# Rural Scotland and Dee Catchment MAPs

## Overview

- Rural Scotland – rural areas, Scotland-wide

  Dee Catchment – focus on water catchment in north-east Scotland
- Composition of the MAPs: Civic society: 45%; policy 30%; science 25%
- Long-term Vision for Rural Areas Topic - **Climate change and environmental services**

**David Miller, Kate Irvine, Susan Cooksley**

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# Climate Change and Environmental Services

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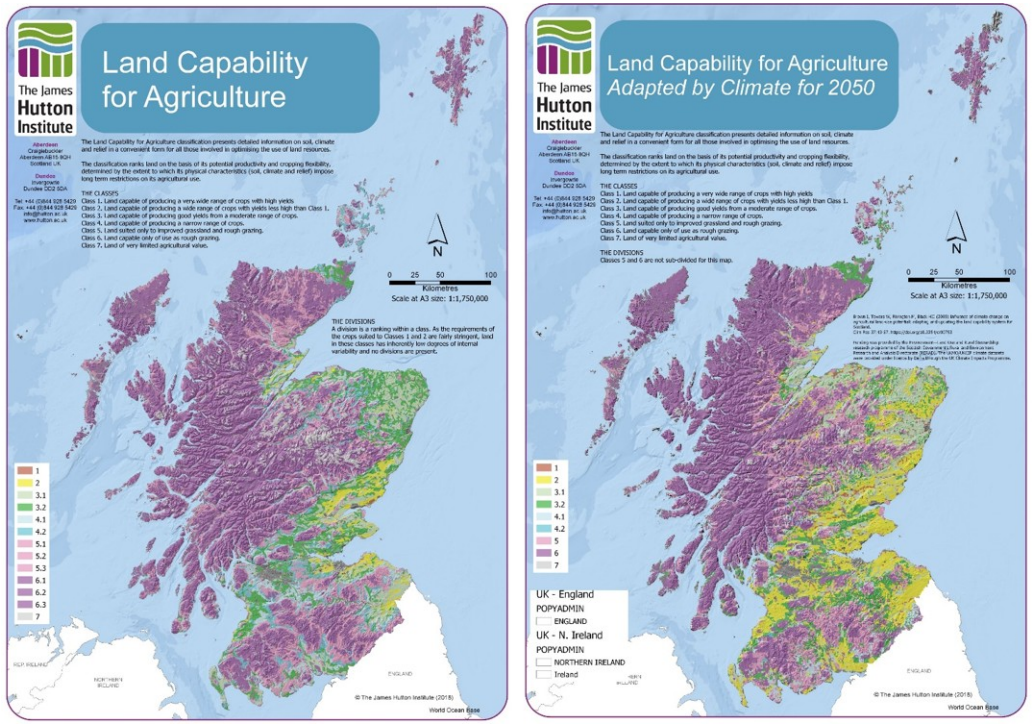
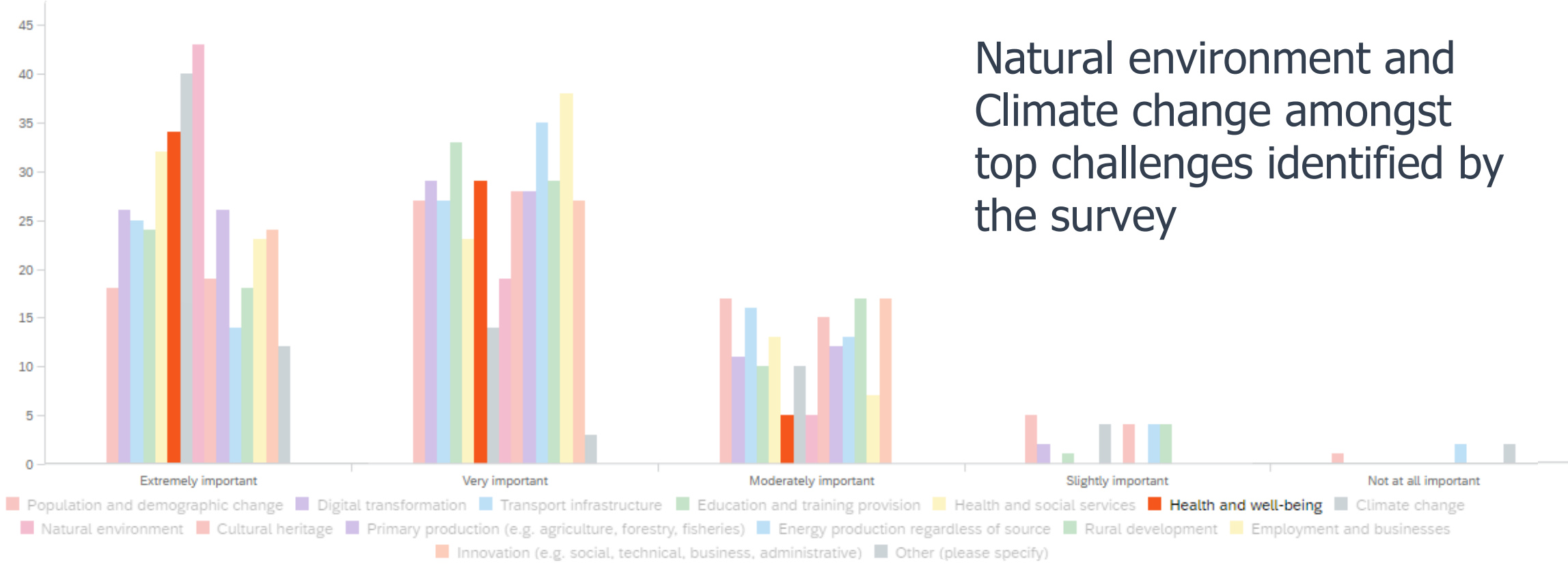
## Climate Change: implications for primary production




