities, but complex doesn't mean unachievable. Some policy advisors or public agents working in the Commission argue that is too complicated, "not ready for being put in place at the European level", some deputies from the previous mandate considered indicators a new burden. But, how to be sure to achieve the specific objectives of the CAP without indicators? Let's see them as an opportunity!

HOW TO MEASURE THE EFFECTIVENESS OF THE PUBLIC POLICY?

Measuring the impact of the public policy was an asset of the new CAP proposal. In order to fulfill this, BeeLife defends the implementation of a Pollinator Index[7], which as been as well included in the European Commission's "Pollinator initiative"[8].

The Pollinator Index proposes several options in order to choose the one which can successfully answer to your question:

- Is the program in favour of the beekeeping sector effective to reverse the pollination deficit in Europe? The number of beehives and the mortality rate are proxy indicators.
- Is the specific objective "Contribute to the protection of biodiversity, enhance ecosystem services and preserve habitat and landscape" achieved? Then bee collected matrices' pollution and botanical origin (see EU INSIGNIA Project[9]) but also wild bees' abundance and richness are the proxy.

The Sustainable Use of Pesticides Directive (Directive 2009/128), was adopted 10 years ago and made mandatory for Member States to support the uptake of Integrated Pest Management in farming. With the New Delivery Model with the necessity of measuring performance, we call for the integration of IPM principles as legal requirements under the revised CAP and robust indicators for accurate monitoring of pesticide use in the EU.

As it was already mentioned in the INI report on the beekeeping sector in 2017, BeeLife calls on the Commission and the Member States to use bees as an indicator of environmental quality and as an instrument for assessing the effectiveness of the implementation of the CAP objectives, specifically via residue analysis and the botanical diversity of environmental matrices sampled in beehives. This is what our proposal is aimed at[10].

Objectives and results need to be well defined and measurable (Regulation 1605/2002 Art. 27). The CAP has to "bee-coherent" and consistency between the declared objectives of the CAP and its real consequences is a key point. That is why it is essential to adopt indicators in order to know if we walk in the desired direction: pollinators can be part of such indicators.

Tools in the II pillar can be activated for the development of pollinators monitoring. This would aim to measure the efficacy of policies i.e. observatory of biodiversity in agricultural landscape.

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[7] BeeLife, 2019. Pollinators as Indicators in Policy Affecting the Landscape and Environment. Available on line: https://link.bee-life.eu/PollinatorIndex

[8] On 1 June 2018, the European Commission adopted a EU initiative on pollinators which sets strategic objectives and actions to be taken by the EU and its Member States to address the decline of pollinators and contribute to global conservation efforts.

[9] https://www.insignia-bee.eu/about/

[10] BeeLife, 2019. Why We Need Bees as Indicators in the Next CAP, 6p. Available on line: https://link.bee-life.eu/bees-as-indicators

CONCLUSION

The vital role of pollinators is necessary for the balance of ecosystems and for European agriculture. Valuing bees and pollinators in general is an opportunity to ensure a safer environment and a better Common Agricultural Policy. Improving environmental conditions for pollinators to thrive is a sustainable investment that, in turn, benefits other dimensions, including having better practices in the field and better indicators of the effects of policy. The CAP post 2020 could further protect pollinators, and make use of these important allies.

To conclude, the pollinators in general need a CAP that can assure them the healthiest environment (soil, air, water, flowers) respecting their ecology and allowing safe and diversified food resources. From a pollinators point of view, BeeLife's proposals would allow populations to develop themselves, thanks to newly favourable conditions supporting habitats and nutritional source multiplication. Beekeepers are major actors in rural areas and contribute where they are living from the economic vitality of the region. It is a necessity to take them into account, to improve the relationship among the farming community.

Acronyms

AECM Agri environment climate measures
CAP Common Agricultural Policy
CMO Common Market Organisation
COM AGRI Committee Agriculture and Rural Development
COM ENVI Committee for Environment, Public Health and Food Security
FAS Farm advisory services
GAEC Good Agricultural and Environmental Conditions
HNV High Nature Value
IPM Integrated Pest Management
MS Member States
NGO Non Governmental Organization
SMR Statutory Management Requirements

Bibliography

BeeLife, 2017. *Proposals to allow nature to ensure our food security*, Position Paper, BeeLife-EPBA, 8p.Available on line: https://www.bee-life.eu

BeeLife, 2019. *Why We Need Bees as Indicators in the Next CAP*, 6p. Available on line: https://www.bee-life.eu

BeeLife, 2019. *Protect Pollinators in the Common Agricultural Policy beyond 2020*, 22p.

