Green Finance Institute

MISSION CLIMATE READY

Unleashing finance and investment for a prosperous Climate Ready economy

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5 July 2023

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This Executive Summary is based on a forthcoming report by Ranger et al. (2023). '*Mission Climate Ready: Unleashing finance and investment for a prosperous Climate Ready economy.*'

Acknowledgements. We wish to thank the Economics of Sustainability Programme for support for this work and to the reviewers: George Leigh, Julie Gorte, Jim Hall, Katie Spooner, Bob Ward and contributors: Helen Bye, Chris Dodwell, Ines Faden, Jason Lowe, Nyree Pinder and José Reséndiz. Thank you also to all the attendees of the Green Finance Institute LCAW Finance Day adaptation roundtable, the outcomes of which were hugely helpful in testing and developing our recommendations. The views expressed in this document represent those of the authors and do not necessarily represent those of the Smith School, the Environmental Change Institute, the reviewers and contributors or other institutions or funders.

FOREWORD

Last year's record-breaking 40°C heatwave in England meant schools had to close, hospital operations were cancelled as systems crashed, wildfires caused the busiest day for the London Fire Brigade since the Second World War, and the high temperatures brought unprecedented numbers of heat-related deaths. I hope we don't have another heatwave like that this year, but we know we will do soon, and we should be preparing for it.

Every day, around the world new extremes of heatwaves, floods, droughts, wildfires, cyclones, and storm surges upend lives and livelihoods. The acceleration of physical climate impacts like these is a well-understood feature of 21st century life. Yet climate security – by which I mean getting ready to live through them and recover quickly - is not given the same focus as energy security or food security. This is an ongoing missed opportunity.

The UK government's key mechanism for preparing for climate change impacts is the National Adaptation Programme, or the NAP. Earlier this year, the Climate Change Committee said of the second NAP that ran from 2018 to 2023: *"Our assessment has found very limited evidence of the implementation of adaptation at the scale needed to fully prepare for climate risks facing the UK across cities, communities, infrastructure, economy and ecosystems."* This summer, the plan will be updated. Ironically, the NAP must be a wake-up call. It must provide an opportunity to complement the ambition of the government's Green Finance Strategy with concrete actions and an urgency consistent with the scale of the risks facing the UK.

Responding to events and repairing damage is much more costly than investing in resilience measures. An official inquiry after an event can never turn back the clock but good preparation and planning can provide returns on investment; skills and jobs; healthier, safer, and greener places to live and base your business, and the soft power of UK leadership among nations racing to find answers to these very same questions.

Climate change is a whole world problem so the solutions must come from every sector, but the UK finance sector has the potential to be game-changing. The Infrastructure and Projects Authority estimates that total infrastructure investment over the next 10 years, including private investment, will be nearly £650 billion. That is 35 times larger than the adaptation costs estimated for climate-proofing infrastructure. The key question that is considered in this report is how to unleash this firepower and we make 25 specific recommendations about how to do it.

UK financial institutions, from Edinburgh to the City of London, together with our world-leading engineers, scientists and technology, are well positioned to address these challenges and support the transition to a prosperous, secure and Climate Ready UK. However, a mixture of policy gaps and hubris borne of the UK's climate leadership in recent decades, mean we risk losing the advantage.

Adaptation is an investable asset class. This report is about securing a prosperous, nature positive and secure UK. The UK financial sector could, and should, be a global leader on climate adaptation and that would, among other social and environmental benefits, make the UK an even more attractive place for global businesses. This report shows that the failure to grasp that opportunity should be added to the list of climate risks facing the UK in 2023, and it also shows how to fix it.

Emma Howard Boyd CBE

Chair, Green Finance Institute

MISSION CLIMATE READY

Unleashing finance and investment for a prosperous Climate Ready economy

EXECUTIVE SUMMARY

The UK has long been viewed as a global leader on climate change mitigation and many aspects of that leadership are still strong[1]. It was the first country to establish a long-term legally binding framework to cut emissions in 2008 and the first G7 country to commit, in 2019, to net zero by 2050. The UK has also led the way on green finance, being the first major country to publish a green finance strategy in 2019. In 2021 the UK became the first G20 nation to require the largest companies and financial firms to make public how they are responding to financial risks and opportunities from climate change. Since 1990, UK carbon dioxide emissions have declined by nearly 50%, while GDP increased by around 80% meaning we need three times less carbon per unit of GDP. We need to continue and move even faster in transitioning our economy to net zero, but we are now also living in a world where we are facing severe impacts of climate change and we are not ready.

