Resilient Planet Finance Lab

Developing evidence, analytics and solutions to radically scale the mobilisation of finance and action for resilience, nature and SDGs globally.

Resilient Planet Finance Lab

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Annual report

2024

Photo credit: Ashim D'Silva (Unsplash)

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Foreword

"The year 2023 – the year the Resilient Planet Finance Lab was born - was the warmest year on record globally, with record breaking heatwaves across India, Europe, part of Asia and Latin America, floods, wildfires and the costliest year on record in the USA for climate-related damages. The world's largest reinsurers measured between $280 to $350 billion losses worldwide.

It was also the year that the financial world really woke up to the macro-criticality of nature and the critical dependencies between people – planet – and prosperity. Our own research shows that nature-related risks could lead to widespread economic dysfunction, cascading across global supply chains and knocking-off years of growth even in the wealthiest economies.

Into this world, the Lab was born with a mission to work with partners across the financial sector, government, regulators, academia and civil society to develop evidence and solutions that can radically scale the mobilisation of finance for nature and resilience with a vision and mandate to help align finance with sustainability goals.

The challenges are significant, but so are the opportunities. The time for action is now.

I'm delighted to share some of the highlights from our first year in this annual report and wish to express our huge gratitude to all those individuals and organisations that have worked with us this year."

- **Dr Nicola Ranger**
  Director, Resilient Planet Finance Lab and
  Co-Chair, Resilient Planet Data Hub

Ekhosuehi Iyahen, Secretary General of the Insurance Development Forum and Nicola Ranger, Director of the Resilient Planet Finance Lab, at the launch of Resilient Planet at COP28 in Dubai

"[From the perspective of the insurance sector] I welcome the great progress made by the Resilient Finance Lab in applying science to guide global financial flows towards adaptation and greater resilience. The Insurance Development Forum was glad to contribute to the Resilient Planet Data Hub mentioned in this report, because we believe in the power of risk insight to corral action across public and private institutions.

In particular, the work of the Resilient Planet Finance Lab on nature-related risk and the demonstrable link with systemic risk to us all is both sobering and strategically important. I encourage readers to consider how the tools developed by the Lab can help build climate resilience in their own organisations and programmes."

It has been a great start, and I look forward to seeing what the Lab can achieve in its second year!"

Ekhosuehi Iyahen
Secretary General
Insurance Development Forum

"We need innovative analytical work to make a strong case for investing in resilience, which remains inadequate if we are to accelerate the implementation of the Sendai Framework for Disaster Risk Reduction. That is why UNDRR is proud of its partnership with the Resilient Planet Finance Lab to help countries mobilise action and finance for resilience."

- Kamal Kishore, SRSG and Head of UNDRR

"Climate change is already a reality we face every year, making it essential for corporations and their financiers to assess its impact and build resilient businesses to protect their stakeholders.

Climate Arc is proud to support the Global Resilience Index Initiative and the development of Resilient Planet Finance Lab, which enhances the availability and quality of physical climate risk and resilience capabilities for corporations. We eagerly anticipate further collaboration to integrate this tool into climate transition assessments, influencing financing decisions. With this initiative, we aim to develop comprehensive analytics for both climate change mitigation and adaptation, encouraging the private sector to drive solutions that are future-proof."

- Meryam Omi, Chief Executive, Climate Arc

"NERC is pleased to support the Resilient Planet Finance Lab, an initiative that has rapidly advanced thinking in finance for nature and resilience around the world. In just one year, the Lab has delivered impactful tools and evidence that are guiding efforts to align finance with sustainability goals. We look forward to continuing our partnership as the Lab grows its activities and its impact on nature and adaptation finance."

- Dr Iain Williams, Director of Strategic Partnerships, Natural Environment Research Council

"Non-State Actors play a pivotal role in driving finance and investment for adaptation and resilience. The Resilient Planet Finance Lab, a core part of the Resilient Planet Initiative nested under the Sharm el-Sheikh Adaptation Agenda, is harnessing this momentum through strong partnerships between the public and private sectors, guided by the leadership of Race to Resilience partners. This collaboration accelerates adaptation, advances pathways for a just transition, and expands nature-based finance, all with the goal of strengthening the resilience of people, communities and the planet."

- Nigel Topping, Race to Resilience Global Ambassador,
  UN HLC COP26 and Founder Ambition Loop

"In the year that the new global climate finance target will be set, the Resilient Planet Finance Lab is leading the way in adaptation finance. It is sending a clear signal: investing in adaptation and resilience not only strengthens our response to climate impacts but also delivers substantial economic, social, and environmental returns. Banks, insurers, investors, and businesses worldwide are innovating and leveraging data-driven solutions to build a new adaptation economy that puts the most vulnerable communities at the front, enabling access to climate finance. We are thrilled to continue our collaboration with the Resilient Planet Initiative as a Flagship deliverable of the Sharm El-Sheikh Adaptation Agenda and grateful for the support of the Race to Resilience partners"

- Marcia Toledo, Director Adaptation & Resilience, Climate Champions Team

"

"Progress on adaptation and nature finance has for too long has been stalled by a chronic lack of awareness, data and well targeted public policy. Bridging these gaps is ever more urgent as temperatures continue to march upward and our critical ecosystems are eroded, putting people and growth at risk. The Resilient Planet Finance Lab brings together government, finance and experts to build the common understanding and language of data, tools, policies and guidance needed to unlock progress. I look forward to continuing to work with the team to help mobilise and align finance and investment for a nature-positive and resilient future"

**Emma Howard Boyd CBE
Chair of London Climate
Resilience Review**

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About us

Resilient Planet Finance Lab

The Resilient Planet Finance Lab is an accelerator programme that aims to develop evidence, analytics and solutions to radically scale the mobilisation of finance and action for resilience, nature and SDGs globally.

The Lab has global reach, working collaboratively with financial institutions, governments and others at all scales through solutions-focused sprints delivering policy outcomes, blueprint financial instruments and toolkits.

The Lab is part of the Resilient Planet Initiative, launched at COP28 as a Flagship Initiative of the Sharm el-Sheikh Adaptation Agenda, spearheaded by key Race to Resilience Partners.

The flagship platform of the Lab is the Resilient Planet Data Hub, co-convened with the Insurance Development Forum, UNDRR and the UN Climate High-Level Champions, providing world-leading data-driven metrics, tools, frameworks, and solutions for decision makers.

The Lab is Directed by Dr Nicola Ranger, hosted by the Environmental Change Institute at the University of Oxford, and works in partnership with researchers and practitioners across the UK and internationally. The Lab is core member of the 'Call for Collaboration to enhance Private Adaptation Finance' as part of the Sharm el-Sheikh Adaptation Finance Taskforce. The Lab has received initial investments from NERC and Climate Arc.

