

Scotland's Rural College

A new vision for land use in Scotland: 6 conversations

Atkins, Richard; McCracken, DI; Houghton, Rachel

Print publication: 23/08/2021

Document Version

Publisher's PDF, also known as Version of record

[Link to publication](#)

Citation for published version (APA):

Atkins, R., McCracken, DI., & Houghton, R. (2021). *A new vision for land use in Scotland: 6 conversations*. SEDA.

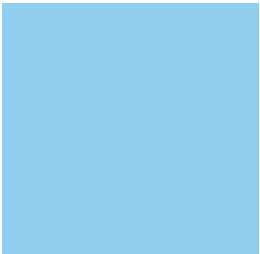
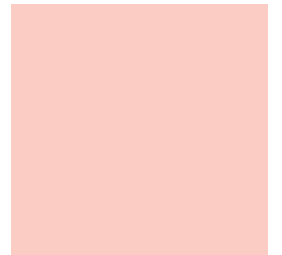
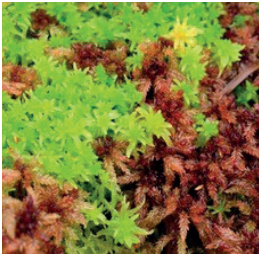
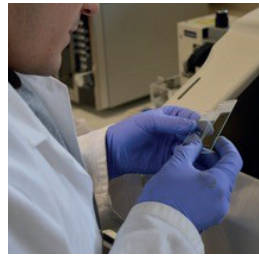
General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



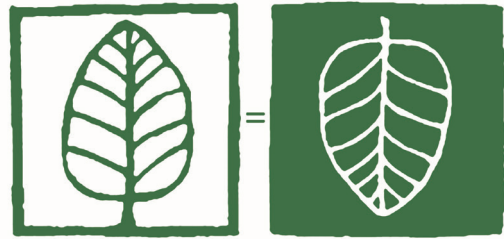
A NEW VISION FOR LAND USE IN SCOTLAND -

6 CONVERSATIONS



ABOUT SEDA

The Scottish Ecological Design Association was founded in 1991 to promote a more environmentally responsible approach to the design of communities, environments, projects, systems, services, materials and products which enhance the quality of life and are not harmful to living species and planetary ecology.



SEDA is a charity (SC020799) and a company limited by guarantee (SC394188) and is run by a voluntary board of directors, who are elected at annual general meetings and who oversee its activities and actively promote SEDA to the wider public.

SEDA publications include regular magazines, design Guides and books such as: ‘Design for Deconstruction’, ‘Design and Detailing for Airtightness’, ‘Design and Detailing for Chemical Reduction’ and ‘100 Sustainable Scottish Buildings’.

To support SEDA please go to our webpage: <https://www.seda.uk.net/support>

To join as an individual, company or institution please go to <https://www.seda.uk.net/become-a-member>
Rates start as low as £15 per year and members receive the magazine, discounts on publications and events, as well as access to additional resources through the website.

Companies and institutions are listed on the SEDA website at: <https://www.seda.uk.net/membership-listings>

FOREWORD

SEDA was founded to publicly share knowledge and experience of ecological design and to encourage sustainable thinking and behaviour. Understanding the long-term impact of our actions and what we can do to minimise our effect on the environment is at the heart of all we do.

Our Land Conversations series applied this approach to a wide range of Scottish land issues, providing a platform for ideas and experiences to be discussed. This report provides a flavour of the rich debate sparked during these events, commentary on how key themes that arose could influence current land use policies and eight recommendations we believe the Scottish Government must implement rapidly. We hope this will be the start of a wider public debate that could revitalise our relationship with the land.

Catherine Cosgrove
Chair, SEDA



The James Hutton Institute was delighted to work alongside SEDA in organising and contributing to the 6 Conversations earlier this year, and by how the events have captured people's imaginations. We particularly welcomed the interdisciplinary and science-led approach. As this report makes clear, a sustainable future for Scotland's land can only be built on a cross-sectoral and multidisciplinary basis, and through the use of principles which take into account people's needs, sense of community, place and tradition - all of which vary from one region to the next. The institute looks forward to working with SEDA in progressing its research programmes and the ideas and questions raised through the conversations.

Deborah Roberts
Deputy chief executive, James Hutton Institute



WHAT INSPIRED THE 6 CONSERVATIONS

Before watching George Monbiot’s ‘Apocalypse Cow’, and reading Isabella Tree’s ‘Wilding’ in spring of 2020, I was accustomed to walking through the Lothian countryside without giving much thought to the changing patterns of land use that had shaped it. Afterwards, I started to look at the countryside in a more critical way, becoming more conscious of the limited diversity, lack of wildlife and the absence of woodland, and started to reconsider how the land is used.

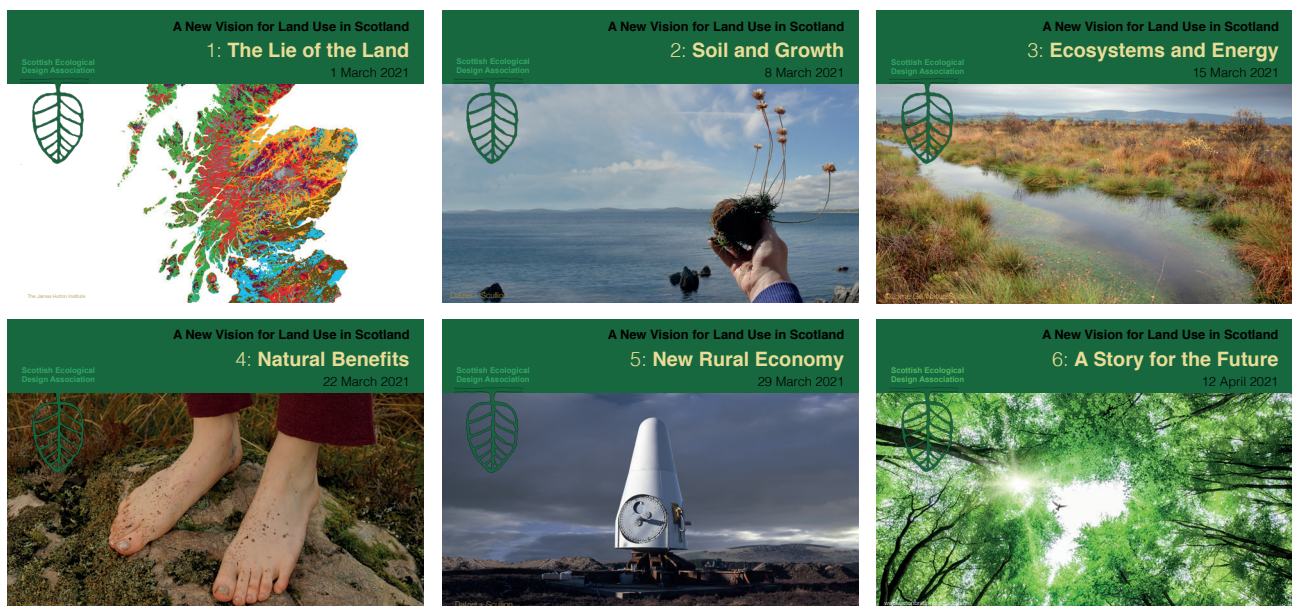
This was the starting point of SEDA’s “6 Conversations”. I felt there was a need for a broad-ranging event on the future of Scotland’s land use in view of the climate emergency, COP15 and COP26.

If the series of events was going to galvanise change, I believed each speaker should not only have a personal stake in the future of land use but should also come from a range of disciplines and perspectives. So, I set about searching for speakers and other participants who were not only experts in their fields but also open-minded and passionate.







I also felt it was important that the event should be underpinned by science, balanced by the inclusion of artistic pieces, that retold rural stories from a more personal and reflective perspective. When I embarked on this venture, I had no idea where it was going or how big it would become.

Gail Halvorsen

Event organiser, SEDA



CONTENTS

SEDA CHAIR	01
WHAT INSPIRED THE 6 CONVERSATIONS	02
EXECUTIVE SUMMARY	04
INTRODUCTION	07
SIX CONVERSATIONS	
 Conversation 1; The Lie of the Land	11
 Conversation 2; Soil and Growth	17
 Conversation 3; Ecosystems and Energy	23
 Conversation 4; Natural Benefits	29
 Conversation 5; New Rural Economy	35
 Conversation 6; A Story for the Future	41
EMERGING THEMES AND OVERLAPS	48
CONCLUSIONS AND SUMMARY	50
FURTHER READING	60
CONTRIBUTORS	63

EXECUTIVE SUMMARY

The current climate emergency and biodiversity crisis require urgent and combined actions. However, the Covid pandemic has shown that while slowing economic activity reduces emissions, it also exacerbates pre-existing social, health and economic challenges and does little to address biodiversity declines. The way land is used has profound consequences on all of these and post-pandemic change is needed to maximise its benefits.

SEDA's 6 Conversations were timed to lead into the COP15 Biodiversity and COP26 Climate Change global conferences later this year, as well as the start of a new Scottish parliamentary session. Both Brexit and the Scottish Government's plans to create new Regional Land Use Frameworks by 2023 provide the opportunity to act on the lessons learned here.

Over the course of six weeks, nearly 50 of the best-informed speakers on all aspects of rural land use participated in 6 Conversations with designers, architects, businesses, campaigners and the general public. Each focused on a different aspect of how land is used, and how it could be better used, in Scotland. The number of attendances across the 6 Conversations was over 1,250

Each Conversation created the space to go back to basics and look holistically at topics such as biodiversity, food production, renewable energy, health and well-being, identifying opportunities for cross-sector initiatives which deliver across a wide range of policy areas. Interspersed with contributions from poets and musicians, each Conversation was recorded and is available online at: <https://www.seda.uk.net/resources>

Each Conversation is summarised in this report and an immediate result has been the decision to form SEDA Land, a new forum for SEDA members and experts in land use to

continue the discussion and seek to influence land use change . Details of how to join this forum will be published on the SEDA website.

The outcome of these Conversations was a recommendation that urgent and coordinated action is needed now. To address the climate emergency and biodiversity crisis, we believe that the Scottish Government should adopt an integrated eight-point programme;

- 1. Develop and implement a Healthy Food Strategy**
- 2. Develop and implement an Agroecology Strategy**
- 3. Strengthen the contents and requirements under the Land Rights and Responsibilities Statement (LRRS)**
- 4. Require Climate Impact Certificates detailing land use impacts**
- 5. Continue to invest in transport, renewable energy and communications infrastructure across Scotland**
- 6. Develop and implement a Sustainable Place Making & Mending Strategy**
- 7. Support secondary and tertiary education in creating a climate conscious, motivated and skilled workforce**
- 8. Provide seed funding for innovative new businesses**

To deliver this requires significant and rapid changes in processes and greater integration of existing and new policies and procedures. Little additional government expenditure is required to deliver such a framework, which would encourage and allow the private and third sectors to invest. This is vital to meet the scale of change that is required.

Crucially, each part of the eight-point programme is dependent on the others to deliver a sustained improvement in climate change mitigation, biodiversity enhancement, health & wellbeing, and economic activity across Scotland.

PAYING HEED

Haike for Scotland on the Mend

Chris Powici

*If inattention is slowly killing the world,
then attention might just save it.*

Kathleen Jamie

lean on an old gate
a doe steps through the high grass
the gate creaks and gives

after the plough blade
goose-down and vole bones glimmer
in the dark, turned tilth

sheep bleat, stonechats chat
on the drystone radio
lichen just listens

snow-in-summer spills
through this mossy wreck of wall
sweet blizzard of stars

broken mussel shells
gleam on the quayside, gulls rise
on the harbour breeze

Atlantic sunlight
slow, vast plankton-blooming tides
life deepens and drifts

rooks in the dusk trees
bawl and yell, grievous angels
crying down the sun

chainsaws fall silent
among cedars, a thrush sings
on the edge of night

now dream a hare's dream
rain on the harrow, moonlight
on the barn owl's wing

INTRODUCTION

If Scotland is to achieve the net-zero climate targets that have been set, then each sphere of economic activity, including agriculture, forestry, tourism, transport and construction must play its part. At the same time, we are reaching a crisis point for our biodiversity and the quality of our soils. Urgent action is needed.

The 15th meeting of the UN Conference of the Parties to the Convention on Biological Diversity expected to take place in China in May 2022 and the 26th UN Climate Change Conference of the Parties (COP26) scheduled to take place in Glasgow in November 2021, make this an opportune time to address a new approach to managing the land.

SEDA organised a series of 6 Conversations around land use in Scotland as a response to the climate emergency and the need to facilitate a green economic recovery from the Covid-19 pandemic.

Each Conversation examined and explored Scotland's land use and how this could or should change. The aim was to take a step back and look more holistically at topics such as biodiversity, health and well-being. Experts in different fields outlined their thoughts on the opportunities for beneficial change and carefully curated contributions from Scotland-based poets and musicians stimulated fresh ways of thinking throughout each Conversation.

By going back to first principles, analysing the evidence and discussing new ways of building bridges between different sectors, SEDA hopes that the Conversations will move the debate out of the silos of traditional entrenched thinking, opening up new ways of discussing the opportunities for increasing economic, social and environmental benefits from changing patterns of land use.

The Scottish Government recently launched its third Land Use Strategy and announced a number of regions across Scotland that will pilot the Regional Land Use Partnership approach. The latter is intended as a mechanism to open up discussion about how Scotland's land use should change in order to tackle the climate emergency and biodiversity crisis, and to seek consensus about the land use changes that are needed to address those concerns.

