

PHYSICAL AND REGULATORY TIPPING POINTS ARE BEING REACHED, AND BANKS NEED TO TAKE NOTICE

THE 2022 IPCC FINDINGS, ALONG WITH THE REGULATORY POLICY IDEAS FROM THE SEC, ARE REQUIRED READING FOR BANKS BUILDING THEIR CLIMATE RISK PROGRAMS.

Climate Risk Perspectives

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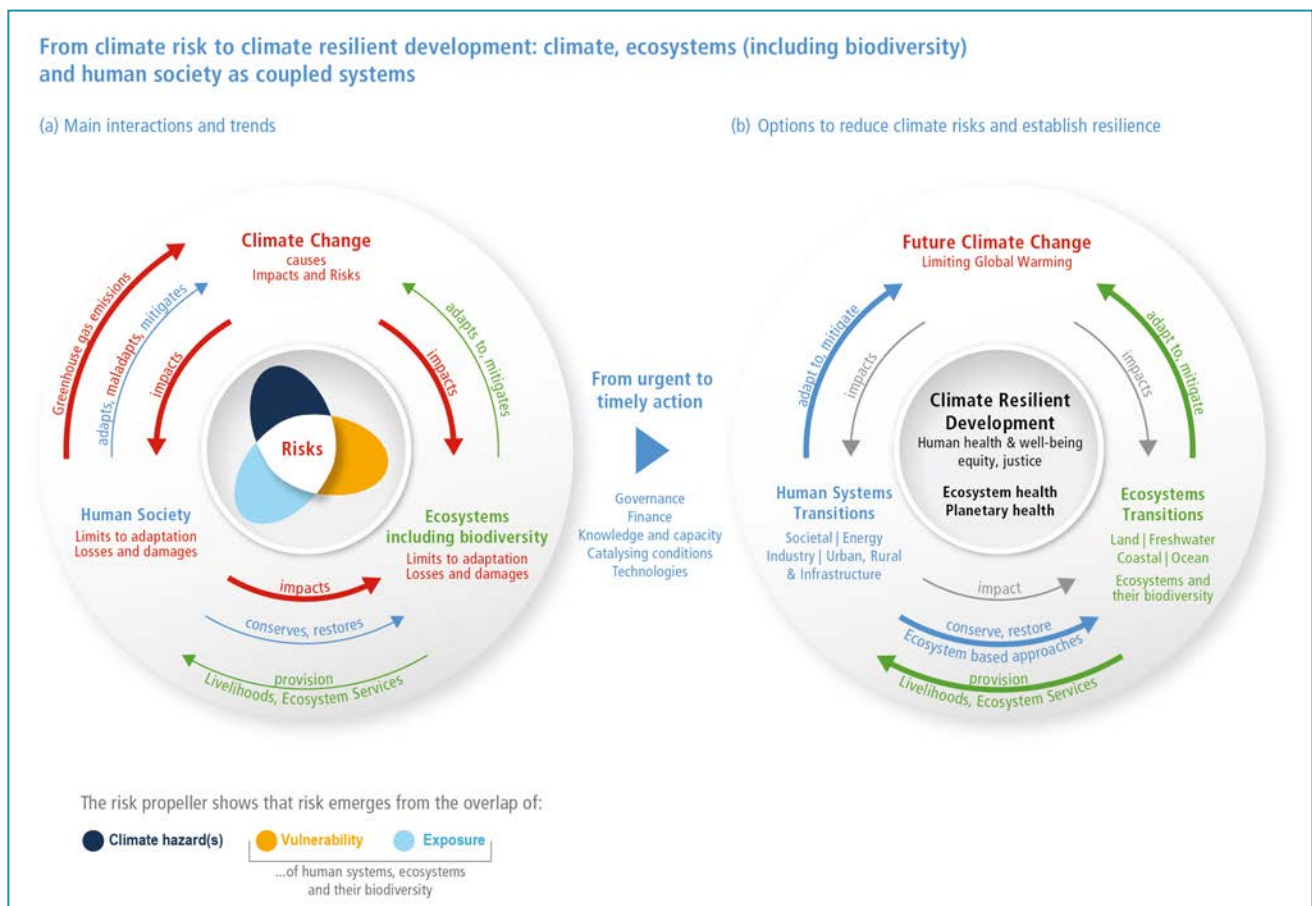
The IPCC report, released on February 27 was alarming...

