

**Senedd Cymru**  
**Pwyllgor yr Economi, Masnach a Materion Gwledig**  
**Economi Gwyrdd**  
**GE05**  
**Ymateb gan: Cyfoeth Naturiol Cymru**

-

**Welsh Parliament**  
**Economy, Trade, and Rural Affairs Committee**  
**Green Economy**  
**GE05**  
**Evidence from: Natural Resources Wales**



# **Senedd: Economy, Trade & Rural Affairs Committee – call for evidence on Green Economy.**

## **Contents**

1. Introduction.....	2
2. Key Messages .....	3
• NRW’s distinctive role.....	3
• Moving to a more sustainable economy .....	3
3. Responses .....	5
• Question 1 .....	6
• Question 2 .....	9
• Question 3 .....	14
• Question 4 & Question 5.....	15
• Question 6 .....	18
• Question 7 .....	20
• Additional considerations. ....	22

# 1. Introduction

Natural Resources Wales (NRW) welcomes the opportunity to respond to the call for evidence on Green Economy. We are the primary environmental body for Wales. Our roles include advisor to Welsh Government, regulating industries and environmental licences, Statutory Nature Conservation Body for Wales, land manager (~7% of Wales), category one emergency responder, statutory consultee (planning applications and other statutory processes), and collaborator on environmental projects. We deliver our functions in an integrated way to achieve our overall purpose of helping Wales to achieve the Sustainable Management of Natural Resources (SMNR) and Wales's Well-being Goals.

The economic mission for Wales has a broad remit and touches many aspects of our work. We are encouraged to see a focus on a green economy and would like to further highlight the key role that natural resources play for the economic, social and cultural well-being of Wales, as envisaged in our commitment towards United Nations Sustainable Development Goals (SDGs). **Thus, the green economy should be used to contribute to, progress and achieve Sustainable Development.**

This is not entirely a new notion, during 2004 and early 2005, the Sustainable Development Commission (SDC) worked closely with government to renew the UK Sustainable Development Strategy. In particular, the Commission led the engagement process that resulted in the five Sustainable Development 'principles. A key element in these principles is the recognition that – rather than being an end in itself – **a 'sustainable economy' should be regarded as the means to reaching the more fundamental goal of a 'strong, healthy and just society' that is 'living within environmental limits.'**<sup>1</sup> This is also paraphrased in the ministerial opening for the economic mission with an opening call for a "A stronger, fairer, greener Welsh economy..<sup>2</sup>

As Dasgupta highlights, "A healthy environment and a vibrant economy can go hand in hand, and indeed must do, otherwise we will have neither"<sup>3</sup>. This is echoed in the recent World Economic Forum (WEF) survey of the economic risks the world faces, with 5 of the top 10 risks facing the economy in the next 10 years being nature related, including all the top 4<sup>4</sup>.

As such, it is imperative that the ecological underpinnings of our economies are mainstreamed across economic planning processes, this is a pre-requisite for a Green Economy to be delivered. The State of Natural Resources Report (SoNaRR 2020 – [ecosystem resilience chapter](#)) makes an assessment of the resilience of ecosystems across Wales (their diversity, extent, condition, connectivity and adaptability). Whilst the assessment has shown some areas of optimism, the dominant trend is of reducing ecosystem resilience, in some cases quite severe – for example 39% of species are now

---

<sup>1</sup> Sustainable Development Commission (SDC), 2009, 'Prosperity Without Growth' [Prosperity without Growth - The transition to a sustainable economy. \(sd-commission.org.uk\)](#)

<sup>2</sup> [Economic mission: priorities for a stronger economy \[HTML\] | GOV.WALES](#)

<sup>3</sup> Dasgupta, P. *The Economics of Biodiversity: The Dasgupta Review*; HM Treasury, 2021.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/962785/The Economics of Biodiversity The Dasgupta Review Full Report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf)

<sup>4</sup> [WEF The Global Risks Report 2024.pdf \(weforum.org\)](#)

found in fewer places than in the previous two decades and 17% of species are at risk of extinction.

It is based on this background Welsh Government declared both [climate](#) and [nature](#) emergencies for the country as well as setting a statutory well-being objective to *embed our response to the climate and nature emergency in everything we do*. The nature and climate emergencies are raising awareness that the current economic and financial system is not delivering for people or the planet. Being built on maximising growth and short-term profits, our economic model is imposing enormous costs on communities and ecosystems. The evidence shows that after a certain level, increasing Gross Domestic Product (GDP) has not created greater well-being, instead it has increased social inequality and led to environmental tipping points being reached or breached. An economy which supports well-being requires a change in the relationship between the economy and the planet.

Thus, a green economy should be one that supports, builds and is dependent on resilient ecosystems and we look forward to collaborating with the Welsh Government and other stakeholders towards building a green economy fit for the future. The Green Recovery: Priorities for Action Report<sup>5</sup> calls for systemic and transformative changes needed for a socially just and green recovery – one such that can be delivered through a green economy agenda.

## 2. Key Messages

- **NRW's distinctive role**

NRW's recently launched [Corporate Plan](#) which takes us from 2023 to 2030 commits, in the exercise of our functions, towards supporting a regenerative economy with a vision of nature and people thriving together, the outcome sought from a regenerative/circular economy.

For example, our role in waste is vital in supporting Welsh Government to deliver their strategic aim of achieving a more circular economy in Wales, and to deliver the commitments within our own corporate plan.

NRW is also leading the way to becoming a carbon positive organisation with a goal of developing a route map for decarbonisation across the Welsh Public Sector. The goal is inclusive of the woodland estate that we manage, whereby we work to further reduce our emissions and manage the estate to support the ambition for a carbon neutral Welsh public sector by 2030.

- **Moving to a more sustainable economy**

Our current economic systems often prioritize short-term economic gains at the expense of long-term environmental sustainability. **Wales needs to promote practices and policies that prioritize environmental conservation, renewable energy, sustainable**

---

<sup>5</sup> Natural Resources Wales. *Green Recovery: Priorities for Action Report*, 2020. <https://naturalresources.wales/media/692667/final-green-recovery-priorities-for-action-report-english.pdf>

## **consumption and production, and the protection of ecosystems, ensuring a healthy planet for future generations.**

An economy which supports wellbeing requires a change in the relationship between the economy and the planet. It is about redesigning the economy so that it delivers good quality lives for everyone on a healthy planet by working in service of people, meeting the needs of all, valuing and measuring what matters, redefining societal progress, and putting the delivery of the long-term wellbeing and prosperity of all generations before narrow metrics focused on the pursuit of GDP growth at all costs. This is the vision of the wellbeing economy set out by the Future Generations Commissioner for Wales<sup>6</sup>.

Wales helped to lead the first industrial revolution and bears the scars of the model of development that kickstarted, from old mine workings and polluted watercourses to intensification of agriculture and loss of key habitats. This model of economic development has led to the degeneration of natural systems, in Wales and internationally. By building a model of economic development which regenerates ecosystems, Wales could once again help lead the fourth industrial revolution and turn our degenerative economy into a regenerative one.

A regenerative economy would keep its material footprint within the capacity of the environment to regenerate itself. It would mean everyone living within their fair share of the Earth's natural resources. It would take Wales from an economy which reduces its natural resources and ecosystems, through to one which actively works with natural systems. The Ecological footprint of Wales has been estimated (for 2018) as 3.93 global hectares per capita, in other words, if the entire world population lived like the citizens of Wales, humanity would require 1.8 Earths<sup>7</sup>. We can therefore conclude that Wales is some way from achieving a regenerative economy. This overconsumption is putting a strain on ecosystems worldwide.

A regenerative economy would see a reduction in the environmental impact of production and consumption and the environmental footprint **within Wales and internationally**, while optimising the benefits of ecosystem goods and services. Here, the economy includes (but is not limited to):

- use of natural resources for production.
- material value of stocks of natural resources.
- agriculture and other land use industries.
- management of waste.
- import and export of natural resources.

