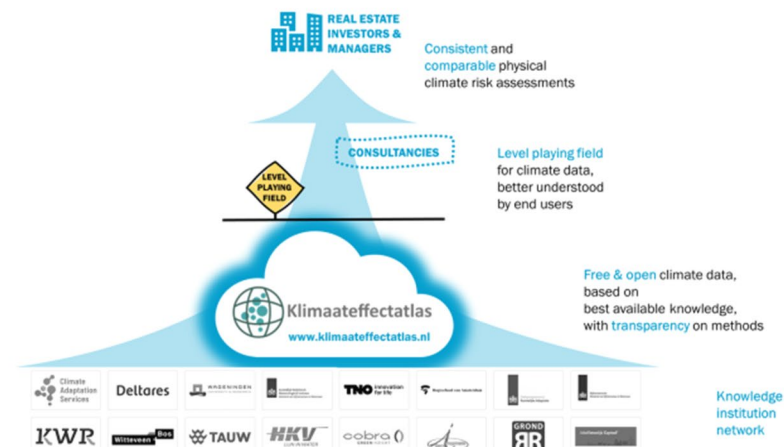


In the spotlight of EU regulations

1. World Economic Forum's Global Risks Report 2023 puts climate change on the top of the list (again)
2. Private funding remains vastly below the scale needed
3. EU strengthens regulations for companies: climate risk analyses become mandatory



A level playing field for The Netherlands



Opening the 'black-box' of climate risk assessments for real estate portfolios: lessons from The Netherlands

Black box approaches are blowing up

1. Organisations often lack climate change expertise
2. Many providers have developed methods to support the real estate sector in assessing physical climate risk
3. The results from these different methods do not correlate well: black box assessments are confusing and puzzling

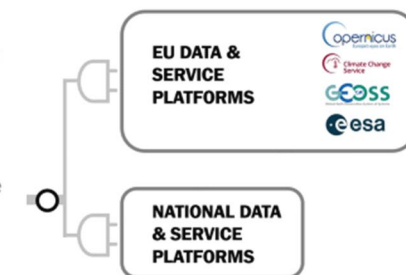


Timo Kelder, Hasse Goosen,
Jan Kadijk, and
Felix van Veldhoven



Upscaling the framework to the wider EU region

1. Upscaling is of great interest, as many investors have assets in multiple countries
2. A large challenge is the trade-off between comparable EU-wide datasets or less comparable but more reliable local data sources



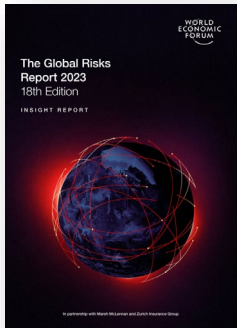
Key takeaway: Connect public and private stakeholders on a shared urgency
= Effective adaptation of buildings and surroundings

