Committee and Date Shropshire Hills AONB Partnership 8th October 2019	Item
	5

ENVIRONMENT AND CLIMATE EMERGENCY – RECOMMENDATIONS TO THE TWO COUNCILS AND WORKSHOP SESSION TO IDENTIFY NEW ACTIONS

Responsible Officer   Phil Holden, AONB Partnership Manager
e-mail: phil.holden@shropshire.gov.uk   Tel: 01743 254741

Summary

This paper sets out:
- background on national and local declaration of emergencies
- draft recommendations to the Councils from the AONB Partnership on nature recovery; on farming and land management; and on development, energy, transport and tourism.
- questions for a workshop to identify priority actions.

Recommendation

The Partnership is recommended to:

a) comment on and endorse the recommendations to the Councils

b) participate in a workshop discussion to identify priority actions.

Background

National   In May 2019 the House of Commons declared an Environment and Climate Emergency, following the finding of the Inter-governmental Panel on Climate Change that to avoid a more than 1.5°C rise in global warming, global emissions would need to fall by around 45 per cent from 2010 levels by 2030, reaching net zero by around 2050. The declaration recognises the devastating impact that volatile and extreme weather will have on UK food production, water availability, public health and through flooding and wildfire damage. It also notes that the UK is currently missing almost all of its biodiversity targets, with an alarming trend in species decline, and that cuts of 50% to the funding of Natural England are counterproductive to tackling those problems. It calls on the Government to increase the ambition of the UK's climate change targets under the Climate Change Act 2008 to achieve net zero emissions before 2050, to increase support for and set ambitious, short-term targets for the roll-out of renewable and low carbon energy and transport, and to move swiftly to capture economic opportunities and green jobs in the low carbon economy while managing risks for workers and communities currently reliant on carbon intensive sectors. It further calls on the Government to lay before the House within the next six months urgent proposals to restore the UK's natural environment and to deliver a circular, zero waste economy.

Councils   On 15th May Shropshire Council declared a Climate Emergency and its intention to become carbon neutral by 2030. The declaration did not however make any reference to nature decline. The Council has set up a member task and finish group on the Climate Emergency, and an officer group, to which the AONB Manager has been invited. Recommendations and output from the Partnership will be taken back to this group.

On 25th July 2019 Telford & Wrekin Council declared a Climate Emergency with a commitment to become carbon neutral by 2030 and to remove single use plastics from its operations. Again there is no reference to nature.

NAAONB   At its annual conference in July 2019 the National Association for AONBs launched the Colchester Declaration on nature recovery in AONBs – see Appendix 1. This sets out a firm intention to significantly step up the scale and pace of action on nature recovery in the context of the Environment and Climate Emergency. The National Association and staff from AONBs are now working up the detail of how the declaration will be delivered.

What role does the AONB Partnership have and how do we raise our game?

The AONB Partnership has been championing shifting to low carbon and nature recovery for a long time, and the declaration of emergencies by Parliament and Councils should be welcomed. However those by the Councils do not cover the environmental dimensions adequately. All the declarations need to be backed up by action. Virtually all of the actions in the AONB Management Plan contribute to nature recovery and lowering carbon emissions.

The Partnership group and the team together have the roles of delivery and of influencing. Our own direct delivery is relatively small and targeted. It is largely dependent on capacity of the team, effectiveness of what we do and our priorities. Partner organisations also have a lot of delivery capacity and how we can work effectively together is an important factor. To influence well, we need clear thinking and positions, and effective engagement. The Glover Review should help to reinforce our role by raising our expectations, influence and capacity.

How do we best harness the energy of Partnership members? They can bring their knowledge and also take back things from the Partnership to their organisations and/or communities. They can introduce the staff team to people they know locally and involve them in discussions.

How can we act on something so big?

Conversations on these topics can lead to people feeling powerless. It is worth thinking about where we fit in and how to approach it. Action is needed from:

    Governments   Businesses   Communities   Individuals

These layers interconnect – as individuals we can do things directly ourselves, as well as join groups and with others in our communities, and exercise our influence on businesses as consumers and workers, and on governments as voters and citizens. Government can influence businesses and individuals. Our government can influence those of other countries. All the layers are needed, we can't just say someone else should act on this.

The most useful part of action planning is focussing on what we need to do next. We can say what we're already doing, but we know this isn't enough. We need to keep an eye on the targets and timescales and challenge ourselves as to whether we are doing enough. But if we can't see all the steps to get to a target, we have to move towards it anyway with our best knowledge, and the later steps will become more obvious when we have made the first ones.

Draft recommendations to Shropshire Council and Telford & Wrekin Council and rationale

<u>Recommendation 1 - Nature recovery:</u>   The Councils must formally declare that nature decline is as threatening an emergency as climate change and that both are inextricably linked. Also, that nature recovery and restoring ecosystems provide some of the essential solutions to reaching zero carbon emissions, as well as addressing many other factors vital for our survival and quality of life. These are not just distant global issues, they are the main challenges now for the Shropshire Hills.

> *"The IPBES assessment has shown the strong interrelationship between climate change, the loss of biodiversity and human wellbeing. Climate change has been identified as a primary driver of biodiversity loss, already altering every part of nature. Likewise, the loss of biodiversity contributes to climate change, for example when we destroy forests we emit carbon dioxide, the major "human-produced" greenhouse gas.*
>
> *We cannot solve the threats of human-induced climate change and loss of biodiversity in isolation. We either solve both or we solve neither. As policymakers around the world grapple with the twin threats of climate change and biodiversity loss, it is essential that they understand the linkages between the two so that their decisions and actions address both."*
>
> From article "**Loss of biodiversity is just as catastrophic as climate change**" 6th May 2019, Sir Robert Watson - Chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and former Chair of the Intergovernmental Panel on Climate Change (IPCC).

We need to halt and reverse the loss of good quality habitats. In the Shropshire Hills this is still happening mostly through land management practices. Development is also a factor. To reverse nature loss we also need to restore and recreate habitat networks across the landscape. The Stepping Stones project is one example of where this is starting to happen. It needs more resourcing to really deliver, and we need more similar projects in other areas. (See link to Wildlife Trusts 2018 paper 'Towards a Wilder Britain' at Background papers).

