



MEETING THE 'TRIPLE CHALLENGE'

GETTING LAND AND SEA USE RIGHT
FOR PEOPLE, CLIMATE AND NATURE

EXECUTIVE SUMMARY

The science is clear: if we want to recover nature, provide everyone with nutritious food and protect ourselves from the impacts of climate change, we need to transform how we use our land and sea.

At WWF, we call this nexus of people, climate and nature ‘the triple challenge’. These three elements must be addressed together: the way we reach net zero will determine how we bring nature back to life, just as nature’s recovery is essential to deliver our climate ambitions. And both are critical to securing a resilient and productive supply of nutritious food in the years ahead. Focusing too heavily on any one of them can too easily lead to perverse outcomes for people and planet.

Achieving this positive future vision requires UK Governments to tackle these shared challenges holistically. Currently, all UK nations have laws and targets for climate and nature but lack equivalent goals when it comes to our nutrition security.

WWF defines nutrition security as the ability to provide, in an equitable manner, a resilient supply of affordable, accessible, nutrient-dense and sustainable food that meets the recommended nutritional requirements of society. This goes beyond a narrow focus on self-sufficiency, or quantities of food produced to focus on a stable supply of the nutrient dense food people need for a sustainable diet.

We believe it is the responsibility of governments to produce plans that clearly demonstrate how we will manage the use of our land and sea resources collectively to meet our climate, nature and nutrition security commitments. Put simply, we are long overdue an honest and joined up conversation about how we use land and sea in this country. No more excuses, no more siloed policymaking.

We believe this can be delivered by evidence-based analysis of land and sea take inherent in any triple challenge-related plan to ensure the science and incentive framework support the multifunctionality implied and we are not double counting. By surfacing our assumptions on land use, grounding them in real landscapes, we will both strengthen our plans and identify any misaligned or competing objectives that could undermine delivery. The macro scale mathematical analysis should be supported by field analysis – case studies and place-based pilots – to allow us to understand where we can address system level challenges with better alignment.

Our aim is that cross-departmental policies add up to tackle climate, nature and nutrition security within our finite land and sea resources, maximising the co-benefits of this approach while supporting the other nations we depend on to do the same, avoiding offshoring our impacts and working with others towards our global goals. Embedding the triple challenge must encompass food, farming, climate and marine initiatives, and government must demonstrate, through quantitative and qualitative analysis, how its policies come together coherently to deliver against the triple challenge.



PROBLEM

Laws, targets and policies to tackle climate change and nature loss exist in all parts of the UK. While many of these have been hard won, and are essential to progress, they remain piecemeal and siloed across government departments and there is no mechanism to ensure that the use of land and sea collectively adds up to address the triple challenge.

Competing policy priorities result in unresolved trade-offs with far-reaching implications for how our land and sea are used. Land and sea resources are finite. Farmers, fishers and communities operating in these landscapes and seascapes face competing, and sometimes contradictory, demands from government. The UK Government's imperative, working closely with devolved governments and overseas territories, is to set out how the use, protection and restoration of land and sea resources will meet climate, nature and nutrition security commitments and to demonstrate clearly how its plans ladder up to those overarching goals.

Droughts, floods, energy price spikes, and conflict highlight the urgent need for diversity and sustainability in our food system, yet there are no meaningful objectives to ensure national nutrition security. Debates on achieving food security and self-sufficiency – often a proxy for the former – are too often pitted against nature and climate goals, rather than being aligned to ensuring our food system is resilient and provides the nutritious food we need.



We only have a finite amount of space to deliver targets for nature, climate and nutrition. Farmers, fishers, and communities living and working within these landscapes and seascapes are facing competing and even contradictory demands from government.

There is a need for a step change in the way we think about and manage land and sea resources if we are to bring our world back to life, and there is a unique opportunity for the UK to lead that change.

No country in the world has yet set out plans sufficient to meet the triple challenge.

The UK has begun to develop and implement the necessary policies, and by putting science at the heart of a comprehensive plan, could give confidence to those working, living and investing in our land and seas to bring our world back to life.

A TRIPLE CHALLENGE APPROACH: “DOING THE MATHS”

A triple challenge approach to land and sea use integrates climate, nature and nutrition security considerations into a coherent framework for government policymaking. It begins by recognising how current and future proposals relating to land and sea use lack consideration of the triple challenge and how siloed approaches to decision-making can result in short and long-term risks, especially when existing systems face shocks and stressors such as extreme weather or price volatility e.g. energy supply, key commodity yields.

Adopting a triple challenge perspective shows that integrated policymaking can deliver mutual benefits – for example, more resilient food production, restored habitats, lower emissions, and improved water quality. It also reduces trade-offs by identifying place-based measures, avoiding the offshoring of environmental impacts, and supporting local communities. Aligning policies in this way can deliver public benefit and can strengthen other political priorities; building public trust, community resilience, and economic stability.

Real-world case studies and place-based pilots can highlight these trade-offs and synergies, ultimately informing cross-government decisions. To ensure coherence, government must work towards developing a robust framework to assess how existing and future policies interact – doing the maths.

