

Submission to Programme for Government

comments by

Northern Ireland Environment Link

22nd March 2021

Northern Ireland Environment Link (NIEL) is the networking and forum body for non-statutory organisations concerned with the natural and built environment of Northern Ireland. Its 63 Full Members represent 190,000 individuals, 262 subsidiary groups, have an annual turnover of £70 million and manage over 314,000 acres of land. Members are involved in environmental issues of all types and at all levels from the local community to the global environment. NIEL brings together a wide range of knowledge, experience and expertise which can be used to help develop policy, practice and implementation across a wide range of environmental fields. These comments are made on behalf of Members, but some members may be providing independent comments as well.

If you would like to discuss these comments further, we would be happy to do so.

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Background

The need for engagement

NIEL welcomes the opportunity to provide input into the consultation on the next Programme for Government. The consultation document says that *“This has been informed by engagement with representative groups across different sectors”*. However, there has been limited engagement with NIEL in relation to this PfG though NIEL would welcome the opportunity to engage more fully with the PfG team in the course of the development of this PfG and subsequent PfGs.

The SDGs

In principle, NIEL supports the outcomes based approach and the existing outcome set. NIEL believes that the UN Sustainable Development Goals (SDGs) should be used as the foundation for the next Programme for Government (PfG) and subsequent versions of the PfG to ensure NI develops a sustainable, resilient, low and ultimately zero carbon, green economy. NIEL therefore welcomes the statement on page 6 of the consultation document that

“The intention is that the Outcomes Framework will be our way to demonstrate progress towards the achievement of SDGs.”

Need for dates within which PFG is applicable

NIEL notes that no time period was given in the consultation document within which the draft PfG is to apply. NIEL would therefore ask for TEO to specify the exact time period within which the PfG will be applicable. NIEL also believes that increased monitoring will be needed in order to ensure that all targets in the PfG, which need to be SMART targets, can be and are appropriately evaluated and the appropriate resources need to be committed to that increased monitoring.

Climate Change

Considering the predicted impacts of climate change in this century, NI will need to prepare not only to become a net zero carbon society by the middle of this century but also to better adapt to the predicted changes in climate. Climate change will have an impact on all sectors of society including biodiversity, on local and invasive species, human health, the spread of zoonoses (animal based diseases), agriculture and food production, water availability, the built environment (which will need to deal with increasing heat loads and the need for ventilation), low carbon transport, supply chains and communication, to name but a few.



Built heritage and historic environment

NIEL believes that the Historic Environment should have a more prominent place in the PfG. Northern Ireland's Historic Environment enhances the values that are most important in life: a sense of place and family roots, health, happiness and life satisfaction. In addition, it is acknowledged that investment in heritage supports business growth, domestic and international tourism, and acts as an incentive in attracting new business and job creation¹.

The historic environment conserves and displays how past generations have shaped the places where they live. Northern Ireland has over 51,783 recorded historic environment assets² including archaeological remains, historic architecture both rural and urban from cottage to 'big house', our industrial and military history, and the ancient landscapes that constitute our unique home. It is a precious and irreplaceable inheritance which, when well-managed, is a valuable source of prosperity, wellbeing and community cohesion.

In addition there is a wealth of compelling evidence that, with the right support, the historic environment can help communities reconnect and heal after a year of pandemic isolation, address endemic issues of loneliness and exclusion, and help local economies to return to sustainable and green growth by attracting businesses, stimulating tourism, and building civic pride and community confidence³.

Integration with other strategies

NIEL notes that the consultation document states on page 2

“The Programme for Government will be underpinned by a budget and supported by key Executive strategies including an investment strategy, an economic strategy and an anti-poverty strategy aimed at building a strong and prosperous society by tackling disadvantage and achieving sustainable economic growth.”

It is disappointing to see that an environment strategy, which is currently in development and will be underpinned by law through the Environment Bill⁴, is not seen as a key strategy that will support the PfG. Also, NIEL believes the use of the word 'sustainable' before economic growth needs to be defined as it is not clear as to whether this is used in the more limited economic terms of continued economic growth without limits, which is not realistic, or economic growth that is based on sustainable development and has ecological outcomes. We have suggested an alternative wording underlined below that we hope will be considered.



'The Programme for Government will be underpinned by a budget and supported by key Executive strategies including an investment strategy, an economic strategy, an anti-poverty strategy and an environment strategy. These will be aimed at building a strong and prosperous society by tackling disadvantage and achieving a long term green recovery.'

Public desire for change

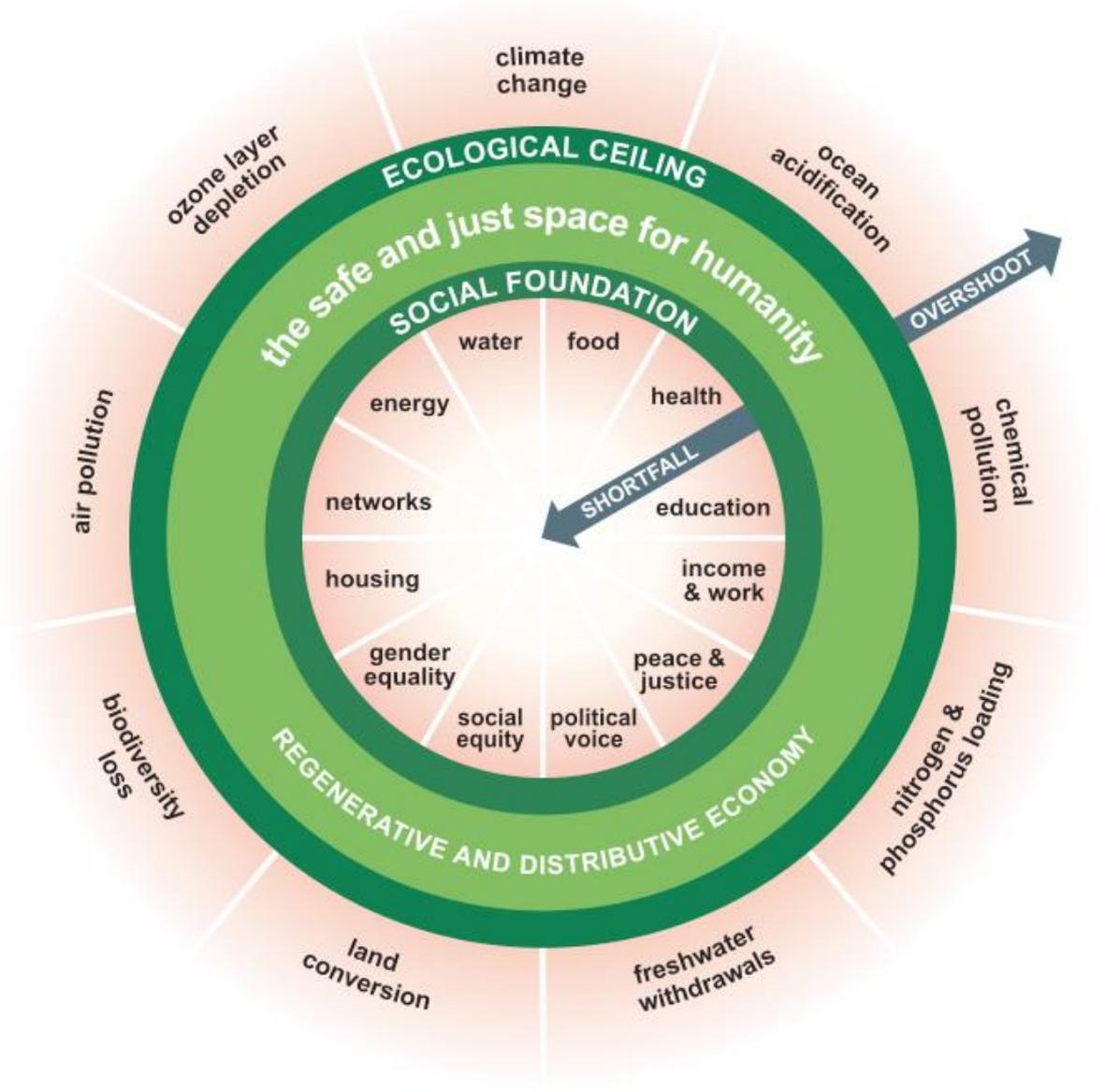
Now is the time for us to change direction and shape a different future for our society. In this response NIEL will outline some of the many, significant economic, environmental and social benefits that are likely to result from investing in a sustainable, resilient, low and ultimately zero carbon, green economy. It is also important to recognise that there is a very high level of public support for change. For example, a 2020 survey commissioned jointly by the RSA's Food, Farming and Countryside Commission and the Food Foundation found that 91% of the public said they don't want things to go back to how they were⁵. A BIES Attitude Tracker Survey, in June 2020 found that 80% expressed support for renewable energy, with only 2% opposing it.⁶ A Lucid Talk poll in NI in May 2020 found that 74% of respondents want new laws to protect nature after experiencing the COVID-19 emergency, 75% of people have appreciated access to green spaces since lockdown began and over 50% of people said they would now vote for a political party that invests in nature-rich green spaces⁷. It seems clear that for the benefit of the people of NI, the NI administration needs to shift its focus towards improving protection for nature and by extrapolation, all of us must provide the investment needed in laws, polices, research, monitoring and other support mechanisms that will ensure that change happens.

