

What next for adaptation finance?



A Green Finance Institute (GFI) primer produced in partnership with:



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The term ‘adaptation’ suggests something iterative – a modification that can almost literally be bolted on. Yet, this is not an accurate description of what is required for so called ‘climate adaptation’. What is actually required is a systems-change approach to ensure economies and communities can be resilient to the impacts of the climate change that we are already experiencing. This focus on resilience must not, of course, be delivered as an alternative to driving economy-wide decarbonisation. Both are needed, and by taking a dual track approach, climate security can be delivered for citizens. This briefing note sets out how the pursuit of climate security for all can drive opportunities for adaptation finance – the next generation of green finance – and where markets can lead, and governments can accelerate action, focusing on the UK as a case in point. A new approach to public policy and an investment plan to match is needed. This should sound familiar, as it is the same playbook used for climate change mitigation. Fortunately, there is much that can be ‘dragged and dropped’ from that playbook. But the process needs to start with recognising that adapting to a climate-secure society is just as important and just as transformative as decarbonising the economy.

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INTRODUCTION

The climate is changing. Investment in resilience ('adaptation finance') needs to increase at pace to protect economically important assets, lives and livelihoods, and manage systemic risks to the UK. While estimates vary, around £5–10 bn per year will need to be invested in adapting the UK economy to the effects of climate change across both the public and private sectors. This seems a prudent investment given it represents a fraction of the total infrastructure investment needed over the next 10 years. While a mix of both public and private finance will be needed, estimates tend to conflate these, which can make it difficult to get a grip on the exact financing challenges at-hand.

On the public side, there needs to be investment in (i) preparedness (institutional capability, civil response capability to deal with extreme weather events etc) and in (ii) adapting publicly owned infrastructure (e.g. hospitals, government buildings, schools but also flood defences). On the private side, there needs to be investment across all sectors of the economy to build resilience to the changing climate. **This briefing focuses on the latter two (publicly owned infrastructure and private assets).**

The Committee on Climate Change's 2023 progress report (CCCRA3) on adapting to climate change was clear: the UK is chronically underprepared for the changes that are already here: "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 is putting lives and livelihoods at risk. Yet, security is the ultimate compact between state and citizens and thus the response to these very real risks needs to be sharply prioritised – while still focusing on reducing emissions across the economy. **Our first observation on what needs to happen to further advance adaptation finance is for adaptation to be rebranded to 'climate security' by the UK Government machine to give it adequate status to achieve this.**

The question then turns to how climate security can be implemented effectively.



Around £5–10 bn per year will need to be invested in adapting the UK economy to the effects of climate change across both the public and private sectors.

1. The Infrastructure and Projects Authority estimates nearly £650 billion, needs to be invested. See IPA 2021 Analysis of the National Infrastructure and Construction Pipeline 2021. https://assets.publishing.service.gov.uk/media/613e4d03d3bf7f05b166a595/Analysis_of_the_National_Infrastructure_and_Construction_Pipeline_2021.pdf This is 35 times larger than the adaptation costs estimated in CCCRA3 for climate-proofing infrastructure.



Adaption finance exists already

Finance for climate security is not a new concept; resilient infrastructure and buildings, flood defences and sustainable agriculture are well understood investment concepts. More than a tenth of allocations from 2020-21 UK green gilts contributed to adaptation in the UK and internationally – notably the building of UK flood defences².

The UK also has established approaches for mobilising private capital into such sectors, for example the Regulated Asset Base (RAB) model that is used extensively to unlock private investment for infrastructure projects in both the energy and water sectors. The RAB model has facilitated investment into the Havant Thicket Reservoir project, the first reservoir to be built in the UK since the 1980s, and designed to enable Portsmouth Water to

provide up to 21 million litres of water each day to homes and businesses (supplied by neighbouring Southern Water Services (SWS)), which is especially important in periods of drought. This will enable SWS to reduce abstraction from world-renowned chalk streams – the River Test and the River Itchen – in Hampshire³. The financing of the Thames Tideway project – a 25km sewer tunnel designed to intercept overflows of raw sewage that discharge directly into the River Thames – takes this model a step further. As a regulated utility company, it receives inflation-linked revenue collected from Thames Water’s wastewater customers. The company benefits from a bespoke regulatory regime until 2030 that is, in many respects, similar to the existing regulatory framework for the water sector but with additional regulatory protections during construction