Action on adaptation is lagging behind and the risks are mounting. This report argues that keeping the UK at the forefront of action on climate change requires not only building a net zero economy, but a net zero, resilient and nature-positive economy. Progress on adapting to the inevitable impacts of climate change is insufficient compared to the pace of change and those impacts are now literally hitting home. Almost 3000 excess deaths[2] were recorded in the summer 2022 heat wave periods; and excess deaths are projected to rise to over 7000 per year by 2050. That summer, UK temperatures breached 40ºC for the first time and scientists say with statistical confidence that this would have been extremely unlikely without man-made climate change[3]. The record-breaking temperatures brought unprecedented wildfire incidents, air pollution and significant infrastructure disruption to the UK, as well as major disruptions to supply chains across Europe. School closures in summer 2022 meant that children in London alone lost 22,000 days of learning and health care services were under strain as hospitals overheated. Concurrently, the UK has seen rising risks from flooding and from droughts.

[1] We note the 2023 Progress Report of the Climate Change Committee and letter from Lord Deben, Committee Chair, to the Prime Minister, which states "*the UK has lost its clear global climate leadership while game-changing interventions from the US and Europe, which will turbocharge growth of renewables, are leaving the UK behind. Inaction has been compounded by continuing support for further unnecessary investment in fossil fuels".* https://www.theccc.org.uk/publication/letter-2023-progress-report-to-parliament-to-rt-hon-prime-minister/

[2] https://www.gov.uk/government/publications/heat-mortality-monitoring-reports/heat-mortality-monitoring-report-2022#:~:text=used%20are%20available.-,Observed%20excess%20all%2Dcause%20mortality,number%20in%20any%20given%20year

[3] World Weather Attribution (2023) https://www.worldweatherattribution.org/without-human-caused-climate-change-temperatures-of-40c-in-the-uk-would-have-been-extremely-unlikely/

The UK is underprepared for climate change, putting lives, livelihoods, assets and well-being at increasing risk. Urgent and decisive action is needed to build a Climate Ready UK.

The UK must urgently double down on adaptation action and set the right policies, institutions and capabilities in place to ensure it remains prosperous and secure in the face of climate change, not just today but also in the decades to come. This was the clear message of the Climate Change Committee (CCC)'s 2023 progress reports on adapting to climate change: ***"****The second National Adaptation Programme has not adequately prepared the UK for climate change. Our assessment has found very limited evidence of the implementation of adaptation at the scale needed to fully prepare for climate risks facing the UK across cities, communities, infrastructure, economy and ecosystems".* We are only just beginning to glimpse the impacts of climate change to come at home and internationally. Scientists predict that the world is likely (that is a 66% chance) to breach the 1.5°C level for at least one year in the next five years. Right now, buildings, cities and infrastructure in the UK are built for climate conditions that will no longer exist in five years, locking in future problems of overheating, economic disruption and rising damages from weather extremes. The UK, and indeed all countries, must act urgently to decarbonise their economies to avoid the most catastrophic changes in climate, but robust action is also needed at home to adapt to and manage the inevitable impacts of climate change now and over the next decades.

The UK has been viewed as a leading country on national adaptation policy in the past, but that leadership position is now at risk as other parts of the world start channelling significant resources into adaptation. On the back of a forward-looking legal framework, established in the Climate Change Act 2008, the UK was one of the first countries to start publishing statutory UK climate change risk assessments (the first in 2012). In the 1990s, the UK launched ambitious programmes, such as the UK Climate Impacts Programme, to support businesses and local authorities to adapt, yet these have since waned. Progress has been slow in embedding ambitious adaptation policies and actions across sectors and in increasing adaptation investments in line with increasing climate risk. The UK's 3rd Climate Change Risk Assessment (CCRA3) clearly concluded that action is required across all sectors: agriculture, the natural environment, infrastructure, health, supply chains, water, buildings and SMEs.