Doughnut economic model

A fundamental part of this change must be in our economics. NIEL believes we need to move towards a Doughnut Economics model⁸, where we thrive within the planetary boundaries and ensure everyone is above the social foundation level. The Doughnut model is outlined in Figure 1 below. It consists of two concentric rings: a social foundation, to ensure that no one is left falling short on life's essentials, and an ecological ceiling, to ensure that humanity does not collectively overshoot the planetary boundaries⁹ that protect Earth's life-supporting systems. Between these two sets of boundaries lies a doughnut-shaped space that is both ecologically safe and socially just: a space in which humanity can thrive.



Figure 1 Doughnut economics model



The main focus for NIEL is in relation to Outcome 2 and Outcome 6 but NIEL has provided commentary on some other outcomes.



- **Outcome 1: Our children and young people have the best start in life**

Key Priority Area:

Access to education

Capability and Resilience

Care

Early Years

Skills and attainment

NIEL RESPONSE

1.1 The role of outdoor education

As the National trust Report “Natural Childhood”¹⁰ said

“Our nation’s children are also missing out on the pure joy of connection with the natural world; and as a result, as adults they lack an understanding of the importance of nature to human society. If we do not reverse this trend towards a sedentary, indoor childhood – and soon – we risk storing up social, medical and environmental problems for the future.”

This lack of connection with nature has been described by author Richard Louv, in his book Last Child in the Woods, as ‘Nature Deficit disorder’¹¹.

There are many other benefits of outdoor play for children in addition to health including general educational benefits, an understanding of risk, interpersonal and social skills, the joy of exploration and community benefits. Interacting with natural environments enables children and young people to learn by doing, experiment with ideas and take positive action alleviating the feeling of helplessness in relation to climate anxiety and ecological grief. In nature, they also think, question, and make hypotheses — thereby developing inquisitive minds where they take risks, try and fail, and try again, gaining resilience and confidence. As Natural Childhood explains¹²



“children who learn outdoors know more, understand more, feel better, behave better, work more cooperatively and are physically healthier”

As regards starting outdoor education with young children, the Dasgupta Review¹³ recommended that our education systems should introduce nature studies from the earliest stages of our lives, and revisit them in the years we spend in secondary and tertiary education. In order to have the maximum impact this environmental education should be integrated in to the early years education. The economic benefits of investment in early years have been highlighted by Professor James Heckman¹⁴ Nobel Laureate in Economics, who found that the most economically efficient time to develop skills and social abilities is in the very early years when developmental support is most influential.

Given all the benefits of outdoor play and learning, NIEL believes that there is a need for greater outdoor education in primary schools and that amongst other things the potential for Forest Schools and more outdoor education should be explored in NI.

Environmental NGOs work extensively with young people and provide a wide range of programmes. One programme (Grassroots Challenge, led by Ulster Wildlife) established the following key asks from young people:

1. More time learning in and about nature in school.
2. Assistance to secure ‘green jobs’
3. A stronger youth voice on environmental issues & decisions in government

Worryingly, the sector’s programmes have also shown that there are increasing levels of climate and ecological anxiety amongst young people. There is clear need for a more significant Government response, and for more co-ordinated action.

Outdoor learning fosters intellectual, emotional, social and physical development. By being outside and surrounded by nature, children and young people experience an ever-changing and free-flowing environment that stimulates all the senses. Nature provides countless opportunities for discovery, creativity, problem solving, and STEM education.



There are also environmental benefits to outdoor education. Our children and young people are the next generation of stewards of the earth. In order to raise adults who are passionate about protecting the environment and preserving our planet, they must first develop a deep love for it.

The Environmental NGO sector, led by the Education for Sustainable Development Forum, is currently developing a new Strategy and Action Plan for Environmental Education. This crucial piece of work will set a long term strategic plan, which will help shape environmental and outdoor education for the coming years. For it to truly succeed we will need cross-departmental support.

Therefore, we would suggest that outdoor learning is an additional key priority area for this outcome.

As the consultation document states, we can help build the capability and resilience of children and young people by equipping them with the knowledge and support to make safe, healthy and sustainable life choices, building their social, cultural and environmental awareness and self-confidence through team sports, and cross community activities.

As referred to in NIEL's response to Outcome 6, there should also be a role for integrating active travel in to area planning for schools. For example, the provision of bicycle parking facilities for pupils and school staff. Active and sustainable school transport could be a key requirement in school development plans and policies and active and sustainable travel could be part of the educational curriculum.

- **Outcome 2 We live and work sustainably – protecting the environment**

Key priority areas:

Natural Environment,

Green Economy,

Built Environment,

Housing,

Active and Sustainable Transport,

Waste Management,

Water and Wastewater Management



NIEL RESPONSE

2.1. The wording of Outcome 2

NIEL believes that the wording of Outcome 2 should be amended so as to read - 'We live and work sustainably -valuing, protecting and restoring the environment'

2.2 The state of Northern Ireland's biodiversity

The Wildlife and Natural Environment Act (Northern Ireland) 2011¹⁵ (the WANE Act) places a statutory duty on public bodies in Northern Ireland to conserve biodiversity. Despite this though, NI's biodiversity is not doing well. For example, the State of Nature Report (2019)¹⁶ clearly demonstrates that Northern Ireland's terrestrial, air, water, and marine environments are suffering, with 11% (272) of the 2,450 species found in Northern Ireland that have been assessed using the IUCN Regional Red List criteria, and for which sufficient data were available, threatened with extinction from Ireland as a whole. The 2015-2020 NI Biodiversity Strategy¹⁷ was supposed to deliver a plan on how Northern Ireland could meet its local and international commitments to protect nature and ensure the environment can continue to support people and the economy. However, a review of the NI Biodiversity Strategy by RSPB NI¹⁸ revealed that 83% of government commitments (35/42) set out in the strategy have not been adequately met.

In terms of an overall environmental target, NIEL would advocate that the existing target of protecting 30% of land and sea for biodiversity should be seen as a primary objective, especially as the UK Prime Minister has already committed to this target¹⁹.

2.2.1. Freshwater

The status of NI's water bodies is another clear example of how NI is failing to properly protect our environment. The EU Water Framework Directive (WFD) (Directive 2000/60/EC)²⁰ requires that EU Member States aim to achieve Good Ecological Status (GES) in all waters by 2015 and if that is not possible, it allows interim targets to be set for 2015 and 2021 with full compliance by 2027. Having failed to meet the WFD targets for 2015, the target is for 70% of water bodies (rivers, lakes, transitional and coastal water bodies, and groundwater bodies) in Northern Ireland to have achieved GES by 2021. As of 2018, only 36.6% of Northern Ireland's water bodies were achieving GES, and this is lower than the level in 2015 when 37.4% of water bodies achieved GES. The decline in the 52 water bodies achieving good environmental status (GES) since 2015 is a clear indication that existing



measures are not adequate to address the significant water management issues in NI. Furthermore, in 2018, 31.3% of 450 river water bodies in NI were classified as 'high' or 'good' quality, compared to 32.7% in 2015²¹. According to the statistics on freshwater quality standards released in August 2020²², 95% of NI's lakes are now failing Water Framework Directive quality standards with only one lake out of twenty one in Good condition in 2019 compared to five out of twenty one lakes in Good condition in 2015. This is poor but maybe not unexpected, given that in 2019, an official UK report²³ on Special Areas of Conservation in NI said that as regards freshwater pearl mussel,

“the lack of juvenile recruitment and an ageing population will almost certainly lead to the future extinction of this species from NI, unless there is a fundamental improvement of their current habitat”.