In the spotlight of EU regulations

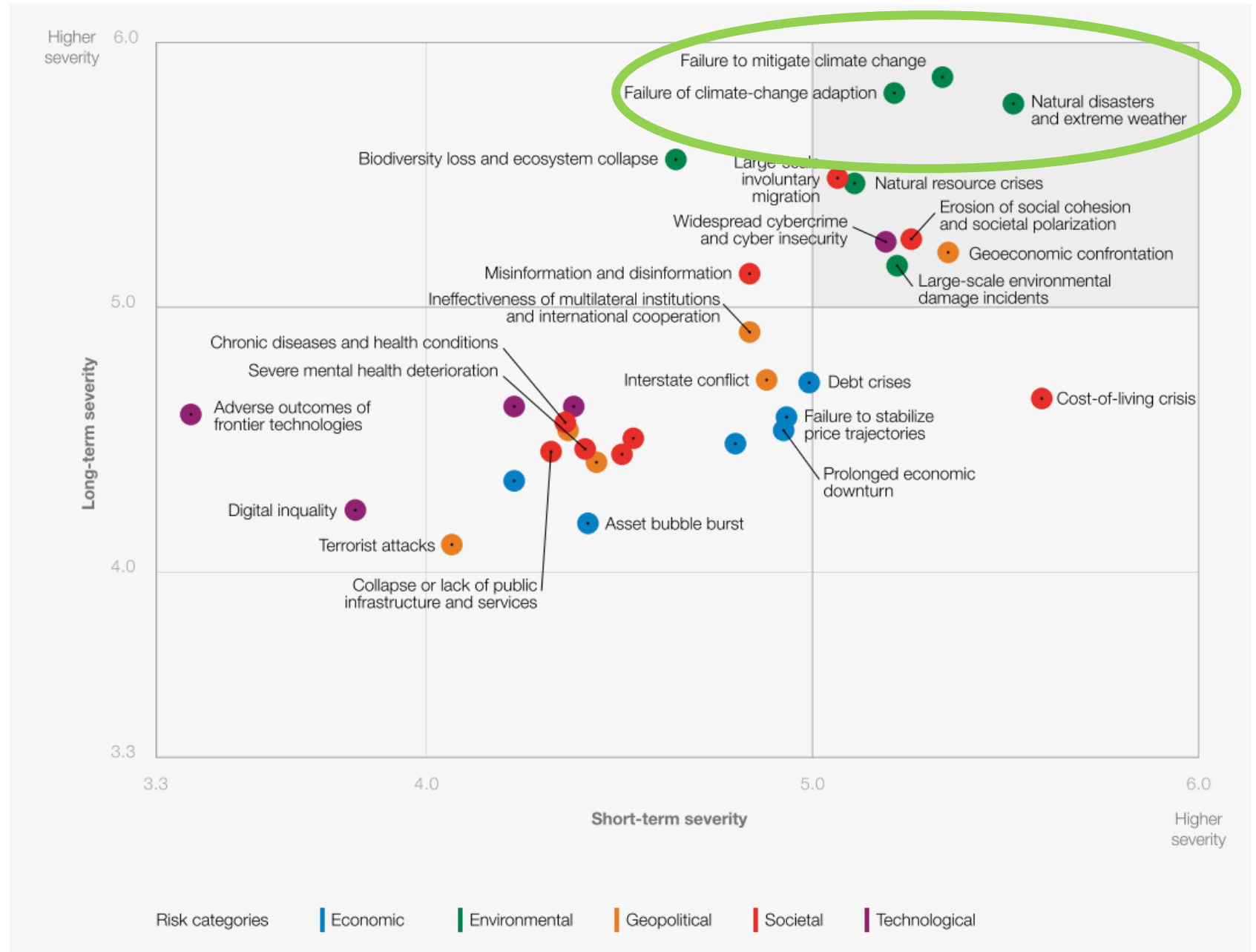
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1. Climate action failure dominates global risks in the next decade

