SUSTAINABLE finance .LIVE

Natural Capital Finance

Conference and Hackathon

A Visual Record from the Sustainable Finance Live event
8 October 2024

Introduction

On 8 October 2024, Finextra Research and ResponsibleRisk held the annual Sustainable Finance Live hybrid conference and hackathon, in partnership with NayaOne. The conference took place at Events@ No6 in London, and started off with a welcome from founder of ResponsibleRisk and contributing editor for Finextra, Richard Peers. Peers opened with an introduction outlining the themes and objectives of this year's event: to understand natural capital risk, pricing, and trade.

The focus areas of the conference were natural capital, agriculture, supply chains, as well as regulation and reporting. The sessions also highlighted highlighting new technologies that are being used to collect nature-related data such as Earth observation and satellite reporting.

"What we wanted to do is to put on an event aimed at explaining the landscape of a natural capital transaction, with the associated data providers identified along the way. Ending the process in an asset management trading platform, taking into consideration all the steps that a regulated entity has to undertake, to prove to the financial industry that this can be an asset class, that is as tradable as any other."

Peers ended the introduction with a simple Slido question: 'Is it clear to you how natural capital could be priced and traded?' The majority responded 'no', and this was asked over the course of the event to see if the response changed.

Focus areas for October 2024

Use case: Natural Capital trading from 'field to trade'

Nexus of forces:
Nature, Capital, Agriculture, Supply Chains, Regulation and Reporting

Levers of change to be utilised:

- Earth observation baseline, verification and monitoring
- Geospatial & Biodiversity Data e.g. via data marketplace
- Artificial Intelligence
- Regulation and disclosure
- Risk & Price e.g. scenarios, narratives & nVaR
- Financial Instruments e.g. tokenisation
- Trading e.g. Natural Capital Portfolio platforms

Why: We need to create leadership and take the plunge. The time is now to create new models for evaluating risk and allocating capital; based on many forms of data.

Topics

Sustainable Finance Live

Advisory Board

Led by Richard Peers, industry experts on Finextra Research Sustainable Finance Live's Advisory Board brought their ideas together to create this year's conference, which focused on developing strategies to highlight natural capital and value.

Richard Peers
ResponsibleRisk

Adrian Sargent
Castle Community Bank

Aled Smith
Raw Advice

Andy Bennett
Innovate UK Business Connect

Anne-Marie Slot
Transition Value Partners

David Harris
LSEG

David Patterson
WWF

Gerrit Sindermann
Green Digital Finance Alliance

Guillaume Levanier
Sciences Po

James Lockhart Smith
Verisk Maplecroft

James Varga
First Carbon Investments

Jigisha Lock
NatWest Capital Markets

Julia D'Agnese
Earth Knowledge

Lesley Li
U Impact

Martina Macpherson
SIX Group

Matt Smith
M&S

Paul Jepson
Credit Nature

Priyank Patwa
Deloitte Consulting

Richard Conway
Elastacloud

Dr Sadia Ahmed
Deloitte

Agenda: 8 October 2024

09:30 – 09:40 **Welcome**

Welcome by Richard Peers, founder of ResponsibleRisk and contributing editor, Finextra Research.

Richard Peers
ResponsibleRisk

09:40 - 09:50 **A day in the life of a transaction (Keynote and Problem Statement)**

What is the process of executing nature's value from the field to trade? What data is available to financial institutions to assess natural capital? How can we ensure clarity in the trade narrative and quantify costs and risk along the supply chain?

Speaker: Robert Gardner
Founder, ReBalance Earth

Moderator: Richard Peers
ResponsibleRisk

09:50 – 11:00 **Showcase of the art of the possible**

Who are the stakeholders in the natural capital sector and how do they contribute to the sustainable ecosystem?

We will reveal how stakeholders and investors can work across a value chain to ensure that they are obtaining valuable information around natural capital, pricing it appropriately and demonstrating how they can invest and divest their assets.

How can firms provide end-to-end clarity in the supply chain from 'field to trade,' and ensure ethical natural accounting can be profitable for people and planet?

Moderator: Richard Peers
Founder, ResponsibleRisk

Speaker: Cain Blythe
Founder, Ecosulis and Credit Nature

Speaker: Andrew Creak
Founder, Kana Earth

Speaker: Giles D'Souza
Strategic Business Lead in Remote Sensing and GIS, Planet

Speaker: Musidora Jorgensen
Chief Impact Officer, World Wide Generation

Speaker: Donna Lyndsay
Strategic Market Lead Environment and Sustainability, Ordnance Survey

Agenda: 8 October 2024

11:30 – 12:00 **What is the role of impact and ESG data in ensuring economic profit of natural capital in the marketplace? (Panel)**

Unpacking the showcase: How is nature priced, quantified, and traded? What can be learned from the agri-food supply chain on how ESG and Impact investing progress leads to returns? What is the go-to-market process with natural capital?

Moderator:
Richard Peers
Founder, ResponsibleRisk

Speaker:
Cain Blythe
Founder, Ecosulis and Credit Nature

Speaker:
Simon Crichton
Head of Nature, Food and Resource, Triodos Bank

Speaker:
Giles D'Souza
Strategic Business Lead in Remote Sensing and GIS, Planet

Speaker:
James Lockhart-Smith
VP Sustainable Finance, Verisk Maplecroft

Speaker:
Donna Lyndsay
Strategic Market Lead Environment and Sustainability, Ordnance Survey

12:00 – 12:30 **How is new policy and regulation shaping the journey of a sustainable transaction? (Panel)**

How is regulation such as CSRD, ESRS, and CSDDD and voluntary measures such as TNFD shaping data available to measure natural capital? What guiderails are in place for corporates to bridge the gap between action and governance? What regulatory parameters are in place that impact accredited natural assets?

Moderator:
Anna-Marie Slot
Founder, Transition Value Partners

Speaker:
Musidora Jorgensen
Chief Impact Officer, World Wide Generation

Speaker:
Carolina Minio Paluello
Tech Innovator

Speaker:
Devina Paul
CFO, Zumo

Speaker:
Tonia Plakhotniuk
Climate & ESG Capital Markets, NatWest Commercial and Institutional

Agenda: 8 October 2024

13:30– 14:00 **What's missing from the transaction journey? (Keynote and Q&A)**

Pricing Nature: Quantifying the financial risks posed by the degradation of nature and ecosystem services to the UK economy and financial sector.

The Green Finance Institute has proposed methods to assess nature-related risks, such as a UK Nature-Related Risk Inventory, an estimation of the dependency and exposure of UK banks, and insurers on ecosystem services, a methodology that will translate dependencies into financial risk. These three scenarios will integrate plausible and extreme futures of nature and climate risks, the presentation will include macroeconomic modelling of the scenarios using the NiGEM model, and a calculation of value at risk for typical UK lending and investment portfolios.

Moderator: Richard Peers
Founder, ResponsibleRisk

Speaker: Dr Nicola Ranger
Director, Environmental Change Institute, University of Oxford

14:00 – 14:30 **How can financial institutions build on the proposals from the GFI to both enhance and ensure the sustainability of natural capital is embedded in the transaction journey for their customers? (Panel)**

What occurs in the secondary market to ensure that integrity is maintained? How can ESG and impact strategies be integrated into the transaction in a format that creates a smooth customer journey?

Speaker: Rachael Barza
Associate Director, Lead Climate Adaptation and Nature Finance, EBRD

Speaker: Tim Coates
Managing Director, Evenlode Landscape Recovery

Speaker: Andrew Creak
Founder, Kana Earth

Speaker: David Croft
Global Head of Sustainability, Reckitt

Speaker: Robert Gardner
Founder, ReBalance Earth

Agenda: 8 October 2024

15:00 – 15:30 **The role of data and application marketplaces for natural capital (Panel)**

How do we bring all forms of data and applications together to support rapid innovation while allowing comparability and interoperability?

How can we map, measure, and manage the impact and dependency on natural assets as they travel through supply chains? How do we establish the provenance of high-quality data, make it more accessible and decision ready?

Can multi-sided data marketplaces operate to facilitate environmental priorities? This panel will seek to address The Biodiversity Data Puzzle.

Moderator:
Richard Peers
ResponsibleRisk

Speaker:
Cathrine Armour
Director Data Initiatives, TNFD

Speaker:
Richard Conway
CEO, Elastaloud

Speaker:
Eoin Murray
Managing Director, Seed

Speaker:
Ana Raposo
Business Applications and Partnerships Officer, European Space Agency

Speaker:
Matt Sandoe
Chief of Staff, OS Climate

15.30– 16:00 **Natural capital value: Oxygen Conservation case study (Keynote and Q&A)**

How have measurement, data aggregation, asset management in natural capital all been crystallised to create a cohesive ecosystem from field to trade? How will the natural capital industry evolve in the future?

Moderator:
Richard Peers
ResponsibleRisk

Speaker:
Dr Rich Stockdale
Founder, Oxygen Conservation

How can natural capital be assessed and why does it need to be?

Speaker

Robert Gardner
Founder,
ReBalance Earth

Moderator

Richard Peers
ResponsibleRisk

Robert Gardner, founder of ReBalance Earth, opened the first session with a keynote address on 'A day in the life of a transaction', which outlined the problem statement of the conference this year: What is the role of natural value in the supply chain, and how can financial institutions assess natural capital?

Providing examples of severe damage to factories owned by Shell and McVities due to natural disasters, he demonstrated how climate change causes loss of revenue and assets: "Of all of the nature risks, water is the number one risk. It impacts 7-9% of GDP. Yet, only two-thirds of financial institutions, banks, asset managers, and insurers, really understand or have assessed their water risks. Only 1% of financial institutions have even set targets about water security. The issue is that no one can even see this risk."

Gardner highlighted that nature is the solution. Expounding on nature-related solutions being enacted through ReBalance Earth initiatives in Plymouth, he showed that water can be stored in nature, by flowing capital back into restoration habitats and biodiversity instead of building more concrete monoliths, environments can be protected and businesses can make profit.

He stated that the return is avoiding the loss of assets due to natural disasters, insurance costs that do not cover business interruption, and slowing down flood risk. Gardner emphasised that the main challenge is the free-rider problem, because big businesses need to put in the capital to protect the environment that will protect investments and attract more business. If more businesses are not willing to make those changes in their infrastructure to assess nature-related risk, then the ability to make a difference will become more difficult.

However, £100 billion over the next decade is needed for nature restoration. Yet, there is £5 trillion in UK pension and wealth assets, which will double to £10 trillion by 2025, that can be redirected into nature.

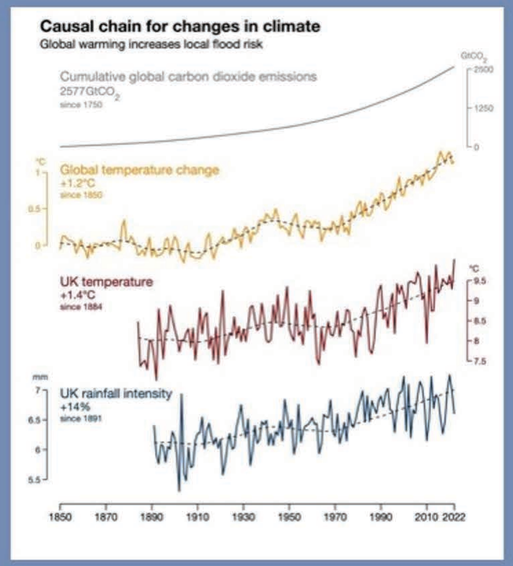
"My point to a pension fund is for every pound that you have, if you just took 2p and made a 2% allocation to nature, as an asset class in the same way that you invest in real estate or infrastructure. If I can reframe nature as business-critical infrastructure, and I can show you that you can get a rate of return, because those companies in Plymouth are going to pay to reduce the risk of not being able to operate like Shell and McVities."

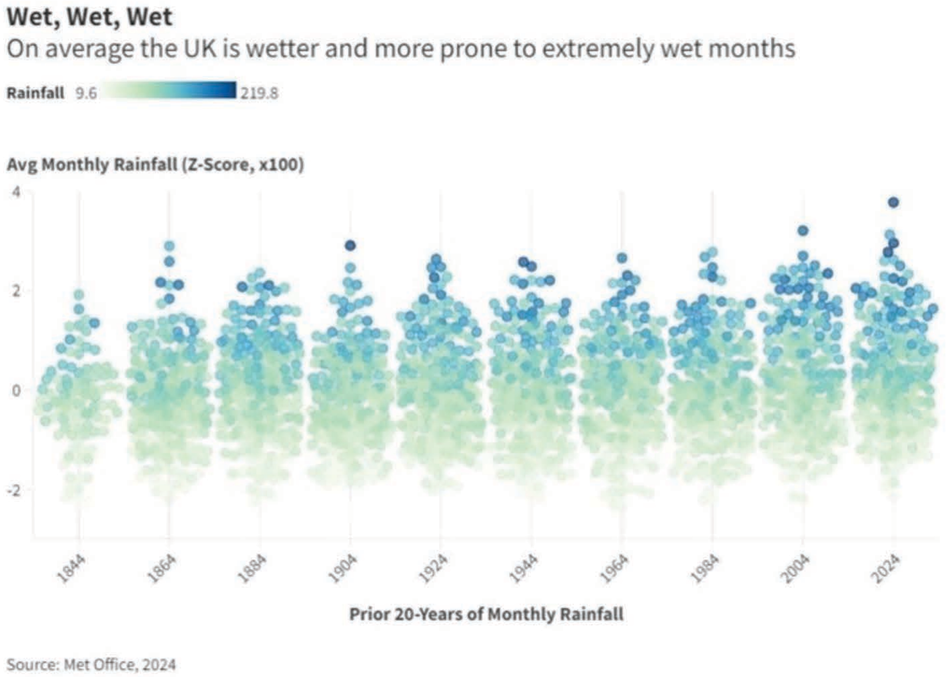
Gardner concluded that by redirecting the flow of capital, we can achieve their goals of "financial return and a world worth living in."

Robert Gardner
ReBalance Earth

"Of all of the nature risks, water is the number one risk. It impacts 7-9% of GDP. Yet, only two-thirds of financial institutions, banks, asset managers, and insurers, really understand or have assessed their water risks. Only 1% of financial institutions have even set targets about water security. The issue is that no one can even see this risk."

Keynote session





Source: Met Office, 2024

Workshop

Making nature worth investing in

Speakers

Cain Blythe
Founder, Ecosulis and Credit Nature

Andrew Creak
Founder, Kana Earth

Giles D'Souza
Strategic Business Lead in Remote Sensing and GIS, Planet

Musidora Jorgensen
Chief Impact Officer, World Wide Generation

Donna Lyndsay
Strategic Market Lead Environment and Sustainability, Ordnance Survey

Moderator

Richard Peers
ResponsibleRisk

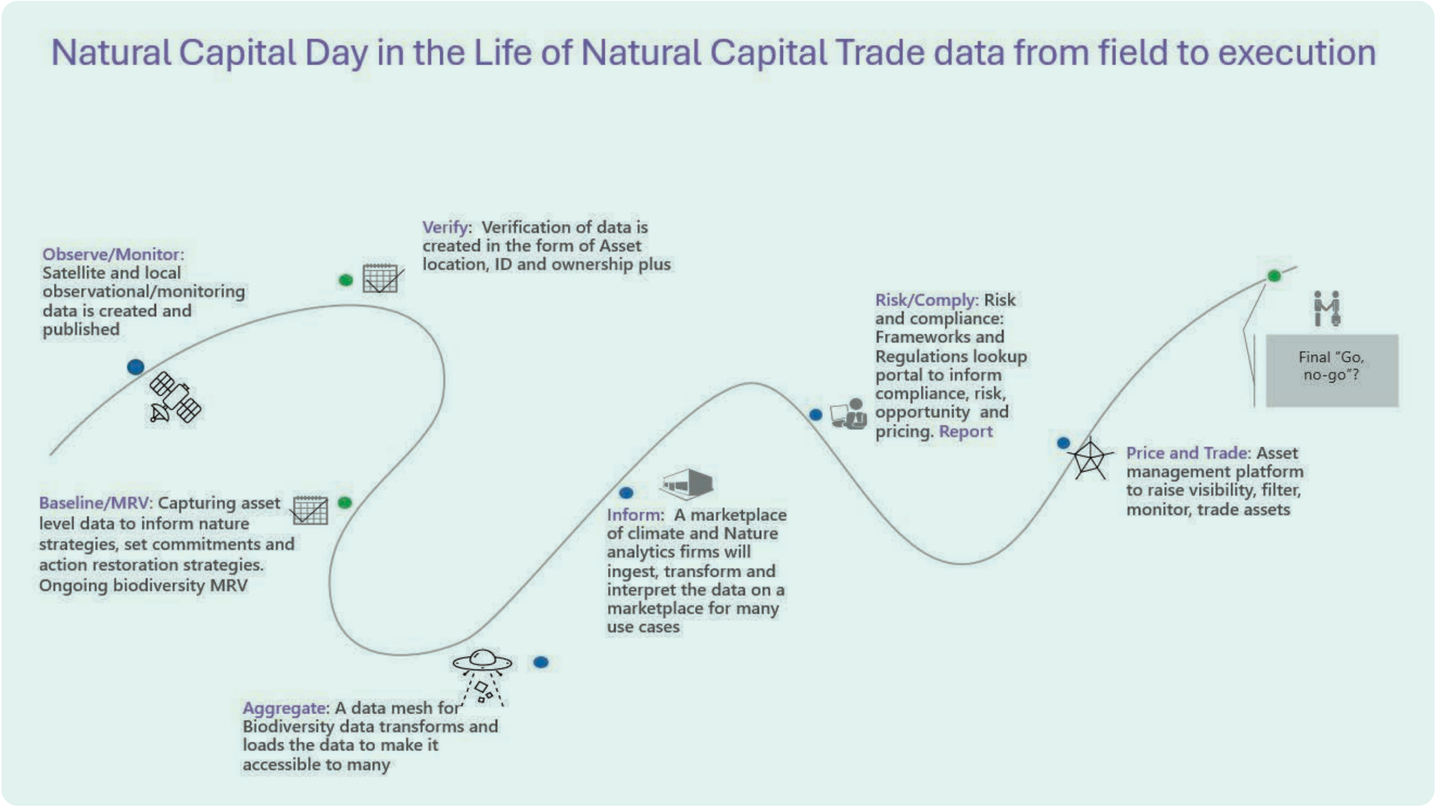
The Sustainable Finance Live session entitled 'Showcase of the Art of the Possible' aimed at showing the potential journey of discovering natural capital to making it tradable. The presentation took the audience through each stage of this proposed journey of gain value from nature, with each section presented by a different expert.

