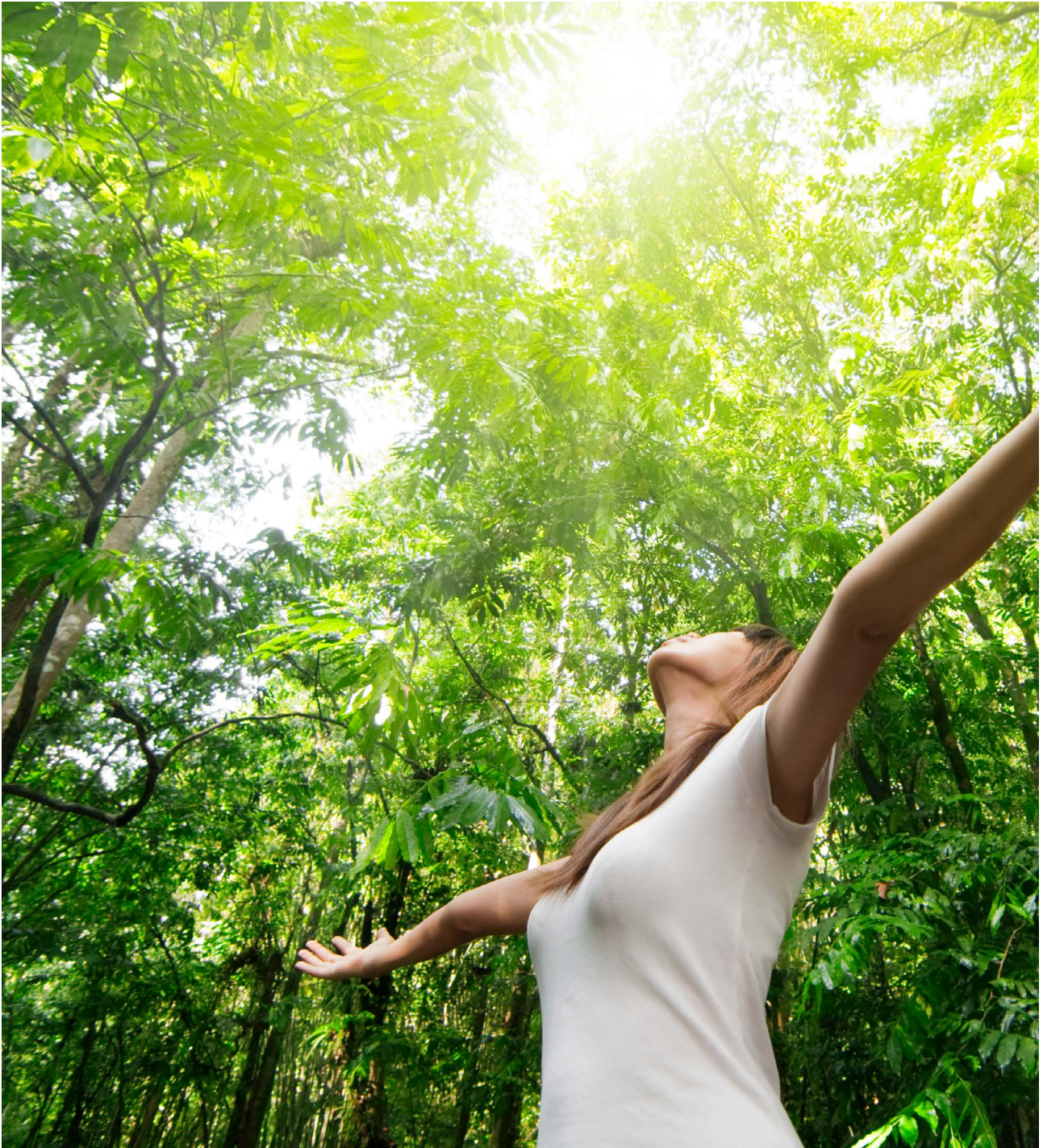


DECOUPLING ADVISORY GROUP



Building Back Better: Principles for sustainable resource use in a wellbeing economy

A report from the Decoupling Advisory Group to Zero Waste Scotland
July 2020

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Foreword from Zero Waste Scotland

It is four years since the Scottish Government published a clear, bold vision for a circular economy in Scotland, entitled Making Things Last¹.

The landmark strategy set out the vital environmental gains that a national circular economic approach would bring in helping to end the climate crisis by reducing our unsustainable consumption of our limited resources. Crucially, it also highlighted the additional financial and social benefits of a circular economy in improved productivity and resilience, enabling sustainable businesses to flourish and providing equitable access to basic goods for everyone.

Valuable progress has been made. However, about four fifths of Scotland's carbon footprint is caused by the production, consumption and, too often, waste of goods, services and materials. This remains the single greatest cause of the climate crisis. It is a significant problem which we need to solve in order to meet the Scottish Government's aim of ending our contribution to climate change by 2045.

After Covid-19 there has arguably never been a greater call for a strategy which simultaneously meets both our immediate, heightened economic needs and our ongoing environmental and social needs as we work together to overcome the current global health crisis and the lasting global climate crisis.

There has also arguably never been such a level of political will to do that, with First Minister Nicola Sturgeon declaring at the start of 2020 that wellbeing was as fundamental to the Scottish economy as GDP.

Zero Waste Scotland established the Decoupling Advisory Group at the same time to gather expert independent advice on the challenges and opportunities for Scotland to find ways to use resources sustainably within a wellbeing economy.

In response to the Covid-19 crisis, the Decoupling Advisory Group produced the following report on how to Build Back Better through sustainable resource use. The main finding from the report is that Scotland needs to look beyond green growth as the primary solution to the Green Recovery and the new wellbeing economy we need for people and planet to thrive.

Remaining within the limits of the Earth's resources is essential to delivering this wellbeing. We need a stable and healthy environment to sustain a stable and healthy economy. The Decoupling Advisory Group's report concluded that this can only be achieved by reducing Scotland's consumption of goods and materials absolutely, rapidly, permanently and fairly.

The report also makes clear that the circular economy will be key to enabling us to meet our inextricably linked environmental, economic and social ambitions within the new wellbeing economy which is now central to the Scottish Government's emerging Green Recovery.

A circular economy will make Scotland more resilient to future crises including pandemics, global recessions and supply chain volatility. It will help to address social injustices exacerbated by Covid-19 by creating more local, sustainable jobs, providing more affordable access to essential goods and services and reducing Scotland's contribution to global environmental crises. It will also provide valuable opportunities to grow domestic sectors which support wellbeing including clean energy, the bioeconomy, education and care.