[SoNaRR2020](#) assesses Wales's progress against four aims of Sustainable Management of Natural Resources (SMNR), but it is important to note that they are inextricably linked and should not be seen in isolation (Figure 1). Wales cannot work towards healthy places for people without resilient ecosystems and cannot make our ecosystems resilient without safeguarding stocks of natural resources. The regenerative economy safeguards and

---

<sup>6</sup> [A Well-being Economy – The Future Generations Commissioner for Wales](#)

<sup>7</sup> Lin, D., Iha, K., Galli, A., Wackernagel, M., West, C., Croft, S., Egan, C.; Molotoks, A., Simpson, J., Caudle, K. & Harris, M. *Understanding the Global Environmental Footprint and Impacts of Welsh Consumption*; JNCC, 2023. <https://data.jncc.gov.uk/data/dc81dd16-9b1c-4eeb-b350-dcadd5ade736/jncc-report-743.pdf>

restores those stocks and is the route to the transformational change needed to achieve SMNR.

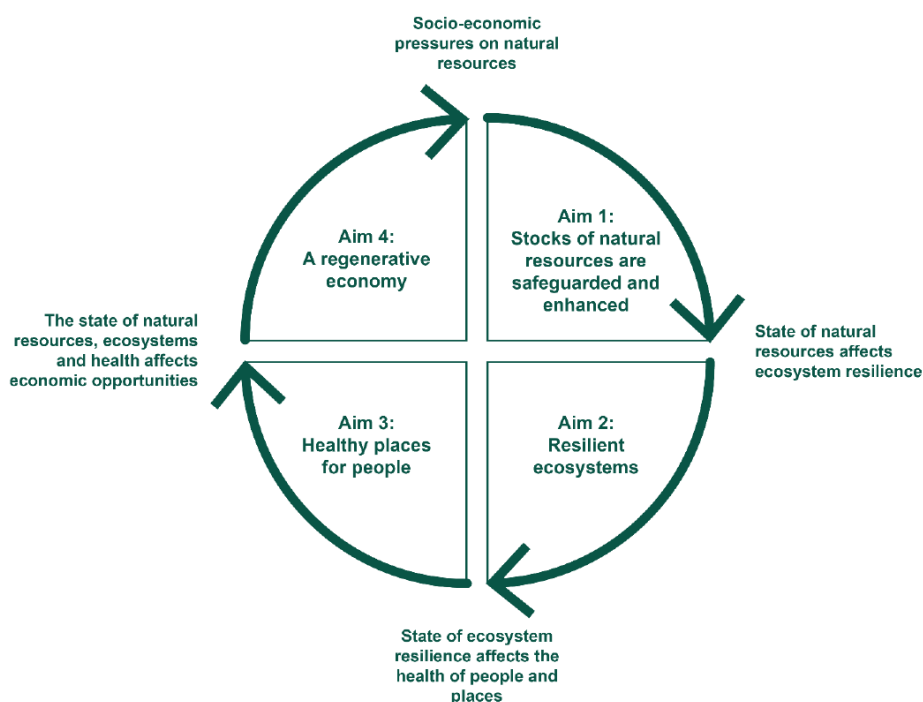


Figure 1. The four aims of Sustainable Management of Natural Resources from SoNaRR.

The opportunities for action identified are:

- Decouple economic growth from environmental impact.
- Use spatial planning to enable sustainability transition.
- A whole systems approach to product lifecycle design.
- Move from purchasing goods to purchasing services.
- Move to a Circular economy using waste as a resource.

To work towards this Wales will need to not only use natural resources more efficiently, but also adopt more sustainable patterns of consumption.

### 3. Responses

Our response is a wider observation on the opportunities and challenges for the Welsh economy with a **key focus on the environment as the foundation of our economy** and that a significant shift in operating models is required to ensure a resilient and sustainable economy.

In addition to this response we wish to draw your attention to four documents of relevance; HM Treasury's Economics of Biodiversity report ([Dasgupta Review](#)), HM Treasury's Economics of Climate Change ([Stern Review](#)), the [first report](#) of the green recovery task and finish group, and the SoNaRR [regenerative economy](#) report.

- **Question 1**

**Within its devolved power, what should Welsh Government's key priorities to maximise the potential economic opportunities from green economy sectors? To what extent does its current approach reflect these?**

The Green Recovery Task and Finish Group<sup>8</sup> recognises the significant role that the green recovery can play in transitioning to a net zero, circular economy which supports nature and creates significant opportunities for jobs and skills development. **It prioritised eight sectors within the Welsh economy – all eight** to a great extent within the administration of devolved government:

1. Food
2. Marine
3. Reimagining our urban areas
4. Active travel and sustainable transport
5. Circular economy
6. Tourism
7. Housing
8. Health and Well-being

Narrowing down on the above priorities in the short term, we believe Welsh Government should prioritise the core systems that are placing the most pressures on the ecosystem. **These are based on food, energy and mobility (transport) - the transformation of all three components has significant impact on the above eight required to transform the socio-economic system of Wales.**

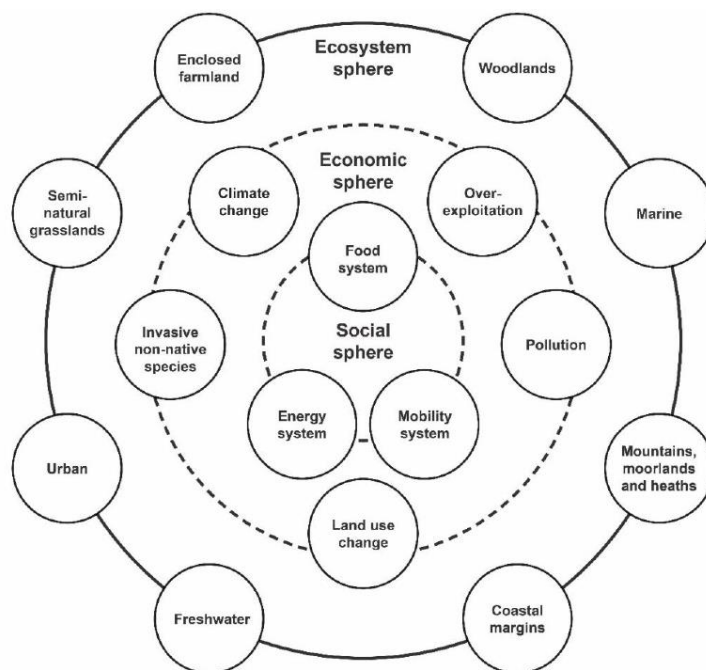
- At the core of SoNaRR's analysis of the eight broad ecosystems and the pressures on them, it was identified that the energy, mobility and food systems are key leverage points for change. This was also the conclusion of the 2019 IPBES report<sup>9</sup> which states that a transition to a sustainable world is technically and economically possible, but it will require collective and individual creativity to reimagine the way we live.
- The diagram below highlights the energy, mobility and food systems set in the context of SoNaRR's ecosystems and cross-cutting themes<sup>10</sup>.

---

<sup>8</sup> Natural Resources Wales. *Green Recovery: Priorities for Action Report*, 2020. <https://naturalresources.wales/media/692667/final-green-recovery-priorities-for-action-report-english.pdf>

<sup>9</sup> PBES. *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*; 2019. <https://www.ipbes.net/global-assessment>

<sup>10</sup> Natural Resources Wales / SoNaRR2020: *Transforming Wales*. <https://naturalresources.wales/evidence-and-data/research-and-reports/state-of-natural-resources-report-sonarr-for-wales-2020/sonarr2020-bridges-to-the-future/transforming-wales/?lang=en> (accessed 2024-02-05).



Adapted from State of Natural Resource Report 2020.