## Climate Change: exposure to extreme events

- Climate change can be a driver of change in rural areas, a trigger for action, and a threat to natural and human capital

# Climate Change and Environment: The Top Challenges identified in UK survey




Natural environment and Climate change amongst top challenges identified by the survey

**Health and well-being**

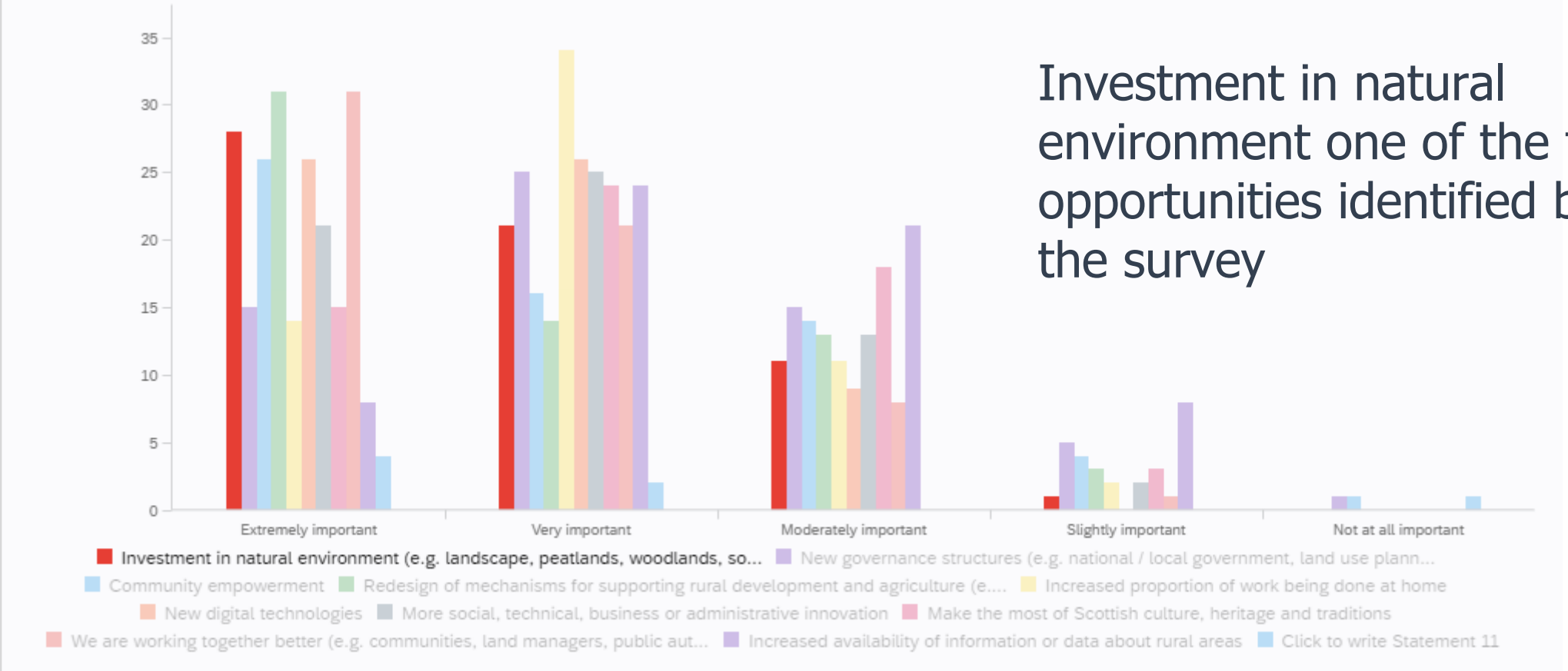
**Note:**
Survey informed discussion, not a statistical sample of population: 83 responses