The Conversations highlighted connections between perceived competing future uses of the land, indicating ways they can coexist to optimise beneficial impact. They should also galvanise a discourse on how competing potential uses of the land can work together, building a picture of what can be achieved and how this process could involve the wider population.

We want to break down the barriers between the many and varied users of land in Scotland and instigate some out-of-the-box ecological thinking. SEDA believes SEDA Land can become a forum for new ways of thinking about land.



REGIONAL LAND USE PARTNERSHIPS

CHANGES TO LAND USE AND LAND MANAGEMENT PRACTICES WILL BE ESSENTIAL IF SCOTLAND AND THE UK ARE TO ACHIEVE CLIMATE CHANGE TARGETS. Regional Land Use Partnerships were first suggested in Scotland's Land Use Strategy in 2016 and were given renewed impetus with the Climate Change Act in 2019.

In February 2021 the Scottish Government announced five areas where the Regional Land Use Partnership approach will be piloted to help develop Scotland's approach to land use in support of our green recovery and transition to net-zero:

- Cairngorms National Park
- Highland Council
- Loch Lomond and the Trossachs National Park
- North East Region (Aberdeenshire and Aberdeen City Councils)
- South of Scotland (Dumfries and Galloway and Scottish Borders Councils)

The Partnerships are expected to play a pivotal role in driving change to a net zero economy. Each Partnership is intended to help national and local government, communities, landowners and stakeholders to work together to find ways to optimise land use in a fair and inclusive way.

The Scottish Government will work with the pilot groups to test approaches to partnership governance that best suit the local situation and priorities. This will help inform future decisions on the wider establishment of such Partnerships.

Further information on Scotland's third Land Use Strategy (Land use – getting the best from our land: strategy 2021 to 2026) and associated Regional Land Use Partnerships can be viewed [here](#).

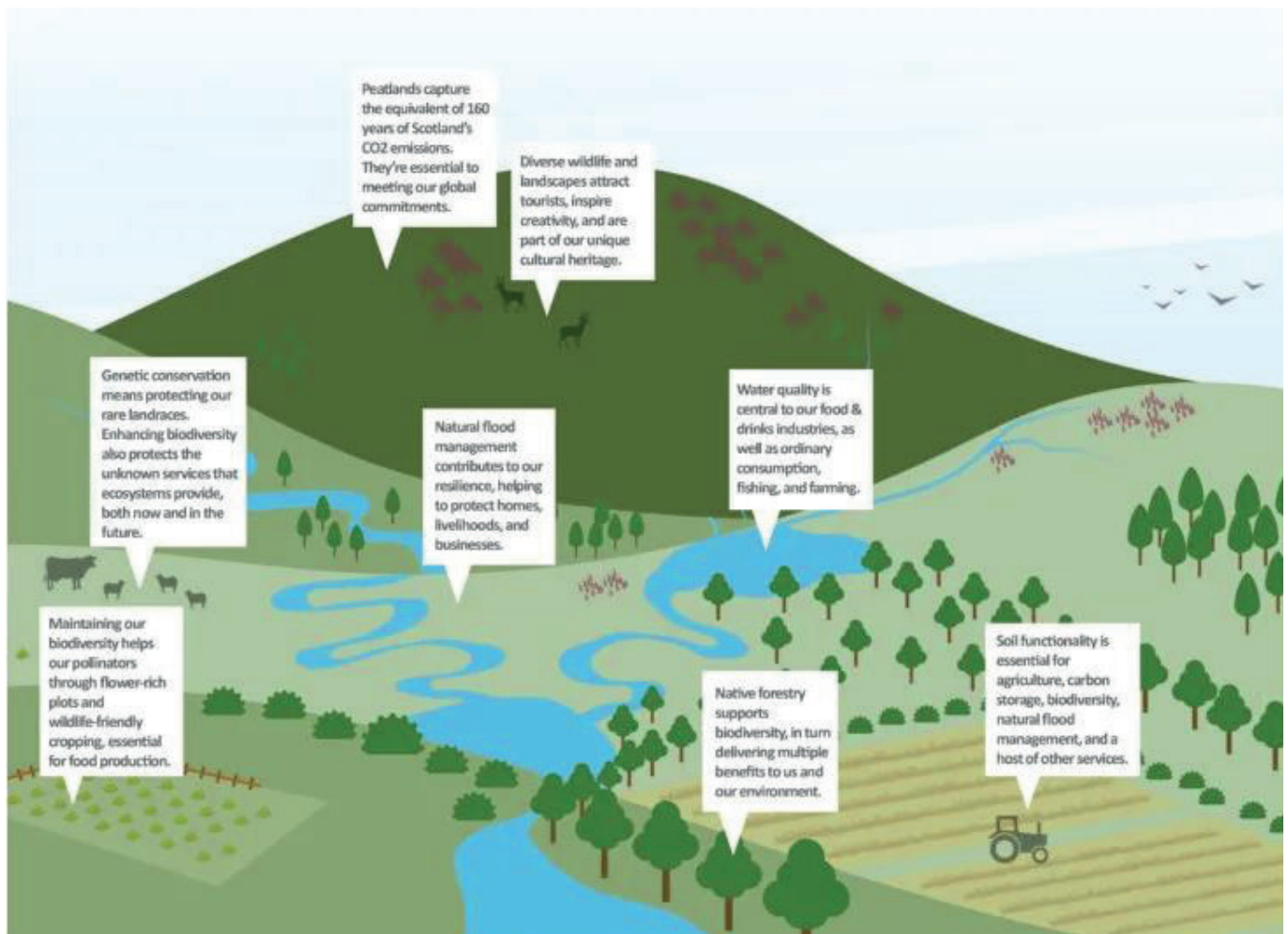
The urgency with which every country must act to address and mitigate the impacts of climate change and biodiversity loss cannot be over emphasised, it is our duty as responsible citizens. But more than this, it is also a means by which Scotland can continue to be one of the greatest places to live, work and play in the world.



Agroforestry is the growing of both trees and agricultural / horticultural crops on the same piece of land. They are designed to provide tree and other crop products and at the same time protect, conserve, diversify and sustain vital economic, environmental, human and natural resources.



The Agroforestry Research Trust



Monday 1st March 2021

CONVERSATION

THE LIE OF THE LAND -

HOW CLIMATE CHANGE AND FOOD SECURITY WILL
DRIVE FUTURE LAND USE IN SCOTLAND

Chaired by

David Miller; knowledge exchange coordinator, The James Hutton Institute

Main speaker

Hugh Raven; chair of Scotland's Moorland Forum & MD of Ardtornish Estate

Responders & panel members

Dr Charles Warren; geography and sustainable development, University of St Andrews

Patrick Krause; chief executive Scottish Crofting Federation

Additional panel members

Megan Rowland; land and deer manager

Megan MacInnes; Land Commissioner, Scottish Land Commission

Andrew Whitley; Baker, author, co-founder of the Real Bread Campaign and Scotland The Bread

Interludes provided by

Hamish Napier & David Russell; 'Snow on the Caledonian Forest'

Jules Horne; 'Unconformity'

Chris Powici; 'Drystone & Deer'

Pau de Planet; 'Tipping Point'

The full conversation can be watched at: <https://vimeo.com/518970761>

The Scottish landscape is incredibly diverse. It encompasses dense urban centres, fertile lowlands, sparsely populated highlands and rugged islands. Little of this land has been left untouched by humanity, with its need for shelter, food and security.

Landscapes such as the Caledonian Forest were largely replaced by subsistence farming, followed, in different places and at different times, by land clearances, commercial farming, plantation forestry, industrialisation and the urbanisation of a growing population.

This has overlaid a complex geography with an equally complex set of land uses. Uses which have responded to social and financial drivers as focused through the lens of property ownership and the influence of government policy and taxation.

The Conversation focused on the wide impact of these changes, together with the challenges and opportunities presented by climate change and the perceived need for food security.

DISCUSSION

Wider social and environmental benefits of rural and urban land use have increasingly diminished with time. Historic upland farming systems, despite the fragility of the land, were more productive and supported a larger population than sheep grazing a wet desert. Deforestation has degraded soils. Where meat and dairy production is intensive, it relies upon imported livestock feed and delivers a poor return on protein inputs. Commercial arable production relies on synthetic inputs. Post-industrial land lies unused or underused and devalued.

As other economic sectors in Scotland decarbonise, the relative impact of greenhouse gas (GHG) emissions from current land-use practice will increase in significance. Changing the way land is used and bringing marginal and abandoned land back into productivity can sequester carbon, increase the variety and quality of food production, support jobs and communities, maintain and enhance biodiversity and create green and productive spaces in urban and peri-urban areas.

Changing the way land is used will only be of value if the social, environmental and financial benefits reach all across society - whether through new jobs, better physical and mental health as well as mitigating climate change impacts.

BARRIERS

The barriers to change were variously identified as societal inertia in the face of the sheer scale and speed of the change that is required. Current policies poorly match the complexity of geography, current land use and ownership. Practical interventions, such as, crofting, mixed farming, rewilding, agroforestry, etc. require to be better understood and need to be flexible enough to cope with local conditions. A one-size-fits-all approach does not work.

SOLUTIONS

Ensuring that Scottish land sustains Scottish society requires the development of land use strategies, and supportive legislation and policies, which are accountable, inclusive and focus on optimising:

- Health outcomes (improved diet, access to green space, improved air quality, etc.)
- Economic benefit to the many not just the few (more high-value high-skilled jobs, increase in local tax revenue in rural and post-industrial areas, rebuilding of an enterprise culture where populations return)
- Carbon sequestration, use and consumption of local low impact resources
- Mitigation strategies which build ecosystem resilience and adaptability in the face of unavoidable climate change already built into climate patterns
- The role that communities have in deciding what happens to the land around them and how they are able to benefit from any changes



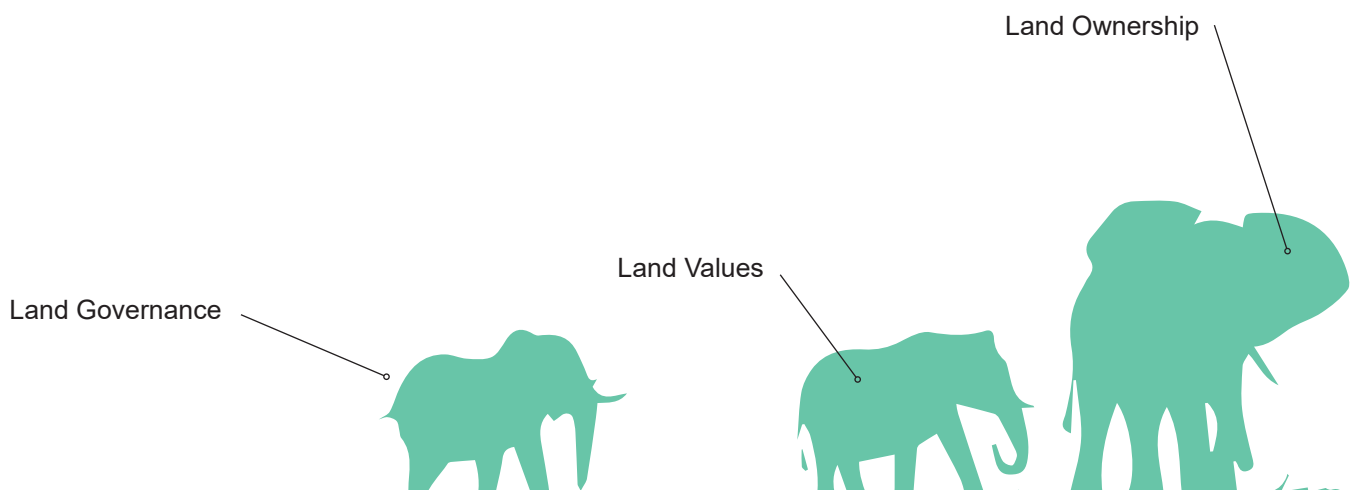
Ruth Barrie of Waltzer Films

Land use in Scotland has calcified into a pattern which does not deliver the best social, economic and environmental outcomes. Land use strategies are needed which set aims and outcomes for Scotland as a whole, while allowing for local decision-making, which works for landowners and communities.

Change is difficult. It requires landowners, communities and local authorities to be able to identify the benefits for themselves and wider society. It requires a shared understanding of the implications of different types of land use and a supportive infrastructure, which includes availability of skills and training to ensure change can be successfully achieved.

The value of land is more than its financial value. In fact much of rural Scotland is overpriced and undervalued, whereas much urban open space teeters between a protected resource, which requires maintenance and a developer's goldmine waiting to be exploited.

The scale of the opportunity is enormous and requires both strategic decisions made at a national level and countless small-scale interventions, but it is doable, and needs to be done.



CASE STUDY: THE GREEN EXERCISE PARTNERSHIP

The NHS Greenspace Demonstration Project is coordinated by the Green Exercise Partnership which brings together NatureScot, NHS Health Scotland, NHS National Services Scotland and Scottish Forestry.

Four pilot projects have been used to showcase how to work with hospital staff and local organisations to:

- improve the quality and accessibility of green space across an assortment of demonstration sites;
- encourage more use of green space by patients, staff, visitors and members of the local community.

Activity programmes have included health walks, community garden projects and environmental conservation work. In April 2020 the Green Exercise Partnership published “Unlocking the potential of NHS greenspace for health and wellbeing”, which can be accessed [here](#). More information on other outputs from the Partnership are available [here](#).