The Marches Nature Partnership and Shropshire Biodiversity Partnership need proper resourcing to raise their influence and activity, working with the LEP and other sectors.

A whole range of mechanisms for looking after nature need to deliver more, including:
- Planning decisions and enforcement action by various regulators to prevent direct harm
- Agriculture and land use policy supporting sustainable activity
- Government schemes for farm conservation with good incentives and minimal barriers, and good advice for private landowners
- Ownership of key sites by conservation bodies and trusts and linking them with wider landscape
- Ambitious projects to recreate and restore habitats, needing public, private and third sector finance and partnership working
- Grassroots action by communities and individuals.

Like climate change, loss of nature can be subtle and not very visible. Our landscape still looks pretty, and may not appear to be in emergency. But we have lost and are losing 'bio-abundance' as well as biodiversity. As well as some extinctions, once common species are becoming rare. Baselines shift and people may not notice. Some 'keystone' species have an especially vital role in ecosystems, such as pollinators which enable crops and flowers to reproduce, earthworms which aerate soil, trees which bind river banks. We are already losing these and seeing the effects, but they can recover.

We need big programmes to engage and re-engage young people and adults with nature, to harness their energy and improve their wellbeing. Services need to join up to improve provision.

Recommendation 2 - Farming and land management for zero carbon and nature recovery:
The Councils have an important role shaping and influencing the future of their areas, as well as directly providing services. While they have less direct involvement in land management than some other factors, making change in this area will be vital to achieving net zero carbon emissions and nature recovery. The Councils must play an active part in this and resource their capacity to do this, including training of members and senior officers.

Agriculture accounts for 10% of greenhouse gas emissions in the UK, through methane and nitrous oxide as well as CO2. Ammonia is not a greenhouse gas but has serious implications for air quality and nature. The NFU's recent report sets out a plan to get UK agriculture to net zero by 2040, based on productive efficiency, carbon storage and bioenergy and renewables (see link at background papers). The high anticipated contribution of bioenergy in this may not be compatible with allowing enough capacity in the land for nature recovery. The RSA's Food, Farming and Countryside Commission calls for a farming and land policy which addresses climate and ecosystems while also delivering much better for health (see Appendix 2).

Land management also has a vital role for carbon sequestration, to help us reach net zero as a whole. Planting trees has a place in this, but this is about much more than carbon offsetting. Soils are a vital means of carbon storage, and they need better management to do this. Peatlands are especially important and need to stay wet - the AONB has only 44ha of peatland, but the lowlands of Shropshire and Telford & Wrekin have much more. Pastures store carbon, some of which is lost when the land is cultivated. Increasing the organic matter in soils will store more carbon as well as help with water retention and natural fertility, reducing the need for artificial fertilisers (the main source of nitrous oxide greenhouse gas). On pasture, soil organic matter can be raised by techniques such as mob grazing where stock are put at high densities for a short period onto tall sward pastures aiming to graze some of the vegetation, leave some and trample some into the soil.

More trees and woodland will help with carbon sequestration, as well as providing many other benefits, but offsetting shouldn't be seen as an easy way to avoid challenges of reducing emissions in other sectors. To be effective, trees planted need to be of suitable species for the location and the landscape, and need maintaining. Enthusiasm should be harnessed, but advice and support is needed. The availability of land can an issue - at the current transition in agricultural policy many farmers are cautious of changes which reduce their options in future.

Some of the calls to cease livestock farming because of methane production and to convert grazed land to growing food for direct human consumption or for nature are too simplistic. Especially in the uplands, land which is less fertile will not grow human food directly, and ploughing sloping land can result in loss of soil and harm to rivers. We need also to remember that land can deliver multiple benefits – for example the best heathland conservation sites in the AONB are maintained by low intensity grazing which provides a food output. High quality pasture-fed livestock from nature-friendly low input systems has an important place in a low carbon agriculture and is not at all the same thing as intensive livestock rearing on arable-grown feeds.

The steps we need to take to zero carbon and nature recovery may alter the character of our landscape – but these changes can enhance it. Ecosystem functions matter, natural beauty is not a static thing, and the AONB designation should not be seen as a barrier to the right kind of change.

The New Environmental Land Management System will be a vital tool and needs the best thinking and engagement in its development to make sure it works well. There should be a collaborative programme of visits and workshops about zero carbon and nature friendly farming, as well as demonstration farms and links with universities.

Recommendation 3 – Development, energy, transport & tourism for zero carbon and nature recovery: In these areas the Councils have a greater lead. Net zero and nature recovery cannot be achieved if the political and corporate focus is on economic growth at all costs. The goals of net zero and nature recovery need to be built into the Councils' visions at the highest levels. Doing this can deliver better quality of life for people as well as new forms of economic activity which are truly sustainable. On energy and transport we need to talk about managing demand as well as changing supply. This may mean people consuming less and travelling less. This future is not unthinkable, and can benefit people.

Planning policy and decisions are aiming to support sustainability, e.g. by providing homes close to where people work, but this isn't currently adequate to achieve carbon targets.

> *"Local Plans in England are not dealing with carbon dioxide emissions reduction effectively, nor are they consistently delivering the adaptation actions necessary to secure the long-term resilience of local communities. This inaction is partly due to a chronic lack of resources in local government, which had contributed to a loss of skills on energy and climate change."*
>
> RTPI 2019, Rising to the Climate Crisis – A Guide for Local Authorities on Planning for Climate Change

Natural capital needs to become a central principle in planning and economic development. The potential of natural flood management techniques and biodiversity net gain need to be maximised.

Renewable energy is a challenge for protected landscapes, and the only real potential conflict between conserving natural beauty and other environmental goals. Policies are against industrial scale developments in the AONB, while being positive about small scale renewables. To justify this, protected areas will increasingly need to make big contributions to reaching net zero in other ways.

The House of Commons Environmental Audit Committee is running an enquiry on sustainable tourism, and some main points from our evidence of 12th September 2019 were:

- The huge challenges of net zero carbon emissions will mean structural change in the tourism industry as in every other part of the economy. There are however growth opportunities in expanded domestic markets and high-quality sustainable tourism products.
- Sustainability remains a fairly fringe consideration in many parts of the industry, and greater incentives and guidance are needed from government.
- Sustainable tourism needs to be planned in a collaborative way between the industry and public sector bodies on a location-specific basis. Much good practice exists, but many Destination Management Organisations are not equipped to lead on sustainability.