According to the DAERA Environmental Statistics Report 2020²⁴, in 2018, there were 1,793 water pollution incidents either reported to NIEA or discovered by NIEA staff during inspections, of which 924 (51.5%) were substantiated (confirmed) as having an impact on the water quality of the receiving waterway. Of these 1,793 incidents farming (30.5%, 547/1793), accounted for the largest proportion of substantiated incidents investigated by NIEA, followed by Industry (20.0%), Domestic (18.0%), Other (16.0%), Northern Ireland Water Ltd (14.0%) and Transport (1.5%)²⁵. Agriculture also accounted for the largest proportion of substantiated water pollution incidents investigated by NIEA in 2017²⁶, 2016²⁷ and 2015²⁸. So, it seems clear that we need to change certain agriculture practices in order to better protect our waterways, rather than have to pay for a clean up after a pollution incident has taken place.

2.2.2 Protected areas

This general failure to properly protect biodiversity even extends to NI's protected areas. As outlined in the NI Environmental Statistics Report 2020²⁹, while the area of land based protected areas under favourable management increased significantly in 2019/20 that was only to 13.7% from an incredibly low level of 0.18% reported in 2016/17³⁰. The proportion of marine protected areas under favourable management in 2019/20 was also low at 4.5%³¹, the same level as reported in 2017/18³². As such, while the figures for terrestrial protected areas shows improvement, overall the picture is still one of an inadequate level of protection. This is also illustrated by the fact that even amongst our protected Areas of Special Scientific Interest (ASSIs), 35% of the features in ASSIs are in unfavourable condition³³.



2.3 The role of indicators

This particular issue raises an interesting point in relation to how progress towards these outcomes is measured. For example, the indicator for biodiversity for Outcome 2 in the previous PfG is the % of protected areas under positive management. While this has improved since 2018, that is from an extremely low base. As outlined above, the review of that indicator is positive as it shows an increase in the % of protected land under positive management from the previous year, but only as far as 13.7% from an even lower level. To an outside observer this improvement might suggest that biodiversity is doing well and even improving in NI, while overall the picture on land and sea is still one of an inadequate level of protection. When the context of this increase is considered along with the drop in overall water quality, the fact that only one of our lakes is in good condition and that one of our supposedly most protected species, the freshwater pearl mussel, is at risk of extinction in NI, then it is clear that the reality is somewhat different from what the biodiversity indicator might suggest. This clearly illustrates the need for appropriate indicators that give an accurate representation of what is happening on the ground.

2.4 Stopping further biodiversity loss

NIEL believes there is a need to seize the opportunity for all outcomes to contribute to biodiversity conservation and restoration, for example, through biodiversity mainstreaming³⁴ - ensuring that biodiversity, and the services it provides, are appropriately and adequately factored into policies and practices that rely and have an impact on it. In order to try to tackle this ongoing decline in NI's biodiversity, NIEL believes all relevant bodies need to fully comply with the biodiversity duty in the WANE Act 2011 and a non-regression clause to prevent any further biodiversity loss would be essential in the Northern Ireland Environment Bill and Environment Strategy that is expected sometime in the near future. Having such a non-regression clause in a NI Environment Bill would be supported by the NI Assembly Agriculture, Environment and Rural Affairs (AERA) Committee which said it is critically important that there should be no regression from the level of environmental protection that existed at the point in time when the UK left the EU³⁵.

While NIEL believes that our environment must be protected to help stop and ultimately reverse declines in biodiversity, doing so could also create significant economic and social benefits. For example, as well as protecting species like Atlantic salmon and the freshwater pearl mussel which are endangered and under ongoing pressures, protecting our waterways can help ensure we have cleaner, safer drinking water which could also save money in avoiding additional water treatment processes.



2.4.1. Working with nature and ecosystem services

When looking at issues like how land management affects water quality, it is important to work with the environment where we can by using our natural capital and ecosystem services. The wide range of ecosystem services that nature provides us with also needs to be accounted for in economic decisions. For example, using wetlands to help improve water quality is an example of using natural capital and ecosystem services. Even though the value of such ecosystem services is rarely accounted for, UK studies have calculated that wetlands provide flood defence services worth £1,279 per hectare per year and storm defence services worth £722 per hectare per year³⁶. NIEL therefore believes that proposals to drain wetlands and convert them to alternative uses should not only be considered in terms of the negative impact that would have on biodiversity but also the impact on water management and the cost-benefits analysis of the proposal, including additional factors such as the carbon sequestration capability of a wetland. The problem with many ecosystem services is that they are often not recognised and not costed and so not included in economic evaluations of proposed developments. For example, the market value of insect pollination of agricultural and horticultural crops in Northern Ireland is estimated at £7.1m³⁷ and in that context planting wildflower margins that support pollinators should be seen as not only beneficial in terms of biodiversity but economically prudent. Our economic systems must properly account for the gains and losses in biodiversity and natural capital in the decision making process.

Working with nature can also save significant amounts of money. For example, South West Water's Upstream Thinking project which works in eleven catchments across Devon and Cornwall, including in the Exmoor National Park, and which aims to improve water quality, at source, by improved land management techniques to reduce soil and chemical run off in the upper reaches of rivers. According to South West Water³⁸, Upstream Thinking has a potential 65:1 payback ratio over 30 years if it delays or even avoids capital expenditure for building and operating traditional treatment works. This sort of approach which uses ecosystem services also builds upon the aim outlined in 'Sustainable Water: A Long-Term Water Strategy for Northern Ireland (2015-2040)³⁹ to

"Manage flood risk and drainage in a sustainable manner"

NIEL believes that working with nature in this way also fits with Outcome 2 (We live and work sustainably – protecting the environment) in the draft 2016-2021 Programme for Government and the approach in the UK Government's 25 year plan for nature 'A Green Future' in which the UK government committed⁴⁰ to

"using more natural flood management solutions where appropriate"



2.5 The economic benefits of protecting and restoring biodiversity

Biodiversity must be a key part of the green recovery response to the coronavirus pandemic, especially as regards developing resilience to other potential pandemics. For example, the greater use of natural capital and ecosystem services rather than hard engineering options should be a foundation of future policies, particularly in relation to water management. Recent research suggests that ecological investments such as afforestation, parkland expansion, protection of forests and water resources and restoration of rural ecosystems should have high priority as part of COVID-19 recovery stimuli^{41, 42}.

In 2007 the 'Valuing our Environment' report⁴³ concluded that economic activities related to the environment of NI contributed £573 million to the regional economy and these environment-related economic activities support 32,750 full-time equivalent jobs.

Some of the economic aspects of better environmental protection are explored in more detail in

NIEL's comments in relation to 6 but one area where the NI landscape brings significant economic benefits is in relation to tourism. While tourism has been badly affected by the coronavirus pandemic and may take a while to recover, the economic value of NI's natural and built heritage is illustrated by the fact that according to NISRA⁴⁴ in 2019 the Giant's Causeway was, once again, NI's most visited attraction with 998, 000 visitors. In 2018 country parks/parks/forests attracted the largest proportion of visitors (42%), with visitor/heritage centres attracting the second highest proportion of visitors during 2018 (21%). NI's world class geology is the foundation of much of our most famous and popular attractions including Marble Arch Caves and Mourne/Slieve Gullion/Cooley geoparks, the 'Stairway to Heaven' at Cuilcagh, the North Down Coastal Path, the Mourne and Sperrins and many beautiful beaches. Often it is the more rural or remote locations that benefit from nature tourism which is an important consideration in terms of employment opportunities and preserving the social structure in small towns and villages.

2.6 The need for targets

NIEL would once again call on the NI Executive to commit to legal targets to reverse nature's decline well ahead of international talks to agree future targets, due to take place in China in 2021 and to press ahead with efforts to meet international targets for terrestrial and marine conservation, such as the 30x30 targets. Meeting those international targets for biodiversity would also help to meet a number of the Executive's existing commitments most notably the commitment in the Outcome Delivery Plan for 2018-19⁴⁵ that

"We will also ensure that there are effective plans in place for the management and improvement of protected sites."