For example, preliminary WWF analysis of the previous Net Zero Strategy¹ (NZS) suggested that while addressing climate change is the priority of the document, when assessed through a triple challenge lens, some of the measures could pose a challenge to nature protection and restoration.

Regarding nutrition security, a risk of the NZS is, if not monitored, there may be an increase in poor-quality imported products, resulting in offshoring the UK's environmental impacts. Commitments to introducing a carbon border adjustment mechanism (CBAM) and mandatory product standards to protect against carbon leakage are therefore crucial. And while the NZS supports the transition to ELMS, it does not incentivise reductions in high environmental impact foods as per recommendations (among others for the agricultural sector) within the Climate Change Committee's 7th Carbon Budget Balanced Pathway.

Crucially, transparent governance and robust analysis are needed to ensure that cross-departmental policies work in concert to deliver against the triple challenge, respecting our finite land and sea resources and preventing the displacement of the UK's environmental impacts overseas.

¹ Initial analysis undertaken ahead of re-published Carbon Budget and Growth Delivery Plan (Oct 2025), though no significant policy changes made to invalidate our assessment.



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SUMMARY OF CONSIDERATIONS

- Land and sea resources are finite – policy measures must be strategic to eliminate the risk of undermining our ability to meet climate, nature and nutrition security ambitions.
- Offshoring environmental impacts must be avoided – UK policy decisions must support delivery of global climate and nature goals via sustainable sourcing, trade and investment decisions.
- Fragmented policy approaches will not add up to meaningful systemic shifts – siloed approaches will continue to result in unmanaged trade-offs and perverse consequences.
- A joined-up approach to land and sea use is the missing link in strengthening and testing the robustness of our plans – this is urgently required to deliver simultaneously for climate, nature and nutrition security.
- Getting land and sea use right will deliver long-term public benefit and is of political interest and importance – farmer and fisher resilience is critical for stable food prices, healthier diets, thriving nature and long-term well-being of our communities.



CASE STUDY: BECCS

COMPETITION FOR LAND AND OFFSHORING IMPACTS

Bioenergy with carbon capture and storage (BECCS) is a technique in which biomass is burned to generate electricity, to create hydrogen, or to fuel heavy industry, with the resulting CO₂ captured and stored. Bioenergy and biofuels currently provide about 13% of the UK's electricity (as of 2021) and 5% of the UK's road transport fuel. In 2022, the UK imported 9.1 million tonnes of wood pellets for electricity generation, making it the largest net importer of forest products in the world. BECCS is included in global models designed to keep warming within 1.5°C and formed a prominent part of the UK's Net Zero Strategy.

Projected demand for BECCS and biofuels require vast amounts of land, either to cut down trees or grow energy crops, potentially around 6% of UK land,

alongside existing imports that are often linked to the destruction of old-growth forests. This land demand is likely to compete with food production due to limited arable land in the UK and globally, while the intensive cultivation of bioenergy crops risks causing further harm to nature, undermining countries' ability to meet their own triple challenge.

This example demonstrates the lack of a triple challenge approach relating to bioenergy – where territorial emissions targets have been prioritised over global climate goals, the protection and restoration of nature, and domestic food production. The ensuing trade-offs include nature depletion and offshoring environmental impacts overseas due to the high level of imported wood pellets.



CASE STUDY: LOWLAND PEAT

SUPPORTING NUTRITION SECURITY

In the UK, carbon-rich lowland peat soils provide some of the most productive land for food production, with approximately 40% of UK-grown vegetables produced on lowland peat. These soils are the UK's most important carbon sink, yet they are currently responsible for the highest carbon emissions per unit area of any land use in the country.

In the long term, continued intensive farming on deep peat is not sustainable from a nutrition security perspective, as the peat will gradually deplete until it loses its fertility and its ability to deliver high yield vegetable crops without increased artificial inputs, which have environmental and economic costs. In addition, the historical drainage of peat landscapes for

intensive agriculture has led to significant biodiversity loss through the fragmentation of habitats.

When developing a strategy to reduce greenhouse gas emissions from peat and restore areas for nature in England, it is essential to consider the contribution of lowland peat to nutrition security, alongside the needs of local communities and the wider economy.

A triple challenge, systems approach is needed to mitigate these risks, carefully weighing up peat restoration, assessing alternative crop production techniques and the economic needs of local communities, to avoid displacing or offshoring environmental and social impacts.



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CASE STUDY: REGENERATIVE AGRICULTURE

TRIPLE CHALLENGE “WHOLESCAPES” APPROACH

Many farmers are taking steps to farm with nature rather than against it, restoring soil health and reducing reliance on expensive inputs. Many of these actions, such as cover cropping, crop fixing, rotational grazing, and improved slurry management, are already in use and offer cost-savings for farmers. Complex, healthy soils that retain carbon and nitrogen provide both climate impact mitigation and long-term resilience, with significant co-benefits for nature, water, air, and people.