**Respondents:**
Society - 49: Science - 20; Policy - 14

# Challenges

- Climate Change: implications for primary production (e.g. crop, farm system), habitats and species, water quality (e.g. temperature), landscapes, …
- Resource uses: Managing risks to uses of carbon rich soils (e.g. woodland expansion in wrong areas)
- Social: e.g. i) stresses and pressures adversely impacting mental health and well-being; ii) geographical and socio-economic inequalities exacerbated by climate change
- Uncertainty: impacts of climate change, timescales, human and natural responses, tipping points

# Opportunities from the UK Survey




Investment in natural environment one of the top opportunities identified by the survey

**Investment in natural environment (e.g. landscape, peatlands, woodland)**

**Note:**
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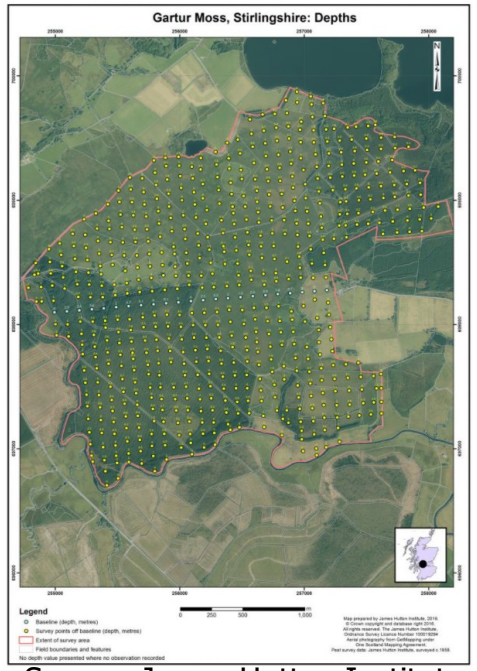
# Opportunities

**Investments:**
**Natural capital**
(Scottish natural capital c.£291 billion in 2015; Office of National Statistics, 2019), e.g. peatland restoration