UK finance, from Edinburgh to the City of London, is competitive, innovative and can be catalytic for the delivery of a prosperous Climate Ready economy.

Private sector finance can play a catalytic role in enabling adaptation at scale. While estimates vary, around £5 – 10 billion per year will need to be invested in adaptation in the UK across both the public and private sector. This can be looked at as a challenge or as an investment opportunity and an opportunity for financial institutions (FIs) to support their clients with new products and services to help them adapt. The UK's FIs, together with its world-leading engineers, scientists and technology, are well positioned to address these challenges and support the transition to a prosperous, secure and Climate Ready UK. Pension funds and insurers, for example, are expected to be able to invest up to £190 billion in infrastructure over the next ten years. **The Infrastructure and Projects Authority estimates that total**

infrastructure investment over the next 10 years, including private investment, will be nearly £650 billion; that is, 35 times larger than the adaptation costs estimated in CCRA3 for climate-proofing infrastructure. The key question that is considered in this report is how to unleash this firepower and how to ensure it is aligned with our national resilience goals.

The basic financing mechanisms exist and the commercial imperative is clear.

Adaptation projects are not new; resilient infrastructure and buildings, better health services, sustainable agriculture, data and analytics are well known assets. Research by Impax Asset Management for this report, found that adaptation sectors collectively delivered total cumulative returns 16.3% higher than the market over the past five years, and while this is not necessarily an indicator of continued outperformance, it does indicate that competitive returns are feasible. The UK also has established approaches for mobilising private capital into such sectors, even where there is a strong public good aspect, for example the Regulated Asset Base (RAB) model that is used extensively to unlock private investment energy infrastructure and in water. More than a tenth of allocations from 2020-21 green gilts contributed to adaptation in the UK and internationally. Arguably more is needed and collaboration is needed to ensure societal resilience goals are fully embedded.

Finance is often framed as a barrier to adaptation, but a new contribution of this report is to argue that the core issue is not finance per se but a lack of targeted policy. The report provides a diagnostic tool to assess the gaps in policies required to align finance with a climate-resilient economy and mobilise investment in adaptation. Based upon this, we argue that adaptation action and investment is not happening at scale today because an adequate policy, fiscal and regulatory environment is not in place to enable it to do so. Some of the biggest challenges in unlocking financial flows are on the demand-side: for example, how to support, incentivise or require the private sector and households to invest in adaptation; how to build pipelines of investible nature-based adaptation projects; how to encourage corporates to develop credible adaptation plans; how to ensure that new infrastructure is designed in ways that are resilient; as well as closing gaps in data, capability and knowledge. There are few clear targets or sectoral plans that identify 'top 10' investments analogous to those for mitigation. The UK also lacks the mechanisms to allow market failures to be addressed, for example allowing monetisation of the resilience benefits of investments, to overcome the upfront costs of resilience and payback over long periods - an adaptation tax credit may assist in overcoming these barriers - and to fully embed resilience within our regulated utilities to ensure investments align with resilience goals. In many areas, public investment needs to scale up and be used more strategically to crowd in and leverage private sector investment, with climate resilience better included as a clear goal within regulation, standards and policies.

The financial sector itself also has much more to do, including better assessing and managing physical climate risks and incorporating those risks into financial decision making. How and where FIs choose to lend or invest today can have a big influence, positive and negative, on the resilience of the UK economy for decades to come. Evidence from the Taskforce on Climate-related Financial Disclosures (TCFD) and the Bank of England show that physical climate risks are not being fully accounted for – or *'priced'* - in financial decision-making. Yet at least one survey indicates that financial professionals, regulators and economists see physical climate risk as the top risk over the next 30 years, and most of those surveyed believe that markets are underestimating those risks now. Without more accurate risk pricing, investment flows into critical climate-vulnerable real-economy sectors like infrastructure, buildings and agriculture may be unknowingly pushing the UK in the wrong direction, as well as leaving the UK financial sector itself exposed to systemic financial risks. Globally, we lack standard frameworks and metrics to ensure financial flows are aligned with societal resilience goals. These issues require action not just by FIs but also by regulators and government, both in the UK and internationally. Policy should support the introduction by firms of reporting on the locations of assets and key supply chain nodes whose loss or damage would be a material event and what companies are doing to mitigate these risks. In summary, by gearing up FIs to manage physical climate risks, develop strong adaptation strategies, innovate in how they support their clients and invest in the UK's resilience, we can unleash the power of finance to support a Climate Ready UK.

