Scottish Wildlife Trust

Written submission to the Scottish Affairs Committee

The future of Scottish agriculture post-Brexit inquiry

Scottish Wildlife Trust Submission

18 January 2019

If the UK exits the EU, Scotland's land should be managed according to the principles of integrated land use and land stewardship. We need a clean break from the principles governing the Common Agricultural Policy in order to invest in natural capital and ensure high quality food is produced sustainably.

The Scottish Wildlife Trust welcomes this opportunity to provide a written submission to the Scottish Affairs Committee's inquiry into the future of Scottish Agricultural Policy post-Brexit. This submission draws on our experience of contributing to the management and enhancement of Scotland's biodiversity, and particularly on our work in integrated land use.

The UN has warned[1] that only 60 years of farming are left if soil degradation continues at its present rate. Our *Land Stewardship Policy*, select agricultural aspects of which are attached as an annex, provides a costed blueprint for securing sustainable food production; better protecting and preserving our soils; reducing greenhouse gas emissions and adapting to a changing climate; and restoring wildlife habitats while reversing biodiversity loss. To achieve this, we need to move away from the principles governing the Common Agriculture Policy and towards a system that rewards the delivery of public goods by protecting and enhancing ecosystem services – our natural life support systems.

Key Points

- We need a clean break from the principles governing the vast majority of the Common Agricultural Policy (CAP) payments. Instead, we need agricultural support that incentivises the protection and enhancement of natural capital, ensuring sustainable, high quality food, while protecting our soils and biodiversity, and reducing emissions to net-zero.
- Scotland's agricultural land should be managed according to the principles of integrated land use. The Trust's costed Land Stewardship Policy (LSP) provides a blueprint for this by rewarding public goods with public money.
- The Trust's LSP proposes a new four-tier structure of regulation and support for agriculture:
  i. Retention and implementation of existing regulations with additional ones for soil testing and soil conservation;
  ii. Area-based payments for meeting mandatory criteria, which include providing wildlife habitat on at least 12% of the area of every farm;
  iii. A further tier of payments available for carrying out optional actions such as increasing wildlife habitat above 12% of farm area, reducing livestock stocking densities on sensitive habitats, conservation grazing; wildlife-friendly cropping practices, mixed farming and measures to encourage pollinators;
  iv. Additional competitive payments targeted at specific public-good priorities, including natural flood management, habitat and species conservation, and support for specific high nature value farming systems.
- Agriculture and related land uses are key contributors to climate change, biodiversity decline, and issues of pollution, in Scotland and around the world.
- The Committee should consider the holistic benefits of an ecological approach to agriculture, in line with existing frameworks. Scotland's Land Use Strategy should inform future travel supporting the rural economy, while Regional Land Use Frameworks[2] are need to coordinate our approach to land-use and inform a public goods-based policy.
- Some useful recommendations have come from the final reports of the Agriculture Champions[3], the National Council of Rural Advisors[4], and the Greening Group[5]. However, despite the proliferation of groups and task forces, none have had the representation, transparency, longevity and resources to develop a blueprint for post-Brexit agricultural policy and support.
- We urge the Scottish Government to publish a detailed transitionary plan that considers the direction the UK and, to a lesser extent, the EU are taking, and at least matches the ambition.
- We support our partners in Scottish Environment LINK in the 10 Principles for Future Land Management Support in Scotland[6].

Overview

Together with our partners in Scottish Environment LINK, we have been advocating for a vision beyond the Common Agricultural Policy for over 10 years[7]. With Brexit looming, we urge decisionmakers to consider the direction the UK and, to a lesser extent, the EU are taking, and at least matches the ambition in delivering environmental public goods.

In the short-term, we call on the Scottish Government to establish a dedicated process to research, consult on and design a system of farm support which:

1) helps to deliver on the Sustainable Development Goals, for which Scotland has pledged its support, and on the Scottish Government's National Performance Framework;
2) meets public policy objectives on the production of healthy food, the provision of a range of public goods, and on the social cohesion of vulnerable rural areas;
3) assists generational renewal[8] and short food chains;
4) is deliverable, equitable (considering disadvantages of geography, scale, tenure), auditable and evaluable.