The long-term aim of the world's governments, as agreed at the various Conferences of the Parties (COPs), has been to limit global warming by 2100, to 2 degrees above pre-industrial levels, with an effort made to achieve an even more ambitious limit of 1.5 degrees.

The recent report produced by the Intergovernmental Panel for Climate Change (IPCC) - [Climate Change 2022: Impacts, Adaptation and Vulnerability](#) - was alarming, as it detailed how certain environmental tipping points had already been reached, and the need for adaptations to deal with consequences of 'overshooting' the 1.5-degree 'soft' target, may well dominate climate policy, with potentially dangerous implications.

Key points from the report include:

- Some previously possible pathways to avoid the worst consequences of climate change are already lost
- Global ecosystems are highly integrated with one another, meaning that acceptance of one tipping point significantly increases the probability of more following
- Any adaptation that is designed with short term goals to avoid specific risks, often leads to unintended consequences, giving rise to other risks becoming '**Maladaptation**'



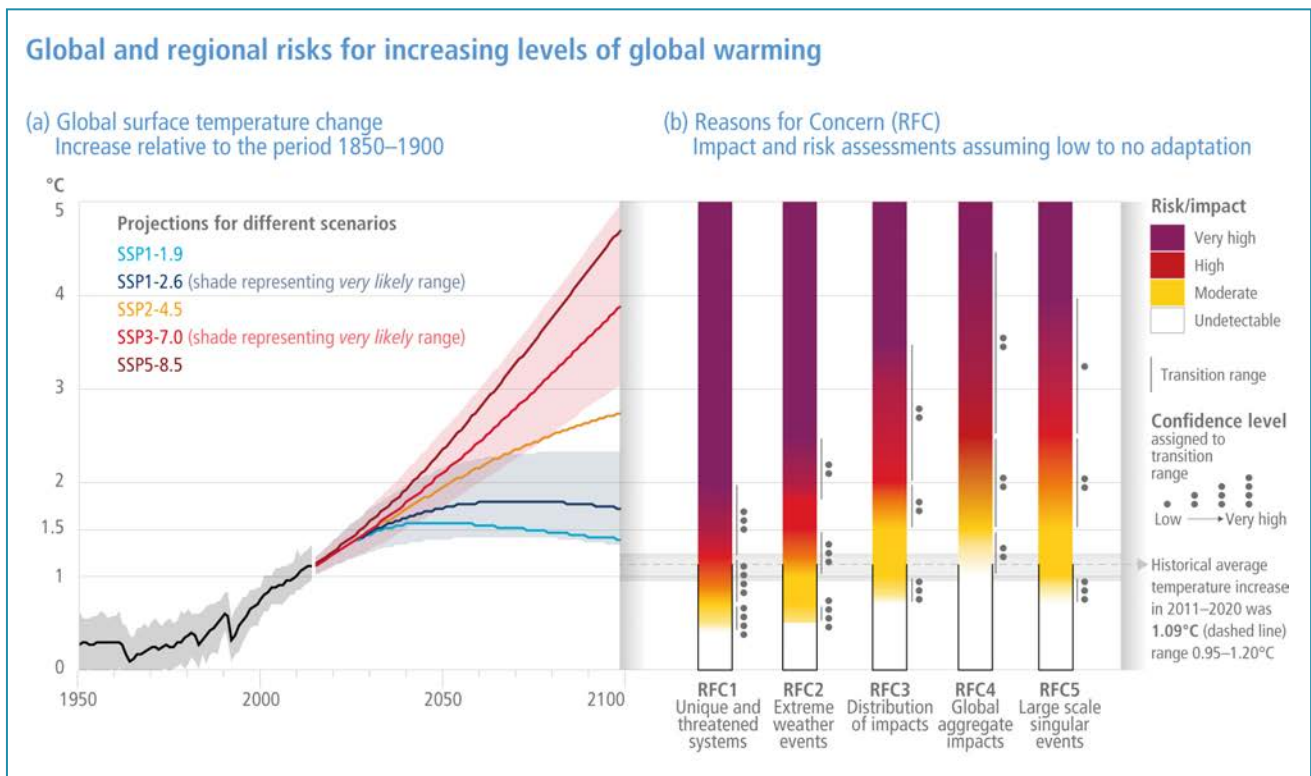
Scientists contributing to the 2022 IPCC report have detailed specific risks that increase, by region, as temperatures rise above the 1.5-degree limit.