2.7 Protecting biodiversity and human health

NIEL believes that a sustainable economy is a healthier economy and that greater linkages should be made between the health of the environment and human health in Outcomes 2 and 3 and that The Executive Office and the NI Executive as a whole should take greater account of the many health benefits of healthy environment and increased access to green space. Unfortunately though, the benefits offered by the Natural Health Service through access to green spaces are not shared equally. We know that children from deprived backgrounds are much less likely to spend time outdoors than those from affluent areas. People who live in nature-deprived areas are more likely to face chronic ill-health and live shorter lives. There is a wide range of options available that could be implemented in order to improve access to green spaces such as:

- Investing in active transport through green and blue infrastructure planning new places and spaces through engagement
- Implementing a programme to enhance and create more urban parks
- Increasing countryside access for everyone
- Developing stronger links between environment and health, focusing on ‘social prescribing’
- Providing access to land for Sustainable Community Use and One-Planet Development

The beneficial relationship between human health and the environment was illustrated by the EU’s PHENOTYPE study⁴⁶ which found that positive health effects of green space have been observed on a range of issues including but not limited to: longevity^{47, 48}, cardiovascular diseases⁴⁹, people’s self-reported general health^{50,51}, mental health⁵², sleep patterns⁵³ and even recovery from illness⁵⁴.

Similarly, a 2016 WHO report⁵⁵ summarizing evidence on the health effects of green space in urban areas showed that green spaces offer numerous public health benefits, including psychological relaxation and stress reduction, enhanced physical activity and a potential reduction in exposure to, among other harmful urban factors, air pollution, noise and excessive heat. The report concludes that there is a need for both small, local green spaces situated very close to where people live and spend their day, and large green spaces that provide formal recreational facilities and opportunities to interact with nature. Research⁵⁶ which looked at the entire population of England below retirement age between 2001-05 (40,813,236 people) found that populations that are exposed to the greenest environments also have lowest levels of health inequality related to income deprivation, concluding

“The implications of the study are clear: environments which promote good health may be key in the fight to reduce health inequalities.”



An analysis of over 3,000 senior citizens in Tokyo⁵⁷ has shown that living in areas with walkable green spaces positively influenced the longevity of urban senior citizens independent of their age, sex, marital status, baseline functional status, and socioeconomic status.

According to the Department of Health report 'A Fitter Future for All, Framework for Preventing and Addressing Overweight and Obesity in Northern Ireland 2012-2022'⁵⁸, one way of addressing the "obesity time bomb" which was described as "one of the most important public health challenges facing Northern Ireland" is by providing access to green space as children with greater access to green space are less likely to be overweight, Department for Health, (2020).

As the National Trust's Natural Childhood report outlined, in addition to obesity, other physical health problems on the increase include vitamin D deficiency, leading to a major rise in the childhood disease rickets⁵⁹; short-sightedness⁶⁰; and asthma⁶¹. There has also been a reduction in children's ability to do physical tasks such as sit-ups, producing 'a generation of weaklings'⁶²; and a major decline in children's cardiorespiratory (heart and lung) fitness, of almost 10% in just one decade⁶³. All these health problems have been, at least in part, attributed by the researchers involved to a decrease in the time children spend outdoors compared with previous generations.

Access to green and blue space also provides a way to deliver for each of the key priority areas of this outcome. The often hidden value of blue and green infrastructure has been highlighted in a Natural Capital Account report⁶⁴ for Derry City and Strabane District Council by Vivid Economics which found that the council supplies more than £75 million in benefits to residents each year through its 223 greenspaces and that for every £1 spent on the Council's greenspace maintenance and investment, it provides £22 of benefits per year.

The Public Health Agency (PHA) has taken as one of its building blocks 'Building sustainable communities', one of the core themes proposed by Sir Michael Marmot in his 2010 report Fair society, healthy lives⁶⁵. In this report, Marmot advocates that organisations should:

- prioritise policies and interventions that reduce both health inequalities and climate change;
- integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each locality;
- support locally developed and evidence-based community regeneration programmes.



Environmental volunteering and facilitated nature therapy sessions (including social prescribing) has been proven to help improve physical and mental health particularly amongst elderly people⁶⁶. This is more important than ever emerging from a pandemic which will have impacted upon people's mental health and more loneliness reported in older people and those with disabilities.

In the PHA's 'Making Life Better 2012–2023'⁶⁷, ten-year public health strategic framework, the indicators that are measured to monitor the wider social determinants of health and wellbeing, include air and water quality. Access to and proximity to green or blue space should also be included and recognised as an important determinant in mental and physical health and wellbeing.

Although the outdoors/green space can have a very positive impact on a person's physical and mental health, NIEL will provide greater detail on the potential benefits of access to green space on an individual's mental health in its response to Outcome 4

2.8 Protecting biodiversity is a key component in the response to the coronavirus pandemic

Reducing our negative impact on biodiversity must also be an essential part of our attempts to reduce the potential development of future pandemics. This was made clear by the OECD which said, in its policy response to the Coronavirus pandemic⁶⁸

“The pandemic is inextricably intertwined with global environmental issues such as biodiversity loss, climate change, air and water pollution, and waste management, both in terms of its origin and the implications for environmental outcomes and the future well-being of societies around the world.”

In fact the OECD has stated⁶⁹

“Human pressure on biodiversity increases the risk of infectious disease.”

“Protecting biodiversity is vital for avoiding the next pandemic.”

“Integrating biodiversity considerations into the COVID-19 recovery is not only important for avoiding future pandemics; it is also vital to economic resilience and human well-being.”



Similarly, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, (IPBES), 2020 Pandemics Report⁷⁰ concluded

“The underlying causes of pandemics are the same global environmental changes that drive biodiversity loss and climate change. These include land-use change, agricultural expansion and intensification, and wildlife trade and consumption.”

The IPBES report went on to advise that human ecological disruption and unsustainable consumption drive pandemic risk. We need to focus on conservation, climate change adaptation and ecosystem services as a human health priority as well as an environmental priority.

2.9 Recommendations for action

NIEL believes that the natural environment and NI’s biodiversity should not just be an issue for our protected areas or the Department for Agriculture, Environment and Rural Affairs (DAERA). Nature and biodiversity need to be valued intrinsically and the conservation and restoration of biodiversity needs to be integrated across all policy areas where possible, as a way of ensuring our well-being and ultimately, our survival. NIEL believes NI needs to take direct, measurable actions to halt the pressures and drivers of nature loss for including the following:

- Ensuring effective protection and management of at least 30% of land and seas for biodiversity by 2030;
- Implementing species action plans for all threatened species
- Restoring and reconnecting defined areas of lost and fragmented habitats to specific standards;
- Phasing out harmful subsidies and introducing systems for payments for environmental public benefits by a fixed date, ensuring that agriculture and fisheries work with and not against nature;
- Taking action to control harmful invasive, non-native species, implementing international best-practice to reduce their spread;
- Taking action to tackle pollution, such as reduction and phase out goals for harmful pesticides;
- Ensuring that nature-based solutions for climate also deliver for nature by agreeing core standards for the certification and measurement of nature-based solutions
- Ensuring biodiversity net gain is a requirement in all developments.



- Significantly increased levels of investment in biodiversity management and protection
- Increasing levels of access to green space
- Working with nature to solve problems
- Greater investment in biodiversity management and protection and a green recovery
- Compliance with existing laws, policies and commitments

As regards the increase in the levels of investment in biodiversity management and protection that is needed, NIEL believes that amongst other things, the nature of our economics needs to fundamentally change and would encourage the NI Executive to develop our economy in line with the statement in the Programme For Government's Outcome Delivery Plan for 2018-19 which said⁷¹

“Our health and wellbeing are directly affected by the quality of the environment around us and, therefore, it is vitally important that we take steps to protect and enrich our natural environment. Achieving economic growth at the expense of the environment, through degradation of finite resources by overuse or causing pollution is not sustainable.”

This is explored further in NIEL's comments on Outcome 6.