### **Transforming the food system**

- The starting point for addressing the environmental impact of the food system lies in changing the way land and seas are managed, with the adoption of more sustainable farming, forestry and fishing practices.
- For example, the Sustainable Farming Scheme has the potential to help protect and enhance food sustainability and food security by supporting farmers to adapt to climate change and extreme weather events, like drought and flooding. It recognises that the broader delivery of environmental and social outcomes depends on farm businesses being economically resilient.
- Research and development with support to introduce innovative to farming practice such as precision farming and earth observation technologies is essential to sustainable transformation.
- Reducing the ‘food miles’ in our farming, processing, marketing and sales mechanisms is ripe for improvement. Wales has some notable community initiatives based on this premise but there are significant areas for investment if progress is to be made more broadly, for example, more smaller abattoir closer to producers.

### **Transforming the transport system**

- Transport is essential to an efficient working of a green economy. How people and goods are transported is critical to the ecosystems, human health and economy.



- Transport is the fourth largest source of greenhouse gas emissions in Wales<sup>11</sup>. It also creates indirect impacts by stimulating demand in a range of other economic sectors, including extraction of raw materials, production of infrastructure and vehicles, electricity generation, petroleum refining, and recycling and disposal of materials<sup>12</sup>.
- According to a UN report<sup>13</sup>, there is urgent need for transformative action that will accelerate the transition to sustainable transport, which can be done with the right policies and investments. **This requires Innovations which is driven by new technologies, evolving consumer preferences and armed with supportive policies and legislations.**
- For example, changes are needed that make walking, cycling and public transport more attractive to people than driving. This is likely to include significant investment in sustainable transport modes, road space re-allocation and large reductions in funding for new roads. It also requires fiscal levers to make public transport cheaper and increased investment in active modes, alongside reductions in 'road' spending, and making driving more prohibitively expensive, are also important. **All these measures need to be undertaken fairly ensuring people's lives and transport choices improve, especially where transport alternatives to the car are currently lacking.**<sup>14</sup>

### Transforming the Energy system

- **Energy should be at the heart of the Welsh economic strategy.** Both the pandemic and the war in Ukraine have underscored the vulnerability of many strategies to movement in energy markets.
- Whilst the power and industry sector progress are partly determined by policies set by UK Government, the promotion of energy efficiency and development of renewable energy (to a large extent) and is well within the gift of Welsh Government.
- The transition to renewable energy sources led by strong energy efficiency measures is a core component of a green economy and it is vital in achieving sustainable development to address the climate emergency, nature emergency and energy crisis.
- Most factors leading to the accelerating loss of biodiversity are linked to the development and increasing use of energy by society<sup>15</sup>. These links are both direct (such as fuel use), and indirect (such as support for food production and consumption).

<sup>11</sup> Lucy Garland, Lotte Gleeson, Lewis Blannin, Jill Mitchell, Courtney Szanto, Luke Jones, Kathryn Hampshire, Katie King, Ben Richmond, Glen Thistlethwaite, Dan Willis, Dan Wakeling, Charles Walker. *Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2021*; NAEI, 2023.

<sup>12</sup> *The European environment — state and outlook 2020: knowledge for transition to a sustainable Europe — European Environment Agency.*

<sup>13</sup> United Nations. Sustainable transport, sustainable development. Interagency report for second Global Sustainable Transport Conference. 2021

<sup>14</sup> Sustrans, 2020, Our position on the climate crisis and transport. [Our position on the climate crisis and transport - Sustrans.org.uk](https://www.sustrans.org.uk/our-position-on-the-climate-crisis-and-transport)

<sup>15</sup> Vié, J.-C., Hilton-Taylor, C. and Stuart, S.N. *Wildlife in a Changing World – An Analysis of the 2008 IUCN Red List of Threatened Species*; 2009.

- **We continue to believe that WG should increase prioritisation and accelerate the promotion on energy efficiency and development of renewable energy.** WG is commendable for their renewable energy targets and the efforts put into renewable development, however, it should be pursued (ideally) alongside energy efficiency efforts. At the moment, the current energy efficiency model in Wales is not running on the same scale as renewable energy. Energy efficiency is a no regret option with greater economic and environmental benefits.
- For instance, the Warm Winter campaign states over half a million adults in Wales live in cold and damp housing conditions<sup>16</sup>. This impacts health and wellbeing in addition to exacerbating fuel poverty. WG's current Warm Home programme is not adequate to address fuel poverty issues, which has a significant impact on the economy.
- As a step forward, Welsh Government should raise building standards, and invest in a long-term greener homes programme with onsite generation built in. Energy efficiency improvements to the construction and technology within our homes must be accelerated. **Radical overhaul is required to achieve this both in new build and existing housing stock.** Targets for minimum energy efficiency standards should extend beyond the private rented sector. Additional incentives and grants must be considered to ensure energy efficiency improvements are available for more consumers. Spending in this area would also help build supply chains to ensure Welsh organisations are at the forefront in meeting demand for low carbon homes in the UK.
- Meeting Wales' Net Zero target also requires a fundamental change in how the Welsh energy system is planned, developed, integrated and operated. Significant network reinforcement is also vital and required across electricity distribution and transmission networks, driven by increases in peak demand and renewables<sup>17</sup>.

- **Question 2**

**What are the key barriers to Wales making the most opportunities in the green economy, and what steps should be taken to overcome these?**

**It is now widely recognised that a healthy and resilient economy is dependent on healthy and resilient ecosystems, including by those within the financial and economic sector.** There is requirement to develop appropriate mechanisms or metrics for attributing value to nature to aid us in economic decision-making.

As highlighted by Dasgupta<sup>18</sup>, contemporary models of economic growth and development tend only to consider produced and human capital (e.g., labour, knowledge and skills) as primary factors of production. These models typically omit, or undervalue, the contributions of nature to the economy, and well-being more generally.

---

<sup>16</sup> [30% of adults in Wales live in cold damp homes - double the UK average \(nation.cymru\)](https://nation.cymru/)

<sup>17</sup> Future energy grids for Wales reports, 2023. [Future energy grids for Wales: reports | GOV.WALES](https://gov.wales/future-energy-grids-for-wales-reports/)

<sup>18</sup> Dasgupta, P. *The Economics of Biodiversity: The Dasgupta Review*; HM Treasury, 2021.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/962785/The Economics of Biodiversity The Dasgupta Review Full Report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/962785/The_Economics_of_Biodiversity_The_Dasgupta_Review_Full_Report.pdf)

Thus, Dasgupta highlights, we **need to move beyond GDP as a measure of economic success if we are to realise economies that are both equitable and address current ecological scarcity**. This requires more integrated information on the environment and the economy to be available for economic planning. Some progress has been made that can help identify green economy opportunities:

- SoNaRR 2020 identifies multiple contributions of nature to economic, social and cultural well-being: [Natural Resources Wales / State of Natural Resources Report \(SoNaRR\) for Wales 2020](#)
- Recent Natural Capital Accounts have been produced for Wales that highlight the value of ecosystem services to the economy and broader well-being: [UK natural capital accounts: 2023 - Office for National Statistics \(ons.gov.uk\)](#)
- Defra's recently updated guidance for its Enabling a Natural Capital Approach to support project and policy appraisal as required the HM Treasury Green Book: [Enabling a Natural Capital Approach - data.gov.uk](#)
- The ERAMMP integrated modelling platform has supported more sustainable economic planning for the agricultural sector: [Integrated Monitoring Platform \(IMP\) | ERAMMP](#)

A principle of the Green Economy is to reduce ecological scarcities, thus **transitioning from built infrastructure solutions to Nature Based Solutions (NBS) can help deliver this outcome**. There are now multiple international and national reports highlighting the role Nature Based Solutions can play in addressing our development issues and how to evaluate their effectiveness:

1. [Nature Based Solutions, IUCN](#)
2. [Nature-based Infrastructure: How natural infrastructure solutions can address sustainable development challenges and the triple planetary crisis \(unep.org\)](#)
3. [WEF BiodiverCities by 2030 2022.pdf \(weforum.org\)](#)
4. [Nature-Based Solutions Initiative | New European Commission report on evaluating the impact of Nature-based Solutions \(naturebasedsolutionsinitiative.org\)](#)
5. [Guidance Note 042 Green Infrastructure Assessments \(final June 2021 \(naturalresources.wales\)](#)
6. [Restoring marine and coastal habitats in Wales: identifying spatial opportunities and benefits \(naturalresources.wales\)](#)

Some examples of opportunities in Wales (but are not limited to):

- **River and wetland restoration** – Improving the quality of inland waters as well as managing and improving river flows is critical, creating benefits for biodiversity and for people through access to safe, reliable water for use in the home, on the farm, in business and industry as well as a resource for recreational activity and tourism.