The Councils need to provide more support and leadership for tourism businesses on sustainability – addressing energy and transport, supporting plastic-free initiatives and managing as well as promoting our areas as environmentally sensitive destinations.

The emergency we have reached is partly the result of some extreme excesses which need to stop. But it is also created by lots of 'normal' behaviour by us – 'normal' agricultural practices, 'normal' amounts of travel and energy consumption. These norms cannot be sustained.

There isn't consensus about the problems, or the solutions. So alongside action, we need to keep raising these topics and challenging ourselves and others, and we can make progress. Because of natural processes, restoring nature will mean looking outside our own area. And we can't just aim for a carbon neutral Shropshire Hills AONB, or county or even a country. To respond to this global issue means we must aim for our place in a zero carbon world.

The 2017 report 'Zero Carbon Britain' contains some excellent ideas, and extracts are at Appendix 3.

Workshop session

For the workshop session we will split into three groups which members can choose:

1. Nature recovery
2. Farming and land management for zero carbon
3. Energy, transport and tourism for zero carbon

Questions: (all in the context of achieving nature recovery and zero carbon)

1. In a few minutes to start with, what's going well in the Shropshire Hills in the topic area of your group?
2. What further things can you or your organisation do on this topic, right now?
3. What support do you need from the AONB Partnership to do this?
4. What else should we be recommending to the Councils to do?

List of Background Papers
Minutes of Shropshire Council meeting 16th May 2019 https://shropshire.gov.uk/committee-services/documents/g3759/Printed%20minutes%2016th-May-2019%2010.00%20Council.pdf?T=1

Minutes of Telford & Wrekin Council meeting 25th July 2019
https://democracy.telford.gov.uk/documents/g1170/Printed%20minutes%20Thursday%2025-Jul-2019%2018.00%20Full%20Council.pdf?T=1

NFU September 2019 report Achieving Net Zero: Farming's 2040 Goal
https://www.nfuonline.com/news/latest-news/achieving-net-zero-meeting-the-climate-change-challenge/

The Wildlife Trusts 2018 Towards a Wilder Britain – Creating a Nature Recovery Network to bring back wildlife to every neighbourhood https://www.wildlifetrusts.org/sites/default/files/2018-06/Nature_recovery_network_final.pdf

---

Human Rights Act Appraisal
The information in this report is compatible with the Human Rights Act 1998.

Environmental Appraisal
The recommendation in this paper will contribute to the conservation of protected landscapes.

Risk Management Appraisal
Risk management has been appraised as part of the considerations of this report.

Community / Consultations Appraisal
The topics raised in this paper have been the subject of earlier consultations with Partnership members.

Appendices

Appendix 1   NAAONB Colchester Declaration

Appendix 2   RSA report Our Future in the Land, Executive Summary

Appendix 3   Extracts from 2017 report Zero Carbon Britain – Making it Happen (Centre for Alternative Technology)

The Colchester Declaration 2019

Set against a backdrop of unprecedented concern for the future of the natural world, and intergovernmental reports that the current global response to the effects of human impact on nature is insufficient – the National Association for Areas of Outstanding Natural Beauty believes that now is the time to significantly increase the scale and pace of nature conservation activity in AONBs. Using our unique network and partnership model, we are making a collective Declaration on Nature in AONBs, setting out our strategy for change.

With many AONB host authorities having taken the step of declaring a Climate Emergency we are demonstrating our readiness to act to redress declines in species and habitats within the context of a wider response to climate change.

We believe

1. Natural Beauty has intrinsic value and means so much to people
2. AONBs should be places of rich, diverse and abundant wildlife
3. Nature recovery is central to the conservation and enhancement of natural beauty
4. Climate change is the biggest threat to humanity and one of the greatest threats to biodiversity. Designated landscapes offer some of the most powerful solutions to the challenges of climate change
5. The network of AONBs and National Parks, their teams, partnerships, authorities and stakeholders offer a unique solution to tackling environmental challenges

We pledge

By July 2020

1. To enable an approach that creates opportunities within AONBs for people to make an emotional connection with nature.
2. To prepare a Nature Recovery Plan for each AONB

By 2024

1. To embed an ecosystems services approach into all AONB Management Plans
2. To ensure all AONB management plans include meaningful measures around climate change mitigation and adaptation, including clear, measurable targets to support Net Zero

By 2030

1. That at least 200,000 ha of SSSIs in AONBs will be in favourable condition
2. That at least 100,000 ha of wildlife-rich habitat outside of protected sites will have been created/ restored in AONBs to further support the natural movement of plants and animals
3. That at least 36,000 ha of new woodland will have been planted or allowed to regenerate in AONBs following the principle of the right tree in the right place
4. That, by each AONB immediately adopting a species on the threatened list and by preparing and delivering a Species Action Plan, at least thirty species relevant to AONBs will be taken off the list by 2030

We call on Westminster and Welsh Governments to provide the power and resources to make these targets achievable

Our Future in the Land

RSA
21st century enlightenment

Food, Farming
& Countryside
Commission

Executive summary

Our future depends on the land. The land nourishes and supports us. It provides for our nutrition, our health and our wellbeing. Food and farming depend critically on the fate of the countryside. Those who live and work here are the stewards of this relationship but the responsibility for it rests with us all. Our own health and the health of the land are inextricably intertwined.

In the last 70 years, this relationship has been broken. Driven by poor policy and perverse incentives, the food and farming system has become one of the main drivers of human and ecosystem crisis. From deforestation, loss of wildlife and soil degradation, to widespread pollution and spiralling diet-related ill-health, people and planet have suffered alike. Far from being the sector that nourishes us, and the land on which we all depend, the system has damaged and depleted our precious and finite resources.

We have relied for too long on the hope that future technologies can repair the damage caused by this. Time is now running out. The actions that we take in the next ten years are critical: to recover and regenerate nature; and to restore health and wellbeing to both people and planet.

The good news is that people are now grasping the extent of this challenge; the call for collective and concerted action is rising. And everywhere, people are responding – shareholders and schoolchildren,

farms and food businesses, and in communities all around the UK. Whilst the challenges are complex and interconnected, we already have many of the tools we need to act.