The Decoupling Advisory Group's report provides three clear policy principles and makes recommendations for a range of immediate actions to turn those principles into reality within Scotland's Green Recovery strategy. The group believes that doing this across the Scottish Government and public sector agencies will ensure that Scotland truly Builds Back Better to create a wellbeing economy by Making Things Last.

1. [Making Things Last](#)

Executive Summary

For the first time in history, the amount of virgin materials entering the global economy annually has exceeded 100 billion tonnes². The extraction and processing of materials is responsible for about half the world's carbon emissions and 90% of biodiversity loss³. Such high levels of resource consumption are causing, and will continue to cause, irreparable damage to the Earth's ecosystems, on which society and the global economy are wholly dependent. The Covid-19 crisis is being seen by environmentalists as a direct consequence of humanity's broken relationship with nature⁴. As the birthplace of the industrial revolution, Scotland's legacy has also contributed to the environmental problems brought about by overconsumption and the nation must therefore take necessary action to solve them.

A Green Recovery Plan for Scotland offers an opportunity to address the social injustice exacerbated by the Covid-19 crisis⁵ and the wider, long-term ecological injustice. Green growth, or continued economic growth with reducing environmental impact, is increasingly being offered as an approach to 'Build Back Better', by addressing social inequalities whilst reducing Scotland's ecological footprint.

This report, however, highlights that green growth does not guarantee a 'fair' recovery, nor has it shown evidence of reducing resource use fast enough to prevent climate and ecological breakdown. Furthermore, the global economic response to Covid-19 is set to exacerbate social and environmental injustices. Across 16 major economies, economic stimulus packages announced so far will invest USD 2.2 trillion (£1.74 trillion) directly into sectors that have a large and lasting negative impact on nature⁶.

Shifting to a wellbeing economy provides an effective alternative to green growth and is already gaining traction in Scotland as an approach. A wellbeing economy is one which ensures 'an equitable distribution of wealth, health and wellbeing, while protecting the planet's resources for future generations and other species'⁷. **Achieving a wellbeing economy will require an absolute, permanent and just reduction in Scotland's resource use at a rate fast enough to ensure it remains within critical local and global ecological limits.**

This paper asks how this could be feasibly done. The Decoupling Advisory Group presents to Zero Waste Scotland a set of Green Recovery policy principles for resource use within a wellbeing economy. Immediate actions for a Green Recovery Strategy based on these principles are also outlined. The Decoupling Advisory Group believes that adopting this approach across the Scottish Government and public sector agencies will enable Scotland to truly Build Back Better and create a wellbeing economy by Making Things Last.

2. [The Circularity Gap Report 2020](#). 3. [Global Resources Outlook](#). 4. [WWF Report on Covid-19](#). 5. [Building Back Better - World Economic Forum](#). 6. [Green Stimulus Packages Overview](#). 7. [Wellbeing Economy Alliance](#).

Summary of Recommendations

- **Recognise that green growth is not sufficient to Build Back Better:** Green growth has not yet been achieved at a scale or pace necessary to address current crises and is unlikely to be achieved in the future. Importantly, green growth does not address systemic social injustice.
- **Operationalise wellbeing:** Prioritising and operationalising wellbeing across the Scottish policy landscape will ensure that Scotland can Build Back Better by reducing its ecological footprint within the carrying capacity of the Earth in a fair way for both people and planet. This can be achieved through:
 - Designing governance and institutions to allow for experimentation, engagement and disruptive innovation;
 - Strengthening equality and redistribution through suitable taxation policies, basic income, universal basic services and job guarantees, delivering this through more effective community and social capital building; and
 - Supporting innovative business models that encourage sharing and giving economies, based on cooperation, communities and localised economies instead of competition.
- **Absolutely, rapidly, permanently and fairly reducing Scotland's consumption of natural resources.**

Reduce Absolutely: At the very minimum, Scotland's consumption of natural resources should be reduced absolutely in line with 'One Planet Prosperity'. For example:

- Support wide public debate about overconsumption. Enable citizens to bring forward the necessary transformation;
- Embed a circular economy across all government departments and public sector organisations; and
- Ban ecologically destructive products or industrial practices

Reduce Rapidly: Scotland's natural resource use must be reduced fast enough to ensure we do not cross planetary boundaries. For example:

- Invest in Scottish companies to reskill their work force and to develop circular and low carbon business practices and opportunities; and
- Invest in Scotland's natural capital to mitigate the impacts of historical and current negative environmental impacts and boost Scotland's bioeconomy.

Reduce Permanently: The reduction of natural resource use must be lasting, not temporary. For example:

- Carefully consider the rebound effect within the policy making process; and
- Embed a circular economy across the Scottish national curriculum.

Reduce Fairly: Consider the risk of any policy in shifting the social and environmental burdens of our consumption to other countries, especially in the global south. For example:

- Reduce consumption-based emissions, which make up 50% of Scotland's carbon footprint and are not included in the net zero target. This should be in the form of new or additional targets and a greater role for those consumption-based measures in government decision-making.

1 We need to look beyond 'green growth'

Green growth asserts 'that continued economic expansion is compatible with our planet's ecology, as technological change and substitution will allow us to decouple GDP growth from resource use and carbon emissions'⁸. Proponents for green growth therefore argue it is possible to enjoy both increasing annual economic growth (as measured by GDP) and environmental sustainability. Based on this assertion, there have been many calls for a Covid-19 Green Recovery which is underpinned by green growth.

The Decoupling Advisory Group would like to raise caution over the unwarranted optimism that Scotland can simply 'green grow' its way out of the multiple crises it faces. This section argues that green growth not only ignores the volumes of evidence critiquing GDP as a useful measure of the economy, let alone a country's success, it is an agenda that stands in the face of mounting evidence of the practical impossibility of decoupling to the extent necessary⁹.

This section outlines three key limitations to green growth in terms of allowing Scotland to achieve a Green Recovery and Build Back Better.

1.1 Limitation 1: Green growth has not been achieved at a rate necessary to prevent climate and ecological breakdown

A recent in-depth review on green growth¹⁰ by the European Environmental Bureau (a representation of 160 environmental organisations across Europe) concluded that **'there [is] no empirical evidence supporting the existence of a decoupling of economic growth from environmental pressures on anywhere near the scale needed to remain within the planetary boundaries'**¹¹.