Outcome 4. We all enjoy long, healthy, active lives

Key priority areas:

Access to Health,

Inclusion and Tackling Disadvantage,

Mental Health and Wellbeing,

Older People,

Physical Health and Wellbeing

As previously referred to in our response to Outcome 2, although the outdoors/green space can have a very positive impact on a person's physical and mental health, NIEL is providing greater detail on the potential benefits of access to green space on an individual's mental health in this section.



The role of the environment and ecosystem services in supporting human health and wellbeing and the importance of access to nature should be given much more recognition, especially in improving quality of life and preventing illness and there is a very important opportunity, and need, for greater co-operation and coordination between central and local government and inter-departmental and inter-agency working, in order to maximise the many benefits of increasing access to green space.

Green and blue spaces can positively influence mental health through mitigation, by reducing harm from environmental stressors such as air pollution, noise and heat. Nature-based experiences can have restorative effects, for example through stress recovery and attention restoration and can encourage physical activity and facilitate social cohesion.

Investing in our natural environment by creating high quality natural places and urban green spaces will improve the mental and physical health of the nation and provide cost savings for the NHS. This is especially important in areas of higher deprivation. NIEL wants to see a society where everyone benefits from nature, walking and outdoor activity as part of their everyday life and journeys, a society where everyone has easy access to green spaces, which also encourage a sense of community and social cohesion. This is a way to 'invigorate and energise our communities and organisations, to promote a culture change that will bring about real improvements for the population in Northern Ireland.'

NIEL wants to see a society where good mental health is promoted and supported through nature-based treatments. Nature-based treatments are non-medical, socially supported solutions, offering a cost-effective approach to addressing prevalent mental health problems. They present a platform that can fully integrate biodiversity, climate and health challenges, with significant positive economic and societal benefits.

NIEL proposes that the established and proven social prescribing model in Northern Ireland is expanded upon. Local pathways to environmental activity interventions should be developed and offered as options to individuals participating in formal social prescribing initiatives, such as those being delivered by the SPRING project (through the members of the Healthy Living Centre Alliance in Northern Ireland) and potentially by the new Multi-Disciplinary Teams in GP Practices.

The need for action to improve mental health is all the greater given the impact of the coronavirus pandemic and the lockdowns on people's mental health. The IEEP and IS-Global paper, Mental Health and the Environment⁷² makes the case for a greater recognition of the benefits of green space on mental health, arguing that



“In recent years, evidence on the interplay between mental health and the environment has grown significantly, and the COVID-19 crisis, with its foreseeable and unforeseen socio-economic implications, adds a more urgent need for policy- and decision makers to identify and implement win-win solutions to both challenges.”

Research by ORNI⁷³ has highlighted the clear link between enjoying outdoor spaces and good mental and physical health with 73% of respondents stating the primary motivation for visiting the outdoors was ‘to get some exercise’ and/or ‘for health and fitness’. In addition, 86% of those participants reported that visits to the outdoors made them feel calm and relaxed and/or refreshed and revitalised and 32% felt closer to nature following visits to the outdoors.

As the Youth Wellbeing Survey, 2020⁷⁴, commissioned by the Health and Social Care Board reported previous studies of adult populations show that Northern Ireland has 25% higher rates of common mental health disorders than England, Scotland and Wales and it appears that the picture is similar for young people as well.

According to Natural England⁷⁵

“Recent work has shown that where people have good perceived and/or actual access to green space they are 24% more like to physically active. If this effect was universal and the population of England was afforded equitable good access to green space it is estimated that the life-cost averted saving to the health service could be in the order of £2.1 billion per annum.”

As the National Trust Natural Childhood report⁷⁶ found that ensuring children have access to green space and time in nature has been shown as a way to build lifelong mental resilience and said

“There is evidence to suggest that this sedentary, indoor lifestyle is having profound consequences for our children’s health, especially with regard to what has been called the ‘modern epidemic’ of obesity”

Natural Childhood goes on to report how in a single generation since the 1970s, children’s ‘radius of activity’ – the area around their home where they are allowed to roam unsupervised – has declined by almost 90%⁷⁷. For example, in 1971, 80% of seven- and eight-year-olds were allowed to go to school on their own or with their friends, often walking, whereas by 1990 fewer than 10% did so –



almost all accompanied by their parents⁷⁸. In NI in 2017-2019, the most commonly used main method of travel to or from school for the 4-11 age group was car (61%), followed by walking (21%) and then public transport (15%)⁷⁹.

Even short-term ‘doses’ of nature can make a marked impact on mental health – indeed, as little as five minutes of ‘green exercise’ can improve mood and self-esteem by a significant margin⁸⁰. The link between increased contact with nature and better mental health was clearly highlighted in the 2007 report from MIND Ecotherapy: The green agenda for mental health⁸¹ which called for a new green agenda for mental health. Amongst other things the report recommended: allocation of health and social care budgets should be informed by cost-benefit analysis of ecotherapies; access to green space should be considered as a key issue in all care planning and care assessment; all health, social care and criminal justice institutions should be required to ensure access to green space; and ecotherapy projects should be evaluated to collect data and continue to build an appropriate evidence base. The MIND report also stated that

“Empirical evidence shows exposure to nature has substantial mental health benefits”

It also referenced research from the University of Essex which identified three key benefits from green exercise, namely; it improves psychological wellbeing by enhancing mood and self-esteem, while reducing feelings of anger, confusion, depression and tension; it has a wide range of physical health benefits and it facilitates social networking and connectivity.

Outcome 6: Our economy is globally competitive, regionally balanced and carbon neutral

Key priority areas:

Competing globally,

Green economy,

Growth,

Food, farming and fishing,

Infrastructure,

Innovation



NIEL RESPONSE

6.1. The need for and benefits of a green, sustainable economy

NIEL welcomes the recognition of the need for a carbon neutral economy in NI. NIEL also welcomes the statement by the AERA Minister Edwin Poots in the Assembly on 23rd June 2020⁸² that

“we want to build our economy in a sustainable way; we want to ensure that growth happens in a sustainable way; and we want to ensure that, as we do things that help and protect the environment, we grow our economy alongside that.”

This sustainable approach is one that NIEL supports. NIEL believes that investing in a sustainable, resilient, low and ultimately zero carbon, green economy will help to create a bigger, better and more resilient (‘future proofed’) economy that is better able to meet the demands of a changing society. The many benefits of a green or greener economy have been highlighted and endorsed by many prominent organisations. For example, this is supported by the findings of the United Nations UNEP Green Economy Report (GER)⁸³ that

“Greening the economy not only generates growth and in particular gains in natural capital, but it also produces a higher growth in GDP and GDP per capita. Under the GER modelling exercise, a green investment scenario achieves higher economic growth rates than a business as usual scenario within 5-10 years”

The case for developing a green economy was made in the House of Commons Environmental Audit Committee in its “A Green Economy”⁸⁴ report which said

“The whole economy needs to be green and traditional sectors of the economy will need to be transformed”

The Global Commission on the Economy and Climate⁸⁵ and World Bank⁸⁶ outlined the benefits of a green economy concluding

“Low-carbon growth could deliver economic benefits of US\$26 trillion to 2030—and this is a conservative estimate.”



It is essential that the move to a zero carbon economy there is a managed just transition to a zero carbon economy in line with best practice including accepted standards for workers' rights. This is dealt with in more detail in section 6.3.

6.1.2. The job creation potential of a more sustainable, green, low/zero carbon economy

The greater benefits in terms of job creation from investing in low/zero carbon energy sources compared to high(er) carbon energy sources was highlighted by the World Bank⁸⁷ which estimated that for every US\$1million invested in the oil and gas sector in the United States five jobs would be created, compared to 17 jobs per US\$1million invested in energy-saving building retrofits, 22 jobs for mass transit/freight rail, 13 for wind, and 14 for solar. While the situation in the USA differs from that in NI, the point is that this research highlights how for the same level of investment, lower carbon energy sources can create many more jobs than fossil fuels.

The CBI and its members describe the recovery from the COVID-19 pandemic as a real opportunity to build back better and pivot towards the low-carbon, sustainable, and net-zero aligned economy that we know we need⁸⁸. Amongst other things the CBI called for government action to:

“Accelerate the deployment of low-carbon electricity generation and investment in grid system flexibility”

“Deliver jobs and energy savings by retrofitting homes and buildings to be more energy efficient and switch to low-carbon heating.”