- **Blue carbon in the marine environment** – The marine environment already stores significant levels of carbon<sup>19</sup>. Given that many marine and coastal habitats important for storing and sequestering carbon, such as sea grass and salt marsh, have suffered historical loss in extent around Wales, the Green Recovery Task and Finish Group recognises the significant opportunity to increase the blue carbon potential of our seas through restoring these habitats.
- **Woodland and hedgerow restoration and expansion** – The amount of carbon stored in UK terrestrial vegetation comprises 5.8% of the total estimated biocarbon stock<sup>20</sup>. Increasing tree cover through planting hedges and new woodland areas and capture and store more atmospheric carbon. Existing woodland helps to reduce flooding by slowing down and storing water. To meet climate change targets, the UK Climate Change Committee has advised an increase in woodland cover for Wales of 2,000 ha per annum rising to 4,000 ha per annum as quickly as possible. However, Wales has a long way to go to meet this ambition. The right tree in the right place is central to Welsh Government's policy and delivery framework. Woodland restoration and improvement are also critically important, as woodland habitats are important for wildlife, provide a source of timber and creates opportunities for recreation and tourism. The (in development) Timber Industry Strategy from Welsh Government will set out the role of timber in supporting a regenerative economy (such as decarbonisation, forestry skill development, supply chain coordination and investment, construction of social housing) and it should therefore support an economic mission for Wales' renewal.
- **Peatland restoration** – Peatlands are a rich with varied suite of habitats and are an important natural resource for carbon capture and storage and the regulation of greenhouse gas emissions. 95% of the carbon held in our environment is in peat soils. However, peatland environments across Wales need urgent action to reverse habitat loss and declining condition. Peatlands can only deliver the full range of characteristic environmental benefits and services when in good ecological condition, when the structures and functions of healthy peatland systems are in place.
- **Protected sites improvement** – A network which covers a wide range of habitats on the land, at sea and in rivers are home to some of the rarest species in Wales, the UK and Europe. Nevertheless, many sites are in ecologically poor condition. Restoring these sites and building their wider ecological resilience must lie at the heart of the Welsh green recovery. Restoring sites is often complex, requiring co-ordinated action between a number of private individuals and companies, public bodies and third sector organisations. Our commitments under the [Global Biodiversity Framework](#) (GBF) highlight the need to enhance protected sites and expand the network (which is being progressed through the biodiversity deep-dive work); the GBF should not however be considered as applicable to protected sites

<sup>19</sup> Armstrong, S., Hull, S., Pearson, Z., Wilson, R. and Kay, S. *Estimating the Carbon Sink Potential of the Welsh Marine Environment*, NRW evidence report 428; NRW, 2020

<sup>20</sup> Natural Capital Committee. *Advice on Using Nature Based Interventions to Reach Net Zero Greenhouse Gas Emissions by 2050*: 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/879797/ncc-nature-based-interventions.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879797/ncc-nature-based-interventions.pdf). <sup>20</sup> Armstrong, S., Hull, S., Pearson, Z., Wilson, R. and Kay, S. *Estimating the Carbon Sink Potential of the Welsh Marine Environment*, NRW evidence report 428; NRW, 2020

<sup>20</sup> Natural Capital Committee. *Advice on Using Nature Based Interventions to Reach Net Zero Greenhouse Gas Emissions by 2050*: 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/879797/ncc-nature-based-interventions.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879797/ncc-nature-based-interventions.pdf).

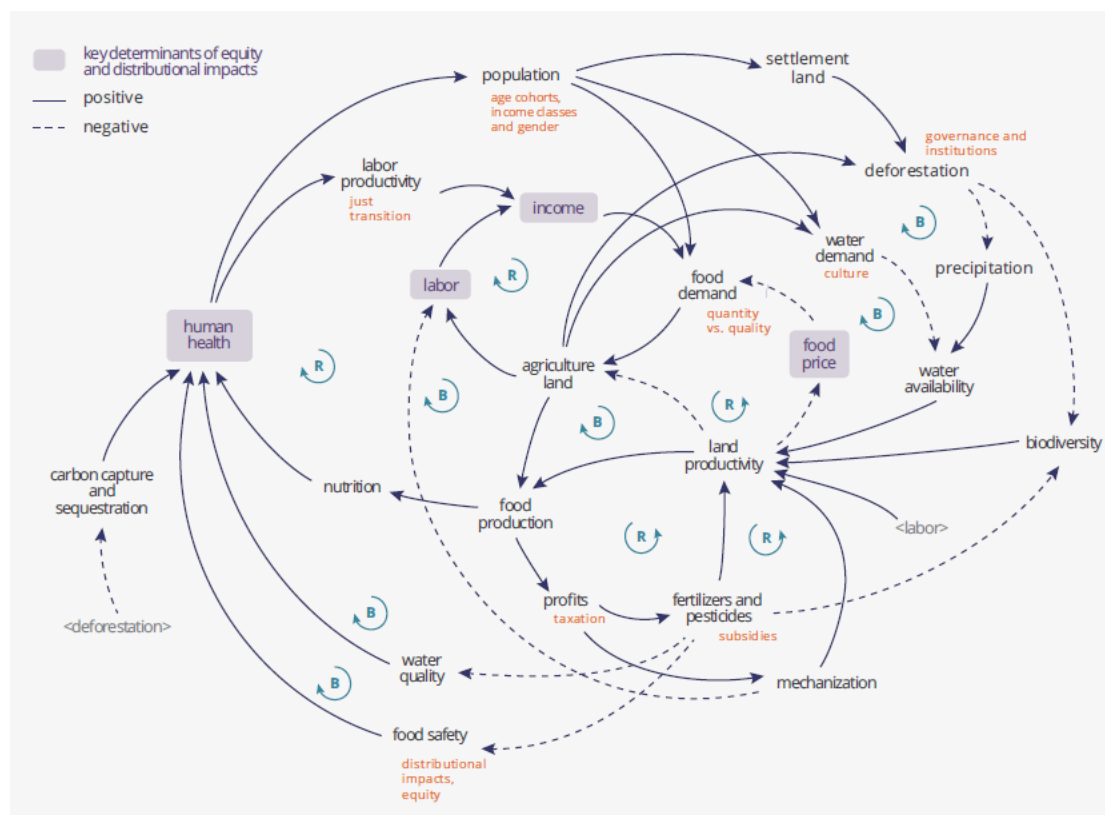
only, key goals and targets within the framework are in relation to ensuring adequate means of implementation (including financing, capacity building, technical and scientific cooperation, and access to technology), appropriately valuing nature, and sustainable use and management of natural resources.

**The above-mentioned Nature based Solutions opportunities are not without barriers.** For instance.

- The lack of knowledge on the opportunities of investment in nature is likely to be a barrier to scaling up investment in Nature based Solutions. Investors and policymakers still generally resort to grey investments for addressing development challenges, such as meeting demand for water or energy, rather than conservation. This is, typically, exacerbated by a lack confidence in Nature-based Solutions.

