

The CAP & Functional Biodiversity

Functional Biodiversity

Agro-ecosystems, biodiversity and the natural environment perform services that are critical for food production. Permanent grasslands, fallow areas and landscape features such as hedgerows, tree lines and wetlands provide valuable functions like water storage and filtration, nutrient cycling or soil protection¹. In addition, they provide habitats for biodiversity which in turn provide agronomic services such as pollination, pest control through 'beneficial' insects and nutrient cycling and soil formation through living organisms in soil.

However, the ability of the natural environment to provide eco-system services on farmland has been seriously undermined by rapid changes to the farming practice across Europe, driven in part by the CAP. A shift to intensive, specialised and high-input/output systems has led to the loss of many habitats and landscape features, natural resource degradation and functional biodiversity decline.

Despite the clear value of ecosystem services provided by functional biodiversity and the natural environment, the market currently fails to reward those who properly manage the land. Policy intervention is therefore required to ensure farmers manage their land in ways which protect ecosystem service delivery.



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Facts & figures

- At least 56% of European crop production depends on, or benefits from, insect pollination².
- For crops destined for direct human consumption, the annual economic value of insect pollination is estimated at €14.2 billion within the EU25 and €153 billion worldwide. The value for all crops is likely to be far higher³.
- The EU Directive 2009/128/EC on the sustainable use of pesticides obliges EU farmers to apply Integrated Pest Management (IPM) from 2014. The protection and proactive use of natural predators (biological control) form an integral part of IPM.
- Each adult Ladybird beetle will eat up to 5,000 Aphids in its 1-year lifespan⁴.
- 90% of pests are prevented by the ecosystem service biological control⁵.
- Services provided by soil organisms underpin soil stability and fertility. The costs of soil mismanagement are estimated at more than €1 trillion a year worldwide⁶.

Recommendation

The CAP needs profound change to support the kinds of farming Europe needs in the 21st century. Public money must support public goods. Taxpayers must see real value for the billions they invest in the CAP. Those who farm sustainably must be effectively supported while those who harm the environment should receive no public money.

If politicians are serious about protecting functional biodiversity and ecosystem services they must support a fundamental CAP reform now.



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Environmental set-aside: a refuge for functional biodiversity

Hedges, small woods, ponds, etc. are very useful to help survival and enhancement of beneficial organisms (predators, pollinators)⁷.

In the 1992 CAP reform, set-aside was made mandatory for production purposes but this measure became a *de facto* form of ecological infrastructure. This resulted in different types of fallow⁸. While the extent of environmental delivery, and the species most positively affected, depend greatly on the nature, position, scale and management of fallow land, numerous studies show that

EU set-aside and similar fallows created by short-term land abandonment, has provided biodiversity benefits and has helped to reduce diffuse pollution and soil erosion⁹.

After the abolishment of set-aside, a few European Member States offered farmers an option to apply for funded agri-environment schemes to be rewarded for establishing and maintaining such ecological infrastructures for 5-10 years and more. Nonetheless, a lot of the valuable ecological infrastructure was lost¹⁰.



Organic farming delivers clear benefits

In 2000, the Research Institute of Organic Agriculture released its findings from a 21-year long study¹¹ comparing organic and conventionally managed arable fields.

The study revealed that the density of arthropods was almost twice as high on organic fields which can be explained by both richer weed flora on organic fields and a lack of prey species on conventional fields. Organically managed soils also contained 30-40% more earthworms which are extremely important for enhancing soil fertility and structure.

While the CAP does provide some support for organic farming in Europe, this is limited to 2nd Pillar agri-environment schemes which receive a very small share of the overall budget. Due to the necessity of national co-financing, support is insufficient in some Member States. A better targeted organic basic premium with the possibility of organic top ups under the 2nd Pillar for special crops and features would be more helpful.



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Inadequate support for biological control

The targeted use of specialist insect species to tackle pests is relatively uncommon in EU agriculture as most farmers tend to use pesticide applications. However, biological control is slowly spreading and, for instance, the release of the egg parasitoid wasp¹² to control the European Corn Borer¹³ is an accepted method for maize¹⁴.

The wasps (at a rate of 200,000 per hectare) are usually distributed and released as parasitised eggs. In the field, hatched adult wasps lay their eggs into the Corn Borer eggs where

the developing wasp larvae destroy them. To achieve sufficient results, release is repeated twice.

The European Commission¹⁵ has highlighted the importance of informing farmers about alternative methods of pest control, particularly in the run up to 2014 when they will have to apply IPM. There is a clear role for the CAP's Farm Advisory System financed under the 2nd Pillar to help farmers better understand more sustainable and environmentally friendly forms of pest control.

Prepared by:

