Food, Farming & Countryside Commission

Devon Locally Led Inquiry

Environment and Biodiversity

RSA

21st century enlightenment

Contents

Thanks

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Preface

Launched in November 2017, the RSA Food, Farming and Countryside Commission is a major, two-year independent inquiry, funded by Esmée Fairbairn Foundation.

Chaired by Sir Ian Cheshire, with fourteen Commissioners from across sectors, the Commission is tasked with creating mandate for change across our food system, farming sector

and in rural communities; shaping a long term vision for the future that's fairer, stands the test of time and aligns more closely with changing public values and expectations; and propose solutions to achieve the vision, identifying where communities and businesses can take a lead and where a national policy framework is required.

Role of the locally led inquiries

The issues covered by the Commission are wide-ranging and heavily influenced by context. From policy differences in the Devolved Nations, to cultural and topographical differences across the countries, it was clear from the outset of the Commission that seeking local perspectives would be critical.

In England, the Commission sought to set up three locally led inquiries. These inquiries would create a frame for the counties of Devon, Cumbria and Lincolnshire to investigate the issues of the Commission most relevant to them, with the aim of stimulating local debate and informing the national Commission.

Devon's locally led inquiry was chaired by Commissioner and Devonian, David Fursdon, who convened a group of expert stakeholders from across food, farming, agriculture, conservation, policy and health, with members from Devon and neighbouring Cornwall. This Committee identified four key issues: Health and Thriving Communities; New Entrants; Devon's Grasslands, and Environment and Biodiversity. Each of these were explored by their own working group, chaired by a member of the Committee. Work took place between June 2018 and May 2019.

The Devon Committee were ably assisted by Professor Matt Lobley and Beth Dooley from the University of Exeter who acted as lead researchers and authors.

Each working group has produced a summary paper of their work, published in July 2019.

Next steps

The release of these papers coincides with the publication of the RSA Food, Farming and Countryside Commission's report Our Future in the Land. The insight from this working group has contributed to the body of evidence reviewed by the Commission and helped to inform their findings and recommendations.

The Commission runs until October 2019 and the next few months will see it work to bring its recommendations to life. This will include supporting the Devon Committee to publish a single report of their work and recommendations, designed to stimulate local action.

Introduction

At the first meeting of the Devon Inquiry Leadership Group, environment and biodiversity were identified as key themes for the group to consider. A sub-group, chaired by Kevin Cox (a landowner in Devon and chair of the RSPB council), formed to work on this theme.

The following paper summarises the group's work. It is informed by a roundtable discussion held in October 2018 and a series of interviews held with farmers, landowners and conservationists (not mutually exclusive categories) in Devon.

The desire has been to incorporate the views of the panel in as representative a way as possible. However, given the complexity of the issues it should not be taken as read that all organisations were in full consensus about the details of the discussion.

Given the urgency of the issues discussed the group have opted to make recommendations which emphasise the pressing need to act.

The group have chosen to concentrate on three key themes: climate breakdown (mitigation and adaptation), biodiversity loss, and access to advice. The first two pose the greatest existential threats we face and some forms of farming, particularly intensive agriculture, are having a significant negative impact in both these areas. These themes are complex and interconnected; for example, climate breakdown can be a driver of biodiversity loss, but it can also be mitigated by adopting nature-based solutions. Reliable, independent, evidence-based advice is crucial to help farmers and landowners become part of the solution that is needed to address these threats.

Mitigation and adaptation to climate breakdown

To meet the IPCC's target of keeping global temperature rise to 1.5° above pre-industrial levels it will require, in the words of the IPCC's Special Report, 'rapid, far-reaching and unprecedented changes in all aspects of society'. The UK government has announced its intention to move towards an economy-wide target of net zero in line with the Paris Agreement. Farming has a crucial role to play.

Globally, food production accounts for about a third of all emissions (Wallace-Wells, 2019). In the UK, the farming sector is currently responsible for 10 percent of the UK's total greenhouse gas emissions. At the same time, however, farmers and landowners contribute to carbon sequestration and storage, and many are introducing efficiencies that are leading to carbon savings.

Acting now is critical and the panel agreed that Devon could become an exemplar of what a post-carbon world could look like. Managing the transition well could deliver a greener, healthier and more sustainable local environment as well as ensuring our very survival on the planet.

On this issue the panel agreed that national leadership is critical. The goal must be to meet the NFU's target of 'a carbon-neutral, resilient farming and related land-use sector by 2040' 1 but to do it in ways that do not impact negatively on biodiversity and ecosystems. The UK government should be encouraged to set interim targets as part of the carbon budget process. To achieve this, the farming sector will need significant support to transition to a net zero future. The current emphasis on productivity needs to change so that farming becomes both profitable and sustainable; agricultural productivity needs to be redefined to account for the true cost of inputs. The natural capital accounting2 approach to farm support will reward farm businesses that deliver non-market public goods, including carbon sequestration.

To reduce carbon emissions, low-carbon farming practices and systems must become the norm. To achieve this, we need to promote and support a range of approaches including organic and agroecological production. Alongside this, we need to identify and support practices within conventional production that help the move to zero carbon.

As well as supporting this good practice, the panel were supportive of government introducing a polluter pays principle to the farming sector. The consensus was that climate breakdown poses too great a threat for it to be left solely to voluntary measures; regulation must be introduced and enforced to outlaw practices with negative impacts on climate. Agriculture has been protected from paying the full cost of the pollution it produces and this has led to the embedding of poor practice: spreading manure

1 The NFU announced this ambition in May 2019 in response to the UK Committee on Climate Change's goal for achieving net zero greenhouse gas emissions from the UK by 2015.

2 Natural capital accounting is the process of calculating the total stocks and flows of natural resources services in a given ecosystem or region (e.g. soil nutrients). Accounting for such goods may occur in physical or monetary terms.

at the wrong time; soil loss from poor ploughing; uncontrolled use of herbicides, pesticides and artificial fertilisers; carbon, nitrogen and ammonia emissions; subsidised diesel use.

Several farmers cited the low-cost of nitrogen as a significant problem. The widespread use of inorganic fertiliser has led to significant atmospheric deposition of nitrous oxide and ammonia as well as being an unsustainable use of fossil energy. Reduced and more efficient nitrogen use would also save farmers money and reduce water and air pollution, which has negative impacts on people and nature. Some are calling for a nitrogen tax to discourage indiscriminate and unnecessary use; alternatively, a national nitrogen balance sheet would help government develop evidence-based policies and targets to improve the efficiency with which nitrogen is used.

Devon has opportunities to act locally on climate breakdown. Because of its diversity of habitats and land use, Devon is well placed to implement more nature-based solutions to climate breakdown. The key areas for this are the uplands where blanket bog and carbon-rich peatlands need to be protected and brought into favourable condition to secure their embedded carbon; semi-natural grasslands need to be maintained and restored; riparian corridors need to be widened and taken out of agricultural use; and there needs to be a greater emphasis on soil health. On arable farmland, a move to min- or no-till should be encouraged, alongside new plant varieties, provided this does not lead to an increase in herbicide use.

Soil health was highlighted as particularly important, and the panel agreed that farmers should be required to test their soils regularly to encourage active action on improving its health. This would include seeking to increase organic matter so that it sequesters more carbon as well as improving its quality, and to prevent soil erosion from fields. To incentivise farmers to act on improving their soil assets it would be beneficial for there to be national agreed objectives, indices and measures, which are affordable and able to be tracked by all farmers. Ensuring the right mix of advice, regulation and incentives would be key to implementing this successfully.

Farming in Devon is also well placed to meet the changes in the public's food buying habits, especially the move towards more plant-based diets. A return to mixed farming[3] would also help make farming in the county more resilient; individual farmers would be less reliant on just one or two income streams, spreading risk and more able to withstand market and climate shocks. This would involve more land sharing and tiered tenancies, an approach that is being trialled on the Dartington Estate. Farmer clusters that manage land at a landscape-scale would allow groups of farmers to work co-operatively to deliver multiple outcomes from their land and move away from the homogenous landscape that has developed across swathes of the countryside[4]. Such an approach could also help producers capture more of the value of their products in the food chain through co-operative marketing.