These risks include:

Small Islands	<ul style="list-style-type: none"> • Loss of terrestrial, marine and coastal biodiversity and ecosystem services • Loss of lives and assets, risk to food security and economic disruption due to destruction of settlements and infrastructure • Economic decline and livelihood failure if fisheries, agriculture, tourism and from biodiversity loss from traditional agroecosystems • Reduced habitability of reef and non-reef islands leading to increased displacement • Risk to water security in almost every small island
North America	<ul style="list-style-type: none"> • Climate-sensitive mental health outcomes, human mortality and morbidity due to increasing average temperature, weather and climate extremes, and compound climate hazards • Risk of degradation of marine, coastal and terrestrial ecosystems, including loss of biodiversity, function, and protective services • Risk to freshwater resources with consequences for ecosystems, reduced surface water availability for irrigated agriculture, other human uses, and degraded water quality • Risk to food and nutritional security through changes in agriculture, livestock, hunting, fisheries, and aquaculture productivity and access • Risk to well-being, livelihoods and economic activities from cascading and compounding climate hazards, including risks to coastal cities, settlements and infrastructure from sea-level rise
Europe	<ul style="list-style-type: none"> • Risks to people, economies and infrastructures due to coastal and inland flooding • Stress and mortality to people due to increasing temperatures and heat extremes • Marine and terrestrial ecosystems disruptions • Water scarcity to multiple interconnected sectors • Losses in crop production, due to compound heat and dry conditions, and extreme weather
Central and South America	<ul style="list-style-type: none"> • Risk to water security • Severe health effects due to increasing epidemics, in particular vector-borne diseases • Coral reef ecosystems degradation due to coral bleaching • Risk to food security due to frequent/extreme droughts • Damages to life and infrastructure due to floods, landslides, sea level rise, storm surges and coastal erosion

Australasia	<ul style="list-style-type: none"> • Degradation of tropical shallow coral reefs and associated biodiversity and ecosystem service values • Loss of human and natural systems in low-lying coastal areas due to sea-level rise • Impact on livelihoods and incomes due to decline in agricultural production • Increase in heat-related mortality and morbidity for people and wildlife • Loss of alpine biodiversity in Australia due to less snow
Asia	<ul style="list-style-type: none"> • Urban infrastructure damage and impacts on human well-being and health due to flooding, especially in coastal cities and settlements • Biodiversity loss and habitat shifts as well as associated disruptions in dependent human systems across freshwater, land, and ocean ecosystems • More frequent, extensive coral bleaching and subsequent coral mortality induced by ocean warming and acidification, sea level rise, marine heat waves and resources extraction • Decline in coastal fishery resources due to sea level rise, decrease in precipitation in some parts and increase in temperature • Risk to food and water security due to increased temperature extremes, rainfall variability and drought
Africa	<ul style="list-style-type: none"> • Species extinction and reduction or irreversible loss of ecosystems and their services, including freshwater, land and ocean ecosystems • Risk to food security, risk of malnutrition (micronutrient deficiency), and loss of livelihood due to reduced food production from crops, livestock and fisheries • Risks to marine ecosystem health and to livelihoods in coastal communities • Increased human mortality and morbidity due to increased heat and infectious diseases (including vector-borne and diarrhoeal diseases) • Reduced economic output and growth, and increased inequality and poverty rates • Increased risk to water and energy security due to drought and heat