A similar argument was made in June 2020 by the UK Climate Change Committee⁸⁹ which recommended five clear investment priorities in the months ahead for building a resilient economy, the first one of which was investing in improving the energy efficiency of homes. The five priorities identified by the CCC were:

1. Low-carbon retrofits and buildings that are fit for the future
2. Tree planting, peatland restoration, and green infrastructure
3. Energy networks must be strengthened
4. Infrastructure to make it easy for people to walk, cycle, and work remotely
5. Moving towards a circular economy.



It is important to note that when developing renewable energy sources, they should be subject to detailed ecological impact assessments to ensure that the right technology is established in the right place. Conservationists have previously raised concerns about fish passes on hydro power developments, wind farms on peatlands and the impacts of wind turbines on bats which can die from barotrauma (tissue damage to air-containing structures caused by rapid or excessive pressure change) or blade strike⁹⁰. The need for sensitive development of low(er) carbon technologies also applies to the potential impacts on bats from large scale cavity wall insulation and loft insulation projects and so there should be bat surveys in properties with high potential for roosting bats before such options are undertaken.

The potential for job creation in the low carbon economy was highlighted by the Institute for Public Policy and Research⁹¹ which concluded that greater investment in a green recovery and clean, low-carbon jobs could create 1.6 million new jobs over the next decade of which over 40,000 could be in Northern Ireland. Of those 1.6 million jobs, half a million (560,000) could be created by improving the energy efficiency of homes, which would also help reduce fuel poverty and help the health and economic prospects of thousands. The IPPR also found that without government intervention, unemployment could rise by more than 2.1 million to almost 10% of the workforce. It is important to recognise that many of these jobs will be in sectors other than the environment sector because there is the opportunity to generate benefits across the community and across departments by win-win options, in line with what the draft PfG 2016-21 was described as aiming to do. For example, closing the huge gaps in social care and in health care could create up to 700,000 jobs by 2030. Jobs in these areas fulfil pressing social needs and at the same time are in line with a low-emission economy as this also facilitates a shift away from resource-intensive growth towards localised service sector growth which can lead to less overall energy demand. The area where the next greatest number, over half a million (560,000), of those 1.6 million jobs could be created is in energy efficiency, which is currently the responsibility of the Department for the Economy, though this policy would also be relevant to the Department for Communities which is responsible for fuel poverty, DAERA which is responsible for climate change, the Department of Finance which is responsible for building regulations and also the Department of Health in terms of the positive impacts on physical and mental health of taking people out of fuel poverty. The IPPR finding that without government intervention, unemployment could rise by more than 2.1 million to almost 10% of the workforce⁹² is a clear demonstration of how setting the right policies can drive economic development and job creation.

6.2 Transport and active travel

The pandemic has highlighted the value of being active in our daily routines, through walking and cycling and the importance of living locally and appreciating the environment around us, including our parks and green spaces. It has shown the shortfalls in our infrastructure – lack of safe cycling



infrastructure and wide enough pavements - and the priority we have placed for decades on building roads.

We need to ensure integrated infrastructure and encourage people to make environmentally responsible choices, but government also needs to enable people to travel actively and sustainably through for example:

- Prioritising vulnerable road users in all road schemes
- Building a network of protected cycle lanes
- Wider, safer footpaths and safe crossings

For example, one of the main objectives of the 20-minute neighbourhood concept advocated by Sustrans is to better align spatial planning with transport planning and infrastructure, to make it easier for people to walk, cycle and use public transport. Both approaches should be underpinned by ensuring 20-minute neighbourhoods are designed to be inclusive and equitable.

More people are working from home as a result of Covid and it is widely expected this may continue in the future. As a result there is less congestion at peak times but NIEL believes the NI Executive needs to work harder to promote and enable more sustainable travel and reduce the dominance of cars in our day-to-day travel in Northern Ireland, which between 2017 and 2019 accounted for 71% of our journeys made and 83% of the total distance travelled⁹³. This dominance of the car is also reflected in the disproportionate spending on roads compared to public transport in Northern Ireland, as compared to England, Scotland and Wales. According to the National Audit Office⁹⁴, in 2017-18, 59% of the NI transport budget was spent on roads with 18% spent on railways, 11% on local public transport and 12% on other transport. The situation in England was almost the complete reverse of that in NI, with 31% of the transport budget spent on roads, 59% on railways and 8% on local public transport. In Scotland 42% of the transport budget was spent on roads and 47% on public transport (39% on railways and 8% on local public transport). In Wales 45% of the transport budget was spent on roads and 51% on public transport (46% on railways and 5% on local public transport). NIEL would like to see a significant shift in spending so that so that the overall transport spend has at least a 50/50 split between roads and public transport, similar to the spending pattern in other UK administrations. The promotion of public transport and active travel is also crucial to delivering sustainable, low carbon solutions for connected infrastructure across Northern Ireland and can create significant economic, social and environmental benefits, and should receive greater support from the NI Executive.

Investing in active travel offers positive outcomes not just for the environment through reducing transport emissions but also for the physical and mental health of people, especially in terms of



reducing particulates and other air pollutants, which in turn has very positive economic benefits. This is illustrated by the findings of Cycling UK⁹⁵ that the average economic benefit-to-cost ratio of investing in cycling and walking schemes (active travel) is 13:1. By comparison, according to UK Department for Transport Road Investment Strategy: Economic analysis of the investment plan⁹⁶ the benefit-to-cost ratio for bypasses and link roads is 2:1. On top of that, greenways can also offer opportunities for enhancing biodiversity. If it is necessary to light greenways then bat surveys should be carried out and no lighting should be located near mature trees or water bodies and alternative lighting options should be used so as not to disturb nocturnal wildlife, particularly bats. Lighting height, column, angle and use of hoods should be used to prevent more light pollution.

6.3 Increasing investment in a green recovery and just transition

The NI Executive needs to allocate funding streams to ensure that NI's environmental targets can and will be achieved and to enable the green recovery that we need and which so many organisations have supported. NI can learn lessons from other administrations. For example, in England, a home insulation fund was established, as was a £40m fund for 'shovel-ready' environmental projects. In particular, NI could learn from the approach being taken in Scotland. As part of the Programme for Government for Scotland 2020-2021 'Protecting Scotland, Renewing Scotland',⁹⁷ amongst other things, £100m was pledged towards a Green Job Fund, £60m to help industrial and manufacturing sectors decarbonise, £60 million was pledged for a Youth Guarantee including increased opportunities for 'green' apprenticeships across public sector bodies, a Green Investment Portfolio was established to identify £3 billion of projects ready for green finance investment, £20 million was allocated for peatland restoration in 2020-21 with a commitment to invest more than £250 million over 10 years, £70m was allocated for improved refuse collection infrastructure, £150m was allocated to deliver a 50% increase in woodland and new funding of over £500 million over five years was allocated for active travel infrastructure, access to bikes and behaviour change schemes.

The Scottish Government has also established a Just Transition Commission to Just Transition Commission is to advise Scottish Ministers on how to apply Just Transition principles (based on International Labour Organisation⁹⁸ principles) to Scotland. These principles can be summarised as:

- plan, invest and implement a transition to environmentally and socially sustainable jobs, sectors and economies, building on Scotland's economic and workforce strengths and potential
- create opportunities to develop resource efficient and sustainable economic approaches, which help address inequality and poverty



- design and deliver low carbon investment and infrastructure, and make all possible efforts to create decent, fair and high value work, in a way which does not negatively affect the current workforce and overall economy

Similar thinking and funding in Northern Ireland could help create opportunities for blue and green infrastructure, sustainable tourism, nature restoration, mitigating against climate change and helping to progress other key Executive priorities. NIEL welcomes the Department for Infrastructure's commitment to £20m for Green and Blue infrastructure in June and the £2.8m funding for greenways announced on 16th September 2020. These are steps in the right direction, however, more action and longer term planning and funding will be required.

The need for appropriate funding for the range of environmental problems we face and for investment in a green recovery was recognised by the Ulster University⁹⁹ in its response to the NI draft budget when it said,

"The Draft Budget makes no specific mention of funding to help Northern Ireland achieve its environmental targets."