Source: NatureScot



Source: James Hutton Institute

**Multi-benefit management practices**
Nature-based solutions e.g. natural flood management

**Multi-functional land uses**
Plan multiple functions of land uses to tackle climate change


Source: Innes Miller

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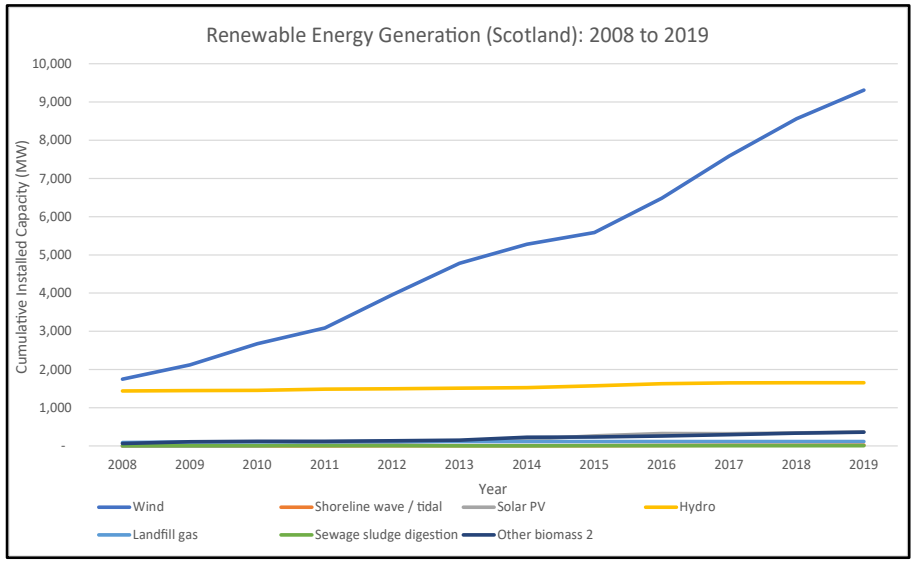
# Opportunities

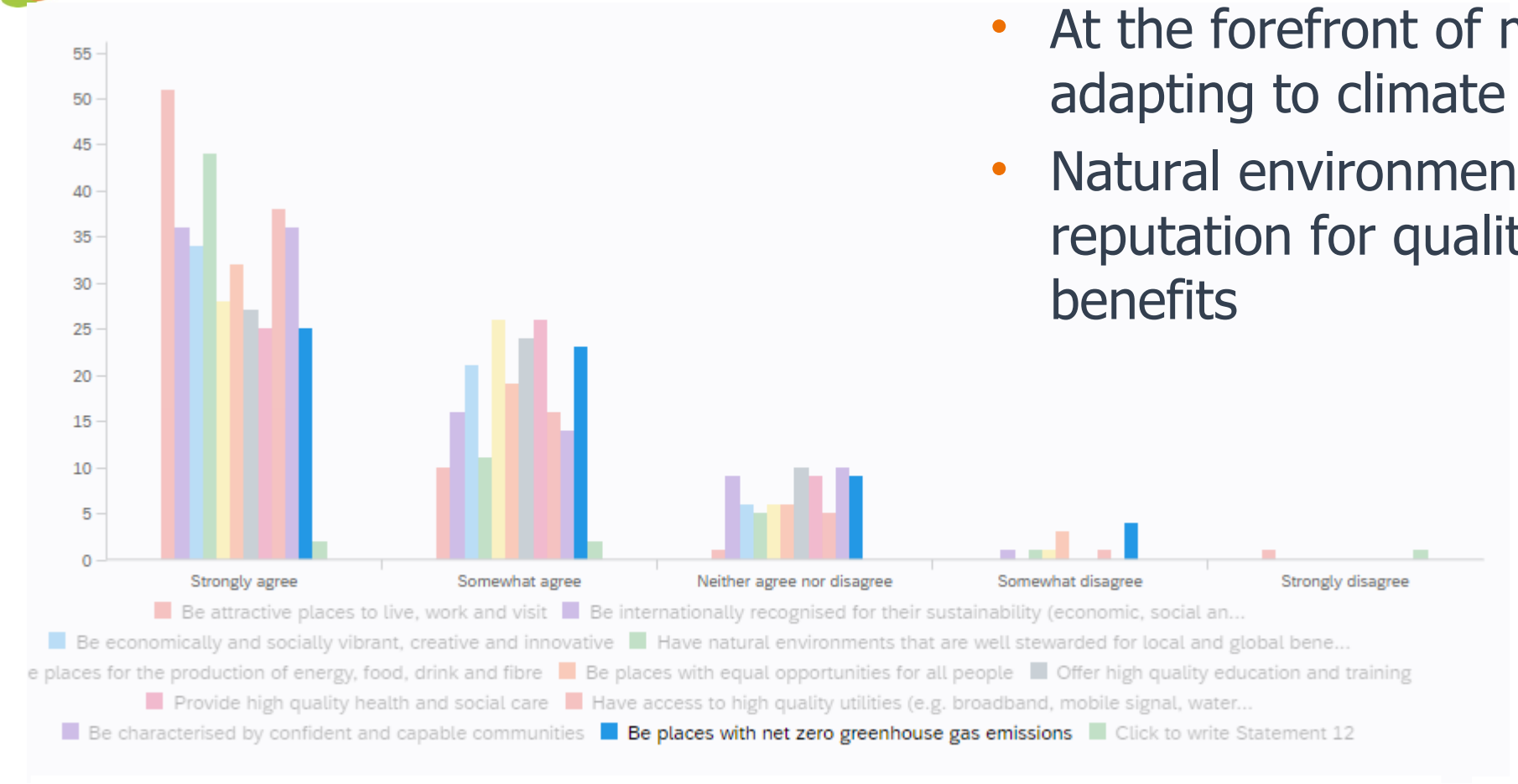
- Understanding and developing land systems most relevant to plotting the pathway to 2040
- Communities and businesses capitalise on policy measures to help achieve the vision (e.g. income from renewable energy)
- Innovation and Internet of Things for monitoring environmental status and change
- Capacity building of all types of actors