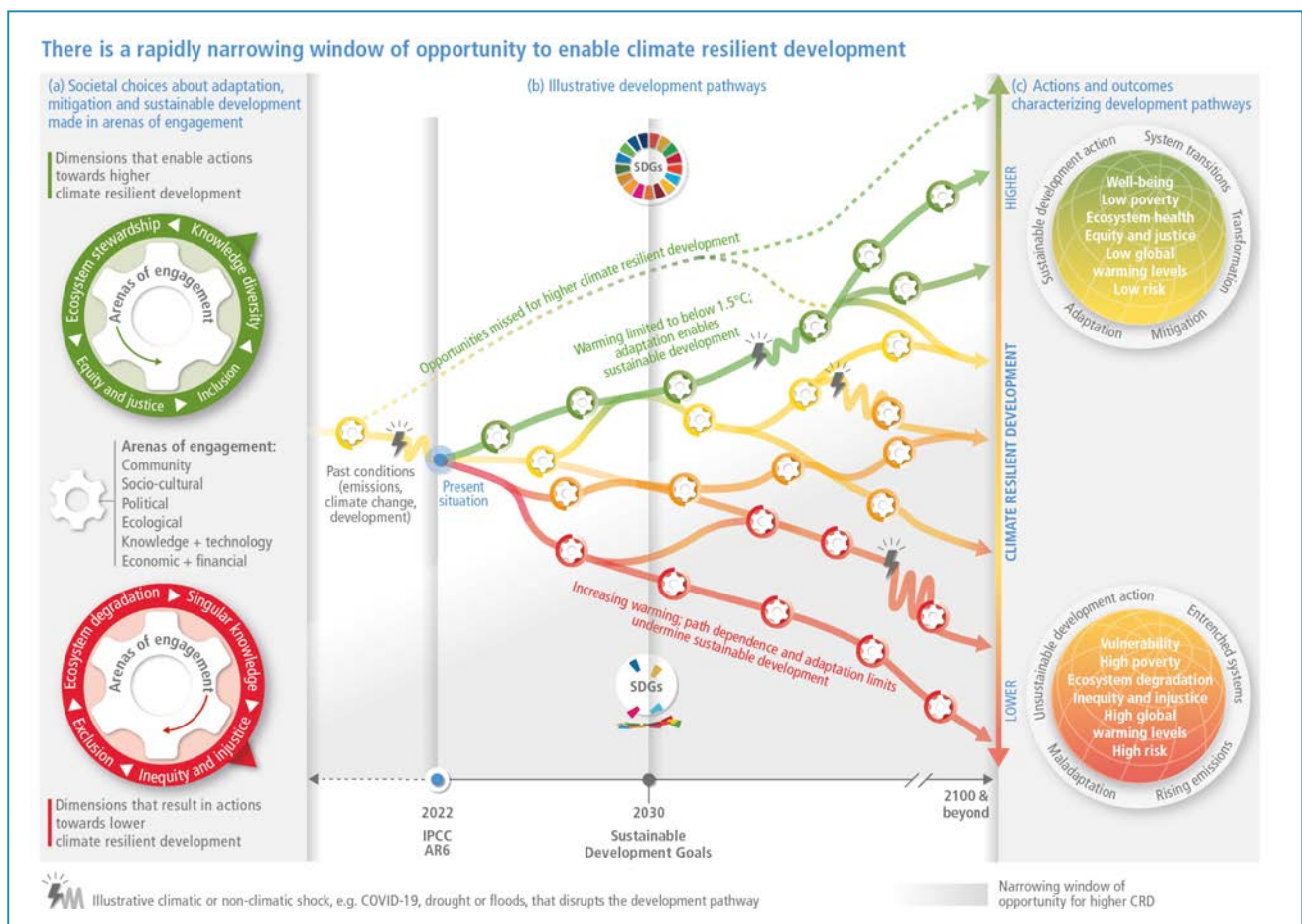
The likelihood of these risks materializing varies considerably from region to region, but what is clear is that the overall risk rises substantially with higher endpoints in terms of global temperature rises.