Key to overcoming these challenges is supporting the knowledge of Nature Based Solutions via pilots and public procurement. The private and public sector can be further encouraged to transition to Nature based Solutions if these can be de-risked, via government underwriting of risks of appropriate insurances.

- Another barrier to realising green economic opportunities is the lack of/missing the systems approaches to explore barrier dependencies, feedback loops (-+) and unintended consequences. The diagram below adapted from The TEEB for Agriculture<sup>21</sup> study provides a useful case study in this regard.



Systems Thinking: An Approach for understanding 'eco-agri-food systems'

<sup>21</sup> UNEP, 2018 'TEEB for Agriculture and Food: Scientific and Economic Foundation Report. [teebweb.org/wp-content/uploads/2018/11/Foundations\\_Report\\_Final\\_October.pdf](http://teebweb.org/wp-content/uploads/2018/11/Foundations_Report_Final_October.pdf)

Adapted from TEEB for Agriculture and Food: Scientific and Economic Foundation report, UNEP, 2018 (figure 2.6, page 43)

Other barriers to green economy include:

- **Policy coherence** – The communication with respect to transitioning to a green economy needs to bring coherence to other economic planning statements. It should speak to the concepts of the foundational economy in the national development economic action plan<sup>22</sup>, as well as the wellbeing economy set out by the Future Generations Commissioner for Wales<sup>23</sup>. The absence of a clear, unifying economic development paradigm will be a barrier to investment.
- **Lack of futures & foresight approaches** – integrating long-term thinking through foresights for policymaking.
- **Financing** - There is growing acceptance that reliance on public money alone will not be enough to meet the scale of investment required to address the climate and nature emergencies<sup>24</sup>. The challenge we are facing is to design new ways to direct our resources so that ecological health is an underlying outcome of land and water etc. management, on which ecosystem service and wellbeing outcomes rest. There are opportunities for leveraging public and private finance to restore ecosystems and catalysing growth in the green economy.
- **Skills, Apprentices, Jobs** - There are real opportunities to support the development of apprenticeships and new jobs through the green economy outcome. During the pandemic, the Future Generations Commissioner Office highlighted that sectors such as construction, heating, electrical installation, manufacturing, engineering, and nature restoration are shown to have significant job creation potential for a “green recovery”<sup>25</sup>. They also highlighted the significant skills gap within Wales which will need to be addressed to enable the rapid growth of the green economy. It should be noted that when discussing ‘re-skilling’ and ‘up-skilling’ we are referring to preparing everyone in the workforce for the economic transition.
- **Research & Development and Innovation** - Innovation is key to green growth which is vital for a green economy. It helps decouple growth from natural capital depletion and contributes to economic growth and job creation. Business is the driver of innovation, but governments need to foster innovation through clear and stable market signals.
- **Digitalisation** - Wales needs to accelerate the digitisation of core infrastructure across the nation, including the networking of Science Park and Catapult Hubs. This is an ambitious project that can be made modular, but its function is also one

---

<sup>22</sup> [Update to Future Wales - The National Plan 2040 \(gov.wales\)](#)

<sup>23</sup> [A Well-being Economy – The Future Generations Commissioner for Wales](#)

<sup>24</sup> *Trust and SEPA publish route map towards £1 billion for nature conservation.* Scottish Wildlife Trust. <https://scottishwildlifetrust.org.uk/news/route-map-to-1-billion-for-nature-conservation-published/>.

<sup>25</sup> New Economics Foundation. *Skills Through Crisis: Upskilling and (Re)Training for a Green Recovery in Wales*; 2021. <https://www.futuregenerations.wales/wp-content/uploads/2021/05/20-05-2021-ENG-NEF-Skills-report.pdf>.

of nation-building where all parts of society and the economy contribute to create, use and develop.

- **Energy efficiency** – the lack of it which has significant impacts on housing, which contributes to wider economy through poor health and wellbeing.
- **Aging infrastructure** – particularly building and energy infrastructure like grid capacity & grid access for the much-needed renewable energy development.
- **Robust and flexible planning system** - The planning system has the potential to be a key tool for net zero and climate resilience which is conducive for a green economy. Spatial planning should stretch beyond a gateway to development consent towards a holistic way of defining strategic pathways to a net zero and climate resilient future which is not entirely the case at the moment.
- **Improved Regulation** - Welsh Government needs to develop a vision and set targets for better regulation. For instance, renewable energy, an important component of green economic growth, is equally dependent on the implementation of environmental regulation policies and that environmental regulation makes a significant contribution to renewable energy development. **The ongoing consultation on a White Paper to introduce legislation on [Environmental principles, governance and biodiversity targets](#) is a great opportunity to transform aspect of this along with improved collaboration with UK Government.**

- **Question 3**

What actions should Welsh Government take to support development of Wales based supply chains in green economy sectors.

- A recent JNCC Report<sup>26</sup> commissioned for Wales highlights that the global ecological footprint of Wales consumption is around two times what the biocapacity of the area of Wales could produce: **A Green Economy requires supply chains that meets demand in a sustainable way. The government and large retailers can contribute to this by ensuring supply chains have minimal global impacts.**
- For instance, our reliance on overseas food imports creates significant impact across the world. This can start to be understood using tools such as Landgriffon<sup>27</sup>, a software service that helps companies assess risks and impacts from agricultural production in their supply chains and analyse futures. Factoring this into procurement decisions could support more sustainable domestic production activities.
- Subsequently network analysis can also help to optimize local supply chains, investigate public sector procurement, and impact of enhancing resilience and reducing environmental footprints.

---

<sup>26</sup> JNCC, 2023 'Understanding the Global Environmental Footprints and Impacts of Welsh Consumption 2023'. [Understanding the Global Environmental Footprint and Impacts of Welsh Consumption | JNCC Resource Hub](#)

<sup>27</sup> Landgriffon, 2023 'Landgriffon Methodology. Executive Summary: Agriculture supply chain impact and risk assessment' [\[DESIGN\] LandGriffon Methodology - Exe v0.2c Summary\\_EP\\_v1](#)

- Another example, as highlighted in question 1, is by investing, innovating and creating a conducive environment, through policy, legislation, funding etc for a sector to thrive such as prioritising and accelerating the energy efficiency measures in Wales. This will not only improve energy consumption and wellbeing of the society, but it will also contribute towards building supply chains to ensure Welsh firms have a first mover advantage in meeting demand for low carbon homes from other parts of the UK.
- Similarly, by attracting pilot and research programmes of a sizeable amount to Wales helps create the momentum to develop supply chains as we have seen in Scotland<sup>28</sup>. This needs to work in tandem with supportive policies, legislations, regulations, funding, development of skills, planning system, infrastructure to attract the pilot and research programmes in the first place.
- Conversely, supply chain collaboration can solve problems in skills, finance, innovation and supply chain efficiency – benefiting the whole supply chain<sup>29</sup>.
- The task force on nature-related financial disclosures (TNFD) have developed guidance to encourage businesses and finance to assess, report and act on nature related dependencies, impacts, risks and opportunities.<sup>30</sup> The TNFD provides recommendations and guidance to enable businesses and finance to integrate nature into decision making. It aims is to support a shift in global financial flows away from nature-negative outcomes and toward nature-positive outcomes. There is an important opportunity to work with business partners to support them in the early adoption of this framework. This can, potentially, make Welsh businesses more competitive in markets where these disclosures are demanded. This would also support Wales in its progress on Target 15 of the internationally agreed Post 2020 Global Biodiversity Framework.

