Evidence to support consideration of a requirement for at least 10% of agricultural land being under non-productive features/areas: An annotated reference list by ENCA

Evidence supportive of 10% area requirement under high-diversity landscapes[1] / non-productive features

- Pe'er *et al* (2020), Action needed for the EU Common Agricultural Policy to address sustainability challenges. People and Nature.
  - **To address farmland biodiversity, specific policy recommendation to restore the pre-2009 requirement for CAP recipients to set aside at least 10% of agricultural area for nature and semi-natural habitats, like buffer strips, fallow land or landscape features.**

- Oppermann *et al* (2012), Common Agricultural Policy from 2014 – Perspectives for more Biodiversity and Environmental Benefits of Farming? Project report sponsored by the German Federal Agency for Nature Protection (BfN).
  - **A proportion of 10–15% Ecological Focus Areas in good condition and with good management is necessary in order to achieve sustainable positive effects for biodiversity. The study goes on to reiterate that the extent of EFAs must reach at least 10 % in order to significantly increase the habitat suitability for species tied to a particular agro-ecosystem.**

- Oppermann *et al* (2008), Bedeutung der Flächenstilllegung für die biologische Vielfalt Fakten und Vorschläge zur Schaffung von ökologischen Vorrangflächen im Rahmen der EU-Agrarpolitik [Significance of set-aside for biodiversity: Facts and suggestions for creating ecological priority areas within the framework of the EU agricultural policy] Study by IFAB (Institut für Agrarökologie und Biodiversität) for NABU and BfN.
  - **To slow species decline, stipulates a commitment to ecological priority areas in the order of 10% of a farm's arable and grassland areas. The 10% share is derived from a number of studies which demonstrate the clearly positive effects on biodiversity at this scale.**

- BIOGEA (2020), BIOGEA Policy Recommendations 2020: A Green Architecture for Green Infrastructure: How the future CAP could support Green and Blue infrastructures, Policy Brief.
  - **At least 10% of farmland at the farm level should be ecologically highly effective. This means semi-natural and connectivity features, but not productive measures.**

[1] According to reports in the specialist press, the Commission seems sensibly to have repackaged the concept of 'non-productive features or areas', seen in GAEC 9 of the proposed new CAP conditionalities, to reframe it instead in the EU Biodiversity Strategy for 2030 as 'high-diversity landscapes'.

- Meichtry-Stier *et al* (2014), Impact of landscape improvement by agri-environment scheme options on densities of characteristic farmland bird species and brown hare (*Lepus europaeus*). Agriculture Ecosystems & Environment 189, pp.101–109.
  - **Analysis of the impact of the quantity and quality of different ecological compensation area (ECA) options on densities of nine farmland bird species and the brown hare in a Swiss arable landscape. The study concludes that a minimum of 14% of high-quality ECAs (wildflower areas and high-quality meadows) and semi-natural habitat is needed to sustain target densities of many bird species of conservation concern. The quality of the ECA options was also important, as densities were positively related to the amount of meadows of high ecological quality, but not to the amount of meadows of low ecological quality.**

- Sharps *et al* (2019), Predicting the extent of agri-environment provision needed to reverse population declines of farmland birds in England. Report to Natural England on project ECM52672 (module 2), unpublished/forthcoming.
  - **For farmland birds, a minimum of 7%, and maybe aiming for or averaging 10%, of farmed area in farmland bird friendly agri-environment options is necessary to achieve population stability and positive growth rates.**

- Dicks *et al* (2015), How much flower-rich habitat is enough for wild pollinators? Answering a key policy question with incomplete knowledge. Ecological Entomology, 40, pp.22–35.
  - **For pollinators, basing figures on the lower end of the range of estimates of pollen demand for the main bee species, at least 2 ha per 100 ha (i.e. 2%) need to be flower rich habitat. Further evidence suggests that a greater area is needed in pastoral areas – at least 7 ha per 100 ha, although there may be scope to improve the specification of legume and herb-rich sward options to give a greater density of flowers.**

- HGCA (2013), Managing uncropped land in order to enhance biodiversity benefits of the arable farmed landscape: The Farm4bio project. [See also: Henderson et al (2012), Effects of the proportion and spatial arrangement of un-cropped land on breeding bird abundance in arable rotations, J. Appl. Ecol., 49, pp. 883–891.]
  - **Overall a positive response to the proportion of uncropped land was found for 17 of the 21 bird species included in this project. Farms with <3% uncropped land supported approximately 60% less birds than those with >10%, and even those with <5% were relatively under-populated.**

- Langhammer *et al* (2017), A modelling approach to evaluating the effectiveness of Ecological Focus Areas: The case of the European brown hare. Land Use Policy Vol. 61, pp.63–79.
  - **Results indicate that overall, 5% coverage with Ecological Focus Area is insufficient to improve the living conditions of the brown hare to a necessary degree. An increase of permanent set-asides and extensive grasslands from 5% to 7% enhances the female brown hare abundance by 22% and 57%. From about 10% onwards, there seems to be a plateau effect, indicating that other factors controlling population density, such as predation or intra-specific competition, limit the carrying capacity of the landscapes.**