Source: ipcc.ch

The current trajectory puts the world on a path where adaptation will become increasingly necessary, drawing more spending away from mitigation, creating more positive feedback loops. It also increases the likelihood of adaptation being rapid and not planned in a global, integrated fashion, possibly leading to maladaptation.

Pathways are continually reassessed and re-mapped, to reflect the latest 'starting' point. It is disturbingly clear that the probability of an outcome of a 1.5-degree temperature rise is vanishingly small and would require a massive increase in targets around the world, including almost instant policy changes to reflect that increase in ambition.



Source: [ipcc.ch](https://www.ipcc.ch)

This has significant ramifications for banks' climate stress scenarios...

Banks require stress tests to assess the resiliency of their own balance sheets. If they are to manage the vast financial flows required to mitigate and adapt, then they must be able to determine the resultant riskiness of current and future investments and credit facilities.

The rules around bank lending and credit risk, especially since the 2008 financial crisis, have been strengthened in ways, which mean that poor credit risk planning now could see far more risk capital being held, as their current obligors come to represent increased risks to the bank while effectively underpaying for that risk in terms of interest rates and credit spreads.

Regulators, including the Securities and Exchange Commission (SEC), are creating policies that can assist climate risk managers...

The IPCC report was released three days after Russia invaded Ukraine, meaning that the full impact was less urgently reported than would normally have been the case. Even so, it is striking that the SEC released its climate change recommendations just three weeks later on March 21.

Interestingly, the SEC policies would fill an important data gap for banks building scenarios for stress-testing purposes.

Specifically, the paper calls for:

- Scope 1 and 2 disclosures from all filing companies
- Physical and transitional risk identification and quantification
- Upstream and downstream supply chain considerations
- Use and Impact of carbon pricing

Essentially, the recommendations, if bought into force, would move the US a lot closer to the EU in terms of climate change reporting.

Crucially, for banks looking to assess their balance sheet climate change risks, the new SEC policies would allow a process to be developed for the creation of likely scenarios built logically, including:

- Transitional plans based on the IPCC pathways and known government plans
- Costing of the known plans by the Network for Greening the Financial System (NGFS), at a global and regional level
- Adjustments to scenario costs based on revisions to the IPCC report as well as International Energy Agency (IEA) progress reports
- Adjustments to scenario impact according to developing/likely carbon pricing and supply chain effects

The base 'transitional' scenario could then be enhanced to include physical impacts as also identified within the SEC requirements.

Finally, banks could use filings to determine those borrowers who had already taken steps to mitigate physical risks from climate change and adjust their exposure and future credit profiles accordingly. This would allow the development of strategies to green the balance sheet and properly price future climate-related credit risks into credit facility pricing.

Given the financial system's central role in moving private money to projects and sectors where resilience is most needed, it is vital that banks perform this kind of scenario-based climate analysis both on their current book and future credit facilities.

GreenCap can help...

GreenCap is a turnkey 'Risk as a Service' (RaaS) solution that provides banks with tools to create and populate climate-based scenarios. These scenarios will reflect the impacts and costs of the IPCC pathways and regional plans.

The system provides loan by loan climate risk analysis, including potential increases in risk capital that should be expected per scenario, and the credit spread differential, in basis points, that would be needed to justify that risk.



GreenCap takes hazard zones and transitional adaptations into account, resulting in a granular analysis that uses all available data to provide insights that can be put to immediate use within the bank.

