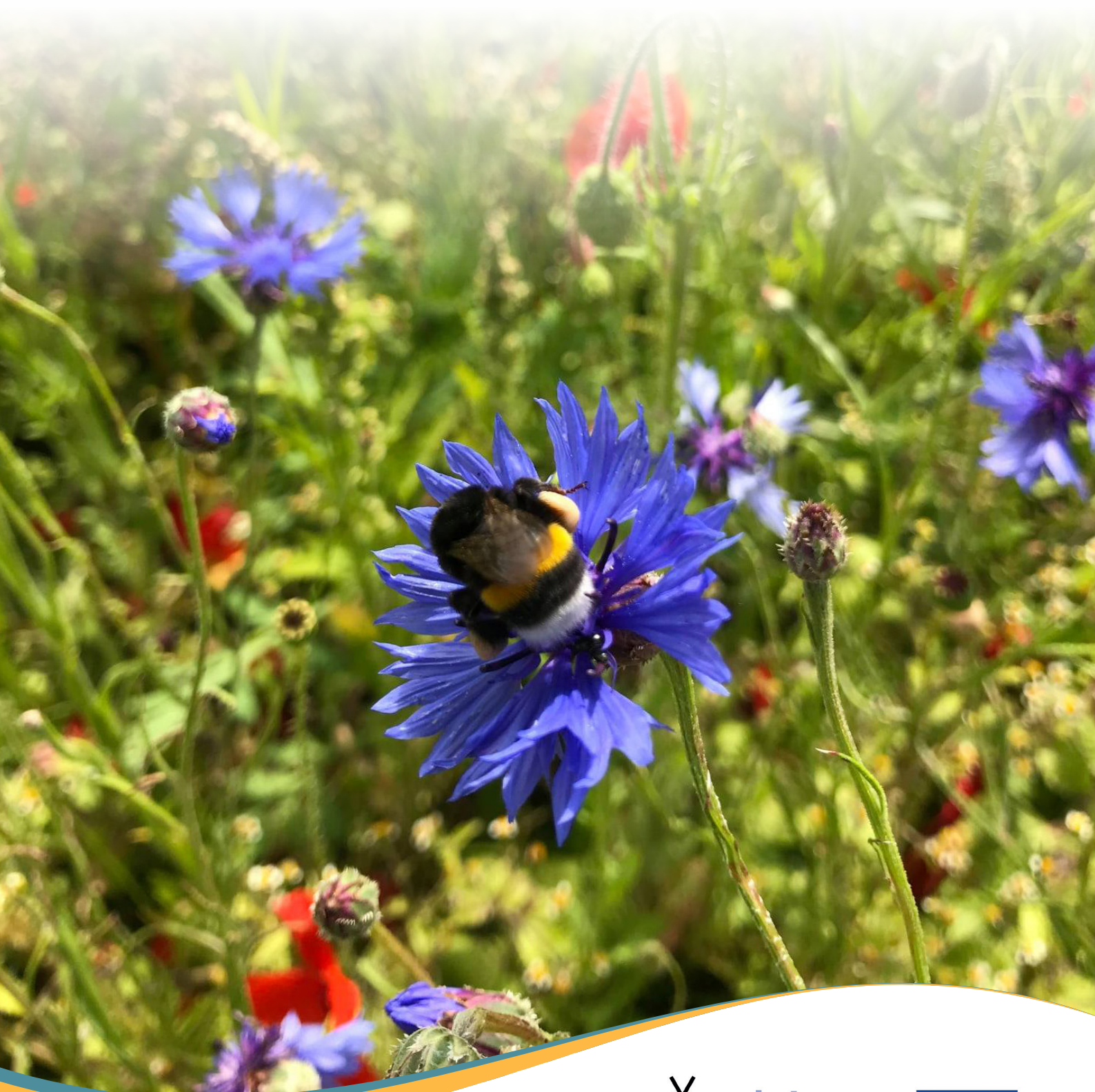




BEESPOKE

Benefitting Ecosystems through Evaluation of food Supplies for Pollination to Open up Knowledge for End users

Policy Recommendations



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FRAMEWORK OF THE CAP 2023-27

The new CAP (Common Agricultural Policy) 2023-27 entered force in all EU Member States (MS) on 1 January 2023. All MS have made CAP strategic plans, considering objectives and targets of key European Union (EU) laws on climate change, energy, water, air, biodiversity and pesticides. These plans are developed separately by each MS and then approved by the Commission. They deliver a broad range of plans with many differences between the MS.