The RSA Food, Farming and Countryside Commission is an independent inquiry established in November 2017, with support from the Esmée Fairbairn Foundation. Chaired by Sir Ian Cheshire, 15 Commissioners were drawn from farming and food businesses, from public health and citizens groups, from thinktanks and universities. The work came at a particularly challenging time in the wake of the EU referendum. But from very early on, the Commissioners agreed that the focus of the work should not be defined by current circumstances. They wanted to tackle the bigger challenges facing the food, farming and countryside sector: from climate and ecosystem breakdown to rising rates of diet-related ill-health.

Commissioners also wanted to hear more from people who are not usually involved in these debates.

> "I'm a farmer and I can't afford to buy the food I produce. How ridiculous is that?"
>
> James, Peak District sheep farmer

Decades of policy to produce ever cheaper food has created perverse and detrimental consequences. Farm gate prices are low; and whilst food in the supermarkets is getting cheaper, the true cost of that policy is simply passed off elsewhere in society – in a degraded environment, spiraling ill-health and impoverished high streets. The UK has the third cheapest food amongst developed countries, but the highest food insecurity in Europe.

The cost of just one diet-related illness – Type 2 diabetes – to the NHS, and in lost work and benefits, is nearly £27bn a year.

Many farmers are at a loss to know what to do for the best. Agroecology or high-tech solutions? More intensification, extensification or diversification? And how to disinvest from investments made in good faith? We found farmers open to change but anxious, and locked into their current business models by debt, skills or circumstance.

In the UK, agriculture contributes 11 percent of GHG emissions, and is the biggest driver of wildlife loss, with 67 percent decline in the abundance of priority species since 1970 and 13 percent of them now close to extinction.

"People come here for the lifestyle. That's great, don't get me wrong. But will they stand for the council? Will they coach the kids' football team? Because at the same time the local bloke driving a tractor for £14,000 a year hasn't got a hope of living in this village."

Mark, Nottinghamshire

Nowhere do conflicts in food, farming and the countryside show up more than in discussions about how we use our land and who decides. Debates have become polarised and it is the ground on which the battles for the future of farming and the countryside are being fought.

Only 8 percent of rural homes are affordable, compared to 20 percent in urban areas; weekly transport costs average £132 in rural areas compared to £71 in urban areas.

During our inquiry we heard many examples of people already taking action. Inspired by them, and as we conclude this phase of our work, the Commission's recommendations for actions are underpinned by three interdependent principles:

1. Healthy food is every body's business
2. Farming is a force for change
3. The countryside has to work for everyone

We also propose a framework for change to speed up the transition to a more sustainable food and farming system, where radical ambitions can be implemented at scale and at pace, through practical actions by governments, businesses and citizens.

Healthy food is every body's business

Healthier and life-enhancing diets mean more and better fresh fruit, vegetables, nuts and pulses, less and better meat and dairy, with livestock products coming from climate and nature-friendly production, with zero food waste, and rebuilding our connections with food producers and with each other.

Much attention is directed towards the challenge of feeding nine billion people by 2030. But we already produce more than enough for everyone in the world to eat well. Today, it is inefficiently and unsustainably produced, profligately wasted and unfairly distributed.

To understand how UK farming could contribute to a more sustainable and healthy diet, we explored reactions to this year's high-profile call from the EAT-Lancet Commission which included a recommendation to move to more plant-based diets. We brought farmers and others together with EAT-Lancet scientists, to model scenarios sensitive to the UK's specific conditions. The results highlighted significant areas of convergence, supporting sustainably-produced pasture-fed livestock to make the best of the UK landscape and climate.

This is the time for an historic drive to put health at the heart of our food system. Government holds many of the key levers and must take the lead, in partnerships with businesses and civil society. All effort, policy, legislation, money and resources must be directed towards implementing and accelerating a transition plan for climate, nature, and public health and wellbeing.

We recommend:

1. Levelling the playing field for a fair food system – good food must become good business
2. Committing to grow the UK supply of fruit, vegetables, nuts and pulses, and products from UK sustainable agriculture, and to using them more in everyday foods
3. Implementing world-leading public procurement, using this powerful tool to transform the market
4. Establishing collaborative community food plans help inform and implement national food strategies and meet the different needs of communities around the UK
5. Reconnecting people and nature to boost health and wellbeing

Farming is a force for change, unleashing a fourth agricultural revolution driven by public values

The case for change is now urgent and unassailable - farming systems must change radically to become more sustainable. This is a challenge as fundamental as decarbonising our energy system. Many farmers around the world are picking up the challenge and the opportunities with courage and commitment. But some were sceptical about the practicality, fairness or impact of future environmental payments.

In a series of polls and focus groups, we asked farmers what it would take to help them, and the industry as a whole, to transition sustainably. Their priorities were:

- A predictable policy environment – a clear and reliable framework to unlock investment and allow strategic planning

- Relevant innovation – public research investment that matches what farmers need

- Peer-to-peer support – technical, business and social support go hand-in-hand in a sector under pressure

- Fair prices and stable markets – a decent income from their produce so farmers can save, plan and reinvest

- Access to innovative finance – farmers are being asked to adapt to an uncertain future, and need investors and lenders ready to share the risk

Changing farming systems is a serious and long-term task. We propose a transition plan for agriculture that applies ecological principles to food and farming systems, optimising interactions between plants, animals, humans and the environment, as well as with the social components of a fair and sustainable food system – a fourth agricultural revolution.

Far from being a revolution that leaves victims in its wake, we want to place farmers in the driving seat to design and lead the change. Working together with industry, stakeholders and government, a transition plan to 2030 must be backed by fair investment, and function from farm scale through landscape scale to national scale.

We recommend:

1. Designing and implementing a ten-year transition plan for sustainable, agroecological farming by 2030

2. Backing innovation by farmers to unleash a fourth agricultural revolution

3. Making sure every farmer can get trusted, independent advice by training a cadre of peer mentors and farmer support networks

4. Boosting cooperation and collaboration by extending support for Producer Organisations to all sectors

5. Establishing a National Agroecology Development Bank to accelerate a fair and sustainable transition

A countryside that works for all, and rural communities are a powerhouse for a fair and green economy

How do we best manage all our land for farming, for nature, for climate adaption, for habitat restoration, for housing, infrastructure, energy and industry? This isn't about a new spatial plan; it is about taking a farsighted, whole systems and systematic view.