Mobilising finance for adaptation is as much about good policy as it is about finance. Policy is needed now to address market failures and create the right enabling environment for finance to flow, in the same way that it has started to do for net zero.

The UK's 2023 Green Finance Strategy stated a welcome and clear intention to take action to prepare the UK for the physical impacts of the changing climate, to seek to align financial flows with a climate-resilient economy, and to increase investment in adaptation. Yet, four conclusions are clear from an analysis of this strategy when compared, for example, with its commitments on net zero: commitments on adaptation are substantially weaker; there is a lack of concrete goals and actions, milestones and plans to address the key barriers to adaptation; government has given no new financial commitments on adaptation; and there is a lack of scale and urgency in action compared with the magnitude and proximity of the risks. As with net zero and nature recovery, to unleash private financial flows into adaptation at scale, key market failures and bottlenecks need to be addressed. A clear vision needs to be set of the role of the public versus private sector in adaptation finance and what are the measures are of success for resilience outcomes. Action to create the enabling environment for adaptation has lagged behind that for net zero; it's time for adaptation policy to catch up. The third National Adaptation Programme (NAP3) provides an opportunity to complement the ambition of GFS2023 with concrete, costed actions, a clear vision for the role of the private sector in both adapting overall and in financing UK and international adaptation, and an urgency consistent with the scale of the risks facing the UK**.**

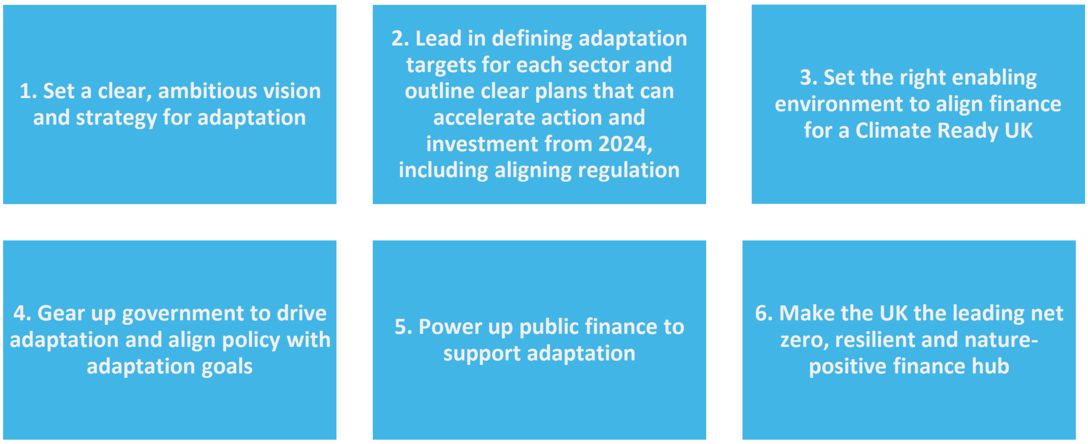
Climate Ready, net zero and nature goals are interdependent and interlinked. Reflecting this across all government policies is essential for any of these three goals to be achieved, and creates a huge opportunity for a prosperous and secure UK.

This report is calling not just for action but for a major policy shift. The UK must act urgently to tackle three linked environmental challenges in the coming years; the transition to net zero, nature recovery and climate readiness. All three require major investments in people, similar industries, infrastructure and landscapes. This is a **win-win**. To tackle these challenges, the UK government, and corporates, need an integrated vision, policies and plans for a net zero, climate resilient and nature-positive economy.