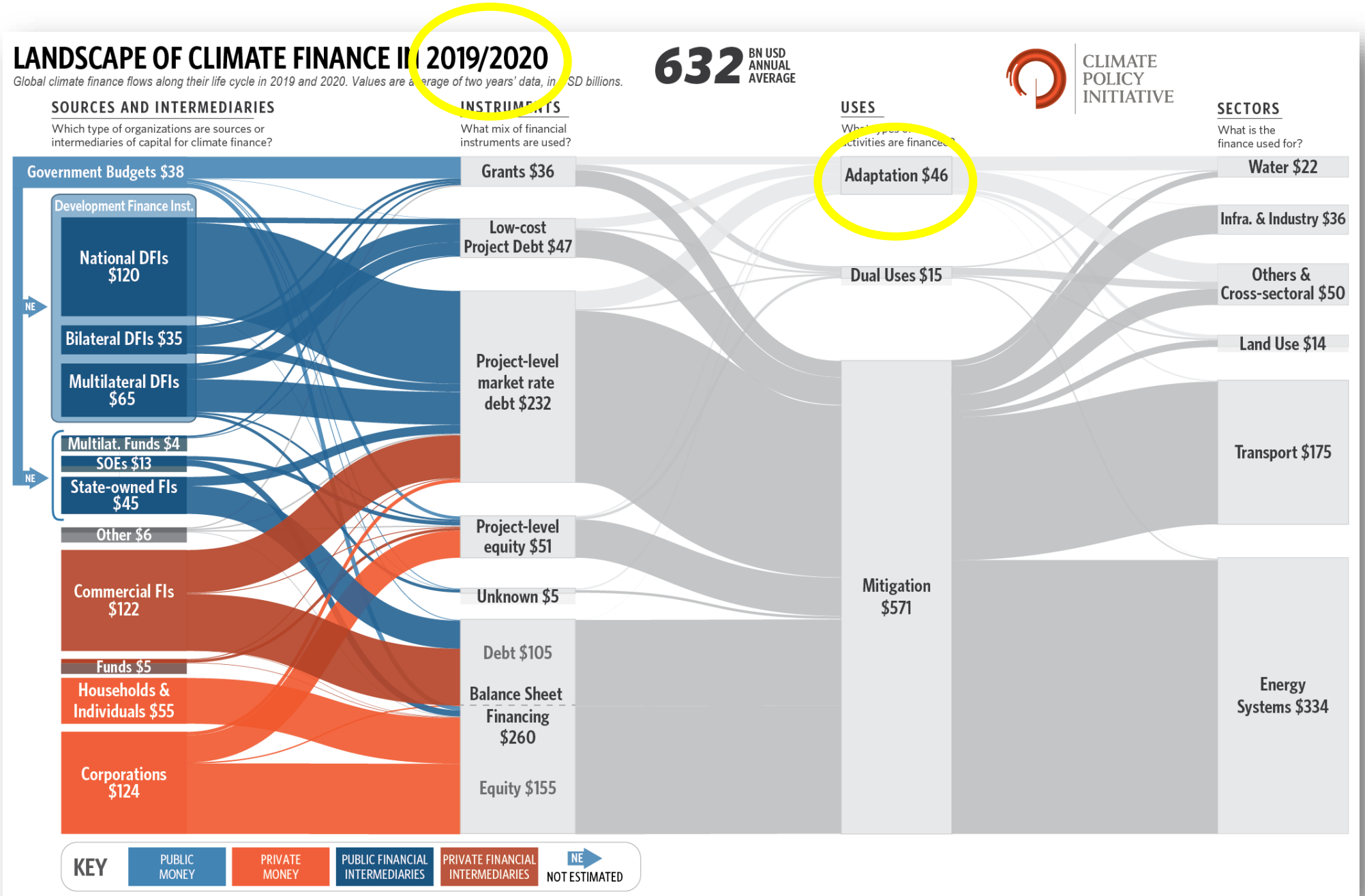


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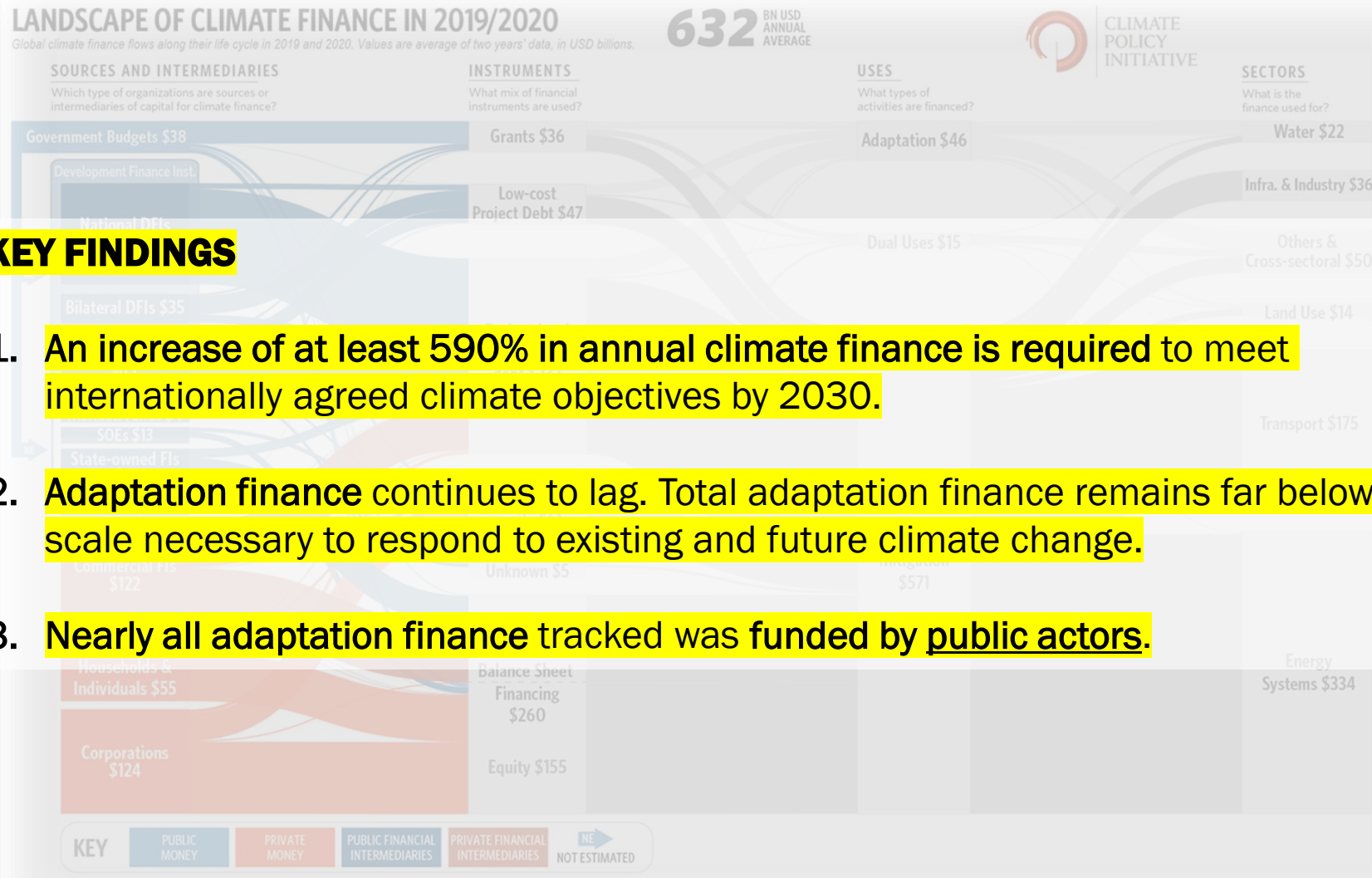


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Climate Policy Initiative, Landscape of Climate Finance (2021)



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Climate Policy Initiative,
Landscape of Climate Finance
(2021)

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Since 2022, investors and companies are required to disclose whether a fund, investment, financial product or activity is sustainable



Taxonomy Regulation (EU Taxonomie)

Starting in 2024, all large companies and all listed companies will be obliged to report on sustainability policies and performance.



Corporate Sustainability Reporting Directive (CSRD)

Since 2021, there is an obligation for all asset managers to disclose information on ESG policies



Sustainable Finance Disclosure Regulation (SFDR)

Mandatory climate risk disclosure from April 2022 for large organizations and financial institutions in the UK, in line with the TCFD



Task Force on Climate-Related Financial Disclosures (TCFD)