Installed renewable energy capacity, Scotland, 2009 to 2019


Training, education, MOOCs, etc.

# Visions from the UK Survey




- At the forefront of mitigating and adapting to climate change
- Natural environments with a global reputation for quality and public benefits

**Net zero greenhouse gas emissions**

**Note:**

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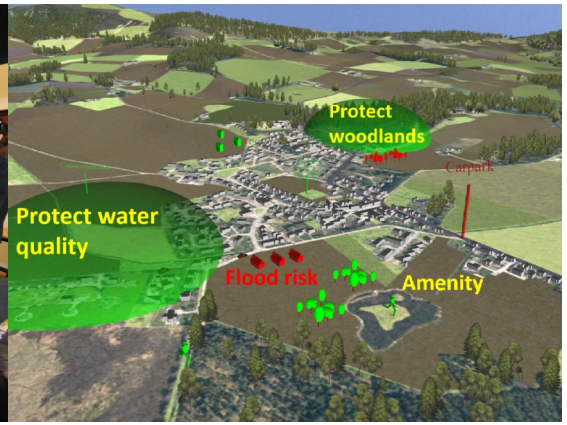
# Vision: As of 2040 ….

- An integrated, landscape level and ecosystem based approach to planning, management and governance of land, land use and landscapes will be widespread
- Scotland will be on track to achieve targets **of net-zero emissions of all greenhouse gases by 2045**
- The target will have been achieved through effective design and implementation of **spatial land use strategies and investment in natural capital**
- A programme of **restoring degraded peatlands** will be well-advanced; woodlands expanded where their contribution to net carbon sequestration can be most effective; and new ways of integrating woodlands into Scottish land uses
- Woodlands will contribute to **effective ecological networks**, functionally and structurally, improving the resilience of natural heritage to pressures of change (e.g. land use, climate change, human behaviour), and have reversed the loss of biodiversity

# Vision

- **Leading development** and implementation of adaptation and mitigation of climate change
- **Young people** taking responsibility for rural areas

