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PRIVATE & INVESTMENT BANKING

Climate Change: Context and Opportunities

An **overview** of climate change, 'green' finance, benchmarking and reporting for sustainability and impact investing

MARTA SIMONETTI

Meet The Trainer

MARTA SIMONETTI

Marta Simonetti is an experienced green finance director based in London. She worked in the City of London, initially in marketing and then in development and transition banking for the European Bank for Reconstruction and Development.

In 2018 she set up her consultancy, Globalfields Ltd, which specializes in advisory, consultancy and training services in green finance and sustainable leadership.
Through the Globalfields, Marta has carried out several assignments at senior level for the Green Climate Fund, Asian Development Bank, WWF-US, GIZ, IPC GmbH, Absolute Energy Capital, as well as for private equity companies and governments.

She is now focusing on the green transformation of financial markets, working with governments, financial institutions and the consultancy sector in Europe, Africa, Central Asia and south-east Asia. Her main skills are in fund management (legal and institutional structuring), blended finance structuring (mixed participation equity and loans; revolving funds; guarantee funds), resource mobilization, program structuring in climate and environmental finance.

Marta is proficient in five languages: Italian, English, French, Spanish and German. She is also a certified professional coach (CPC), with a Master of Science (MSc) degree in Comparative Politics from the London School of Economics and Political Science (LSE); a Diploma in Management (Birkbeck, University of London); Climate Change Science and Policy specialization (Imperial College); Climate and Sustainability Leadership (Cambridge University). She also recently finishes her Senior Management Programme at the Cambridge Judge Business School.

The context of climate change: Understanding climate policy and action

- Understanding the role of science in building climate policy
- Strengthening the knowledge of the three main Conventions on climate change, biodiversity, and land degradation.
- Building knowledge on practical responses to align the institution with the targets of the Paris Agreement, with focus on Singapore and South East Asia.
- Learning about the benefits of green finance and investing in green instruments and products and how this can be applied to the participant's career path or organization.
- Exploring ESG, impacts and other measurement and reporting framework
- Build applicable knowledge at individual and corporate level to make significant change in the chosen area of climate action.

Introductions…

In your current function within the organization, do you have:

1) **A direct role and deliverables linked to climate change, impact and sustainable finance, e.g. a role which specifically works on strategies for alignment of your Bank with international standards and agreements;**

2) **An indirect role, e.g. a back office role supporting other team working in this area of business;**

3) **No role at all in this area of business.**

Please share additional views and comments live and / or in the chat room…

The Science and Policy Context

Context Of Change

Climate Change Regime

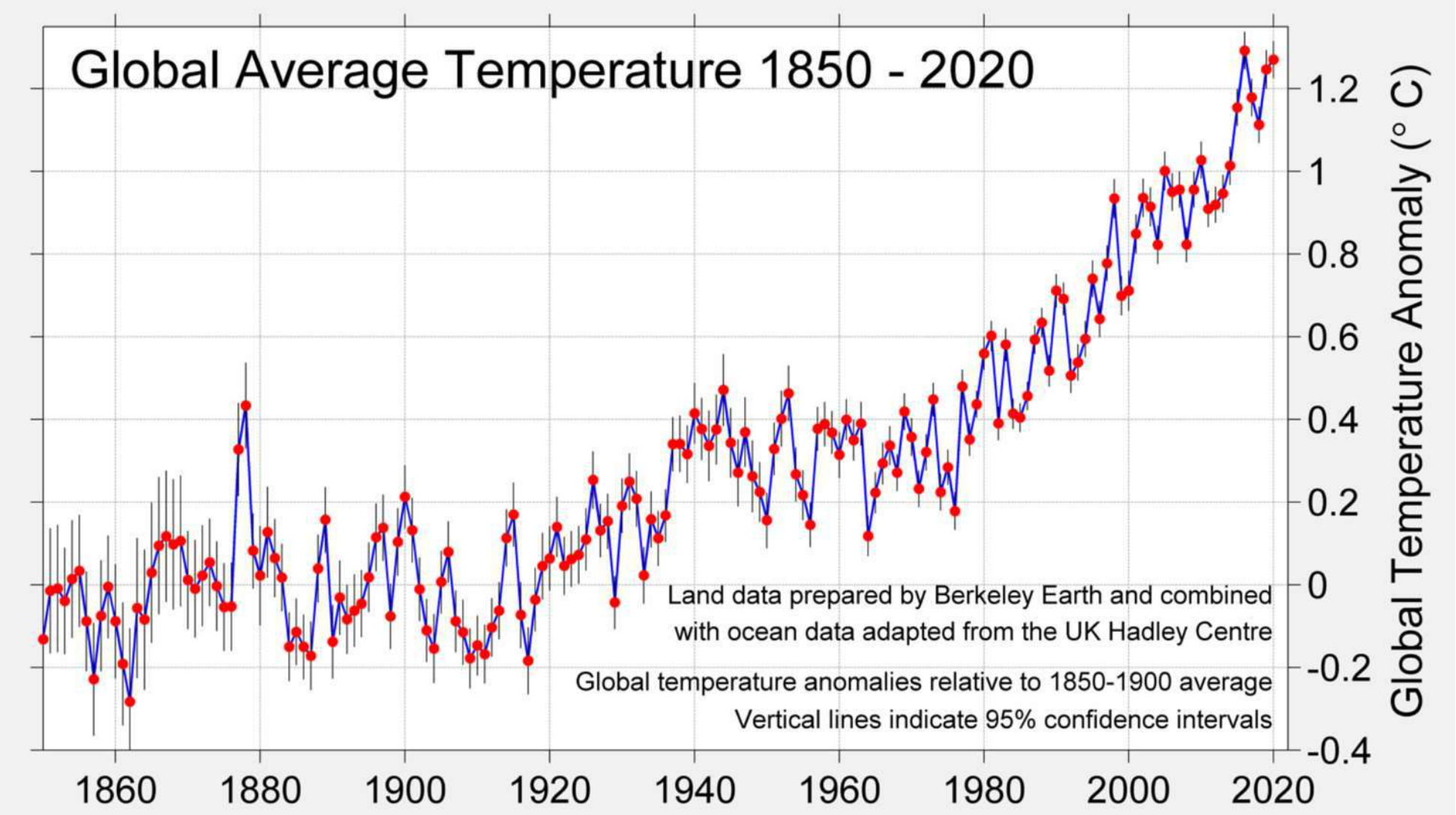
Climate change refers to the complex shifts that emerge due to human activity (greenhouse gas emissions into the atmosphere) that affect the planet's weather and climate systems (The National Geographic).

Climate change encompasses extreme weather events, shifting wildlife populations and habitats, rising seas etc.

Global warming: "Global warming is the long-term heating of Earth's climate system observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in the Earth's atmosphere" (NASA).

