Rewarding Environmental Public Goods on Lowland Livestock Farms – Case Study

This case study was prepared to inform the debate on future agricultural policy. It was developed as part of a study to explore how the resources currently spent on CAP basic and coupled payments, as well as agri-environment, could be redirected to improve delivery of environmental outcomes. The projections are based on a number of assumptions and are therefore considered for illustrative purposes only.

Key messages

1. Lowland livestock farms have the **potential to generate greater environmental benefits** in the future.

2. **Farm incomes can be maintained** when combining:
   - Agroforestry
   - 10% of land set aside for biodiversity
   - Improving input use efficiency by using legumes in pasture to replace nitrogen fertiliser.

3. Shifting some land use from agriculture to a primarily environmental focus **on habitat conservation has a negative impact on net profit, but should be easily rewarded through the redirection of current payments.**

4. Environmental outcomes can help make land-based businesses **more resilient to climate change and future challenges.**

What is a public good?

Public goods are all the things we enjoy and value in life, but we cannot buy the way we do with other goods.

Examples of public goods include biodiversity, flood protection, air quality, animal welfare, and cultural values.

In the context of agriculture, public goods generally refer to those activities for which there is no direct market.

Illustration of Environmental Public Goods

Biodiversity e.g. soil biodiversity, pollinators, native woodlands, farmland birds

Water Quality e.g. soil health, riparian woodlands, healthy peatlands

Flood Management e.g. woodlands, farm wetlands, healthy peatlands, hedgerows, agroforestry, re-meandering rivers.

Air Quality e.g. woodlands

Soil Health e.g. min till, reversion to grasslands, hedgerows

Climate Change Mitigation e.g. legumes and herb-rich swards, woodlands, agroforestry, hedgerows, peatland restoration

Climate Change Adaptation e.g. natural flood management, agroforestry for shade and shelter

Public Access to land e.g. gates

Landscape e.g. diversity of habitats, linear features

Findings

In addition to the status quo (baseline), the following are three alternative illustrations with an outline assessment of the potential to improve environmental outcomes and an indication of their financial impact. Further examples can be found in the full report.

FBS* representative farm model

Baseline represents the current situation of the farms as it might look 12 years in the future, on a business as usual basis.
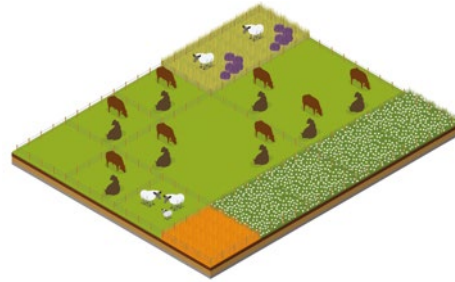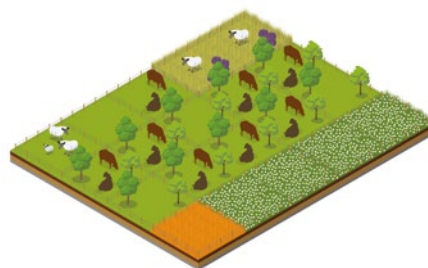
FBS* representative farm model

Uncropped field margins (5% of farm area) and input use reduction (by 10%), with same output.

Financial impact ↔

An increase in farm profitability as a result of improved efficiency while environmental set aside has very little impact.

Public goods ↑

Reduced water pollution, reduced run off and soil erosion and some biodiversity gains.
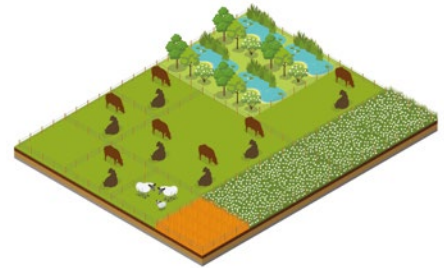
FBS* representative farm model

Agroforestry, based on 50-100 trees/ha in permanent grassland fields.

Financial impact ↔

Focused on individual trees in permanent grassland and compensating by increasing stocking rates on the remaining grassland, it has very limited financial effect.

Public goods ↑↑

Brings diversity in the farmed landscape with significant benefits for biodiversity. Potential for carbon sequestration and flood mitigation. Reduced run off and soil erosion. Improved animal welfare. Improved air quality.

FBS* representative farm model

Habitat conservation, existing or new creations following prescribed management. Assumed 20% of land (permanent grass and rough grazing) no longer mainly agriculture.

Financial impact ↓

The main focus would be on less productive land, so that the most profitable enterprises can be maintained, but with limited opportunities for savings on fixed costs.

Public goods ↑↑

Boundaries, in-field strips, diverse swards, field wetlands, pollinator zones etc. would boost biodiversity. Some of these measures can also play a role in reducing run off, flood risk and soil erosion.

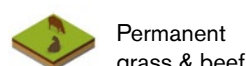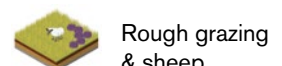## Key: ↑ increase   ↓ reduce   ↔ no impact   *FBS: Farm Business Survey
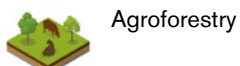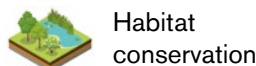
Barley   Clover ley   Fodder   Permanent grass & beef   Rough grazing & sheep

Agroforestry   Habitat conservation   Uncropped field margin

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