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Our achievements

Photo credit: Uys Wynand (Unsplash)

Using AI to assess companies' resilience alignment

Challenge

As interest in the financial sector turns to adaptation and nature, financial institutions and regulators are increasingly focussed on determining the extent to which companies are aligned with adaptation goals, and resilient to physical climate and nature risks. This information is crucial both to build resilience and scale up investment in adaptation and nature. However, disclosure is limited and reliable evaluation tools do not exist to date.

6 **themes**

60+ **indicators**

We built on the TPT, TCFD and ISSB to develop an assessment framework that evaluates company adaptation and resilience alignment. We then collaborated with the University of Zürich to develop a Natural Language Processing Model to accompany it.

Impact

Preliminary results of an example use case suggest limited corporate alignment with adaptation. This confirms the need for urgent action to align business strategies to adaptation and improved disclosures on this theme.

98
Nature Action 100 companies analysed

Integrating our AI tool to scale uptake

The Resilient Planet Finance Lab will partner with ClimateArc, the University of Zürich and XDI to integrate adaptation, resilience and nature analytics into the TransitionArc tool, for the first time allowing investors to assess progress of firms and transition plans against an integrated set of metrics, and providing vital information to regulators and government.
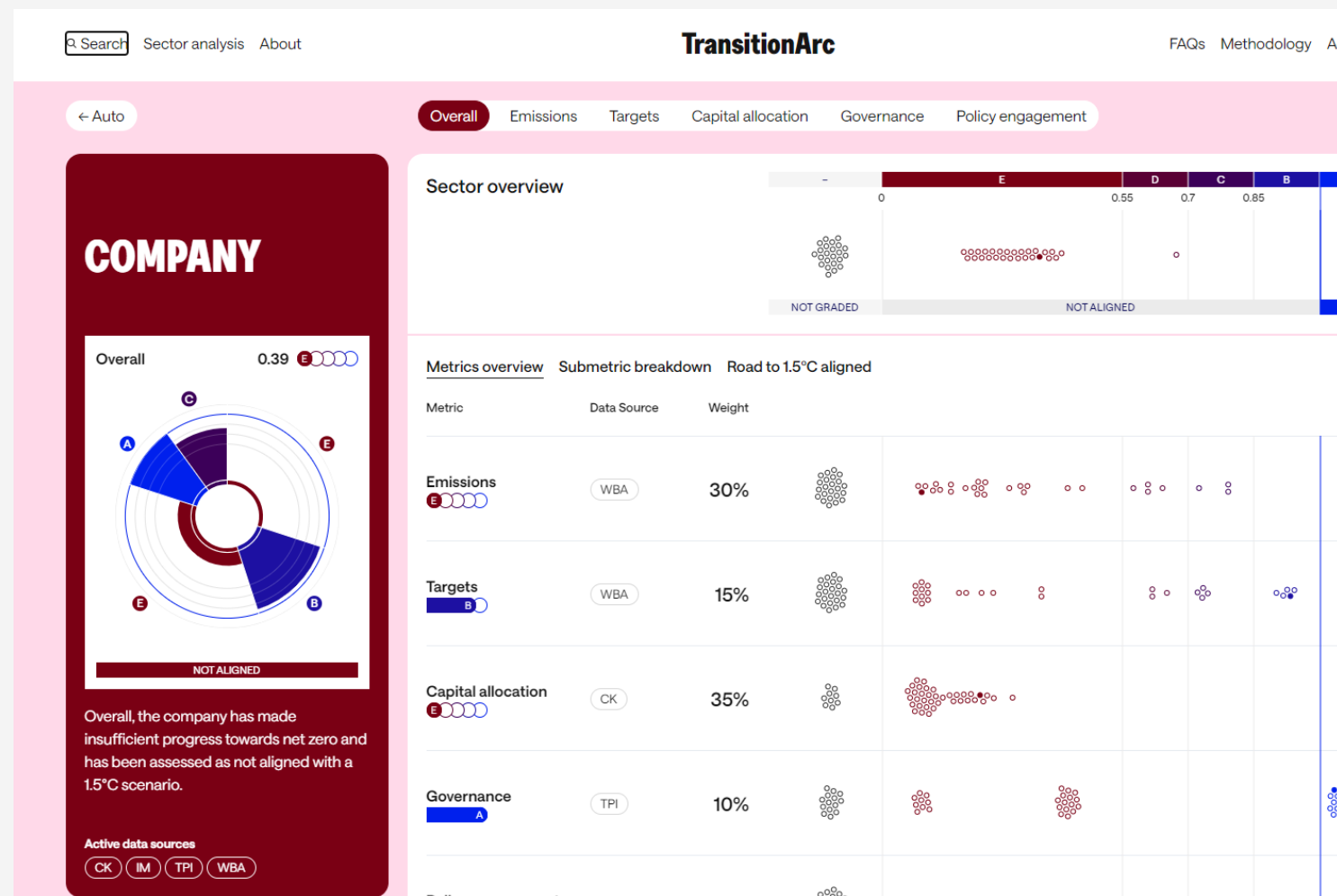
Screenshot of the current TransitionArc tool