## • Question 4 & Question 5

**Q4: What skill challenges exist in relation to transitioning to a green economy? What actions should be taken, and by whom, to ensure the skills are there to meet the growing demands of a green economy?**

**Q5: What will workers and employees need for a Just Transition to a Net Zero economy to be achieved, and what actions should the Welsh Government take to deliver the elements of this that lie within devolved powers?**

There are real opportunities to support the development of apprenticeships and new jobs through the green economy outcomes. During the pandemic, the Future Generations Commissioner Office highlighted that sectors such as construction, heating, electrical installation, manufacturing, engineering, and nature restoration are shown to have

<sup>28</sup> [Offshore wind energy collaboration set to benefit Scottish communities and supply chains | BlueFloat Energy](#)

<sup>29</sup> Department for Business, Innovation & Skills, 2014 'Strengthening UK Supply Chain: Good Practice from Industry and Government'. [Strengthening UK supply chains: Good practice from industry and government \(publishing.service.gov.uk\)](#)

<sup>30</sup> [The Taskforce on Nature-related Financial Disclosures \(tnfd.global\)](#)



significant job creation potential for a “green recovery”<sup>31</sup>. **They also highlighted the significant skills gap within Wales which will need to be addressed to enable the rapid growth of the green economy.**

The joint Nature Positive Evidence report of the statutory nature conservation bodies of the UK and JNCC highlights evidence that a transition from ‘grey’ infrastructure solutions to nature-based solutions delivers multiple benefits on biodiversity while also delivering a host of health and well-being benefits for people and contribute to a fairer society<sup>32</sup>. With appropriate design, Nature based Solutions can support a just transition process and provide new employment opportunities. The sub-sector is fledgling, but in the community of practice and building skills in this sub-sector could realise opportunities for growth. It should be noted that when discussing ‘re-skilling’ and ‘up-skilling’ we are referring to preparing everyone in the workforce for the economic transition. Nesta estimate that around half of all employees in the UK are likely to experience an elevated risk of displacement or job transformation<sup>33</sup>. These workers will need to learn new skills to move from being precarious to being prepared. To increase participation in adult learning, learning must fit individual needs, characteristics, preferences and habits. **For Wales to reap the benefits of a green economy, regional and national institutions must provide the right conditions for investment in an inclusive and fair adult learning system.**

For instance, the following policies and targets relating to renewable energy development are likely to drive changes in net zero skills need:

- Welsh Government is anticipating offshore renewables deployment to meet 100% electricity needs by 2035.
- UK government also has ambitious targets for offshore wind (50GW by 2030, including delivery of 4.5GW floating offshore wind in Celtic Sea.
- Expansion of innovative marine energy technologies (wave and tidal) in Welsh waters is likely because of government policies and targets.
- Welsh Government’s Programme for Government (2021-2026) include substantive renewable energy commitments: e.g., tidal lagoon challenge.

This presents a set of skill challenges such as.

- First and utmost, recognition of the skills gaps needs to be realised. Lower pay and less employment security could be issues for retention of skills within Wales.
- A combination of new jobs and upskilling of existing jobs will be required. All the following areas will need engineering skills (process, chemical, mechanical, electrical) and science and technical skills: fuel switching, carbon capture systems, hydrogen, ammonia and carbon dioxide transport and storage systems, denser-than-air dispersion modelling, offshore wind and other marine/tidal technologies.

---

<sup>31</sup> New Economics Foundation. *Skills Through Crisis: Upskilling and (Re)Training for a Green Recovery in Wales*; 2021. <https://www.futuregenerations.wales/wp-content/uploads/2021/05/20-05-2021-ENG-NEF-Skills-report.pdf> .

<sup>32</sup> [Nature Positive 2030 Evidence Report \(incc.gov.uk\)](https://www.incc.gov.uk/nature-positive-2030-evidence-report)

<sup>33</sup> Nesta, Future Fit. *Going Green: Preparing the UK Workforce for the Transition to a Net-Zero Economy*; 2020. [https://media.nesta.org.uk/documents/Going\\_Green-](https://media.nesta.org.uk/documents/Going_Green-)

- The above skill set would also need to be coupled with implementation of Nature based Solutions, ecosystem restoration etc.
- Timescales for skills relating to large-scale fossil fuel plants is from now through to 2030, before transitioning completely to renewable technologies. Re-skilling of expertise in legacy industries is an opportunity. However, this is very unlikely to be sufficient and additional jobs are required. This will include not just the private sector to deliver renewables expansion but also the public sector in a range of regulatory bodies (e.g., PEDW, Local Authorities, NRW, HSE, etc.).
- Emerging and increased net zero skills demands, these will be engineering skills (process, chemical, mechanical, electrical) and science and technical skills, in both the public and the private sector. Additionally, modelling skills for evaluating potential impacts will also be in demand. Systems scientists/engineers will be required to assess whole system impacts and implications. Scientific skills are also likely to be required across a range of disciplines relating to potential impacts: e.g., ornithology, marine vertebrates, sea-bed ecologists. Additionally, skills in administration and project management skills, plus expertise in planning, policy and legislation, are likely to be needed for transformation of fossil fuel systems, deployment of renewables and associated infrastructure development. In the planning field, planning advisors often rely on the expertise of internal specialist consultees when responding to planning consultations. Such specialists may require more technical/specialist upskilling in relation to new and emerging technologies.
- Capacity is also likely to be an issue in any rise in demand for statutory advice, consenting and licensing decisions in relation to applications for renewable and low carbon energy developments.
- Some skills are very specialised and can be difficult to replace. Building knowledge and experience can take significant time. The legacy of industrialisation does present a potential pool of expertise that could be reskilled. However, this is also likely to be an ageing workforce, so may only be a temporary solution.
- Existing regulatory provisions are very reliant on legacy expertise, which is also ageing. There is a limited pool of expertise and there is increasing competition between regulatory bodies and the private sector so addressing the skills gap will be important for ensuring that regulation does not become a barrier due to skills shortages.
- Offshore renewables expansion is occurring throughout the UK. This has resulted in a growing pool of expertise, but Wales faces significant competition from those recruiting elsewhere across the UK. The large-scale developments are likely to occur through multinational companies, which are likely to secure expertise from wherever this may be available, either within the parent company or wider afield. That said, the rapid progress on decarbonisation in Europe and the US is likely to put pressure on this resource and require some multinationals to prioritise projects.

- The process of Local and Regional Energy Planning in Wales is uncovering concern over the level of skills provision to achieve net zero. These concerns focus around: training of electricians to deliver electrified transport (electric vehicle maintenance, EV charging infrastructure and maintenance); provision of engineers with renewable energy design skills (wind, solar, offshore, tidal); training of heat pump installers and their certification/licensing.
- From a regulatory perspective, the emergence of new First of a Kind (FOAK) developments places particularly complex challenges on the regulator during transition. Effective regulation is heavily reliant on technical support from consultees (including NRW). It is unlikely that there is sufficient skilled expertise to support future needs. There has been recent expansion in some areas, but this is likely to be outstripped by sector growth, and some technical areas (project management, scientific, policy) will need to be scaled up.
- Sectors developing innovative technologies (such as wave and tidal) are particularly resource intensive and require greater levels of expertise/experience.
- During transition, there will still need to be skills and expertise applied to legacy technologies and activities. There is a risk that an unplanned move to new Net Zero skills could deplete these, leading to economic or environmental implications from failing plant. This is a similar issue for regulators, whereby there may be a need for increased regulatory scrutiny on older assets.


Some useful actions (but limited too).

- A full understanding of the expertise and knowledge gaps needs to be developed: where and what organisations, and when do those gaps impact.
- The educational system, which can be slow to respond to changes in skills needs, will need to be incentivised to develop new courses at speed and with volume. This will require WG and HEFCW to develop appropriate funding and delivery strategies with all Welsh FE/HE providers.
- There is an opportunity to better embed system efficiencies as well as development of cross-industry synergies to help support the circular economy, and this has been identified by the South Wales Industrial Cluster (SWIC) Plan for clean growth. More use of global systems thinking may also help embed circular economy and help avoid offshoring of impacts. This may also increase the demand for “green skills” such as sustainability management, life cycle analysis, environmental impact assessment, etc.