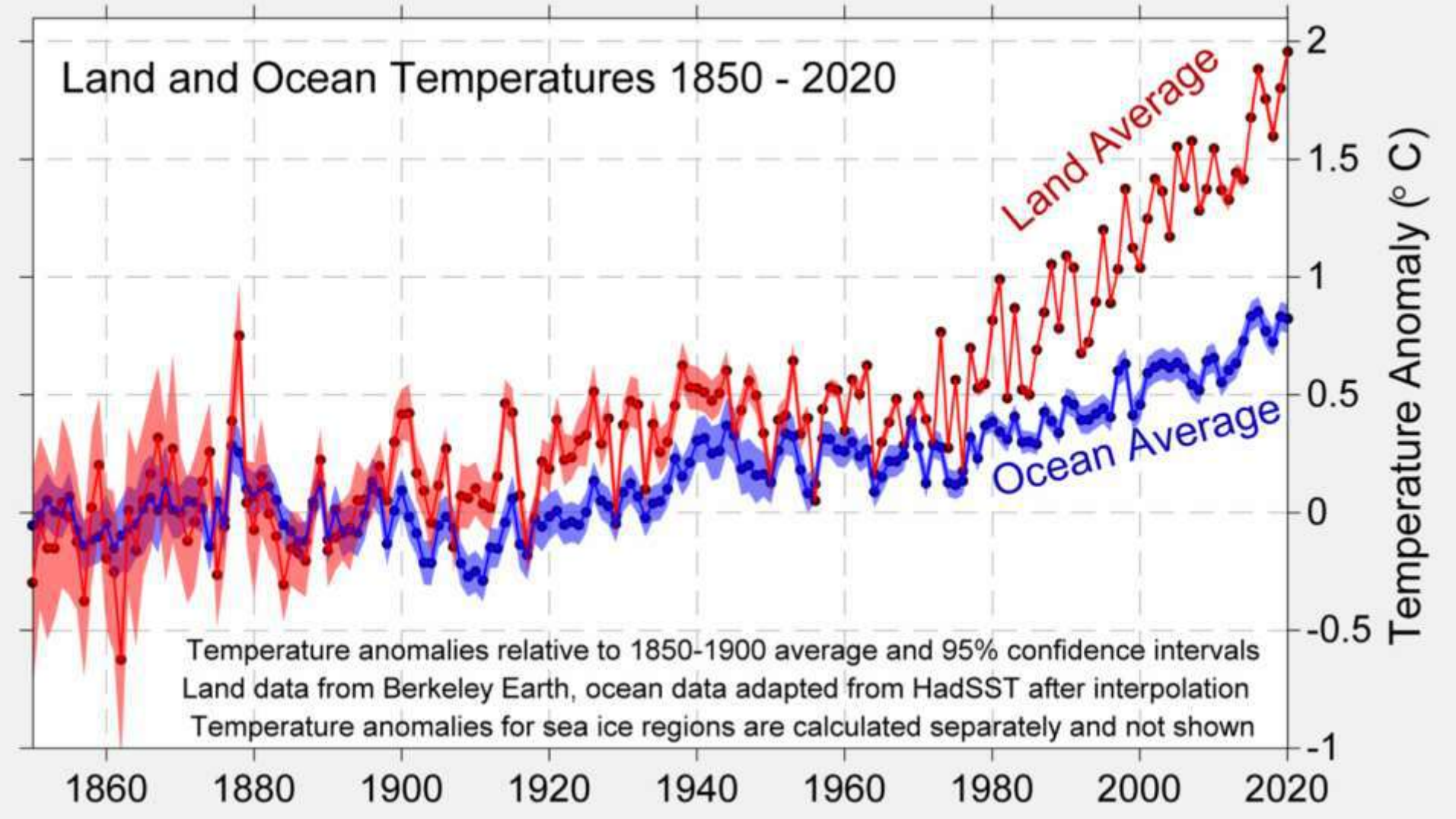
The Scientific Context

TEMPERATURE RISE



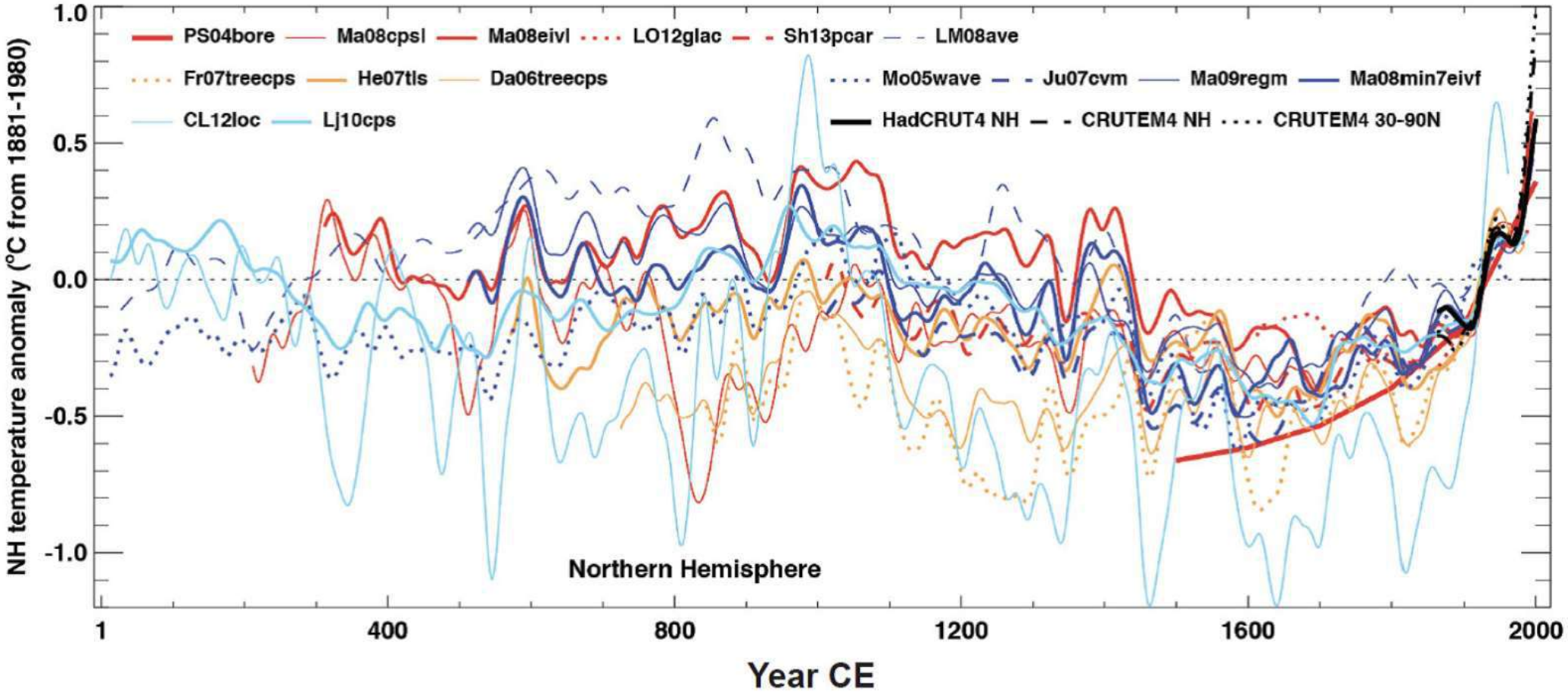
The Scientific Context

TEMPERATURE RISE (land and ocean disaggregation)



The Scientific Context

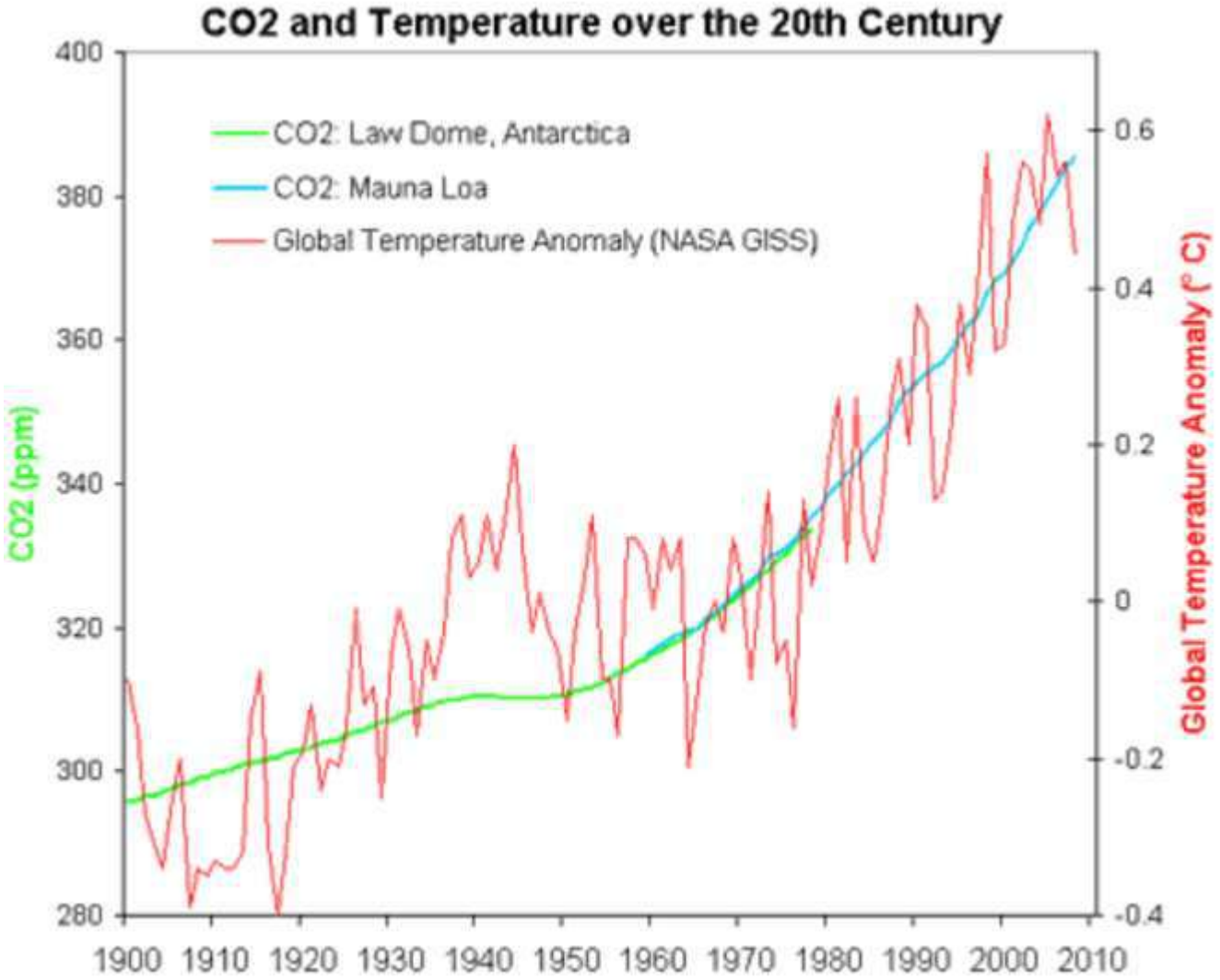
TEMPERATURES



(source: https://www.ncdc.noaa.gov/global-warming/last-2000-years)