The report suggested that green growth's lack of ability to achieve sufficient decoupling is evident for a range of different types of natural resources, including materials, water, land as well as the environmental impacts of greenhouse gases¹², biodiversity loss¹³ and water pollutants. When decoupling was observed to occur, it was only temporary, concerning only certain resources or forms of impact, for specific locations. In essence it was nowhere near being of a sufficient rate or scale to make a global difference.

More recently, Eurostat published the annual review of progress towards the UN Sustainable Development Goals (SDGs) and the message was clear. The European Union has failed to make the necessary progress on climate and energy (SDG 7) targets as well as the shift to a circular economy (SDG 12), which in turn increases pressures on ecosystems and biodiversity (SDG 15)¹⁴. In line with this, the Circularity Gap Report 2019¹⁵ found only 9% of the ~100 billion tonnes of minerals, fossil fuels, metals and biomass that enter the economy are reused annually and this number is, worryingly, reducing over time.

The Dasgupta independent review on the Economics of Biodiversity for the UK Government aligns with these findings. It suggested that to address ecological breakdown, we need to 'revisit our measures of success [and] look beyond GDP in order to maximise our wealth and wellbeing, and that of future generations'¹⁶.

8. [Hickel and Kallis \(2019\)](#). 9. [Nature Climate Change, Financial Times, New Political Economy, OECD, European Environmental Bureau, Nature Communications, Globalizations](#). 10. [Decoupling Debunked Report by European Environmental Bureau](#). 11. [Planetary Boundaries](#). 12. Overall, the reviewed literature converges in saying that there has never been a global pattern of absolute decoupling of CO2 from economic growth. Out of 588 observations, Li et al. (2007) do not find a single case of absolute CO2 decoupling over the 1995-2005 period. (Source: [European Environmental Bureau](#)). 13. The latest report to date by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019) has shown that almost all drivers of biodiversity loss keep increasing, that the dangerous decline of biodiversity is unprecedented, that the species extinction rates are accelerating and that the current global response is insufficient. (Source: [European Environmental Bureau](#)). 14. [EU Progress on UN Sustainable Development Goals](#). 15. [The Circularity Gap Report](#). 16. [The Dasgupta Review on the Economics of Biodiversity](#).

1.2 Limitation 2: Achieving green growth in the future requires overcoming several major challenges

Breaking the link between economic activity and environmental impact is incredibly difficult. Through examining relevant studies on historical trends and model-based projections, Hickel and Kallis (2019)¹⁷ found no empirical evidence that a sufficient level¹⁸ of decoupling from resource use can be achieved on a global scale against a background of continued economic growth.

Scotland faces a daunting set of challenges that would all need to be addressed and overcome if sufficient decoupling¹⁹ is to be achieved under a growth scenario. The Decoupling Advisory Group has summarised a shortlist of these challenges which need to be considered within a Green Recovery Plan²⁰:

Challenge 1: The Rebound effect

Rebound simply means that actual efficiency savings from improved efficiency in the use of natural resources are less than expected savings – sometimes much less. Examples of rebound include using a fuel-efficient car more often or buying plane tickets for remote holidays with the money saved from fuel economies. The rebound effect for household energy efficiency improvements in Scotland, for example, has been estimated to be between 27-53%²¹. This implies that 27-53% of the expected savings in energy use are eroded.

The backfire effect is when efficiency improvements actually lead to increase demand (in absolute terms). The difference between expected and actual emissions savings needs to be carefully considered in Scotland's Green Recovery Plan, both in terms of emissions reduction forecasts and environmental policy design.

Challenge 2: Rising energy expenditures

When extracting a resource, cheaper options are generally used first. The extraction of the remaining resources which are deeper underground or harder to reach then becoming more energy-intensive to extract. Scotland needs to completely decarbonise its energy and transport sectors, amongst others, to achieve net zero. This requires importing tens of thousands of tonnes of rare earth metals²², which green technologies are dependent on – such as wind turbines, solar panels and electric and hydrogen powered vehicles.

As Scotland's demand for these materials increases, the resource becomes more difficult to mine and therefore requires more energy, in the form of carbon emissions, to be extracted and processed. **Scotland can mitigate this challenge through embracing a circular economy and capturing these valuable materials at their end-of-life and reusing them to supply future renewable technology demand.**

Challenge 3: Problem shifting

Reliance on clean technologies to solve climate change results in new environmental impacts overseas. As outlined above, in addition to rising energy expenditures, the development and provision of renewable technologies in Scotland requires the need to mine rare earth metals in emerging economies with less stringent environmental regulations. As such, Scotland risks achieving net zero by offshoring its environmental impacts elsewhere.

17. [Hickel and Kallis \(2019\)](#). 18. Reducing the environmental impacts of economic activity fast enough to prevent passing beyond key planetary boundaries (such as climate change and biodiversity loss). 19. Sufficient decoupling would reduce the environmental impacts of economic activity fast enough to prevent passing beyond key planetary boundaries (such as climate change and biodiversity loss) ([source](#)). 20. Based on challenges outlined in [Decoupling Debunked Report by European Environmental Bureau](#). 21. For the case of Scotland - the economy-wide rebound from an increase in household energy efficiency and the estimated rebound is between 27 and 53% (see table 1) depending on the ability of households to substitute the consumption of energy for non-energy goods ([Figus et al. 2018](#)). 22. [Wind turbine market and opportunities for recovery of neodymium magnets in Scotland](#).

Box 1 Problem Shifting Example: Offshoring Greenhouse Gases in Scotland

The Scottish Government has committed to ending Scotland's contribution to climate change, i.e. its total carbon footprint, within a generation. However, the net zero target only addresses half of Scotland's total carbon footprint because it requires us to reduce only our territorial (domestic) emissions, i.e. the emissions created within our borders. It doesn't address the other half of the emissions which we are responsible for, which are created overseas and embedded in the goods and services which we import - known as our consumption, or offshored, emissions.

