



6 oct. 2023

INTERNATIONAL SYMPOSIUM
COLLOQUE INTERNATIONAL



How can we talk about our future transformations?

Comment dialoguer sur nos transformations futures ?



SCIENTIFIC COMMITTEE – COMITE SCIENTIFIQUE



**CLAUDE
NAHON**



**AÏDA
DIONGUE-NIANG**



**SOPHIE
DUBUISSON-QUELLIER**



**VALÉRIE
MARTIN**



**CLAIRE
TUTENUIT**



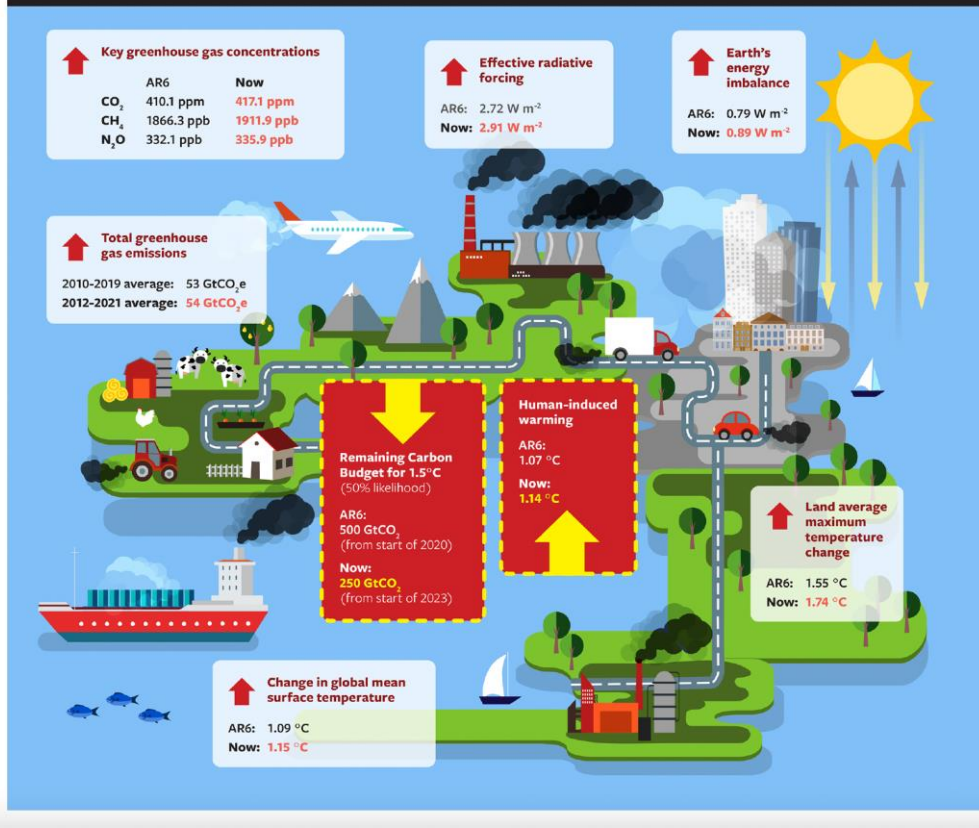
**DOMINIQUE
PAQUIN**

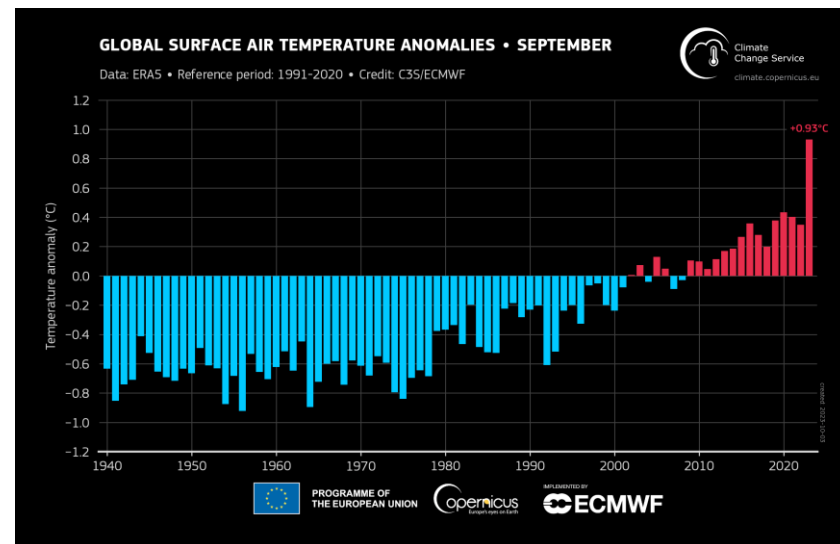
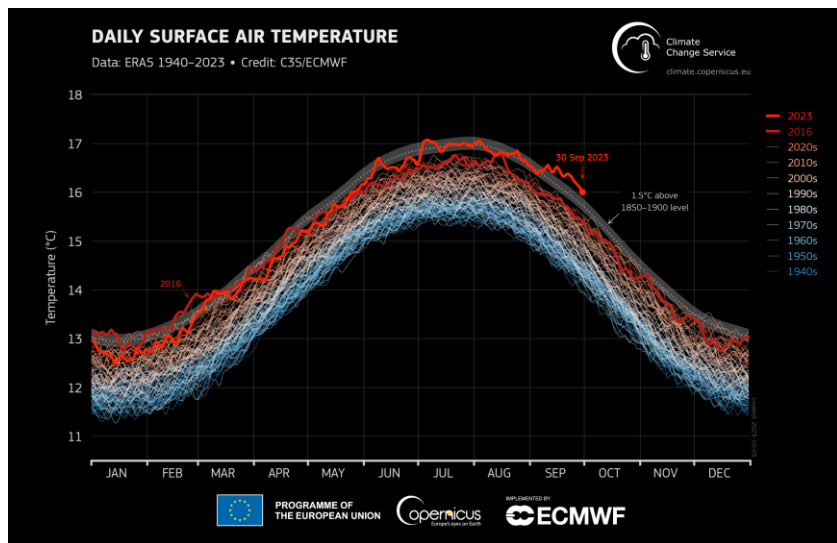