Over the longer-term, we need to:

Retain at least the current levels of public investment in our rural areas. As we leave the CAP behind, this must not be used as an excuse to lower the level of public expenditure in the rural sector. The challenges facing farming, crofting and other rural land use businesses and the environment are too great to ignore. Without public investment, these challenges will not be met and opportunities will be missed.

Reshape how we spend public money, allocating resources in three main ways:

- public money for public goods with the lion's share of resources focused on this;
- investments to facilitate change such as helping farming, crofting, forestry and other rural businesses adapt and develop, improve business efficiency and explore market opportunities;
- investments in supporting activities including research, knowledge transfer, advice and training.

Renew our rural areas for the benefit of all of us: rewarding farmers, foresters and other land managers for the full range of goods and services they provide and helping rural businesses become more profitable and sustainable; protecting and enhancing the environment and the natural resources that underpin economic activity; and, spending taxpayers' money effectively, helping to create good livelihoods and jobs and contributing to our health and well-being.

The Scottish Wildlife Trust's Land Stewardship Policy would establish a new basis for long-term public support to ensure the viability of sustainable, high quality food production by Scotland's farmers and crofters. Included in this document's annex, we include select figures that set out how this could work in practice.

Context

Fewer than 60 harvests[9] remain in our soils, and it takes 1,000 years to generate three centimetres of top soil. Scottish peaty soils contain carbon and methane equivalent to 140-160 years of Scotland's total greenhouse gas emissions. Agriculture and related land uses remain strongly implicated in Scotland's GHG emissions and the net-decline in biodiversity, as well as a key factor in both source and diffuse pollution. The agricultural sector is the main anthropogenic influence on the nitrogen cycle which has the 'potential on its own to drive the Earth System into a new state'[10].

The most recent report by the Intergovernmental Panel on Climate Change[11] (IPCC) warns that in order to limit global warming to 1.5 degrees Celsius significant changes in the way land is used must be made. The report also highlights the importance of reducing more than just carbon dioxide. Limiting global warming will require a 35% reduction in methane by 2050, relative to 2010, and significant reductions in nitrous oxide and black carbon. Agriculture and related land uses account for 68% of methane and 79% of nitrous oxide emissions in Scotland - there's no way to keep the planet on a sustainable footing without a major change in the way that our land is managed.

Elsewhere, 'Farmland biodiversity has shown serious declines in habitat diversity and species numbers' due to intensification, land use change, and pesticide use.[12] The 2016 interim report on Scotland's progress towards the binding Aichi Biodiversity Targets set by the UN Convention on Biological Diversity outlines that:

> Scotland's biodiversity indicators, the condition of notified habitats and species on protected areas, and progress towards meeting Scotland's biodiversity targets demonstrated that biodiversity loss had not yet been halted and would require renewed and sustained effort over a longer period.[13]

In terms of greenhouse gas emissions, while Scotland's agricultural greenhouse gas emissions have declined since the 1990s, these declines 'are often associated with reduced production rather than increased efficiency'[14], and agricultural systems continue to contribute over a quarter of Scotland's emissions – the second largest contributor nationally.

Figure 1: three-planet living. If everyone in the world lived as we do in Scotland, it would require 3 planets. This was first articulated over 10 years ago, and our ecological footprint has only increased since. Source: SEPA, 2015

Scotland's ecological footprint[15] already exceeds 'three-planet living' (fig. 1), as recognised recently by SEPA, and reducing our ecological footprint nationally and internationally is essential for any long-term viability of the economy. In particular, 'one-planet prosperity[16]' requires an urgent, systemic transition in our food production. This correlates with Scotland's existing commitments under Sustainable Development Goal 12[17] to 'ensure sustainable consumption and production patterns' with 'developed countries taking the lead'. The RISE Foundation recently concluded in an analysis of all EU member states' safe operating space for livestock that the UK has no room for further expansion, and that reductions in livestock and intensity are necessary to comply with existing climate targets and remain within planetary boundaries[18].