The Scientific Context:

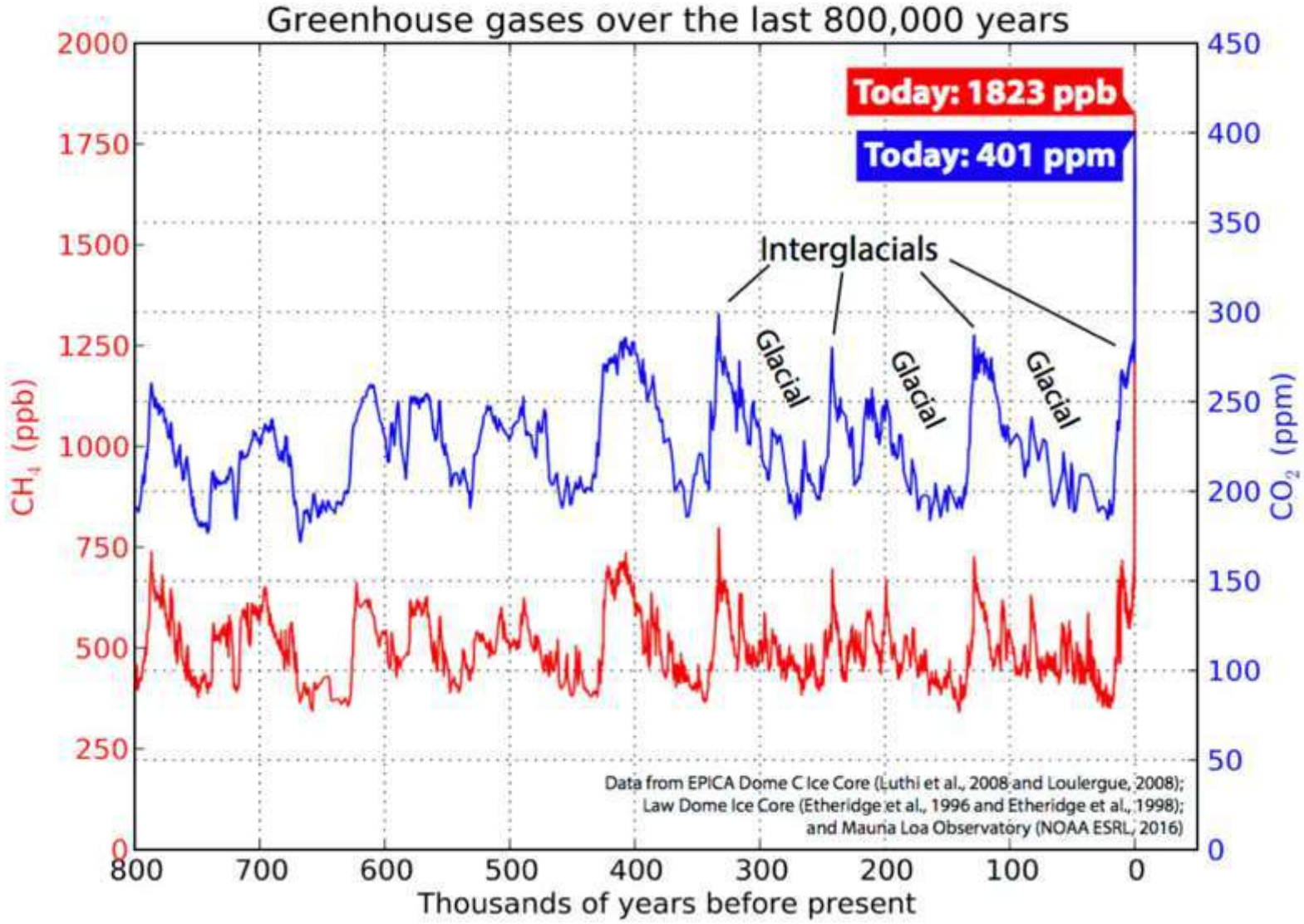
Correlation btw CO_2 and temperature rise



There is an algorithmic relations between CO_2 concentrations and temperature rise

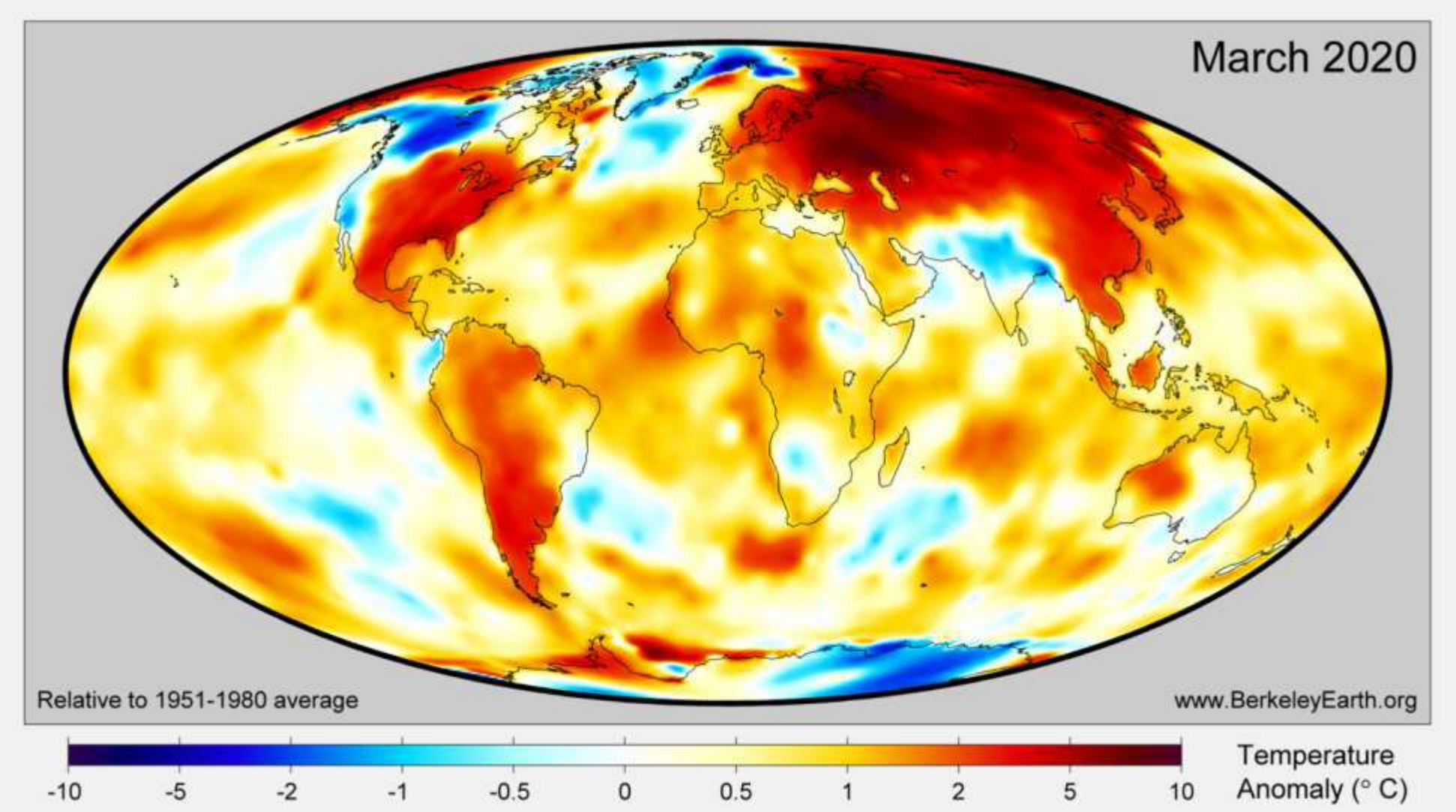
The Scientific Context:

A look into paleo-climate to see the the link between CO_2 rise in interglacial years



The Scientific Context:

Anomalies



From the *Berkeley Earth* global temperature report – we see the global distribution of temperature changes 2020 relative to the period 1951 – 1980.