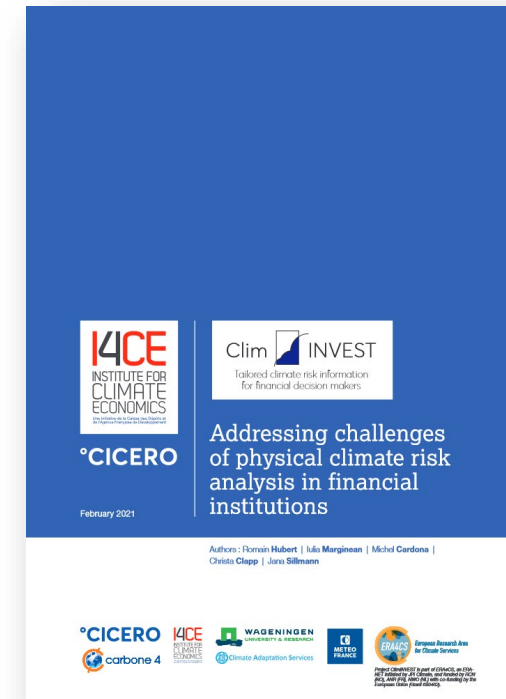
Black box approaches are blowing up

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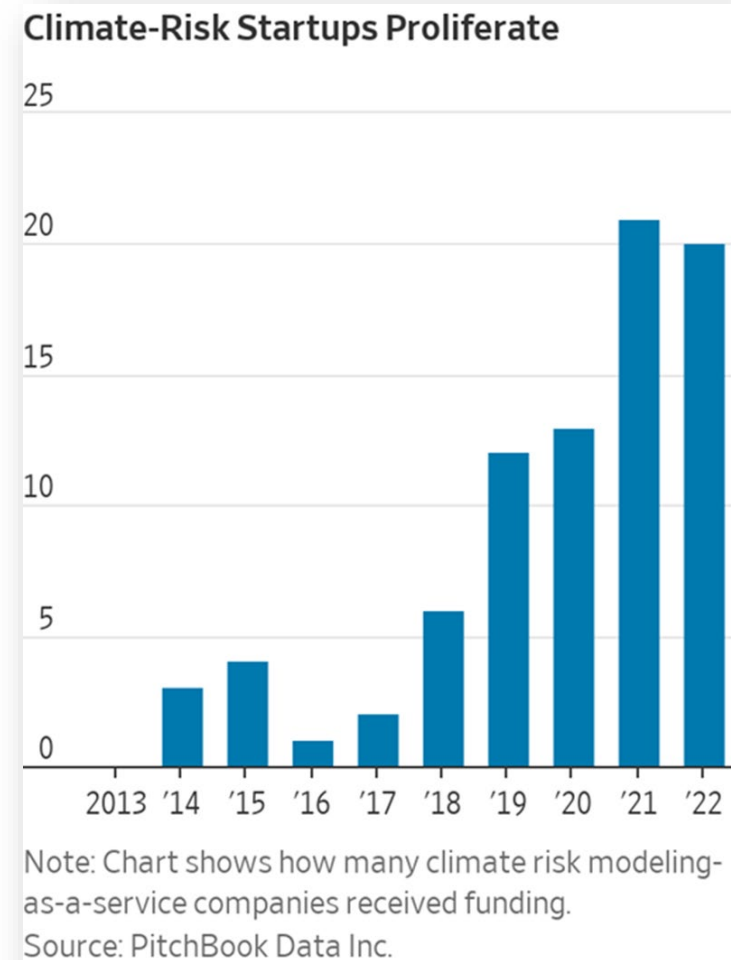


ClimINVEST project: a 3-year collaboration between European climate experts and financial institutions

- Financial institutions underestimate the climate problem.
- There is a need for better data that is openly accessible and transparent.
- There is a 'black box' and institutions do not have the expertise to assess the quality of climate data.



The number of climate risk startups has increased enormously over recent years



"Black box" approaches limit confidence and the ability to improve, compare and combine results.

COMMENT Check for updates

<https://doi.org/10.1038/s41467-022-31979-w> OPEN

Climate risk assessment needs urgent improvement

Alberto Arribas¹, Ross Fairgrieve², Trevor Dhu¹, Juliet Bell³, Rosalind Cornforth², Geoff Gooley³, Chris J. Hilson⁴, Amy Luers¹, Theodore G. Shepherd⁵, Roger Street⁶ & Nick Wood⁷

Existing constraints in current climate risk assessments make them inappropriate to effectively assess the true exposure of society and businesses to climate-related risk. Using the key constraints to guide a conceptual framework, we identify four cross-cutting and inter-related critical paths for improvement.

The impacts of climate change are already posing a significant risk to biodiversity and human welfare¹; every community and sector of the economy faces climate-related risks, including physical risk derived from climate variability and change, and transition risk derived from the social and economic transformations required to achieve a climate-resilient and net-zero future². The urgency and seriousness of this challenge are reflected in the rapidly emerging regulation for disclosure of climate-related risks across the world such as the recent proposal by US Securities and Exchange Commission and climate-related financial disclosure legislation in UK. Mandatory disclosure makes climate risk assessment (CRA) a critical matter not only for every organisation, but for their investors, lenders, and insurers.