2. See Green bond report 2022 | Publication | english.dsta.nl

3. <https://www.ukib.org.uk/uk-infrastructure-bank-invest-ps50m-first-uk-reservoir-be-built-1980s> UKIB alongside ING, Lloyds, Nat West, and Siemens Bank is investing in the first reservoir to be built in the UK since 1991 and construction is expected to start in Spring 2023. Spanning 160 hectares, the reservoir will supply around 160,000 customers once completed.

Research by Impax Asset Management for this report, found that adaptation sectors⁸ collectively delivered total cumulative returns that were 16.3% higher than the market over the past five years.

to reflect specific considerations. During construction, the company also benefits from a support package provided by the UK Government covering certain exceptional risks. This delivery model, with a supportive regulatory and contractual framework, and stable revenue profile enabled the company to attract competitive private investment of £1.3 billion of equity and £3 billion of third-party debt. The company is privately owned by UK and European infrastructure investors and insurance companies representing over 3 million UK pension holders⁴.

FloodRe – a public/ private partnership between the Government and insurers established as a joint initiative – has launched a ‘build back better’ scheme, which enables homeowners to install property flood resilience measures up to the value of £10,000 when repairing their properties after a flood. The initiative helps insurers in the UK make the flood element of their household insurance policies more affordable. This is a vitally important innovation in the market that needs to mainstream as a means to start to address growing concerns about

‘climate gentrification’ in the UK – where there is greater demand for properties possessing climate resilient traits (e.g. located at higher elevation), which is driving up property prices compared to those that are more exposed to climate risks – notably flood risk⁶.

Finally, as the recent report ‘Mission Climate Ready’⁷ sets out, the market is already valuing adaptation-related products and services. Research by Impax Asset Management for this report, found that adaptation sectors⁸ collectively delivered total cumulative returns that were 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 by bringing an adaptation lens to how companies are valued.

But, all sectors of the economy will need to adapt and doing so will require some form of financing. While efforts are positive, they are too ad hoc and slow, driven in part by responding to events rather than preparing for them. A step change in action is needed.

4. <https://www.smithschool.ox.ac.uk/sites/default/files/2023-06/Mission-climate-ready-Unleashing-finance-and-investment.pdf>

5. <https://www.floodre.co.uk/buildbackbetter/>

6. WTW Research Network Annual Review 2023

7. <https://www.smithschool.ox.ac.uk/sites/default/files/2023-06/Mission-climate-ready-Unleashing-finance-and-investment.pdf>

8. Impax defines ‘adaptation solutions’ as sectors and activities which are: (i) Directly reducing the immediate physical impacts of climate change, including for example, improving energy systems resilience, water supply resilience, resilient buildings and sustainable agriculture (ii) Providing new business models and/or solutions arising from climate change, such as the need for healthcare solutions to address increased spread of vector-borne diseases, the need for improved data for business continuity solutions, as well as environmental products and services to forecast and mitigate financial losses caused by extreme weather events. Source: Impax Asset Management, 2023

There is more the private sector can do

Scaling up the required investment in adapting critical infrastructure systems will require action by both government and the private sector. It will require radical collaboration not just across the public and private sectors but also across different parts of the financial services systems, to a degree not seen before. To find a path forward and unlock financial solutions, the resilience and climate security of the UK economy needs to be considered through two lenses: place-based resilience solutions (e.g. physical flood barriers and natural flood management systems) and also the resilience of individual assets (to heatwaves, flood and drought for example).