Climate Change 2021: IPCC report

- It is unequivocal that human influence has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere have occurred.
- The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.
- Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in carbon dioxide (CO2) and other greenhouse gas emissions occur in the coming decades.
- From a physical science perspective, limiting human-induced global warming to a specific level requires limiting cumulative CO2 emissions, reaching at least net zero CO2 emissions, along with strong reductions in other greenhouse gas emissions. Strong, rapid and sustained reductions in CH4 emissions would also limit the warming effect resulting from declining aerosol pollution and would improve air quality.
- (source: https://www.ipcc.ch/report/ar6/wg1/)

Context Of Change

Agreed aspirational limit of 1.5 degrees Celsius of warming by the Intergovernmental Panel on Climate Change (IPCC) in order to limit the effects of climate change on our ecosystems and existence.
1.5 degrees versus 2 degrees?

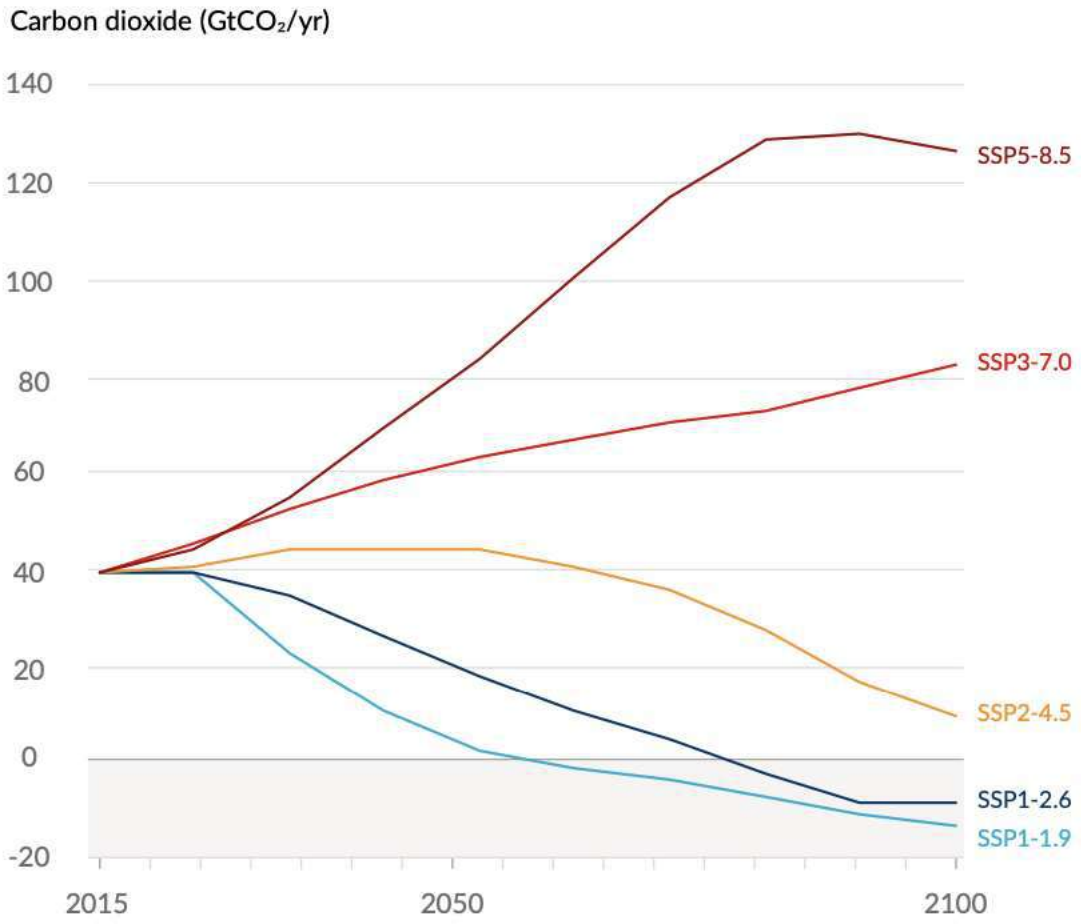
•At 2°C, extreme heat will be 2.6x worse, the world will experience 10x more ice-free summers, there will be 2x more species loss, ecosystem shifts will be 1.86x worse, there will be a 2.3x reduction in crop yields, a 29% further decline in coral reefs, and double the decline in marine fisheries.

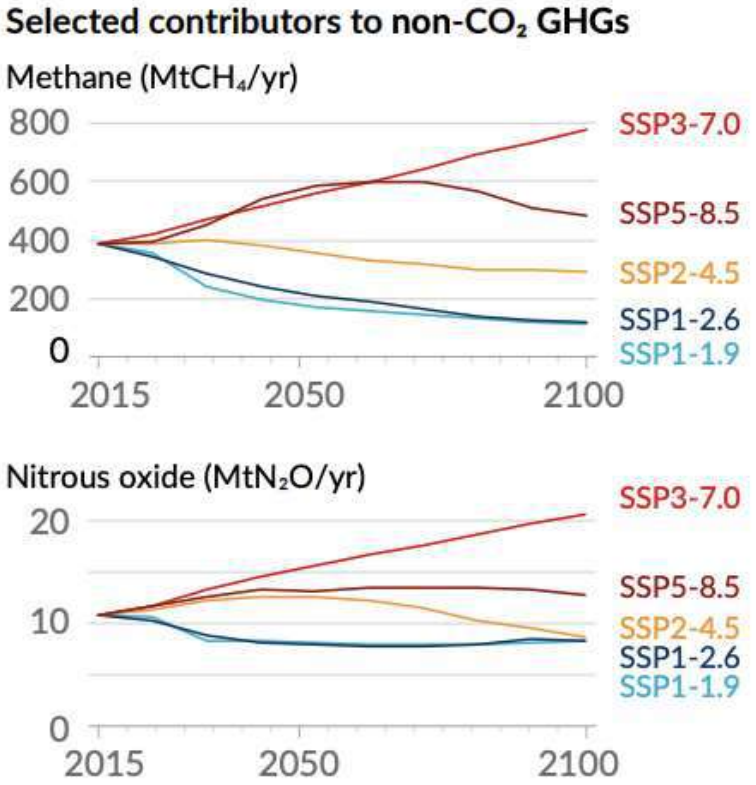
•Currently, the world is not on track to limit warming to 1.5 degrees, as emissions will need to reach net-zero by mid century.

•The WRI finds that to meet the 1.5 degree goal, investments in low-carbon energy technology and energy efficiency will need increase by roughly a factor of five by 2050 compared to 2015 levels.