Botias C. et al., 2015. *Neonicotinoid Residues in Wildflowers, a Potential Route of Chronic Exposure for Bees*, Environ. Sci. Technol. 49, 21, pp. 12731-12740, October 6, 2015, https://doi.org/10.1021/acs.est.5b03459

Common Press Release "*EP's Environment Committee CAP vote is a Valentine's Day letter encouraging the sector to work WITH nature!*", Brussels on the 14/02/19.

Gallai N, Salles JM, Settele J , & B Vaissière, 2008. *Economic valuation of the vulnerability of world agriculture confronted with pollinator decline*. Ecological Economics, doi:10.1016/j.ecolecon.2008.06.014

Klein AM., Vaissiere B, Cane JH, Steffan-Dewenter I, Cunningham SA, Kremen C ., 2007. *Importance of crop pollinators in changing landscapes for world crops*. Proceedings of the Royal Society B: Biological Sciences, 274: 303-313

Krupke CH, Hunt GJ, Eitzer BD, Andino G, Given K., 2012. *Multiple routes of pesticide exposure for honey bees living near agricultural fields*. PLoS One 7:e29268

Lumea apicola, 2016. C*aracteristicile agronomice si melifere ale principalilor hibrizi de floarea-soarelui comercializati in Romania in anul 2016*- Bucuresti.

Ollerton J. , Winfree R., and Tarrant S., 2011. *How many flowering plants are pollinated by animals?,* Oikos, 120:321-326.

Poquet Y, Kairo G, Tchamitchian S, Brunet J-L, Belzunces LP., 2015. *Wings as a new route of exposure to pesticides in the honey bee*. Environ Toxicol Chem, 34(9): 1983–8.

REPORT on prospects and challenges for the EU apiculture sector (2017/2115(INI)) Committee on Agriculture and Rural Development, Rapporteur: Norbert Erdős, 32p. Available on line: https://www.europarl.europa.eu/doceo/document/A-8-2018-0014_EN.pdf

Sánchez-Bayo F, Yamashita H, Osaka R, Yoneda M, Goka K., 2007. E*cological effects of imidacloprid on arthropod communities in and around a vegetable crop*. J Environ Sci Health B, 42(3): 279–86

Sanchez-Bayo F. and Koichi Goka (May 20th 2016). *Impacts of Pesticides on Honey Bees, Beekeeping and Bee Conservation* - Advances in Research, Emerson Dechechi Chambo, IntechOpen, DOI: 10.5772/62487, Recovered from: https://www.intechopen.com/books/beekeeping-and-bee-conservation-advances-in-research/impacts-of-pesticides-on-honey-bees

Siebers J, Binner R, Wittich K-P., 2003. *Investigation on downwind short-range transport of pesticides after application in agricultural crops*, Chemosphere, 51(5): 397–407.

Simon-Delso et al., 2017. *The challenges of predicting pesticide exposure of honey bees at landscape level*, Scientific Reports 7, Article number: 3801 (2017). Available on line: https://www.nature.com/articles/s41598-017-03467-5

Tosi S. et al., 2018. *A 3-year survey of Italian honey bee-collected pollen reveals widespread contamination by agricultural pesticides,* Science of the total Environment, 615, pp. 208-218

Going further:

Fahrig, L., Girard, J., Duro, D, Pasher, J., Smith, A., Javorek, S., King, D., Freemark Lindsay, K., Mitchell, S. and Tischendorf, L., 2015. *Farmlands with smaller crop fields have higher within-field biodiversity*. Agriculture, Ecosystems and Environment, 200: 219-234

Hass AL. et al., 2018. *Landscape configurational heterogeneity by small-scale agriculture, not crop diversity, maintains pollinators and plant reproduction in western Europe.* Proc. R. Soc. B 285: 20172242. http://dx.doi.org/10.1098/rspb.2017.2242