The first step was presented by Giles D'Souza, strategic business lead in remote sensing and GIS, Planet, a company which provides global daily satellite imagery and insights about the planet. He gave the example of visually looking at deforestation in the Amazon or development in Indonesia where you can see forest disappearing.

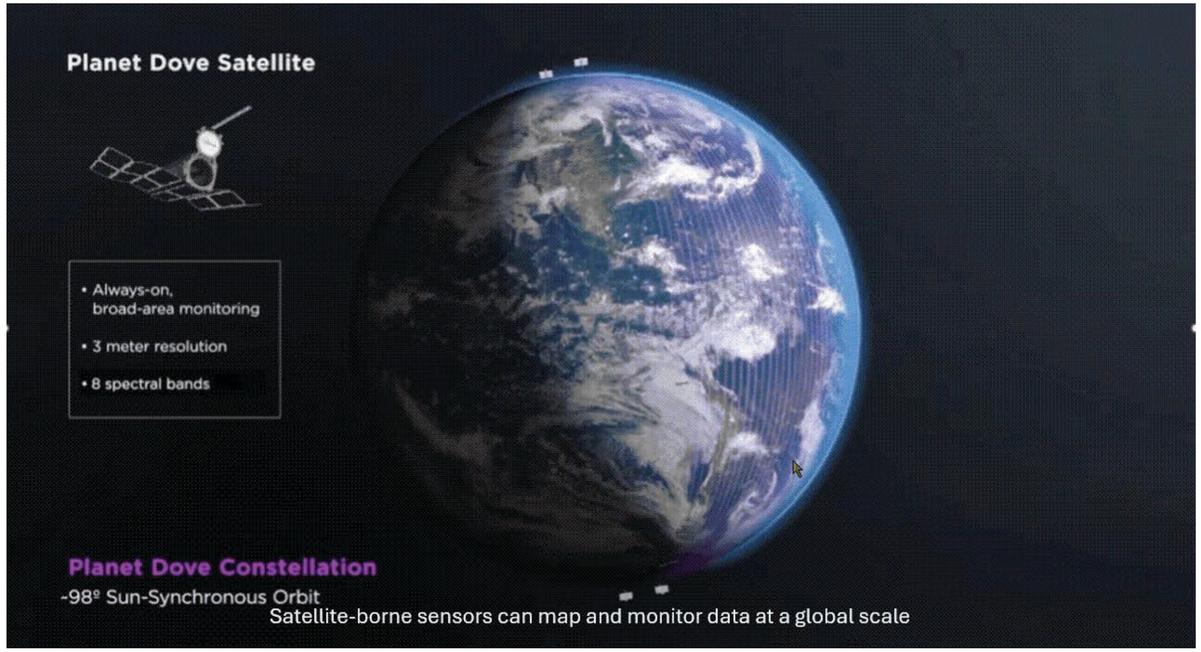
This allows for the Earth's land to be monitored up to a scale of three metres resolution. D'Souza commented: "We can look for areas that are maybe more pristine, areas worth preserving."

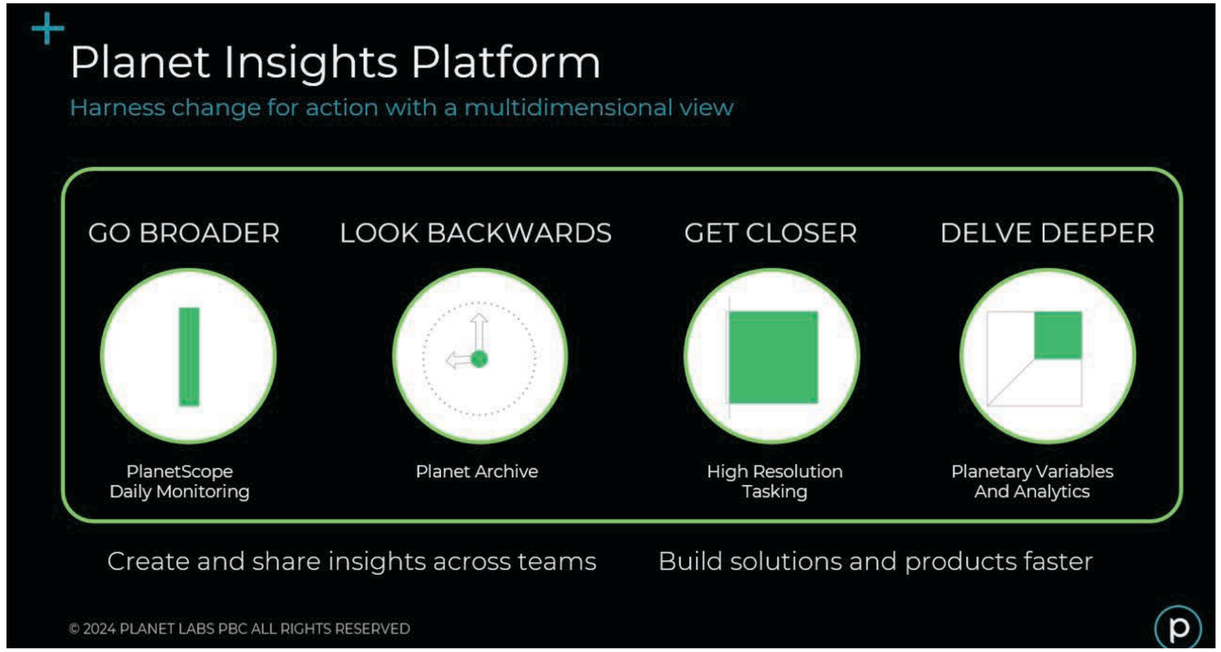
He added that they are working hard to "identify what we can see on the ground, relate that to the number of trees or the amount of biomass, and how that can be monitored on a daily basis from satellite data."

D'Souza concluded: "All of that information that becoming accessible will be usable by those who want to build models to measure and monitor at a scale."



Workshop


Planet Dove Satellite
• Always-on, broad-area monitoring
• 3 meter resolution
• 8 spectral bands
Planet Dove Constellation
~98º Sun-Synchronous Orbit
Satellite-borne sensors can map and monitor data at a global scale


Planet Insights Platform
Harness change for action with a multidimensional view
GO BROADER
LOOK BACKWARDS
GET CLOSER
DELVE DEEPER
PlanetScope Daily Monitoring
Planet Archive
High Resolution Tasking
Planetary Variables And Analytics
Create and share insights across teams
Build solutions and products faster
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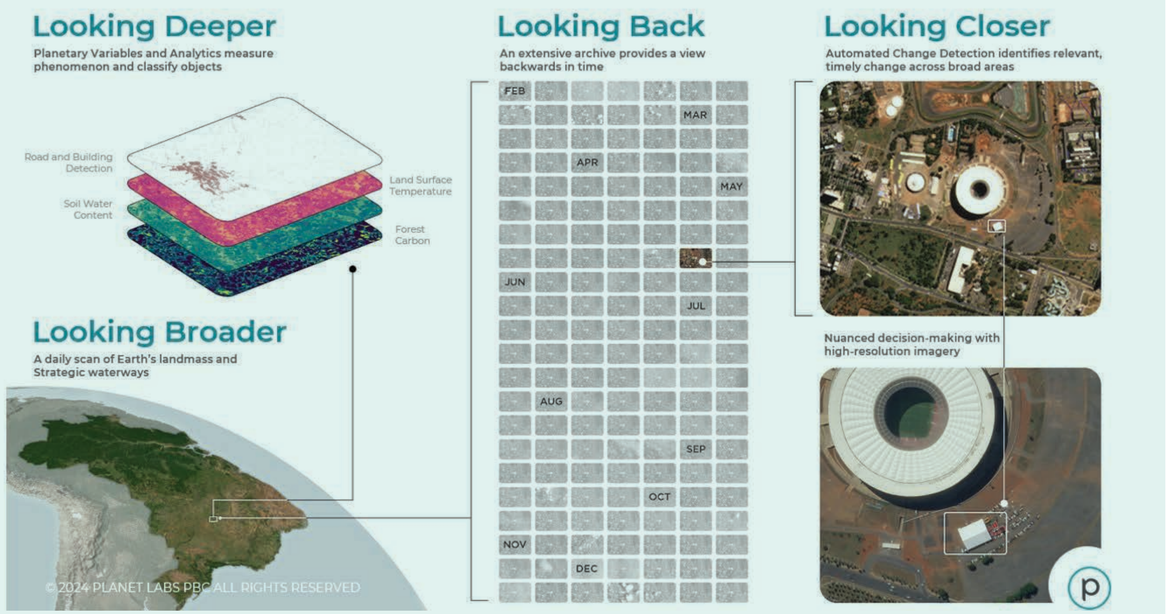
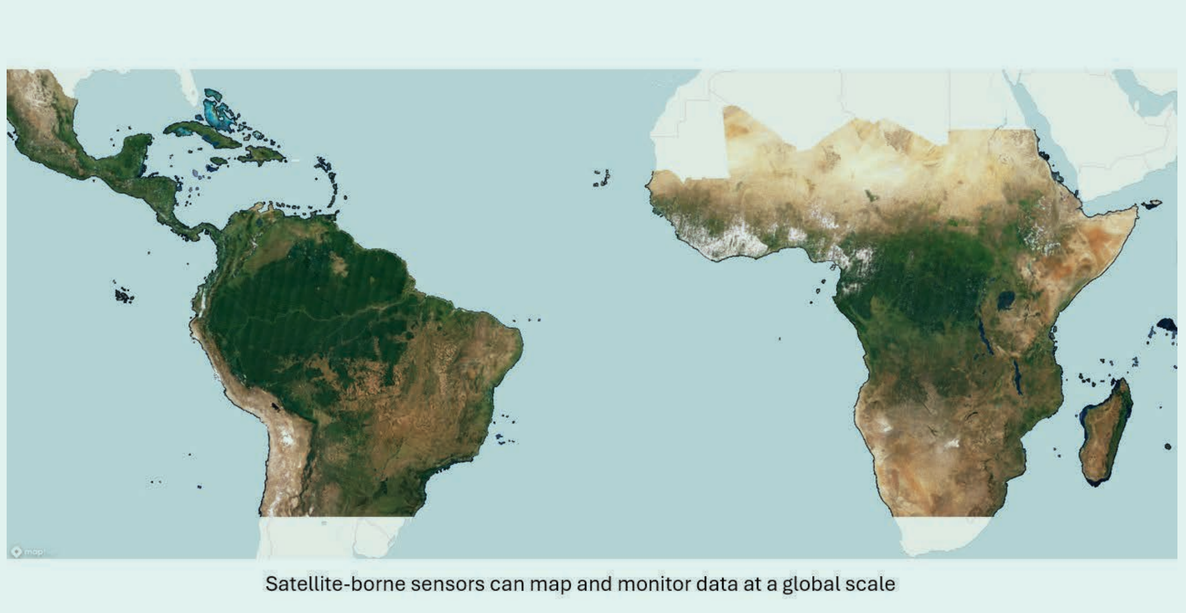
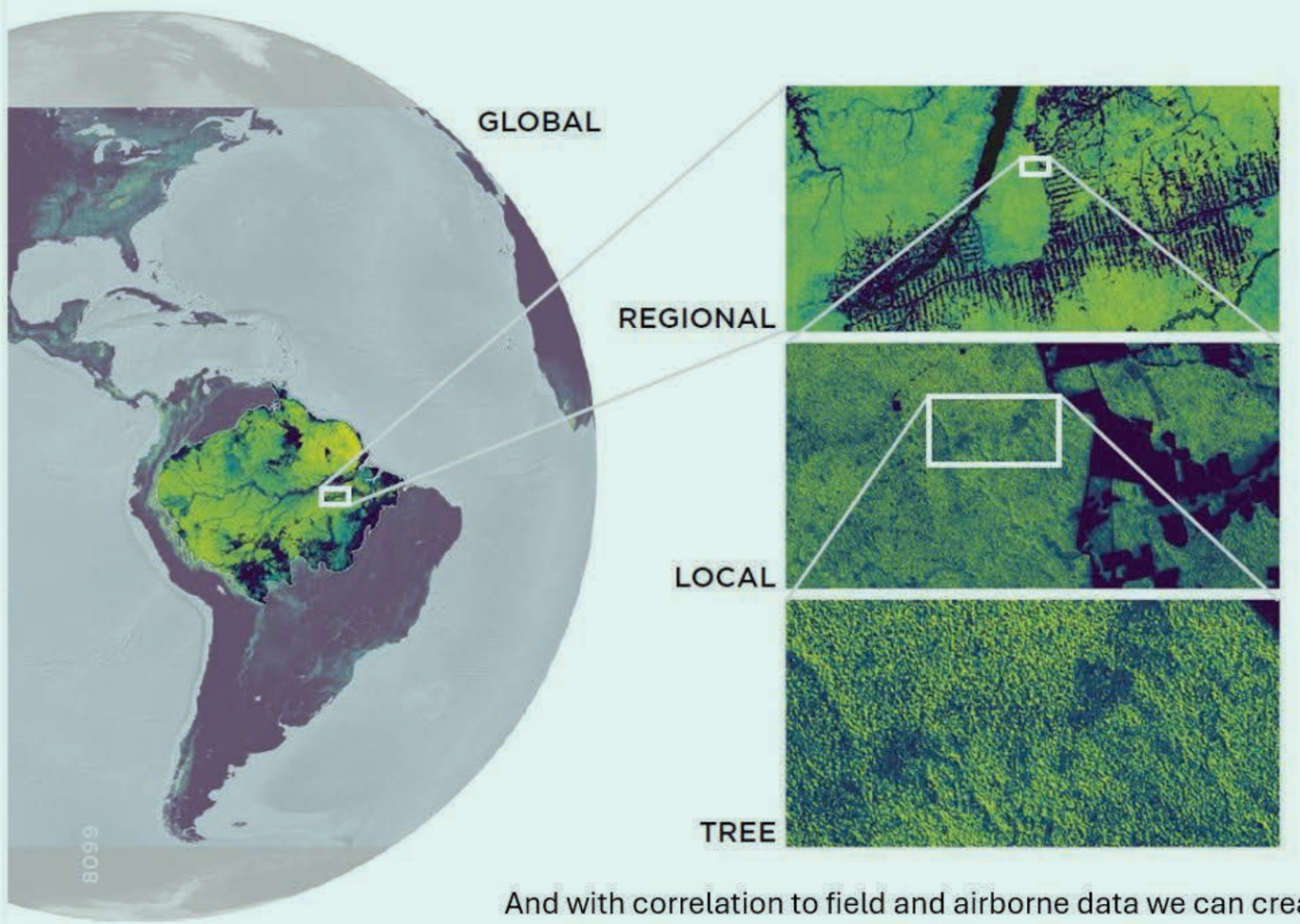
Workshop





Satellite-borne sensors can map and monitor data at a global scale

Workshop

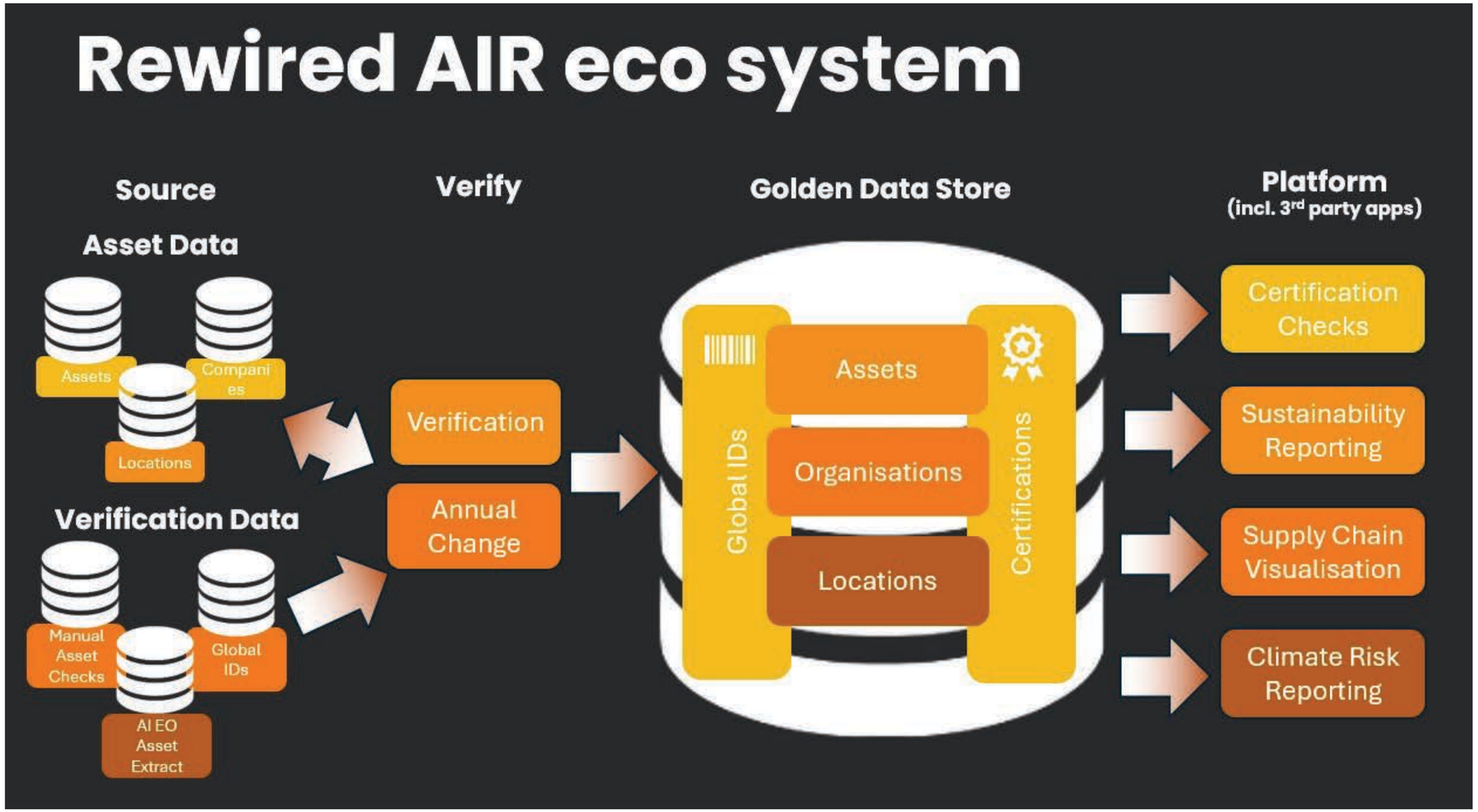


And with correlation to field and airborne data we can create insightful products for baselining and monitoring like this 3m Forest Carbon one

Workshop

Regarding D'Souza's presentation, Donna Lyndsay, strategic market lead environment and sustainability, Ordnance Survey said: "We can see all this wonderful stuff, but how do we know who has what and where? That is what we've been trying to do in terms of what we call gold pin."