The Scientific Context

CARBON and other GHG TRAJECTORIES

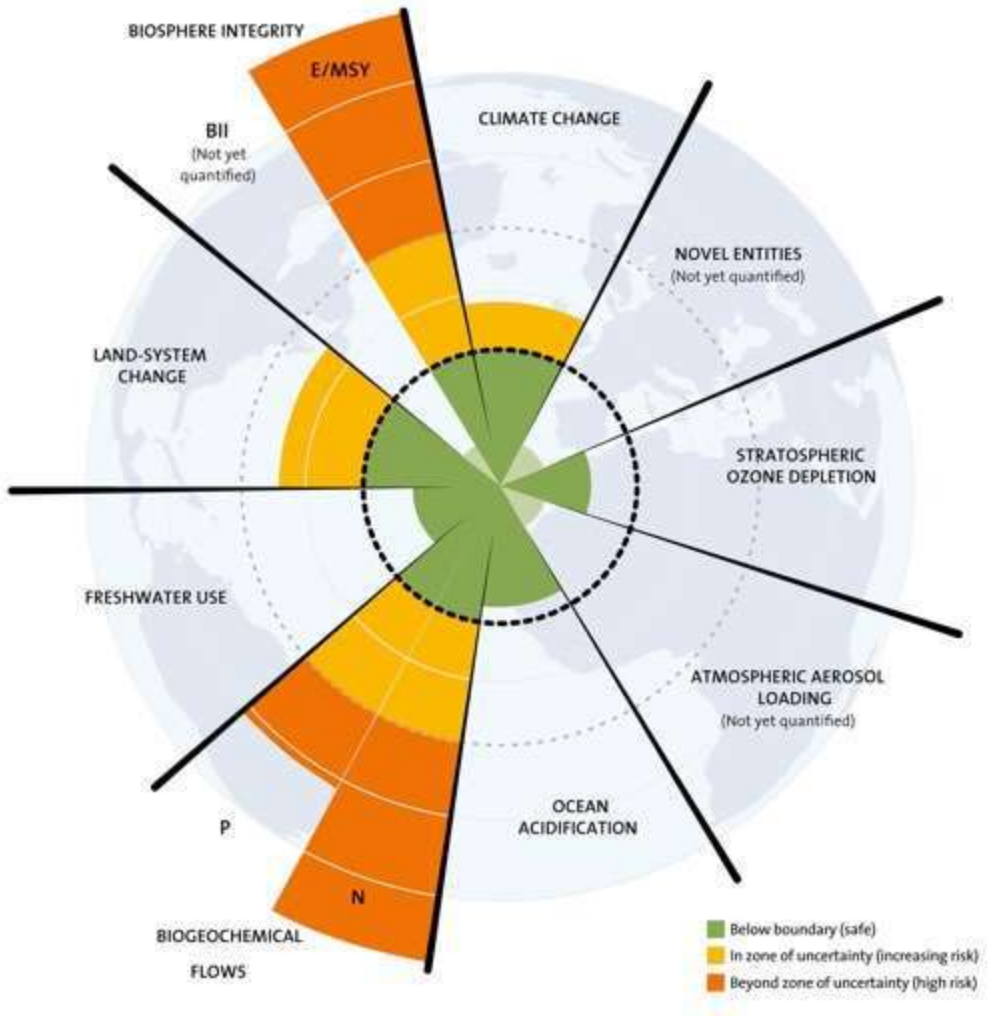




(source: https://www.ipcc.ch/report/ar6/wg1/)

The Scientific Context:

PLANETARY BOUNDARIES



Paris Agreement (Climate Change)

Montreal Protocol (CFC)

Kigali Amendment (rev. CFC)

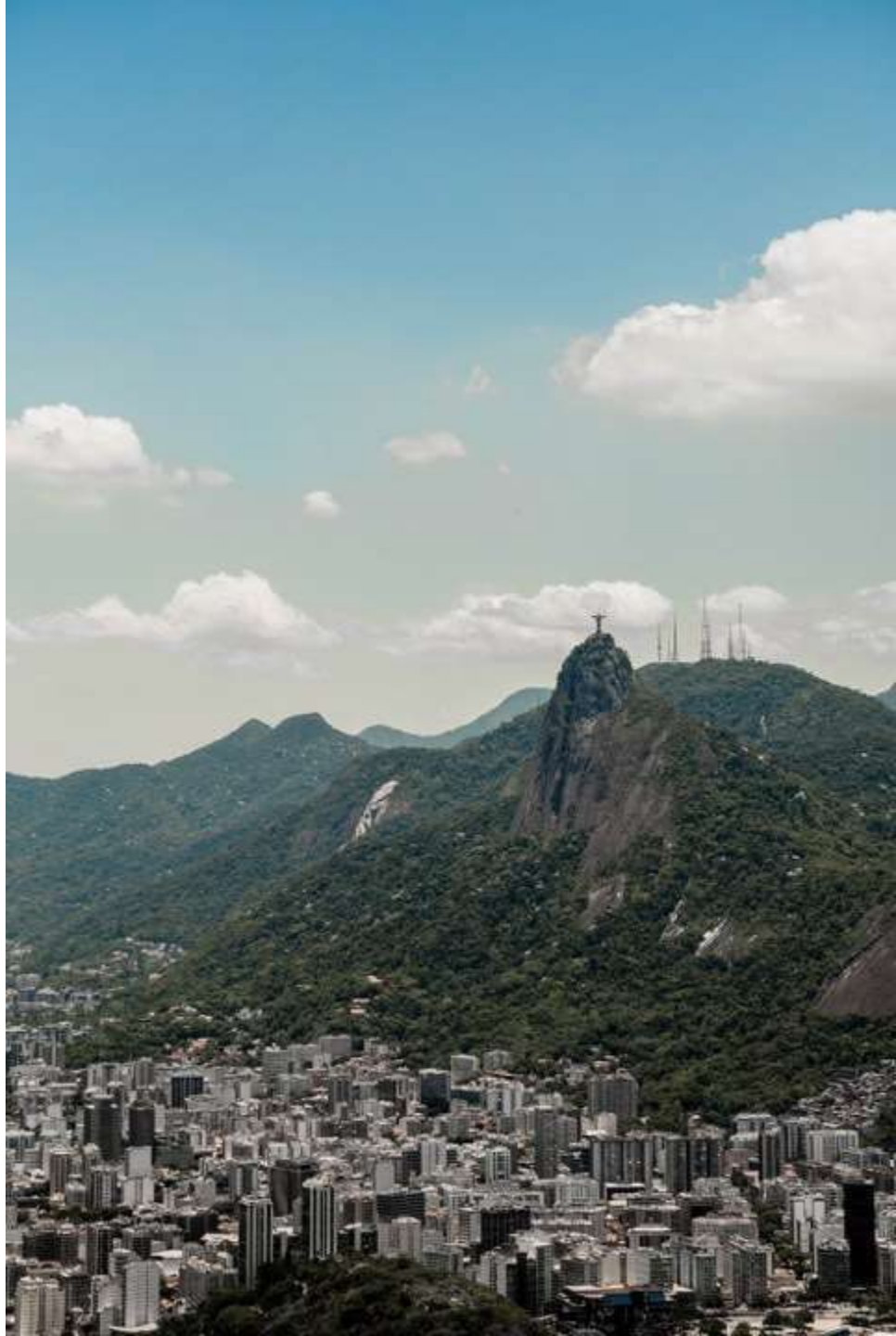
Convention on Biological diversity (CBD)

UN Convention to Combat Desertification (UNCCD)

Three Key Conventions

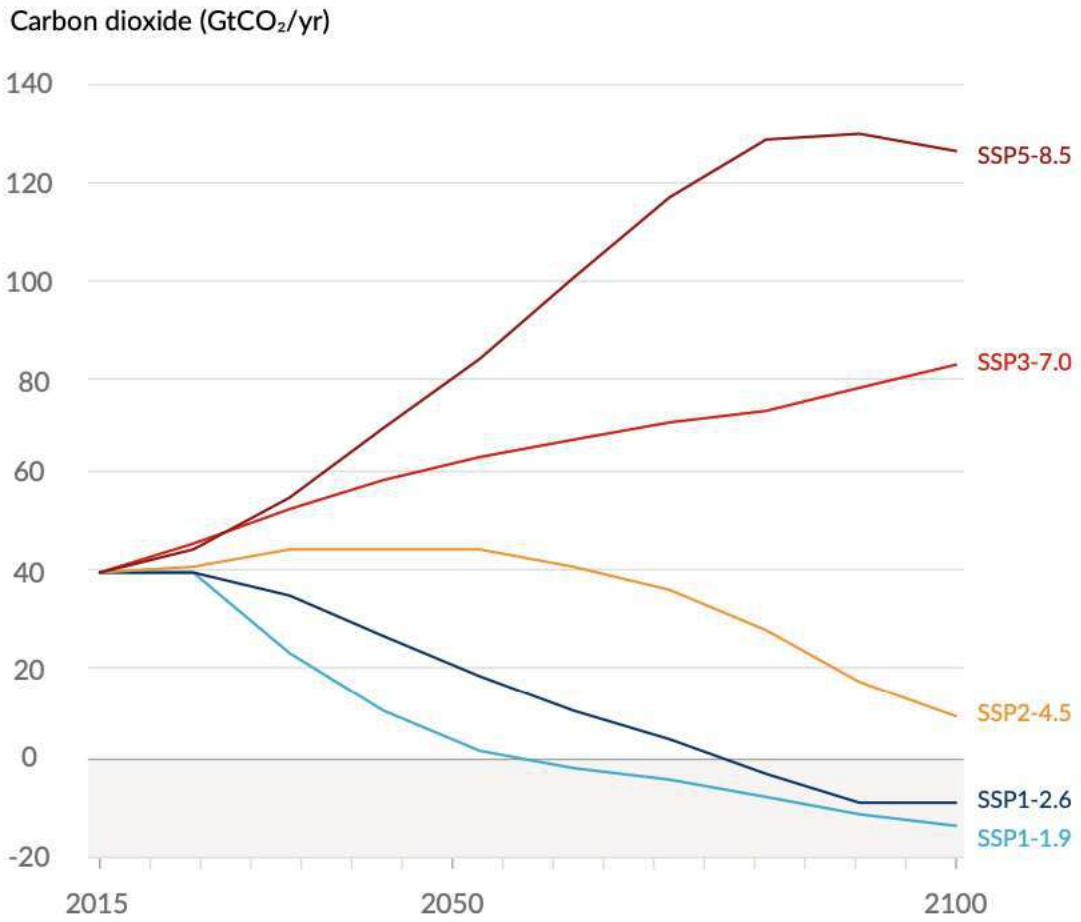
Originating from the Rio Convention of 1992, based upon numerous multilateral exchanges and the Stockholm Declaration (1972) - Declaration of the United Nations Conference on the Human Environment