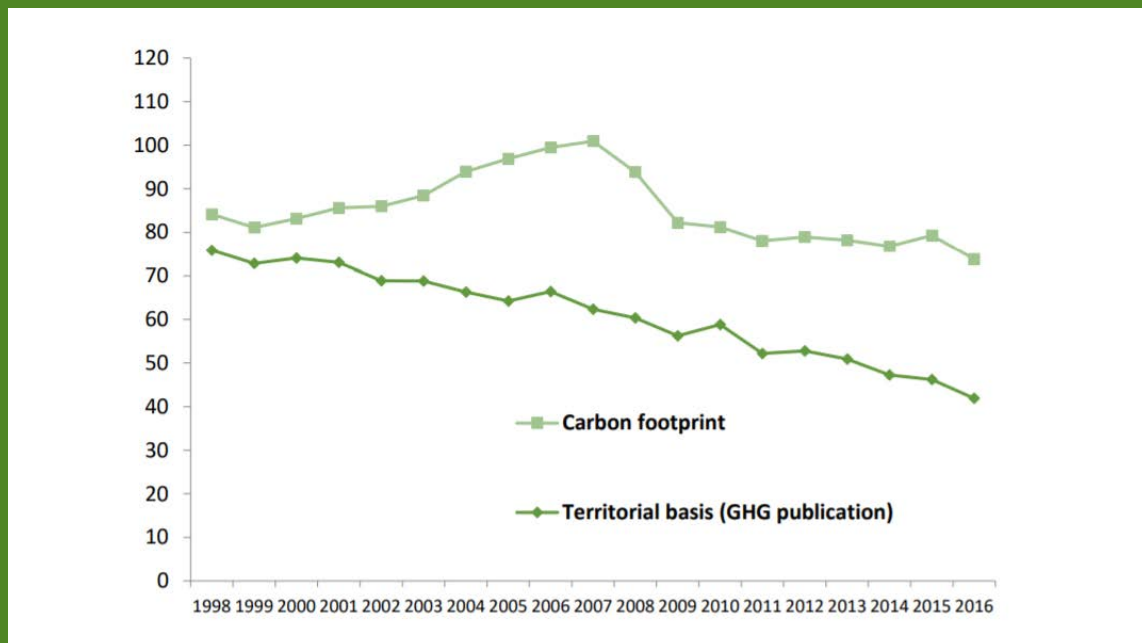


Figure 1: Scotland's Carbon Footprint is much higher than its territorial emissions (Source: Scottish Government, 2020)

If Scotland fails to reduce its consumption emissions whilst reducing its territorial emissions, we will end up reaching the net zero target, yet only marginally reducing our total emissions and therefore falling into the trap of problem shifting as outlined above (See Fig. 1).

Thankfully, Scotland is one of only a handful of countries in the world to publicly report on its consumption emissions as a requirement of the Climate Change (Scotland) Act 2009. In recognition of this, the Advisory Group on Economic Recovery recommended the Scottish Government have an 'explicit focus on consumption-based emissions (such as carbon footprint) in the form of new or additional targets, or a greater role for those consumption-based measures in government decision-making'.

Challenge 4: The underestimated impact of the service economy.

In transitioning from an extractive economy, such as mining and oil and gas, to a service-based economy, such as digital services, tourism and recreation, there is hope that Scotland can more easily decouple growth from environmental pressures.

However, services also have a significant ecological footprint for three main reasons. Firstly, services require people to travel, either from a service provider to customer such as mail delivery, or the opposite, tourists travelling to Scotland, which is made possible by material infrastructure, vehicles, and energy use. Secondly, they require a physical space within which to operate, such as, train stations, airports, hospitals and offices, whose construction, operation, and maintenance requires materials and energy. Finally, services, particularly online types, are heavily dependent on material-intensive communications technologies and infrastructure, such as computers, credit card readers, screens and displays and data servers. For example, a recent article in Nature Communications²³ suggested that **'digitisation has actually increased resource consumption and inequality. Further, it is likely to sustain resource-intensive and greenhouse-gas growth activities in the future'**.

Challenge 5: Technocentric solutions distract from necessary system change.

Replacing one technology with another does not necessarily result in demand reduction. While technological improvements have helped to reduce emissions and other environmental impacts, the worldwide growth in affluence has consistently outpaced these gains, driving all the impacts back up²⁴.

Overreliance on technological fixes can create a false sense of progress as well as actively prevent the more radical system change required. For example, Scotland's net zero target is highly dependent on the rapid deployment of carbon dioxide removal (CDR) technologies. However, there are formidable challenges associated with the use of these technologies. Foremost is that CDR - such as Biomass Energy with Carbon Capture & Storage (BECCS) - has yet to be deployed at scale and many assumptions are yet to be validated²⁵. Overreliance on such technology is a major risk as it means that carbon reduction policies will be designed on the assumption that CDR is successful.

This is not to argue that CDR cannot play a role in achieving net zero. **Rather, focus should be on creating long lasting system change which results in immediate and long-lasting energy demand and GHG emissions reduction.** Examples include (i) dedicating the majority of urban road space to active travel; (ii) promoting working locally through community working hubs; and (iii) introducing steep carbon taxes on high emitting activities such as aviation.

Each of these five challenges taken individually casts doubt on the possibility for achieving the promises of green growth. Considered together, the hypothesis that green growth will allow economic growth to continue without a rise in environmental pressures appears highly compromised, if not unrealistic.

23. [Scientists Warning on Affluence](#). 24. [Scientists Warning on Affluence](#). 25. [Types of Injustices that require consideration](#) – Chatham House.

1.3 Limitation 3: Green growth does not necessarily guarantee collective wellbeing

Green growth is primarily a political approach to fuelling the growth of the economy whilst preventing it from tipping over an ecological cliff. **Yet key questions around social justice are lacking in the green growth debate, leading to many 'green' solutions disproportionately impacting low income households²⁶.**

In the UK, it was found that the cost of low carbon policies, such as renewable energy subsidies, household retrofit and installation of smart meters, increased household energy bills by 13%. The highest income households spend less than 1.5% of their income on heating and powering their homes, whereas the lowest income households spend 10%. Therefore, any increase in price hits the poor disproportionately²⁷.

A particular injustice aspect that green growth does not address is the disproportionate impact wealthy people have on the environment compared to low income earners. To a large extent, the affluent lifestyles of the world's rich determine and drive global environmental and social impact. To put this into context - the world's top 10% income earners are responsible for at least 25% and up to 43% of our environmental impact²⁸. Most people living in developed countries, such as Scotland, would fit into this category. Even many poorer people in wealthy countries have a disproportionately large and unsustainable resource footprint compared to the global average.

Without addressing injustices which are deeply entrenched within the prevailing growth-based paradigm, green growth risks making the economy marginally greener but not necessarily fairer.