Although the number of tools to support CRA has rapidly increased in the last few years, these tools have been found to suffer from major limitations^{3,4}. CRA requires not only knowledge of the climate change hazards across multiple space and timescales (e.g., likelihood of changes to extreme rain over North America over the next decade), knowledge of the exposures (e.g., location of assets and value chains), and knowledge of the vulnerabilities (e.g., response of communities to drought or response of supply chain to changes in carbon taxes). Crucially, appropriate CRA also requires the ability to integrate all these heterogeneous sources of information—and their associated and unavoidable uncertainties—to evaluate the effectiveness of possible interventions, helping to communicate risk and prioritise investments. From this perspective of integration, we have identified three key constraints on the effectiveness of the current CRAs:

- **Scope** – today’s CRAs evaluate risks in isolation and do not fully consider compounding or systemic risks.
- **Data** – today’s CRAs typically use either top-down data that provide global coverage but are not locally robust, or bottom-up data that provide detailed local information but cannot be scaled globally.
- **Transparency** – today’s lack of commonly accepted methods and principles and the extensive use of ‘black-box’ approaches to CRA limits trust and the ability to improve, compare and combine the results of different assessments.

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Morgan Stanley
INSTITUTE FOR SUSTAINABLE INVESTING

Morgan Stanley
INVESTMENT MANAGEMENT



CLIMATE CHANGE

Climate-Related Risk Data for Real Assets:

A Framework for Assessment

Because they invest in physical assets, often over long hold periods, real estate investors are on the front line of the impact of climate change. They rightly want to take a data-driven approach to managing their exposure to climate risk. Morgan Stanley Investment Management partnered with the Morgan Stanley Institute for Sustainable Investing to compare the outputs of select leading physical climate risk data providers and discovered highly varied results. The purpose of this report is two-fold: to provide real estate investors with a framework for assessing physical climate risk tools and to caution against taking a one-size-fits-all approach.

KEY INSIGHTS

- Vendor Comparison Findings >
- The Challenge for Real Estate Investors >
- Our Suggested Approach >