Gold pins, Lyndsay explained, are used to verify the location and ownership of certain assets across the globe. Lyndsay added that they are working closely with the Global Legal Entity Identifier Foundation (GLEIF), which is important in understanding who owns the assets in the areas of the field you want to invest in.


Rewired AIR eco system
Source
Asset Data
Assets
Companies
Locations
Verification Data
Manual Asset Checks
Global IDs
AI EO Asset Extract
Verify
Verification
Annual Change
Golden Data Store
Global IDs
Assets
Organisations
Locations
Certifications
Platform
(incl. 3rd party apps)
Certification Checks
Sustainability Reporting
Supply Chain Visualisation
Climate Risk Reporting

Workshop

Cain Blythe, founder, Ecosulis and Credit Nature stated that the next step involves how to think about restoration strategies. Blythe added that when looking at restoration strategies: "It's very much a codesigned and a co-created process. It's a big mistake to try and do these things in isolation, without talking about the intermediaries, the landowner, or the different teams in the in the corporation."

Blythe discussed that from the companies they work with they are seeing net zero requirements, water improvement projects, biodiversity, and looking to be aligned with frameworks like the TNFD and CRSD.

Blythe concluded: "This is a journey. I don't think anyone at this point can claim that they have a net positive strategy that is guaranteed. I think things are still fluid and quite dynamic at the moment. So there is an expectation that this is a journey towards nature positive, not an end point in and of itself."

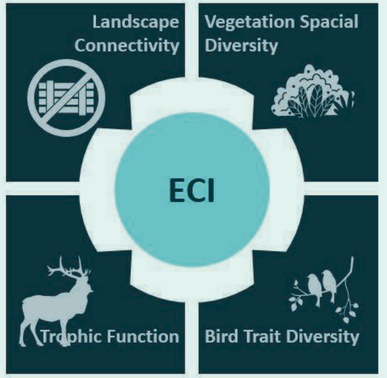
Cain Blythe
Founder, Ecosulis and Credit Nature

"This is a journey. I don't think anyone at this point can claim that they have a net positive strategy that is guaranteed. I think things are still fluid and quite dynamic at the moment. So there is an expectation that this is a journey towards nature positive, not an end point in and of itself."

A nature positive approach

Impact/footprint	Baseline	Invest	Continued MRV	Optimise
Identify the dependencies and extent of impact Footprint and set commitments for a nature strategy	Identify restoration projects Baseline assessments Landowner and community engagement	Restoration planning Investment options Legal agreements	Ongoing MRV Adaptive management	Review and update nature-positive strategies Return to impacts and footprint

Impact/footprint Baseline Invest Continued MRV Optimise



Species, habitats and/ or ecosystems

Example unit of uplift: ecosystem condition index
Example: 10-point gain from 30/100 - 40/100
x 1,000-hectare area
= 10,000 units

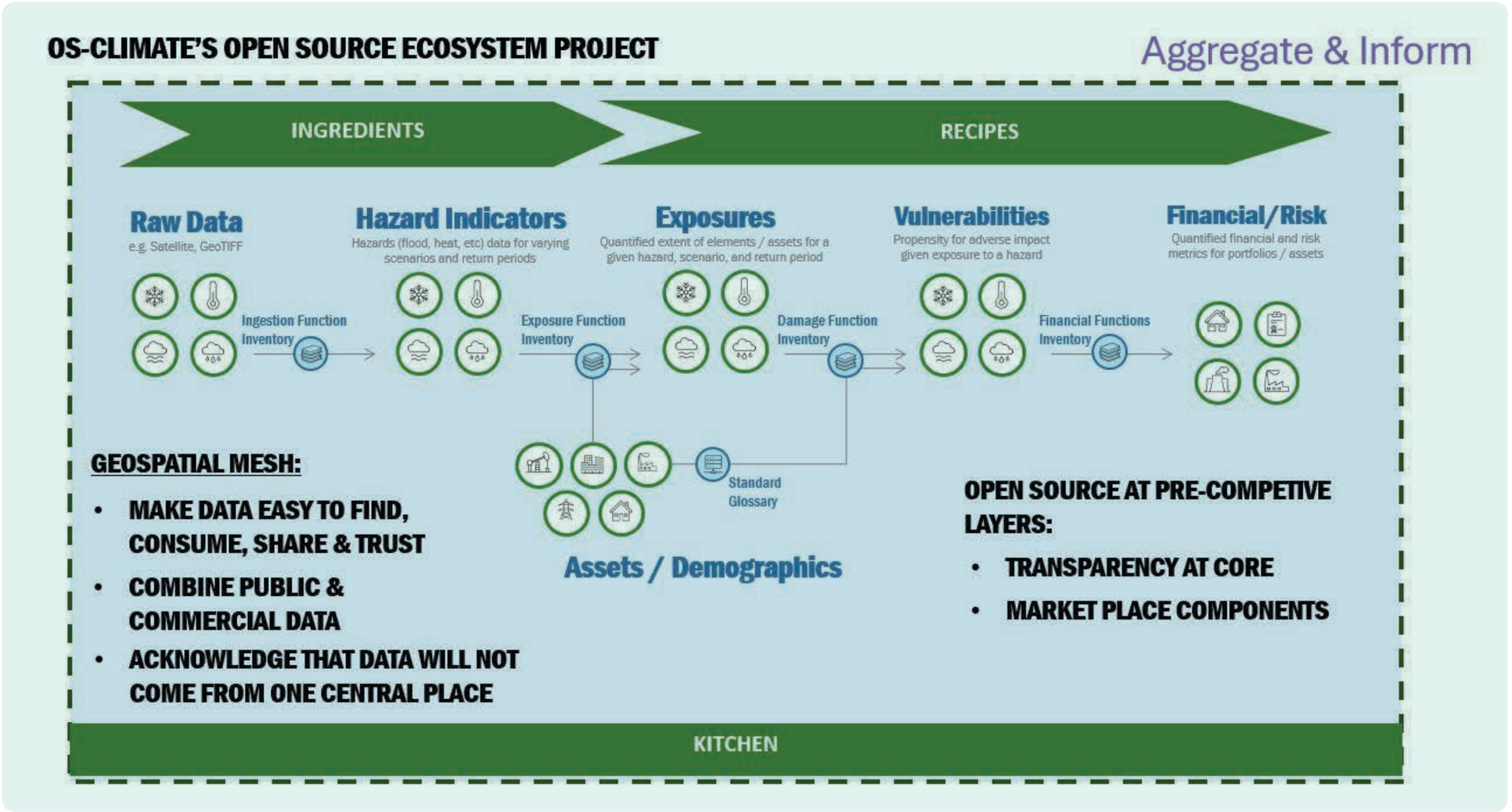
Units can be creditised, reported or traded.

Workshop

"How do we bring an ecosystem of open source, plug and play code and data that everybody can access?" was the question Matthew Sandoe, chief of staff, OS Climate explored during his section.

Sandoe explained they take raw data from satellite or geo-active information, and process it into hazard information such as chronic heat measurements. He stated their aim is to "make date easier to find, consume, share, and trust."

The blueprint behind all of this is to create a "marketplace where you can search data, combine it, aggregate it to analytics, pass it through to deliver your use cases," with the ultimate goal of allowing "banks and asset managers to make a controlled calculation."



Workshop

Musidora Jorgensen
Chief impact officer,
World Wide Generation

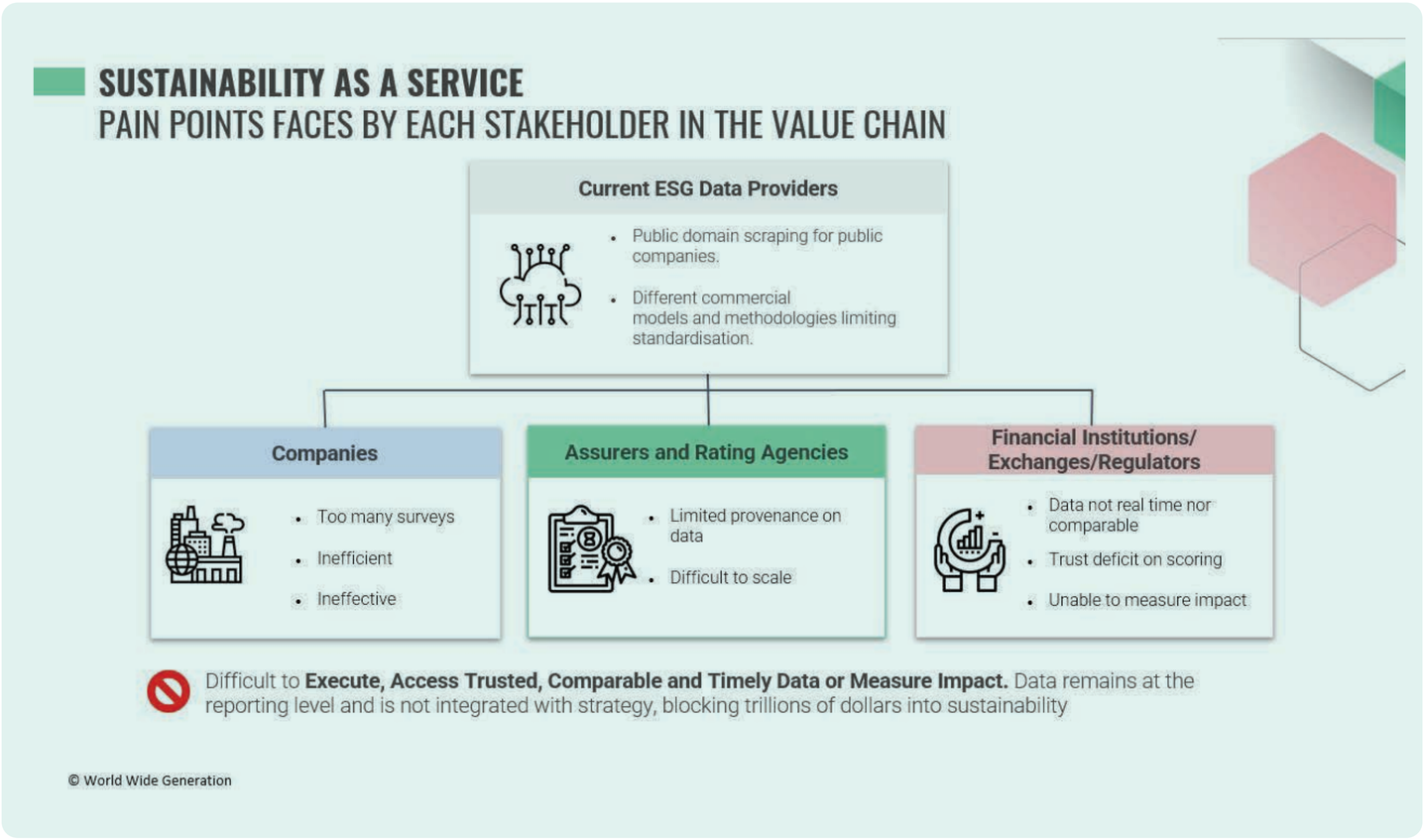
"The goal is to have real time, trusted, comparable data that everybody can access, in order to then be able to share and ensure that the overall strategies are being aligned."

"In the overall landscape, particularly when it comes to assurance and rating agencies, is a really difficult one to be able to see who is actually making progress," said Musidora Jorgensen, chief impact officer, World Wide Generation.

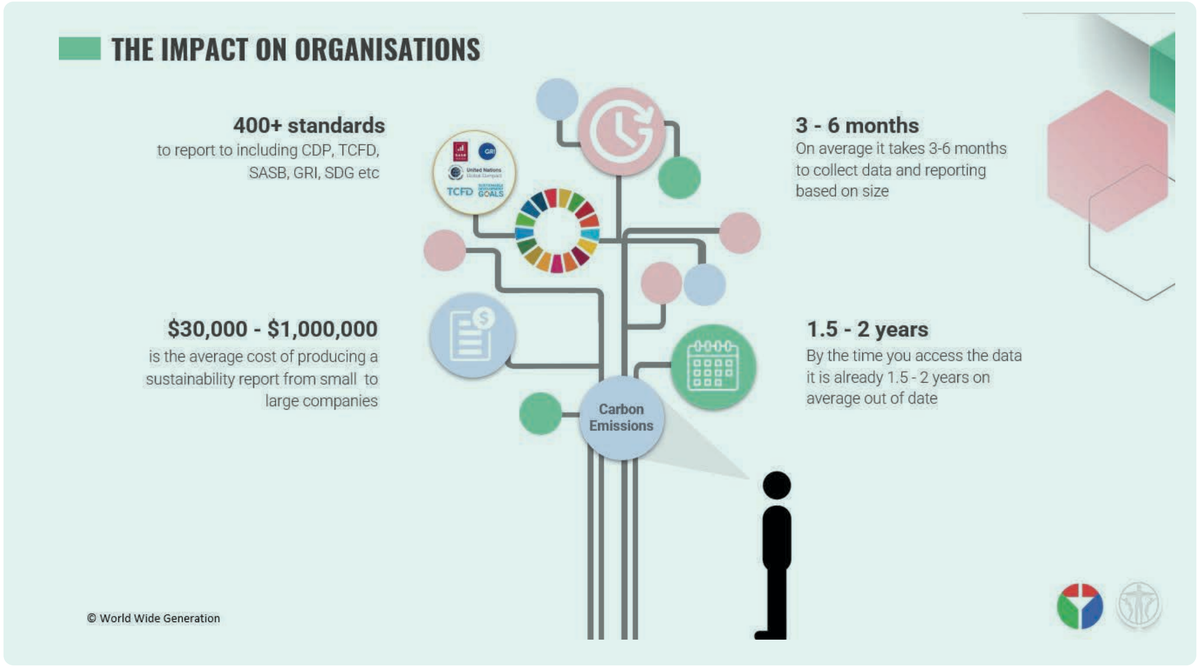
"The goal is to have real time, trusted, comparable data that everybody can access, in order to then be able to share and ensure that the overall strategies are being aligned," she added.

Jorgensen explained that companies often get "carbon tunnel vision", when there are many other aspects to consider.

Regarding a way forward for managing this data and regulations, Jorgensen stated, "having an automated, digital way of doing that is key. Trying to do that on a spreadsheet is just impossible."



Workshop

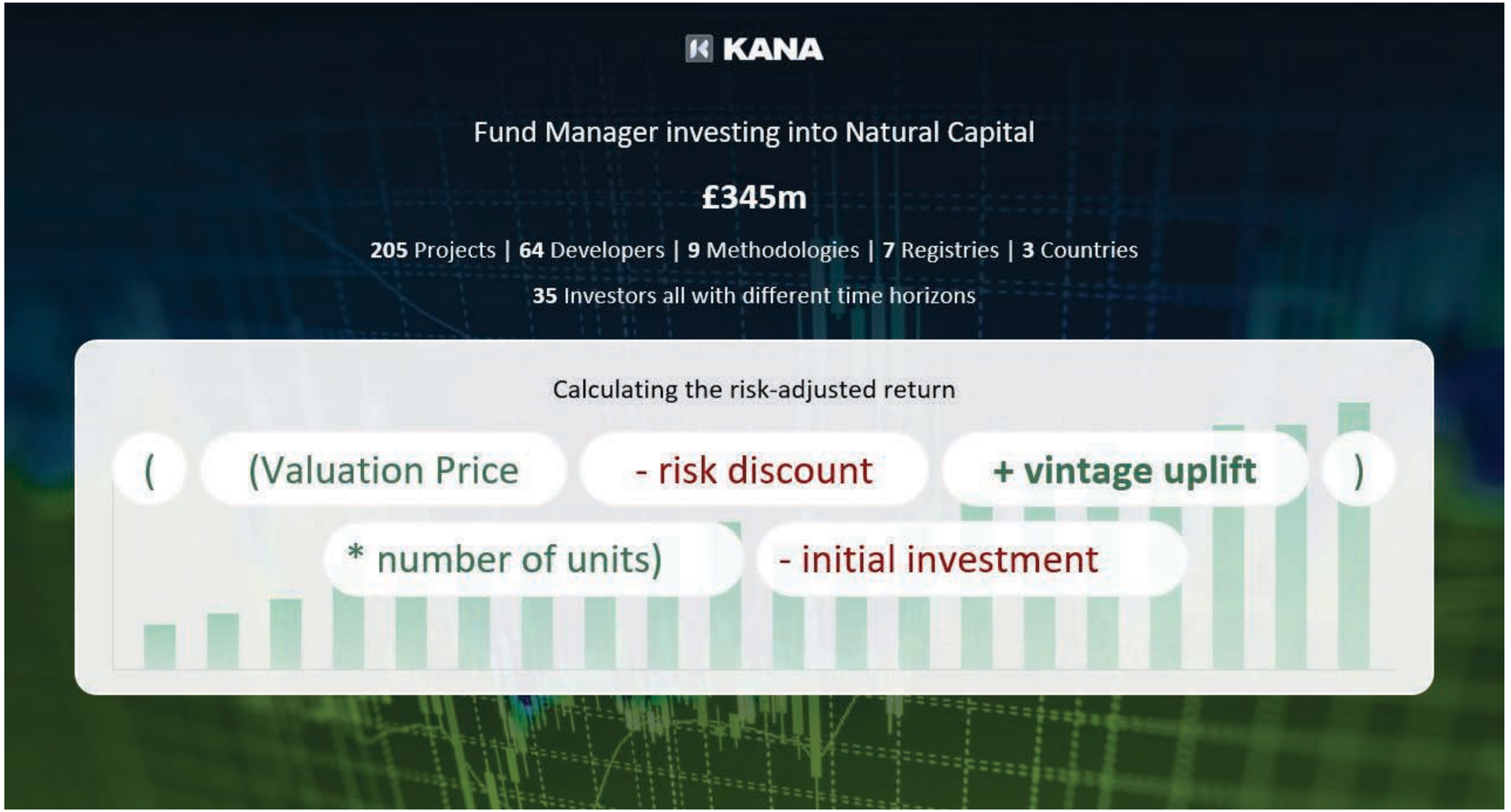

THE IMPACT ON ORGANISATIONS
400+ standards
to report to including CDP, TCFD, SASB, GRI, SDG etc
$30,000 - $1,000,000
is the average cost of producing a sustainability report from small to large companies
Carbon Emissions
3 - 6 months
On average it takes 3-6 months to collect data and reporting based on size
1.5 - 2 years
By the time you access the data it is already 1.5 - 2 years on average out of date
© World Wide Generation


1 NO POVERTY
2 ZERO HUNGER
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
SUSTAINABLE DEVELOPMENT GOALS
SDG

Workshop

The final step led by Andrew Creak, founder, Kana Earth, looked at the end goal of all the other sections - making a nature based project an asset to invest in.