Box 2: Questions of justice for green growth

Outlined below are three types of injustice which require greater consideration within the green growth agenda. Without considering these from the outset, green growth will not lead to a 'fairer' society:

Distributive injustice How are the costs and benefits of green growth distributed, and how will the burdens of transition be distributed? In which sectors and countries are jobs gained, and where are jobs lost?

Procedural injustice Who has influence, who decides, and who is involved? Is the decision-making process managed or inclusive, and do all stakeholders have a seat at the table?

Rights injustice How are marginalised views and narratives, knowledge and values recognised and integrated into dominant narratives? How can competing development interests be resolved through participatory processes?

Considering the three limitations outlined above, green growth appears to be an insufficient objective to Build Back Better. The goal of the economy needs to be adapted from one which is based on the premise of perpetual 'green' economic growth to one which pursues collective wellbeing for all.

The next chapter explores how collective wellbeing could serve as a blueprint to Building Back Better and asks how resources can be used appropriately within a wellbeing economy.

26. Feasible Alternatives to Green Growth – Nature Sustainability. 27. Owen and Barrett (2020). 28. Scientists Warning on Affluence.

2 Building Back Better: Prioritising wellbeing

Green growth is unlikely to ensure Scotland can Build Back Better by both addressing social injustices whilst also reducing Scotland's ecological footprint. **Shifting to a wellbeing economy provides an effective alternative to green growth and is already gaining traction in Scotland as an approach.**

A wellbeing economy is one which ensures 'an equitable distribution of wealth, health and wellbeing, while protecting the planet's resources for future generations and other species'²⁹. Achieving wellbeing would mean designing the economy in a way that delivers human and ecological wellbeing first time around, rather than having to fix these problems further down the line when they have become even harder and more costly to solve³⁰.

Box 3: What is a wellbeing economy?

- Wellbeing is the outcome of a convergence of factors, including good human mental and physical health, greater equity and fairness, good social relationships and a flourishing natural environment.
- A wellbeing economy has the fundamental goal of achieving sustainable wellbeing with dignity and fairness for humans and the rest of nature. This is in stark contrast to a vision of development solely based on growth of GDP.

Moving towards a wellbeing economy is a key objective for the Scottish Government. The Scottish Government's economic strategy is now underpinned by a National Performance Framework (NPF) which is designed to measure progress against a broad spectrum of social, environmental and economic outcomes, rather than just one measure such as GDP. Additionally, the Scottish Government has established, with the New Zealand, Welsh and Icelandic governments, the Wellbeing Economy Governments (WEGo) partnership to share wellbeing expertise and transferable policy practices. More recently, the Scottish Economic Recovery Advisory Group recommended that wellbeing must underpin the Green Recovery³¹.

Recognition of the importance of wellbeing is also reflected at the UK level and globally. In the UK, a cross-party parliamentary group on Limits to Growth was established in 2016, and a parliamentary debate was held in 2019 to challenge the pursuit of economic growth³². Internationally, institutes such as the OECD³³ and the European Commission have launched "Beyond GDP" agendas³⁴. Further afield, New Zealand has introduced a £1bn wellbeing budget³⁵.

Although wellbeing during the Covid-19 lockdown may have improved for the few, the crisis looks set to exacerbate existing structural injustice, in terms of employment, access to essential services and quality of life, for the many. Addressing these injustices in an economic recovery package should, of course, sit at the top the agenda. This is the case in Scotland, where the Advisory Group on Economic Recovery has recognised that the recovery should "increase wellbeing, fairness and inclusivity, and make the most of opportunities towards a greener, net-zero society"³⁶.

Yet, whilst addressing such inequalities and stabilising the economy, the Scottish Government has the unenviable task of significantly reducing its ecological footprint, such as achieving net zero emissions by 2045. Scotland is not

29. Wellbeing Economy Alliance. 30. Wellbeing Economy Alliance. 31. Towards a robust, resilient wellbeing economy for Scotland. 32. Limits to Growth. 33. Ramos and Hynes (2019). 34. European Commission Beyond GDP. 35. New Zealand Wellbeing Budget. 36. Scottish Advisory Group on Economic Recovery.

alone in this challenge. **A recent study in Nature Sustainability suggests that no country in the world currently has managed to meet the basic needs of its citizens at a globally sustainable level of resource use³⁷.**

One way to conceptualise this challenge is the Doughnut Economy model which was developed by the economist Kate Raworth and is being adopted by nations and cities around the world as a framework for collective action³⁸. The 'doughnut' represents a 'safe space' for society to flourish by remaining within the planetary boundaries whilst meeting the basic needs for all. The framework was proposed to measure the performance of an economy by the extent to which the needs of people are met without overshooting Earth's ecological ceiling. Developed by the Stockholm Resilience Centre, the planetary boundaries are a list of nine environmental limits within which humanity can safely operate³⁹.