In the wider context, the latest Living Planet Report[19] highlights (referencing Tittensor *et al*[20]) that most of the Aichi targets are unlikely to be met, while '…the main drivers of biodiversity decline continue to be the overexploitation of species, agriculture and land conversion'. Citing research in the journal Nature, the authors point out that "of all the plant, amphibian, reptile, bird and mammal species that have gone extinct since AD 1500, 75% were harmed by overexploitation or agricultural activity or both"[21]. The Report warns, overall, that the we've witnessed a decline of 60% in population sizes between 1970 and 2014.

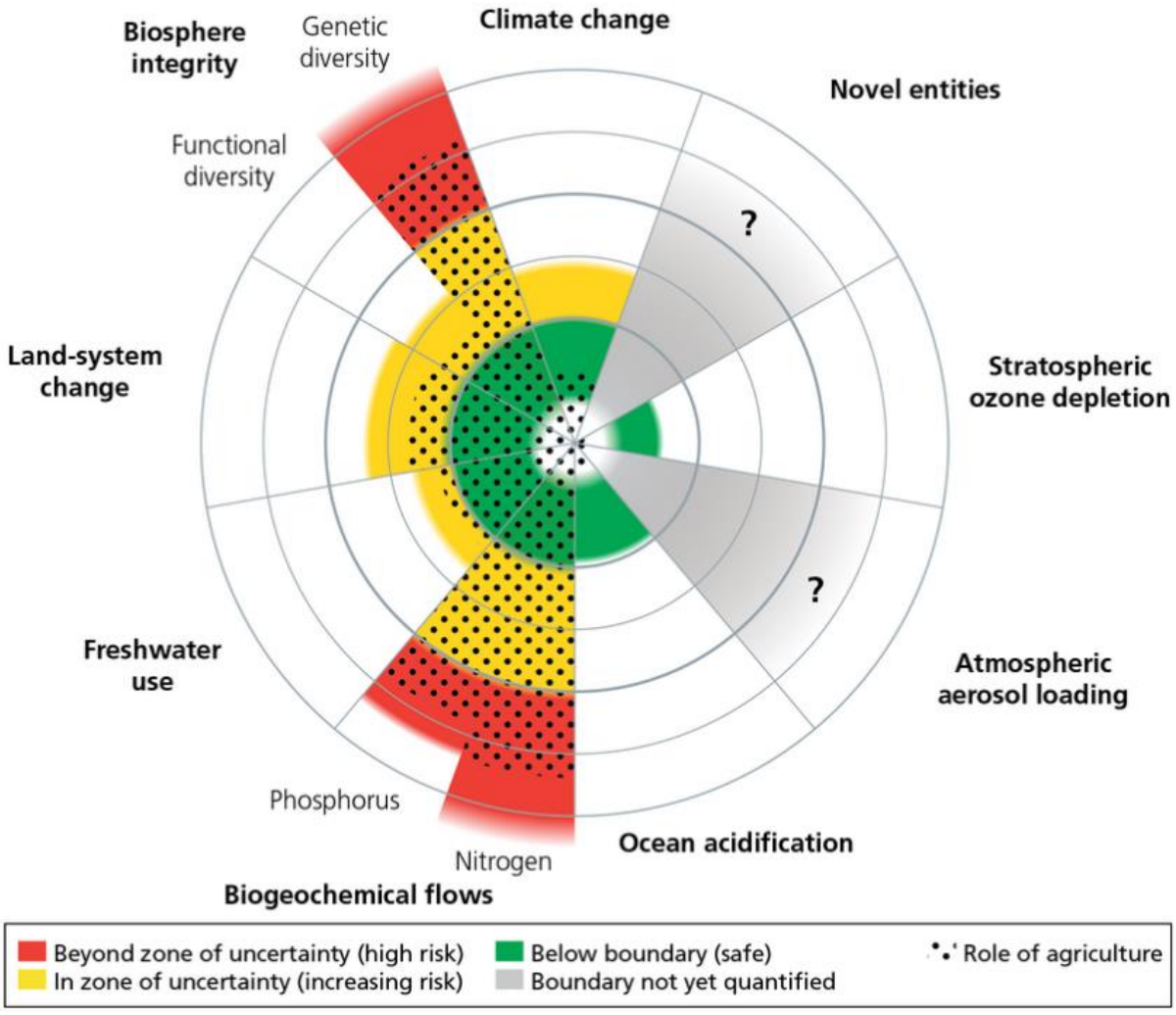

Figure 2: Agriculture's role in planetary overshoot (dotted areas) (from Campbell et al, 2017[22]) overlaying planetary boundaries framework (Steffen et al., 2015), with additional modifications from Gerten et al. (2013[23]), Jaramillo & Destouni (2015[24]), and Newbold et al. (2016[25]).