By adopting updated planning, design and management principles, the NHS and individual health boards can support health and well-being. It will also help meet other NHS policies such as sustainability and biodiversity.

The opening Conversation raised many points which were echoed later in the series (numbers in brackets refer to the other Conversations in which each point arose):

Land management and the terminology used, the food Scotland produces and the impact on the environment and diet 2

The siloed nature of policy making 2 4

The natural environment’s role in promoting physical and mental health 4

Land use includes urban and peri-urban as well as rural use 4

Land ownership and decision making 4 5

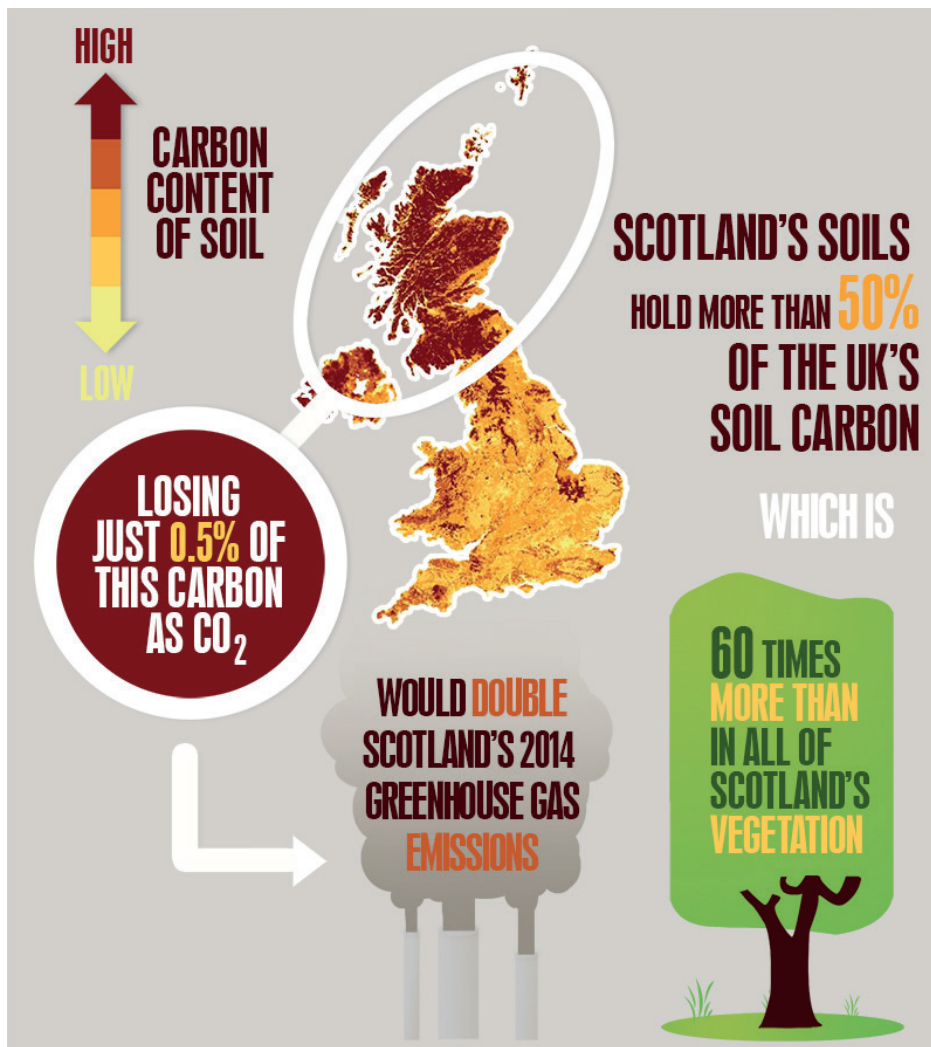
Communities need to have a role in managing the land around them and/or being able to share the financial benefits from land use and land use change 6



Ecology is the study of relationships between plants, animals, people, and their environment - and the balance between these relationships.

Agroecology *is the application of ecological concepts and principals in farming*

Soil Association



Monday 8th March 2021

CONVERSATION

SOIL AND GROWTH -

THE SCIENCE AND ECOLOGY OF SOIL: CARBON EMISSIONS AND CARBON CAPTURE EXPLAINED

Chaired by

Marc J Metzger; professor of environment and society, The University of Edinburgh

Main speaker

Pete Ianetta; head of ecological food systems within the agroecology group of the
James Hutton Institute

Responders & panel members

Bob Reid; development director Wildlife Limited

Willie Mcghee; Forest Policy Group

Additional panel members

Dr Mads Fischer-Moller; professor in food policy Scotland's Rural College

Bob Reese; professor of agriculture and climate change and head of

Carbon Management Centre, SRUC

Nikki Yoxall; Grampian Graziers

Interludes provided by

Su-a Lee; 'Moon River'

pantea & Kate Foster; 'Mending the Blanket'

Chris Powici; 'Flanders Moss'

Iain Fraser; 'King O the Wood'

The full conversation can be watched at: <https://vimeo.com/522462562>

Soils form a thin veneer which sustains the growth of terrestrial plant and animal life. What is going on below the surface is complex. Soils hold and release water, carbon and nutrients - the vital ingredients of plant-based life. Soils can be replenished and improved or abused and exhausted.

We learnt long ago how to look after soils and improve them through the use of natural fertilisers, crop rotation and replenishing them with animal dung etc. We learnt how to irrigate and drain soils and understood when the land needed to rest.

The Conversation focused on the impact that economic demands and the modern agrochemical industry have placed on Scotland's soils. It also highlighted the dangers posed by current patterns of land use and the social, economic and environmental opportunities presented by maintaining and promoting healthy soils.

DISCUSSION

Soils have a global significance as carbon sinks and Scottish soils are particularly rich in carbon. There is a danger, however, that industrialised farming practices, already reliant on carbon-intensive nitrate production, also leads to carbon currently sequestered in soils being lost into the atmosphere.

Much of Scottish land lies 600 feet (200m) above sea level and the detailed knowledge needed to inform land management, focused on healthy soils, at a local level, is lacking. The loss of upland peat areas, rich in trapped carbon and methane, to plantation forestry, particularly if destined to be burnt as biomass fuel, will increase rather than mitigate climate change.

Conversely, much of the limited arable land available at lower altitudes is given over to the production of fodder for intensive meat and dairy farms, or grain production for the whisky industry, rather than food for direct human consumption. Crop types such as legumes (peas and beans, for example) have a much greater conversion rate of nutrients into fat, proteins and carbohydrates than other crops, and fix nitrogen into the soil. Hence, they formed part of a traditional crop rotation.

On more marginal land, the introduction of agroforestry, which combines broadleaf deciduous trees with low density cattle husbandry, creates a synergy which maximises land yield in two high-value products.

An increase in both traditional crop rotation and agroforestry would reduce Scotland's reliance on agrochemical inputs and imported food. They would promote a better understanding of where Scotland's food comes from, the health benefits of non-industrialised food products and create more jobs in Scotland's agricultural sector.

BARRIERS

The barriers to change mirrored those in Conversation 1. The opportunities offered by Scotland's soils, as a sustaining system, are yet to be properly understood and are therefore often disregarded or overlooked when individual interventions are being considered. The benefits of those innovations discussed in Conversation 2 are yet to be fully evaluated, let alone incorporated into supportive and promotional policies at either a national or local scale.

SOLUTIONS

Addressing climate change is a key driver for the development of policies which promote healthy soils, a vibrant agricultural industry and strong rural society. COP26 was seen as a catalysis where Scotland could pause and focus on ways of using this precious planetary resource to deliver:

- A sustainable, high value, agricultural industry
- A better ecological understanding of the impact of land use, supportive of increased biodiversity
- And, an increased and improved basket of Scottish foods for local consumption



Grampian Graziers, Nikki Yoxall

Soils and what they are doing do not get the attention they deserve. They have an important role to play in mitigating climate change and sustaining biodiversity and productive high value food & forestry industries. These industries are two of those which are needed in turn, to promote re-peopling of rural areas, based on high-value skilled employment, supporting vibrant, culturally rich communities.

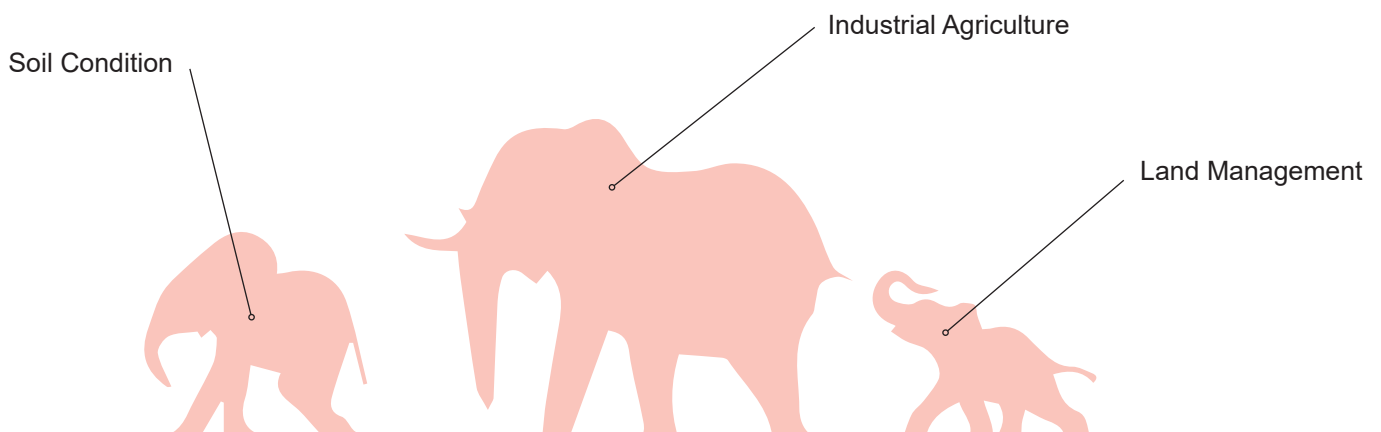
Earlier themes which appeared and new ones that came up again later:

Land management and the terminology used, the food Scotland produces and the impact on the environment and diet 1

The siloed nature of policy making 1 4

The potential to find new revenue streams associated with land use, such as new therapeutic services and an expanded range of food crops 4

Changing land use patterns requires new skills sets, supported by education, technology and entrepreneurship 5



CASE STUDY: GLASGOW FOOD AND CLIMATE DECLARATION

Global food systems account for one-third of total greenhouse gas emissions, and are a leading cause of environmental degradation, and socio-economic and health inequalities.

On 14th December 2020, the International Panel of Experts on Sustainable Food Systems (IPES-Food) and Nourish Scotland were joined by cities, governments and more than 250 people from across the world at the virtual launch of the Glasgow Food and Climate Declaration.

The Declaration recognises that local governments of all sizes, from towns and cities to states and regions, are pioneering sustainable food systems change. COP26, set to take place in Glasgow in November 2021, will be a key opportunity to place food and local action at the heart of the global response to the climate emergency.

The Glasgow Declaration confirms the commitment of local and regional authorities to develop sustainable food policies and calls on national governments to put food and farming at the heart of the global response to the climate emergency at COP26.

Full details of the Glasgow Food and Climate Declaration can be accessed from [here](#).



We are going to need a lot more electricity

Nicholas Gubbins



Monday 15th March 2021

CONVERSATION

ECOSYSTEMS AND ENERGY -

PROMOTING BIODIVERSITY: THE ROLE OF NATURAL RESOURCES AND RENEWABLE ENERGY

Chaired by

Prof Dan Van Der Horst; professor, environment, energy & society, University of Edinburgh

Main speaker

Nicholas Gubbins; CEO Community Energy Scotland

Responders & panel members

Caroline Drummond; chief executive LEAF (Linking Environment and Farming)

Alison Hester; senior scientist, The James Hutton Institute

Additional panel members

Jim Birley; Scottish Wood & ASHS

Jeremy Leggett; Solarcentury & Bunloit Wildland

Adrian Loening; Mór Hydro Ltd

Interludes provided by

Moteh Parrot; 'Song for the Insects'

Sophie Cooke; 'Clockwork World'

Roseanne Watt; 'Kishie Wife'

Su-a Lee; 'Songs My Mother Taught Me'

The full conversation can be watched at: <https://vimeo.com/525445457>

Over the last two decades coal and gas-fired electricity generation in Scotland has nearly all been phased out, in favour of renewable generation to sit alongside the historical hydro and nuclear generation capacity. This has resulted in a dramatic reduction to near zero greenhouse gas emission levels for grid electricity, compared to the UK average of 0.256kgCO₂(e)/kWh (2019), and over a third of Scottish generation is exported.

However, the Scottish Government's most recent energy statement (2019) notes that hydrocarbon fuels (predominantly gas) still account for over 90% of the energy consumed for heating and nearly 100% (predominantly oil derived) for transport. Hydrocarbon fuels still account for 78% of Scotland's overall energy consumption.

DISCUSSION

The discussion concentrated on the huge challenge of meeting the Scottish Government's objective of net-zero greenhouse gas emissions by 2045. It is a challenge that can only be met by efforts across multiple sectors. It is therefore imperative to achieve further reductions in overall energy demand by the widespread introduction of energy-saving measures and more efficient technologies in both the built environment and transport sector.