Whilst around one percent of people are employed in agriculture, around 72 percent of UK land is farmed. People are part of the landscape; they shape it and are shaped by it. The beauty of the countryside contributes to the local and national identities of rural and urban people alike. Access to the countryside and to the natural world is crucial to wellbeing. This requires flourishing rural economies to sustain vibrant, living, working communities.

It is also in and on the land that new work is needed to respond to the well-rehearsed global challenges. The world of work is changing fast. Amidst the talk of disruptive technologies and their impact on careers, we also need to ask, what is the work needed right now to recover fragile natural and human systems and who will do it? The fierce sense of urgency to tackle the climate emergency is well expressed amongst young people, who will be hurt most directly by degraded ecosystems.

We recommend:

1. Establishing a national land use framework in England that inspires cooperation based on the public value of land, mediating and encouraging multipurpose uses
2. Investing in the skills and rural infrastructure to underpin the rural economy
3. Creating more good work in the regenerative economy
4. Developing sustainable solutions to meet rural housing need
5. Establishing a National Nature Service that employs the energy of young people to kickstart the regenerative economy

A framework for change

Radically shifting the whole system is likely to combine incremental, transformational and disruptive change. We need leaders who can hold together broad coalitions of interests, unified around a connecting mission, to imagine a better version of our shared future, and to translate shared intention into collective action.

A radical mission must be underpinned by practical actions. And as we have found throughout our inquiry, people are already doing things to bring a more regenerative future to life. Around the UK, farmers and growers, businesses and communities are bringing their ingenuity to work, to craft creative solutions to the problems they are dealing with day in and day out. Our companion document to the report, Field Guide for the Future, shares their stories, experiences and learning.

Our relationship with the EU and our subsequent trade arrangements are still to be determined. It is vital that the government reflects UK standards in trade deals and champions the multilateral approaches best placed to achieve a consistent approach worldwide. Meanwhile, government already has some useful tools at its disposal to act now. One is the Public Value Framework and we set out how we think this can be imaginatively and practically extended to provide for stronger cross-departmental actions across government, local and regional bodies.

The Natural Capital Committee and others have moved the dial in debates about how public money should be spent for public benefits. The three underpinning principles are compelling. And we think we can go further.

Public money for public goods	▶	all the resources aligned for public value
Polluter pays principle	▶	not just the environment but also health and wellbeing
Net environmental gain	▶	AND fair net social gain

We also need new economic measures. Perverse incentives in one part of the system can drive actions which create unforeseen consequences elsewhere, with huge costs to the public purse, people and planet. Businesses require the right enabling environment to change, with meaningful incentives to enrich public value. To back these up, we call for a strong and escalating regulatory baseline, so that business activities which deplete public value are curtailed. We must make it easy for people to do the right thing and increasingly difficult (or expensive) to do the wrong things.

But we also know that the change required is momentous. Some of our recommendations are straightforward, aligning with others; some require much more deliberation, so that citizens, businesses and communities can work through the complex choices and implications. Our report sets out actions for everyone. In taking this whole systems approach, our responses are both radical and practical, engaging all those who need to act, to do so together.

Next steps

The Commission will continue to work with partners until the end of October 2019 to help progress and implement our recommendations.

Esmée Fairbairn FOUNDATION

THE ASHDEN TRUST

Appendix 3 to item 5 Extracts from
 Zero Carbon Britain - Making it Happen (2017)

Executive summary

In signing up to the historic Paris climate change agreement, the UK has accepted that it must enshrine in law a goal of reducing its carbon emissions to zero. The UK is also legally committed by its own 2008 Climate Change Act to delivering an 80% cut in emissions by 2050. Yet, even based on emissions within its borders, not counting those associated with imports, the UK is not on track to meet this target, let alone reach zero carbon. There is an urgent need to increase ambition on delivery.

CAT's previous Zero Carbon Britain (ZCB) reports, plus a range of other work, clearly demonstrate that we have all the technologies needed to reach net zero carbon. Rather than an unresolved technical challenge, it is increasingly accepted that we must overcome a mix of political, cultural and psychological barriers. This report investigates how we can overcome them, linking up insights from research with examples and stories from individuals and organisations that are living the changes we need to see.

This report doesn't claim to provide all the answers – there is a clear need for more detailed and better resourced work, further linking research and practice across disciplines, borders, sectors and scales.

Where we are now

Understanding where we are today is a vital step in exploring what needs to change, and how that can be brought about.

The situation today is a long way from where we need to be. Most of the UK's electricity is generated from fossil fuels and the UK is not on track to meet its target of generating 15% energy from renewables by 2020. The energy system is highly centralised and dominated by a small number of large companies, while community energy schemes supply less than 1% of electricity.

Most people in the UK are eating too much animal protein and processed foods and not enough fruit and vegetables. Obesity levels are on the rise and a huge amount of food is being wasted.

There is growing car dependency, through choice or necessity, while public transport services are being cut back. Electric vehicles are still a small percentage of the overall fleet. There has been a dramatic growth in air travel, due to a relatively small proportion of richer frequent flyers.

The UK has an ageing and poorly insulated building stock, with over 2 million households in fuel poverty.

Inequality in the impacts of climate change

Climate change affects everyone, but some people suffer more than others. It reinforces and exacerbates existing patterns of inequality, particularly in developing countries. In the UK, worsening storms, flooding and heatwaves particularly impact disabled people, children and older people, as well as deprived communities. The UK contributes to global climate change impacts through its domestic emissions plus those associated with imported goods and its high carbon investments overseas.

What needs to change?

There needs to be a significant increase in installed renewable capacity for electricity and heat. We must increase the amount of plant-based food and reduce the amount of meat, especially beef and lamb, as well as dairy in our diets. We must significantly reduce the need to drive or fly by improving public transport, increasing levels of walking and cycling, and providing disincentives to drive or fly. All vehicles need to be run on 100% renewable energy.

New houses need to be built to zero-carbon standard and use low-carbon materials for construction, while existing buildings need to be retrofitted to significantly reduce energy demand. All of these changes can result in significant social, economic and environmental benefits.