The present contributions of agriculture to our planetary overshoot have been shown by Campbell et al. (2017) based on the planetary boundaries framework (Steffen *et al.,* 2015[26]). Fig. 2 shows the role of agriculture (dotted area) in the overshoot of nitrogen and phosphorus cycles, land-system change, freshwater use, and functional and genetic diversity (what amounts to biodiversity). Two out of the nine planetary boundaries are pushed beyond the zone of uncertainty (indicating high risk) by agricultural practices. Steffen *et al* (2015) highlight that each of these two boundaries has the 'potential on its own to drive the Earth System into a new state should they be substantially and persistently transgressed'. The Food and Agriculture Organization (FAO) recently estimated[27] that, due to soil degradation as a result of agricultural activities, including chemical loading, 'all of the world's top soil could be gone within 60 years', if present trends continue.

Calls from scientists and official bodies[28] for the formal adoption of the term Anthropocene to replace Holocene have strengthened in this context, and its mention in scientific literatures has exploded since it was first coined in 2001. Humans have become the foremost geological influence on the world, and our footprints are embedded in the strata as nuclear isotopes and chicken bones[29]. The intensification of our agricultural systems – their driving influence over the world's nitrogen cycle and the proliferation of domesticated species – is a key reason behind the terming of the Anthropocene:

> Soil nitrogen and phosphorus inventories have doubled in the past century because of increased fertilizer use, generating widespread signatures in lake strata and nitrate levels in Greenland ice that are higher than at any time during the previous 100,000 years …[this]expresses the extent to which humanity is driving rapid and widespread changes to the Earth system that will variously persist and potentially intensify into the future.[30]

Current agricultural practices are demonstrably unsustainable globally. This needs to be accounted for when discussing the sustainability of Scotland's food system given its global interconnection. Scottish food and drink exports recently reached a record £6 billion, with food and animal exports increasing by 130% overall in 10 years.[31] The export of animal feed alone has increased by just under 1000% since 2007, according to HMRC regional trade statistics[i] – as GHG emissions from Scottish livestock have plateaued, we've fuelled their increase elsewhere. That's important for Scotland's global ecological footprint as the UK continues to import more than half of its food and animal feed; distributing the environmental and social impacts of our consumption around the world means the negative impacts are measured elsewhere. We haven't solved those problems we've merely moved them around geographically.

Moreover, Hughes et al, including the originator of the planetary boundaries concept, Johan Rockström, (2013[32]) have argued that, given the inherent interconnectedness of biodiversity, local changes in biodiversity soon scale up to regional and global levels. This has implications for the design and performance measurement of sustainable agricultural policy and shows the importance of local policy in the delivery of sustainability goals at larger spatial scales. Scotland's role, under the SDGs, is therefore both as a developed country and as an important space for biodiversity.

In the social context, quality food remains unaffordable for much of Scotland: The poorest 10% in Scotland would need to spend 70% of their income after housing costs to follow the Eatwell Plate[33]. A tenth of children in Scotland are raised in food insecurity, while two thirds of adults are overweight or obese. Obesity is even set to overtake smoking as a leading cause of female cancers[34]. The current food system

[i] 2007 animal feed exports were valued at £16m, 2017 exports of animal feed were valued at £174m (roughly on par with cereals) – an increase of 986%. It should be noted that increases in value do not necessarily correlate precisely with increases in volume as other market factors will influence price. See table 1 here *[16]*

does not work, it relies on a high investment of subsidies to break even economically, it's environmentally unsustainable, and it's contributing to a growing diet-related health crisis.