Creak said this starts with getting a valuation price. The next step is the risk discount, he stated: "If the risk discount is too big, it may be worth me insuring against some of these things, especially as I put it together in a big portfolio."



Panel session

The role of ESG data inthe nature capital marketplace

Speakers

Cain Blythe
Founder, Ecosulis and Credit Nature

Simon Crichton
Head of Nature, Food and Resource, Triodos Bank

Giles D'Souza
Strategic Business Lead in Remote Sensing and GIS, Planet

James Lockhart-Smith
VP Sustainable Finance, Verisk Maplecroft

Donna Lyndsay
Strategic Market Lead Environment and Sustainability, Ordnance Survey

Moderator

Richard Peers
ResponsibleRisk

The panel discussed the transaction journey of natural capital, exploring how nature is priced, quantified, and traded. The session outlined how ESG and impact investing leads to profit. Starting off with the perspective of a banker, Crichton stated that Triodos Bank has been working on nature financing since its inception, with an objective to developing wind turbines.

He emphasised the need to be challenging gaps in data, and government gaps in policy and regulation. Commenting on the route to financing nature, Crichton highlighted that nature is a solution to many problems with carbon and net zero serving as the starting points of a journey to data collection, but there is a need for data standardisation and policy support moving forward.

D'Souza provided a case study for nature collection solutions explaining what Planet does by pointing to satellite data. However, for full data coverage there needs to be correlation between measurements and monitoring from satellites and the ground. Having deployments on the ground is essential to map ecosystems, but there needs to be data points above and below to create a comprehensive and detailed picture of the data.

"From our point of view, satellite data is great because it's homogeneous. We cover the whole world. We cover it routinely. We cover it every day with certain parameters. What we are missing is how that relates into what we've got on the ground."

He moved on to talking about AI models and how those can identify where and how ecosystems are developing: "AI is now helping us organise that data so you can look at models through time and space, and then identify where things are changing, how ecosystems stay intact, or whether there is pressure, for example, from droughts or floods.

"What we're finding, as well as the investors, we want to look at particular projects to map and monitor areas. We're also getting the insurance data coming along and saying, put a buffer of 10-20 kilometres around that, because they want to know what the risks are that might be encroaching on that project."

Giles D'Souza
Planet

"AI is now helping us organise that data so you can look at models through time and space, and then identify where things are changing, how ecosystems stay intact, or whether there is pressure, for example, from droughts or floods."

Panel session

Lyndsey explained that Ordnance Survey works in both public and private spaces as a government corporation to address geospatial problems faced by commodity providers. By collaborating with organisations such as Planet, Deloitte, Trace, and ESRI, they trace global supply chains to identify sourcing and processing locations.

Lockhart-Smith spoke on geospatial place-based risks for places and corporations, stating that Verisk Maplecroft collects data on risk issues across political risk and unstructured data for human and labour rights issues. They seek to answer the specific question: 'what do you learn about a risk sustainability profile of an asset because of where it is and what it does, before having any other information about that asset?'

James Lockhart-Smith
Verisk Maplecroft

"There is the challenge of creating decision-ready data at scale. Moving from looking at one asset and one issue at a time in a detailed, real asset context, to looking at many issues and millions of assets across a broader investment portfolio."

"There is the challenge of creating decision-ready data at scale. Moving from looking at one asset and one issue at a time in a detailed, real asset context, to looking at many issues and millions of assets across a broader investment portfolio.

The relevance for today is thinking about what's possible, putting everything together, and then also how to think about all the other sustainability and risk issues which couldn't be required to look at investment beyond first-order nature restoration data."

From a nature-positive perspective, they bring in a wealth of data on deforestation, degradation, depletion – water pollution, air pollution, local data on ESG risks that are impacting the price of nature. Lockhart-Smith highlighted that the social component is vital in nature restoration, not only do they need local government and community consent, but there has to be interested parties lobbying for change and bringing people together.

Blythe echoed the importance of community, stating that Credit Nature have a socioecological model in place to speak to all involved parties on what they can invest in when it comes to restoration processes, so they all have a voice. He concluded that the ability to invest in nature is becoming more commonplace, but is not being done at scale. He noted that the level of ambition that was lacking is now coming into the sector.

Panel session

Regulations driving sustainable transactions

Speakers

Musidora Jorgensen
Chief Impact Officer, World Wide Generation

Carolina Minio Paluello
Tech Innovator

Devina Paul
CFO, Zumo

Tonia Plakhotniuk
Climate & ESG Capital Markets, NatWest Commercial and Institutional

Moderator

Anna-Marie Slot
Founder, Transition Value Partners

Slot, founder of Transition Value Partners, opened the session by listing some of the ESG-linked regulations such as the Corporate Sustainability Reporting Directive (CSRD), the Corporate Sustainability Due Diligence Directive (CSDDD), the Nature Restoration Law, and the Biodiversity Net Gain. Many of these regulations are under the EU, with Slot stating: "The EU has been probably the most prolific when in terms of passing laws around the space."

When discussing what is driving the market interest, Tonia Plakhotniuk, climate and ESG capital markets at NatWest Commercial and Institutional, stated that European Sustainability Reporting Standards (ESRS) have been a "game changer". She added the ESRS "is probably the only framework to date which will require banks and corporates to report on their nature and biodiversity matters for the first time next year."

Plakhotniuk further added that there are some stringent requirements coming from the ECB, but investors are also driving the market interest in sustainability.

Turning to the role data and technology plays, Musidora Jorgensen, chief impact officer at World Wide Generation, said: "The opportunity for tech and data is to accelerate the sustainable outcomes that we want to see, and by aggregating the data that's required in order to be able to report, obviously reduces risk from a compliance perspective, but what it also does is allows you to as an organisation so to really see the insights."

Looking at ESG regulation from the perspective of an asset manager, Carolina Minio Paluello, ex CEO, Arabesque AI, mirrored Plakhotniuk's point arguing that the next generation of investors are the ones who care about ESG investment.

Moving towards a digital assets perspective on this issue, Devina Paul, CFO, Zumo, commented: "What we understand is that these regulations are driving the demand, and with that demand is this requirement for scalability, which isn't there at the moment."

Paul argued that looking at examples like biodiversity and nature credits "the projects are small, they are fragmented, they are disparate." But if you "take something like tokenisation, it brings in this aspect of you're able to rationalise assets, you're able to bring in more liquidity into the market. You're also able to introduce an aspect of gamification or incentivisation, and reduce cost."

Devina Paul
CFO, Zumo

"What we understand is that these regulations are driving the demand, and with that demand is this requirement for scalability, which isn't there at the moment."

Analysing the transaction journey and assessing nature-related risk

Speaker

Dr Nicola Ranger
Director, Environmental Change Institute, University of Oxford

Moderator

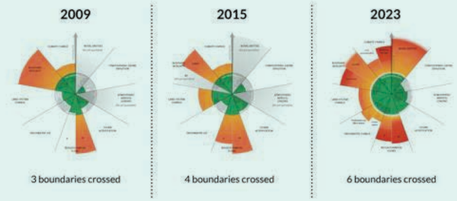
Richard Peers
ResponsibleRisk

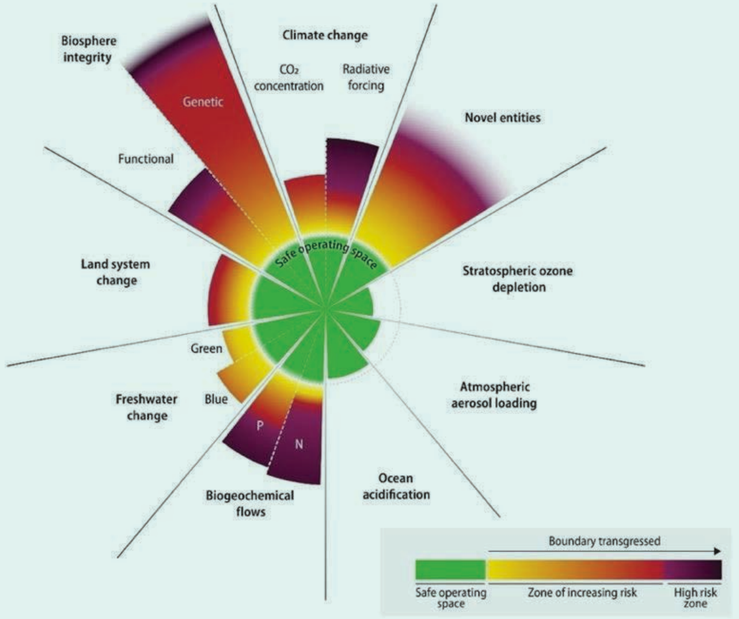
Dr Ranger outlined how nature risks are priced and which methods the Green Finance Institute (GFI) has put forward to assess nature-related risk.

She emphasised that nature is a material financial risk which companies need to be thinking about, since the economy does revolve around it. She added that 25% of species are threatened with extinction and that biodiversity risk is critical from the perspectives of corporates and supply chains.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) accumulates data on nature, and has revealed that 14 out of the 18 critical ecosystem services have declined, which is an urgent concern for the state of our planet.

Six of nine planetary boundaries have now been breached





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Source: Richard Peers et al. (2023)

Dr Nicola Ranger
Environmental Change Institute, University of Oxford

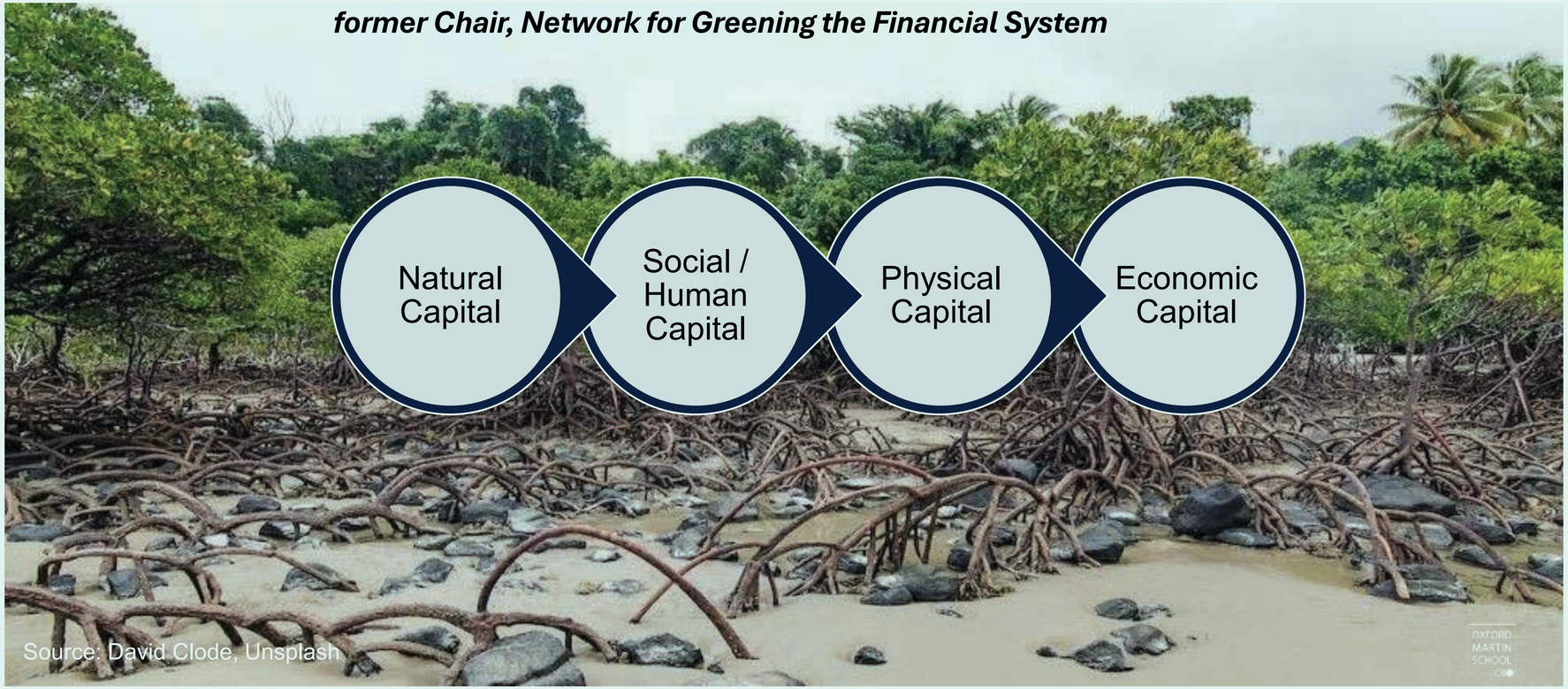
"When we were making climate projections, we would never have expected the level of temperature change that we're seeing today."

Keynote and Q&A

"20 years ago I came into this as a climate scientist," said Dr Ranger. "When we were making climate projections, we would never have expected the level of temperature change that we're seeing today. In 2023, the scientific community was shocked, globally, by the level of temperature rise. It was the warmest year on record by a large margin. You see here the variation year-on-year and 2024 is above it again."

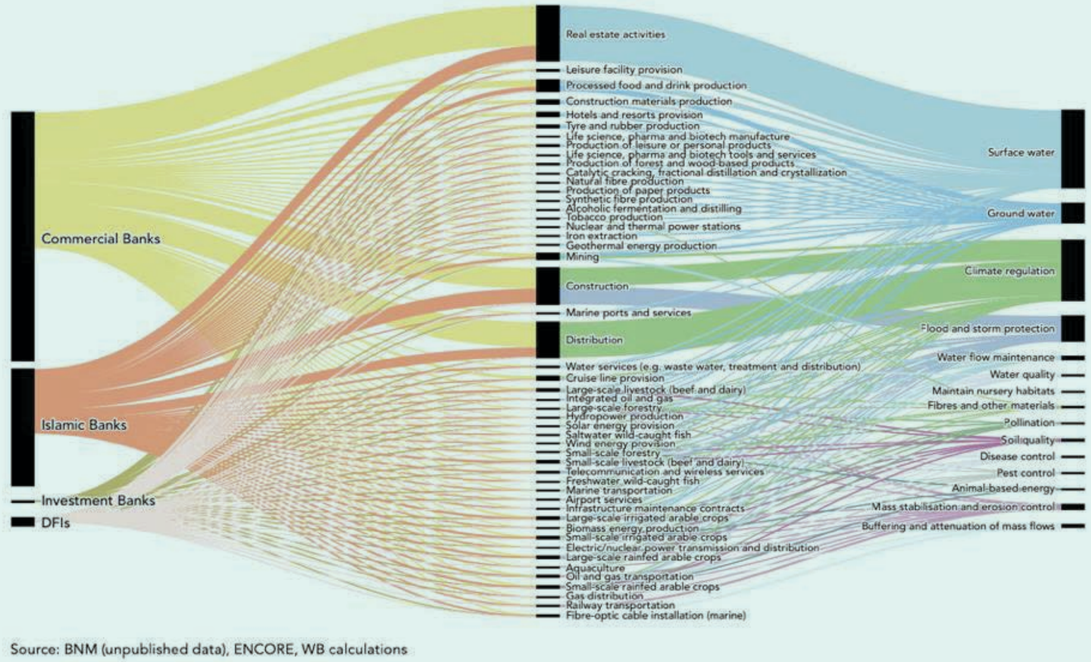
When analysing nature-related risk, there are significant overlaps with climate-related risk. When assessing nature risk, companies need to keep in mind that risks can cascade across supply chains, and nature and climate risks amplify each other. Dr Ranger emphasised that climate and nature cannot be disconnected from each other, so when assessing risk, both need to be taken into account.