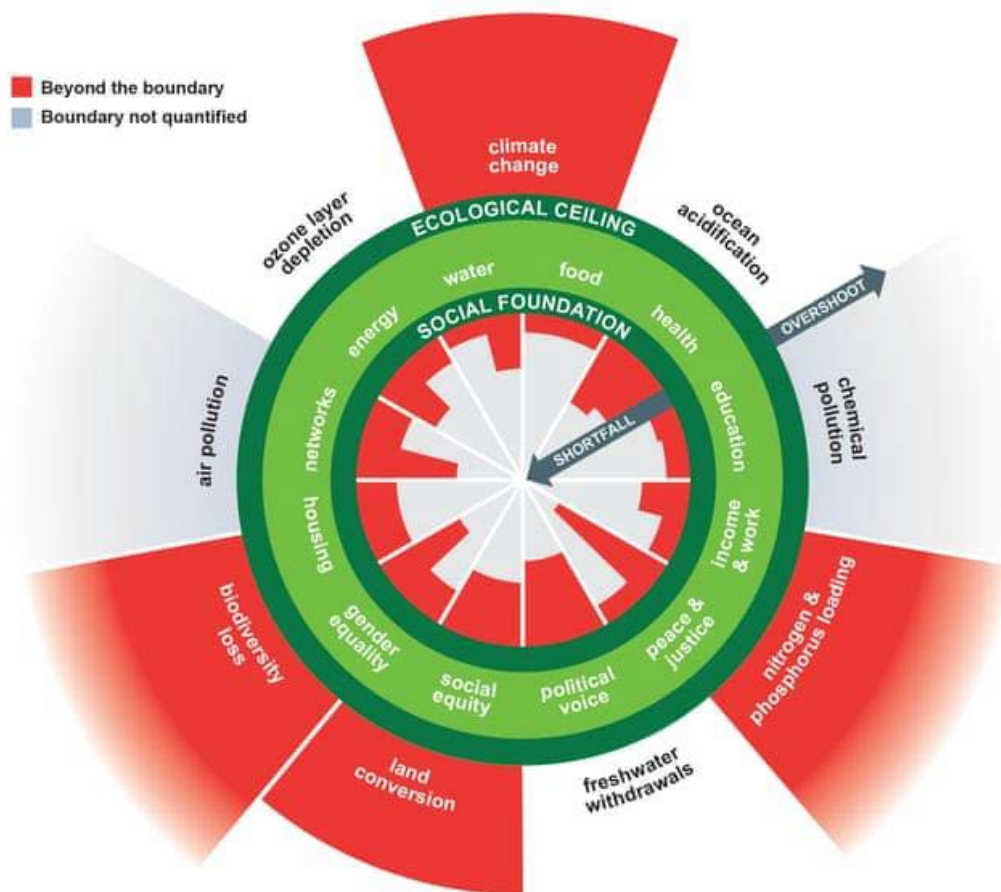


Figure 2: An example of the Doughnut framework (Source: Kate Raworth)

The challenge, not just for the Scottish Government, but for all governments, is therefore to remain within the green band, or safe space, of the doughnut by: (i) significantly reducing our consumption of natural resources and expanding the ceiling of the doughnut by investing in nature-based solutions (natural capital); whilst (ii) ensuring inequalities and injustices amplified by Covid-19 are addressed through a wellbeing economy.

The next chapter addresses this challenge by presenting a set of key principles for appropriate resource use within a wellbeing economy.

37. [A good life for all within planetary boundaries](#). 38. [Amsterdam Doughnut Economy Framework](#). 39. The nine planetary boundaries include: climate change, ocean acidification, stratospheric ozone depletion, disruption of the nitrogen and phosphorus cycles, global freshwater use, land use changes, biodiversity loss, aerosol loading in the atmosphere, and chemical pollution.

3 Principles for resource use in a wellbeing economy

Living within the planetary boundaries is a necessary requirement to achieve collective wellbeing.

To achieve this, the Decoupling Advisory Group has developed a set of three policy principles. These principles should be applied to the development of short-term policies being proposed in a Covid-19 Green Recovery strategy as well as the longer-term transition towards a wellbeing economy.

1. Recognise that green growth is not sufficient to Build Back Better: Green growth has not yet been achieved at a scale or pace necessary to address current crises. It faces major challenges going forward and does not, by itself, guarantee collective wellbeing.

2. Adopt a wellbeing approach: Prioritising wellbeing is fundamental to Scotland reducing its environmental impacts.

3. Absolutely, rapidly, permanently and fairly reduce Scotland's consumption of natural resources.

Principle 1: Recognise green growth is not sufficient to Build Back Better

Green growth has not yet been achieved at a scale or pace necessary to address current crises. It faces major challenges going forward. These include the likes of the rebound effect which erodes and, in some cases, negates efficiency gains and offshoring our environmental impacts abroad. Moreover, it does not address systemic social injustice within society such as wealth inequality and unequal access to essential services. As such, it cannot be relied upon to deliver wellbeing.

Principle 2: Operationalise a wellbeing approach

As outlined in Chapter 2, prioritising wellbeing will ensure that Scotland can reduce its ecological footprint within the carrying capacity of the planet and in a fair and just way. Prioritising collective wellbeing requires rethinking and redesigning the way society functions. It will require changes in the way we work, travel, undertake business, grow and procure food, produce energy and socialise. Budgets must deploy resources and design incentives to prevent harm rather than allowing damage to be done in the first place.

Principle 3: Rapidly, permanently and absolutely reduce Scotland's consumption of natural resources

Reduce absolutely

The Scottish Environment Protection Agency's (SEPA) One Planet Prosperity campaign highlights that if everyone in the world lived and consumed as we do in Scotland, we would require the resources of three planets⁴⁰. Scotland's total consumption of natural resources should at least be reduced in line with 'One Planet Prosperity', recognising that the extent of wellbeing does not depend on the quantity of resources being consumed⁴¹. This is also recognised in the Environment Strategy for Scotland which proposes to ensure that 'Scotland lives within the sustainable limits of our single, shared planet; and, where we can, take actions which help to make the impact of our consumption and production on other countries sustainable'⁴².

It is therefore necessary for Scotland to reduce its resource use in absolute terms, in other words shrinking the size of the pie. This is not to say that some sectors of the economy should not be allowed to grow and need investment - the so-called foundational economy - including clean energy, education and care. However, other sectors need to shrink radically given their fundamental lack of sustainability or their role in driving excessive consumption, for example oil and gas, mining, and aviation.

40. Footprint Network. 41. A Good Life for All within Planetary Boundaries. 42. Environment Strategy for Scotland.

Reduce rapidly

We are fast approaching Earth's fundamental ecological tipping points, which risk resulting in "abrupt and irreversible climate change"⁴³. Natural resource consumption is one of the primary drivers for this. This means that consumption of such resources must be reduced at a sufficient rate to ensure we do not reach these tipping points. Reducing consumption rapidly must be prioritised over the pursuit of growth. There is no economy without a stable and healthy environment. Without knowing the volume of resources which Scotland is using, there is no way of knowing if the nation is consuming too much. **It is therefore necessary to measure and report on the flow of materials through the economy, thereby offering the ability to monitor progress.** Once the scale of resource use is known, it is possible to determine what a sufficient rate of consumption reduction is for Scotland.

Reduce permanently

A recent report by the European Environmental Bureau⁴⁴ suggests that on the occasions where economic activity was decoupled from environmental impact, most cases were only successful over a short period of time. **If we are to achieve collective wellbeing over the longer term then our policies need to demonstrate that the impact of decoupling is lasting, not fleeting.**

Reduce fairly

The shift in nations like Scotland from a manufacturing economy to a modern service economy not only means that we import most of the products we consume, and often waste. It also transfers the burden of our mass consumption by exporting production, and therefore half our carbon emissions, to countries that produce our goods for us. Offshoring our production can generate other environmental and social impacts, including biodiversity loss, water shortages and slave labour. These problems can be worse in poorer countries with weaker environmental laws and less capacity to mitigate these environmental impacts. Reducing fairly therefore means a just transition focused on consumption and not simply production.

