

Restoring biodiversity

Restoring biodiversity in crops and encouraging a shift from intensive agriculture practices in the United Kingdom

by Fisher German, United Kingdom



"Britain has had a cheap food policy since the war, but the time has come to re-evaluate our priorities. Pressure on prices has forced farmers to sacrifice ecological protection in the name of productivity. Government subsidies, while designed to encourage sustainable farming, have unfortunately failed to deliver tangible benefits to wildlife. With this in mind, Fisher German, a leading rural consultancy, takes a look at how the role of the farmer is and needs to change in order to restore biodiversity in crops, and encourage a shift from current intensive agricultural practices"

Individual trailblazers are creating new models of sustainable farming, but a complete overhaul of the subsidy system is needed to ensure that all farmers are required to deliver environmental services. Brexit – while a threat to the protections enshrined in EU law – provides an opportunity to reset the balance, ensuring that British farmers are valued for their stewardship of the environment as much as for the food they produce.

Current ‘sustainable farming’ subsidies, under Pillar 1 of EU structures, consist of the Basic Payment Scheme (BPS) and Greening obligations. Under the BPS, farmers are paid a fixed flat rate per hectare, which varies between lowland, upland or moorland.

The Greening obligations, required for further payment, include

the rotation of a minimum number of different crops (Crop Diversification), and the creation of Ecological Focus Areas. In addition, Pillar 2 grants support the UK’s Countryside Stewardship scheme, aimed at maintaining areas of existing high biodiversity, such as limestone grassland or neutral meadows, or specific bird breeding habitats.

The BPS under which farmers are paid regardless of what they produce, providing the land is maintained as farmland, has failed to deliver, because it offers no incentive to engage in ecological protection. Indeed, ‘non-qualifying’ features, wildlife-rich habitats such as ponds, wetlands and wide hedgerows, are actually deducted from the area for which farmers can receive payment, thus encouraging their destruction.

A fair system

With respect to Greening, the rules for Crop Diversification contain many loopholes, while the Ecological Focus Area (EFAs) obligation is poorly specified; it does not enforce improvement, but allows farmers to claim for already existing ecological features, while catch-and-cover crop obligations have failed to improve biodiversity due to narrow restrictions on the species permitted and the duration that they are grown for.

Ironically, frustration with the present system, in which even high inputs and production levels do not enable farmers to compete with cheap food from abroad, is driving innovation. It has encouraged a growing minority of farmers to experiment with more traditional systems, producing higher quality food that commands a premium in the market and simultaneously achieving a multitude of ecological benefits.

Trial and error

One farm has been trialling with using grass and herbal leys utilising a rotational approach which gives nature the opportunity to restore soil health and faunal diversity between crop yields.

In 2011 an 11-hectare field, which had been in continuous arable cropping for over 30 years, was drilled with grass seed and white clover and left for five years, untouched save for grazing sheep and cows. In 2015 the grass was removed and winter oilseed rape and winter wheat were direct drilled into the field. The direct drilling method precludes the need to cultivate the soil for seven years, and so the field is currently acting as a carbon sequestration facility.

According to the farmer's data, soil carbon has increased from 1.4 percent in 2011 to 2.6 percent in 2015; the earthworm population and the structural quality of the soil improved. This in turn provides the foundation for stable crop yields, improving commercial revenue.

On the farm's other fields, the cropping programme has moved away from narrow, two crop rotations of wheat and rape to rotations of eight -10 diverse crops, including spring crops, linseed and catch-and-cover crops which act as green ploughs and cultivators. A suckler herd and sheep flocks now graze the rotational grass leys; and close to 20,000 extra trees have been planted, the area under which will be used for free-range chickens.

The farm has implemented a monitoring programme to record achievements and failures, including annual soil tests and a bird survey to audit the farmland birds.

Looking after the future

The grass leys have meant that soil is now in good enough condition to allow direct drilling for the foreseeable future. This has resulted in a 65-70 percent saving on establishment costs and reduced CO₂ emissions previously caused by in field cultivations prior to drilling. The longer crop rotation has helped to improve the soil health, so that herbicide sprays across the farm have been reduced by 10 – 15 percent as the ground becomes cleaner.

Other estates are experimenting with various forms of 're-wilding', allowing natural re-diversification and enhanced profitability; whilst groups such as the Pasture-Fed Livestock Association (PFLA) are working to encourage the restoration of species-rich grasslands, and also producing higher value meat at lower cost.

The Brexit effect

While it is widely understood that British environmental policy will initially be identical to EU legislation, the current farm subsidies are only guaranteed until 2022.

Speculation suggests that, once farming subsidies are paid directly from the Treasury and not through the EU, the public may increasingly demand quantifiable tax-payer benefits in return for subsidy payments.

The recent indication from Mr Gove that farmers are likely to be paid by results – whether increases in the 'natural capital' of the soil and water or better delivery of biodiversity across the countryside – certainly suggests that change is on the way.

40 years ago, the respected Professor of Agriculture Gerald Wibberley was fond of saying that farmers will always respond to 'price signals', growing whatever society pays them to.

This concept could form the basis of a new contract between farmers and their communities. An EU-funded pilot scheme in Wensleydale, for example, awards farmers with grants, dependent on the biodiversity they can produce in the dale's hay meadows, including re-establishing meadow flora and increasing the



population of wet grassland birds, such as the Curlew. Farmers are already discussing their achievements, and even competing for the best result.

To restore biodiversity and encourage a shift away from intensive farming methods, government subsidies need to be refocused along similar lines.

A new eco-partnership

Any new scheme will need to be more helpful both for farmers and for the environment. It seems highly likely that the declines of many species, and the catastrophic overall reduction in invertebrate populations, must be ascribed to changes in the chemical – and not just agro-chemical – environment; its scale is such that it cannot be due to habitat loss.

It will not be possible to restore biodiversity without addressing methods of production in the area of intensive farming. To do this, it seems clear that much of the BPS funding, (around E25. one billion over 2014-2020), could with advantage be re-directed towards CSS type schemes (Pillar II grants (E2.6 billion 2014-2020) which help to create and restore more biodiversity over a much wider area, as well as farm innovation.

It is not simply a matter of numbers, though. The administration of grants needs to be made simpler and cheaper, and targets need to be more integrated across landscapes. Regulatory focus in UK, unlike most of Europe, has tended to home in on details of individual fields, at the expense of a more comprehensive overview of the potential for reconnecting land and restoring soils and isolated or lost features across larger areas.

Many other considerations

DEFRA's focus on individual fields should be urgently replaced with discussions between groups of landowners (inhibited by present confidentiality rules) about implementing low-input systems and restoring connected habitat systems across a suite of adjoining farms.

These groupings should reflect soils, geology and drainage, and semi-natural vegetation patterns. The countryside is one comprehensive unit, not just individual plots of farmland, and grants and cross-compliance checks should be designed accordingly. As the 'Making Space for Nature' report of 2010, led by ecologist Professor Sir John Lawton, stressed, biodiverse areas need to be bigger, better, and better-connected.

These concerns must feed into the promised overhaul of the system, to ensure that each and every farmer is required to deliver environmental services. These could include carbon sequestration, the storage of floodwater to prevent it flooding a town, and the conservation of biodiverse wildlife habitats. In short, DEFRA should change its philosophy from control to enabling.