In some cases, the market is already acting. Appropriate responses will hinge on financial services firms differentiating responses to weather events versus planning for climate resilience and over what timescale. (See table – shaded areas represent adaptation finance opportunities). As set out above, there are already examples of good practice – awareness of these needs to be raised and supported by policy measures to accelerate replication and uptake. **In other cases, new business models and incentives to invest will need to be created. These are likely to vary based on asset ownership and whether new build or retrofitting is required.**

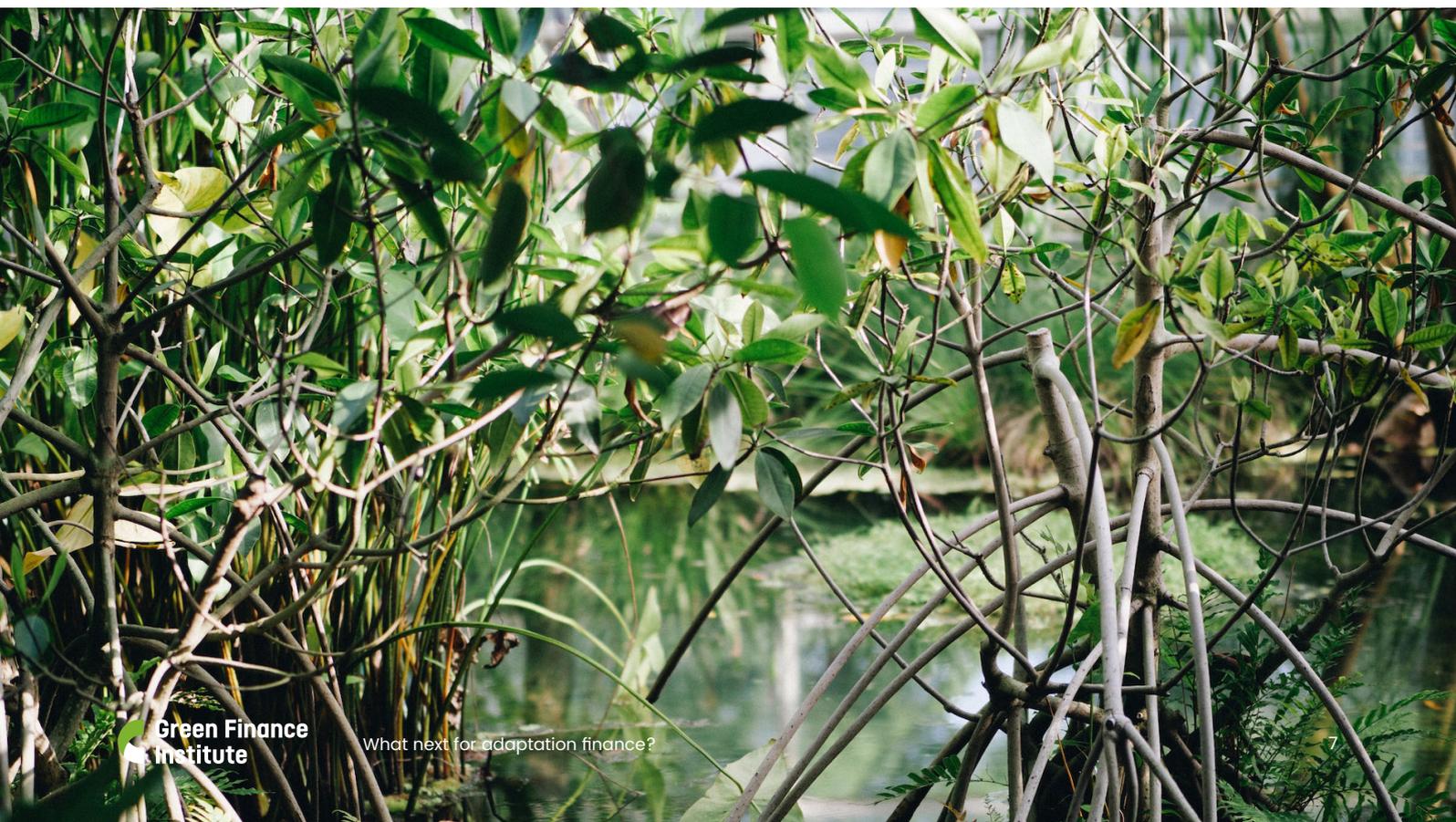
Timeframe	Managing weather-related risk		Financing climate resilience	
	Daily	Weekly/ Monthly	Seasonal (1-3yrs)	Decadal (>3yrs)
Example adaptation-related considerations	Flooding leading to damages and evacuations	Disaster recovery and preparedness	Droughts, energy/water shortages (new and retrofit)	Infrastructure investments needed to build resilience (new and retrofit)
Insurers	Damages need to be paid out quickly	Preparedness for future events to enable coverage to continue to be provided – through providing build back better policies	Preparedness for future events to enable coverage to continue to be provided – through providing build back better policies, novel insurance solutions and supporting the financing of retrofit options	Insurers as investors and insurers as facilitators of investment (providing niche products to enable construction of novel solutions)
Banks	Consideration of losses due to credit defaults	Ensure enough cash is available on the ground in the event of systems failure	As lenders to resilient infrastructure, including buildings	
Asset Managers (public markets)	Supply chain disruptions and impact on earnings	Hedging against commodity price swings and inflation	Using stewardship and engagement to promote forward risk planning to avoid losses among investee companies	