In its draft budget consultation 2021, the University of Ulster¹⁰⁰ also concluded that

"Creating a zero-carbon economy will require a 'Whole of Government' response and can help support economic growth"

The University went on to say¹⁰¹ that

"As well as delivering environmental benefits, there is also the potential to deliver significant economic benefits and create jobs."

NIEL would therefore urge TEO to review the investment programme and related strategies so as to facilitate the sort of green recovery NI needs to future proof its economy.

-ENDS-



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- ¹ Heritage Delivers <https://niheritagedelivers.org/prosperity>
- ² Heritage Delivers <https://niheritagedelivers.org/prosperity>
- ³ <https://wewillthrive.co.uk/audience-insights/reports/culture-beyond-covid-for-heritage-insights>
- ⁴ <https://bills.parliament.uk/bills/2593>
- ⁵ Food, Farming and Countryside Commission and the Food Foundation 2020 survey https://foodfoundation.org.uk/covid_19/rsa-and-food-foundation-survey-shows-changes-in-citizen-attitudes-to-the-food-system/
- ⁶ Department for Business, Energy and Industrial Strategy BIES Public Attitudes Tracker (June 2020 Wave 34 UK) [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906452/BEIS_PAT_W34 - Key findings.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/906452/BEIS_PAT_W34_-_Key_findings.pdf)
- ⁷ <https://community.rspb.org.uk/getinvolved/b/steppingupnorthernireland/posts/new-poll-shows-strong-public-support-for-a-green-recovery>
- ⁸ <https://www.kateraworth.com/doughnut/>
- ⁹ <https://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html>
- ¹⁰ National Trust Natural Childhood by Stephen Moss <https://nt.global.ssl.fastly.net/documents/read-our-natural-childhood-report.pdf>
- ¹¹ Louv, R. (2005) Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder, Algonquin Books, Chapel Hill, p.34
- ¹² <https://nt.global.ssl.fastly.net/documents/read-our-natural-childhood-report.pdf> (page 9)
- ¹³ [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)
- ¹⁴ Heckman, J.J., 2008 Schools, Skills and Synapses. Economic Inquiry, 46 (3), 289-324 http://jenni.uchicago.edu/papers/Heckman_2008_EI_v46_n3.pdf see also <http://www.nber.org/papers/w14064.pdf>
- ¹⁵ [Wildlife and Natural Environment Act \(Northern Ireland\) 2011 \(legislation.gov.uk\)](https://www.legislation.gov.uk/ukpga/2011/27/section/1)
- ¹⁶ <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-Northern-Ireland-summary.pdf>
- ¹⁷ <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/natural-policy-biodiversity-strategy-to-2020-2015.pdf>
- ¹⁸ <https://www.rspb.org.uk/about-the-rspb/about-us/media-centre/press-releases/rspb-ni-northern-ireland-biodiversity-strategy-failing-after-years-of-inaction/#:~:text=On%20the%20day%20that%20a,have%20not%20been%20adequately%20met.>
- ¹⁹ <https://www.gov.uk/government/news/pm-commits-to-protect-30-of-uk-land-in-boost-for-biodiversity>
- ²⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060>
- ²¹ <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/NIEA%20-%20WFD%20Statistics%20Report%202018.pdf>
- ²² <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Water%20Framework%20Directive%20-%20Statistics%20report%20-Lake%20Quality%20Update%202020.pdf>
- ²³ UK's 2019 Article 17 report <https://jncc.gov.uk/our-work/article-17-habitats-directive-report-2019/>
- ²⁴ https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2020_0.pdf
- ²⁵ Ibid
- ²⁶ https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2019_1.pdf
- ²⁷ <https://www.daera-ni.gov.uk/publications/northern-ireland-environmental-statistics-report-2018>
- ²⁸ <https://www.daera-ni.gov.uk/publications/northern-ireland-environmental-statistics-report-2017>
- ²⁹ DAERA Environmental Statistics Report 2020 <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2020.pdf>
- ³⁰ DAERA Environmental Statistics Report 2019 https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2019_1.pdf
- ³¹ DAERA Environmental Statistics report 2020 <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2020.pdf>



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- ³² DAERA Environmental Statistics Report 2019 https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2019_1.pdf
- ³³ DAERA Environmental Statistics Report 2020 https://www.daera-ni.gov.uk/sites/default/files/publications/daera/ni-environmental-statistics-report-2020_0.pdf
- ³⁴ <https://www.cbd.int/mainstreaming/>
- ³⁵ Northern Ireland Assembly Committee for Agriculture, Environment and Rural Affairs Report on the legislative consent Motion on the UK Government Environment Bill NIA 12/17-22 (page12) <http://www.niassembly.gov.uk/globalassets/documents/committees/2017-2022/agriculture-environment-and-rural-affairs/reports/2019-2020/lcm-uk-environment-bill/lcm-report-on-the-environment-bill.pdf>
- ³⁶ <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/valuing-our-environment-summary-report.pdf>
- ³⁷ <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/biodiversity-duty-guidelines-for-public-bodies-may-2016.pdf>
- ³⁸ <https://wwtonline.co.uk/features/moorland-project-delivers-multiple-benefits->
- ³⁹ <https://www.infrastructure-ni.gov.uk/sites/default/files/publications/drd/sustainable-water-a-long-term-water-strategy-for-northern-ireland-2015-2040.PDF> (page 25)
- ⁴⁰ A Green Future: Our 25 Year Plan to Improve the Environment https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf page 52
- ⁴¹ https://reliefweb.int/sites/reliefweb.int/files/resources/COVIDFS_compressed.pdf
- ⁴² <https://wedocs.unep.org/bitstream/handle/20.500.11822/32923/BBB.pdf?sequence=1&isAllowed=y>
- ⁴³ <https://www.daera-ni.gov.uk/sites/default/files/publications/doe/valuing-our-environment-summary-report.pdf>
- ⁴⁴ <https://www.nisra.gov.uk/sites/nisra.gov.uk/files/publications/Tourism-Statistics-Annual-Publication-2019.pdf>
- ⁴⁵ Outcomes Delivery Plan <https://www.executiveoffice-ni.gov.uk/sites/default/files/publications/execoffice/outcomes-delivery-plan-2018-19.pdf> page 16
- ⁴⁶ Positive health effects of the natural outdoor environment in typical populations in different regions in Europe (PHENOTYPE): a study programme protocol <https://bmjopen.bmj.com/content/4/4/e004951>
- ⁴⁷ Takano T, Nakamura K, Watanabe M. Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *J Epidemiol Commun Health* 2002;56:913–18. <https://pubmed.ncbi.nlm.nih.gov/12461111/>
- ⁴⁸ Mitchell R, Popham F. Effect of exposure to natural environment on health inequalities: an observational population study. *Lancet* 2008;372:1655–60. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61689-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61689-X/fulltext)
- ⁴⁹ Gavin Pereira, Sarah Foster, Karen Martin, Hayley Christian, Bryan J Boruff, Matthew Knuiman, Billie Giles-Corti The Association Between Neighborhood Greenness and Cardiovascular Disease: An Observational Study <https://pubmed.ncbi.nlm.nih.gov/22720780/?dopt=Abstract>
- ⁵⁰ de Vries S, Verheij RA, Groenewegen PP, et al. Natural environments -healthy environments? An exploratory analysis of the relationship between greenspace and health <https://journals.sagepub.com/doi/pdf/10.1068/a35111>
- ⁵¹ Maas J, Verheij RA, Groenewegen PP, et al Green space, urbanity, and health: how strong is the relation? https://jech.bmj.com/content/60/7/587?ijkey=61b649839da2c8f6e38b03f172ad0e51a80fbe68&keytype=tf_ipsecsha
- ⁵² Grahn P, Stigsdotter UA. Landscape planning and stress. *Urban Forestry Urban Greening* 2003;2:1–18. <https://www.sciencedirect.com/science/article/abs/pii/S1618866704700199>
- ⁵³ Astell-Burt T, Feng X, Kolt GS. Does Access to Neighbourhood Green Space Promote a Healthy Duration of Sleep? Novel Findings From a Cross-Sectional Study of 259 319 Australians <https://pubmed.ncbi.nlm.nih.gov/23943772/>
- ⁵⁴ Ulrich RS. Views through a Windows may influence recovery from surgery. *Science* 1984;224:420–1. <https://pdfs.semanticscholar.org/43df/b42bc2f7b212eb288d2e7be289d251f15bfd.pdf>
- ⁵⁵ http://www.euro.who.int/_data/assets/pdf_file/0005/321971/Urban-green-spaces-and-health-review-evidence.pdf?ua=1
- ⁵⁶ Mitchell R, Popham F. Effect of exposure to natural environment on health inequalities: an observational population study. *Lancet* 2008;372:1655–60 [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61689-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61689-X/fulltext)