Holzschuh A., Steffan-Dewenter I. and Tscharntke T., 2008. *Agricultural Landscapes with Organic Crops Support Higher Pollinator Diversity*, Oikos, 117(3): 354-361, https://www.jstor.org/stable/40235312

Lentini P.E. et al., 2012. *Supporting wild pollinators in a temperate agricultural landscape: Maintaining mosaics of natural features and production,* Biological Conservation, 149 (1): 84-92, https://doi.org/10.1016/j.biocon.2012.02.004

Mathevet, R., Vuillot, C. and Sirami, C. 2014. *Effective nature conservation on farmland: can we change our own models, not just the farmers'?* Conservation Letters, 7 (6): 575-576

Annexes

Table 1. BeeLife comments on the GAEC proposed post 2020

Code	Focus	Measure in CAP post 2020	BeeLife comments
GAEC 1	Climate Change	Maintenance of permanent grassland based on a ratio of permanent grassland in relation to agricultural area	This is a good measure but authorities should pay special attention to the veterinary products used in animal husbandry, as well as biocides used for vector control. For further details, please see the report "How pesticides used in livestock husbandry threaten bees", available at: http://link.bee-life.eu/reportpesticideslivestock
GAEC 2	Climate Change	Appropriate protection of wetland and peatland	Good measure for pollinator protection, mainly if it involves low input approaches.
GAEC 3	Climate Change	Ban on burning arable stubble, except for plant health reasons	Apart from banning the burning of arable stubble for its obvious impact on soil organic matter (including pollinators species nesting in soil), the systematic soil treatment of insecticides, fungicides and herbicides should be avoided as they as well highly impact the soil organic life.
GAEC 4	Water	Establishment of buffer strips along water courses	This is a good tool to reduce water pollution, which inherently involves that the plants in the buffer strips will absorb the pollutants going out of the treated fields. This is a reality that science and field practitioners have often described (Kruepke et al., 2012; Botias et al.., 2015; Simon-Delso et al. 2017; Tosi et al., 2018). The botanical profile of such buffer strips needs to be considered carefully by authorities, who may be tempted to profit from this measure to achieve a twofold objective: reduce water pollution and increase the resources and habitat of biodiversity. Should buffer strips contain plants of interest to pollinators or biodiversity, authorities may be putting biodiversity at risk. Therefore, authorities need to make sure that this GAEC goes hand-in-hand with a reduction of production inputs such as pesticides, by imposing the implementation of integrated pest management or similar approaches.
GAEC 6	Soil protection and quality	Tillage management reducing the risk of soil degradation, including slope consideration	Good measure for pollinators if soil is tilled the least possible. In doing so, soil biodiversity, including pollinators nidifying in the soil can be preserved from being destructed.
GAEC 7	Soil protection and quality	No bare soil in most sensitive period(s)	Good measure to avoid erosion. Cover crops of plants/varieties with interest for pollinators in areas previously occupied by crops treated with persistent and/or systemic pollutants (Simon-Delso et al., 2017).
GAEC 8	Soil protection and quality	Crop rotation	Crop rotation can help farmers reduce their dependence on fertilizers and pesticides. It should include cycles of minimum 5 years, ideally 7 years, with a maximum of two crops impacting the soil during the duration of the rotation, e.g. sugarbeet, potatoes, carrots, chicory, etc. Among the crops that could be included in the rotation that have special interest for pollinators we have: oilseed rape, sunflower, flax, vitacea plants, cameline, alfalfa, lupin clover, bird's-foot trefoil, buckwheat, corn, aromatic plants, crops of intercropping: phacelia, sunflower, mustard, radish, cabbage, pulses, vetch, tuberous pea, etc.

GAEC 9	Biodiversity and landscape	Maintenance of non-productive features or areas, including a minimum share of agricultural area devoted to non-productive features or areas. ·Retention of landscape features ·Ban on cutting hedges and trees during the bird breeding and rearing season ·As an option, measures for avoiding invasive plant species	See text box 1 on “non-productive area”. If set up in an intelligent way, these areas provide and support ecosystem services, including pollination and pest control. In parallel, these non productive areas can result in a diversification of the production of the farmer, by producing for example timber, fruits, honey, etc.
GAEC 10	Biodiversity and landscape	Ban on converting or ploughing permanent grassland in Natura 2000 sites	Well managed permanent grassland provide a source of food and habitat to plenty of wild fauna.