3 Mixed farming is a system of farming which involves the growing of crops as well as the raising of livestock.

4 Farmer Clusters is an initiative from Natural England. It recognised that local collaboration is critical to improving nature-based outcomes. With the help of a Conservation Advisor, Farmer Clusters enable farmers and land managers to work more cohesively together in their locality, enabling them to collectively deliver greater benefits for soil, water and wildlife at a landscape scale. There are currently 10 Farmer Clusters in Devon.

Agroforestry and silvopasture5 are viewed as opportunities to support farmers to integrate more trees into their farming business and to promote more woodland creation. Planting the right tree in the right place would have a significant benefit in sequestering more carbon as well as protecting soils and watercourses. It would also deliver a range of other benefits such as increased biodiversity, diversification of farm income, shelter for livestock and improved animal health.

The above proposals need to be backed up by action to reduce greenhouse gas emissions through demand side measures as well, such as cutting food waste, eating more locally produced food and

promoting healthy diets. The latter would involve eating much less, but better quality, meat and dairy, both significant sectors in Devon. Farmers would need support and advice to help identify new markets and/or transition into new production models. Pipers Farm (see case study below) is an example of a group of farms working to achieve this.

5 Agroforestry is a land use management system in which trees or shrubs are grown around or among crops or pastureland. Silvopasture is the intentional combination of trees, forage plants and livestock together as an integrated, intensively-managed system.

Biodiversity loss

Nature is declining globally at rates unprecedented in human history. The recent IPBES Global Assessment Report on Biodiversity and Ecosystem Services finds that around one million animal and plant species are now threatened with extinction, many within decades, more than ever before in human history (IPBES, 2019). Two State of Nature reports (2013 and 2016) show the marked declines of the UK's wildlife since the 1970s: 56 percent of species have declined across all taxa (RSPB, 2016). The intensification of agriculture is the single biggest driver of biodiversity loss. Devon has not escaped this downward trend; the Devon Bird Atlas (2016) showed declines of 60 bird species since the previous atlas was published in 1988 plus eight species that are now extinct as breeding birds in the county (eg nightingale) and several species that are on the brink of extinction (eg curlew, lapwing, turtle dove, grey partridge) (Devon Birdwatching and Preservation Society, 2016). Farmland birds have fared significantly worse than other species. Changes to farming practices are key drivers of these declines: the loss of mixed farming, early cutting of silage, invertebrate declines because of the increased use of pesticides, and too great a reliance on inorganic fertiliser.

The good news is that positive changes to farming practice have led to increases for at least one species. Cirl bunting numbers have increased ten-fold in the last two decades because of sensitive farm management: spring sowing of crops so that stubbles are left over winter, weedy margins, uncut hedgerows.

To reverse the fortunes for species dependent on agricultural land, we need a bold vision for the land. The aim should be to restore what's lost, not just protect what remains. Where appropriate, this could mean reintroductions of species that have been recently lost, such as curlew, and those that disappeared further back, such as beaver and pine marten, both of which have significant benefits for biodiversity.

The new normal needs to close the gap between food production and environmental delivery. To do that, farming must become multi-layered and deliver food production, environmental outcomes, health and wellbeing, access and social welfare.

Farming practices introduced to mitigate the impacts of climate breakdown can also have significant benefits for biodiversity. These include:

- Introducing more trees into the farmed landscape, provided they are the right trees planted in the right places. This could take the form of woodland creation, wood pasture, agroforestry and replacing lost hedgerows
- Planting herbal leys rather than rye grass monoculture: this would benefit pollinators as well as having a positive impact on animal health and sequestering more carbon
- The reincorporation of hay meadows into the agricultural system
- Reducing stocking levels to reduce methane emissions and the reliance on imported feed
- Reintroducing more mixed farming for better soil health and reducing the use of inorganic fertiliser

- Providing greater support for organic farming systems, which have been shown to increase biodiversity
- In arable systems, leaving an uncultivated margin of at least five metres around each field
- Letting hedges grow out and cutting them back every three years instead of annually
- Reducing the use of agrochemicals and the applications of slurry

Currently, the Basic Payment Scheme has the perverse outcome of rewarding farmers for destroying natural habitat, much of which could be of benefit to wildlife and climate mitigation6. This needs to be reversed. The group agreed that farmers and landowners should be incentivised for taking land out of production, or reducing its intensity, where they can demonstrate that it would deliver a suite of public goods, including biodiversity gain, water management and carbon sequestration.