Concerns were raised about the viability and probity of the extensive use of biomass energy sources, particularly timber, given this displaces other agricultural activities including the growing of a wide range of different timber species for use in construction. More mixed woodland provides added benefits such as diverse ecology, a source of low-carbon, low-toxicity materials and the promotion of the use of emerging Scottish-produced materials such as wood fibre insulation and cross laminated timber (CLT) by the construction sector. The emissions associated with biomass fuels at the point of use also rely on sequestration elsewhere to achieve near-zero values.

This means that the dominant energy source at the point of use, in future, will be electricity. This increase in demand can only be met through increased use of building level, local level, coastal and offshore renewable generation technologies. The expansion of generation and consumption also poses significant challenges with transmission and storage, requiring a further roll-out of emerging technologies capable of storing and optimising each generation opportunity. While at a local or community level there are many examples of significant newly installed generation capacity, the effort must continue and there are still big opportunities to combine renewable energy systems with existing land uses, such as grazing and the urban roofscape.

BARRIERS

While many technological solutions such as building-mounted photovoltaic panels are well understood and have been well tested and extensively deployed, provision is still insufficient overall. Measures that need to be addressed include the vast numbers of hard-to-heat, inadequately insulated Scottish homes and the incentives available for the development of coastal and offshore generation.

The planning system within Scotland is seen as a drag on new developments. Also, we should not lose sight of the cost of the carbon emissions and demand for rare materials, such as lithium, linked to the manufacture of many new renewable technologies.

SOLUTIONS

Achieving net-zero greenhouse gas emissions in Scotland requires:

- Community empowerment to work towards reduced energy demand, which would also help reduce fuel poverty
- Continued regulations and incentives to innovate and develop new interventions and technologies as well as maintaining the roll-out of those already proven to work
- Revised planning guidelines which presume towards consent of renewable technologies



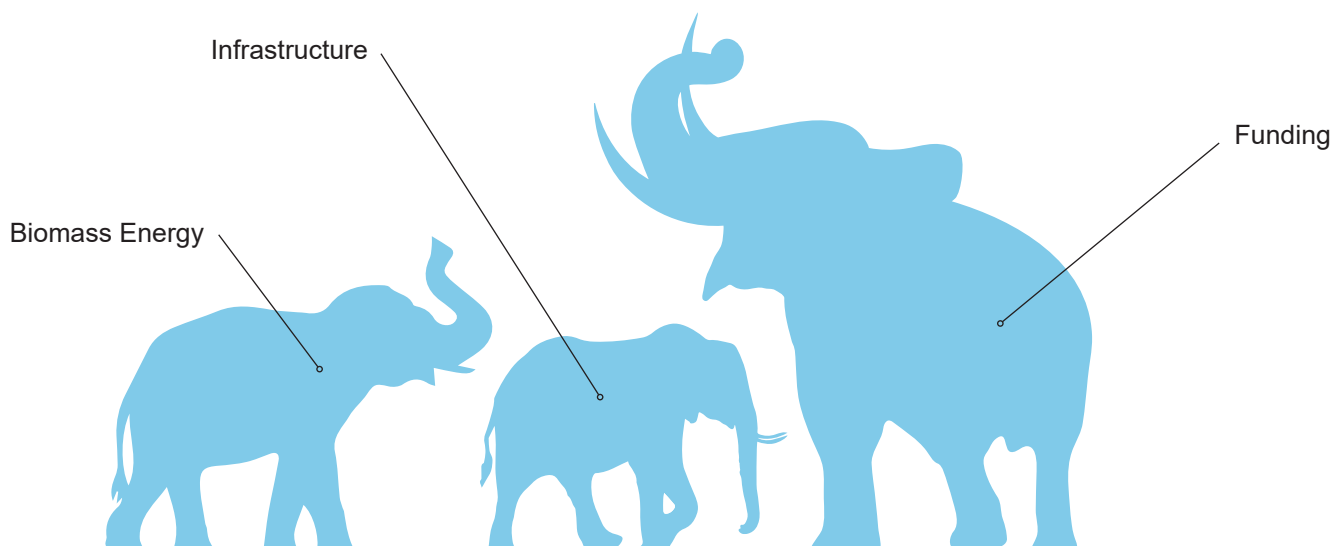
Financial incentives have led to the development of a largely carbon-neutral electricity generation system in Scotland. However impressive its current scale, it has yet to eradicate Scotland's dependence on fossil fuels for heating and transport, which is needed if a net zero emissions economy is to be achieved.

The next steps require further incentives and regulations which reduce energy demand, promote the continued expansion of renewable energy production and provide the physical and skills infrastructure needed to deliver. This requires significant financial investment, and the benefits of this investment should remain local to the impacted communities and be delivered without secondary impacts on the environment.

Earlier themes which appeared and new ones that came up again later:

Scotland is rich in renewable energy, but many rural communities still suffer from fuel poverty 5

Access to affordable renewable energy could help stimulate greater business diversification in rural areas 5



CASE STUDY: THE FISHERMEN THREE WINDFARM, HORPRIGSHIELS

Onshore wind power provides 71% of the renewable electricity generated in Scotland. The vast majority of this is produced by private companies but there are some examples of community-owned generation, usually on land that has been subject to community buy-outs, such as the first community wind farm on the Isle of Gigha.

The Fishermen Three is a three-turbine, 7.5MW, windfarm built on a traditional livestock farm, in the Scottish Borders and the turbines are owned and operated by Berwickshire Community Renewables which is owned by two charities, Berwickshire Housing Association (a registered social landlord providing homes for over a fifth of households in Berwickshire) and Community Energy Scotland.

Supplying energy to the National Grid, the windfarm will create revenue of around £30 million over the next 25 years to support BHA's housing program and CES's support of community-based energy projects.

The windfarm provides enough energy to power 5,900 households and save 12,000 tonnes of carbon dioxide emissions each year, as well as affording an annual community benefit payment for the communities closest to the site.

The windfarm project was made possible with support from Triodos Bank and the Renewable Energy Investment Fund (REIF). REIF is delivered by the Scottish Investment Bank – the investment arm of Scottish Enterprise – on behalf of the Scottish Government and its Enterprise Agencies.

More details about The Fishermen Three can be accessed [here](#).

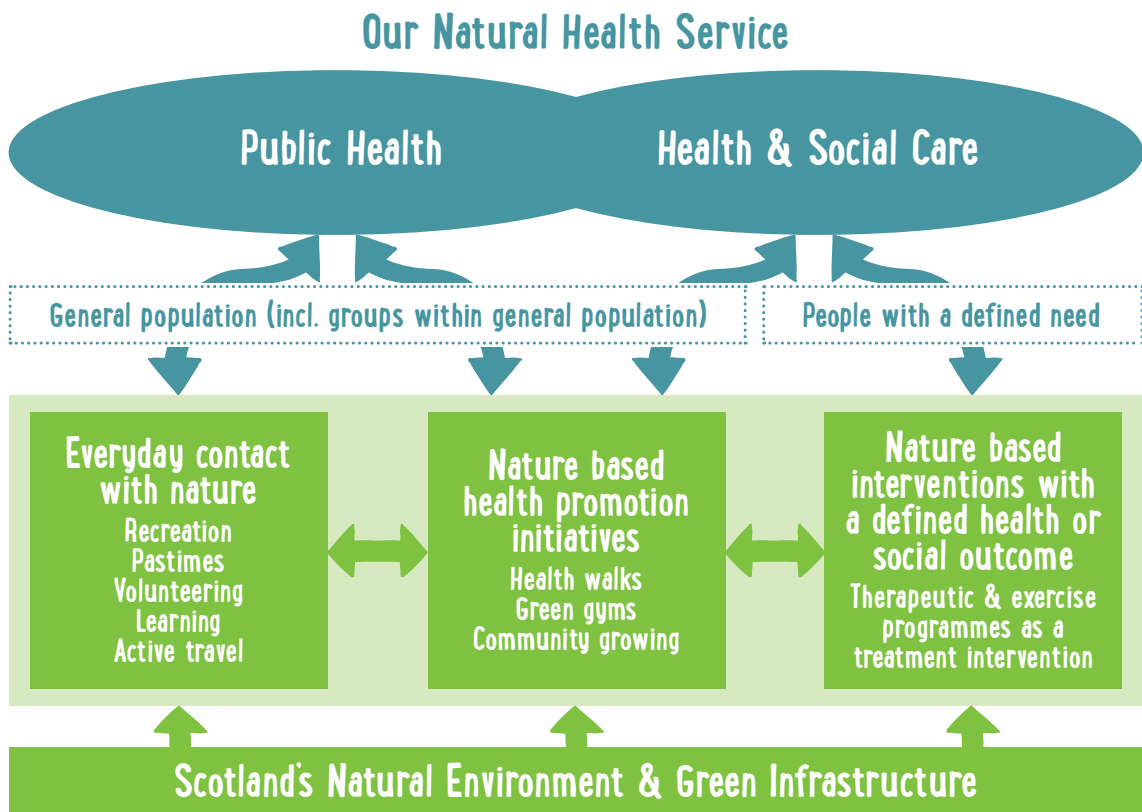


Ask not what nature can do for you, but what can you do for nature

Ninian Stewart



Illustration Courtesy of Nature Scot



© Scottish Natural Heritage

Monday 22nd March 2021

CONVERSATION

NATURAL BENEFITS -

NATURE'S IMPACT ON HEALTH: CREATING INCLUSIVE LOCAL ECONOMIES

4

Chaired by

Francesca Osowska; chief executive, NatureScot

Main speaker

Sarah-Anne Munoz; acting head of division of rural health and wellbeing, University of the Highlands and Island

Responders & panel members

Dr Rehema White; School of Geography and Sustainable Development, University of St Andrews and Learning for Sustainability Scotland

Andrew McCornick; Beef and sheep farmer, Dumfries

Additional panel members

Lynn Cassells; Lynbreck Croft

Naveed Bakhsh; founder Boots and Beards

Kevin Lafferty; health policy advisor, Scottish Forestry

Interludes provided by

Karine Polwart; 'The Lost Words Blessing'

Rachel Marsh; 'Four Seasons in a Day'

Jill de Fresnes & Ruth Barrie; 'Among the trees: The Foresters of Gosford Estate'

Hamish Napier & David Russell; 'The Woods'

The full conversation can be watched at: <https://vimeo.com/529363717>

The on-going Covid pandemic has brought into sharp focus the well-being benefits of interaction with nature, whether through access to rural areas or by the inclusion of green spaces within urban and suburban settings.

Research shows that children who have access to nature carry through to adulthood a greater desire to maintain that connection. It also shows that hospital patients with views of green space recover more quickly, and that access to the natural environment delivers three key types of benefit: calm spaces to relax and destress; spaces which encourage movement and physical activity; and spaces which can provide a setting for social interaction.

DISCUSSION

As urbanisation spread from the 18th century, it was soon followed by the development of spa towns, such as Grantown-on-Spey, designed so that those who could afford it were able to take advantage of the therapeutic value of rural landscapes. In the modern era, a more mobile urban population has the opportunity to access these areas, particularly where these are in the ownership of the public and charitable sectors, but they remain underutilised.

The discussion speculated on mechanisms that would encourage rural businesses to do more to promote, and perhaps also develop additional revenue streams, from the health benefits of connecting with nature, including to local consumers who might service a tourist industry but who currently see nature as being for the tourists and not for them.

It was recognised that interactions with nature can occur in multiple ways, and that even short interactions can be beneficial to health and well-being. It's not all about experiencing nature within large, 'wild' rural landscapes, it's also about access to nature within urban areas. More money needs to be invested in the provision of and access to new and existing green spaces.

Our place in the natural environment should be seen as intrinsic, providing us with a range of experiences: from the simple pleasure of birdsong; to the challenge of hiking or biking; to the sense of awe and what some might call eco-spirituality.

BARRIERS

Much of Scottish urbanisation occurred prior to the introduction of a regulated planning process and, with notable exceptions, much of this ignored nature in a simple process of maximising the financial value of land through construction. Nature lost out to a consumerist paradigm.

The regulated planning process now includes the provision of green spaces in new urban developments. However, this still leaves a legacy of cities and towns in which access to green space requires a degree of mobility. Many of Scotland's most remote rural landscapes remain inaccessible or difficult to access unless you have a car because of inadequate public transport.

While legislation gives a right to roam in the countryside, this can create tensions with landowners, particularly as a result of a small minority who abuse those access rights.

There are profound cultural, social and economic barriers facing many members of society who are seeking to engage with the natural world. For them, the rural environment and many green spaces are seen as off limits.

SOLUTIONS

Research and education stood out as the key to encouraging responsible use of green and rural spaces:

- Research to further underline and identify the social, health and economic benefits of greater interaction with green spaces
- Promoting more outdoor access and activities, across society, but particularly with younger people, such as school gardens and outdoor visits
- Create a proactive view of green spaces as a resource which supports social interaction, cultural activities, the rural economy and which is accessible and available to all

It is easy to argue that those who access green spaces, whether small urban parks or large rural landscapes, are likely to have greater levels of well-being. Contact with the natural world, when safe and comfortable, is therapeutic, even if only for short periods of time, such as taking lunch in the park. What is more problematic is developing metrics which quantify the benefits, in order to support the development of equigenic solutions to inequalities of access, whether caused by economics, social proclivities or the physical constraints of location and transport.

Increasing proactive use of outdoor spaces, at every scale, has the potential to create green service jobs and support a green recovery, based not on increased consumer consumption, but increased well-being.