"this is not some kind of a flower power, tree-hugging exercise. This is core economics". Frank Elderson, ECB Executive Board Member, & former Chair, Network for Greening the Financial System



Dependencies on Nature

The financial sector and ecosystem services dependencies per Malaysian ringgit invested (in million RM)



Source: BNM (unpublished data), ENCORE, WB calculations

"Among all ecosystem services, Malaysian banks depend most strongly on individual ecosystems which provide surface water (30 percent), ground water (14 percent), flood and storm protection (16 percent), and climate regulation (26 percent). Of every RM per loan, almost half depends highly or very highly on these four ecosystem services"

11

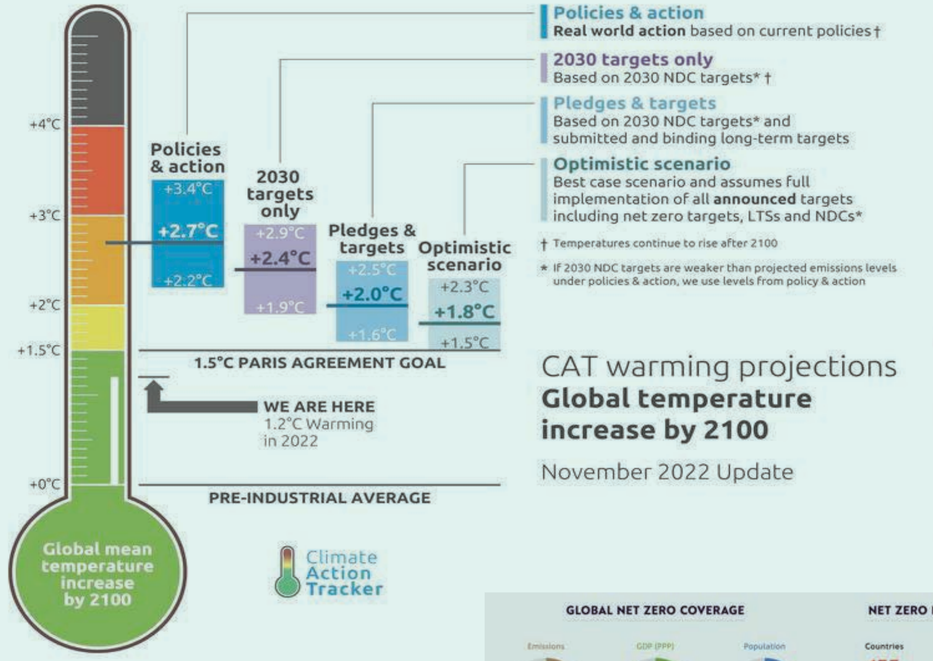
Source: World Bank/BNM 2022 An Exploration of Nature-Related Financial Risks in Malaysia

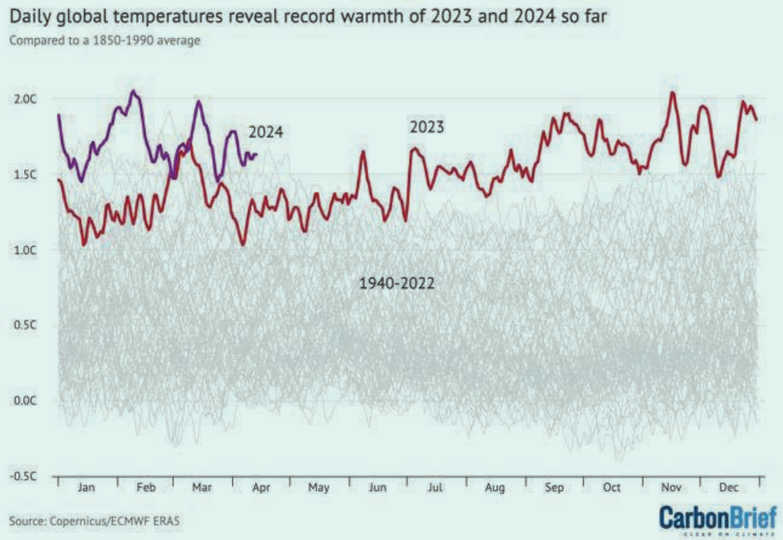
Keynote and Q&A

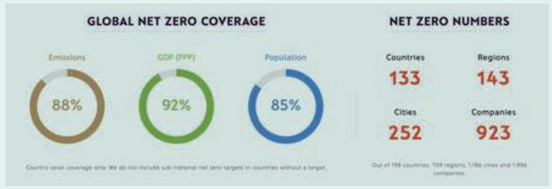
When analysing nature-related risk, there are significant overlaps with climate-related risk. When assessing nature risk, companies need to keep in mind that risks can cascade across supply chains, and nature and climate risks amplify each other. Dr Ranger emphasised that climate and nature cannot be disconnected from each other, so when assessing risk, both need to be taken into account.

Turning to the key sources of nature-related risk, Dr Ranger underlined pollinators' decline as well as soil quality changes and water-related risk. Dr Ranger closed her keynote by reminding the audience that while transition risks are considerable, they also represent strong investment opportunities. Those pertaining to biodiversity, carbon, and water are expected to grow in the near future.

Nature-Climate Interlinkages

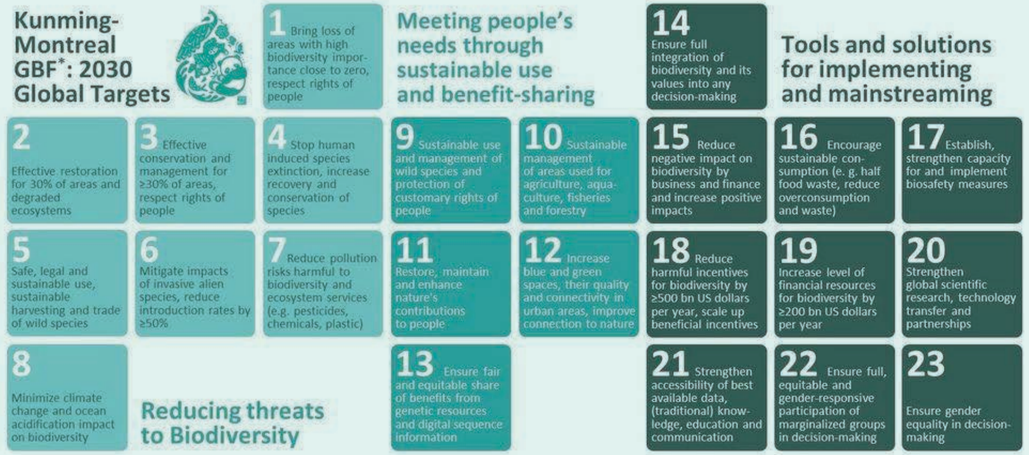




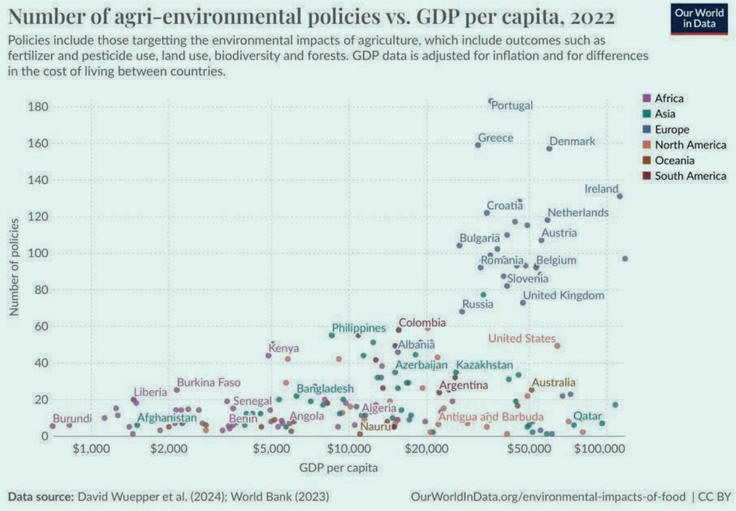


Source: Climate Action Tracker, IPCC AR6, Net Zero Tracker

Shifting policies…



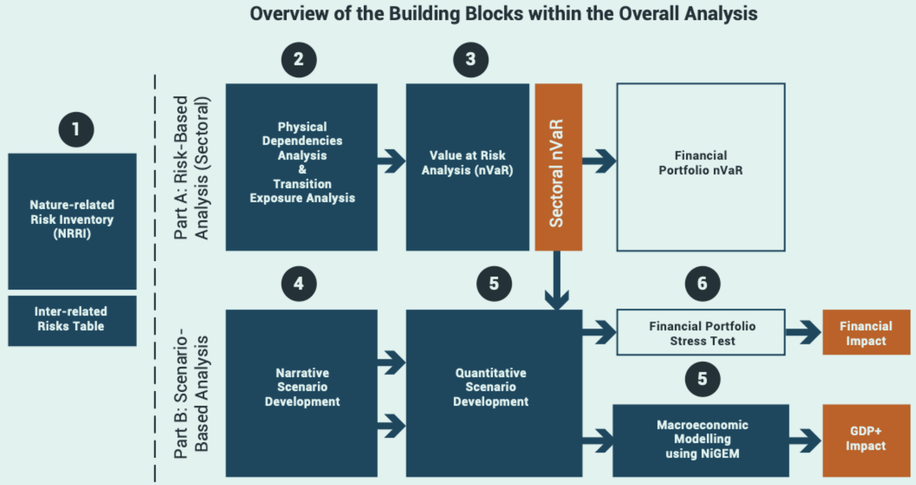
Evolving national policy



Keynote and Q&A

	Climate-Related Physical Risks	Nature-Related Physical Risks
Driver	Global	Local. Wide range of drivers
Acute and chronic	Both	Both
Diversity of impacts	Wide range	Arguably even wider and more direct
Timescales	Immediate but time delay	Immediate and can build up over time
Spatial scales and localisation	Global, albeit spatially heterogenous	Local and global
Linearity, uncertainty and predictability	Non-linear, compounding, cascading	Non-linear, cascading
Thresholds and tipping points	Tipping points	Tipping points
Climate-Nature Amplifiers	Risk amplifiers	Risk amplifiers
Status of modelling	Moderate (intercomparison)	Nascent (no intercomparison)

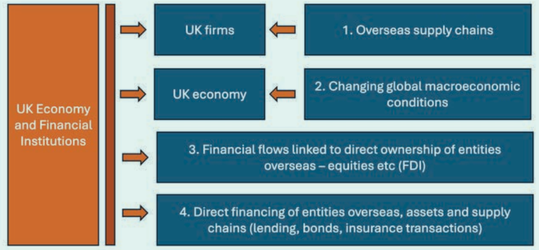
UK Nature Risks - Methodology

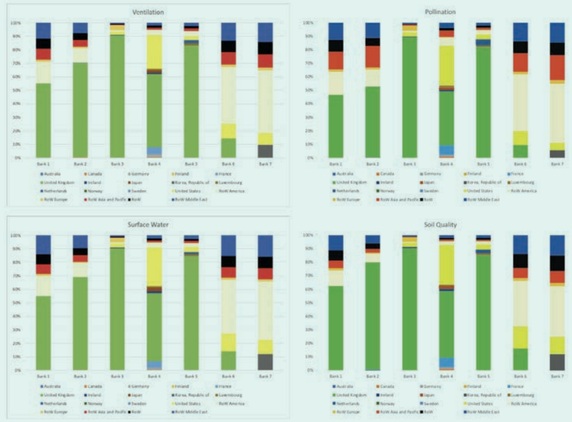


Keynote and Q&A

International risks account for more than half of all nature-related financial risks to the UK economy

International nature-related risks transmit to the UK economy through four main channels:

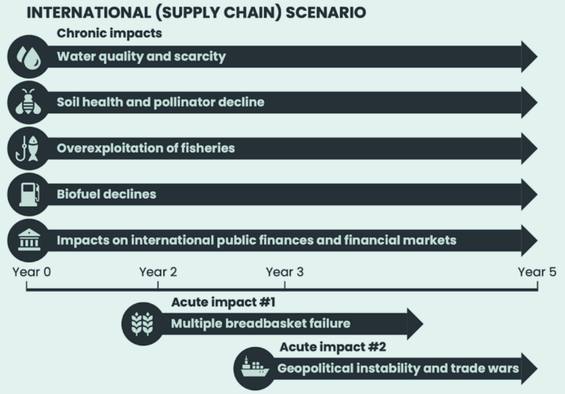


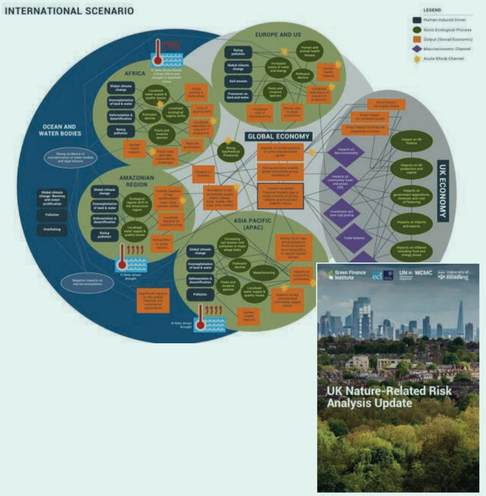


The £3.8 trillion in assets from UK banks and insurers are dependent on a wider set of assets through supply chains, which may represent approximately £5.8 trillion of assets, of which **£3.2 trillion, or 56% of the total upstream exposure are highly or very highly dependent on nature. International banks are particularly highly exposed.**

Scenario-based analysis

Scenarios

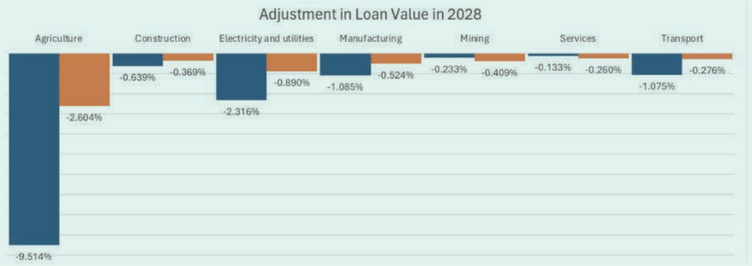




Keynote and Q&A

First nature financial ‘stress test’

Warning –these results are conservative!



	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6
Domestic Scenario	1.29%	1.48%	3.95%	0.64%	2.26%	1.45%
Domestic + International Scenario	1.85%	2.08%	5.16%	1.01%	3.04%	2.04%

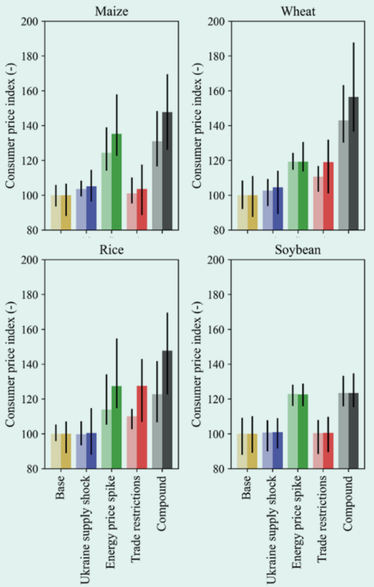
Even in the next decade, material impacts on the values of loans portfolios are expected.

Looking across the portfolios of the seven largest UK banks, the analysis indicates possible near-term adjustments in the values of domestic holdings of up to 4-5% for particular sectors and banks from nature-related risks alone. This is very conservative – does not include second-order effects or possible tipping points.

Climate change would amplify these risks further.

Nature versus wider Supply Chain Risks

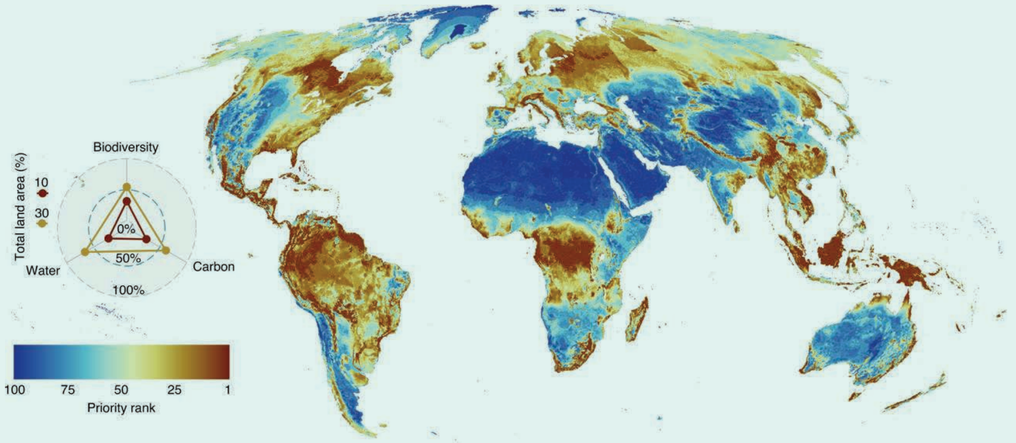
Analysis suggests that for food supply chains, the impacts of environmental shocks on prices are on a par with other types of shocks, but the **compounding effect can be very material.**



With thanks to ECI colleagues: Jasper Vershuur, Jim Hall and team

Keynote and Q&A

Opportunity hot spot: Biodiversity-Water-Carbon



Jung et al. (2021) Areas of global importance for conserving terrestrial biodiversity, carbon and water. Nature Ecology and Evolution. https://www.nature.com/articles/s41559-021-01528-7

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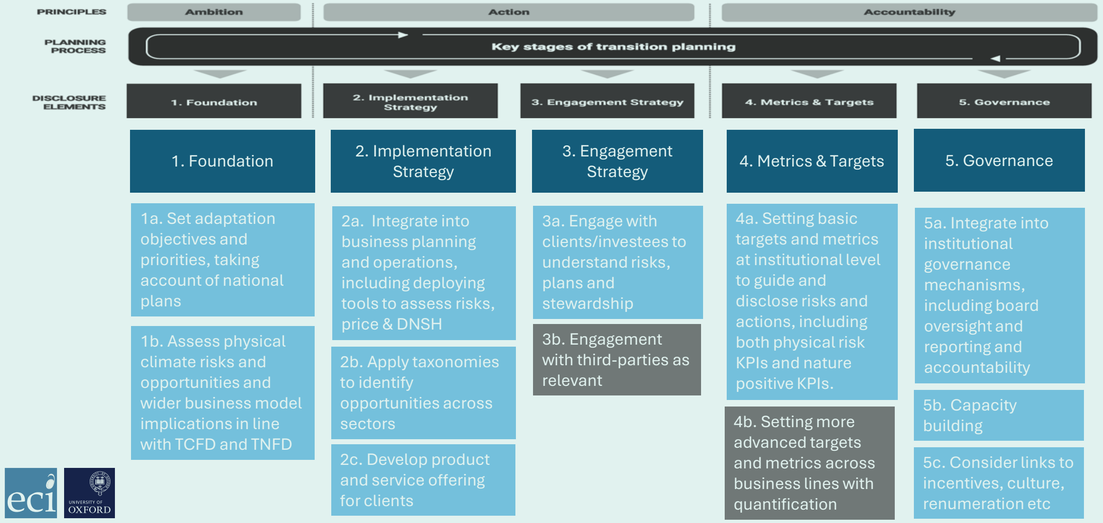
Nature-Positive Transition Plans



Panel session

Ensuring the sustainability of natural capital

Speakers

Rachael Barza
Associate Director, Lead Climate Adaptation and Nature Finance, EBRD

Tim Coates
Managing Director, Evenlode Landscape Recovery

Andrew Creak
Founder, Kana Earth

David Croft
Global Head of Sustainability, Reckitt

Robert Gardner
Founder, ReBalance Earth

Moderator

Richard Peers
ResponsibleRisk

The speakers discussed the customer experience aspect of a natural value transaction, and how companies can remain transparent and accountable with their ESG and impact investing strategies. Coates started by outlining that the global economy needs to be shifted, and that it will not be a smooth, easy, or quick process: "There is a lot of focus on trying to make projects 'investment-ready'. The truth is that the market is not 'investment-ready', and that is to do with market infrastructure. It is to do with policy and regulation, and misallocation of risk, which means there's a misallocation of capital. If we can describe and manage risk better, we can have better risk-reward statements..."

When asked how ReBalance Earth attracts capital, Gardner said that there has been a shift in pension funds' strategic assets to include impact investing. He continued that it is difficult for nature to gain funds in the marketplace of private equity; it is important to identify who your customer is and what they will pay.

Robert Gardner
ReBalance Earth

"I would love to have a dashboard that seats nature with equal footing as interest rates, inflation, and unemployment, because that's when you land the economic value of these things."

He stated by focusing on pain points they are gaining capital and making a difference, and that they don't have time to wait for other solutions. Gardener went on to state that local governments and regional municipalities shouldn't be underestimated, as they push for a more localised conversation and drive investments in biodiversity and carbon.