The enhanced conditions require that farmers increase biodiversity with certain conditions. For example, with arable land 4% must be devoted to non-productive features and areas, including fallowing land. This is a requirement that could deliver many benefits for biodiversity across the EU. However, due to the current pressures on agriculture (e.g. the Ukraine crisis and rising cost of farming inputs) the requirement for non-productive land has been made more flexible and less rigorous. This means it may deliver fewer benefits for target species. To increase biodiversity on non-productive areas, appropriate choices, including better maintenance could help deliver areas of higher biodiversity quality that are tailored for local aims, for example wildlife enhancement, which also protects water. To achieve such benefits specialist on-farm advice is required and should be rolled out across MS.

A new instrument in the CAP is the introduction of ECO-Schemes (ES). Member States need to spend at least 25% of their direct payment budget on this scheme which is a new tool aimed at applying eco-friendly measures on a wide scale. These practices (actions) will have a positive impact



on the environment. In the different MS CAP strategic plans, schemes include implementing and maintaining diverse flora. This is a very positive ambition, but to fully benefit pollination and/or biodiversity will need to be implemented in the right location, with a seed mixture designed for the locality with appropriate management and supporting tailored advice.

A farmer must claim for an ES through the geo-spatial application system where they must declare the agricultural land parcels of the holding and appoint the parcel and the type of eco-scheme. This approach to claims will become more frequent in the future, through mobile app systems where field data can be recorded and stored. Such an administrative system must be highly effective and user friendly. However, to increase biodiversity goals, the knowledge and habitat management skills of the farmer needs to be improved. This would be best achieved through targeted advice where farmers are trained at practical, field-based events. In the different MS's, strategic actions are planned to support, advise and to train farmers to develop more efficient, resilient and sustainable agricultural systems, thus there is a framework but this needs effective implementation to increase farmer's biodiversity knowledge and skills.

At least 35% of the rural development funds are allocated to measures to support climate, biodiversity, environment and animal welfare. Agri-Environment Schemes (AES) are important for the conservation of farmed environments of high nature value, for the protection of agroecosystems and arable wildlife. In most MS, farmers can have a sown flower areas as part of their AES, however uptake has been low despite these being one of the most valuable habitats for a range of wildlife. Ways to increase uptake need to be explored.



RECOMMENDATIONS

Sustainable protection of wild bees in agricultural areas assumes a wide range of measures of which maintaining natural flower-rich vegetation, grasslands, flowering hedges and woodland, 'messy corners', regulating pesticide, etc., form the basis. These can be reinforced with additional supporting measures such as establishment of flower fields/edges on farms.

Establishment of flower areas within fields is a measure promoted as AESs in several MS. The following recommendations are made specifically for flower areas and can be considered when developing AES's or Eco Schemes (ES):

1. Seed mixture – use of locally adapted species

- ✓ **Locally adapted** (soil, nutrient condition, species ...) seed mixtures, should be local to the region. Local plants are more likely to act as good host plants for insects as they have evolved together. Establishment will also be more successful and lead to plants with the same characteristics and diminish the risk of flora not endemic to the region being introduced. Within regions, soil types are also likely to vary and therefore further refinement of the seed mix may be needed. Producing seeds locally will ensure plants are best matched to their environment.

The use of hybrids or cultivars (often sterile, double flowered, ...) should be avoided.

- ✓ Adding **agricultural crops** (buckwheat, black mustard, dill, fodder radish, ...) can be a good alternative/supplement in regional mixtures. Flowering of these crops supports wild bees and reduces the seed cost in the short term. The addition of grass is also possible but should be limited; they tend to become dominant in the medium- to long-term.
- ✓ Both **annual or perennial** wildflowers are recommended as they have different flowering periods and qualities and will ensure food supply for pollinators throughout the year. Perennial flower strips can match perfectly with perennial

crops, annual flower strips with annual crops. Perennials have the advantage of having a longer flowering period than most commercial annual borders in addition to providing year-round nesting and shelter for pollinators. They are also hosts to different insects and will support a wider range of pollinators. Perennial flower borders develop more slowly and are less flower rich the first year. This can be overcome by combining in the first year with an annual strip or adding annual seeds to a section of the perennial mixture (e.g. poppy, cornflower, ...).