Earlier themes which appeared and new ones that came up again later:

The siloed nature of policy making 1 2

The natural environment's role in promoting physical and mental health 1

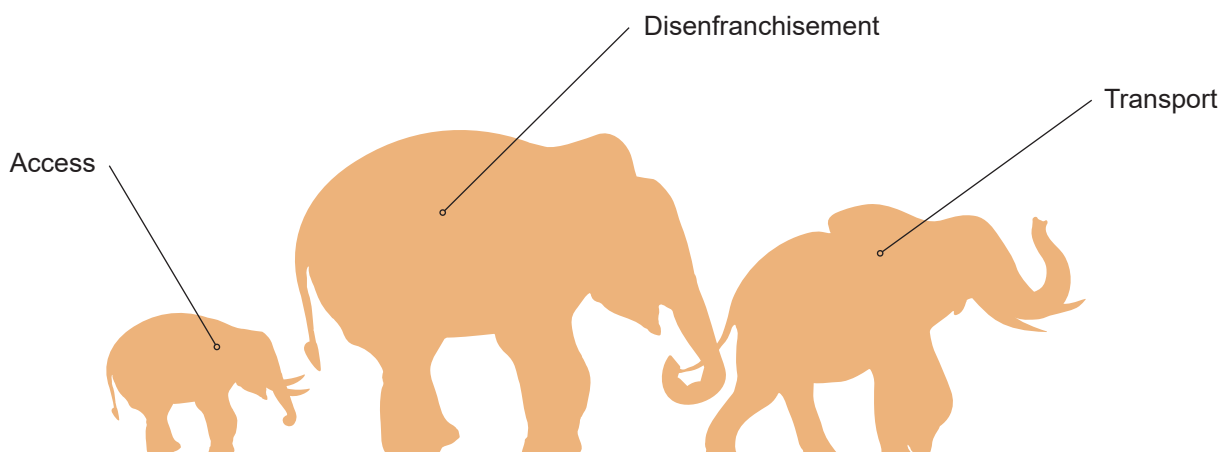
Land use includes urban and peri-urban as well as rural use 1

Land ownership and decision making 1 5

The potential to find new revenue streams associated with land use, such as new therapeutic services and an expanded range of food crops 2

The need to enhance local areas, facilitate community activities and encourage outdoor learning 6

Communities need to have a role in managing the land around them and/or being able to share the financial benefits from land use and land use change 6



CASE STUDY: THE BOOTS AND BEARDS INITIATIVE

Average healthy life expectancy is defined as “the average number of years that an individual is expected to live in a state of self-assessed good or very good health”. The average healthy life expectancy for men in Glasgow is the lowest of anywhere in Scotland.

National Records of Scotland statistics indicate the healthy life expectancy at birth of men in Glasgow is just 54.6 years, against a national average of 61.7 years. For women in Glasgow that figure is 57.6 years, with the national average being over four years higher, at 61.9 years.

Over 50,000 Scots of Asian descent live in Glasgow but many do not spend time in the countryside. Some of the barriers include work/life balance, but also a lack of confidence about spending time in the great outdoors.

Boots and Beards is a Glasgow-based organisation which focuses on bringing together people from the city’s Asian population to have fun outdoors.

The founders of the organisation only intended to help bring together family members more often, outside of the usual family get-togethers, such as birthdays and religious festivals. But they quickly recognised that the initiative provided an opportunity to make a positive, lasting impact on the wider community.

The group now works with its 700 members to deliver its mission of improving their health, widening access to the natural environment and helping create a better life for present and future generations.

They run a series of activities that get the community outside and active. These include hill walking, indoor climbing and boots camps - things that take people from the Asian community out of their comfort zone and give them experiences that they’ve never tried before.

More information on the group activities can be found [here](#).

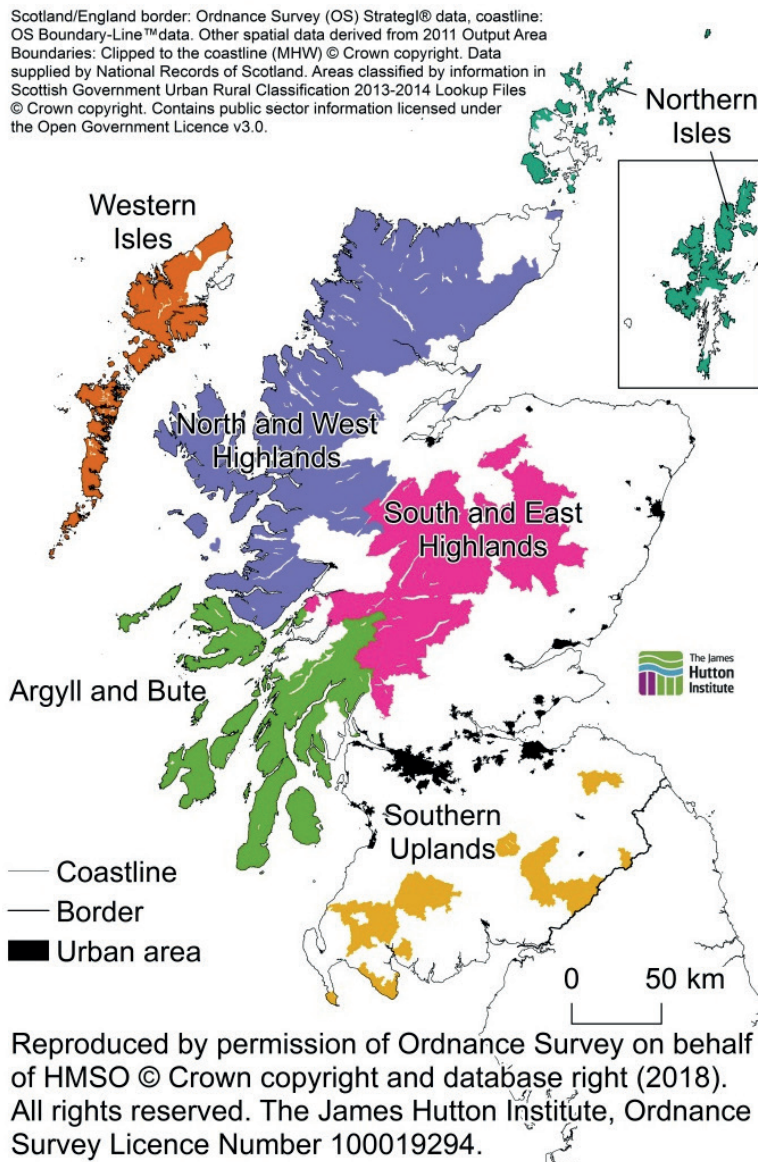


I want to see people of the landscape, not just in the landscape



Magnus Davidson

Scotland's six most sparsely populated areas contrasted with its dense urban conurbations.



Monday 29th March 2021

CONVERSATION

NEW RURAL ECONOMY -

CHANGING ECONOMIC PATTERNS: REIMAGINING WHERE
WE LIVE AND WORK

Chaired by

Deborah Roberts; deputy chief executive and director of science, The James Hutton Institute

Main speaker

Magnus Davidson; environmental research institute, University of the Highlands and Islands

Responders & panel members

Neil Sutherland; architect / director, Makar Ltd

Dennis Overton; sea farmer & chair, Scotland Food & Drink

Additional panel members

Professor Ronald MacDonald; research professor of macroeconomics and international finance,
Glasgow University

Guy Watt; forest industry economist

Duncan Bryden; Bryden Associates

Interludes provided by

Kirsty Law; 'The Faithful Shepherdess'

Sophie Cooke; 'Bread'

Jules Horne; 'Remeandering'

The Poozies; 'Fresh Blood'

The full conversation can be watched at: <https://vimeo.com/530849263>

The key to a new, successful and sustainable rural economy in Scotland is to take advantage of the country's vast carbon-neutral energy reserves, and invest more in the production of the infrastructure used to produce it. A parallel was drawn with North Sea oil, which is piped onshore and processed in Scotland, with much of the offshore technology developed, manufactured and assembled here. As the world moves away from fossil fuels, Scotland is well-placed to manufacture and install offshore wind, tidal and onshore green hydrogen technologies.

The Highland clearances deliberately depopulated the land and went hand in hand with the clearance of trees, wildlife and agriculture, in the 18th and 19th centuries. The Scottish rural economy was left with little opportunity to benefit much from any trickle-down effect from Scotland's post 1970s success in the North Sea as equipment and specialists were brought in, rather than home grown. Now is the time to capitalise on the energy-rich resources in rural areas, and work towards re-industrialisation, re-peopling, replanting and rewilding Scotland.

DISCUSSION

The discussion concentrated on mechanisms to deliver this vision. These included suggestions for a Marine Planning Framework to support new offshore energy and aquacultural industries, such as seaweed production. Participants also called for an acceleration of research into new industries and a repurposing of Scotland's agricultural colleges to include a focus on rewilding, forestry production, rural industrial development, and entrepreneurship.

To make such a transformation possible, there is a need to support economically sustainable businesses, including those which can increase the use and value-add to one of Scotland's greatest natural assets – forestry products. Scotland currently imports timber in preference to using indigenous species. But with more research and investment, we could unlock additional uses for locally grown timber and timber-derived products, therefore delivering significant environmental benefits over mineral and fossil-based alternatives.

There is an associated need to reset tourism – the current focus on volume and the pressures caused by this are not delivering benefits to places or communities. There needs to be a balanced approach to the development of tourism and consideration of the net – rather than the gross – benefits that can be achieved.

There is a need for new investment models which consider natural and social capital benefits.

Scotland is aiming to achieve net-zero carbon by 2045, but much of the Scottish economy is reliant on fossil fuels for heating and transport. Transformative action and leadership are needed to replace this reliance with a switch to renewable alternatives.

BARRIERS

Housing supply, housing cost, tourism pressures, land values and land management were all highlighted as specific issues which currently hamper the opportunities which Scotland's potential for maximising renewable energy production and forestry products present.

Without affordable, comfortable housing it is hard to attract a skilled workforce to rural communities. Without a proactive planning regime and access to affordable land, it is hard to establish new business premises. Without access to finance, it is impossible to invest in factories, workshops, equipment or training. In the absence of established rural businesses using renewable energy to manufacture high-value, sustainable homes and products, it is difficult for new entrants to the market to argue their business case.

SOLUTIONS

Revitalising Scotland's economy, where it becomes an attractive place to establish small to medium-sized, local businesses as both part of and serving a community and exploiting Scotland's natural renewable resources requires:

- A new vision for investment planning that values more than just the maximisation of shareholder value
- More research, education and training in innovative green technologies and business practices
- Devolving decision-making to local communities to engender a pro-active planning framework which encourages sustainable businesses

Scotland 'and particularly the Highlands & Islands' benefit from extensive renewable resources of energy and timber. These resources support a traditional industrialised economic approach which seeks economies of scale in production in order to deliver products to the biggest available market, which lies outside Scotland. This approach fails to support small-scale local suppliers to the industries, nor does it foster and service local demand for their products.

A virtuous circle is needed where more of the renewable energy and forestry infrastructure is built and supplied locally. This would create more highly-skilled and better-paid jobs, which would, in turn, increase the local tax take and support local services, whilst creating demand for food and housing. This in turn would support local agriculture and house-building, using local timber, which are then heated by renewable energy.

Earlier themes which appeared and new ones that came up again later:

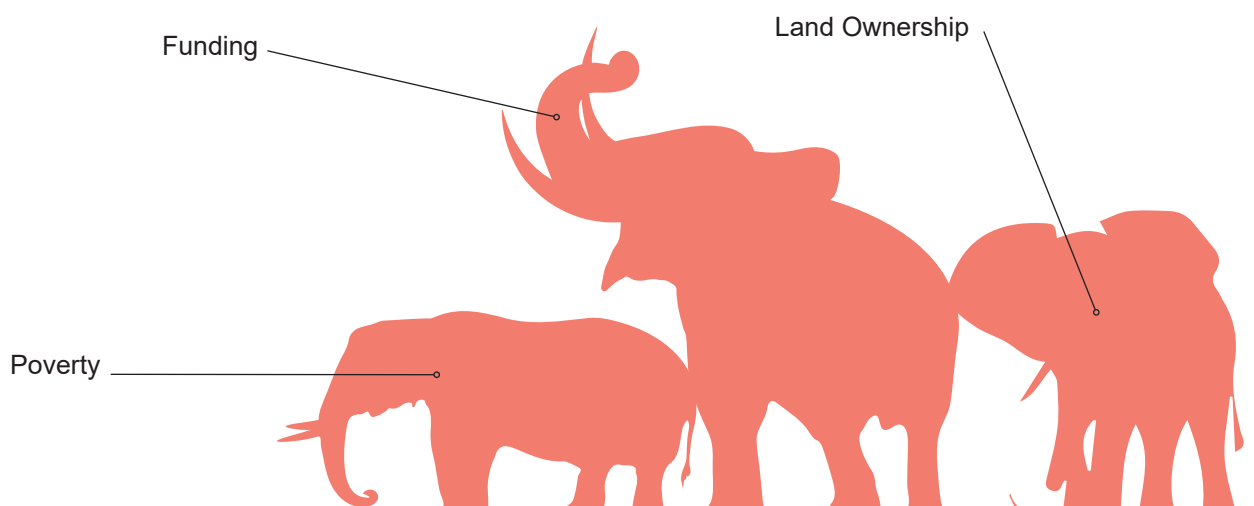
Land ownership and decision making 1 4

Changing land use patterns requires new skills sets, supported by education, technology and entrepreneurship 2

Scotland is rich in renewable energy, but many rural communities still suffer from fuel poverty 2

Access to affordable renewable energy could help stimulate greater business diversification in rural areas 2

Communities need to have a role in managing the land around them and/or being able to share the financial benefits from land use and land use change 6



CASE STUDY: MAKAR CONSTRUCTION

MAKAR Ltd is an architect-led design, manufacture and construction company which specialises in delivering healthy, comfortable, beautiful and low-energy homes. Using environmentally responsible building materials, including Scottish-grown timber, they have delivered over 100 homes and other types of building using innovative off-site construction methods.