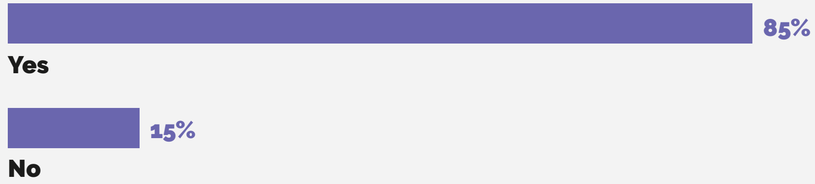
Barza noted that while it is a challenge to create a market for nature investment in the current economy, there is a successful 'mainstreaming' happening across biodiversity investments, whereby clients are more willing to invest in regeneration projects.

Croft gave his perspective on enhancing the sustainability of natural capital; emphasising that the market is still immature and opportunistic, and that resilience is about relative growth, and motivating investment in risk and nature. He argued for the need to blend market and non-market actors for dynamic solutions.

According to Creak, there needs to be asset managers willing to take on the business case and do the hard work of allocating that capital and moving nature-related projects forward. He also commented on the shortage of talent to drive natural capital.

Poll:

Does the audience believe that capital will flow to Nature projects if FSI's can price Nature to a reasonable degree of accuracy?



Gardner added that nature-related risk should be given more widespread importance given the gravity of its impact: "The investor context is that just 6-12% of GDP will drop due to nature loss in the global financial crisis. Peak loss in the UK was 6%, so you might think that is not a big number. It is a big number right now for what's called Investment Committee week.

"I used to spend my life going from investment committee to investment committee, and it starts with unemployment, inflation; that economic clock. There is no mention of the mass carbon emissions. There is no mention of the nature-related risk, so I would love to have a dashboard that seats nature with equal footing as interest rates, inflation, and unemployment, because that's when you land the economic value of these things."

Panel session

The role of data for Nature Capital

Speakers

Cathrine Armour
Director Data Initiatives, TNFD

Richard Conway
CEO, Elastaloud

Eoin Murray
Managing Director, Seed

Ana Raposo
Business Applications and Partnerships Officer, European Space Agency

Matt Sandoe
Chief of Staff, OS Climate

Moderator

Richard Peers
ResponsibleRisk

In the last panel of the day, moderated by Richard Peers, founder of ResponsibleRisk, the discussion centred around the role of data in nature intelligence and financial services. Peers started the discussion by turning towards Armour regarding her take on the role of data as well as the need to standardise, benchmark and support. Armour, representing TNFD, emphasised that there has been a long demand for nature data.

"We're really doubling down on the challenges that continue to exist, making the most of available data that is reusable is very important. One of the key things for us at TNFD is to collect once and use many times, but what we're actually seeing is lots of collection activity but not necessarily specific to the use cases. Ultimately, it's about getting much more specific about what's being neglected, but then that moves us to transparency," Armour explained.

She further teased TNFD's upcoming launch of a blueprint for a major data facility, including announcements on where they see ecosystem change being required in the nature data space.

On the topic of required change, Peers turned the conversation to Eoin Murray, managing director of Seed. Murray started off by explaining that legacy change is absolutely crucial, and gave a few examples of tools and companies spearheading positive change, including OS Climate, Ocean Ledger, and Cambridge University's 4Cs group, among others.

Matt Sandoe
OS Climate

"We're in prime position to really plug the philosophy of open-source and open data."

A lot of the good examples mentioned by Murray included open-source technology, so Peers called on Sandoe next, who explained that OS Climate is a non-profit which is part of the Linux Foundation, which means they have access to the flagship open-source consortium including members such as Goldman Sachs or Morgan Stanley.

"So we're in prime position to really plug the philosophy of open-source and open data," Sandoe emphasised. "Why is open-source so useful? Firstly, it enables you to bridge the gap across research, academia, industry, corporates, financials and data providers. It becomes a shared problem, and the trick is identifying the common layers. It's all about pre-competitive collaboration."

Ana Raposo
European Space Agency

"One of the key things of space is that it brings this transparency that everyone is craving. You no longer have to rely on someone's reporting - you can actually see it from space."

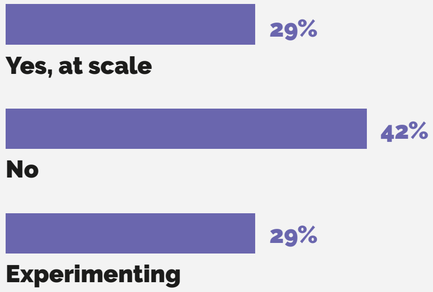
At this point in the discussion, the concern around transparency had been mentioned by multiple panel members. Raposo gave an overview of examples of what is meant by space data - whether it's looking at car parks or the health of crops. Thanks to the resolution of space data, "we can see things at asset level, at regional level and at global level," she explained. "One of the key things of space is that it brings this transparency that everyone is craving. You no longer have to rely on someone's reporting - you can actually see it from space."

She also explained how the advanced technology they have access to allow for multispectral and hyperspectral views. "With hyperspectral, you're able to distinguish hundreds of colours. The impact of this is that you can understand composition of minerals. This has implications for understanding the stress levels of crops much faster, allowing for decisions on how to act before it's too late."

Panel session

Poll:

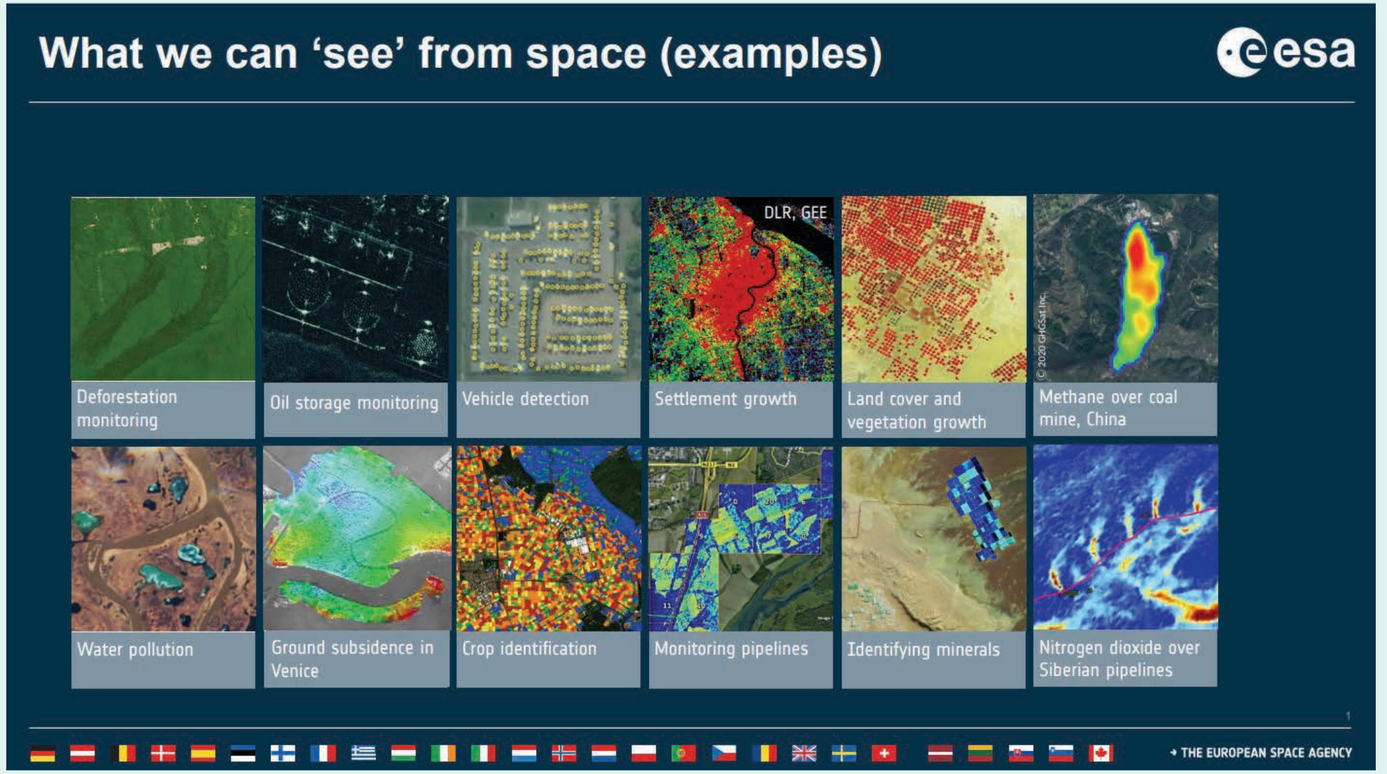
Are you using Geospacial data in your business today to inform risk and opportunity decision making?



Lastly, Richard Conway, the CEO at Elastacloud, explained the impact of AI and how large language models (LLMs) can streamline the decision-making process in a time where organisations have access to more data than ever before: "It's a lot of effort to take raw data that includes gaps, and get it to a place where it can be shared and you can do analytics on it, and it's fantastic that all these building blocks exist with open-source. The change that's happened over the last 18 months is that you can take all these complex classifiers of data science and you can use software, prompt engineering, and spectral images to derive value from LLMs," he continued.

Summarising the session, the panellists emphasised the need for proactive, holistic approaches to data management. There is lots of technology that organisations can leverage, but they need to identify the right use cases in order to gain the most valuable insights.

A poll to the audience additionally revealed the untapped potential of geospatial data.



Environmental sector isn't "investable or professional yet"

Speaker

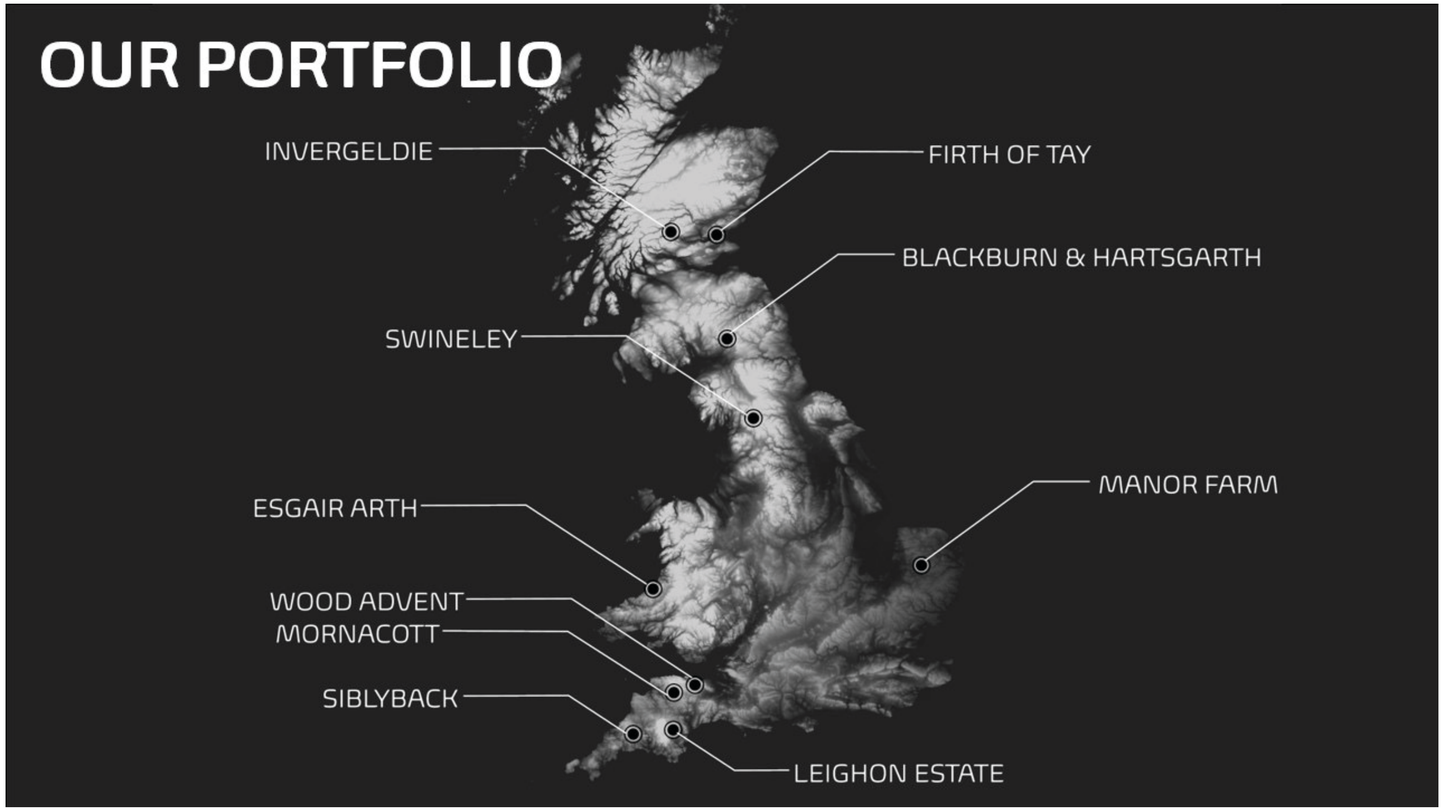
Dr Rich Stockdale
Founder, Oxygen Conservation

Moderator

Richard Peers
ResponsibleRisk

Dr Stockdale gave the closing keynote of Sustainable Finance Live 2024, looking into how the investment into natural capital can evolve in the future.

"I wanted to change the environment for the better. I wanted to take weirs out of rivers. I wanted to plant trees and reintroduce species and build new nature reserves," explained Stockdale on his motivation for starting Oxygen Capital in 2021, which invests in land to restore natural capital and sells carbon credits. Stockdale stated that by the end of this year, the company will have 45,000 acres and a £150 million valuation.



Dr Rich Stockdale
Oxygen Conservation

"I wanted to change the environment for the better. I wanted to take weirs out of rivers. I wanted to plant trees and reintroduce species and build new nature reserves."

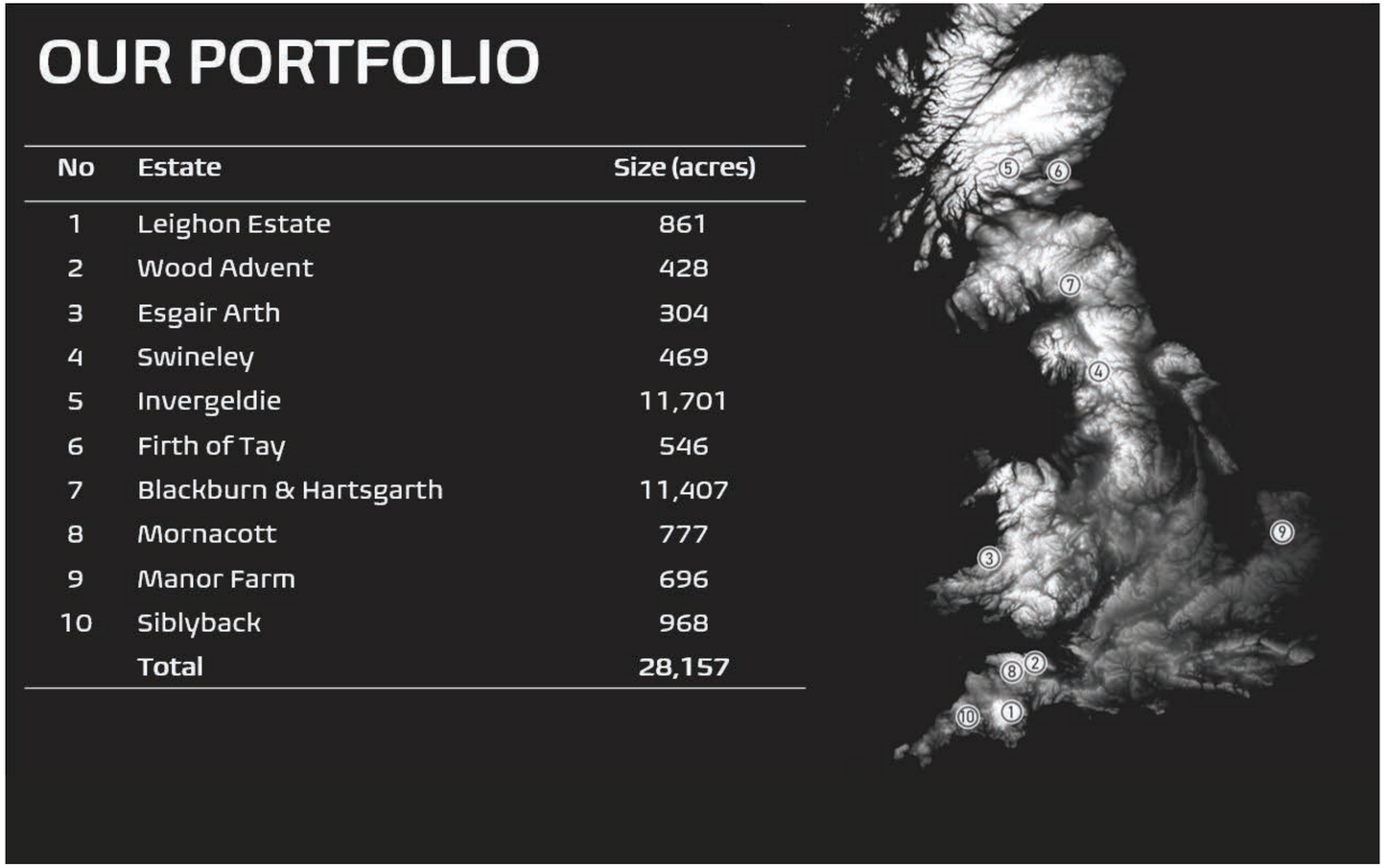
Keynote and Q&A

When discussing the investment landscape in nature, Stockdale illustrated his point with a cricket metaphor: "The environment sector is Test cricket. It's slow and laboured and traditional and protected. Investors don't want Test cricket. They want T20. They want speed and urgency, and IRRs. Nature doesn't care about IRR and that's the problem, we don't have a language to coalesce between the two."

Regarding the environmental sector as a whole, Stockdale said "It isn't a sector that's investable or professional yet."

Dr Rich Stockdale
Oxygen Conservation

"There is "£20 billion worth of high quality, premium natural capital acquisition opportunities."



Looking to the dimension of criticism in the space, Stockdale stated they everything they do will be criticised. He argued: "Some people believe that the concept of natural capital and profiting from nature is inherently inappropriate and wrong, and you're not going to change their mind, but that's part of the logic that's got us into the situation. My personal view on the cause of climate change, it's the absence of a price on carbon and pollution."