## • Question 6

**How will the Welsh Government need to work in partnership with others to realise the potential of the green economy and deliver a just transition? To what extent is the partnership working that is needed being undertaken?**

- Welsh Government has a crucial role as it occupies a unique space in the global and national partnership for sustainable development and is well placed to support the vision embodied in the SDGs. For instance [Policy Lab](#) outlines a set of Government Intervention styles, as seen in the diagram below, **which can be used as a framework to define specific and concrete ways in which government might play a role in partnerships at different stages of (idea, policy, product etc) development.**



### Styles of government intervention\*

	Early stage intervention	Framing, piloting and market forming	Scaling, mainstreaming and market building	Acting in mature markets and policy ecosystems
Government as a... Steward	<b>Champion</b> Build a case for change and alliances for action.	<b>Convening power</b> Applying government's convening power to draw together expertise.	<b>Connecting networks</b> Fostering a nexus where government, experts and citizens can co-create change.	<b>Co-producing</b> Co-deliver by steering different actors from across the system to deliver outcomes.
Leader	<b>Agenda setting</b> Build awareness and confidence in new opportunities by providing thought leadership	<b>Strategy and skills planning</b> Prepare for changing workforce demands and consequences of change.	<b>Educating and informing</b> Ensure regulation is sufficiently agile and permissive to enable innovation.	<b>Collaborating</b> Providing platforms for citizens to protect vested rights and interests.
Customer	<b>Catalyst</b> Review, identify and prioritise key opportunities with strategic value.	<b>Standard setting</b> Develop standards for data collection and presentation.	<b>Intelligent customer</b> Utilise public procurement to encourage investment and innovation.	<b>Consumer, and supply-chain, protection</b> Protection of consumer rights and upholding of standards.
Provider	<b>Innovator</b> Create test beds, sandboxes and trials in real world settings.	<b>Reformer</b> Establish legitimacy, harnessing political will for change.	<b>Service provider</b> Provide services directly or indirectly through funding and target setting.	<b>Choice architect</b> 'Nudging' behaviour so that the default is both attractive and easy.
Funder	<b>Early adopter</b> Explore, experiment and trial new opportunities with strategic value.	<b>Fiscal incentives</b> Direct finance to stimulate new thinking that can drive future opportunities.	<b>Grants and subsidies</b> Incentivise behaviour change through grants or other incentives	<b>Platform provision</b> Scale up proven ideas through existing infrastructure and public services.
Regulator	<b>Encourage voluntary codes</b> Self-regulation, without legislating, allowing for greater flexibility.	<b>Governance</b> Ensure regulation supports the conditions for change and delivers the policy intent.	<b>Building regulatory environment</b> Ensure regulation enables the intended policy outcomes.	<b>Compliance</b> Support enforcement and harmonise regulatory compliance environment.
Legislator	<b>Green papers</b> Publish proposals for discussion with stakeholders and the public.	<b>White papers &amp; draft bills</b> Publish proposals for consultation and pre-legislative scrutiny.	<b>Primary and Secondary Law</b> Support a bill through parliament and enact legislation	<b>Amend rules</b> Statutory Instruments: rules, orders, created by delegated authorities (e.g. Secretary of State).

\* Examples of different formal and informal powers and levers for government policy-makers

- For instance, as recognised by the Green Recovery Task and Finish Group<sup>34</sup>, it is critical to move to a long-term funding approach to support investment in Nature Based Solutions. **Money needs to be available over multiple years to encourage collaboration and partnership working.**
- The Green Recovery Task and Finish Group also recognised that partnerships could drive innovations - another critical component of net zero and green economy that is currently lacking in Wales<sup>35</sup>. A Welsh Innovation platform in the form of a Future Generations Lab<sup>36</sup> is a positive step forward in boosting innovation and creating more partnerships.

<sup>34</sup> Natural Resources Wales. *Green Recovery: Priorities for Action Report*, 2020. <https://naturalresources.wales/media/692667/final-green-recovery-priorities-for-action-report-english.pdf>

<sup>35</sup> *Y Pair Dyfodol – A new cauldron for Welsh Innovation - Institute of Welsh Affairs (iwa.wales)*

<sup>36</sup> *Y Pair Dyfodol – A new cauldron for Welsh Innovation - Institute of Welsh Affairs (iwa.wales)*

- Thus, we urge Welsh government to advocate for collaborative platforms that bring together public, private, and third sectors, leveraging collective intelligence for sustainable solutions.
- **Most, if not all the styles highlighted by Policy Lab are also required by Welsh Government in addressing the other challenges and conditions (e.g., net zero skills) required to build a green economy.**
- A good example of partnership benefits can be seen by the Wales Coasts and Seas Partnership (CaSP Cymru) which involves a range of stakeholders working to improve marine resilience in Wales (formerly Wales Marine Action and Advisory Group). The Partnership considered how best to support sustainable development actions to help coastal communities to recover, and to achieve our vision of resilient Welsh seas (see [Towards marine resilience in Wales \(gov.wales\)](https://gov.wales/towards-marine-resilience-in-wales)). This had led to identification of three areas of work to accelerate and enable action for our environment, economy, social and cultural well-being that is:
  - Ocean Literacy
  - Sustainable Investment
  - Building capacity
- Welsh Government is well placed for intervention in enabling and accelerating the above requirements. It can also support the sustainable investment group in exploring the development of a fund to encourage private investment that will provide a source of funding to invest in Wales' marine and coastal natural resources for the long-term, supporting our vision of Welsh seas that are clean, healthy, safe, productive and biologically diverse.

## • Question 7

**The Welsh Government says it will face considerable budgetary constraints in the short term. How should it prioritise investment to support development of the green economy over the shorter and longer term? What innovative approaches to financing could be considered to maximise potential investment and benefits.**

- Wales has a £5bn - £7bn nature finance gap to 2030<sup>37</sup>, with the UK needing a minimum of £44bn - £97bn investment above current public sector commitments to meet nature-related outcomes over the same period.
- The Finance Earth report commissioned by Welsh Government in 2023 - Development of a Sustainable Delivery Model for Nature Recovery in Wales outlines a set of recommendations as a priority for financing nature recovery in Wales. This could potentially include the creation of a Natural Capital Forum for Wales, a Natural Capital Bank and modelling approaches identifying a pipeline investment ready nature-based project.
- There is wider potential to increase the role of 'green finance' in industry, development, land use and land management decisions. Here 'green finance' would

<sup>37</sup> [The-Finance-Gap-for-UK-Nature-13102021.pdf \(greenfinanceinstitute.co.uk\)](https://www.greenfinanceinstitute.co.uk/the-finance-gap-for-uk-nature-13102021.pdf)

be defined as private investment and finance flows that support the delivery of public policy. Underpinning 'green finance' is the need for a clear understanding of the natural capital to be traded and how it would be regulated. England and Scotland are experimenting deeply with some of these mechanisms and Wales must fill the policy gap to establish approaches which are suitable for Wales' people and places.

- It is highlighted that developing innovative financing mechanisms for nature restoration is far from straightforward and not without risk. Significant consideration is required with respect to managing transaction costs, structuring property rights and establishing projects and investment opportunities that deliver nature related outcomes needed. Any such mechanism must be focused on outcomes, otherwise there are risks of establishing operational markets that deliver little in the way of positive, or even perverse, outcomes<sup>38</sup>.
- More diversified and creative funding plans, utilising green finance mechanisms to reward the delivery of public goods, could provide the longer-term stability of funding that is required for transformative changes. Production of goods and services in a sustainable manner must be at the heart of mobilising any model alongside value to society and the environment. Discussion on the scope and appetite to leverage funding in this manner is urgently needed, to set out the potential synergy between the achievement of Welsh Government policy and green investment from the private sector.
- NRW see potential to increase the, arguably, inevitable role of 'green finance' in industry, development, land use and land management decisions. Here 'green finance' would be defined as private investment and finance flows that support the delivery of public policy. Underpinning 'green finance' is the need for a clear understanding of the natural capital to be traded and how it would be regulated. England and Scotland are experimenting deeply with some of these mechanisms and Wales must fill the policy gap to establish approaches which are suitable for Wales' people and places.
- The development of the [Teifi demonstrator project](#) is an example where action research laboratories can be created and some of the issues modelled out in real time. However more of these demonstrators will be needed that primarily have a focus on looking at other questions – industry, health, marine, forests, agriculture and so on. These are then used to sandbox aspects of the green economy such as digital, infrastructure, finance etc

Other innovative approaches include:

- Significantly increasing domestic resource mobilization, facilitated by the preparation and implementation of national biodiversity finance plans or similar instruments according to national needs, priorities and circumstances.