- ✓ A distinction could be made between widely applicable (and **affordable**) mixtures aimed at supporting biodiversity in general (wild bees, hoverflies, butterflies, ...) and a slightly more specialized mixture for pollination, supporting endangered wild bees or pest control in crops.

Within the BEESPOKE project, various flower mixtures were developed that meet the different requirements of various wild bee groups (e.g. solitary bees) or for specific crops to encourage their most valuable pollinators and natural enemies.

2. Sowing and managing flower strips – more flexibility

There is a need for more flexibility in AES's so farmers can deal more appropriately with weed problems and weather conditions: more flexibility in sowing and mowing dates, in relocating measures, and designing more suitable customized seed mixes (developing a broad seasonal flowering period, natural pest control, ...).

- ✓ **Sowing:** This is best done in autumn (~September) for control of weed pressure and seed emergence, possibly in combination with a false seedbed. Early frost needs to be a consideration in some regions. When locating flower areas, account for the presence of pollinator nesting opportunities (hedges, dead wood, unpaved verges, slopes, etc.) in the immediate vicinity (e.g. 200 meters). Sown areas are also best located in sunny locations and avoiding heavy, clay soils.

- ✓ **Flexible mowing management:** Farmers can respond to various problems such as excessive grass or weed pressure. Additional mowing can stimulate a second flush of flowers lower in the canopy depending on the year and plant composition. Flexibility in weed management in agriculture can be an asset but should avoid compromising other wildlife aims, e.g. ground-nesting birds.
- ✓ **Weed pressure:** This can lead to difficulty in establishment of flower areas, but is overcome by proper soil preparation, sowing in autumn or by adaptive mowing management. A degree of flexibility regarding siting of habitats (variable location in time during contract period) where ES or AES could also be implemented to fit within farm management/cultivation plans could provide more wildlife on the farm.
- ✓ **Injurious weeds:** Balfour *et al.* (2022)¹ show that the abundance and diversity of pollinators visiting injurious weed species such as common ragwort (*Jacobaea vulgaris*), creeping thistle (*Cirsium arvense*), spear thistle (*C. vulgare*), curled dock (*Rumex crispus*) and broadleaved dock (*R. obtusifolius*) are more

significant compared to some plant species recommended for pollinator-targeted agri-environmental options. This is because their flower morphology allows access to a wide variety of pollinator species, and they produce, on average, four times more nectar sugar than the recommended sown plant species. Injurious weed species are widely distributed and abundant across a variety of landscapes. Given their value to biodiversity, the new policy should provide sufficient directives and financial incentives to persuade land managers to tolerate injurious weeds (e.g. thistles). Any changes to these policies need to consider the balance of practicality, cost (impacts on crop yields and plants of conservation concern), and benefits (effects on biodiversity, ecosystem services, and direct cost savings) of tolerating weeds. To inform evidence-led policy, further work is required in these areas, especially to train advisors and guide farmers.

- ✓ **Size:** Flexibility in the dimensions of the sown area to accommodate available machinery or to fit within corners of fields, small fields or along field boundaries offer farmers more options that will benefit wildlife.





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✓ **Pesticides:** Drift from neighbouring fields is a concern. There is a need to ensure that harmful pesticides (especially insecticides) do not contaminate flower-rich habitats creating an ecological trap. If unavoidable, adjacent areas are best sprayed before sunrise or after sunset (legislation forbids the application of neonicotinoids). A grass buffer strip between flower areas and the adjacent crop can also have a buffering effect.

3. Encourage locally produced seed and engage in knowledge exchange. Work towards a better regulation/quality control on commercial seed mixtures used for agro-environmental measures and by public authorities

All too often, seed mixtures are used (in the context of AESs and by public authorities) that do not meet the above standards. These mixtures are used as locally produced seed is less widely available, more costly and there is insufficient knowledge of it.