14

Informing adaptation-inclusive transition plans

Challenge
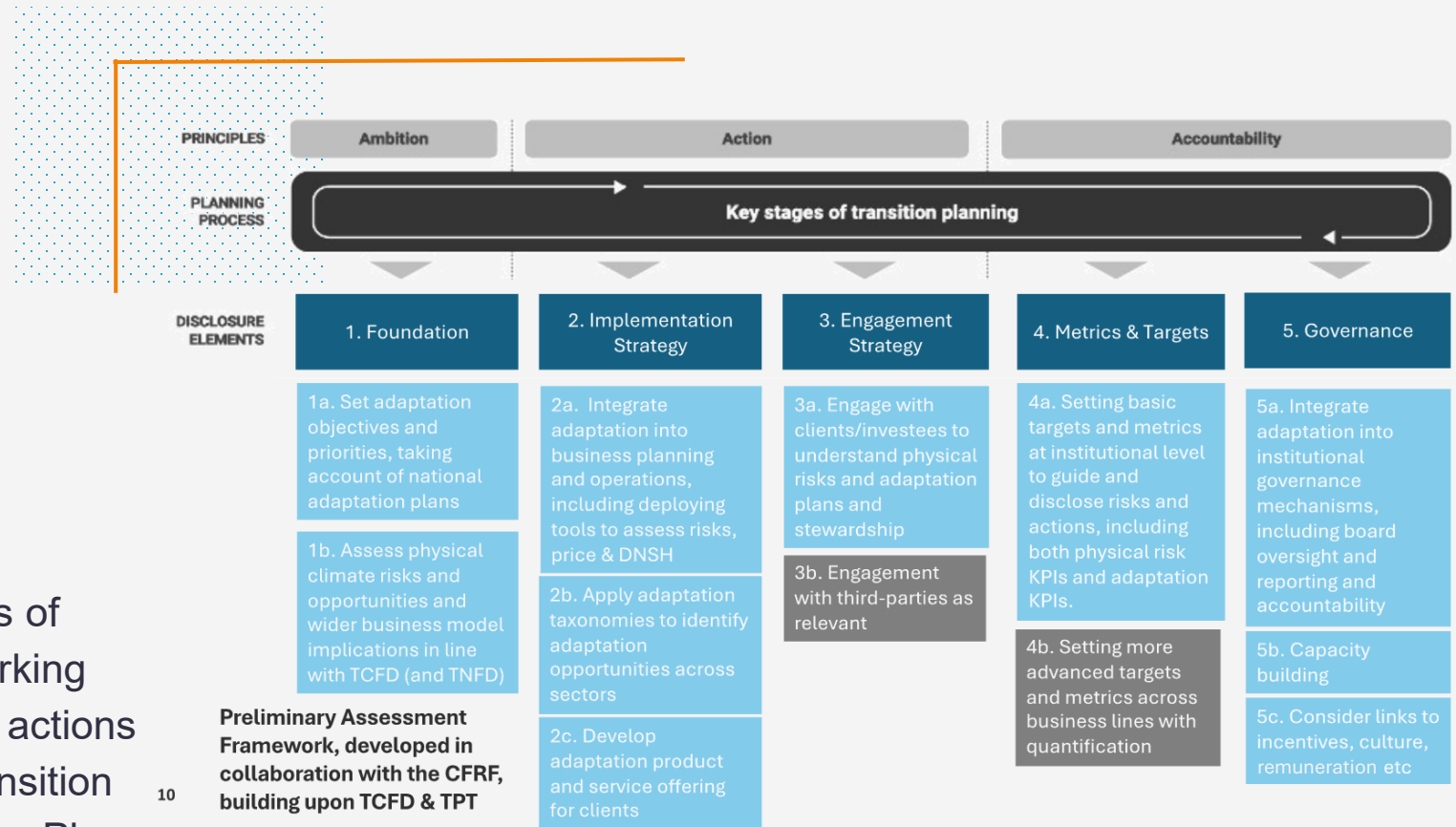
The Transition Plan Taskforce and NGFS both identified the need to integrate adaptation and nature within transition plans, yet financial institutions need guidance to do this.

Impact

We worked with the more than forty members of Climate Financial Risk Forum Adaptation Working Group to develop a preliminary framework of actions to integrate adaptation and resilience into transition plans. We also fed this work into the Transition Plan Taskforce Adaptation Working Group.

	PRINCIPLES	Ambition	Action		Accountability	
PLANNING PROCESS			Key stages of transition planning			
DISCLOSURE ELEMENTS	1. Foundation	2. Implementation Strategy	3. Engagement Strategy	4. Metrics & Targets	5. Governance	
	1a. Set adaptation objectives and priorities, taking account of national adaptation plans	2a. Integrate adaptation into business planning and operations, including deploying tools to assess risks, price & DNSH	3a. Engage with clients/investees to understand physical risks and adaptation plans and stewardship	4a. Setting basic targets and metrics at institutional level to guide and disclose risks and actions, including both physical risk KPIs and adaptation KPIs.	5a. Integrate adaptation into institutional governance mechanisms, including board oversight and reporting and accountability	
	1b. Assess physical climate risks and opportunities and wider business model implications in line with TCFD (and TNFD)	2b. Apply adaptation taxonomies to identify adaptation opportunities across sectors	3b. Engagement with third-parties as relevant	4b. Setting more advanced targets and metrics across business lines with quantification	5b. Capacity building	
		2c. Develop adaptation product and service offering for clients			5c. Consider links to incentives, culture, remuneration etc	

Preliminary Assessment Framework, developed in collaboration with the CFRF, building upon TCFD & TPT

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Enabling policy conditions for adaptation finance

Challenge

The barriers to mobilising increased adaptation finance are often reduced to information gaps. The role of the policy environment is understudied, which has lead to a dearth of prospected policy solutions and recommendations to government.

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

1. Set a clear, ambitious vision and strategy for adaptation	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. Set the right enabling environment to align finance for a Climate Ready UK
4. Gear up government to drive adaptation and align policy with adaptation goals	5. Power up public finance to support adaptation	6. Make the UK the leading net zero, resilient and nature-positive finance hub

Impact

We co-authored a report with leading adaptation finance practitioners to propose six pillars of action for a climate-ready UK economy.

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. We find that some of the biggest challenges for adaptation finance are on the demand-side (e.g. incentivising adaptation investment, creating project pipeline, aligning existing investments).

Read the full report

Assessing nature-related financial risks

Challenge

Nature-related financial risk assessments are challenged by the complexity, non-linearity and uncertainty of nature risks. Moreover, climate- and nature-related risks are often modelled in silos, which drives system risk.

Impact

Enhanced modelling capabilities allows financial institutions and regulators to better prepare for the systemic risks posed by nature and climate, leading to a smoother transition.

We worked with the Network for Greening the Financial System (NGFS) Task Force Nature and partners (with financial support from INSPIRE) to co-develop a scenario-based integrated assessment framework. Our team led the development of the assessment methodology by developing new frameworks and risk screening and assessment methodologies for scenario development.

In collaboration with: Green Finance Institute, NGFS TF Nature, NIESR, UK Centre for Ecology & Hydrology, UNEP WCMC, and University of Reading

Nature risks in the UK

6%-12%
GDP loss by 2030s

8%-53%
of largest banks' assets exposed to nature-related transition risks

See more at Our Publications

Photo credit: Anthony Delanoix (Unsplash)