Annexes

Table 2: SMR as voted by the COM AGRI – Annex III, RULES ON CONDITIONALITY PURSUANT TO ARTICLE 1

Focus	Main Issue	Requirements and standards		BeeLife Comments
Climate and Environment	Water	SMR 1	Directive 2000/60/EC of 23 October 2000 of the European Parliament and of the Council establishing a framework for Community action in the field of water policy: Article 11(3)(e) and Article 11(3)(h) as regards mandatory requirements to control diffuse sources of pollution by phosphates	"Enhanced conditionality" would involve avoiding water pollution by other chemicals used in agriculture and livestock like pesticides, biocides or veterinary products. These as well need to be included into the SMR 1.
		SMR 2	Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources (OJ L 375, 31.12.1991, p. 1): Article 5	Catch and cover crops aimed to reduce nitrate pollution, mobilise pesticide residues retained in the soil and expose pollinators to pollutants drifting from the place of treatment (e.g. Simon-Delso et al., 2017). In biodiversity poor landscapes, such as large areas of arable crops including cereals, sugarbeet, potatoes, etc. (please note that these crops hardly provide any food resources to pollinators) avoid bee-attracting catch/cover crops to bloom.
	Biodiversity and landscape (protection and quality)	SMR 3	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (OJ L 20, 26.1.2010, p. 7): Article 3(1), Article 3(2)(b), Article 4(1), (2) and (4)	
		SMR 4	Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild flora and fauna (OJ L 206, 22.7.1992, p. 7): Article 6(1) and (2)	Compliance **to all** these articles should be an eligibility criteria for receiving public support.

Public health, animal health and plant health	Food safety	SMR 5	Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (OJ L 31, 1.2.2002, p. 1): Articles 14 and 15, Article 17(1)1 and Articles 18, 19 and 20	Compliance **to all** these articles should be an eligibility criteria for receiving public support.
		SMR 6	Council Directive 96/22/EC of 29 April 1996 concerning the prohibition on the use in stock farming of certain substances having a hormonal or thyrostatic action and beta-agonists, and repealing Directives 81/602/EEC, 88/146/EEC and 88/299/EEC (OJ L 125, 23.5.1996, p. 3): Article 3(a), (b), (d) and (e) and Articles 4, 5 and 7	Good measures to avoid contamination of beekeeping products with these substances.
	Animal diseases	SMR 11	Regulation (EU) 2016/429 of the European Parliament and of the Council of 9 March 2016 on transmissible animal diseases (OJ L 84, 31.3.2016, p.1) Article 18(1), limited to foot-and-mouth disease, swine vesicular disease and blue tongue.	Since many disease vectors are insects, authorities should avoid the preventive treatment in open air of buildings, transport material or material used in animal husbandry with biocides for vector control.
	Plant protection products	SMR 12	Regulation (EC) No 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products on the market and repealing Council Directives 79/117/EEC and 91/414/EEC (OJ L 309, 24.11.2009, p. 1): Article 55, first and second sentence	Application of integrated pest management should be an eligibility criterion for payment under the first pillar. Article 53 and 67 of the 1107/2009 to be included: (1) demonstration of consistent implementation of IPM at national scale must be a precondition for any Member State in order to grant emergency authorisations of pesticides; (2)farmers need to register their pesticide use and this information should be publicly available so that other field operators are informed about potential risks for their work (e.g. beekeepers, organic producers, etc.)
		SMR 13	Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for Community action to achieve the sustainable use of pesticides (OJ L 309, 24.11.2009, p. 71): Article 5(2) and Article 8(1) to (5) Article 12 with regard to restrictions on the use of pesticides in protected areas defined on the basis of the Water Framework Directive and Natura 2000 legislation. Article 13(1) and (3) on handling and storage of pesticides and disposal of remnants.	Application of integrated pest management should be an eligibility criterion for payment under the first pillar. Article 14 of the Sustainable Use Directive needs to be included as eligibility criterion: farmers to uptake IPM since 2014.

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