SUMMARY OF RECOMMENDATIONS

In support of the upcoming National Adaptation Programme NAP3 (2023-28), this report builds upon the 2023 Green Finance Strategy (GFS2023) to propose a roadmap of concrete actions that the government can take to 2025 to strengthen investment in the UK's preparedness for climate change. This report identifies six pillars of action and twenty-five specific recommendations to the government to act on by 2025 (summarised in Table 1).

Figure 1: Six Pillars of Action for a Climate Ready Economy



Our six pillars operationalise the following core conclusions from our analysis:

First, set a clear, ambitious vision and strategy for adaptation.

Setting clear and measurable goals for adaptation, and the actions to deliver them, is an essential first step in mobilising action and investment. Until now, the private sector has lacked a clear steer on the role they are expected to play on adaptation at the sector and local level and the policy certainty necessary to enable them to align their plans and investments. As part of the NAP3, the government must set out its vision for a well-adapted England, commit to make the country resilient to climate change by 2030 (not 2050 as in previous policies), and set a goal to mobilise £1bn per year of private finance for adaptation by 2030. This ambition would be consistent with the UK's call to other countries at COP26[4].

Table 1: Six proposed pillars of action and twenty-five specific recommendations for 2025.

Twenty-Five Recommendations to the UK Government to Mobilise Finance for a prosperous and Climate Ready UK	
Pillar 1: Set a clear, ambitious vision and strategy for adaptation	1. Commit to make the country resilient to climate change by 2030 and outline specific and costed goals and delivery

[4] https://www.gov.uk/government/news/uk-calls-for-world-to-be-climate-resilient-by-2030-as-cop26-delivers-billions-for-most-vulnerable

	plans for each sector by 2025, and envisaged public/private sector roles. 2. Commit to mobilise £1bn per year of private finance into UK adaptation by 2030.
Pillar 2: Lead in defining adaptation targets for each sector and outline clear plans that can accelerate action and investment from 2024, including aligning regulation	3. Establish public-private task forces by the end of 2023 to define adaptation roadmaps for sectors and clear investment plans aligned with national goals. To enable timely action, the government should respond with clear commitments to adaptation finance by 2025. 4. Commit to develop an Adaptation Markets Framework. 5. Explicitly incorporate climate resilience within the mandate and priorities of all regulatory frameworks and bodies. 6. Introduce natural capital as the 14th critical infrastructure sector.
Pillar 3: Set the right enabling environment to align finance for a Climate Ready UK	7. Government and financial regulators to build upon TCFD and ensure that the TPT standards set expectations for the assessment and disclosure of physical climate risks and adaptation plans across the economy and ensure consistency between the Adaptation Reporting Power and corporate reporting frameworks. 8. The Bank of England and the Financial Conduct Authority should work with the Climate Financial Risk Forum (CFRF) and the academic community to strengthen financial risk management for physical climate risks, including through improved data, scenarios and guidance. 9. HM Treasury (HMT) should commit to ensure financial regulatory frameworks, including the UK Green Taxonomy, are aligned with a climate resilient economy, and in 2023, implement a task force to examine explicit integration of adaptation and nature across existing disclosure and accounting frameworks, with commitment for HMT to review and set roadmap for implementation by end of 2024. 10. Through the new Adaptation Working Group of the CFRF, financial institutions should work with government to identify barriers to investment in adaptation and opportunities to overcome barriers and investment in adaptation
Pillar 4: Gear up government to drive adaptation and align policy with adaptation goals	11. Establish a National Office for Climate Readiness 12. Mainstream consideration of climate change risk into spending and policy decisions by government, using the Green Book to screen policy and programme decisions and implement the recommendations from the Coalition of Finance Ministers for Climate Action to mainstream climate into the role of Finance Ministries, including the use of Green Budgeting techniques. 13. Strengthen local planning and local government planning regimes for adaptation and resilience by 2030. Reintroduce a statutory duty to adapt to climate change for the public sector in England. 14. Integrate adaptation and nature into the UK's national fiscal risk management frameworks and set out plans for how these can be managed that protect national resilience and incentivise action across the economy. 15. Commission work to examine public-private risk pooling architecture of the UK and how this can evolve to support insurability and adaptation. 16. As part of its 2025 Progress Report to Parliament, the CCC should assess and report on the preparedness of the corporate and financial sector for climate change and the alignment of financial flows with UK adaptation goals.