First nature risk scenarios and financial risk assessment

INTERNATIONAL SCENARIO
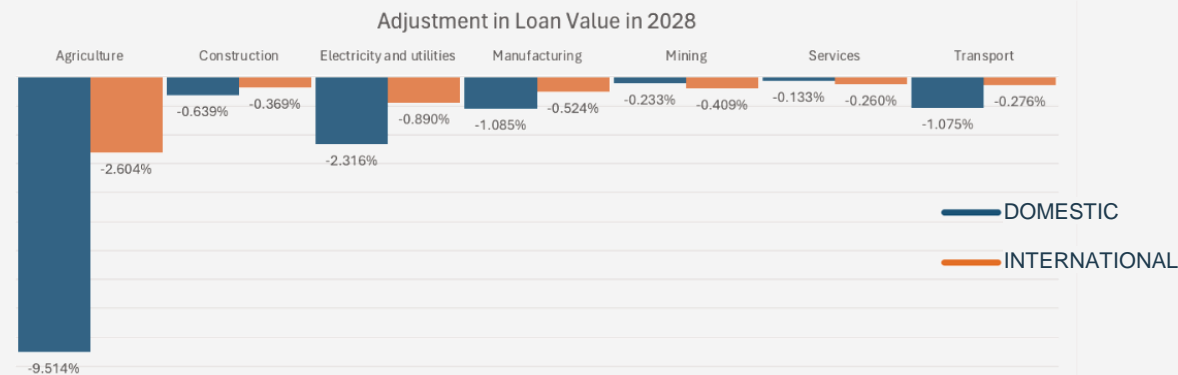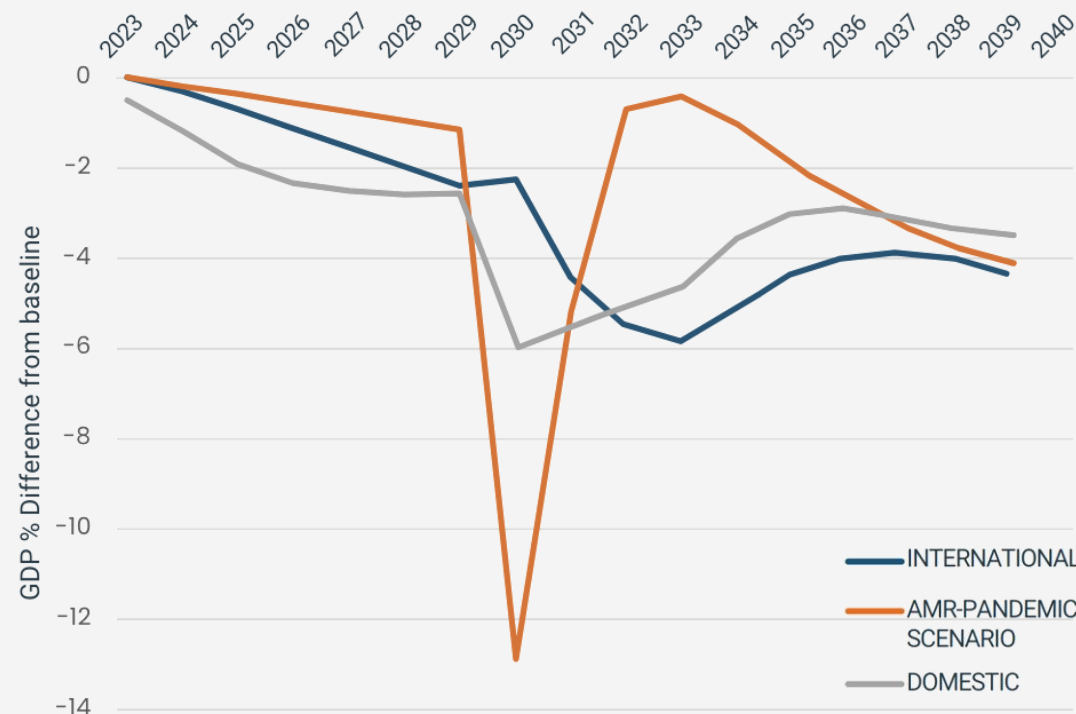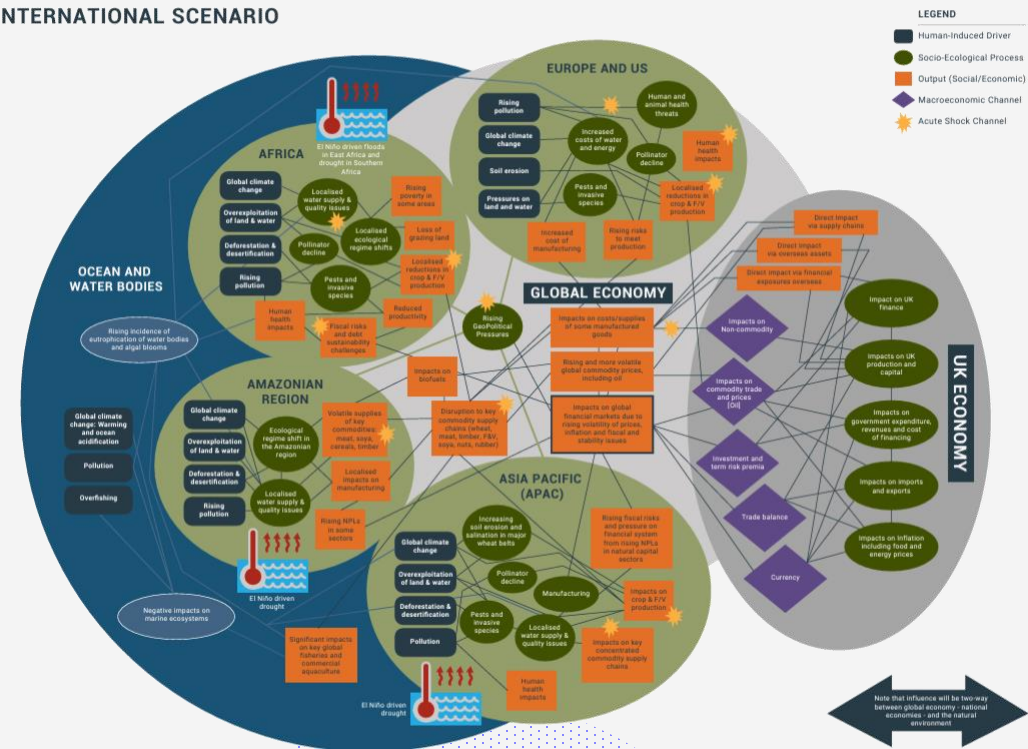
Results from UK economy analysis

Guiding the use of **climate data in adaptation planning and investment**

Challenge

Financial institutions and asset managers require reliable and granular data for their climate risk assessments. This is also a vital ingredient of adaptation plans, business strategy development, stewardship and investment due diligence. Many private and public data providers have emerged to plug this data gap, but different providers are suited to different needs.

70 Asset-level sources

100 Climate hazard sources

39 Vulnerability data sources
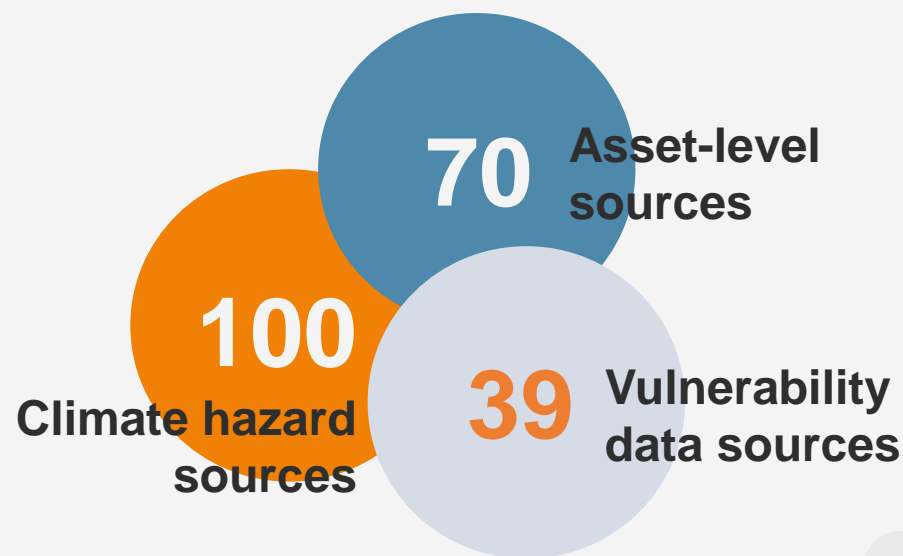
We worked with the Climate Finance Risk Forum and the Met Office to provide guidance on the use of data and scenarios in adaptation decision making. This included creating a database of public and private climate and risk data, including information on providers such as methodologies used, data format, spatial granularity and others.