On the scale of opportunity in the natural capital market in the UK, Stockdale stated he believes there is "£20 billion worth of high quality, premium natural capital acquisition opportunities."

Looking to the importance of work with in this space, Stockdale concluded: "It can't be any more urgent. We need to go, and we need to go fast. We need to do this; people want to. We're making strides every day, improving things and making it an easier space to get into and do some incredible things. The flip side of that, and one that's a weird dichotomy for people to carry quite a lot, is the worse the climate gets, the better that is for this business. That's a really unfortunate thing to feel and to be aware of sometimes."

Closing statements

Making a pledge

Closing off Sustainable Finance Live 2024, Peers revisited the question that he had posed in his welcome speech: Is it clear to you how natural capital could be priced and traded? The result was that more of the audience received clarity on the natural capital transaction process.

Peers also asked the attendees to pledge a few words on what action they plan to take as they leave the event, to which many responded with strategies to invest in nature in their business and assess nature-related risks.

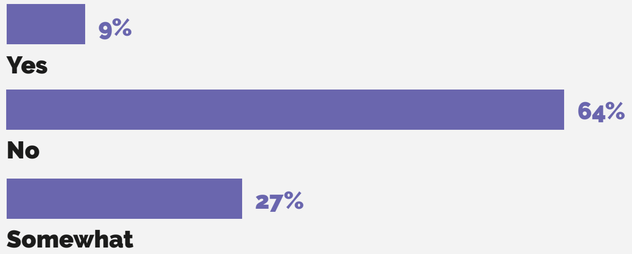
He concluded the event with a casting call from *Doughnut Economics: the twenty-first century story*, to emphasise the significance of collaboration and taking action within your own company.

Speaker

Richard Peers
ResponsibleRisk

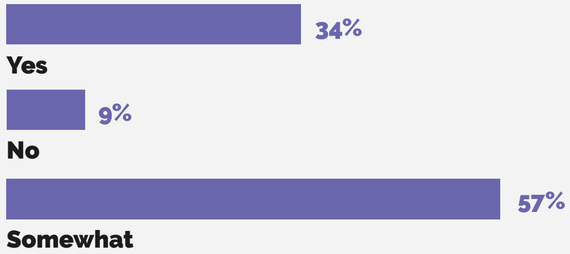
At the beginning of the conference:

Is it clear to you how Natural Capital could be priced and traded?

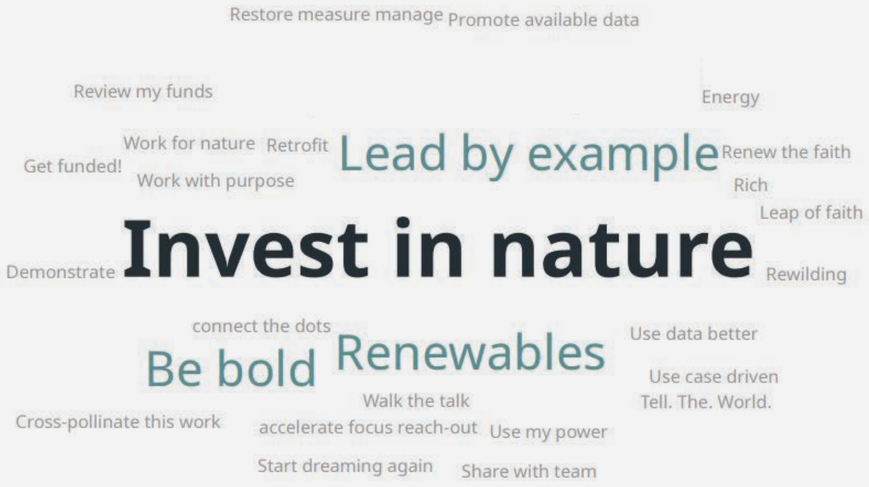


At the end of the conference:

Is it clearer to you how Natural Capital could be priced and traded?



Make a pledge in three words



Closing statements

Economics: the twenty-first-century story
(in which we create a thriving balance)

Staging and script: a work in progress by economic re-thinkers everywhere

Cast in order of appearance:

EARTH, which is life-giving – so respect its boundaries
SOCIETY, which is foundational – so nurture its connections
THE ECONOMY, which is diverse – so support all of its systems
THE HOUSEHOLD, which is core – so value its contribution
THE MARKET, which is powerful – so embed it wisely
THE COMMONS, which are creative – so unleash their potential
THE STATE, which is essential – so make it accountable
FINANCE, which is in service – so make it serve society
BUSINESS, which is innovative – so give it purpose
TRADE, which is double-edged – so make it fair
POWER, which is pervasive – so check its abuse

Sustainable Finance Live: The Hackathon

NayaOne

The Sustainable Finance Live Hackathon 2024, in collaboration with NayaOne, took place from 27 September to 10 October. This year's themes linked back to nature capital and biodiversity value:

- geospatial data and the role of AI;
- data fusion and LLMs;
- demand innovation and impact orientated financial instruments;
- enhancing nature through sustainable agriculture;
- and nature risk and reporting.

The teams were split into 'emerging' and 'established' categories.

Sustainable Finance Live: The Hackathon

NayaOne

Judges & Mentors

Nigel Greenhill
Director, Hill Stone Wood

Mitesh Soni
Client Executive, AWS

Richard Conway
CEO, Elastacloud

David Gristwood
Freelance Consultant, ex Microsoft

Sarah Sinclair
Founder, Change Gap

Darshna Shah
Solution Lead, Elastacloud

Chryssi Chorafa
Director, StarLiX

Jean-Guillaume de Maneville
Fintechs & Financial Sponsors, Natixis Corporate and Investment Banking

Giles D'Souza
Strategic Business Lead, Planet

Andy Bennet
Space Lead, Innovate UK KTN

Priyank Patwa
Director, ESG Digital, Data and Analytics FS Lead, Risk Advisory, Deloitte UK

Isabelle Chatel de Brancion
Business and Innovation Lead - Geovation, Ordnance Survey Geovation

Accelerator Partners

Harry Wright
Founder, BrightTide

Andy Bennet
Space Lead, Innovate UK KTN

Sarah Sinclair
Founder, Change Gap

Emily Barrett
Corporate Innovation Director, Sustainable Ventures

Ana Raposo
ESA, European Space Agency

Isabelle Chatel de Brancion
Business and Innovation Lead - Geovation, Ordnance Survey Geovation

Sustainable Finance Live: The Hackathon

NayaOne

Amrit Satpathy and Ambar Vitelli were on the ground to oversee the end-to-end faciliation for the 2024 Hackathon on behalf of NayaOne. "We're delighted that NayaOne's hackathon platform enabled this programme of work and drove much needed innovation at this year's Sustainable Finance Live 2024—accelerating the creation of new financial instruments focused on Natural Capital," Karan Jain, CEO of NayaOne commented after the hackathon concluded.

Emerging category winners

Team 3 (NatureDelta), made up of Juan Sabuco, Qiu Wong, Nell Agate Tsui, Max Neri, Jean Joy and Nicola Ranger, snatched the win in the emerging category.

Their solution addresses a crucial gap in the market: the ability to accurately evaluate nature related financial risks. The team's platform will take into account nature data in order to enable businesses and investors to make more informed and sustainable decisions.

Taking Brazil, the world's most biodiverse country thanks to the large coverage of the Amazon rainforest, as an example, the team explained how their platform works: "This wealth of biodiversity is involved in a number of ecosystem services, and throughout the tool, we've set out to evaluate and translate these services into financial metrics, which is an extremely important step as we move towards including nature and biodiversity in financial decision making."

By using nature data to evaluate dependencies and impacts as well as locating hotspots, the tool shows the ecosystem services value at risk in Brazil across major sectors, including manufacturing and agriculture, which play important roles such as flood and staff protection.

Announcing the Team 3 (NatureDelta) win, Richard Peers said: "What we thought was extraordinary, was that this group, where most people had not met each other, came together. They wrestled down to a use case, which was clear and understandable for us as judges, and then drilled down good use of data and clearly demonstrated the value that could be derived of using this data in this use case. This was something that we really valued, and we'd love to see carried forward."

Speaking to Finextra about their win, Nell Agate Tsui, climate stress testing and scenario analysis at HSBC, commented: "Having the chance to pitch our data product 'NatureDelta' alongside more established teams and observe innovation in action was the cherry on top of a lively two weeks. You have to be quite brazen to volunteer for such a task against such odds, but being grouped with other likeminded and passionate people meant the learning curve was fast and the output was efficiently deployed."

Speaking to the team's experience in the Hackathon, she continued: "The Sustainable Finance Live Hackathon provided a unique opportunity to crystallise thinking on a challenging subject matter. In our case, the task was to link nature transition risks to macroeconomic impacts. Our concept was finetuned to the financial services sector, namely stress-testing, which represents the coalface of risk management and strategic decision-making. It was great to conceptualise a possible path to success."

"The Sustainable Finance Live Hackathon provided a unique opportunity to crystallise thinking on a challenging subject matter. In our case, the task was to link nature transition risks to macroeconomic impacts."

Nell Agate Tsui
HSBC

Emerging category winners – Team 3 (NatureDelta)

NayaOne

Team 3 – Nature Risk & Reporting

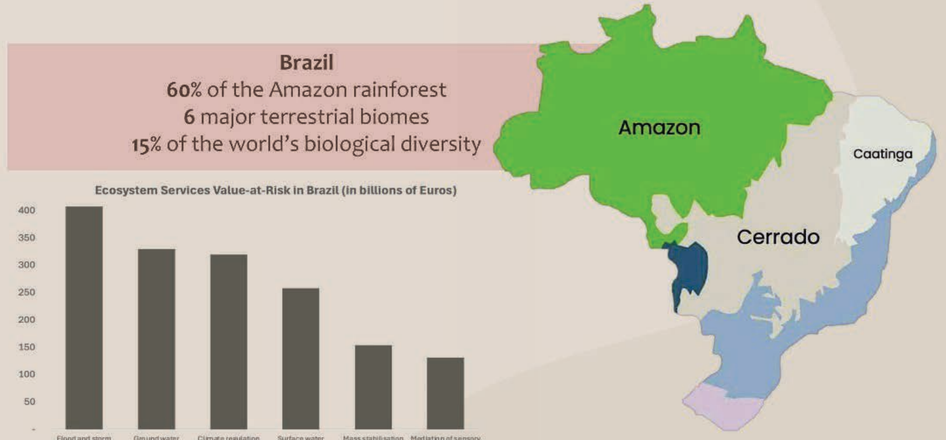
October 2024

Members:
Juan Sabuco
Qiu Wong
Nell Agate Tsui
Max Neri
Jean Joy
Nicola Ranger

Mentors:
Richard Peers
Amrit Satpathy

Scene Setting – Why should you care?

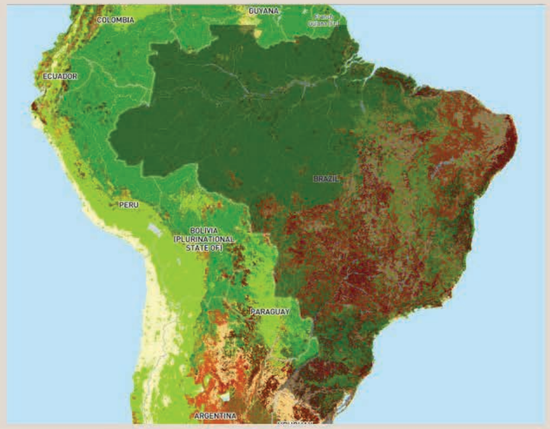
Brazil
60% of the Amazon rainforest
6 major terrestrial biomes
15% of the world's biological diversity



Emerging category winners – Team 3 (NatureDelta)

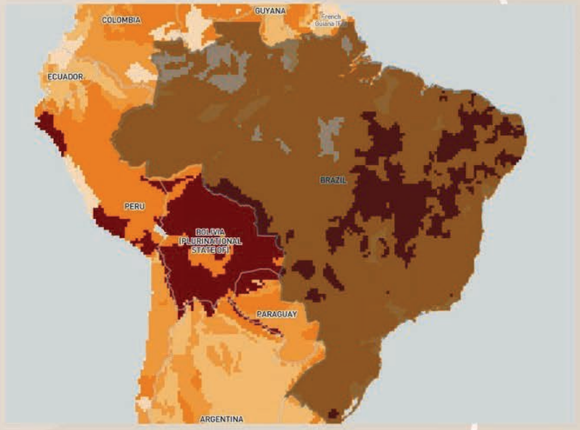
NayaOne

1: Evaluating dependencies and impacts



Land cover data is one of several datasets used as input to evaluate nature-related dependencies and impacts. For water, this results in indicators such as **baseline water stress** and **water supply variability**.

II: Locating hotspots



Once dependencies and impacts have been evaluated, data can be aggregated and sorted at the global level, producing heat maps that show the highest **water depletion rates**, subsequently used for stress testing.

Key Use-case: Stress Testing

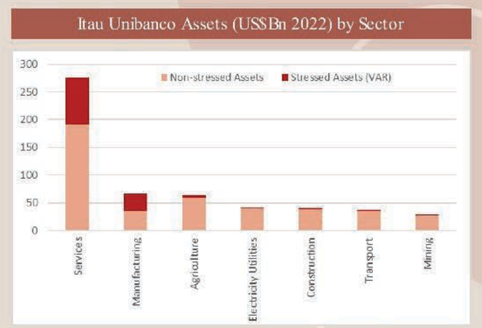
Identify and Mitigate Risks:

- Quantify nature-related risks, per major sector
- Compare company risk exposures by peer group
- Future-proof investment decisions.

Case Study:

The largest Brazilian bank holds assets in many sectors. Water stress impacts sectors unequally. Fine-tune strategic management actions.

- Action for Itau Unibanco:
  Immediately de-risk assets in services and manufacturing.
- Action for Investors:
  Due to risk concentration, avoid investing in a bank with similar sector exposures.



Water stress† alone impacts 23% of Itau Unibanco's Assets* in the Baseline scenario (approx. US$126Bn)

†Source: Oxford University VAR calculations. *Source: https://www.itau.com.br/relacoes-com-investidores/en/integrated-annual-report/

Emerging category winners – Team 3 (NatureDelta)

NayaOne

Data Evaluation - Transition Risk

Data Resource	Spatial Resolution	Temporal Resolution	Rationale
Company Assets	Sub-national	Annual	Specificity
Aqueduct	Sub-national	Annual	Trusted, Standardised
Exiobase	National	Quarterly	Trusted, Standardised
T-Risk	National / Sub-national	Quarterly	Standardised
Bloomberg	Country-level	Daily	Macro connection

Transition risk

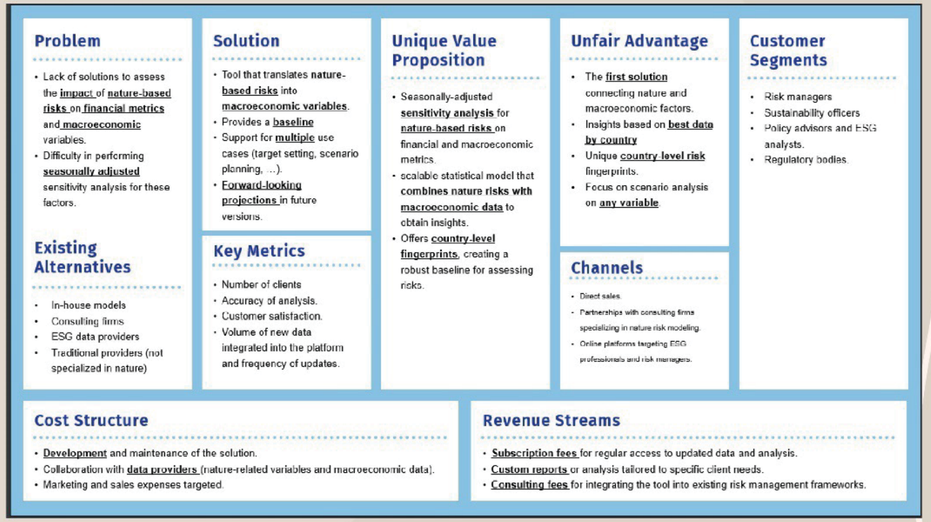
Misalignment with actions aimed at protecting, restoring, and/or reducing negative impacts on nature, e.g. via:

- Regulation/policy/legal precedent
- Technology
- Consumer and investor preferences

Additional focus on nature transition risks:

- Improves future product readiness when integrating the effects from policy action (EUDR and equivalent)
- Better explore the interactions between nature-positive and socioeconomic-positive behaviours
- Create a unique value proposition, differentiated from other data subscription providers

Lean Canvas



Winning team, established category – Team AgriEco Hub

NayaOne

In the established category, team AgriEco Hub by AfriGIS were crowned the winners of the 2024 Hackathon. The team consisted of CF Haasbroek, Christopher Ueckerman, Dicky Thomas, Eddie Griffiths, Liesel Lange, Martemie Le Roux, Nicolas Kemp and Tondani Phaswana.

The team's concept was to enable sustainable farming practices, optimise resource use, and facilitate access to sustainability-linked funding. Their pitched platform connects commercial farmers, smallholder farmers, and financial institutions to drive profitability, resource efficiency, and collaboration.

Each persona - commercial farmers, smallholder farmers, and financial institutions - are facing unique challenges, including water scarcity, climate change, economic pressures, and risk evaluation, among others. AfriGIS' solution will help each persona address their individual challenges by providing streamlined farm management, enhanced collaboration, access to funding, risk reports, and more.

The AgriEco Hub platform leverages advanced technology to drive sustainable farming, using weather forecasting, GIS mapping, and real-time environmental data to support smart decision-making. This empowers all stakeholders to act on accurate, timely insights and drive sustainable outcomes.

Announcing the team's win, Peers commented: "We were impressed with how much was done within ten days. I couldn't believe the amount of content that the team put together, both in terms of the use cases, user journeys, business canvas, and logical architecture for the technology. We were really impressed with the capabilities of the offering itself, and the way it was communicated."

Speaking to Finextra about their win, team AgriEco Hub commented: "Working as a team over the past ten days has been amazing, and we have once again realised that when like-minded individuals band together, we can change the world, one sustainable solution at a time. We are ecstatic about the victory and eager to launch the solution.

"The hackathon allowed us to concentrate on research and development for this solution, which we think fills the gap in green finance tools by seamlessly integrating smallholders, commercial farmers, and financial institutions to guarantee that green finance may be used where it is most needed. In addition to improving sustainable agriculture, the approach also supports biodiversity and—above all—makes sure that financial risk is reduced."