We consume far more resources than the people living in these countries, and by exporting our production to them we can cause far greater environmental and social problems for them than their own lifestyles create. Failing to address this imbalance and these devastating consequences risks flouting our commitment to the UN SDG's, aimed at eradicating extreme poverty and fighting inequality and injustice to 'leave no one behind'. It is therefore necessary for policy makers to consider the risk of any policy shifting the environmental burdens of our consumption to other countries in order to achieve wellbeing domestically.

A key point to stress is that absolute, permanent and rapid resource consumption reduction needs to be achieved in a way which delivers wellbeing. This means delivering a suite of local services to communities, particularly deprived communities, to help them reduce their consumption whilst at the same time boosting health and wellbeing. Examples include providing widespread affordable green public transport, increased access to nature, volunteering opportunities, local food growing space, civic space for arts and recreation and four day working weeks. Such services need to be combined with wider fiscal reforms such as redistributive taxes targeting high income consumption activities, such as frequent flying.

43. Climate Tipping points – Nature Journal. 44. Decoupling Debunked Report by European Environmental Bureau

4 Conclusion

Governments around the world face a tightrope walk between meeting the immediate Covid-19 recovery needs of the economy, whilst remaining committed to achieving long term environmental goals. It is evident that Scotland needs to look beyond relying on green growth as the primary solution to Building Back Better and towards delivering wellbeing. Remaining within the planetary boundaries is an essential element to delivering a wellbeing economy. This can only be achieved by permanently, rapidly and absolutely reducing Scotland's consumption of resources in a just and fair way for Scottish citizens and the global community alike.

Glossary

Circular Economy: Looking beyond the current take-make-waste extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits. It is based on three principles: (i) Design out waste and pollution; (ii) Keep products and materials in use; (iii) Regenerate natural systems

Decoupling: Decoupling refers to the ability of an economy to grow or prosper without corresponding increases in energy and resource use (source limits) and environmental pressures (sink limits).

- Relative decoupling: Resource consumption continues to increase but is slower than that of growth of economic activity.
- Absolute decoupling: Resource consumption plateaus or drops over time in absolute terms relative to growth of economic activity
- Sufficient absolute decoupling: Resource consumption drops at a sufficient rate to remain within the planetary boundaries.

Doughnut Economy: The Doughnut is a visual framework conceptualised by Kate Raworth for sustainable development – shaped like a doughnut or lifebelt – combining both planetary boundaries with of social boundaries. The framework was proposed to regard the performance of an economy by the extent to which the needs of people are met without overshooting Earth's ecological ceiling.

Green growth: An approach to making economic growth processes more resource-efficient, cleaner and more resilient without necessarily slowing them.

National Performance Framework: The Scottish Government's National Performance Framework (NPF) provides an overarching view of how Scotland is faring; and is a critical and broadly accepted barometer of success.

Natural Capital: Natural capital is broadly defined as the Scotland's stock of natural assets which include geology, soil, air, water and all living things.

United Nations Sustainable Development Goals: The 17 Sustainable Development Goals (SDGs) goals provide a shared blueprint for peace and prosperity for people and the planet, now and into the future. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

Wellbeing economy: A wellbeing economy has the fundamental goal of achieving sustainable wellbeing with dignity and fairness for humans and the rest of nature.

Annex 1: Recommended Actions

Policy Actions

Operationalise Wellbeing

1. **Design governance and institutions to allow for social experiments, engagement and disruptive innovation:** This could be trialled and organised through the likes of citizen assemblies or juries such as Transition Initiatives or the Catalan Integral Cooperative.
2. **Strengthen equality and redistribution:** Through suitable taxation policies, basic income, shorter working weeks and job guarantees, and deliver this through more effective community and social wealth building.
3. **Sharing Economy:** Support innovative business models that encourage sharing and giving economies, based on cooperation, communities and localised economies instead of competition. Research is needed to create, assess and revise suitable policy instruments.
4. **Support local wellbeing projects:** Capacity building, knowledge transfer and education—including media and advertising—need to be adapted to support local sufficiency projects and citizen initiatives.
5. **Further integrate the National Performance Framework (NPF) into the budget and policy design and review process:** Increased scrutiny from Scottish Parliament as to the alignment of proposed policies with the NPF.
6. **Scottish National Investment Bank:** Appraise investments against their ability to maximise wellbeing.
7. **National Planning Framework 4 and the Climate Change Plan:** Wellbeing criteria should underpin these pieces of legislation.
8. **Introduce a wellbeing performance measure for Green Recovery policies** and downplay measuring the recovery by GDP given the perverse incentives it encompasses.

Reduce Absolutely

1. **Public debate:** Open up a wide public debate on the topic of overconsumption and how it is unsustainable and unethical or unjust.
2. **Support additional consumption research:** identify the main issues (flying, car driving, household sufficiency, etc) and how cultures of sufficiency, care, solidarity and simplicity can be created.
3. **Enable citizens to learn to engage as social actors to bring forward social tipping points:** These social tipping points include, for instance, removing fossil-fuel subsidies and investments, building decentralised energy generation or low-carbon cities.
4. **Embed the circular economy across public sector:** The transition to a circular economy (which makes better use of fewer resources) will be essential to achieving these targets. As such, it should be more widely adopted across all government departments and public sector institutions.
5. **Support circular business practices:** a concerted effort is needed by finance institutions (banks, investment houses, etc.), with support from public sector initiatives (including the Scottish National Investment Bank and Zero Waste Scotland) - to help businesses structurally change their business model and practices around circular economy principles. In particular, it is necessary to support investment in innovative business models (which shorten supply chains and increase local value) and in the labour market (to reskill people).
6. **Stronger regulation:** Ban certain products or ecologically destructive industrial processes that have thrived on a legacy of vested interests, lobbying and state-supported subsidies.
7. **Material Flow Data Collection:** Without knowing the amount of resources which Scotland is consuming, there is no way of knowing if we are consuming too much or to track progress. The Scottish Government should therefore accurately monitor and publicly report on the flow of materials around the Scottish economy. Zero Waste Scotland has compiled Scotland's first Material Flow Account which provides a preliminary approach with which to build on.
8. **Introduce legal targets for consumption reduction:** of critical materials and extractive and high carbon sectors (such as mining and aviation).
9. **Incentivise and catalyse the digital economy:** Better ICT infrastructure can reduce travel needs, localising supply (value) chains can keep income recycled within Scotland).
10. **Shorter working week:** Commission further research into the material and wellbeing impacts associated with a shorter working week (as currently being considered by a number of countries including Finland and New Zealand).