Impact

Higher uptake of the right data will lead to improved climate risk assessments. Improved climate risk assessments, on the other hand, are the foundation for targeted and effective climate resilience.

Guiding the use of climate and **resilience data**

Some financial institutions need clear guides on how to use resilience data in their decision-making.
We collaborated with various partners to develop three use cases that demonstrate how open climate and nature data can be used by stakeholders to direct investment toward climate resilience and nature restoration.

One case study looked at how combining spatial data on mangroves with quantitative analysis on the economic benefits to local communities could help investors in identifying suitable mangrove restoration projects. This was part of a wider project conducted with the Oxford Programme for Sustainable Infrastructure Systems with kind support of the Global Centre for Adaptation.

The other case studies explored how climate risk data could be used in scenario analysis to understand sovereign climate risk and the benefits of investing in adaptation and how tools could be developed for climate resilient infrastructure adaptation option appraisal.

Guiding the use of resilience metrics by banks

Challenge

To align finance with adaptation and resilience goals, financial institutions need appropriate adaptation metrics and targets.

We have worked closely with the United Nations Environment Programme Finance Initiative's (UNEP FI) Principles for Responsible Banking adaptation working group to compile and categorise resilience metrics to improve their usability and accessibility by banks.

440

Metrics compiled

26
Sources

10
Different filters

Impact

With this database, banks now have a user-friendly tool to identify the right metrics to use when assessing company alignment to resilience or when drafting their own adaptation plans. Working side-by-side with UNEP FI's PRB has enabled this work to be taken up by banks and DFIs, creating the foundation for a globally consistent set of resilience metrics.
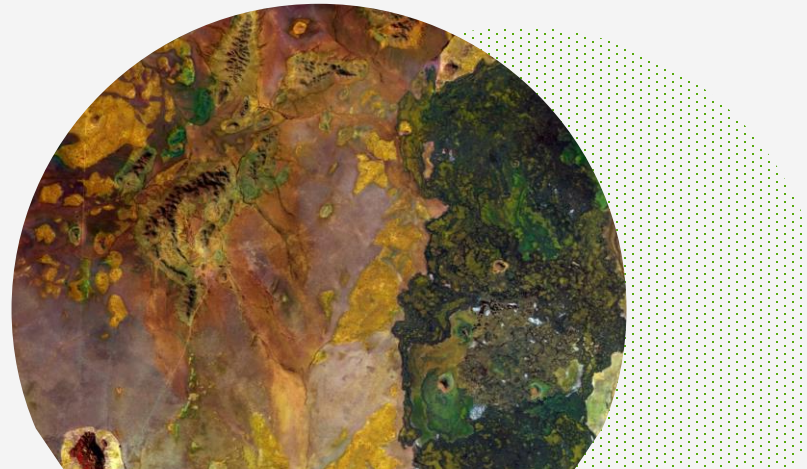
Guiding the use of adaptation taxonomies

Challenge

Too many adaptation and resilience taxonomies risk jeopardising clarity on which activities are adaptation-aligned and which are not.

We are the first to compile and systematise a list of adaptation taxonomies and analyse their differences. We also contributed to the UK Green Technical Advisory and LNAS Groups (on the UK taxonomy) and the Climate Bonds Initiative Resilience Taxonomy Advisory Group (RTAG).

Impact

This foundational work together with a forthcoming analysis enables the financial sector to identify adaptation-aligned investment opportunities. Increased harmonisation between taxonomies also serves regulators to embed comprehensive adaptation taxonomies in regulation.

35+

taxonomies analysed covering state and non-state actors

ID	Year	Link	Naviga	Risk	Plans	Net-Ze
				Mullan and Ran		
CBI Climate Resilience principles	2019	Publication	y	X		X
Boutang et al	2020	Paper	y	X		
Adaptation SME Accelerator Programme	2020	Slides	y	X		
EU Sustainable Investment Taxonomy	2020	Source	y	X	X	X
UNDRR Budget Tagging for DRR and CCA	2020	Source	y			
SDG Finance Taxonomy	2020	Report	n		X	
UNFCCC Technology Needs Assessment	2021	Report	y			
Malaysia taxonomy (Bank Negara	2021	Link	n	X		
Jenkins et al	2022	Paper	y	X		
MDB Joint Methodology for tracking climate change adaptation finance	2022	Report	y	X		
South Africa	2022	link	n	X	X	
Colombia Taxonomy	2022	link	n	X	X	X
Malaysia Taxonomy (Securities	2022	link	n	X		
South Korea - K-Taxonomy Guidelines	2022	Link	n	X	X	
Blackrock Megaforces publication	2023	Report	y	X		
IFC Biodiversity Finance Reference Guide	2023	Report	y			
Mexico Taxonomy	2023	link	n	X	X	X
GARI, MSCI, Lightsmith - CRISP Framework	2024	Report	y	X		
Goldman Sachs SUSTAIN: Adaptation physical risk, financial risk, Opportunity	2024	Report	y	X		
Standard Chartered Adaptation and Resilience Taxonomy	2024	Report	y	X	X	
CRAFT - Climate Resilience Adaptation Financing Taxonomy	2024	Paper	n			
Tailwind	2024	Link	y	X		
ASEAN Taxonomy	2024	Link	n	X	X	

Snapshot from taxonomy database

Resilient Planet
Data Hub

Delivering the next generation of global, open climate risk analytics

Our tool brings together open-access data on hazards, infrastructure networks and land use. We combine it with our bespoke analysis to guide decision-making. Developed in collaboration with a wide range of partners, including the Oxford Programme for Sustainable Infrastructure Systems.