---

<sup>38</sup> [Biodiversity market doublespeak | Science](#)

- Stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms, with environmental and social safeguards.
- Optimizing co-benefits and synergies of finance targeting the biodiversity and climate crises.
- Leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments.
- For instance, Wales need to explore/engage with opportunities for using public and private finance to restore ecosystems as done in England through [NEIRF](#) and Scotland through [FIRNS](#). The aim of these funding streams is to stimulate private investment and market-based mechanisms that improve and safeguard the natural environment by helping nature projects develop to a point where they can attract private investment.
- The funding will help to develop projects so they can demonstrate a return on that investment by capturing the value of carbon, water quality, biodiversity and other benefits provided by natural assets such as woodlands, peatlands and rivers – with revenue generated through the sale of carbon storage, improvements in biodiversity, natural flood management benefits and reduced water treatment costs.
- One of the four NEIRF pilot schemes, the [Wyre Natural Flood Management project](#), has secured private investment and will now deliver work to reduce flood risk to downstream communities – generating income through the sale of these services.

- **Additional considerations.**

NRW welcomes this call for evidence regarding the “Green Economy” however it is necessary **to reiterate that the role for natural resources underpin the entire economic, social, and cultural wellbeing of Wales.**

In addition, in 2023 NRW responded to the Welsh Government call for evidence regarding i) “A Renewed Economic Mission for Wales” and ii) Welsh Government’s Net Zero Skills consultation, both of which, our views and recommendations remains relevant and pertinent to this call.

We would also like to highlight that the concept underpinning the transition to a green economy, is for the economy to work better for people and planet. The current approach in Wales does not seem to fully recognise this.

Good examples of an integrated approach are provided by the EU Green Deal policy framework and Scotland’s Vision for a Blue Economy<sup>39</sup>. In these policy frameworks, the economy is an enabling factor in delivering healthy ecosystems, poverty alleviation and decent livelihoods. This is important to stress, otherwise a perception may emerge that the

---

<sup>39</sup> [A Blue Economy Vision for Scotland - gov.scot \(www.gov.scot\)](https://www.gov.scot/resources/consultation-papers/collections/documents/Blue-Economy-Vision-for-Scotland.pdf)

green economy represents a new frontier for economic growth, rather than a restructuring of the economy that delivers better outcomes for nature and people in Wales. The Future Generation Commissioners also envisage this call through a transition towards a well-being economy<sup>40</sup>.

Wales is well placed to develop and lead a green economy. The legislative and strategic policy framework has been reformed over the last 10 years. The Well-being of Future Generations Act and Environment (Wales) Act provide the strategic direction and tools that enshrine sustainable development through a holistic, iterative, collaborative, place-based decision-making process. Many strategic policy frameworks have been revised by Government, with the publication for example of the Natural Resources Policy (2018)<sup>41</sup>; Woodlands for Wales Strategy (2018)<sup>42</sup>; Prosperity for all: A low carbon Wales (2019)<sup>43</sup>; Welsh National Marine Plan (2019)<sup>44</sup>; Towards Zero Waste (2019)<sup>45</sup>. With our unique legislation and strategic policy context, Wales has the tools available to drive an ambitious green economy plan.

However, we feel that within the structure of this call for evidence, this holistic picture is not adequately represented. We advocate towards a comprehensive system thinking which is inclusive of futures and foresight approaches across all WG sectors and departments required within the 1-7 questions (although we have attempted to provide some useful materials where relevant)

Our SoNaRR report makes an assessment of the state of Wales' natural resources & their mismanagement so we will not repeat that evidence here, but refer the reader to our executive summary<sup>46</sup> ("SoNaRR2020 Executive Summary," 2020) and its supporting evidence<sup>47</sup>. (3rd iteration of this report is due 2024/25).

Within this approach we advocate for the Drivers, Pressures, State, Impact & Response (DPSIR) method of assessment, which looks at how things like social and economic drivers affect things like Climate change, INNS, Pests, Diseases, Land-Use Change, Exploitation & Pollution.

It is within this space of growing Wales' capacity to deliver nature-based solutions to tackle the nature, climate, and pollution emergencies that we feel offer huge potential for growing a vibrant Green Economy here in Wales.

The next few decades are critical for renewing, upgrading installing and securing the UK's national infrastructure to meet Net Zero commitments. In addition to tackling nature and pollution crisis will require systemic transformation across energy, transport, food, manufacturing, agriculture, and the build environment. Government decisions during this period are pivotal for unlocking future opportunities such as import, export, skills development, infrastructure resilience.

---

<sup>40</sup> [A Well-being Economy – The Future Generations Commissioner for Wales](#)

<sup>41</sup> [natural-resources-policy.pdf \(gov.wales\)](#)

<sup>42</sup> [Woodlands for Wales \(gov.wales\)](#)

<sup>43</sup> [low-carbon-delivery-plan\\_1.pdf \(gov.wales\)](#)

<sup>44</sup> [Welsh National Marine Plan \(gov.wales\)](#)

<sup>45</sup> [towards-zero-waste-our-waste-strategy.pdf \(gov.wales\)](#)

<sup>46</sup> [SoNaRR2020 Executive Summary \(naturalresources.wales\)](#)

<sup>47</sup> [Natural Resources Wales / SoNaRR2020: Evidence Needs](#)



It is also equally important to ensure that the greater share of the social, environmental and economic opportunities provided by nature-based solutions (e.g., renewables, water etc) of Wales are kept in Wales – and crucially, distributed in a way that is fair. To deliver a Net Zero and Just transition where no one is left behind will require that we retain the value of our natural resources in Wales.

We must also ensure that Wales is not burdened or disadvantaged by development in supporting wider UK without the benefits being realised locally first.

**Thus, employing creativity and systems thinking is essential to minimize the risk of failure and maximize societal and economic benefits in a low-carbon future, ensuring quality of life, job security, and the creation of a skilled workforce.**

With our small agile networks, we are well placed to develop new ways of living within the resource constraints of the planet and addressing these societal challenges as advocated in these documents.

- [SoNaRR2020 Executive Summary \(naturalresources.wales\)](https://naturalresources.wales/so-narrative-report-2020-executive-summary)
- [Future Trends Report Wales 2021: Narrative summary \[HTML\] | GOV.WALES](https://gov.wales/future-trends-report-wales-2021-narrative-summary)
- <https://www.gov.wales/sites/default/files/publications/2021-12/future-trends-report-wales-2021-evidence-pack.pdf>
- [Trend Deck Spring 2021 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/trend-deck-spring-2021)
- [net-zero-a-systems-perspective-on-the-climate-challenge-final-nepc.pdf \(raeng.org.uk\)](https://raeng.org.uk/net-zero-a-systems-perspective-on-the-climate-challenge-final-nepc.pdf)
- [Prosperity Without Growth, Sustainable Development Commission](https://www.prosperitywithoutgrowth.com/)

Thus, as stated earlier, a green economy should be one that supports, builds and is dependent on resilient ecosystems and we look forward to collaborating with the Welsh Government and other stakeholders towards building a green economy fit for the future.