"We have once again realised that when like-minded individuals band together, we can change the world, one sustainable solution at a time."
AgriEco Hub


AgriEco HUB
Growing Green,
Harvesting Sustainability
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AFRIGIS


AgriEco Hub – Concept.
Our platform connects commercial farmers, smallholder farmers, and financial institutions, driving profitability, resource efficiency, and collaboration.
It enables sustainable farming practices, optimises resource use, and facilitates access to sustainability-linked funding.
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Who are our target personas?

- **Commercial farmers:** Focused on profitability, resource efficiency, and climate resilience.
- **Smallholder farmers:** Seeking market access, resource sharing, and growth opportunities.
- **Financial institutions:** Aiming to invest in sustainable agriculture with measurable ESG outcomes.

2024/10/09

AFRIGIS

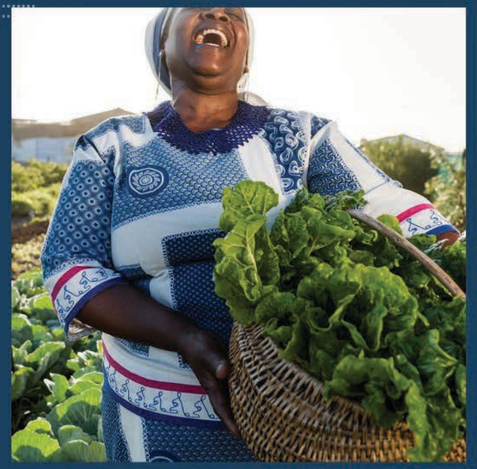
What challenges do a commercial farmer face?

- Water scarcity: Increasing pressure to optimise water usage.
- Climate change: Rising unpredictability impacting crop yields.
- Biodiversity loss: Threats to ecosystems affecting farm resilience.
- Economic pressures: Balancing profitability with sustainability.

AFRIGIS

What challenges do a smallholder farmer face?

- Economic instability: Limited access to resources and markets.
- Infrastructure gaps: Difficulty in scaling operations and distribution.
- Knowledge and Technology: Barriers to accessing the latest farming techniques and tools.



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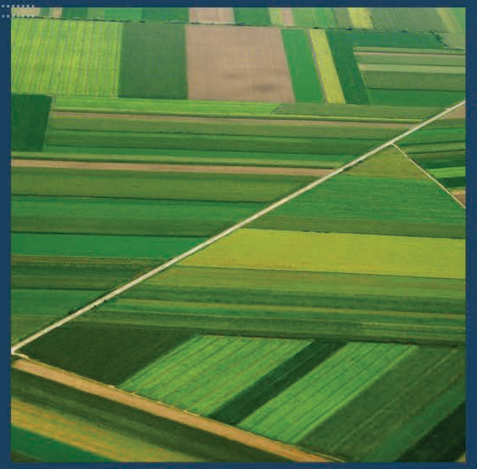
What challenges do a financial institution face?

- Risk Evaluation: Identifying sustainable investment opportunities with minimised risk.
- ESG Reporting: Measuring sustainability outcomes and tracking performance.
- Sustainability Investments: Allocating funds where environmental and financial returns intersect.



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How does the solution assist the commercial farmer?

- **Assists Farm Management:** Real-time tracking of water availability, weather, and crop health.
- **Sustainability:** Facilitating resource conservation and biodiversity protection.
- **Collaboration:** Connecting with smallholder farmers for shared resource management.
- **Supply Chain Optimisation:** Managing inputs and outputs for greater efficiency.
- **Access to Funding:** Streamlining the process of securing sustainability-linked financing from financial institutions to support resource-efficient farming practices.

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How does the solution assist the smallholder farmer?

- **Market Access:** Connecting with larger commercial farmers to increase market reach.
- **Collaborative Farming:** Enabling co-operative farming and resource-sharing.
- **Tracking and Reporting:** Monitoring harvest volumes and market performance.

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Winning team, established category – Team AgriEco Hub

NayaOne

How does the solution assist the financial institution?

- **Sustainable Investment:** Identifying areas for regenerative and optimised farming.
- **Risk Reports:** Providing data-driven insights on agricultural sustainability risks.
- **ESG Metrics:** Tracking and reporting on progress and environmental impact.

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AgriEco Hub – Technology Drivers.

Our platform leverages advanced technology to drive sustainable farming, using weather forecasting, GIS mapping, and real-time environmental data to support smart decision-making. This empowers all stakeholders to act on accurate, timely insights and drive sustainable outcomes.

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Technology Stack

Front end	Back end	Database	Services	Datasets	Infrastructure
VUEJS	.NET8 Web API	Postgress	AfriGIS Search	AfriGIS Landparcel	Amazon Web Services
NUXT - VUE Framework	Springboot	SQL	AfriGIS Property & Deeds	AfriGIS Geological classification	Docker
React Native	JAVA 21	GraphQL	AfriGIS Travel Time Bands	AfriGIS Contours	ORCA Security
	Python		AfriGIS Weather 10-day Forecast	AfriGIS Landcover	GITLab CI/CD
	Geopandas		AfriGIS Lightning	AfriGIS Basemaps	QGIS
			AfriGIS Routing	AfriGIS Africa Data	AfriGIS Identity
			AfriGIS Business Search	Live EO Vegitation Management	Amazon Web Services computer vision (AI)
			Financial Sector Reporting	SAAQIS Air Quality Index	Amazon Web Services API Gateway
			AfriGIS maps in Leaflet		Geoserver
					AfriGIS Mapserver
					Amazon Web Services payment gateway

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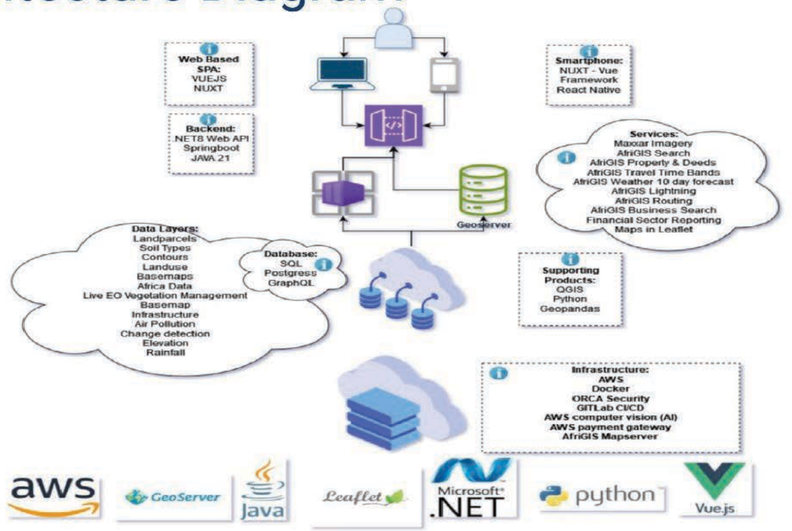
Architecture Diagram



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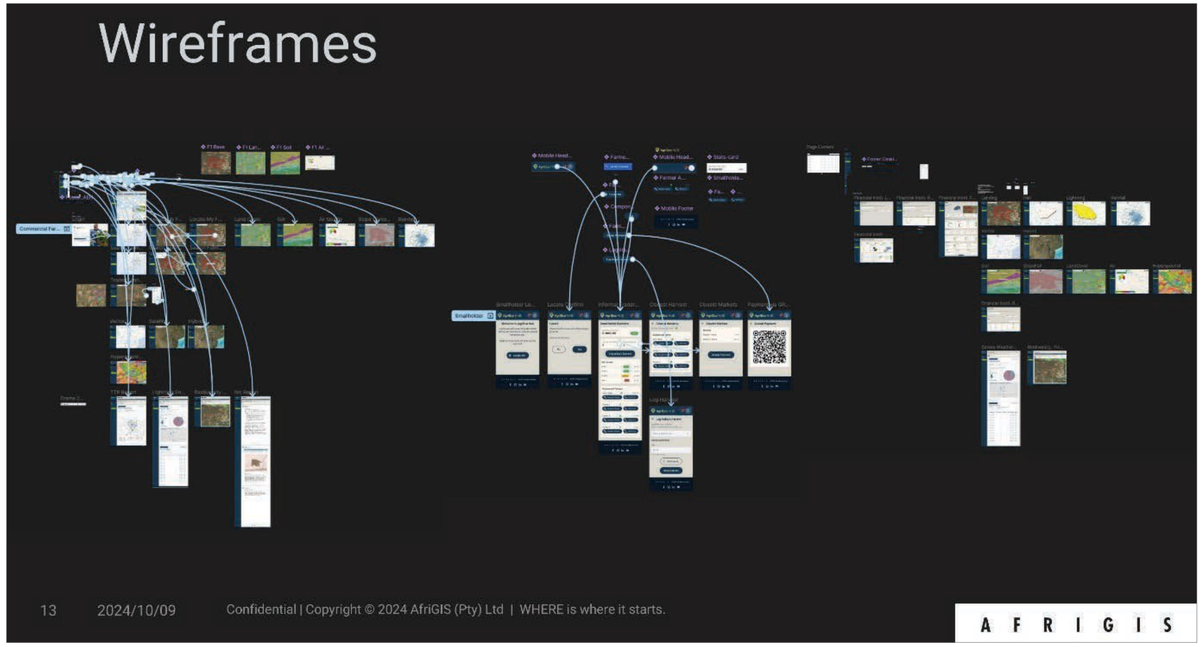
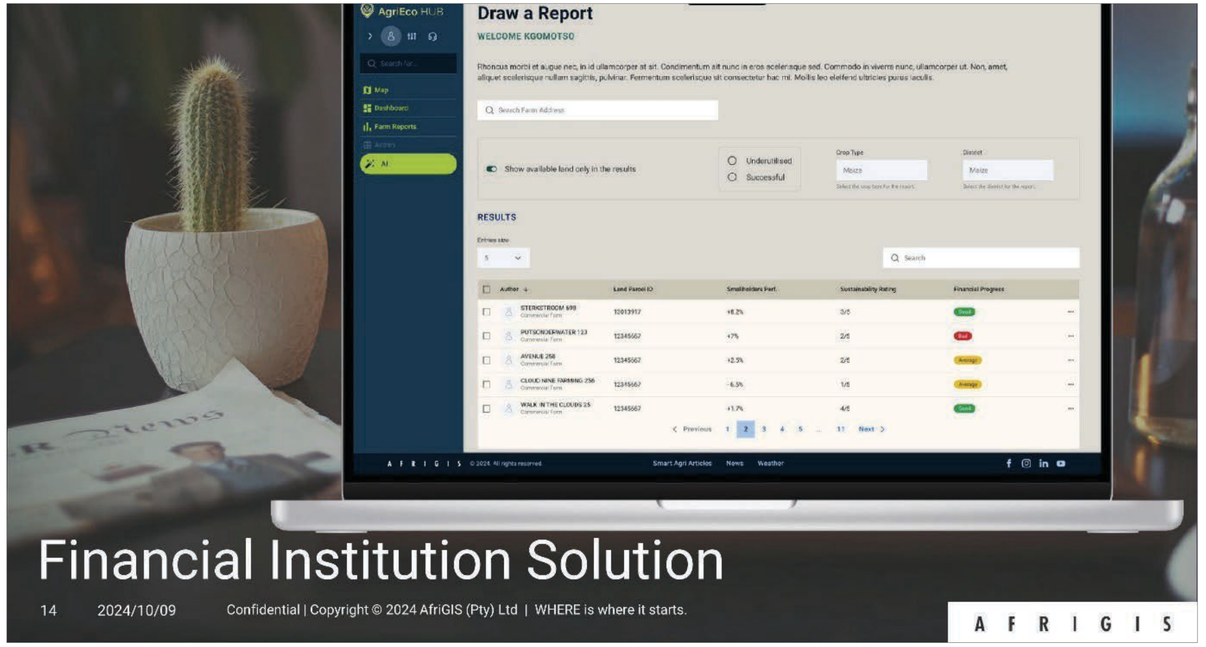
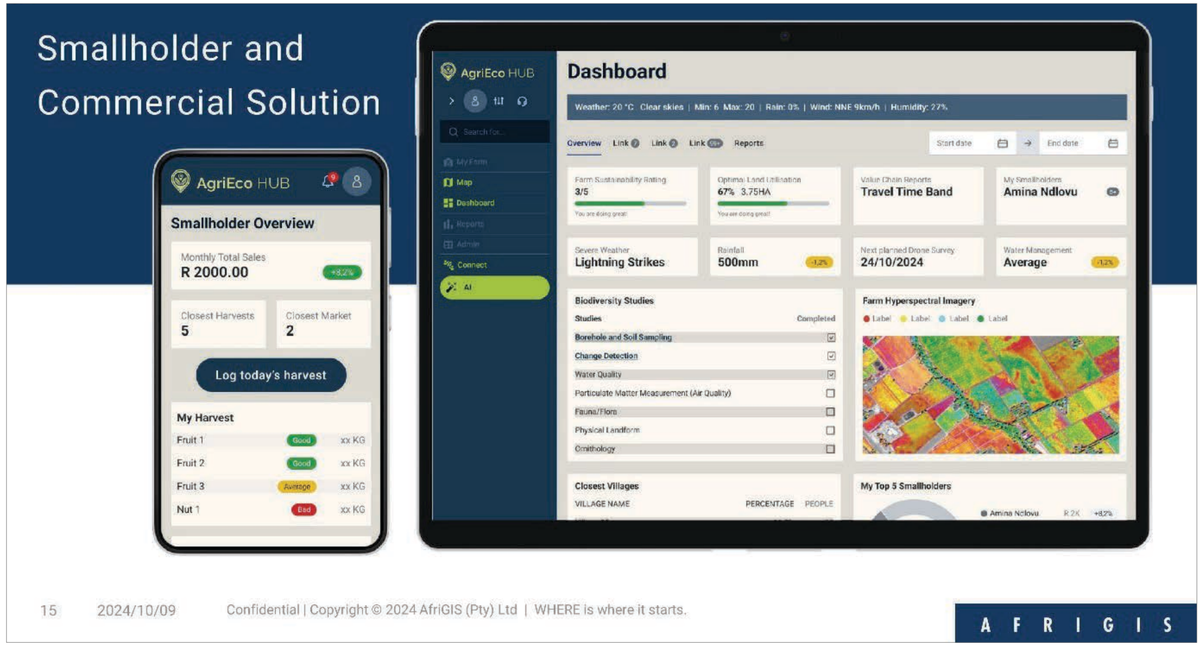
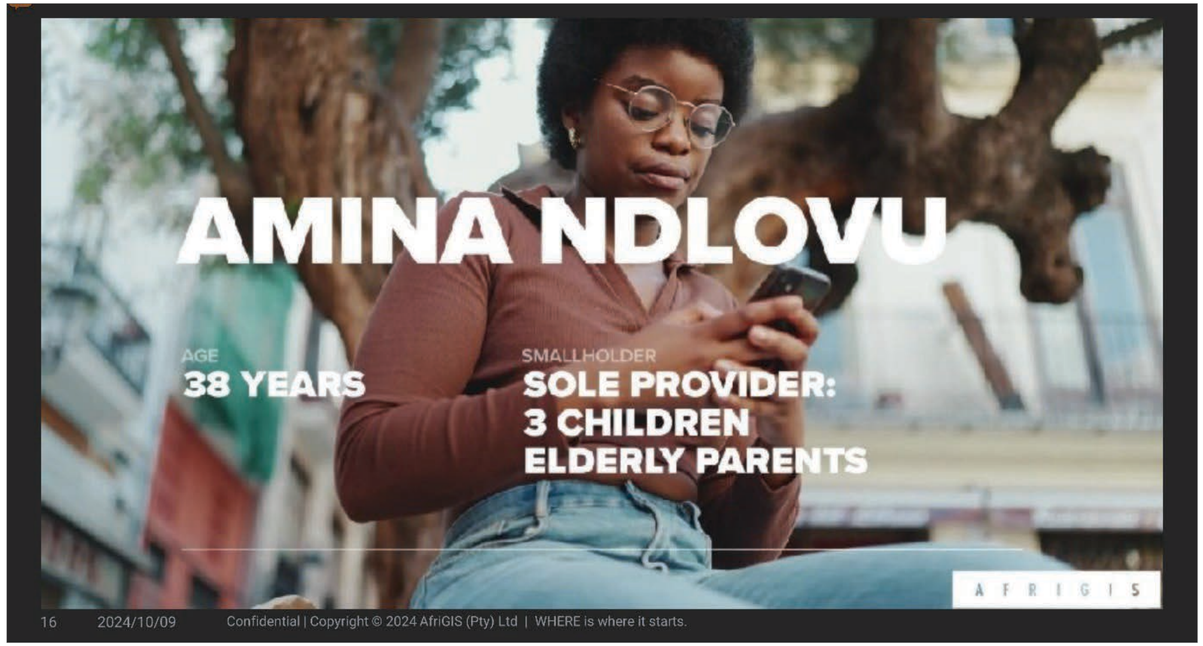




Winning team, established category – Team AgriEco Hub





About

Finextra

Finextra Research is the world's leading specialist financial technology news and information source. It offers more than 130,000 fintech news, features and TV content items to some 800,000 monthly visitors to **www.finextra.com**.

Finextra covers all aspects of financial technology innovation involving banks, institutions and vendor organisations within the wholesale and retail banking, payments and cards sectors worldwide. Finextra's unique member community consists of over 40,000 fintech professionals and 200,000 social followers working inside banks and financial institutions, specialist fintechs, consulting organisations and technology providers.

The Finextra community actively participates in contributing opinions, ideas and comments on the evolution of fintech.

For more information:
Visit **www.finextra.com** and become a member, follow **@finextra** or reach us via **contact@finextra.com**.

Sustainable Finance Live

Finextra and ResponsibleRisk are bringing together sustainable finance experts to discuss how financial services firms and technology companies can achieve the UN's Sustainable Development Goals by 2030.

Debunking the myth that revenue cannot be generated through trustworthy implementation of ESG measures, a programme of interactive Co-Creation workshops will each be targeted at a sub sector in financial services and speak to specific challenges and opportunities, following a lean back, lean in and learn model

ResponsibleRisk

ResponsibleRisk Ltd was founded to drive improvements in Sustainable Finance adoption and outcomes, via better understanding, data and solutions.

From the largest consulting firms to the most elite of specialists: ResponsibleRisk works to bring AI, Data, Sustainability, Banking and Capital markets firms together to resolve the biggest challenges facing our People, Planet and Industry.

www.responsiblerisk.com

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