Young people planning land uses for a sustainable future; Aboyne, Aberdeenshire, UK (James Hutton Institute)




- **Carbon positive land management systems** (e.g. agro-forestry, agro-ecology)
- **Carbon neutral** value chains (e.g. agri-food)
- Environmental services as key elements in **sense of identity** (e.g. agro-biodiversity, species)
- Equitable use of rural spaces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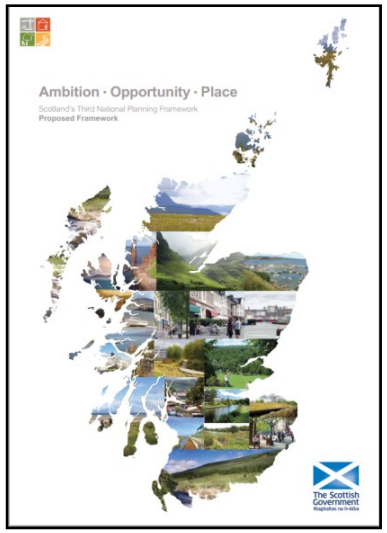
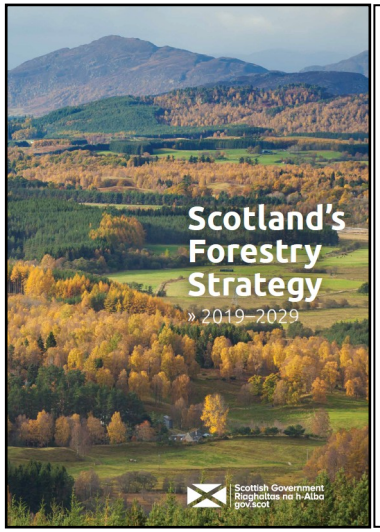
# Enablers

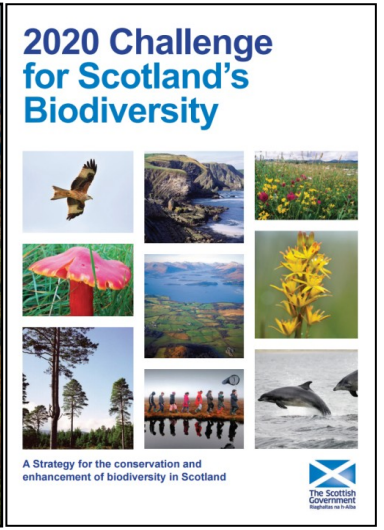
- **Policy Ambition**
  - Climate Change (Scotland) Act, ambitious targets for climate change
- **Linked Policies and Practices**
  - Spatial planning, Place Principle
  - Biodiversity 2020/2030
  - Forestry Strategy 2019 to 2029
  - Scottish Rural Development Programme
  - Land Reform and Community Empowerment Act (e.g. Community Land Fund)
  - Agri-renewables Strategy
  - Mental Health Strategy

**Respondent:**

*"Better environmental management through enabling natural processes Improving ecosystem service provision and natural capital"*