The barriers to change

Exploring the wider barriers helps us grasp the multifaceted nature of this challenge.

Worldviews and values: Climate change is not the root problem but a symptom of our materialistic culture and growing disconnection from nature and from each other. The belief that we are separate from, or even somehow 'above' nature, allows continued inaction, even when there is clear evidence that our actions are deeply damaging the habitats of other humans and other species. Our values have a profound effect on our behaviour. As long as values based on image, wealth and status appear to dominate society, people will struggle to act on more helpful values, such as honesty, social justice and equality.

Communications: The prevailing silence on climate change across the media and in public dialogues undermines levels of public awareness and action. There is significant media bias, with views of marginal climate sceptics given inappropriate prominence. There is also undue stress on the uncertainty of climate science, driven through well-funded campaigns by industry. Corporate or political affiliations can lead to media bias, often because of dependence on advertising revenue. Highly concentrated media ownership gives a few individuals a disproportionate influence on public opinion. Commercial advertising

promotes values that are counter to concern and action on climate. People are often unaware of the subliminal effects of advertising, and children – often targeted by advertisers – are especially vulnerable.

Psychology and behaviour: There are numerous psychological barriers preventing people thinking about or acting on climate change, even when they have high levels of concern about the issue. Many people fail to take responsibility because of feelings of powerlessness or scepticism about the efficacy of individual action. In some cases there may be a lack of knowledge or information about what to do. People are heavily influenced by others and observed social norms, so will be reluctant to act if no one else does.

There may also be a lack of urgency because climate change is not seen as a personal threat or because it's not recognised as a moral wrong. Many of the behaviours that need to change are also habitual behaviours that are hard to change. There has been undue focus on uncontroversial individual behaviour change and not enough emphasis on more radical action and tackling barriers at social, industrial and governmental levels.

Carbon lock-in: Industrialised economies have become dependent on fossil fuel systems over many years, developing significant system inertia that is hugely resistant to change. While innovation at the local level can break through this inertia, many local projects face difficulties in scaling up or spreading ideas into the mainstream. Small groups often lack the necessary financial resources, time or skills, making them vulnerable to external shocks and problems of fatigue and burnout.

In many cases there are practical barriers that make alternatives less convenient or attractive, such as the hassle factor of building retrofits. Local councils are responsible for local policy and delivery of planning, housing, transport and waste but have seen budget cuts that undermine action in these key areas. The planning system has been constantly devalued and local planning powers removed.

Economics and finance: The continued belief in the ideology of neo-liberalism, deregulation and free markets undermines society's ability to deal with climate change. The systematic privatisation and contraction of the public sphere favours returns to shareholders over environmental responsibilities, and means the necessary funds are not available for investment in the zero carbon transition. There is an urgent need for a level playing field for low or zero carbon alternatives. Fossil fuels receive billions of pounds in subsidies, far higher than those given to renewables, and the full external costs of fossil fuels are not included in the price, making them appear cheaper.

Higher upfront costs of super-efficient buildings or electric vehicles also impede uptake despite lower

whole–life costs than conventional alternatives. The government has an interest in supporting national fossil fuel production due to the contribution of revenues to government budgets. There is an investment gap for renewables, with traditional methods of financing tending to favour large centralised projects.

There is a pervasive but mistaken assumption in society that perpetual growth within our finite ecosystem is synonymous with improved well–being and is sustainable and desirable. Also the problems with using GDP as a measure of progress and quality of life have long been recognised by economists and others.

Politics and governance: Changing systems like energy or food is a political power struggle with risks including confronting powerful vested interests and implementing policies perceived as unpopular. Just 90 private and state owned companies are responsible for nearly two-thirds of historical cumulative emissions of carbon dioxide. Fossil fuel and other high carbon industries successfully lobby governments to weaken climate legislation and policy, a phenomenon known as regulatory capture. Current lobbying laws fail to meet international principles on transparency and weaken checks on corporate influence.

There is also a problem of 'revolving doors' where politicians and civil servants move backwards and forwards to and from industry. Lack of collective political will for action is a fundamental obstacle, with both commitment and cross–party unity on climate change diminished over recent years. Public spending cuts have undermined green investments, while fossil fuel tax breaks have increased.

Even when politicians are aware that climate change is urgent and important they may still fail to act because of factors including; undue faith in future technical solutions, education in neoclassical economics, 'tendency for group think' and a need to avoid blame. In recent years the government has shifted away from legislation towards self–regulation and voluntary approaches, and has withdrawn or repealed key laws and policy, such as the legislation for zero carbon homes.

Many of the remaining policies have shortcomings. The Climate Change Act has loopholes that prevent emissions from the power sector being included in carbon budgets, and there is a lack of accountability for meeting its targets. It is also difficult for citizens and NGOs to bring legal cases against polluting firms. The changes proposed to Judicial Review, an important check and balance on government action, will make it extremely difficult for charities to seek this legal remedy.

Making it happen

Based on our assessment of the barriers, we offer a synthesis overview of the broad range of current research and practice demonstrating how these can be overcome. There is no single approach that guarantees success,

but a combination of interventions in different ways can leverage change.

Worldviews and values: The importance of feeling connected to nature is a long recognised way of fostering pro-ecological behaviour. Helping people understand that their well-being is interlinked with the protection of the natural world has been shown to foster more sustainable behaviour as well as leading to higher levels of health and well-being. Promoting more compassionate values is important, so that these values become strengthened across society.

Reducing the focus on consumption needs to be recognised as a positive shift that increases well-being. Measures that can help this include reducing the working week as a way to break the cycle of working to spend, and promotion of the sharing economy, which enables products and services to be given or exchanged. On the production side, the circular economy designs out waste in a closed loop system.

The main global religions now show increasing unity around climate change, with many promoting less materialistic lifestyles and engaging on climate both practically and politically. Outside of organised religion, many people now seek spiritual experience that provides meaning in their lives. Some practices, such as meditation and mindfulness, have been shown to foster greater compassion for others and more sustainable behaviour. Spiritual practice is also being successfully combined with both social and political change.

The arts have long been a powerful catalyst in transforming worldviews and sparking cultural change, allowing imaginations to flourish, glimpsing other ways of seeing and feeling. It is from these experiences that different futures can emerge. The arts have the ability to engage people collectively and to challenge the status quo.