Our asks

Agroecology delivers food security and public goods: Our livestock, crops, soil, and forestry can be interlinked. Agroecological systems favour the use of integrated methods to deliver wide-ranging benefits in soil functionality, limiting fertiliser use, reducing run off, sequestering carbon, and restoring biodiversity, in addition to protecting wildlife for its own sake. We already have examples where agricultural practices are contributing to ecosystem health, but their viability is under threat. As the 2016 *State of Nature (Scotland)* report outlines:

> The High Nature Value (HNV) farming and crofting of agriculturally marginal lands in the Highlands, islands and uplands of Scotland is increasingly difficult to sustain economically and socially. However, the sensitive grazing regimes and low-intensity arable production involved are hugely valuable for a whole suite of wildlife, and subsidies directed to HNV farming systems deliver tangible environmental benefits from public investment.[35]

Rewarding responsible land managers for providing local and dispersed public goods can help increase the economic viability of HNV farming systems.

Regional Land Use Frameworks should coordinate our approach to land use: Multiple competing drivers influence land use, including political, economic, social, environmental and other targets, which will not be met without a strategic, coordinated approach to land use. We also believe that there is consensus across the rural sector that policy and funding must be more regionalised. Given the differences in geographies, farming systems, and capacities across Scotland, regions need to be able to identify priorities and regional land use capabilities. With regards to future policy and funding frameworks, this strategic, participatory exercise should highlight the potential for public goods contributions that could be publicly funded.

Healthy, sustainable food must be affordable: We need to tackle the market failures that skew our valuation of food and its dependency on healthy ecosystems. Cheap food has occurred by degrading ecosystems: high antibiotic use, biodiversity decline, reduced soil functionality, diet-related illnesses and many others, are the prices we've really paid for cheap food. Most of the money spent under the CAP has reinforced this system by favouring production. By accounting not just for these negatives, but also the positives that come from agroecological approaches, a replacement policy can make public money deliver plentiful, quality food at a price that's affordable.

A safe operating space: Katherine Richardson, co-author of the latest Planetary Boundaries paper, emphasises that the increased understanding of environmental limits provides us with possibilities – 'this knowledge provides us with a great opportunity to turn things around … they can aid decision-makers by defining a safe operating space for humanity'.[36] We urge the Scottish Government to take an evidence-led approach to the sustainability of our food system and fully utilise the experience and knowledge at its disposal.

Social benefits: Farmers and land managers play an important role in engaging people with the environment, through supporting public access on their land and hosting educational visits. This is crucial in raising awareness and understanding of nature and wildlife, our land and our food systems, but also in helping people to care about these aspects which may otherwise be far from their daily experience. This activity needs investment, which as well as contributing to a healthier society can also promote sustainable rural communities through tourism.

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[5] https://www.gov.scot/publications/cap-greening-group-discussion-paper/
[6] http://www.scotlink.org/wp/files/documents/10-principles-for-future-land-management-support-in-Scotland_finaldraft.pdf
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Annex: Select extracts of Land Stewardship Policy

AGRICULTURE

"Current farming practices are essentially mining natural capital as though it was a depleting resource rather than husbanding it for the long-term future. We have to think broadly about the relationship between current food production and future food production. We do not want to do our grandchildren down."

Lord Krebs, Chair of the Adaptation Sub-Committee of the UK Climate Change Committee to Scottish Parliament Environment Climate Change and Land Reform Committee, September 2016[19]

Challenges

Scottish farm businesses are highly reliant on subsidies, and many would struggle to be profitable without public support as the cost of producing food is often higher than income from sales. If Scotland wants a viable agricultural sector across the country it is highly likely public monies will need to continue to subsidise farming for years to come. However, these same subsidies have sometimes in the past led to environmental degradation, bringing additional costs. In the 21st century, such degradation linked to subsidy is less common, but, nevertheless, income support payments have done little to mitigate the environmental impacts of farming practices. The hidden costs – so called 'externalities' – of environmentally insensitive farming practices are not always accounted for in traditional economics but, nevertheless, have financial costs for society. The environmental impacts which existing policy is not sufficiently addressing are:

I. soil degradation and erosion – the fundamental public and private asset on which future productivity and profit depends;

II. the generation of substantial greenhouse gas emissions;

III. biodiversity loss through habitat loss and simplification and inappropriate use of pesticides and fertilisers;

IV. water pollution.

The transition to a new system of farm support in Scotland between 2015 and 2019 caused significant administrative difficulties that were both costly to resolve and significantly delayed the processing of payments to farmers. However, transitional arrangements help businesses adapt to change.