- Traba *et al* (2019), The decline of farmland birds in Spain is strongly associated to the loss of fallowland. Scientific Reports 9, 9473.
  - **Tracked the decline in farmland birds in Iberia to the loss of fallow following the abolition of set-aside. Suggests that a return to the obligation to keep at least 10% of farm land as fallow may help restore the conditions previous to 2008.**

- Roberts and Pullin (2007), The effectiveness of land-based schemes (incl. agri-environment) at conserving farmland bird densities within the U.K. Systematic Review No. 11.
  - **This systematic review identified 11 papers investigating the effect of set-aside provision on farmland bird densities in the UK. In both winter and summer surveys there were significantly higher densities of farmland birds on fields removed from production and under set-aside designation than on conventionally farmed fields.**

- Butler *et al* (2010), Quantifying the impact of land-use change to European farmland bird populations. Agriculture, Ecosystems and Environment, No 137, pp.348–357.
  - **Loss of compulsory set-aside exacerbates losses in cropped area resources for farmland biodiversity, with predictions that by 2020, the European Farmland Bird Index might be 8% lower than if current conditions persist in agricultural landscapes.**

- Šarapatka et al (2008), Recommendations for organic farming leading to a higher benefit for nature and landscape. Bioinstitut, o.p.s. Olomouc.
  - **Discusses (in Czech) in Chapter 4 the Swiss system of ecological compensation areas (pp. 8–16) and the 7% requirement for these areas.**

Evidence emphasising importance of eligibility definitions and management of areas / features

- Allen *et al* (2012) Maximising environmental benefits through ecological focus areas. Institute for European Environmental Policy. Report commissioned by the Land Use Policy Group.
  - **Generally, the greater the proportion of uncultivated land present on a farmed holding, particularly one that is managed for environmental purposes, the greater the positive impact on the environment. However targeted interventions have been shown to deliver greater environmental benefits within a smaller area providing they are in the right location, are retained for a significant period of time, and managed in an appropriate way.**

- Pe'er *et al* (2017), Adding Some Green to the Greening: Improving the EU's Ecological Focus Areas for Biodiversity and Farmers. Conservation Letters.
  - **Study based on expert opinion indicates that most Ecological Focus Area options that were considered beneficial to biodiversity had low uptake among farmers. Since the EU-average of the proportion of EFA surfaces registered was already greater than 10%, recommends focusing**

efforts on improving EFA option design and implementation, considering biodiversity, the determinants of farmers' decisions, and current obstacles to EFA implementation.

- Pe'er *et al* (2014), EU agricultural reform fails on biodiversity. Science 344, pp.1090–1092.
  - **Recommendation to improve Ecological Focus Area effectiveness by reducing exemptions, refining management criteria for qualification, and expanding their total area, building on country-level evidence and experience.**

- Westhoek *et al* (2012), Greening the CAP: An analysis of the effects of the European Commission's proposals for the Common Agricultural Policy 2014-2020. Note by PBL Netherlands Environmental Assessment Agency.
  - **The ecological focus area measure is probably the most promising of the three greening requirements, with respect to both biodiversity and greenhouse gas, although its effect depends strongly on its design. As applied they are at best likely merely to slow the projected decline in agricultural biodiversity and loopholes could render the whole measure almost ineffective.**

- Winspear *et al* (2010), The development of farmland bird packages for arable farmers in England. Aspects of Applied Biology, No 100, pp.347–352.
  - **Evidence suggests that farmland bird populations are likely to be increased if farmland bird measures are adopted on at least 7% of arable farmland. The scale of the requirement could be reduced to 3-4% of arable farmland by adopting a more prescriptive package of measures.**

- **The PARTRIDGE project** (2017–23) involves partners across five countries (Netherlands, Belgium, Germany, Scotland & England) at ten farmland demonstration sites, and aims to demonstrate how farmland biodiversity can benefit from measures developed for the grey partridge, using it as a key indicator species of farmland ecosystems health.
  - **A key aspect of the approach is that over 7% of each demonstration site is dedicated to habitat that will benefit this species, through existing wildlife habitat and creation of new high-quality habitat (i.e. wild bird mixes, beetle banks, winter stubbles and conservation headlands).**

- Cole *et al* (2020), A critical analysis of the potential for EU Common Agricultural Policy measures to support wild pollinators on farmland. Journal of Applied Ecology, Vol 57(4).
  - **To conserve pollinators and help protect pollination services, there is a need to create a variety of interconnected, well-managed habitats that complement each other in the resources they offer. Also fundamental will be obtaining a better understanding of the level of resources required to sustain healthy populations, and also the level of resources currently present in a landscape.**