In Devon, with its rich natural heritage, productive farming and biodiversity can co-exist on the same land. The landscape matrix which has evolved over time has the potential, with some adjustments the right changes to management practices, to deliver great products and great wildlife in the future. Areas of high-nature value are important, more so when they are connected by nature-rich farmland. For biodiversity, scale matters; landscape-scale partnerships between landowners, supported by a knowledgeable environmental advisor, are key to deliver species recovery. All land, even land that is currently depleted, can be transformed to deliver better biodiversity outcomes; this should be rewarded on its own merits as a public good.

To support local action on biodiversity, the group recommended that Devon's natural assets be mapped to show areas of biodiversity richness. Financial support could then be directed to those landowners who are willing to create wildlife corridors between biodiversity hotspots. This would support the ambition expressed in the 25-Year Plan for the Environment to create a Nature Recovery Network covering 500,000 hectares of new land well-managed for nature (Defra, 2018). Devon is also well placed to deliver on the recommendations of the Lawton report, Making Space for Nature (Lawton, 2010), that called for more, bigger, better and joined-up areas for nature. Whilst encouraging natural processes to take precedence in these areas, food production can still be one of the outcomes, as demonstrated by the Knepp Estate in Sussex (Natural England, 2012).

Devon's uplands are key areas for the delivery of a range of public goods, including biodiversity. They have become refuges for species that have been displaced on intensively managed farmland. In the uplands, prioritisation needs to be given to the provision of public goods over food production, which is often marginal at best and unprofitable without subsidy (RSPB, 2017). The commons have also become delinked from the home farms and in-bye land; where grazing continues, farmers need support to manage their holdings holistically. The greatest negative impact on Devon's uplands has come about because of the decrease in the number of cattle and ponies

6 Under the Basic Payment Scheme, landowners are paid based upon the area of their land. Larger landowners receive greater payments and are more likely to invest in intensive agricultural techniques with a detrimental impact on wildlife and negatively impacting smaller farms with less intensive techniques; some land types, including lakes, salt marsh or large hedges, are not eligible for BPS payments, despite being good wildlife habitats.

and the increase in sheep numbers, which are left out on the common throughout most of the winter. The current practice of swaling (the burning of the common to encourage fresh grazing land) has some benefits for biodiversity, but releases carbon and is therefore unsustainable in the long term. If similar results are deemed necessary for habitat management, cutting must replace it.

Whilst climate mitigation and adaptation measures are generally aligned with increased biodiversity they can also come into conflict. Proposals for large conifer plantations on sensitive habitat such as blanket bog have been justified elsewhere, in the Republic of Ireland for example, by the need for increased carbon sequestration; and applications have been made for large solar farms to be sited on wildlife-rich land (eg Rampisham Down in Dorset). When seeking to mitigate climate breakdown, the panel agreed that priority must be given to nature-based solutions. Adaptation measures should be put in place to provide habitat for species displaced from more southerly regions by climate breakdown. Achieving this will require support and one-to-one advice for farmers and landowners to make space for nature alongside delivering other public goods.

At a policy level, the case must be made for biodiversity as a 'pure' public good. Other environmental objectives such as flood risk management, water quality and carbon all have other potential 'buyers' beyond the state, but for wildlife there is no alternative buyer. Maintaining and restoring biodiversity to the countryside cannot, therefore, be achieved without significant public funding, and should be a top priority for public investment in future policy. It is crucial that the natural capital approach to Environmental Land Management Scheme development in England and Wales does not omit biodiversity. It is not currently adequately factored into most approaches to natural capital accounting.

Advice

Given the complexity and interconnectedness of climate breakdown mitigation and adaptation and biodiversity health, advice was recognised by the panel as being key to success. The most frequently expressed concern was about the provision of independent, trusted advice, especially to aid the transition from CAP support to the new public goods schemes. It is imperative that government continues to invest in farmer-facing advice and that this provision is reflected in future policy. There is some concern that government believes that farmers should in future procure advice from the market; the reduction in Natural England's staffing levels and budgets reflects this. If this route is followed, the panel are concerned that hidden costs of 'free' advice, for example, from non-independent agronomists, will lead to perverse outcomes for the environment.