Reduce Rapidly

1. **Invest in Scottish companies:** To reskill their work force and to develop circular business practices and opportunities, using the latest research and innovation available to help them transition.
2. **Determine what is 'sufficient' reduction:** Ongoing research is required to assess what a 'sufficient' reduction in resource consumption is for Scotland.
3. **Secure high-risk materials:** Building on the Scottish Government procurement guidelines on 'Critical Materials and Material Scarcity', it is necessary to further identify high risk materials in terms of future access and supply chain fragility. Once identified, national strategies should be produced in order to mitigate such future risks.
4. **Improve materials data reporting:** Expand the work done by Zero Waste Scotland on Beyond Carbon and Material Flow Accounting.

Reduce Permanently

1. **Consider rebound:** The rebound effect must be carefully considered and accounted for within the policy making process.
2. **Long-term monitoring and evaluation programmes:** These should be undertaken to assess whether permanent reduction was successful.
3. **Embed the circular economy across national curriculum:** To ensure Scotland has a future workforce to take full advantage of the economic and environmental opportunities presented by the circular economy, it must be embedded across the entire educational system – from primary school, high school and university to lifelong learning and skills development.
4. **Invest in Scotland's natural capital:** To help mitigate the impacts of historical and current negative environmental impacts, including greenhouse gas emissions. Natural capital investment will also unlock a range other co-benefits, or ecosystem services, provided by nature.

Reduce Fairly

1. **Green policies must demonstrate how the risk of problem shifting (i.e. offshoring the environmental impacts associated with our consumption) has been considered and mitigated:** This would require introducing a 'Material Footprint Assessment' into the policy making process which would sit alongside the existing processes of Strategic Environmental Assessments, Islands Impact Assessments and Business and Regulatory Impact Assessments.
2. **Reduce consumption-based emissions:** The Scottish Government and Zero Waste Scotland should have an explicit focus on consumption-based emissions (such as carbon footprint). This could be in the form of new or additional targets, or a greater role for those consumption-based measures in government decision-making.
3. **Increase support to rural regions to develop Scotland's bioeconomy:** This would reduce Scotland's requirement to import carbon intensive and environmentally harmful bioresources from overseas.
4. **Introduce a Good Food Nation Bill:** This could put Scotland on the path to sustainable food production and consumption and help reduce its reliance on imported carbon intensive bioresources.
5. **Expand the mandate of the Just Transition Commission:** Go beyond the energy transition to further consider transition to a sustainable material economy.

City and Region Actions

Operationalise Wellbeing

1. **Adopt appropriate goals, metrics and policies to operationalise a wellbeing economy:** For example, the four capitals approach used by the Advisory Group on Economic Recovery or the Doughnut model by economist Kate Raworth.
2. **Rethink and revalue the role of natural capital/nature:** Include the role of natural capital in community and personal health and wellbeing within the city or region.

Reduce Absolutely

1. **Support research to help re-envision and reorganise cities:** To allow for shorter travel distances, closer communities, higher self-sufficiency, increased local place identity and more decentralised production, including that of food.

- 2. Maximising the use of vacant space:** To avoid the need for new construction.
- 3. Energy Efficiency:** Improvements in the energy efficiency of buildings and the widespread roll-out of renewable heat and district heating networks.
- 4. Accelerated improvements to digital communications infrastructure:** to support reduced transport demand, increased home working and the establishment of more local businesses.

Reduce Rapidly

- 1. Act quickly:** Local authorities and city councils must act now to lock in the low carbon behaviour change which has resulted from the Covid-19 lockdown.
- 2. Temporary assignment of vehicle road space:** Install active travel space for citizens and deliveries (walking and cycling) with the view to making these changes permanent.
- 3. Changing use of office space (and commuting):** Exploit new opportunities to repurpose partially used offices/buildings around local community needs.

Reduce Permanently

- 1. Bold action at the city/region level is required to enable permanent behaviour change:**
Actions include (i) converting brownfield land to food production sites such as vertical farming and supporting local distribution business models that can rapidly connect Scottish produce to consumers; (ii) introducing a social housing decarbonisation fund.

Reduce Fairly

- 1. Undertake a detailed analysis of the flows of critical materials within a city or region:** to identify circular economy opportunities and reduce reliance on carbon intensive imported goods. This could be done through a city or regional circular economy scan (as done by Zero Waste Scotland for Glasgow and Tayside).
- 2. Use the Doughnut economy or Four Capitals models as a framework for change:** to assess the key areas where a city or region is offshoring its environmental impacts. The Amsterdam Doughnut is a good example of such an exercise.

DECOUPLING

ADVISORY GROUP

About the Decoupling Advisory Group:

This is a diverse independent panel of experts commissioned by Zero Waste Scotland to provide expert advice on the challenges and opportunities for Scotland in terms of decoupling its economic activity from its environmental impacts. While the paper constitutes the collegial work of the advisory board, the views expressed in the document do not necessarily fully represent the ones of the individual members of the group.

The members of the panel include: **Prof. John Barrett** (University of Leeds), **Prof. John Barry** (Queens University Belfast), **Prof. Iain Black** (University of Stirling), **Kate Chambers** (2050 Climate Group), **Dr Craig Dalzell** (Common Weal), **Dr Gioele Figus** (Fraser of Allander Institute), **Janine Finlay** (Embedded Artist), **Dr Alex Hilliam** (Hilliam Research & Analysis), **Dr Andrew Kerr** (EIT Climate-KIC), **Tom McKenna** (Scottish Natural Heritage), **Catherine Payne** (Fife Council), **Timothée Parrique** (Stockholm Resilience Centre), **Prof. Dave Reay** (University of Edinburgh), **Prof. Colin Reid** (Dundee University), **Aedan Smith** (RSPB), **Dr Katherine Trebeck** (Wellbeing Economy Alliance), **Ruth Wolstenholme** (Sniffer).

The Decoupling Advisory Group is facilitated by **Dr Jack Barrie**, Circular Economy Policy Analyst, Zero Waste Scotland. Please contact Jack at jack.barrie@zerowastescotland.org.uk if you require any further information about the Decoupling Advisory Group.

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