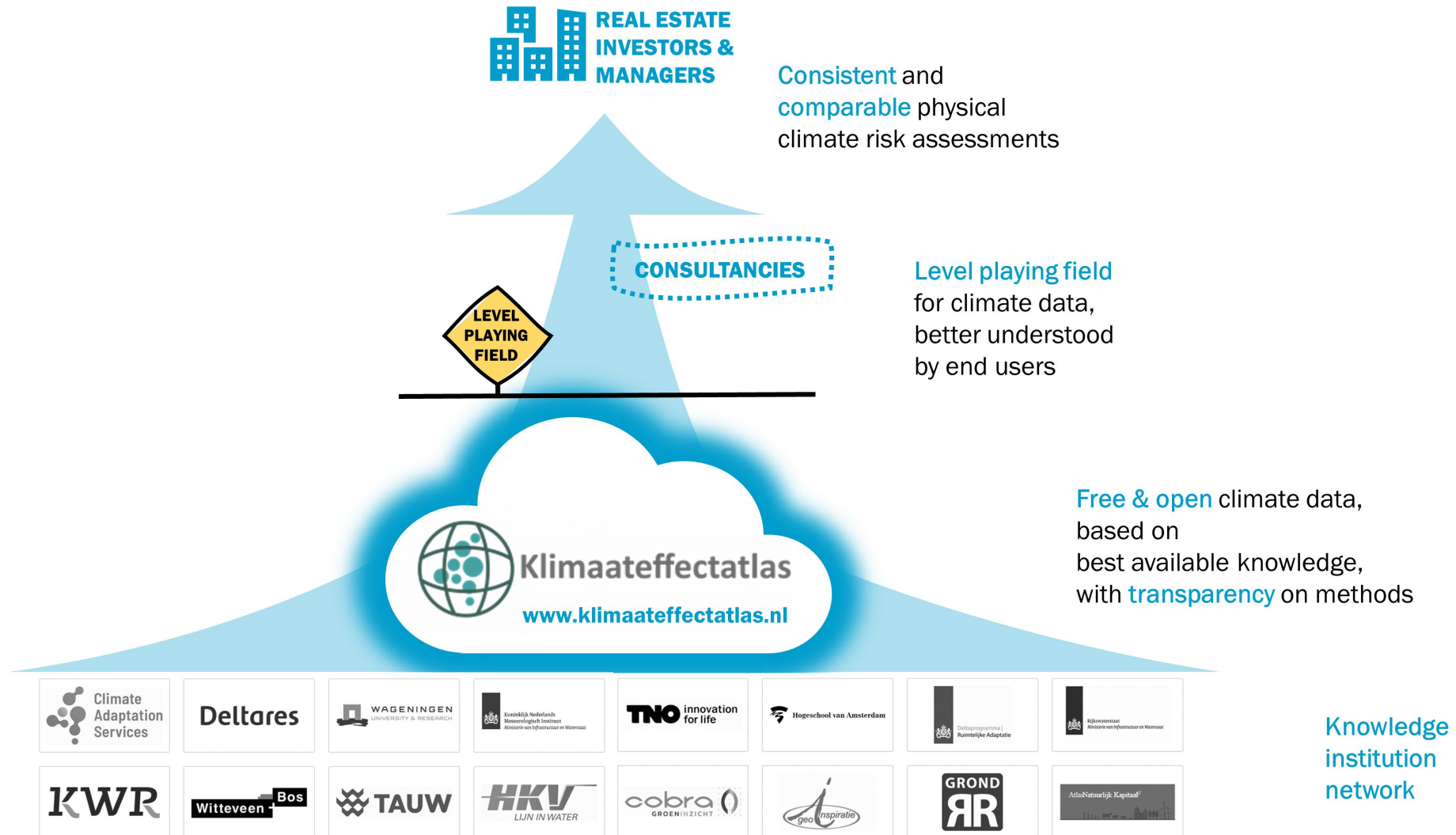
CLIMATE-RELATED RISKS CAN BE CATEGORIZED AS PHYSICAL OR TRANSITION

<p>PHYSICAL RISK</p> <p>Physical risk is defined as potential loss caused by climate-related events. These can be acute or chronic.</p>	<p>TRANSITION RISK</p> <p>Transition risk encompasses the risks stemming from the need to decarbonize in order to minimize global warming and reduce physical risks.</p>
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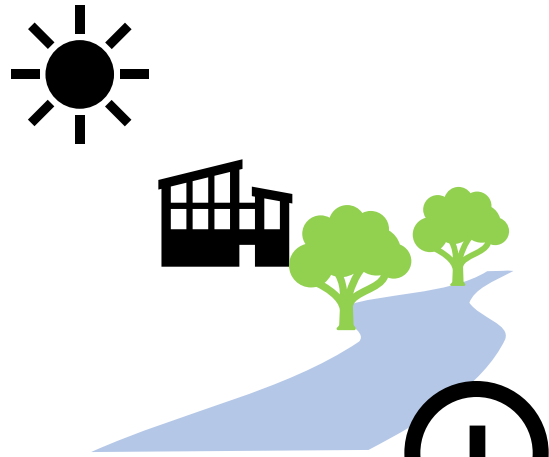
This material was developed by the Morgan Stanley Investment Management Global Real Assets Team and the Morgan Stanley Institute for Sustainable Investing. The statements above reflect the opinions and views of the Global Real Assets Team and the Institute for Sustainable Investing as of the date hereof and not as of any future date and will not be updated or supplemented. All forecasts are speculative, subject to change at any time and may not come to pass due to economic and market conditions.

There is little correlation between the results of different providers

Solution: working towards a level playing field for The Netherlands

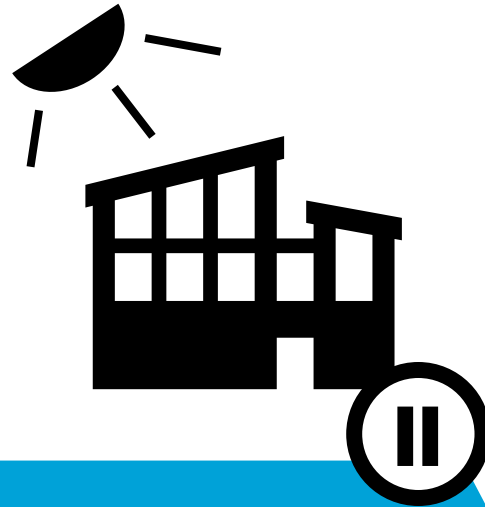


The level playing field is developed through a framework for climate adaptive buildings