Natural building materials have minimal synthetic chemical content and enable moisture to dissipate through the structure, improving air quality. Using local materials strengthens the local economy, with Scottish timber being an abundant yet under-utilised renewable resource.

Integrating all the required services from design, consents, off-site manufacture of panels and modules, on-site groundworks through to final fit-out and finishes reduces site time, exposure to weather for critical components, construction waste and snagging.

More information about MAKAR can be found [here](#).





The land is a character too



Rachel Marsh



Illustration Courtesy of the Land Commission

Monday 12th April 2021

CONVERSATION

A STORY FOR THE FUTURE -

ART AND COMMUNITY: HARD FACTS ALONE DON'T WIN THE ARGUMENT

Chaired and introduced by

Chris Dalglish; director, Institute for Heritage & Sustainable Human Development

Responders & panel members

Sophie Cooke; poet, novelist, and short story writer

Rachel Marsh; author & creative writing teacher Gateway KE Lead for Environment

Additional panel members

Prof Lorna Dawson; head of Soil Forensic Group, James Hutton Institute, SEFARI

Dr Calum MacLeod; policy director, Community Land Scotland

Andrew Whitley; Baker, author, co-founder of the Real Bread Campaign and Scotland The Bread

Interludes provided by

Chris Powici; 'At Sheriffmuir'

Sophie Cooke; 'Byland'

Rachel Marsh; 'Braemarnia'

The Poozies; 'Soaking in the Bathtub'

The full conversation can be watched at: <https://vimeo.com/536439052>

The earlier Conversations recognised the importance of community engagement with and participation in land use decision-making, and these followed through to the final conversation. At first glance, there may not seem to be a specific role for the arts and culture in decision-making. However, the process of community engagement by artists can bring out a shared understanding of the challenges and opportunities that can be faced in developing cohesive and sustainable land uses for the future.

DISCUSSION

The discussion focused on a number of exemplary projects and the lessons learnt from each, including the impact they have had on a community's perception of the wider environment and on building an understanding of the outcomes that are deliverable by community-based art initiatives.

Central to this is the realisation that a community is its own entity, separate from that of the individual members. The community as a whole has a personality, internal dynamics and relationships with other stakeholders, such as landowners, local authorities etc.

An art facilitator can help a community to understand and articulate its shared values and objectives across a range of issues, including land use and management. In the case of a writer, they can help different groups within the community by creating a narrative which belongs to everyone. This must include a bottom-up decision-making approach, where interests are vested in the community which inhabits the land, participates in the management of land and ultimately acts to foster and protect a bio-diverse natural environment.

This is important because sustainable stewardship of the land can only be viable where all stakeholders can see the benefits, take responsibility, and where that stewardship remains responsive to change. Hence, achieving sustainable land use in practice will mean empowering more local communities in land use decision-making processes and addressing land ownership/access to land issues.

BARRIERS

Conceptually the idea that the arts and culture have a positive role to play in land use and management will be novel to many, including stakeholders and policymakers. The first barrier to overcome is simply that of introducing the notion and demonstrating success through pioneering projects.

As with any arts initiative where external expertise is required, the question of funding and determining what outcomes are expected from a project doesn't conveniently lie with any one stakeholder.

SOLUTIONS

Mainstreaming arts and culture as one of a number of community decision-making tools requires:

- Effective engagement with emerging scientific data, demonstrating the success of good practice
- Opportunities for, and buy-in by, creative practitioners in the field
- Openness from stakeholders such as landowners, policymakers and decision making authorities to recognise the benefits and encourage the use of art interventions as a means to build community cohesion



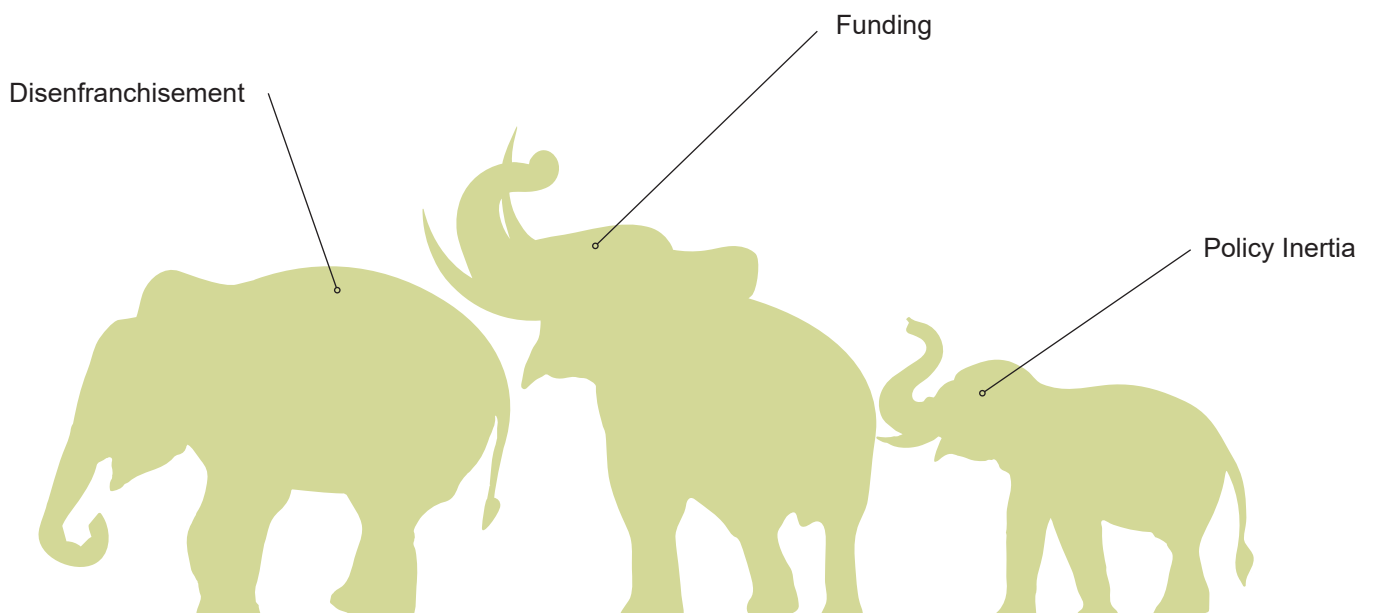
Communities have been a constant thread through the Conversations, particularly the advantages that come from their role in managing the land around them and sharing the financial benefits from land use and land use change.

To be effective, communities need to be at the forefront of land-use change. Community involvement strengthens a project and ensures equitable access to the wide range of benefits highlighted throughout the Conversations. As articulated by the speakers, both landscape and communities are characters in the narrative of their particular place which extend beyond the involvement of individuals. Achieving sustainable land use in practice requires the empowerment of local communities in the decision-making processes including the question of land ownership and access.

Earlier themes which appeared and new ones that came up again later:

The need to enhance local areas, facilitate community activities and encourage outdoor learning 4

Communities need to have a role in managing the land around them and/or being able to share the financial benefits from land use and land use change 1 4 5



CASE STUDY: CLIMAVORE: ON TIDAL ZONES

Cooking Sections is a London-based duo examining the systems that organise the world through food. Using site-responsive installation, performance and video, they explore the overlapping boundaries between art, architecture, ecology and geopolitics.

Established in 2013, they use food as a lens and tool to observe landscapes in transformation. They have worked on multiple iterations of the long-term site-responsive CLIMAVORE project since 2015, exploring how to eat as humans change the climate.

On the Isle of Skye, Atlas Arts and Cooking Sections have established CLIMAVORE: On Tidal Zones which examines the environmental impact of intensive salmon aquaculture, and reacts to the changing shores of the islands of Raasay and Skye.

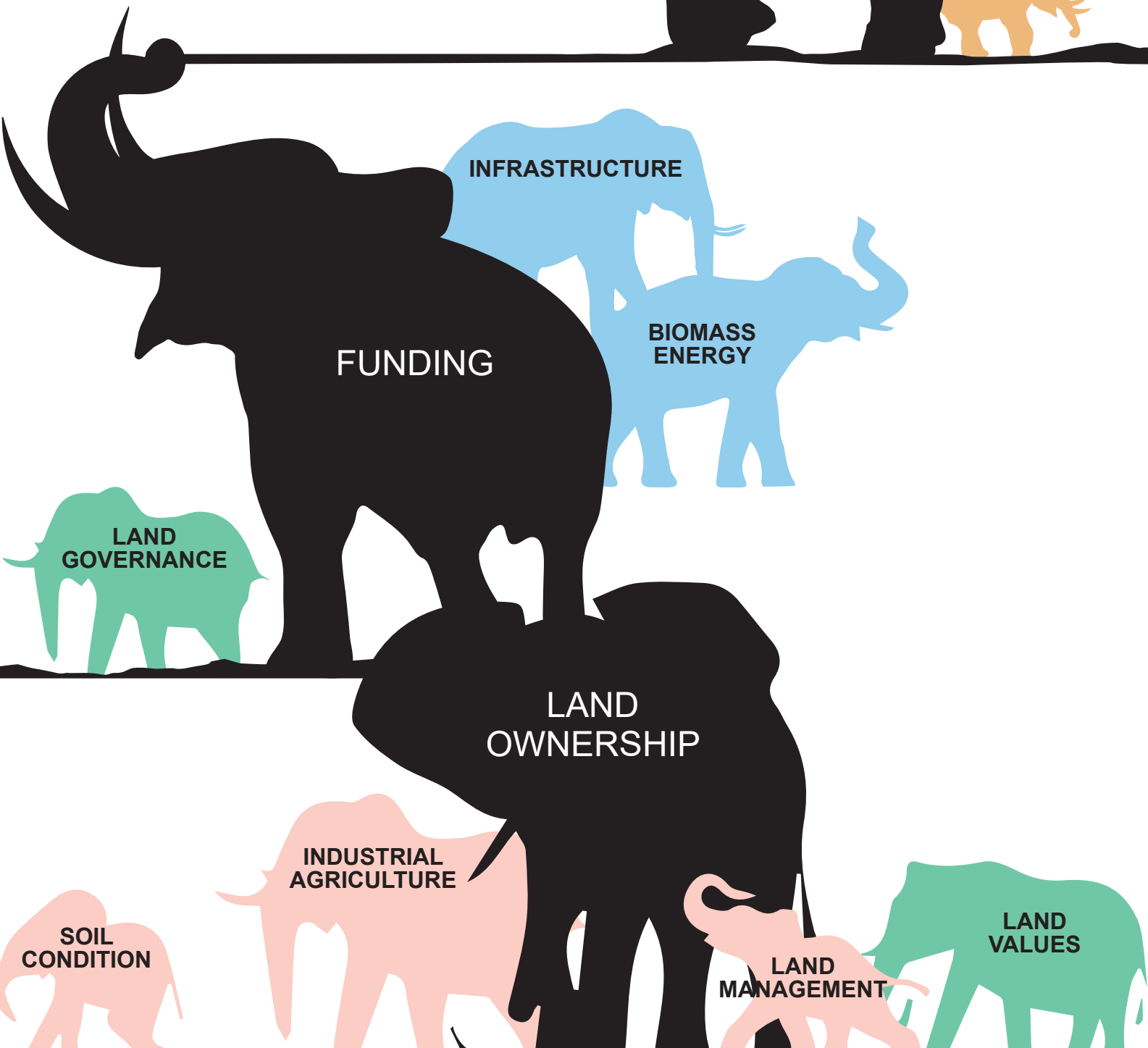
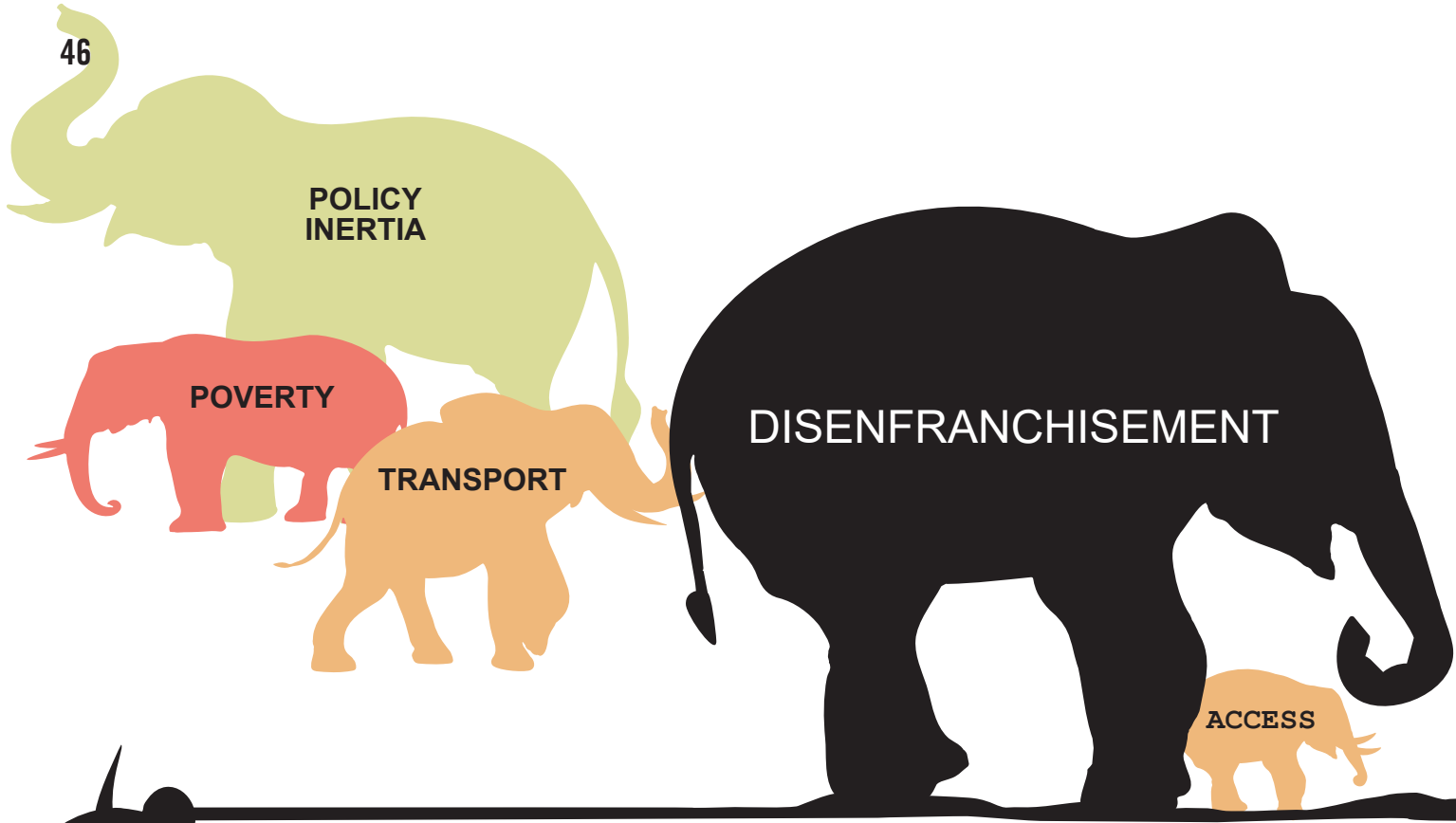
It looks at forms of eating that address environmental regeneration through the promotion of ingredients that proactively respond to the new ecological challenges of Scottish waters.