Solutions

This policy establishes a new basis for long-term public support to ensure the viability of sustainable, high-quality food production by Scotland's farmers and crofters. It sets out a four-tier hierarchy of regulation and support payments for natural capital maintenance, enhancement, and restoration (see Table 1).

The four tiers, and examples of the measures that will be included in each tier, are shown in the box overleaf.[20] The figure on p.17 shows how the budget for payments is shared between payments for natural capital maintenance, enhancement, and restoration.

Tier 1: Regulation

All farmers must comply, irrespective of whether they choose to apply for support payments. This will include retention and implementation of existing regulations, and, in addition, soil testing and soil conservation regulations will be introduced.

Tier 2: Natural Capital Maintenance Payments

This is an area-based payment available to all farmers (owner-occupiers and tenants[21]) for meeting mandatory criteria. These include:

I. complying with all existing regulatory requirements in Tier 1, including requirements to comply with regulations on species protection;[22]
II. keeping land in Good Agricultural and Environmental Condition (GAEC) (see Appendix 1);
III. providing at least 12% of land area on all farms as wildlife habitat;
IV. undertaking whole-farm reviews that include financial performance and efficiency, soil, water, energy, greenhouse gas emissions and biodiversity.

Tier 3: Natural Capital Enhancement Payments

This is a non-competitive additional area-based payment available to all farms for additional actions to provide public goods. Applicants can choose from a range of options, each of which attracts different point scores towards a target total to trigger the payment. Measures include:

I. increasing wildlife habitat above >12% of farm area on a graduated scale;[23]
II. reducing stocking densities on sensitive habitats, or allowing woodland and scrub regeneration;
III. optimising fertiliser and pesticide use;
IV. conservation grazing of species-rich grasslands and wetlands;
V. wildlife-friendly cropping;
VI. reintroduction of mixed farming and/or a greater diversity of crops;
VII. encouraging pollinators.

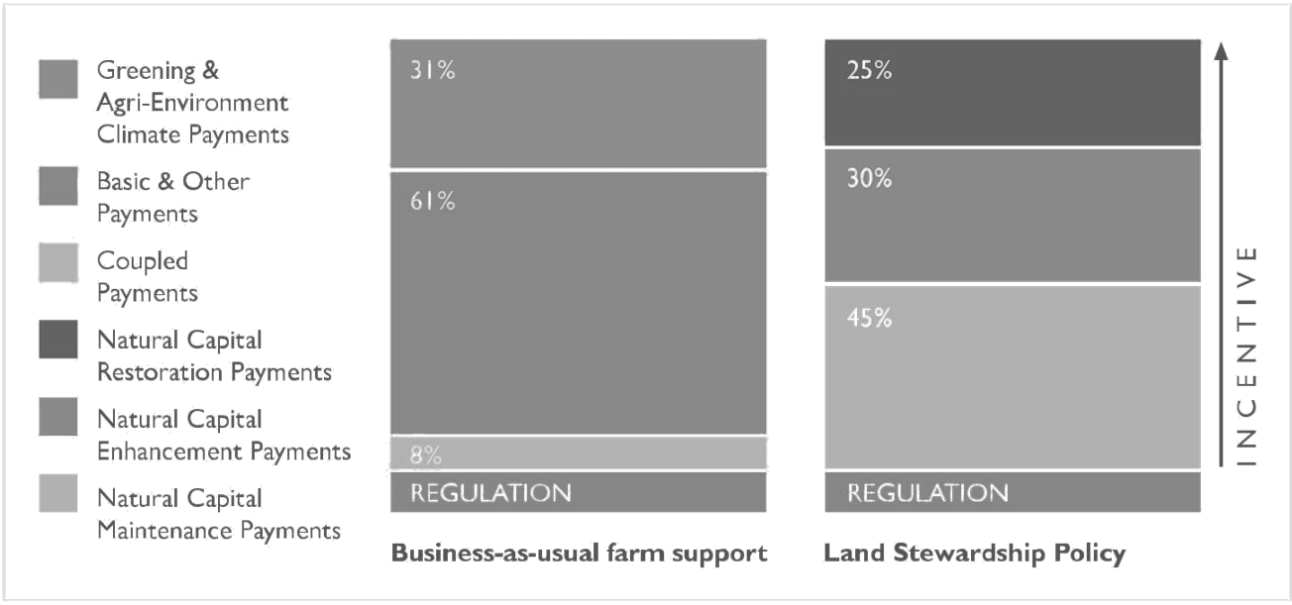
Tier 4: Natural Capital Restoration Payments