A Defra review of advice and incentives (Defra, 2013) found that incentives are more effective if supported by advice, and that advice needs to come from a trusted source and targeted to a specific farm or habitat. Advice is essential in setting target outcomes, so-called Indicators of Success, and it is highly effective in improving habitat quality.

If financial provision is made in a future Environmental Land Management Scheme for paid independent advice, then the environmental NGOs could have a role to play in offering it. If delivered well at a policy level, ELMS should lead to greater alignment between farmers and conservationists as both share a commitment to better and more sustainable land management.

The development of groups such as the Nature Friendly Farming Network7 is welcome and it would be good to see them given greater support and encouragement. Good advice, stronger social networks and better environmental outcomes will build even greater public support for the range of goods and services that farmers provide.

7 Launched in 2018 The Nature Friendly Farming Network (NFFN) aims to unite farmers and the public with a passion for wildlife and sustainability in farming.

Case Study - Pipers Farm: Raising high-quality meat, and delivering environmental outcomes

Pipers Farm produces high-quality, pasture-fed meat across a network of 26 smaller scale family farms in Devon and Cornwall, providing a route to market for these farming businesses, delivering online retail nationwide. The market is increasingly moving towards demand for less quantity of meat, and of a better quality. Quality is defined by consumers' growing awareness of systems of livestock production, sustainability in terms of impact on landscape and the environment, and nutritional value.

The framework of the organisation is tailored to respond to the physical, environmental and human resources specific to each of those individual businesses. However, working as a group creates economies of scale and provides each business with digitised access to the market. Aggregating the resources of these smaller scale businesses has the additional benefit of harnessing traditional knowledge of landscape, native breeds, and farming practices which have often been passed down through several generations, and which focus on environmentally sustainable outcomes.

The organisation seeks to produce meat which is value for money in terms of nutrition, taste and convenience, and believes that enterprises producing food must be built on a fundamental objective to deliver a financially sustainable margin for the farming business and provide ecological and public goods through their work. Pipers Farm undertakes a range of activities to achieve their objective. For example, the partner farming businesses are encouraged to be multi-enterprise and draw on the wisdom of traditional mixed rotational systems, in order to diversify income streams and provide a more resilient business. Pipers Farm offers the opportunity for each individual farmer to optimise sustainable management of the landscape and natural assets, delivering both public goods and also high-quality food to meet growing market demand.

Examples of different farm enterprises within the Pipers Farm family:

Trevigue, North Cornwall

Trevigue is a partnership farm within the National Trust estate. It rears a herd of pasture fed red ruby cattle, which are outdoors year round. This beef is sold through Pipers Farm delivering a sustainable enterprise margin, resulting in a positive impact on the profitability of the farm. This model safeguards and enables the promotion of biodiversity on the land. As well as the intrinsic benefits of this, it provides additional value in experience and education for the public who access the farm, including potential relationships with local health centres through social prescribing.

Orway, a mixed family farm in the Culm Valley

Farming for over a hundred years, this farm focussed on red ruby Devon cattle (dual purpose milk and beef), and subsequently commercial holstein cattle. The farm used to produce increasingly high volumes of commodity milk, until it was driven out of milk production in 2015 by the downward pressure on margins, and an outbreak of bovine tuberculosis. During this time both young sons left the farm to work elsewhere.

The farm is now part of the Pipers Farm model, rearing 700 pigs, 750 turkeys and 250 lambs, for sale direct through the Pipers Farm online shop. These viable livestock enterprises are helping to re-establish a multi-enterprise family farm, and demonstrate the traditional benefits that livestock can bring to arable rotations, for example reduced use of inorganic nitrogen fertilizer, reduced use of carbon fuels through mechanical cultivations, and improvements to soil structure, biota and fertility.

Pipers Farm

The Home Farm is increasingly becoming a hub for interaction with consumers interested in provenance, animal welfare, nutrition, human health, cooking, and children's education. The farm visits are complemented and enhanced by sharing knowledge digitally through the Pipers Farm website to a wider audience about the positive impacts their food and lifestyle choices have on their own health, biodiversity and the sustainability of landscapes and rural communities.

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