The Oyster Table is an installation set on the intertidal zone at Bayfield, Portree. Each day at high tide, it works as an underwater multispecies oyster table, inhabited by filter feeder bivalves and seaweeds. At low tide, the installation emerges above the sea and functions like a dining table for humans.

Since November 2018 students at Portree High School have trained to become CLIMAVORE Cooks. Through a series of oyster shucking and seaweed bread-baking workshops led by local chefs, foragers, scallop divers and Cooking Sections, students have learnt about the aqua-cultures along the tidal zones of Skye and food practices that can support them.

In 2019, a Community Interest Company was established to steer the CLIMAVORE Station project. Through reinterpreting the use of waste shells and seaweed as new materials for the construction sector, the work of the project seeks to contribute to the development of circular economies between food and building businesses on Skye, and the wider Highlands and Islands, exploring new avenues for alternative forms of caring for the coast.

More detail on the CLIMAVORE: On Tidal Zones projects on Skye and Raasay can be found [here](#).



HERE TOGETHER - IN THIS PLACE

Sophie Cooke

You can't separate the river
from the rocks beneath it,
or sunlight from the leaf,
the earth from your bloodstream.

The partitioned oil slick
that sits on top of everything
is not us. It's a vision.

Oil does not belong here nor
the plastic things we make from it, and liquids:
they do not fit in, at all,
when they are finished; sit
detached in time, unable to die:
mess with our real world's functioning.

We are different.

We belong to this place. It's in our nature
to join the world around us to ourselves:
it is our air, our food, our bones and blood.

This place and the way we live:
why should they be separate? The way we live
so much the same: one oily borrowing,
spread across everything?

This place and the way we live
will be joined, and different
as every place is different, each twist and rise
and nook; the things that are around us -
lignin, bracken, wool -
stretched to furnish many needs.

Our waste - food for something else, taken
into the heartbeat of the world that's living.

We'll join this sun, earth, water, wind,
to our skin: make of these things a blessed heat
to warm ourselves in winter. Join
the rocks, soil, roots
to our blood, in the food we eat: take in
the light on this landscape.

Breathe.

In, out: give, take.

This is our existence.

Like in nature, each part is needed,
each voice a drop of water in the river
that weaves together rain and sea.

This place will be our place:

this corner, and all the voices, all the life within it.

EMERGING THEMES AND OVERLAPS

Each of the Conversations stimulated debate and discussion. Many themes re-occurred as either a major talking-point for that particular Conversation or as a passing reference echoing one of the other Conversations. The word cloud below goes some way towards identifying these.



Current land use in Scotland is a legacy of a deeply ingrained pattern of ownership, rural clearances and urban development. This has created highly urbanised settlements – even many of Scotland’s villages are remarkably densely populated with 90.8% of the population living on just 2.3% of the land, surrounded by a very sparsely populated but highly managed landscape.

Much of Scotland, despite modern improvements in transport and communications, still feels isolated and there remain deep pockets of rural deprivation which are no less disadvantaged than the worst areas of urban blight.

Recurring themes included;

- Scotland's rural landscape is highly valued but accessed by relatively few
- Too often communities feel disenfranchised from decisions about land use
- Current land use is focused on industrialised agriculture and forestry, which produce relatively low value products and support relatively few jobs
- There are some spectacularly good examples of best practice in food production, community building and construction, but these are thin on the ground
- Scotland could do much better at exploiting its abundance of renewable resources
- Access to the natural environment is good for health and well-being
- Barriers, such as finance, accessibility and behavioural inertia, that restrict access need to be recognised and overcome
- Rewilding, reforestation, rewilding and agroforestry are not mutually exclusive, in fact quite the reverse
- The pattern of land ownership is a barrier to much innovation
- Coordinated policymaking is required to promote better, more productive and more financially rewarding uses of the land, skills development, job creation, rewilding and community building
- Low wages, fuel poverty, and poor communications are all barriers to community building

CONCLUSIONS AND SUMMARY

The 6 Conversations showed that land use patterns are relevant and important because of the impact they have in accelerating or mitigating climate change as well as in preserving biodiversity, supporting vibrant rural communities, addressing the Scottish Good Food Agenda, building sustainable industries, exploiting Scotland's renewable resources & energy and promoting well-being & inclusion. It is vital that Scotland gets this right.

The speakers and session chairs included scientists from the James Hutton Institute; academics from top Scottish universities, as well as representatives from farming, forestry, renewable energy, tourism; and landowners. The discussions centred on opportunities, as yet unexploited and the reasons and barriers for this. The tone of the Conversations and the presenters was universally positive and upbeat. This is not a zero-sum game. There is the appetite, on the part of all stakeholders, to do things better and to deliver better outcomes for everyone.

In the 6 Conversations we heard from pioneers who have recognised and overcome the challenges which lie ahead. They have established new businesses, engaged with communities and changed the way Scotland's land is used. Scotland needs their success stories to become better-known and to become mainstream.

The Scottish Government's plan to create new Regional Land Use Frameworks by 2023 offers the possibility of a coherent programme of land use change to tackle climate change. Will Scotland's Land Use Strategy and the work of the new Regional Land Use Partnership pilots, however, help to address some, or all, of the recurring themes which arose in the 6 Conversations?

Our conclusion is that the strategy in isolation will not be enough to tackle the many and varied ‘elephants in the room’ identified through these discussions. This is particularly true of those not directly related to, or influenced by, land use policy with a capital ‘P’, but nonetheless heavily influenced by the land uses they promote. If the strategy is not enough on its own, what more needs to be done to move from simply talking about the need for land use change in Scotland to actually facilitating it on the ground?

A clear message from the 6 Conversations is that there is a need for radical change in how Scotland’s land is used and in how it supports local, regional, national economies and food systems.

There is a need to move away from a ‘single policy, single outcome’ approach, and towards developing cross-sector policies which are integrated and can deliver across a broad set of issues. These policies need to be adaptable both over time and to local circumstances so that “the best does not become the enemy of the good”.

The outcome of these Conversations was a recommendation that urgent and coordinated action is needed now. To address the climate emergency and biodiversity crisis, we believe that the Scottish Government should adopt an integrated eight-point programme;

1. Develop and implement a Healthy Food Strategy
2. Develop and implement an Agroecology Strategy
3. Strengthen the contents and requirements under the Land Rights and Responsibilities Statement (LRRS)
4. Require Climate Impact Certificates detailing land use impacts
5. Continue to invest in transport, renewable energy and communications infrastructure across Scotland
6. Develop and implement a Sustainable Place Making & Mending Strategy
7. Support secondary and tertiary education in creating a climate conscious, motivated and skilled workforce
8. Provide seed funding for innovative new businesses

1. Healthy Food Strategy

Food is not only a fundamental human need, but – as we heard through all 6 Conversations – the type of food system we support in Scotland will have major implications for human and environmental health, the economy and communities. It is essential that the Scottish Government develops an overarching Healthy Food Policy alongside other policies and legislation with a link to food.

Much of Scotland's productive arable land consists of large-scale agrochemical farming of monocrops and too little of that land is used for food production. The majority currently produces barley which is primarily used by the drinks industry or for livestock feed. This unnecessarily makes Scotland a net importer of food and misses out on the job creation which goes with local, high-value, high-quality, healthy food.

Healthy food is an intrinsic part of improving public health. Extending and improving lives, ensuring people remain active for longer and reducing health and social care costs.

A Healthy Food Strategy could for example include the requirement for hospitals and schools to purchase, wherever possible, ingredients from local producers. Under a Healthy Food Strategy the value chains for sustainable products would become more transparent and readily understood by consumers. This would involve the audit, and possible certification, of all food products. This could address several of the problems we are facing at present – over-consumption, pollution, health, climate change and biodiversity.

2. Agroecology Strategy

Providing support and resources to encourage a shift away from highly intensive, non-food agrochemical farming, creates opportunities for new businesses to grow in the production, processing, responsible packaging, marketing and distribution sectors.

Production and fast distribution of fresh food is more labour intensive, creates more jobs and minimises the need to add preservatives and use plastic-based packaging. The waste from processing can be locally composted and returned to the land. Adding variety at a local level to Scotland's food production enhances visitor appeal supporting gastro-tourism.

An Agroecology Strategy could, for example, provide funding for electric delivery vehicles, which could serve a local distribution area and promote the use of distribution boxes to be returned, washed and used again.

Agroecology promotes farming practices that reduce emissions, recycle resources and supports local supply chains. Such farming systems also enhance wildlife and adapt farming practices to suit local social, environmental and economic conditions.

An Agroecology Strategy will support the delivery of the Healthy Food Strategy.

3. Strengthened LRRS

There should be a more explicit requirement for landowners and managers to include a soil condition survey, a biodiversity survey and a job impact analysis, which show there will be no degradation and a positive improvement as a result of any proposed land use change, as part of The Good Stewardship of Land Protocol that helps put the Scottish Government's Land Rights and Responsibilities Statement (LRRS) into practice.

Land management is the key to delivering agroecological benefits. Moving away from a reliance on artificial fertilisers, together with the improved soil conditions which come with high-value food production, will help combat climate change. Increases in both landscape diversity and biodiversity improve ecological resilience while strengthening Scotland's scenic beauty. This encourages re-peopling by creating jobs and attractive lifestyle choices.

Where statutory consents are required for land-use changes, the LRRS, could, for example, dictate where a developer contribution (similar to a Section 75 Planning Agreement) will be required to balance against a poor net outcome of the proposals. Equally, a net beneficial outcome could trigger other forms of incentive and support, such as innovation funding.

Strengthened LRRS requirements will support the delivery of the Healthy Food and Agroecology Strategies.

4. Climate Impact Certificates (CICs)

There should be a requirement for all landholdings over a certain size to provide a Climate Impact Certificate. CICs would detail the CO₂(e) emissions associated with the use to which the land is put. Such CICs would be required to be refreshed every ten years and as part of any land use change proposal.

Similar in concept to Energy Performance Certificates (EPCs) for buildings, they could require, for example, that any proposed change in land use should either demonstrate a net benefit, in order to gain financial support and the necessary consents, or operational licenses that are needed. Or conversely, they could lead to a requirement for a compensatory or offset proposal to ensure that the overall impact is not negative.

In the same way that EPC data is used to identify opportunities to upgrade building performance, CICs would build up a detailed national record of the emissions related to land use, tracking improvements and highlighting those land-use changes which deliver positive benefits.

CICs will support delivery of the Agroecology Strategy and contribute to mitigating the impact of emissions on climate change.

5. Coordinated Infrastructure Investment

Continued investment in transport, renewable energy and communications infrastructure is needed to make Scotland the best-connected country in Europe and provide the conditions necessary to revitalise and repeople rural areas, stimulate sustainable job creation and economic growth.

Easy movement, affordable energy and good communications are key factors in creating the conditions that will support business growth in response to the Healthy Food and Agroecology Strategies and contribute to mitigating the impact of emissions on climate change.

Improved transport and communications links could, for example, make it feasible for more wind turbine manufacturers to move production closer to the eventual deployment sites for the technology (or indeed be manufactured in Scotland for export) and ensure that the servicing, control and maintenance facilities are retained locally.