Visit greencap.live for more insights and for resources, curated to assist bank risk departments in ensuring that their banks are truly resilient.



ABOUT GREENCAP

- GREENCAP is a turnkey 'Risk as a Service' (RaaS) solution, designed for banks to include climate change as a category in their risk management frameworks.
- The solution allows banks to replicate climate pathways within their scenarios for economic impact and risk analysis.
- Using GreenCap, banks can modify pathways and scenarios to include the timing effects of delayed sustainability transition measures.
- Loans and credit facilities are measured and monitored against risks arising from both 'physical' and 'transition' impacts.
- GreenCap provides support for risk reporting and governance in the areas of 'Responsible Banking' and climate change.
- With GreenCap, banks can ensure that their climate strategies are financially grounded, and loan pricing is optimized throughout the transition to a green global economy.



ABOUT GREENPOINT FINANCIAL

- GreenPoint Financial is a division of GreenPoint Global, which provides software-enabled services, content, process and technology services, to financial institutions and related industry segments.
- GreenPoint is partnering with Finastra across multiple technology and services platforms.
- Founded in 2006, GreenPoint has grown to over 500 employees with a global footprint. Our production and management teams are in the US, India, and Israel with access to subject matter experts.
- GreenPoint has a stable client base that ranges from small and medium-sized organizations to Fortune 1000 companies worldwide. We serve our clients through our deep resource pool of subject matter experts and process specialists across several domains.
- As an ISO certified by TUV SUD South Asia, GreenPoint rigorously complies with ISO 9001:2015 and ISO 27001:2013 standards.



Marcus Cree

MANAGING DIRECTOR AND
CO-HEAD OF FINANCIAL TECHNOLOGY AND SERVICES

Marcus has spent 25 years in financial risk management, working on both the buy and sell side of the industry. He has also worked on risk management projects in over 50 countries, gaining a unique perspective on the nuances and differences across regulatory regimes around the world.

As Managing Director, Marcus co-heads GreenPoint Financial Technology and Services and has been central in the initial design of GreenPoint products in the loan book risk area, including CECL and sustainability risk. This follows his extensive experience in the Finastra Risk Practice and as US Head of Risk Solutions for FIS. Marcus has also been a prolific conference speaker and writer on risk management, principally market, credit and liquidity risk. More recently, he has written and published papers on sustainability and green finance.

Marcus graduated from Leicester University in the UK, after studying Pure Mathematics, Psychology and Astronomy. Since graduation, Marcus has continually gained risk specific qualifications including the FRM (GARP's Financial Risk Manager) and the SCR (GARP's Sustainability and Climate Risk). Marcus's latest academic initiative is creating and teaching a course on Green Finance and Risk Management at NYU Tandon School of Engineering.



Sanjay Sharma, PhD

FOUNDER AND CHAIRMAN

Sanjay provides strategic and tactical guidance to GreenPoint senior management and serves as client ombudsman. His career in the financial services industry spans three decades during which he has held investment banking and C-level risk management positions at Royal Bank of Canada (RBC) Goldman Sachs, Merrill Lynch, Citigroup, Moody's, and Natixis. Sanjay is the author of "Risk Transparency" (Risk Books, 2013), Data Privacy and GDPR Handbook (Wiley, 2019), and co-author of "The Fundamental Review of Trading Book (or FRTB) - Impact and Implementation" (Risk Books, 2018).

Sanjay was the Founding Director of the RBC/Hass Fellowship Program at the University of California at Berkeley and has served as an advisor and a member of the Board of Directors of UPS Capital (a Division of UPS). He has also served on the Global Board of Directors for Professional Risk International Association (PRMIA).

Sanjay holds a PhD in Finance and International Business from New York University and an MBA from the Wharton School of Business and has undergraduate degrees in Physics and Marine Engineering. As well as being a regular speaker at conferences, Sanjay actively teaches postgraduate level courses in business and quantitative finance at EDHEC (NICE, France), Fordham, and Columbia Universities.