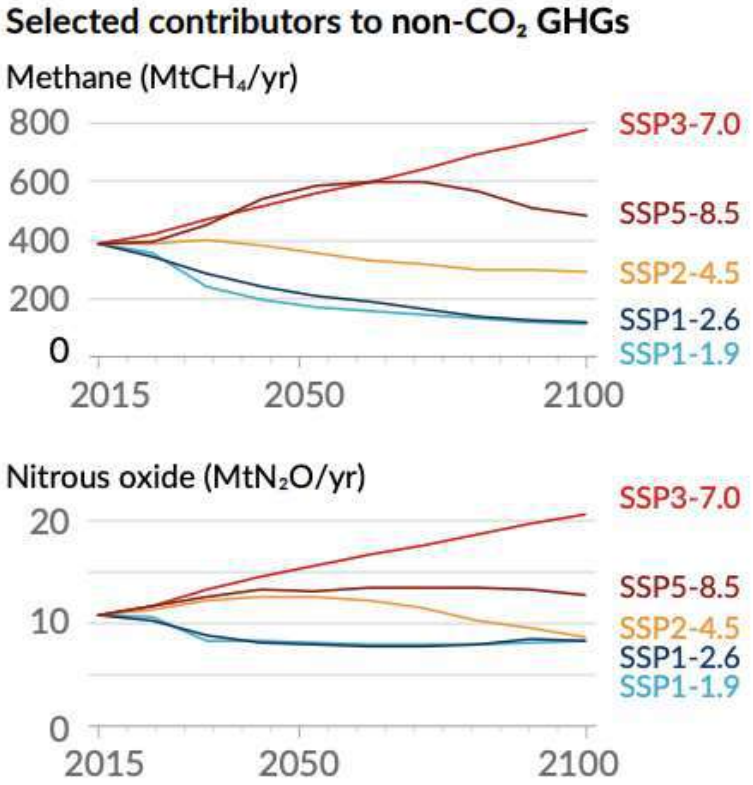
* United Nations Convention on Climate Change (**UNFCCC**)
* Convention on Biological Diversity (**CBD**)
* United Nations Convention to Combat Desertification (**UNCCD**)



The Scientific Context

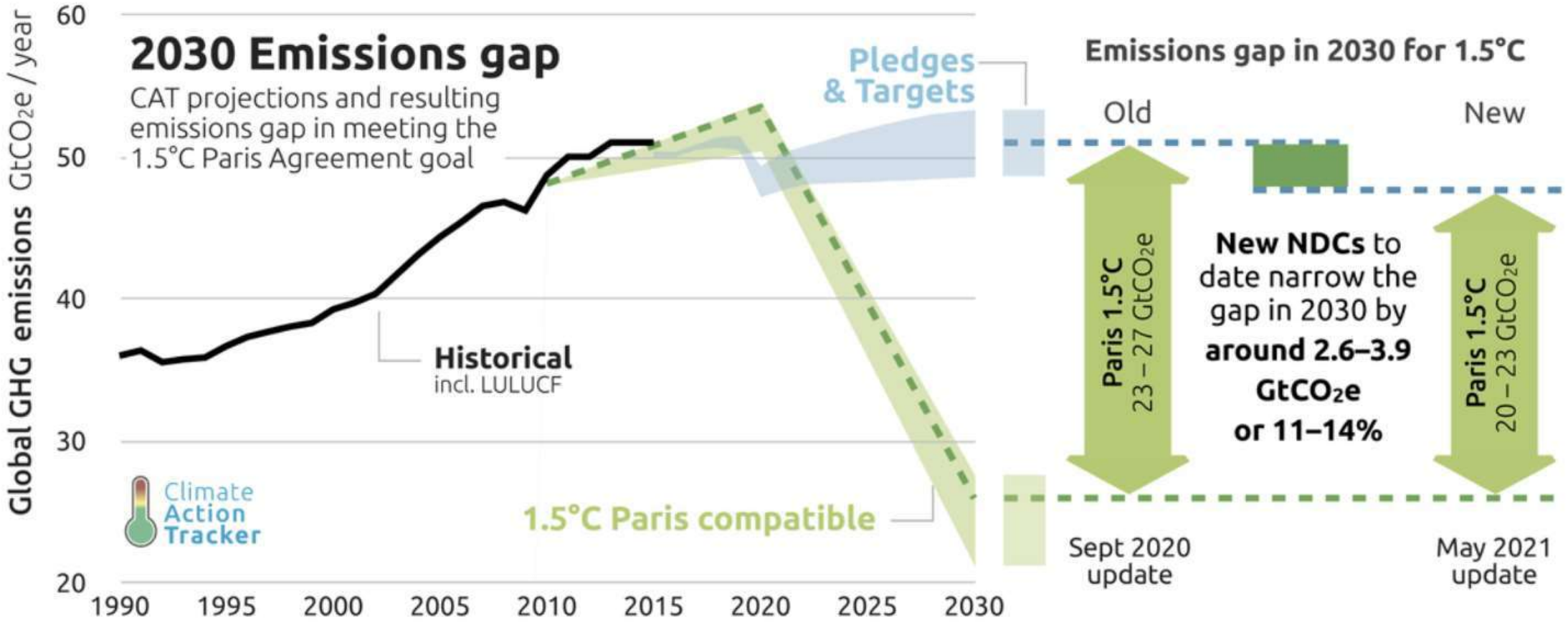
CARBON and other GHG TRAJECTORIES





(source: https://www.ipcc.ch/report/ar6/wg1/)

Regulatory Change



Context Of Change - NDCs

- 2015 was a historic year in which 196 Parties came together under the ***Paris Agreement*** to transform their development trajectories so that they set the world on a course towards sustainable development, aiming at ***limiting warming to 1.5 to 2 degrees C above pre-industrial levels***.
- Through the Paris Agreement, Parties also agreed to a ***long-term goal for adaptation*** – to increase the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production.
- Additionally, they agreed to ***work towards making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development***.
- ***Nationally determined contributions (NDCs)*** are at the heart of the Paris Agreement and the achievement of these long-term goals. NDCs embody efforts by each country to reduce national emissions and adapt to the impacts of climate change.
- The Paris Agreement (Article 4, paragraph 2) requires each Party to ***prepare, communicate and maintain*** successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions.

EUROMONEY LEARNING

Question time…

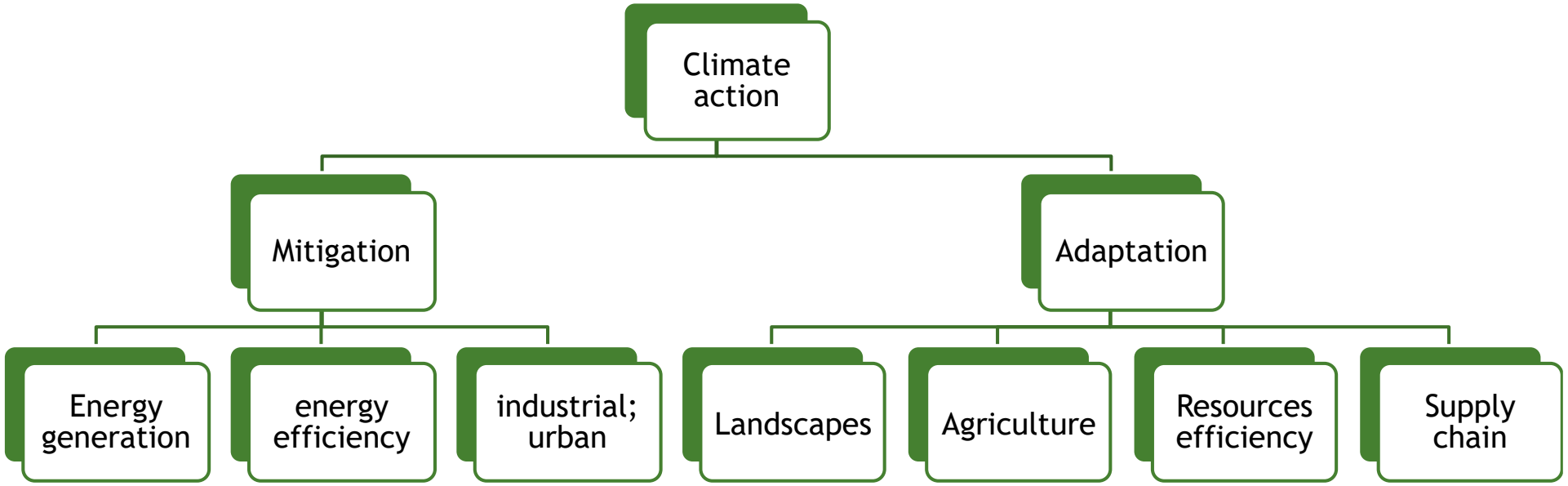
1) **What are the specific climate vulnerability you observe in Armenia?**

Please share additional views and comments live and / or in the chat room…

Multiple dimensions for reporting

1) **Descriptive: Measuring / reporting on alignment with green standards (e.g. taxonomy, own corporate inclusion and exclusion lists)**
2) **Qualitative outcomes that are impact related: ESG, SDG**
3) **Risk-related: Taskforce on climate related financial disclosure (TCFD) and Adaptation and Resilience (A&R): measuring risk**

Benchmarking: What is green? What is environmental?