Pillar 5: Power up public finance to support adaptation	17. Amend the UK Infrastructure Bank Bill and British Business Bank to include economic prosperity, net zero and adaptation as a priority on equal footing, including through targeted concessional finance. Grants instruments and guarantees should allow for capacity building and blended finance options, similar to the UK Export Credit Agency. 18. Re-establish an adaptation support programme (£3 – 5 million per year), including capacity building and foundational investment in R&D. 19. Increase investment in open data, guidance and tools to support financial institutions to upscale adaptation investments, including publication of foundational risk data by end of 2025. 20. Issue first dedicated UK adaptation bond in this government, supporting local, municipal and national adaptation projects. 21. As a special topic report in 2024, CCC to independently review implementation of adaptation - including how UK regulation (financial, economic and environmental) and fiscal and economic policies can work together to better support adaptation in the UK.
Pillar 6: Make the UK the leading net zero, resilient and nature-positive finance hub	22. Set ambition to make the UK the world's first Climate Ready, Nature Positive, Net Zero-aligned financial sector. 23. Government and financial institutions to work together to identify opportunities to strengthen the UK's market for international adaptation finance and services, including through the Climate Financial Risk Forum. This includes ensuring the global interoperability and conduciveness of a UK taxonomy and standards and environment for new innovations in adaptation finance. 24. Invest in science and innovation as a public good in the UK to capture the growing demand for information and professional services globally on adaptation, including building upon existing initiatives such as the UKCGFI. 25. Advocate and lead on the implementation of Paris Article 2.1c globally on ensuring financial flows are consistent with climate ready and resilient economy.

Second, lead in defining adaptation targets for each sector and outline clear plans that can accelerate action and investment from 2024, including aligning regulation.

Government should work closely with corporates and the financial sector to outline plans, unlock barriers, power up markets, and mobilise investment, sector by sector. Progress has been mixed across sectors, with areas like water already having clear targets and plans. To fill the gaps, we recommend that the government immediately establishes dedicated task forces by the end of 2023 to define sectoral adaptation roadmaps and clear, concrete investment plans, co-led by senior officials and senior private sector representatives. This can follow the approach taken by the Net Zero Council established this year. Plans should specify targets and outline sector-specific delivery plans and associated costs, and the envisaged role of the private sector in financing them and the needs from the public sector. This should include a 'top 10' investments for each sector to guide banks and investors. Local authorities should also play a role in defining specific needs for their localities and helping to identify interdependencies. The task forces should deliver outputs by the end of 2024 and the government respond with clear commitments for finance and policy in response by 2025. This is much faster than the pace suggested by the GFS2023, but it is justified by the urgency.

It is essential to ensure that climate resilience is fully incorporated across all relevant existing policies and regulatory frameworks to unlock investment, in particular water, environment, energy, telecoms, health, education, buildings, transport and land use. Regulation has played a vital role in driving private investments in hard (and soft) infrastructure that deliver critical services to people and the economy and ensures standards are met, including on safety, service provision, risk and environmental protection. Major new investment is needed to make the UK's core systems Climate Ready. For example, the Joint Committee on the National Security Strategy noted that critical energy and transport infrastructure – both important to the UK's transition to a net zero economy – is vulnerable to cascading physical risks from climate change***.*** In addition, our wider critical national infrastructure is unprepared; for example schools and hospitals had to close in recent heatwaves and care homes had specific challenges. The Environment Agency and the National Infrastructure Commission have highlighted the need to update regulation to meet the climate challenge and mobilise investment. Resilience standards need to be designed and implemented. The NAP3, alongside the devolved adaptation programmes, provides an opportunity to progress this. The CCC should be asked to advise on *implementation* alongside progress- how regulation, environmental, fiscal and economic policies can work together to mobilise investment in a climate resilient economy.