resilient-planet-data.org

RPDH was founded with our partners:
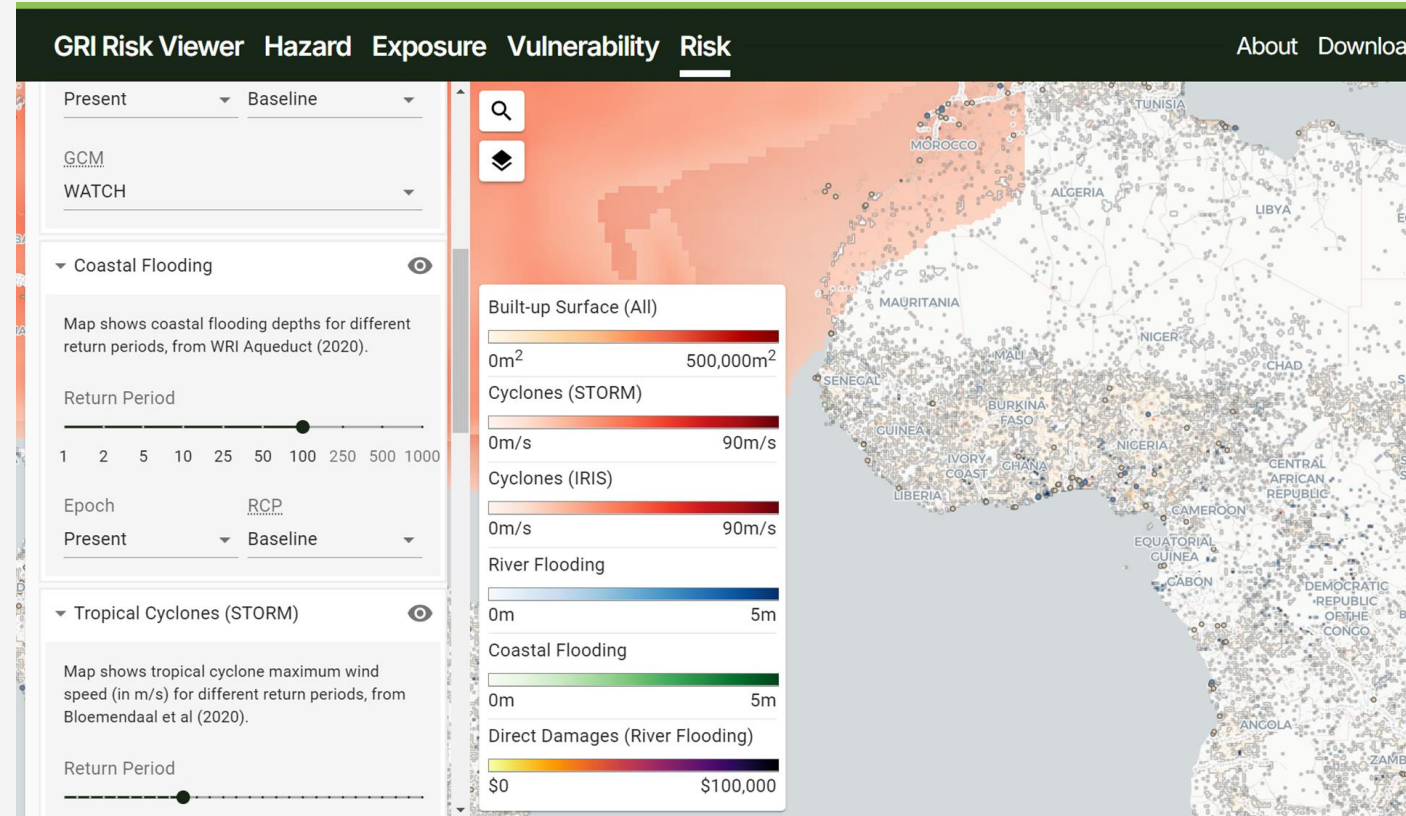
Strengthening scenario analysis with real-world data

For example, working with the Bank of Thailand and UK PACT to develop analytics for financial resilience to climate change. In this example, various flood risk scenarios were considered.

This project was conducted in partnership with the Oxford Sustainable Finance Group and Theia Finance Labs, with kind support of the UK FCDO.
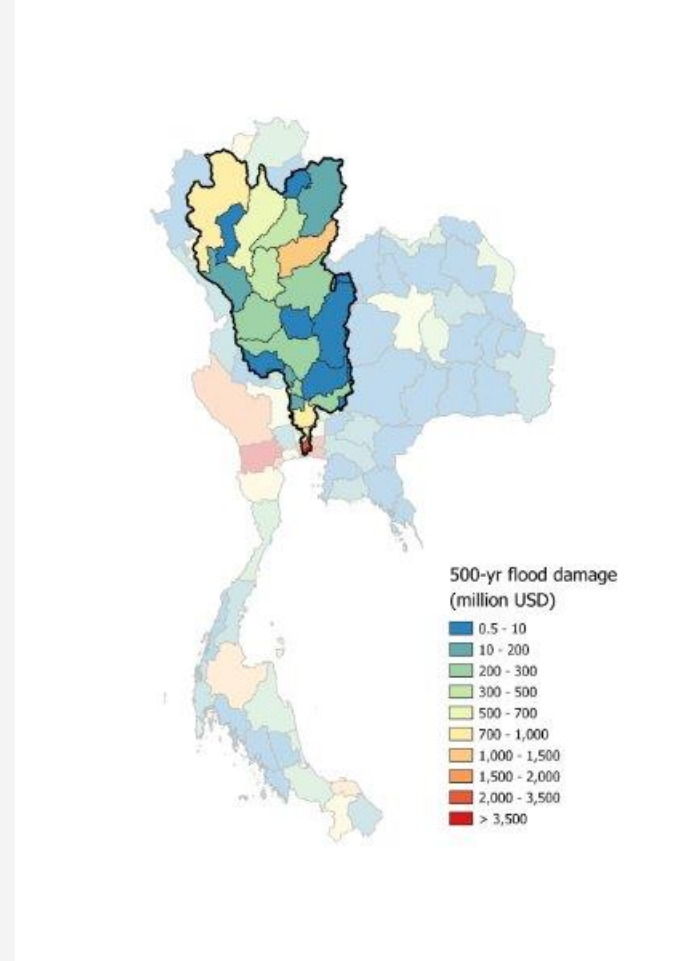
Insights from Bank of Thailand analysis

RPDH was founded with our partners:
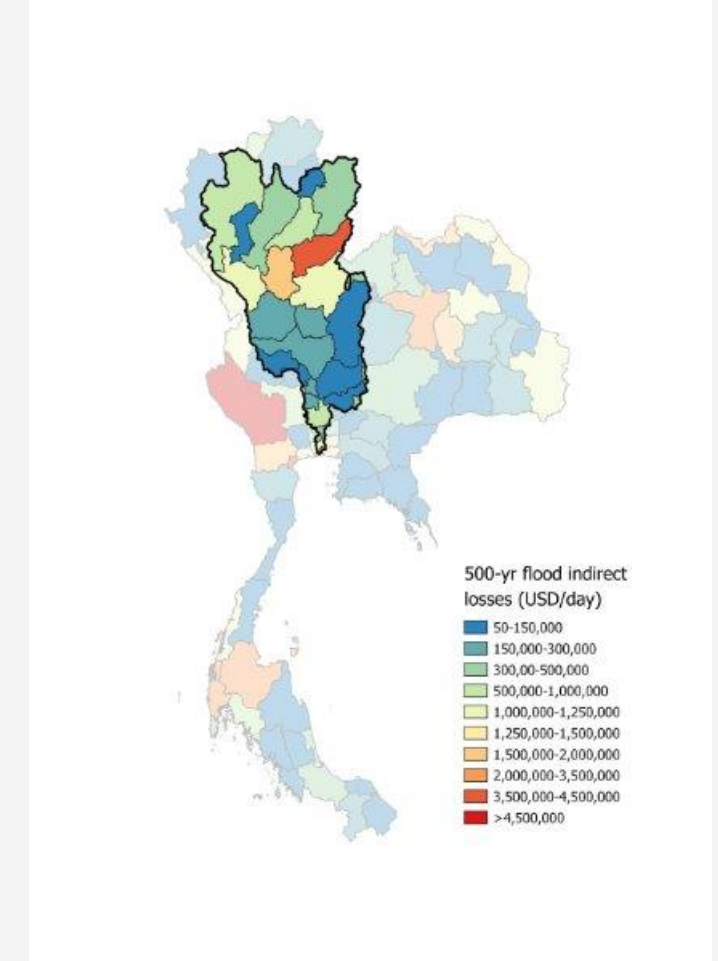
Supplying data for impact-based forecasting