- Think about a continuum, with the extremes being brown = oil and coal; natural gas;
- Somewhere in the middle (arguable): nuclear;
- Towards green: battery storage, gravitational storage;
- Very green: energy efficiency; clean energy generation

Climate Finance (Mitigation and Adaptation)

UNFCCC Definitions: ’Climate finance refers to local, national or transnational financing drawn from **public, private and alternative sources of financing** — that seeks to support mitigation and adaptation actions that will address climate change. It is needed for **adaptation and mitigation.**‘’
UNFCCC 2020

Mitigation: avoids or reduces GHG emissions or enhance GHG sequestration; and contributes to the stabilisation of atmospheric GHG, in alignment with the Paris Agreement.

Adaptation: builds the long-term resilience of people, livelihoods and places (natural and physical infrastructure) to demonstrable climate-related vulnerabilities.

Green, Climate and Sustainable Finance

Sustainable finance typically refers to the process of taking due account of environmental, social and governance (ESG) considerations in investment decisions. It refers to climate change mitigation and adaptation, as well as the environment (preservation of biodiversity, pollution prevention and circular economy).

Green finance is an umbrella term to define the financing of investments that provide environmental benefits in the broader context of environmentally sustainable development. Subsets of green finance include climate finance, environmental finance and conservation finance.

Sustainable

Green

Climate

Low-carbon

Climate change mitigation (clean energy; energy efficiency; e-connectivity; low-carbon agriculture)

Climate change adaptation (increased resilience; regeneration; livelihoods; health)

Other environmental issues:
- Water resources
- Resources efficiency
- Circular economy
- Pollution abatement
- Biodiversity & land restoration

Cross-cutting and nature-based solutions; environmental certifications; offsetting activities

Social outcomes:
- Health, Education
- Gender empowerment
- Inclusion programs
- Human rights
- Supply / Value chain integrity
- ESS

Socio-economics outcomes:
- Reduced poverty
- Green recovery
- Green jobs

Others SDG's

1. Alignment with green taxonomies

Category	Sub-category	Technology	Examples	Indicators
Energy	Energy Generation	Renewable Energy	Wind and solar generation	MW Installed GWh generated GWh lost due to transmission and distribution network capacity shortage
		Low-Pollution Energy	Generator refurbishment and /or replacement	Average CO_2 emissions of fossil fuel generators MW replace and / or refurbished
	Energy Transport and Distribution	Grid/Heat network Improvements	Grid strengthening, energy loss reduction; integration of all renewable sources in grid operation capacity	Losses reduced in GWh CO_2 emissions per MWh transported
		Energy Storage	Large-scale batteries to enable renewables	MW Installed GWh generated
		Distributed Energy Solutions	Local and small-scale generation	CO_2 emissions avoided / energy savings
	Energy Use	End Use Energy Efficiency/ Green Buildings	Building envelope improvement/	Capacity installed in RES in public buildings Energy use er square meter
			LEDs	Number of LEDs installed
			Energy performance standards	Number of standards upgraded Gap of standards compared to best available technologies

Alignment with taxonomies /CDB and UNCC

Category	Sub-category	Technology	Examples	Indicators
Landscape protection/ Desertification	Nature reserves	Planning/Zoning	Creation of reserved zones for landscapes and species protection	Ha of protected areas in support of land restoration
	Increased vegetation cover	Natural land management	Afforestation Increased vegetation cover Herding for sustainable land management	Ha land restored
Biodiversity	Agriculture/Forestry	Incentives for sustainable land/ herd management/ regenerative agriculture	Integration of rangeland management approaches into herding practices	Ha forest restored; number of trees planted
		Forest protection / reforestation / afforestation	Forest management approaches Afforestation	Number / areas of habitat for protection of species
	Urban	Urban natural carbon sinks	Green walls Micro-parks Tree-planting	Area in ha of green walls / green roads / green spaces installed
		Water sensitive urban designs; integrated urban water management	Natural filtering of run-off water Flood management	Reduction of pollutant loads Number of people exposed to flood hazard reduced
	Eco-tourism	Product and services; sustainable tourism management	Develop eco-tourism regions, products and services, to promote Mongolia's nomadic culture and tourism brand globally.	Number of tourists participating in eco-tourism Economic value generated from eco-tourism activities

ESG – several contextual dimensions

1) ***Sustainability*** refers to development that meets the needs of the present without compromising the needs of future generations. Interest in sustainability has grown significantly along with the growing threats of climate change. As a means of mitigation, In September 2015, the General Assembly of the United Nations adopted the 2030 Agenda for ***Sustainable Development that aimed to achieve 169 targets to meet 17 Sustainable Development Goals (SDGs)***

2) Several global indices have been designed to measure and report ***sustainability performance***. Sustainability reporting is the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organisational performance towards the goal of sustainable development

3) ESG Issues can directly relate to ***ethics and governance*** through exploring business practices. A company can address questions aimed at ESG issues, such as How do we manage climate change?, which in turn raises an ethical response.

Sustainable Development Goals 2015-2030

The Sustainable Development Goals or SDGs were adopted by the UN Assembly in 2015, they replace the Millennium goals for poverty reduction, till 2030.

7 are directly related to climate-change:

- Clean water and sanitation
- Affordable and clean energy
- Sustainable cities and communities
- Responsible consumption and production
- Climate Action
- Life below water
- Life on land

What are the ESG?

Environmental, social and governance (ESG) measures and describes the environmental, social and governance issues that are considered to influence corporate behaviour in their investment decisions

ESG area	
Environmental	·GHG targets; Air quality targets ·Resource efficiency (water, energy savings) ·Resilience improved ·Environmental certifications
Social	·Gender equality and diversity programs ·Lost time injury rates; Fatalities declining ·Training hours per employee ·Relationship with unions; Benefits
Governance	·The existence of appropriate internal controls through an audit system / checks & balances ·Board / committee level oversights ·Level of board independence, quality, diversity ·Remuneration incentives ·Litigation actions against the company ·Taxation; Data and IT security and systems ·Accounting Quality

ESG and SDG Together

Environmental	Social	Governance
6) Clean water and sanitation 7) Affordable and clean energy 11) Sustainable cities and communities 12) Responsible consumption and production 13) Climate action 14) Life under water 15) Life on land	1) No poverty 2) Zero hunger 3) Good health and well-being 4) Quality education 5) Gender equality 8) Decent work and economic growth 9) Industry, innovation and infrastructure 10) Reduced inequalities	16) Peace, justice and strong institutions 17) Partnership for the goals

TCFD

- The ***Taskforce on climate related financial disclosure (TCFD)*** recommendations are designed to solicit consistent, decision-useful, forward-looking information on the material financial impacts of climate-related risks and opportunities, including those related to the global transition to a lower-carbon economy. They are adoptable by all organizations with public debt or equity in G20 jurisdictions for use in mainstream financial filings.

- ***Four elements:***
  - Governance
  - Strategy
  - Risk management
  - Metrics

- ***Strategy:*** The actual and potential impacts of climate-related risks and opportunities on the organization's business strategy, and financial planning

Moving onto risk: What Are The Impacts On Business

Climate change related risks...

Transition risks : the risks associated with the transition to a lower carbon economy, the most common of which relates to changes in the regulatory framework, legislation and international agreements. For example, compliance with agreements e.g. the Paris Agreement may lead to risk of stranded assets; however weight current cost versus future savings. *Rethinking of the paradigm

Physical risks : those are the very tangible risks arising from acute events that have been rendered 'extreme' by climate change, such as storms, floods, fires. They can also be chronic, as they relate to longer term shifts in weather patterns (changing rains patterns, longer periods droughts) and gradual changes in physical conditions (sea level rise; loss of certain habitats). https://www.youtube.com/watch?v=4RQv9VDgQq0

What are the implications to think about here?