Adaptation must learn from the mitigation playbook on mobilising investment. Market-based mechanisms have played a big role in mobilising private investment to decarbonise the UK economy and yet are largely unexplored for adaptation. Similarly for adaptation, there is a market failure to be resolved; the huge positive resilience 'spill overs' from investing in resilience today and in the future for society are difficult to capture and monetise, leading to a common underinvestment by the private sector. As part of NAP3, the government should commit to develop an Adaptation Markets Framework to explore the role that market-based approaches can play, and also ensure adaptation is integrated within net zero and nature market frameworks. This could include, for example, '*resilience net gain'* credits for activities, or the extension of codes and standards such as the ISO standards on adaptation planning.

Make natural capital the 14th critical infrastructure sector. Nature-based solutions, and nature protection and recovery more widely, are an important part of adaptation. For example, urban green spaces and green buildings can be a key adaptation to heat and flooding risks in cities, as well as enhancing biodiversity and acting as natural carbon stores. Protecting natural capital is also important for water quality. In 2020, the value of the natural capital services that the government currently quantifies were estimated to be worth at least £1.8 trillion. Natural capital clearly meets the UK definition of *critical national infrastructure*; as noted by the Dasgupta Review, the loss of natural capital would have a major detrimental impact on critical services in the UK and national security. The UK is already one of the most nature-depleted countries in the world and the government has committed to reverse biodiversity loss, but progress is not being made fast enough. The economic value of nature needs to be recognised in policy in order to power up the necessary regulatory frameworks, and mobilise investment. Doing so will create significant co-benefits for the UK's resilience to climate change.

Third, set the right enabling environment to align finance for a Climate Ready UK.

Government and financial regulators are taking positive steps to align finance with a climate-resilient economy, including for example world-leading work by the Bank of England, UK Research and Innovation, and the Transition Plan Taskforce, but more must be done to manage risks and catalyse adaptation investment. Both the TCFD and Bank of England identified challenges in how firms are accounting for physical climate risks that could be leading to insufficient action to manage those risks. An urgent priority is to set clearer expectations and guidance around the reporting of physical climate risks and adaptation plans, as well as bring together financial institutions, the best science, government and regulators to generate improved data and standards to fully incorporate physical risks. This should be an urgent priority for the Climate Financial Risk Forum in 2023/4. To support and encourage greater alignment of finance with a climate-resilient economy, a task force should also be established to examine how adaptation and natural capital are integrated across existing disclosure, regulatory and accounting frameworks, including the upcoming UK Green Taxonomy and building upon activities such as the Transition Plan Taskforce and the Land, Nature, and Adapted Systems Advisory Group, and to provide recommendations on how gaps can be filled and capabilities to deliver enhanced. HM Treasury should commit to set a roadmap for implementation by end of 2024. This would set a clear direction of travel.

More data is required to make better decisions and enable more finance to flow. Ensuring that financial institutions, government (national, devolved, regional and local) and the real economy have access to the same basic reference data on risks and adaptation opportunities is essential to catalyse action, manage risks and avoid greenwashing. Investing in UK science and technology to deliver this is a cost-effective win-win for government that can be transformative in driving action across the real economy and financial sector. A coherent and open set of information needs to underpin investment decision making, otherwise it can lead to information asymmetry and market distortions between government, FIs, corporates and the public, e.g. heat, drought and flood hazard and benefits of adaptation. The UK can leverage its strength in climate services and build upon the success of past investments such as the UK Climate Projections and the UK Centre for Greening Finance and Investment to provide the open data, tools and frameworks that financial institutions and corporates need to act. The NAP3 is an opportunity for government to commit to a roadmap of investments in this area.

Finally, the government, regulators and financial sector should work together to identify and unlock barriers to adaptation investment. This includes, for example, removing any unnecessary regulatory barriers that can hold back investments with longer-term returns, developing investible pipelines and sandboxing the design of financial products.

Fourth, gear up government to drive adaptation and align policy with adaptation goals.