Communication: The current concentration of UK media ownership needs to be addressed through regulation with clear thresholds in law. This requires a wide public campaign to build the necessary political support. While media misinformation sticks and is often hard to correct, it can and should be challenged head-on by climate scientists and activists. With limited resources the climate movement can use clever and engaging online communications to counter misinformation and greenwash.

Given the pervasive and detrimental nature of advertising there is a clear need to better regulate the industry, banning advertising in public spaces and restricting advertising to children. Many other countries have introduced such restrictions, and it is likely that there would be public support for this in the UK. The creative power of the marketing industry can also be harnessed in ways that support the zero carbon transition.

The prevailing climate silence can be broken using stories that are more engaging and memorable than information alone, backed by positive images that can have a strong

mobilising effect. Communication that highlights the positive benefits of mitigation is more effective in promoting action than fear driven appeals. The use of low-cost accessible social media can enable rapid communication with a global audience and can be used to mobilise large numbers of people very quickly, as well as driving news traffic.

Psychology and behaviour change: Positive stories of what can be practically achieved can help counter feelings of helplessness, demonstrate that other people care, and show that the actions of both individuals and communities do make a difference. The influence of social norms related to how others behave and what people believe others expect of them can be harnessed to encourage more sustainable behaviour. High profile individuals can also help normalise new behaviours.

The lack of urgency on climate change can be addressed by making the issue more immediate, for example, by emphasising the impacts of severe weather. Care is needed, however, to avoid overwhelming people or inducing guilt. Engagement can also be increased by framing climate change as a moral wrong that needs to be put right, and linking action to positive emotions, such as hope, pride and gratitude.

Behavioural change can be more closely linked to the wider structural changes needed in society, industry and government. Better programme design and targeting can improve outcomes and can be used to influence

social action and tackle more damaging behaviours. The challenge of breaking ingrained habitual behaviour can be addressed during transition periods, such as moving house or changing jobs, when habits are disrupted and people are more open to change.

Carbon lock-in: Thousands of community groups across the UK are developing practical, positive examples of the zero carbon transition, ranging from waste food cafés to community energy schemes. While many of these community-scale projects are small, they empower and connect people, help expand the political choices available, give people a sense of agency and help normalise sustainable behaviours. The role of intermediary organisations that connect and support grassroots projects is very important in helping to scale up and replicate ideas. Government support is needed for community action on carbon in the form of a long-term strategy and the provision of necessary resources.

Making zero carbon alternatives more convenient and attractive is essential. For example, by making walking and cycling safer with the provision of off-road, segregated paths and reduced traffic speeds, or combining energy works with general home repairs, maintenance and improvements.

Rethinking planning can help reduce car dependency through measures, such as an increase in car-free developments, higher minimum densities for housing and tighter parking provision. There

is also a need to restore the rights of councils to set higher energy standards for local developments.

Local authorities play a key role in reaching carbon targets. Despite funding pressures, many UK authorities have developed innovative low carbon solutions, and councils can make significant savings from energy efficiency and earn revenue from renewable energy schemes. Cities are in an ideal position to catalyse wider climate action, with higher urban densities enabling innovative approaches. Several world cities plan to be carbon neutral within the next ten years.

Economics and finance: Moving on from the prevailing and demonstrably failed economic model of neo-liberalism with its emphasis on free markets can facilitate a more co-operative, fair, enriching, resilient and sustainable economic system. Backed by a shift from a narrow focus on economic growth and GDP, this could transform how society sets out its goals and evaluates progress towards them.

Removing the massive subsidies currently given to fossil fuels and making all energy choices pay their full societal or environmental costs will help level the playing field for zero carbon alternatives. This could manifest in the form of a carbon tax for fossil fuels, congestion charging, workplace parking schemes, taxes on unhealthy foods and a levy on frequent flyers.

Local and municipal banks and citizen finance can assist in providing investment for zero carbon measures, such as renewable energy generation, retrofitting buildings and sustainable transport infrastructure and services. Low and zero interest 'pay as you save' loans could be provided for energy efficiency measures using successful examples from around the world to remodel the failed Green Deal.

New business and ownership models can prioritise environmental and social benefits as much as economic returns; these include energy co-operatives, social enterprises, new energy supply models, municipally owned companies, community and public ownership.

There is enormous scope for more community and public ownership, particularly in energy supply and distribution. This can be achieved by strengthening policies that encourage community energy projects and through new legislation.

Taking assets like the railways or national grid back into public ownership could ensure that the necessary improvements take place and profits are reinvested for the public good rather than being distributed to shareholders.

Politics and governance: Political action requires increasing the visibility of climate change amongst voters, whilst providing clear evidence that workable solutions already exist gives politicians no place to hide. Powerful vested interests and their undue influence on the regulatory process can be challenged through shareholder action and divestment campaigns, as well as

by increased transparency. The current law on transparency of lobbying can be amended to satisfy international principles of transparency. Rules to prevent the problem of 'revolving doors' must be tightened.

Mass social movements based on coalitions of a broad range of groups will be needed to drive political support as individual issue groups are not strong enough on their own. Forging a sense of collective identity and finding common values is vital. While traditional insider advocacy approaches are valuable, disruptive forms of protest are also needed. Throughout history radical voices have challenged and helped overturn systems of injustice and helped shift the window of political possibility.

Cross-party political support for both policy and action can be built by framing communications appropriately and by the use of trusted communicators. Submissions to Parliamentary Select Committees or direct communication with MPs and local councillors help build support. Political risk can also be reduced by directly linking climate policies with complementary policies, such as health.

New and strengthened legislation and policy frameworks are needed. Despite government preference for deregulation or self-regulation, most voluntary approaches have performed poorly. The Climate Change Act must be amended to deliver the net zero emissions target and to close existing loopholes that exclude emissions from the power sector.

There also needs to be a better system of accountability at all levels. New laws can protect the planet and future generations, such as an international law on ecocide. In Wales, a groundbreaking new law requires public bodies to consider the well-being of future generations in decision-making. Legal access for NGOs and citizens to challenge public policy also needs to be improved.

Conclusions

Getting to zero carbon will require radical system change. All the necessary technologies already exist, improvements are appearing all the time and costs are falling. However, our hesitation to believe that this transition is possible is, in itself, one of the key barriers to achieving that shift.