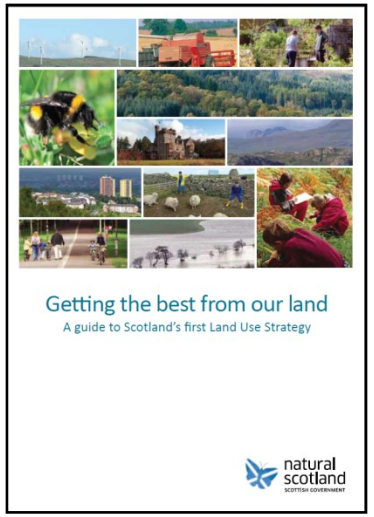
# Enablers

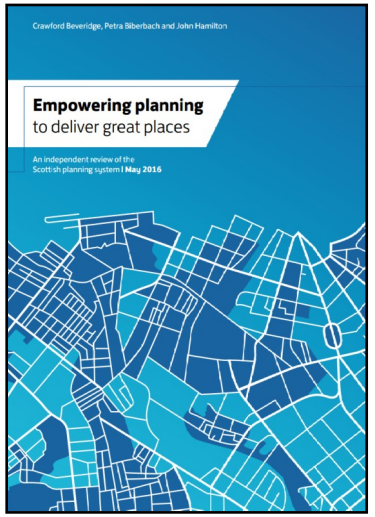
- **Policies and Practices**
  - **Land Use Strategy;** 12 Principles, including… "Where land is highly suitable for a primary use (e.g. food production, flood management, water catchment management and carbon storage) this value should be recognised in decision making"
  - **Regional Land Use Partnerships**

    "We will make regional land use plans for maximising the potential of every part of Scotland's land to contribute to the fight against climate change"

**Respondent:**

Key is … "*How feasible they are, what the priorities might be, and what the gap between the vision and current reality is.*"




**Policy and Principle needs translated into practice**

# Enablers

- **Communities -**
  - Social innovation – Identifying, designing and leasding initiatives in adapting to climate change
  - Empowerment – New legal structures, community capacities
  - Passing on community traditions

**Respondent:**

*"Strengths of rural areas and the people who live and work there, and its culture and traditions, should be celebrated"*

Traditional peat cutting, Scotland (Source: S Chapman, James Hutton Institute)

- **Businesses -**
  - Support micro-businesses provding new services (e.g. monitoring natural capital 'banks')
  - Business capacities, building on innovations learnt during COVID-19
  - Just transitions towards adapted practices and behaviours (e.g. new skills and areas of employment to replace those phased out)

# Enablers

- **Open science** – making information, data, knowledge available and accessible: e.g. Roles of solis in relation to climate change and environmental services
- **Science-Society-Policy engagement** – actors identifying and implementing, co-learning and adapting new practices in environmental management
- **Demonstration and peer-to-peer** co-learning and adapting new practices in managing environmental services


Education and training: characterising soils


Dee Catchment MAP Facilitator, S Cooksley, and Mr Mason, Member of the Scottish Parliament

# Acknowledgments



- Thank you to the members of the Rural Scotland and Dee Catchment Multi-Actor Platforms for their contributions:

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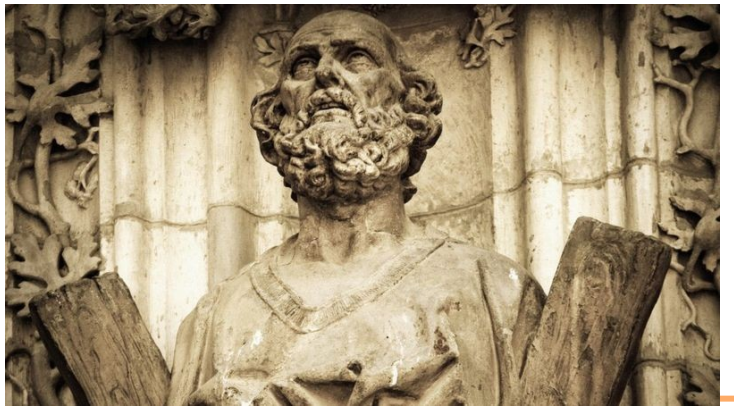
- Thanks also to the particiants in the online survey, and contributors of the maps and photographs

… and Happy St Andrews Day to Scotland, Romania, Greece, Russia, Ukraine and Poland!

# THANK YOU

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# Selected Respondent Statements

- "rural proofed" re both peri-urban rural, rural and remote rural and island as these all differ
- We desperately need to look after the landscape, our natural resources and our native flora and fauna as we develop rural areas
- Sadly even this review only focuses on human self interest without understanding that we can only secure a human future by addressing environmental degradation and biodiversity.
- Sustainable will be key for future rural communities - not too big, not too small, just right with the right supportive infrastructure and a strong community feel
- stop treating rural areas as.a single entity
- how feasible they are, what the priorities might be, and what the gap between the vision and current reality is