To mobilise action across the economy, the government itself needs to further gear itself up to tackle the challenges of climate change over the coming decades, including integrating adaptation as a priority across all relevant policies, regulatory bodies and spending in line with the government's initial 25 Year Environment Plan. This should be a core priority of NAP3. In line with progress in other regions, for example across Europe, this should be supported by a detailed Adaptation Investment Plan. The UK should also consider how the machinery of government could be geared up to deliver this, as well as ensure better integration across the triple challenges of climate change adaptation, net zero emissions and nature protection and recovery. A new National Office of Climate Readiness hosted within the Cabinet Office for example could ensure better integration with the National Resilience Framework and a more coherent approach across government.

It is also vital to integrate physical climate risks within the government's own financial risk management engine. When crises happen, government often acts as an insurer of last resort, supporting homes and businesses to recover, as well as rebuilding public infrastructure. Measuring and proactively managing these risks is not just efficient for the taxpayer but can create more risk sharing with the private sector. An example is flood risk in the UK, where Flood Re helps to maintain the insurability of homes. As part of NAP3, the government should take actions to explore how pooling mechanisms like Flood Re can be scaled-up and applied more widely. Government should also build its capability to monitor physical climate risks and adaptation across the economy. As a starting point, as part of its 2025 Progress Report, the CCC could assess the preparedness of the private sector for climate change and the alignment of public and private financial flows based on disclosures. Supporting local and devolved government in England should also be a key priority for the NAP3, including through a statutory duty for public bodies to adapt to climate change (as has worked well in Scotland), strengthening capacity and empowering local authorities to define sector-based adaptation targets and financing arrangements, learning from examples such as Climate Ready Clyde.

Fifth, power up public finance to support adaptation.

The UK's public financial institutions, like the UK Infrastructure Bank, can be more fully mobilised to serve UK adaptation goals. Other institutions, like the European Investment Bank and the European Bank for Reconstruction and Development, provide good models for how this could work, offering a mix of technical assistance and targeted concessional financing. As part of NAP3, the UK Infrastructure Bank (UKIB) and other public financial institutions should be mandated to support adaptation as a priority on equal footing with net zero and other goals and provide technical assistance alongside financial. The UKIB, for example, is already mandated to lend to local authorities and could be a vehicle to provide concessional support to local resilient infrastructure and housing.

Investment in public goods, including capability building, information and data, is essential and a no-regrets way to catalyse action across the economy. Part of the UK's leadership in adaptation globally has come from its continued investment in important public goods, including major programmes such as the Met Office Hadley Centre and UK universities to generate data and information to inform adaptation. However, investment in support services to give businesses, local government and the third sector the capacity to adapt has stopped over the past ten years. The UK government should re-establish a national adaptation support programme, with investment of at least £3-5 million per year and including capability building and foundational R&D, to provide businesses and investors (as well as local government and the third sector) the guidance and tools to help them integrate climate risks, identify adaptation opportunities and ensure that actions that are needed urgently are being undertaken. NAP3 is an opportunity to lay out plans to do more to mobilise UK scientific strength and technology innovation and support public goods for adaptation.

Building on the successful issuance of UK green gilts, and the allocation of some 13% to Climate Change Adaptation in 2021/22, the UK should issue a first dedicated adaptation bond to mobilise resources for government funding and financing from the private sector. The allocation should be aligned with the priorities of the NAP3, building on the Green Financing Framework which financed UK flood defences.

Finally, make the UK the leading net zero, resilient and nature-positive finance hub.

One of the objectives of the GFS2023 was to make the UK financial sector the world's first UK Net-Zero-aligned Financial Sector. The NAP3 should set the ambition to make the UK the world's first Climate Resilient, Nature Positive, Net Zero-aligned financial sector. Mobilising international adaptation finance can be a growth opportunity for the UK. The UK has unparalleled strengths in this area, including through its world-leading insurance market; leading scientific institutions; technology innovators; professional services; international banking and borrowing, asset management, international debt issuance, financial services and foreign exchange trading. HM Treasury should work with the London Market, the Climate Financial Risk Forum, financial regulators and others to respond to this opportunity and ensure the continued competitiveness of the UK.

To maintain the UK at the forefront of climate action for the next decade and to 2050 and beyond, government, regulators, industry, finance and the best science must come together. The UK financial sector has the appetite, expertise and capability to become the global hub for adaptation finance and NAP3 is the moment to commit to unleash this).