The system of energy distribution needs to be rethought, with incentives for manufacturing industry to locate near to sources of renewable energy and insure that all users pay a fair price.

6. Sustainable Place Making & Mending Strategy

Scotland is blessed with stunning scenery and picturesque towns and villages. However, this does not disguise the fact that many settlements lack a mixed demographic which supports local services and sustains a vibrant community.

Planning support and financial incentives are needed to encourage investment in both refurbishment and new high quality sustainable community facilities, visitor accommodation and housing developments. These provide reasons to visit and reasons to stay in Scotland. Tourism, together with a diverse range of other industries and service demands, creates jobs and improves lifestyles encouraging re-peopling and the strengthen of existing communities.

A Sustainable Place Making and Mending Strategy could, for example, make a condition of a major land use change the release of land parcels to local Registered Social landlords (RSLs) at agricultural values in order to build new homes. The low land values would allow a requirement to ensure that the homes are built to very high environmental standards, using local resources and labour.

A Sustainable Place Making & Mending Strategy will encourage re-peopling of rural areas, which is vital if there are to be people available for employment in expanded and new industries.

Rural communities should be given a bigger role in decision-making over policies affecting their own local environments, including housing and employment. At the start of the pandemic, local communities, including community development trusts, responded more quickly than the Scottish or local governments. This is a valuable resource that should be tapped into.

7. Education

It is vital to strengthen the environmental education currently delivered by primary schools and carry this through to secondary schools, expanding on and exploring the linkages which the 6 Conversations highlighted between land use, food production and renewable resources. These naturally lead on to geography, history, nutrition and a host of other curriculum topics.

Education not only prepares youngsters for the world of work, but also equips them with the tools by which to make the best lifestyle, food, health and business choices and make a positive contribution to wider society.

The attainment levels of individual schools often drives a decision to move to a new area. Ensuring that every rural school is well resourced would be a significant driver for re-peopling, which would contribute to maintaining viable school populations in every community.

Further and higher education institutes must be encouraged to provide and promote the vocational training courses which will deliver a workforce with the skills needed by new and expanding businesses in the evolving technology, manufacturing, land use, tourism, food and services sectors.

It is essential to ensure that Scotland's future workforce is equipped with the support, skills and experience needed to drive the green economic recovery.

8. A Sustainable Business Innovation Fund (SBIF)

Access to affordable seed funding and a willingness to fund well thought-out, innovative start ups in areas such as rewilding and agroforestry is vital.

The benefits of investing, at a local scale, in technology, manufacturing and service businesses across Scotland based on renewable resources, such as food, forestry products and energy, are significant. Creating new, skilled and well-rewarded jobs, will encourage re-peopling, redress demographic imbalances and build sustainable communities. This then has a multiplier effect, creating further market opportunities for local food, housing and service suppliers.

Similar in concept to the former Renewable Energy Investment Fund (REIF), SBIF funds would be made available to leverage commercial investment. Loans would roll over rapidly as projects mature leaving recipients able to access cheaper refinancing options once their businesses are established. The SBIF could, for example, provide seed funding, to allow a community to buy the land on which to establish a tenanted agroforestry enterprise.

The SBIF will support the delivery of the Healthy Food and Agroecology Strategies, job creation and contribute to mitigating the impact of emissions on climate change.



We believe the 6 Conversations and this report, make it clear, that if Scotland is to reach its environmental goal of net-zero greenhouse gas emissions by 2045, these eight recommendations must be acted upon urgently. If implemented in a multi-disciplinary way, they will address climate change and protect biodiversity, while also improving health and well-being. Decisions about the future of Scottish land have, in the past, been deferred while other crises have gathered. Maximising the potential of Scottish land will, however, make Scotland more resilient and pursuing a co-ordinated strategy now, will transform the rural economy, communities and Scotland for the better.



Gail Halvorsen and David Seel, Event organisers, SEDA

FURTHER READING

This is simply intended to signpost a small number of high-level links that touch on some of the matters raised across the 6 Conversations. It is not intended to be an exhaustive or definitive listing.

Advisory Group on Economic Recovery (2020) *Towards a robust, resilient, wellbeing economy for Scotland*. Accessed 13/05/2021 from [here](#)

Alasdair Reid (2021) *Update to the Climate Change Plan: background information and key issues*. Accessed 13/05/2021 from [here](#)

Annual energy statement 2019 (Scotland). Accessed 19/05/2021 from [here](#)

Callum McLeod (2021) *Beyond the Horizon: commentary and sustainability policy analysis*. Accessed 13/05/2021 from [here](#)

Final Report - *The Economics of Biodiversity: The Dasgupta Review*. Accessed 25/05/2021 from [here](#)

Electricity generation and supply in Scotland, Wales, Northern Ireland and England, 2016 to 2019. Accessed 19/05/2021 from [here](#)

Food, Farming & Countryside Commission (2021) *Farming for Change: mapping a route map to 2030*. Accessed 13/05/2021 from [here](#)

Forest Policy Group (2018) *Forestry could and should contribute more to local economics than it currently does*. Accessed 13/05/2021 from [here](#)

IPES-Food and Nourish Scotland (2020) *The Glasgow Food and Climate Declaration*. Access 17/5/2021 from [here](#)

National Register of Scotland: Scottish Settlements Urban and Rural Areas in Scotland. Accessed 26/5/2021 from [here](#)

National Register of Scotland: Mid-Year Population Estimates Scotland, mid-2019. Accessed 26/5/2021 from [here](#)

Nourish Scotland (2018) *Food Atlas: mapping out a sustainable food future*. Accessed 13/05/2021 from [here](#)

Owen, R. (2020) *How to create a government that considers future generations*. Accessed 26/05/2021 from [here](#)

Revive (2021) *Our Land: a vision for land reform in Scotland and how we get there*. Accessed 13/05/2021 from [here](#)

Scottish Government (2020) *The Environment Strategy for Scotland: visions and outcomes*. Accessed 13/05/2021 from [here](#)

Scottish Government (2021) *Land use – getting the best from our land: strategy 2021 to 2026*. Accessed 16/5/2021 from [here](#)

Scottish greenhouse gas emissions annual target report: 2017. Accessed 19/05/2021 from [here](#)

Scottish Land Commission; Community Engagement in Decisions Relating to Land, accessed 31/05/2021 from [here](#)

Scottish Parliament Information Centre (2021). Key Issues for Session 6: COVID, Climate and Constitution. Accessed 26/5/2021 from [here](#)

Sustainable Food Trust (2021) *Measuring Sustainability*. Accessed 13/05/2021 from [here](#)

The Green Exercise Partnership (2020) *NHS Greenspace Demonstration Project: unlocking the potential of NHS greenspace for health and well-being*. Accessed 17/5/2021 from [here](#)

The Conversation; How to create a government that considers future generations – article which discusses the process of Policy Making post pandemic. Accessed 26/5/2021 from [here](#)

The Royal Society (2021) *Living Landscapes*. Accessed 13/05/2021 from [here](#)

UK Research and Innovation (2021). Food for thought – new report discusses possible UK food systems. Accessed 26/5/2021 from [here](#)

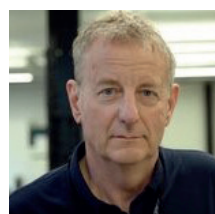
1



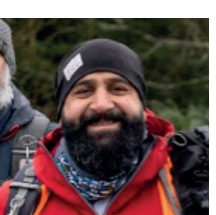
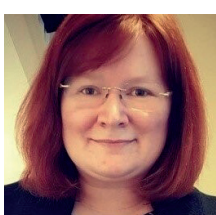
2



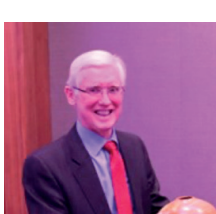
3



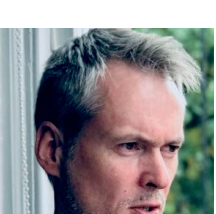
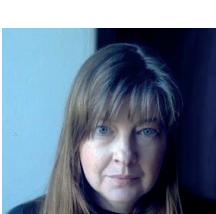
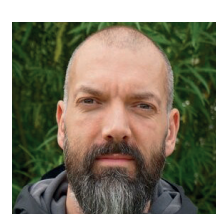
4



5



6



CONTRIBUTORS

CONVERSATION CHAIRS

Chris Dalglish; director, Institute for Heritage & Sustainable Human Development

Marc J Metzger; professor of environment and society, The University of Edinburgh

David Miller; knowledge exchange coordinator, The James Hutton Institute

Francesca Osowska OBE; chief executive NatureScot

Deborah Roberts; deputy chief executive and director of science, The James Hutton Institute

Prof Dan Van Der Horst; professor, environment, energy & society, University of Edinburgh

MAIN SPEAKERS

Magnus Davidson; environmental research institute, University of the Highlands and Islands

Nicholas Gubbins; chief executive Community Energy Scotland

Pete Ianetta; head of ecological food systems within the agroecology group of the James Hutton Institute

Sarah-Anne Munoz; acting head of division of rural health and wellbeing, University of the Highlands and Islands

Hugh Raven; chair of Scotland's Moorland Forum & MD of Ardtornish Estate

RESPONDERS AND PANEL MEMBERS

Sophie Cooke; poet, novelist, and short story writer

Caroline Drummond; chief executive LEAF (Linking Environment and Farming)

Alison Hester; senior scientist, The James Hutton Institute

Patrick Krause; chief executive Scottish Crofting Federation

Rachel Marsh; author & creative writing teacher Gateway KE Lead for Environment

Andrew McCornick; beef and sheep farmer, Dumfries

Willie Mcghee; Forest Policy Group

Dennis Overton; sea farmer & chair, Scotland Food & Drink

Bob Reid; development director Wildlife Limited

Neil Sutherland; architect / director, Makar Ltd

Dr Charles Warren; geography and sustainable development, University of St Andrews

Dr Rehema White; school of geography and sustainable development, University of

St Andrews and Learning for Sustainability Scotland

ADDITIONAL PANEL MEMBERS

Naveed Bakhsh; founder Boots and Beards

Jim Birley; Scottish Wood & ASHS

Duncan Bryden; Bryden Associates

Lynn Cassells; Lynbreck Croft

Prof Lorna Dawson; head of Soil Forensic Group, James Hutton Institute, SEFARI

Dr Mads Fischer-Moller; professor in food policy Scotland's Rural College

Kevin Lafferty; health policy advisor, Scottish Forestry

Jeremy Leggett; Solarcentury & Bunloit Wildland

Adrian Loening; Mór Hydro Ltd

Professor Ronald MacDonald OBE; research professor of macroeconomics and international finance, Glasgow University

Megan MacInnes; Land Commissioner, Scottish Land Commission

Dr Calum MacLeod; policy director, Community Land Scotland

Bob Reese; professor of agriculture and climate change and head of Carbon Management Centre, SRUC

Megan Rowland; land and deer manager

Guy Watt; forest industry economist

Andrew Whitley; Baker, author, co-founder of the Real Bread Campaign and Scotland The Bread

Nikki Yoxall; Grampian Graziers

ARTISTS

Sophie Cooke

Su-a Lee

Moteh Parrot

Iain Fraser

Rachel Marsh

Karine Polwart

Jill de Fresnes & Ruth Barrie

Hamish Napier & David Russell

The Poozies

Jules Horne

pantea & Kate Foster

Chris Powici

Kirsty Law

Pau de Planet

Roseanne Watt

ORGANISERS AND BACK ROOM VOLUNTEERS

Gail Halvorsen

Organiser

Gloria Lo

David Seel

Organiser

Natasha Houchin

Geoff Squire

Scientific advisor

Scott McAulay

Sally Blackburn Daniels

Digital event organiser

Kyle Henderson

Ian Fraser

Calum Ross

Eleanor Fraser

Reem Al Kayyem

Rosanna Harvey Crawford

REPORT AUTHORS, DESIGN AND LAYOUT

Richard Atkins

Davy McCracken

Rachel Houghton

THANKS

SEDA extends its thanks to the James Hutton Institute, The Open University Scotland, Wildland Limited and The Pebble Trust, without whose support the 6 Conversations could not have taken place.

SEDA is grateful to those who chaired each Conversation, the presenters, the contributing artists and the backroom volunteers who organised and managed each Conversation. A list of all those involved is included at the end of this report.

Finally, SEDA would like to thank the authors of this report Richard Atkins, Davy McCracken and Rachel Houghton for its presentation and layout.

The opinions expressed in this publication are those of the authors. They do not purport to reflect the opinions or views of the Scottish Ecological Design Association (SEDA) or its members.

The artists's contributions of music, poetry, film and images etc, remain their copyright and have been reprinted here with their kind permission.

Note: Hyperlinks to further information are included throughout this document and can be accessed via the electronic copy of the report available at www.seda.uk.net/seda-land-conversations/report

Front Cover

©Lorne Gill/NatureScot; The James Hutton Institute

Zain Sehgal; The James Hutton Institute; Gabriela Palai; Ruth Barrie of Waltzer Films

©Lorne Gill/NatureScot; ©Lorne Gill/NatureScot; Su-a Lee

NONE; ©Lorne Gill/NatureScot;

Ruth Barrie of Waltzer Films

Andrew Whitley; Ruth Barrie of Waltzer Films

Page 2

The James Hutton Institute

Dalziel + Scullion

©Lorne Gill/NatureScot

Dalziel + Scullion

Dalziel + Scullion

www.simonbrattphotography.com



ISBN 978-1-7399416-0-4



A SEDA Publication
£15 print price