Seed origin needs to be better regulated. Only wildflower seed produced from the same region should be sown. All regions should aim to have

legislation gradually introduced over the next 10 years, starting with a few commonly sown species that are locally produced and adapted to local conditions. This needs to be implemented in collaboration with seed producers to assure the ambition in the region. This initiative would also offer new opportunities for farm businesses supported by the right incentives to stimulate the market and reach net zero aims. There would also be opportunities to establish seed certification and regulation for use under AESs.

Other authorities such as municipalities, government departments, ... (in parks, road verges, ...) should use flower mixtures with locally produced seed, thus stimulating the “seed market/supply side” towards locally produced seed.

4. Remuneration

Farmers should be better informed of the intrinsic benefits of pollination and natural pest control of floral areas and other habitat-enhancing measures on their farms.

However, awareness of the pollination deficit seems insufficient to convince farmers to implement

¹ Balfour, Nicholas J., and Francis LW Ratnieks. “The disproportionate value of ‘weeds’ to pollinators and biodiversity.” *Journal of Applied Ecology* (2022).

protection measures for wild pollinators. Moreover, for many farmers, the pollination deficit is less relevant, but they can nevertheless contribute to wild pollinator biodiversity.

Through financial support or regulation (CAP conditionalities) farmers can be encouraged to participate in flower areas ES or AES.

Payments need to be fair considering the cost of high biodiversity value seed mixtures, revenue loss and management. Alternatively, they could be flexible e.g. payments by result for number of species which establish, taking into account soil types (example, lower target for clay soils compared to chalk). Such an approach, would require more policing to ensure targets are met.

5. Legislation

Flower borders established voluntarily by farmers for wild pollinators (e.g. as an agri-environmental measure) are temporary in nature. These voluntary measures should not take on a permanent legal character such as applies to permanent grassland.

6. Advisory services

Successful implementation of agro-management measures requires knowledge, experience and tools not always present among farmers. Therefore, proper advice is important:

- ✓ Overall picture – what farmers can do for wild bees: lost corners, planting flowering hedges/ wood edges, woodland, species-rich grasslands, nesting facilities and on added value of sowing new flower areas.
- ✓ Farmers need to be properly informed of the benefits of wild pollinators. The added value of pollination, natural pest control and biodiversity enhancement need to be estimated correctly and valued. Farmers need this knowledge so that they can evaluate the cost/benefits and make informed decisions.

- ✓ Use of tools to allow farmers to identify whether they have a pollination deficit and, linked to this, where to locate new areas of flower-rich habitat and the amount of area needed to enhance pollinators. A prediction and advisory tool for farmers, for crop pollination (deficiency) was developed in the BEESPOKE project by the University of Ghent.

- ✓ Practical advice on establishing and managing all types of flower-rich habitats is needed because this requires specific expertise that farmers may not have (as specified above). Many free guides were produced in the BEESPOKE project and included 1) **Nature Based Solutions: A guide to the management and benefits of farmland habitats** 2) **How to successfully establish perennial wildflower areas**. Many accompanying videos were also produced and are available on the BEESPOKE YouTube channel.

7. Engagement actions

Policy makers, agricultural collectives, nature conservationists and agricultural advisors who want to increase farmers' engagement with ES or AES should improve communication and information on options available with flowering habitats and the expected outcomes of ES/ AES. Increasing public awareness of farmer's conservation efforts and engaging farmers more in the development of schemes, can have a big impact on farmers participation. To increase participation and engagement, links should be fostered between local stakeholders.

BEESPOKE PROJECT OUTPUTS

GUIDES

<https://northsearegion.eu/beespoke>

VIDEOS

<https://www.youtube.com/@beespoke-interregnorthsear2>



The **BEESPOKE project** (Benefitting Ecosystems through Evaluation of food Supplies for Pollination to Open up Knowledge for End users) aims to increase levels of pollinators and crop pollination at local and landscape scales by providing land managers and policy makers with new expertise, tools and financial knowledge to create more sustainable and resilient agroecosystems.

For further information and other free guides visit:
www.northsearegion/beespoke.eu



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