Government needs to set the direction of travel and ambition to accelerate private sector action.

However, much more needs to be done – a task that is beyond the reach of the private sector to deliver unilaterally. Climate security and resilience need to be integrated into 'business as usual' infrastructure investment – based on avoided costs and disruption. To facilitate this, there is a need for authoritative direction for the market

on what potential future conditions society needs to prepare for. In terms of facilitating preparedness and guiding financing decisions, the Government also needs to set expectations of what a climate secure and resilient economy should look like – the range of physical risks to consider and minimum operational performance expectations of key infrastructure though flooding, heat, drought and continuity of basic services etc. A systems change approach to matching new policy with financial incentives and risk/return across all sectors of the economy is then needed, drawing directly on the climate mitigation playbook.

Efforts need to be accelerated to define policy and regulatory environment for relevant assets and infrastructure to create systems of incentives. The Government's Land Use Nature and Adapted Systems Advisory Group (LNAS AG), a sub-group to the Green Technical Advisory Group, chaired by the GFI, will be advising on defining a series of adapted systems in the UK. But in addition, a comprehensive programme of policy development is needed to turn this vision into delivery of the resilient system needed to create a climate secure economy. A financial lens can be brought to this policy and financial solutions design process early on: based on asset ownership, access to balance sheet and whether new solutions or retrofit are needed.



We suggest that there are six distinct 'buckets' to consider.

1. Public infrastructure delivered by private utility businesses

Includes e.g. water, rail etc. Investment budgets are shaped by a regulated price review approach and so the upfront costs of investment in resilience will need to be built into these discussions to facilitate access to finance.

- *What needs to happen to enable this business case to be effectively made to the regulators? Timing is key to hit the negotiation cycle at the right time.*

2. Private infrastructure delivered by non-utility businesses

This includes all other businesses – across a range of industries e.g. retail, pharmaceuticals etc. Future proofing infrastructure and supply chains should be good business risk management on the basis of avoided business interruption.

- *What needs to happen to enable this business case to be effectively made to senior management teams/boards and investors?*

3. Existing housing

Assets are owned by individuals, trusts and firms for which retrofit and finance solutions will need to be delivered.

- *Are there lessons to learn from the GFI's success in catalysing the growth of the green mortgage market?*

Insurers can contribute by developing buildings and contents insurance policies that promote resilience in the event of building damage.

- *Where are there examples of existing best practice that can be further showcased and by whom?*
- *What role do banks have in promoting the use of such insurance policies to individual clients – or in offering portfolio-wide solutions to customers and pool their risk?*

4. Publicly owned infrastructure, including buildings

Paid for by the public purse, this includes flood defences but also hospitals and government buildings. Currently investment is secured through general taxes (and some PFI in the case of hospitals).