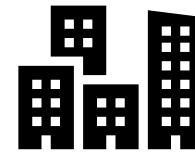
Surroundings score

Estimating the climate effects on the surroundings of a building

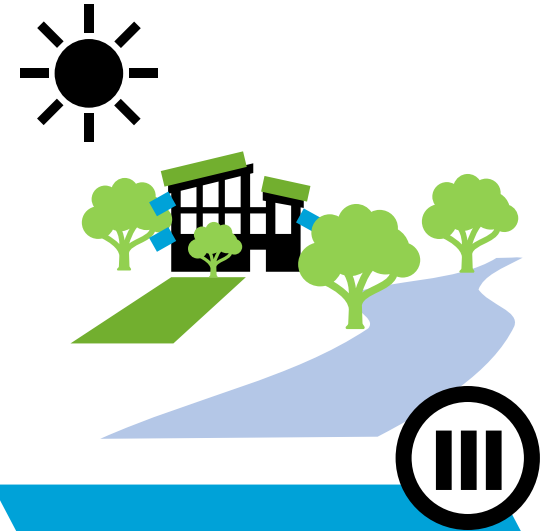


Building score

Estimating the **vulnerability** of a building to various climate effects, by looking at **building-specific properties**



Climate Risk score



Measures

Defining and implementing measures that reduce risks

Surroundings score

Used data



Floods



Water depth



% Probability



Heat



Heat stress



Drought



Foundation
issues



Natural fires



Groundwater
issues



Heavy
precipitation



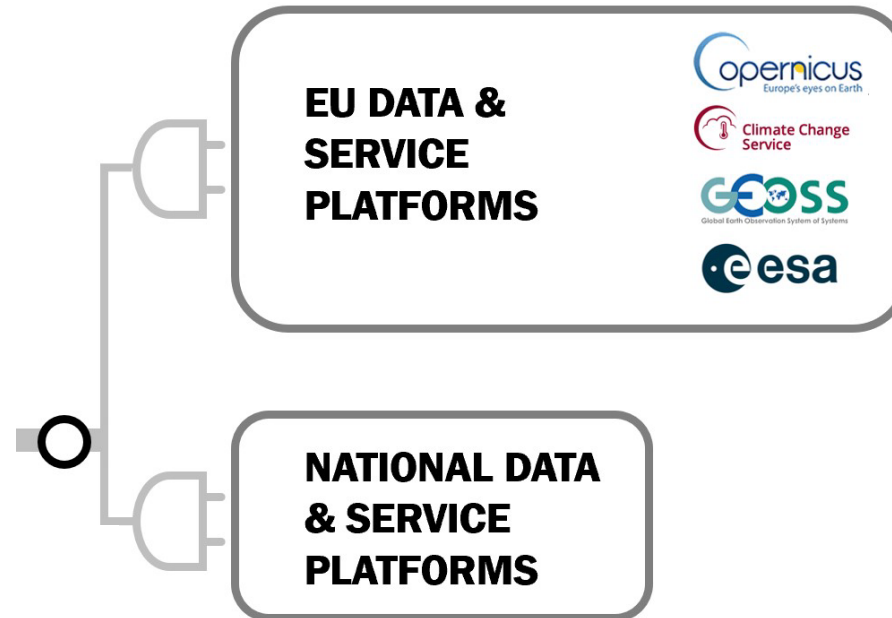
Water depth

The process of development featured extensive end-user involvement and co-production. This is a list of partners:



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1. Upscaling is of great interest, as many investors have assets in multiple countries
2. A large challenge is the trade-off between comparable EU-wide datasets or less comparable but more reliable local data sources



Co-production of information through Science-Practice Labs

Three key takeaways from the Science-Practice Lab 2022:

1. The starting point of physical climate risk assessments in science is not the same as in practice.
2. From this starting point of physical climate risk, we can further improve towards financial climate risk.
3. Besides our current probabilistic way of calculating likelihoods and risk, there is an opportunity to look at individual events to better understand ripple effects.