WWF is supporting farmers to adopt more regenerative practices through our “Wholescapes” programme, which connects policy and practice across land, freshwater and sea. In Norfolk, we are supporting the farming community with this transition by creating habitat through arable reversion, reducing synthetic inputs, and providing public goods such as improved flood protection and carbon sequestration. This work is being done

in conjunction with local communities to ensure that Local Nature Recovery Strategies align with new Environmental Land Management Schemes and crowding in private investment, thereby guiding and aiding local decision making and providing a structured framework that balances the needs of nature, climate, and people.

The benefits of regenerative agriculture are far-reaching. Our partners working to restore North Norfolk’s dynamic coastline are co-beneficiaries, as are the local communities who live and work there and the many tourists visiting the area. Changes in farming practices affect not only the land but also river and coastal systems, contributing to improved water quality and creating opportunities for wider ecological restoration. The triple challenge benefits of this work serve as an exemplar and opportunities to scale this approach are being explored.

CASE STUDY: OCEAN SEAWEED AS A BIOSTIMULANT

Seaweed is one of nature's wonder materials – not only does it capture carbon and support biodiversity in the marine environment, but when farmed sustainably, it also has the potential to replace some synthetic fertilisers and serve as an alternative protein feed source.

Seaweed-based biostimulants facilitate more efficient nutrient uptake in plants, enabling farmers to use less synthetic fertiliser, cutting associated emissions, and reducing synthetic nutrients polluting rivers and coastal waters. Increased use of biostimulants will also create demand

for seaweed, offering additional economic opportunities for coastal communities.

WWF is currently trialling the use of seaweed-based biostimulants on spring barley fields, with pilots including the application of liquid seaweed spray at varying levels alongside reductions in synthetic fertiliser. The aim is to demonstrate that yields and crop quality can be maintained while reducing synthetic fertiliser use by 20%, delivering both a lower carbon footprint and neutral or improved environmental outcomes.



CASE STUDY: USE OF LAND FOR CARBON REMOVALS

The use of land to sequester carbon is included as a lever in government and business plans for achieving net zero. However, the IATP 2025 Land Gap report finds that national climate pledges submitted to the UNFCCC are increasingly dependent on land-based carbon removals (e.g. forests) to meet mitigation targets.

When aggregated, land pledged to support carbon removal now exceeds one billion hectares, a scale the Land Gap report characterises as far beyond what is feasible or sustainable. The report identifies overpromising of land-based carbon removals at a national level which could lead to undue systemic pressure on land use, resulting in domestic and overseas impact, displacement and competing priorities for finite land. Without clear limits and guardrails, carbon markets and removals strategies risk exacerbating land scarcity rather than supporting sustainable transitions.

A similar situation can be said to be arising in the net-zero plans of businesses and organisations. The energy intensive and growing tech sector is notable for pledges to invest in land-based removals. Google, Microsoft and Meta, alongside a few other companies, are part of the Symbiosis Coalition and have made an advance commitment to invest in 20 million tonnes of 'nature-based carbon removals' by 2030. Elsewhere it is reported that Microsoft alone has long-term forest restoration offtake agreements in Brazil and the US that amount to over 200,000 ha.

The extent to which these companies are following good practice in terms of abating their own emissions varies, especially when it comes to addressing emissions in their supply chains. However, the point remains that this level of reliance on land, if replicated across the sector or wider business community, is unrealistic alongside meeting other demands on land.

This over-reliance on land for carbon sequestration is, in part, because countries and companies are not reserving carbon removal options to offset residual emissions only – i.e. those unavoidable emissions which are technically very difficult to mitigate. Emissions that could be abated are instead being offset.

This provides a stark example of where a triple challenge approach to land use has not been embedded in decision-making and the lack of guardrails governments have put around corporate carbon mitigation strategies that rely on land.



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INTERNATIONAL IMPACT

Decisions on how domestic land and sea are used can have far-reaching consequences. For example, WWF analysis found the import of animal feed and fertiliser from abroad for domestic food production currently adds a further 40% to UK agricultural emissions. Likewise, the projected land requirements for bioenergy under current emissions reduction pathways could increase reliance on food imports from climate vulnerable regions. It is important to note that the UK's legally binding net zero targets only covers domestic (territorial) emissions and currently, overseas (consumption-based footprint) emissions are not accounted for.

There is minimal value in making decisions about how we optimise land or sea at home if we continue to source food, fuel and other goods and services in ways that undermine climate, nature and nutritional security elsewhere in the world. Nor can the UK expect other countries to use their land and seas to provide the carbon sinks and habitats the world needs while failing to deliver its own global climate, nature and nutrition security commitments.

JOIN US

If we are to stand a chance of restoring nature, our shared inheritance, of limiting climate change to 1.5°C of warming and delivering nutrition security for people, then the UK must be prepared to use the next five years to take ambitious action on multiple fronts.

We must deliver the targets set for 2030 and beyond for climate, nature and nutrition security, which we have committed to domestically and through international processes. And we must play our part in driving change on the global stage.

WWF will continue to work with scientists, business partners, communities and supporters to provide evidence to support demands for action from governments to tackle the triple challenge. This is the fight of all our lives. Together, we can bring our world back to life.

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