- ⁵⁷ Takano T, Nakamura K, Watanabe M. Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *J Epidemiol Commun Health* 2002;56:913–18 <https://pubmed.ncbi.nlm.nih.gov/12461111/>
- ⁵⁸ <https://www.health-ni.gov.uk/sites/default/files/publications/dhssps/obesity-fitter-future-framework-ni-2012-22.pdf>
- ⁵⁹ Davies, Justin H., Reed, Joseph M., Blake, Elizabeth, Priesemann, Max, Jackson, Alan A. and Clarke, Nicholas M.P. (2011) Epidemiology of vitamin D deficiency in children presenting to a pediatric orthopaedic service in the UK. *Journal of Pediatric Orthopaedics*, 31, (7), 798-802 – reported on BBC News website 4 February 2011 www.bbc.co.uk/news/health-12357382
- ⁶⁰ www.bbc.co.uk/news/health-15427954
- ⁶¹ Glasgow University study, 2009; see BBC News website 3 March 2009 www.news.bbc.co.uk/1/hi/7918576.stm
- ⁶² *Acta Paediatrica* (2011), see *Guardian* 21 May 2011 <https://www.theguardian.com/society/2011/may/21/children-weaker-computers-replace-activity>
- ⁶³ <https://www.theguardian.com/society/2009/dec/22/childrens-fitness-declining-across-world>
- ⁶⁴ <https://www.derrystrabane.com/getattachment/Subsites/Parks-and-Open-Spaces/GI/v1-NCA-Final-Report.pdf>
- ⁶⁵ <http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review>
- ⁶⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7514226/>
- ⁶⁷ <https://www.publichealth.hscni.net/about-us/making-life-better>
- ⁶⁸ OECD Policy Responses to Coronavirus (COVID-19) Making the green recovery work for jobs, income and growth [http://www.oecd.org/coronavirus/policy-responses/making-the-green-recovery-work-for-jobs-income-and-growth- /](http://www.oecd.org/coronavirus/policy-responses/making-the-green-recovery-work-for-jobs-income-and-growth-/)
- ⁶⁹ OECD Policy Responses to Coronavirus (COVID-19) Biodiversity and the economic response to COVID-19: Ensuring a green and resilient recovery <http://www.oecd.org/coronavirus/policy-responses/biodiversity-and-the-economic-response-to-covid-19-ensuring-a-green-and-resilient-recovery-d98b5a09/>
- ⁷⁰ IPBES Workshop on Biodiversity and Pandemics Executive Summary https://ipbes.net/sites/default/files/2020-11/201104_IPBES_Workshop_on_Diversity_and_Pandemics_Executive_Summary_Digital_Version.pdf (page 5)
- ⁷¹ Outcomes Delivery Plan <https://www.executiveoffice-ni.gov.uk/sites/default/files/publications/execoffice/outcomes-delivery-plan-2018-19.pdf> page 15
- ⁷² <https://ieep.eu/uploads/articles/attachments/2bfb2051-b305-4338-9770-ae8071320b1a/Mental%20health%20and%20the%20environment.pdf?v=63775265428> (page 1)
- ⁷³ Outdoor Recreation: People, nature and Health March 2021 (pages 8 and 9) <http://www.outdoorrecreationni.com/wp-content/uploads/2021/03/People-Nature-and-Health-NI-March-2021.pdf>
- ⁷⁴ <http://www.hscboard.hscni.net/our-work/social-care-and-children/youth-wellbeing-prevalence-survey-2020/>
- ⁷⁵ An estimate of the economic and health value and cost effectiveness of the expanded WHI scheme 2009 Natural England Technical Information Note TIN055 <http://publications.naturalengland.org.uk/publication/35009?category=127020>
- ⁷⁶ Natural Childhood, Stephen Moss for The National Trust http://www.lotc.org.uk/wp-content/uploads/2012/04/National-Trust-natural_childhood.pdf
- ⁷⁷ Natural Childhood by Stephen Moss referring to Gaster, S. (1991) 'Urban Children's Access to Their Neighbourhoods: Changes Over Three Generations', quoted in Louv, R. (2005) *Last Child in the Woods*, p.123.
- ⁷⁸ Hillman, M., Adams, J., and Whitelegg, J. *One False Move: A Study of Children's Independent Mobility*. London: Policy Studies Institute, 1990. <http://john-adams.co.uk/wp-content/uploads/2007/11/one%20false%20move.pdf>
- ⁷⁹ <https://www.infrastructure-ni.gov.uk/system/files/publications/infrastructure/tsni-headline-report-2017-2019.pdf> (page 9)
- ⁸⁰ <https://www.reuters.com/article/us-mental-health-green-idUSTRE6401Y620100502> and <https://www.nursingtimes.net/roles/mental-health-nurses/green-exercise-and-mental-health-09-05-2010/>
- ⁸¹ MIND (2007). *Ecotherapy: the green agenda for mental health*.



www.mind.org.uk/assets/0000/2139/ecotherapy_executivesummary.pdf or <https://www.bl.uk/collection-items/ecotherapy-the-green-agenda-for-mental-health#>

⁸² <http://data.niassembly.gov.uk/HansardXml/plenary-23-06-2020.pdf>

⁸³ <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=659&ArticleID=6902&l=en>

⁸⁴ House of Commons Environmental Audit Committee A Green Economy Twelfth report of session 2010-12 Volume 1 HC1025 <https://www.parliament.uk/documents/TSO-PDF/committee-reports/cmenvaud.1025.pdf>

⁸⁵ The Global Commission on the Economy and the Environment Unlocking the inclusive growth story of the 21st Century: accelerating climate action in urgent times August 2018 https://newclimateconomy.report/2018/wp-content/uploads/sites/6/2018/09/NCE_2018_FULL-REPORT.pdf

⁸⁶ World Bank Enabling Institutional Investment in Climate Smart Infrastructure <http://documents1.worldbank.org/curated/en/591461596539796229/pdf/Enabling-Institutional-Investment-in-Climate-Smart-Infrastructure.pdf>

⁸⁷ Issues in estimating the employment generated by energy sector activities Robert Bacon and Masami Kojima The World Bank Sustainable Energy Department June 2011 (page 38) <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.474.4306&rep=rep1&type=pdf>

⁸⁸ Achieving Net-Zero the government decisions needed to deliver a green recovery <https://www.cbi.org.uk/media/5579/cbi-green-recovery-roadmap.pdf>

⁸⁹ Climate Change Committee Reducing UK emissions: 2020 Progress Report to Parliament <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/>

⁹⁰ <https://www.sciencedirect.com/science/article/pii/S0960982208007513>

⁹¹ <https://www.ippr.org/research/publications/transforming-the-economy-after-covid19>

⁹² Ibid page 24

⁹³ <https://www.infrastructure-ni.gov.uk/system/files/publications/infrastructure/tsni-headline-report-2017-2019.pdf>

⁹⁴ National Audit Office Investigation into devolved funding <https://www.nao.org.uk/wp-content/uploads/2019/02/Investigation-into-devolved-funding.pdf>

⁹⁵ <https://www.cyclinguk.org/campaigning/views-and-briefings/cycling-and-economy>

⁹⁶ UK Department for Transport Road Investment Strategy: Economic analysis of the investment plan https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/411417/ris-economic-analysis.pdf

⁹⁷ <https://www.gov.scot/publications/protecting-scotland-renewing-scotland-governments-programme-scotland-2020-2021/pages/5/>

⁹⁸ http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf

⁹⁹ [UUEPC-NI-Draft-Budget-Consultation-Response-February-2021.pdf](#) (p15)

¹⁰⁰ [UUEPC-NI-Draft-Budget-Consultation-Response-February-2021.pdf](#) (p15)

¹⁰¹ Ibid p15