RPDH Impact Metrics	Total
Population Exposed (> 150 cm)	210,000 pp
Roads Impassable	3,300 km
Estimated Humanitarian Cost	$ 4.2 m USD
Estimated GDP impact (direct + indirect)	$ 47 m USD

In late September 2022, Typhoon Noru caused severe flooding in Thailand, Vietnam, and the Philippines.

We are exploring how RPDH risk metrics can be combined with flood forecasting tools such as GloFAS to support impact-based forecasting as part of the UN's Early Warnings for All initiative that aims to ensure everyone on earth has access to early warning systems by the end 2027.

Excerpts from the analysis

RPDH was founded with our partners:

Building a community for scale and impact

Fostering systemic resilience is a collaborative effort. Over the past year, we have been around the world, bringing together our and others' insights to collectively drive towards resilience. We have worked with financial institutions and regulators to integrate resilience and nature into decision-making, including with the NGFS, the Climate Financial Risk Forum, The UNEPFI Principles of Responsible Banking, Race to Resilience and the Climate Bonds Initiative RTAG and GTAG. We took part of the Sharm el-Sheikh Adaptation Agenda Finance Taskforce 'Call for Collaboration to Enhance Private Adaptation Finance'. Some of our highlights include…

Taking part in the UN Climate Change High-Level Champions Google Design Sprint at the New York Climate Week.

Presenting at workshops in Vietnam, Thailand, Malaysia with DFIs, central banks and regulators on preparing for climate change and delivering adaptation now

Hosting leaders from across finance, data and government communities at COP28 to chart a roadmap for the community

04

Our outputs

Photo credit: Jaanus Jagomägi (Unsplash)

Our reports and tools
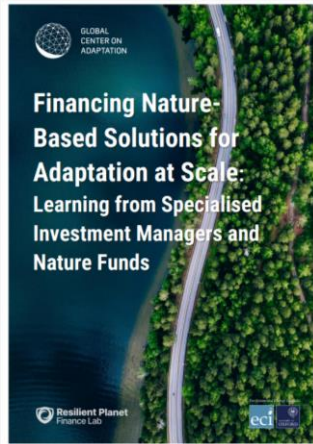
2023 ⦙ Financing nature

Financing nature-based solutions for adaptation at scale: Learning from specialised investment managers and nature funds

Access here
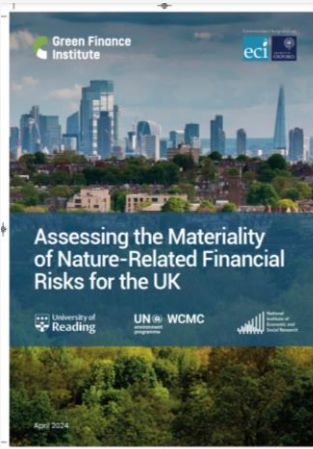
2024 ⦙ Modelling nature risks

Assessing the materiality of nature-related financial risks for the UK

Access here

2023 ⦙ Integrated Climate-Nature Scenarios

The Green Scorpion: the macro-criticality of nature for finance – Foundations for scenario-based analysis of complex and cascading nature-related financial risk

Access here

Our team also contributed to several publications with our partners, including Standard Chartered, the Climate Financial Risk Forum, the Network for Greening the Financial System and the UN Environment Programme Finance Initiative.

Our academic articles

2023 ⦙ Adaptation and Resilience Alignment

Aligning Finance with Adaptation and Resilience Goals: Targets and Metrics for Financial Institutions

A technical note to accompany the database of targets and metrics produced in collaboration with the UNEP FI Principles for Responsible Banking adaptation working group.

Access here

2024 ⦙ Adaptation and Resilience Alignment

The (in)coherence of adaptation taxonomies

An analysis of 24 adaptation taxonomies that examines differences and overlaps and proposes guidance and avenues for future taxonomic efforts.

Access here

2024 ⦙ Adaptation and Resilience Alignment

Harnessing AI to assess corporate adaptation plans on alignment with climate adaptation and resilience goals

Proposing a framework to assess firm alignment with adaptation and resilience, coupling it with a natural language processing model and carrying out a pilot use case analysis on the Nature Action 100 companies.