Impacts on financial flows, their direction, liability risks, displacement / replacement

Group work: Discussion

1) How has climate change affected your industry at large?

2) What impact might global warming have on your industry and organization in the future?

Group work: **10 minutes** in breakout room
You can also share additional views and comments live and / or in the chat room...

Integration: banking and climate change

- The growing threat of climate change presents both threats and opportunities for the banking industry.
- The need for sustainable development relies on understanding the evolving risk of ESG and implementing manageable strategies to catalyse sustainable solutions by directing capital flows to projects that can enable the transition towards a more sustainable future.
- All three dimensions of reporting are needed: descriptive, impact-related, risk-related in order to mitigate risks but also be proactive in the offering of green and sustainable products.

How Do We Make This Work For Business

Research has revealed a trend of dematerialization in the United States: As the economy is growing, the country is actually using less timber, metals, water, and other resources. And this trend is spreading to other parts of the globe.

- ***Dematerialization*** **may have an important impact for the Economy—and indeed for Climate Change**

- **Using less resources: New technologies and digitization are helping dematerialization happen. As individuals and companies do more online, for instance, they use fewer resources like paper.**

- **Quicker urbanization and technological leap: Developing nations that are building their economy and looking to urbanize must build infrastructure, which traditionally has required vast amounts of resources. But these countries may reach urbanization quicker than expected, since they will follow different technology and materials paths than more prosperous nations.**

- ***Dematerialization and decarbonization***: **While dematerialization is a promising development, it is not enough to stop climate change. Decarbonization is also needed, and it isn't happening fast enough. Further action, like effective public policy, is required.**

How Do We Make This Work For Business

Individuals are growing increasingly conscious of the negative consequences of consumerism, leading them to buy less. This consumer-driven degrowth is becoming a concern for companies who see growth as an economic necessity. But three strategies can help.

- ***Degrowth-adapted product design***. Companies can create products that have longer lifespans, are modular, or are locally produced. For example, Fairphone produces phones that are repairable, which extends their longevity.

- ***Value-chain repositioning.*** Businesses can exit from certain stages of the value chain and delegate tasks to other stakeholders, including the customers themselves. The vehicle manufacturer Local Motors, for instance, uses crowdsourced design and crowdfunding to build new products.

- ***Degrowth-oriented standard setting.*** Companies can create a standard for the rest of the industry to follow. Patagonia, the poster child for this philosophy, has opened a worn-wear store and provides free repairs to offset the concerns about growth in the apparel industry.

How Do We Make This Work For Business

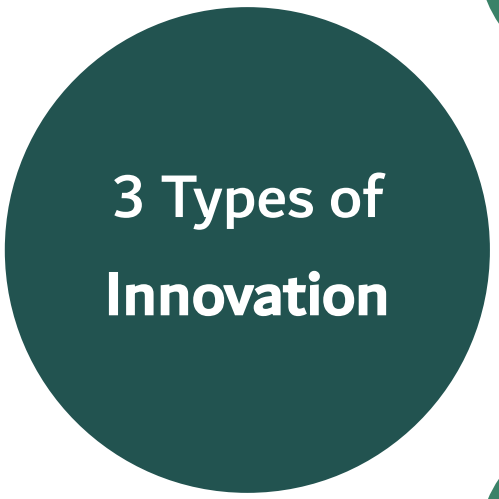
Companies need to mobilize in three ways to deal with the unprecedented global problem of climate change.

- ***Use political influence to demand aggressive climate policies.*** Proactively support laws that make high-carbon products and choices more expensive, mobilize capital toward a clean economy, and help deal with adaptation and the human costs of shifts to clean technology, including resilience planning in cities, relocation of citizens, and retraining workers.

- ***Empower key stakeholders to drive change***. Limit your suppliers to only those who have low emissions or work with them to create more energy- and carbon-efficient products. Offer your customers products that produce fewer emissions throughout their life cycles and provide ways for them to use less, thereby reducing their carbon footprints. Build sustainability and climate action into incentive structures for your employees by paying everyone (from the C-suite on down) to cut carbon.

- ***Rethink investments and business models to eliminate waste and carbon.*** Think about how all products and services in every sector of your company are created and used, and squeeze carbon out of every step in the value chain. Then, rethink where your company is taking risks and consider new business models.

Circling back... The 3 Types of Innovation



Product Innovation

Product innovation can come in 3 different forms; The development of a new product, An improvement to the performance of an existing product and introducing a new feature to an existing product.

Process Innovation

Process innovation concerns changes in the combination of facilities, skills and technologies used in production. This includes improvements in tools, techniques and technology whilst producing a product.

Business Model Innovation

Business Model innovation is the process of enhancing competitive advantage and value creation though changes to its value proposition to customers and its underlying operating model.

https://www.differential.com/posts/the-3-types-of-innovation-product-process-business-model/

Zero-Carbon Future

Is Your Company Ready?

There is an increasing public demand for a zero-carbon economy.

Review your industry groups. Assess your membership in trade groups, and make sure their climate action goals are aligned. If they're not, help change the group's position or leave.

Get smart on climate governance. Equip boards and management teams with knowledge and skills that will help them recognize the risks and opportunities posed by the climate crisis. Read recent environmental reports and regulations, and ask if your company is up to date.

Speak up in support of climate policy. Inspire legislators to create more drastic and ambitious climate policies through face-to-face dialogue.

Communicate your purpose. Make your reporting and external communications visible to policy makers, customers, and employees.

Zero-Carbon Future

Is Your Company Ready?

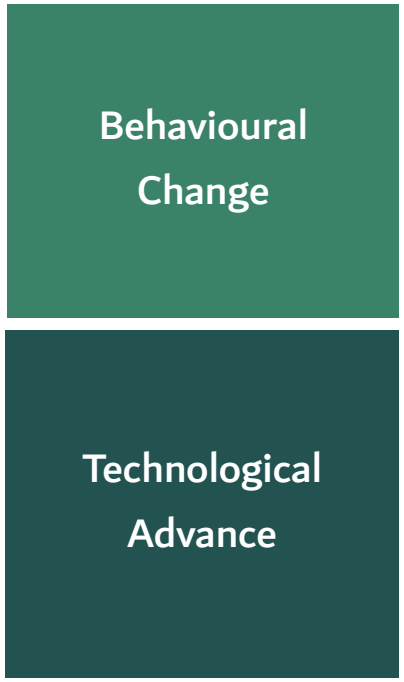
If businesses don't take steps toward folding carbon reduction into their strategies, they could face financial losses and other risks.

Align your company with the Paris Agreement. Strive for net-zero emissions by 2050. Use science-based targets and ensure that all strategic decisions incorporate climate risk and opportunity analysis.

Join a transformative initiative. Find support through projects like the Climate Group's global EP100 initiative, the Net Zero Carbon Buildings Commitment, or the World Business Council for Sustainable Development's Low Carbon Technology Partnerships.

Make a goal of 100%. Send a powerful signal to your stakeholders by committing to 100% in your environmental initiatives—for instance, by switching all of your electricity consumption to renewable sources, as opposed to only 20% or 50%.

Final discussion points



1) **What do you is more important to combat climate change: behavioural change or technological advances? Or both together?**
2) **Can you describe the most innovative product or process you have come across (in your company or elsewhere) to combat climate change and make a difference?**

Poll and Discussion Questions…

1) **Will actions taken today be enough to combat the direct impacts of climate change? Or are they too little too late?**

2) **Discuss how your company can proactively reduce its emissions and invest in resilience while planning for vast change.**

3) **What are all the things your business can do with its resources? What capital—financial, human, brand, and political—can your company bring to bear?**

4) **How can dematerialization lend itself to increased environmental protection when combined with effective public policy?**

Please share additional views and comments live and / or in the chat room…

RECAP: The context of climate change & Understanding climate policy and action

- Understanding the role of science in building climate policy
- Strengthening the knowledge of the three main Conventions on climate change, biodiversity, and land degradation.
- Building knowledge on practical responses to align the institution with the targets of the Paris Agreement.
- Learning about the economic and financial benefits of green finance and investing in green instruments and products and how this can be applied to the participant's career path or organization.
- Three dimensions of reporting (descriptive, impacts / outcomes, Risk-related)
- Build applicable knowledge at individual and corporate level to make significant change in the chosen area of climate action.

Course Reading

Economics: Annual Review of Environment and Resources The Economics of 1.5◦ C Climate Change. www.annualreviews.org/doi/pdf/10.1146/annurev-environ-102017-025817
Investopedia Guide to Impact Investing, ESG: https://www.investopedia.com/terms/i/impact-investing.asp
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