This is a competitive additional payment designed to deliver specific public-good priorities. Measures include:

I. natural flood management;
II. interventions targeted at particular farmland types; e.g. machair, wood pasture, upland hay meadows;
III. interventions targeted at particular species; e.g. brown hare, black grouse, farmland waders and passerines;
IV. support for targeted livestock grazing on qualifying High Nature Value farmland;
V. creating and restoring non-woodland habitats to contribute to a National Ecological Network.

Priority non-woodland habitats will be identified at local level as part of the process of catchment-scale opportunity mapping.

Figure 2: Business-as-usual farm support and farm support under Land Stewardship Policy



Distribution between land types

The new Natural Capital Maintenance and Natural Capital Enhancement Payments will be area-based payments available to all farms set on a per hectare basis for two land types:

Region 1 – arable land, temporary and permanent grassland

Region 2 – rough grazing

The budget for Natural Capital Maintenance and Enhancement Payments will be split 70:30 between Region 1 and Region 2 land. The implications of this for indicative payment rates are shown in Table 4 below. The ability of upland farms to provide substantial public benefits such as natural flood management, carbon sequestration and wildlife habitats is recognised in this policy, as are the challenges that upland farms face in generating returns from the market, by increasing the proportion of support devoted to Region 2 land (compared to business as usual).

Table 4: Indicative payment rates per hectare

	Region 1 - arable land, and temporary and permanent grass land	Region 2 - rough grazing
Natural Capital Maintenance Payments	£86	£22
Natural Capital Enhancement Payments	£58	£15
Total	**£144**	**£37**

OTHER MEASURES

Involve farmers and advisors in developing measures

This policy proposes to closely involve farmers and advisors in the design of measures which will apply post 2020. Instead of specifying the means, measures could be outcome led, leaving it to farmers to decide how to achieve the specified outcome.

Transition to new system

This policy substantially changes the way farming is supported in Scotland post 2020. If there is judged to be a significant risk of administrative difficulties with transitioning to a new system, the existing system should be kept in place for a period before this policy comes into effect. This will give farm businesses time to plan. A transitional period where existing arrangements remain in place of between 3–5 years beyond 2020 may be appropriate.

Advisory and monitoring

Central to the new approach advocated in this policy is the provision of high-quality advice to farmers. The whole-farm reviews recommended as a requirement for Natural Capital Maintenance Payments will establish a baseline against which progress can be measured, and which will inform future policy development.

Benefits

The benefits of these measures will be:

I. Scotland will have one of the most sustainable agriculture policies of any country in the world, providing high-quality products for the food and drink industry, which trades on Scotland's reputation for environmental quality.

II. A much greater alignment of the incentives provided by support payments and public policy objectives to safeguard and restore stocks of natural capital and reduce greenhouse gas emissions from agriculture.

III. The new system will reward farmers who have retained the natural capital of their land and will provide a clear incentive for its maintenance, enhancement, and restoration. This will lead to a farming sector better able to continue to provide the quality raw materials for our food and drink industry and the landscapes for our tourism sector, underpinning our rural economy and rural communities, and better prepared to face the challenge of climate change.

IV. Ongoing support for Scotland's traditional farming systems and their natural and cultural heritage.