- *For new builds and retrofit, should dedicated new resilience bonds be raised from the private sector to bring forward investment?*
- *The UK Sovereign Green Bonds allocated funding to the Environment Agency for flood defences. What other solutions might be available?*
- *What solutions could be developed to facilitate local authority-based public buildings (school, council, social housing) investment? A concerted effort to develop public sector financial solutions could be beneficial to ensure access to up front finance is not an issue.*

5. New buildings

Assets built by private contractors and then sold on. This includes both publicly owned and private owned buildings. The issue is a live one with around 5,000 new homes recently approved in high flood risk areas⁹. With the current wave of housebuilding the issue is more urgent than ever.

- *How do the planning system and building codes need to change to ensure all new buildings are resilient?*
- *What lesson can be learned from overseas? Australia and US are prime examples.*

6. Food and agriculture systems

Farming and food distribution need to adapt to the realities of a changing climate.

- *How can financial services firms support with access to finance to fund more resilient systems of food production?*
- *How can transition risk for farmers be best managed?*
- *What public policy enablers are needed to fast track access to financial solutions?*

9. <https://www.theguardian.com/society/2021/nov/22/more-than-5000-homes-in-england-approved-to-be-built-in-flood-zones>



The private sector can accelerate action now

Private investment can already play a considerable role in building a Climate Ready UK for businesses and households. Looking across the six buckets – three stand out as being areas where the private sector can start to accelerate action unilaterally: private infrastructure delivered by non-utility businesses; existing housing; and food and agriculture systems. Many of these investments are low regret – i.e. they deliver benefits today. Indeed, most of those risks identified as high priority by the CCRA3 relate to asset types that are privately owned or operated in the UK, including supply chains, water use, agriculture and human health issues due to overheating in private homes and businesses¹⁰.

Success will be determined by the use of data and scenario analysis to identify risks and develop solutions to solve for those risks. As noted in the Mission Climate Ready report there are good examples of financial institutions stepping up already – with sustainability linked bonds for investing in resilient buildings and water efficiency, including the BBVA Water Footprint Loan, as well as variable repayment loans to address income variability for smallholders¹¹. In Delft, Bouwfonds, a subsidiary of Rabobank, develops buildings that take more account of extreme weather conditions than in conventional and existing buildings.

Underpinning the ability of financial institutions to start to answer these questions is access to the right data in the right format that enables them to undertake risk assessments and, from that, develop product offerings that start to address those risks. This could include opportunities to manage flood risk but also wind, drought and heat risk. Efficiencies in these endeavours can be created through overarching guidance provided by government on what good resilience looks like – supercharged by policy enablers of a wide variety, including – as noted above – changes to building codes, planning law and how nature markets revenue streams are combined.

10. <https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk/>

11. <https://www.smithschool.ox.ac.uk/sites/default/files/2023-06/Mission-Climate-Ready-Unleashing-finance-and-investment-REPORT.pdf>

Moving forward

Bright spots in the growth of finance for climate security are starting to be visible but more needs to be done. A new narrative, a new policy framework, and a new investment thesis is needed across the UK. As a next step to drive this, the GFI is cochairing with Impax Asset Management, alongside a technical partnership with the Environmental Change Institute at Oxford University, the Climate Financial Risk Forum Adaptation Working Group as a means to develop answers to the questions set out above. Key issues covered in this work will be:

- Working with financial institutions to showcase best practice and build frameworks for better directing finance into adaptation and resilience solutions. This includes understanding how to work with currently available data solutions – but also identifying gaps and suggesting remedies;
- Analysing the current financial regulatory framework to see how can it be better used to support finance for climate security;
- Setting out where public policy is needed to generate an expanded deal pipeline to leverage the effects of supply side interventions;
- Understand what disclosures would be helpful to support the deployment of capital into adaptation finance opportunities.

We urge you to get in touch if you would like to get involved in this work.



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