Access here

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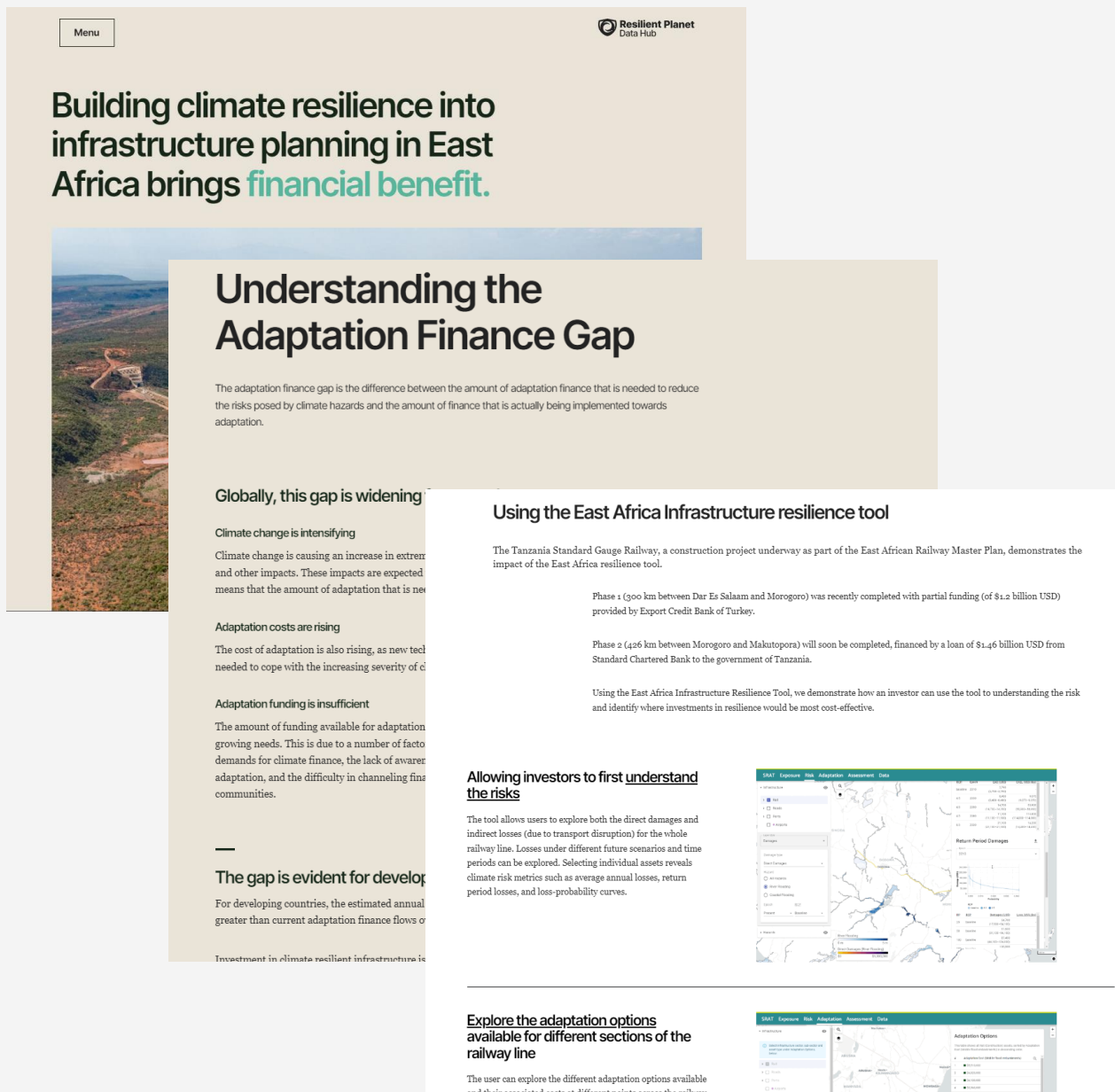
Our case studies

Building climate resilience into infrastructure planning in East Africa brings financial benefit

Publishing case studies to guide investors on how to integrate resilience data into decision-making

Access here

Our case studies

Scenario analysis to **understand climate financial risk** in South-East Asia

Publishing case studies to guide investors on how to integrate resilience data into decision-making

Access here

Our case studies

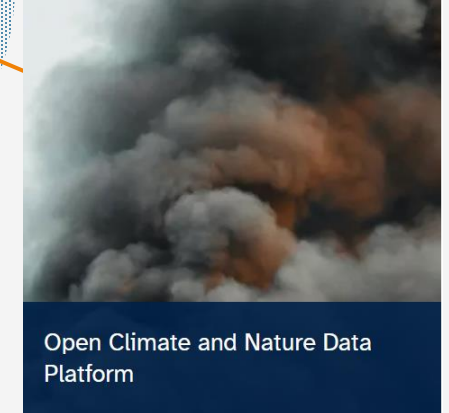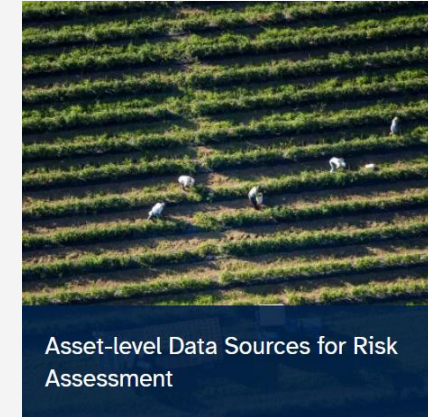## Data-Driven Investment for Nature-Based Solutions

Publishing case studies to guide investors on how to integrate resilience data into decision-making

Access here

All of our data products and guides are open-source and readily available

These can all be accessed from the same site.

Access here

Climate Hazard Open Sources

Asset-level Data Sources for Risk Assessment

Taxonomies Database

Adaptation Targets and Metrics

Adaptation Plans and Corporate Performance

Open Climate and Nature Data Platform

05

Our future

A look ahead…

We're proud of what we achieved in 2023/4, but the year ahead brings a significant and exciting scale-up in activities on both nature and adaptation finance to further advance the implementation and finance of the Sharm el-Sheikh Adaptation Agenda and support the delivery of the Race to Resilience campaign. Some highlights include…

Expanding our work on nature-related financial risks globally with a continued focus on integrated climate-nature scenarios.

Scaling up our work in emerging and developing economies to develop data and financial solutions to scale up nature recovery and adaptation finance, including new work on just adaptation, supply chains and nature markets.

Accelerating our work on the linkages between physical risks, debt, investment and sovereign credit ratings, with new work on the opportunities for sustainability-linked sovereign finance, disaster risk financing and insurance.

Development of guidance, frameworks, policy recommendations, scenarios, data and analytics – all openly available – working hand-in-hand with financial institutions, governments, international financial institutions and regulators.

Introducing new data and methods to assess the alignment of firms with adaptation and nature goals, inform transition planning and identify opportunities for stewardship and investment.

06

Our people

Our team

Director

Dr Nicola Ranger
Director

Senior leader and researcher working at the intersection of finance, policy, climate, nature and resilience. 20 years' experience in risk analytics, finance, environmental economics and decision-making across academia, public sector and private sector, including World Bank and UK Government.

Data, Modelling and Analytics

Dr Samira Barzin
Geospatial Economics and AI

Dr Mark Bernhofen
Climate Analytics and Scenarios

Dr Anna Freeman
Resilience Analytics

Prof Michael Obersteiner
Global Change and Sustainability

Emma O'Donnell
Nature Data and Analytics

Estelle Paulus
Complex Systems Analysis

Akaraseth Puranasamriddhi
Macroeconomics and fiscal risks

Dr Juan Sabuco
Resilience Analytics

Dr Matthias Wildemeersch
Systemic Resilience

Applications, Policy and Evidence

Dr Jimena Alvarez
Greening Finance for Nature

Dr Roosa Lambin
Social Policy, Adaptation & Resilience

Benedikt Signer
Risk Finance and Governance

Roberto Spacey Martín
Adaptation & Resilience Finance

Mathias Weidinger
Geospatial & Development Economics

Dorian van Raalte
Nature Finance

Management

Andrey Levitskiy
Group Manager

Our partnerships

The Resilient Planet Finance Lab and the Resilient Planet Data Hub are collaborative initiatives, which would not be possible without the support and engagement of our partners.

We would like to thank all our generous supporters for the financial support that have provided to us.

We would also like thank the many partners with whom we have collaborated across our work.

We look forward to addressing the resilience and nature challenge together in the future.

Thank you

For more information, please contact

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