History shows that radical social and technological changes are possible, and can happen within a few years. This transition should not be seen as burdensome or a return to the past, but as one of the most exciting opportunities in human history. Isolated, stressful, consumer-focused lifestyles can be replaced by a sense of connection with community and nature, delivering benefits in physical health and psychological well-being.

The overarching headline is that we need to do this together. It will take many of us pulling in the same direction to enable change, and each and every one of our actions can contribute to making a zero carbon future happen.

Chapter 2:

Postcards from the future

Being able to envisage positive change is a powerful first s ep in making it happen. Drawn from CAT's Zero Carbon Britain research, these 'postcards' help us visualise what a zero carbon future could look like. Looking back from a future where we have risen to the climate challenge, they explore what changes have occurred in the four key sectors of food, transport, buildings and energy.

2.1 Food

The average diet in the UK is now healthier, more varied and sustainable owing to a mixture of legislation and education. The trend in obesity has been reversed and is no longer a health concern now that the consumption of foods high in fats, salt and sugar has fallen.

Restrictions on advertising, as well as the taxation of junk foods, have helped move the population as a whole to a much more balanced diet. There is a greater understanding of healthy food choices and the benefits of more nutrient-dense foods. This vastly increased awareness of what actually constitutes a diet healthy for both people and planet means people eat significantly less red meat – particularly beef and lamb, but also pork and chicken, and less cheese, milk and eggs. Many people enjoy high quality meat a couple of times a week, and while most still eat a certain amount of dairy produce, plant-based alternatives are everyday fare.

Publicly-funded organisations like schools and hospitals always provide sustainable diets. Restaurants and manufacturers have diversified significantly and the majority of meals on their menus are now non-meat or lower meat choices. Many popular dishes, such as spaghetti Bolognese, are now made by adding a small amount of meat to a plant-based mince. Nobody seems to have noticed the difference.

Farmers grow a wider range of crops, providing more food directly for human consumption, rather than for livestock. The UK grows much more of its own fruit and vegetables. Animal welfare and meat quality is also improved. Pigs and chickens are fed predominantly on food waste, with a small amount of crops still grown to feed livestock, to limit the need for these to be imported from elsewhere. The reduction in livestock farming has reduced water pollution and enabled better protection of the UK's green spaces and land around streams and rivers, helping wildlife and biodiversity.

2.2 Transport

Towns and cities have become more human-centred and vibrant, with attractive public spaces where people can meet, stroll and shop in traffic-free streets. Cars no longer dominate and vast areas of the land that were once used for car parking have been made into green areas, or converted to low-cost and social housing.

Public transport is now quicker, more affordable and more convenient than travelling by car. Combined with safer and more pleasant options for cycling and walking, these have become the norm for all sorts of journeys, including to work and to the shops.

All cars, light vans and buses are electric or hydrogen-fuelled, meaning they're not only cleaner but quieter too. This has been helped by the reduction of traffic speeds in urban areas to 20mph, making residential areas much safer and enabling children to play outdoors in their streets.

In addition to being less stressed by their commute, people use technology to work more flexibly, all of which make for a more productive working day. The school run is a thing of the past as children walk, cycle or catch the bus.

The efficient public transport infrastructure extends to rural areas, where regular bus services connect with rail networks.

Holidaying in the UK is popular again, regenerating the economies of many British seaside resorts and rural areas. Although some people still take occasional flights for family holidays, health or religious reasons, travelling by high-speed train to continental Europe is favoured by many. Rather like the slow food movement, slow travel for leisure has become popular – with the focus as much on the journey as the destination.

People, especially children, are much healthier and less stressed as a result of the cleaner air and from walking and cycling more. This, together with better diets, has averted an obesity epidemic in the UK, saving money on healthcare and increasing overall levels of well-being.

2.3 Buildings

While many of the UK's buildings look the same, their performance has dramatically improved thanks to comprehensive energy efficiency retrofitting. This has come about through a mixture of minimum energy efficiency standards for buildings, incentive schemes managed by local authorities to ensure secure financial returns, and the provision of low-cost finance.

Building regulations require all new buildings to be built to 'Passive House or equivalent' standards, giving everyone – whether they're home-owners or in the social and rented sectors – homes that are warmer and cheaper to run.

Methods and technologies for achieving these super-high efficiency standards have spread throughout the construction industry. With their wider implementation, costs have reduced significantly and further innovations have been developed. The adjustment in land values to cover increased construction costs has been minimal and many wonder why we didn't do it sooner!

Zero carbon heating systems, such as heat pumps and solar thermal systems, have become commonplace and people are more aware of their energy use and much better at controlling it using smart-meters and energy control systems. There is also a much increased range of 'flexible demands', such as freezer and heat pumps, which can pay the best possible price by automatically selecting to operate at the time when the grid tells them energy from renewables is available.

The materials used in building new buildings and in retrofitting existing ones have changed. Knowledge and information about the embodied energy and carbon of construction materials, as well as the health and well-being benefits of 'natural materials', have become widely available and well understood. At long last, as a nation, our housing stock has caught up with that of our European neighbours.

2.4 Energy

The UK now gets all its energy from renewable sources, from solar panels on roofs and walls, wind turbines on the tops of hills and out at sea, from plantations and energy crops, and agricultural and food waste.

A significant and important percentage of renewables are installed, owned and managed by communities, boosting and stabilising local economies and helping public acceptance. Offshore wind is part-owned privately and part-owned by the public purse, using public sector pension funds. This growth in the renewable energy industry has also created hundreds of thousands of good jobs across the country.

Local authorities return to getting a significant part of their funding from delivering local energy provision, this time sustainably. There is still a national grid, developed to enable a greater proportion of the energy that feeds into it to come from decentralised and community owned sources – for which there is widespread public and political support.

The carbon dividend, an equal per-person refund of revenue raised by a carbon tax, means that although the unit cost of energy has increased, household energy bills are lower as a result of much improved insulation and efficiency. People are still better off than they were, and certainly in a better position than they would have been if dangerous had not been averted.

The renewable energy industry in the UK has also grown strongly, and many see the benefits of the energy transition, particularly the creation of hundreds of thousands of good jobs across the country.

The human and monetary cost of illnesses caused by air pollution has fallen significantly.