**SOPHIE
ROLAND**

Key indicators of global climate: What's changed since AR6?

Human-induced warming is increasing at the **unprecedented rate** of over 0.2°C per decade, the result of greenhouse gas emissions being at an all-time high over the last decade, as well as reductions in the strength of aerosol cooling.





<https://climate.copernicus.eu/copernicus-september-2023-unprecedented-temperature-anomalies>

Human-induced climate change increased drought severity in Horn of Africa



Since October 2020 large parts of Eastern Africa have been experiencing extended dry conditions punctuated by short intense rainfall events that often led to flash floods. The below-average rainfall in the October-December (OND) 2022 season "short rains" was the fifth consecutive failed season since OND 2020, including the below-average March-May (MAM) "long rains" in 2021 ...

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27 April, 2023 | **DROUGHT** | **AFRICA**

Extreme heat in North America, Europe and China in July 2023 made much more likely by climate change



Following a record hot June, large areas of the US and Mexico, Southern Europe and China experienced extreme heat in July 2023, breaking many local high temperature records.

25 July, 2023 | **HEATWAVE** | **ASIA, EUROPE, NORTH AMERICA**

Interplay of climate change-exacerbated rainfall, exposure and vulnerability led to widespread impacts in the Mediterranean region



During the first two weeks of September 2023 torrential rain fell in several countries across the Mediterranean, caused by low-pressure systems forming around a blocking high centred over the Netherlands.

19 September, 2023 | **EXTREME RAINFALL** | **AFRICA, EUROPE, MEDITERRANEAN**

Extreme humid heat in South Asia in April 2023, largely driven by climate change, detrimental to vulnerable and disadvantaged communities



For the last two weeks of April 2023, many parts of Bangladesh, India, Thailand and Lao PDR experienced record high temperatures.

17 May, 2023 | **HEATWAVE** | **ASIA**

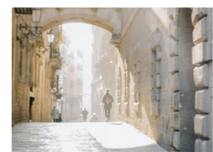
Climate change more than doubled the likelihood of extreme fire weather conditions in Eastern Canada



During May and June 2023 Canada witnessed exceptionally extreme fire-weather conditions, leading to extensive wildfires that burned over 13 million hectares.

22 August, 2023 | **WILDFIRE** | **NORTH AMERICA**

Extreme April heat in Spain, Portugal, Morocco & Algeria almost impossible without climate change



A large area of South Western Europe and Northern Africa experienced extremely high temperatures usually only seen in July and August, at the end of April 2023.

05 May, 2023 | **HEATWAVE** | **AFRICA, EUROPE**



Adverse impacts from human-caused climate change will continue to intensify

Observed widespread and substantial impacts and related losses and damages attributed to climate change





Water availability and food production

			
Physical water availability	Agriculture/crop production	Animal and livestock health and productivity	Fisheries yields and aquaculture production




Health and well-being

			
Infectious diseases	Heat, malnutrition and harm from wildfire	Mental health	Displacement

Cities, settlements and infrastructure

			
Inland flooding and associated damages	Flood/storm induced damages in coastal areas	Damages to infrastructure	Damages to key economic sectors




Biodiversity and ecosystems

		
Terrestrial ecosystems	Freshwater ecosystems	Ocean ecosystems

Includes changes in ecosystem structure, species ranges and seasonal timing

Key

Observed increase in climate impacts to human systems and ecosystems assessed at global level

-  Adverse impacts
-  Adverse and positive impacts
-  Climate-driven changes observed, no global assessment of impact direction

Confidence in attribution to climate change

- High or very high confidence
- Medium confidence
- Low confidence

Impacts are driven by changes in multiple physical climate conditions, which are increasingly attributed to human influence

Attribution of observed physical climate changes to human influence:

Medium confidence



Increase in agricultural & ecological drought



Increase in fire weather



Increase in compound flooding

Likely



Increase in heavy precipitation

Very likely



Glacier retreat



Global sea level rise

Virtually certain

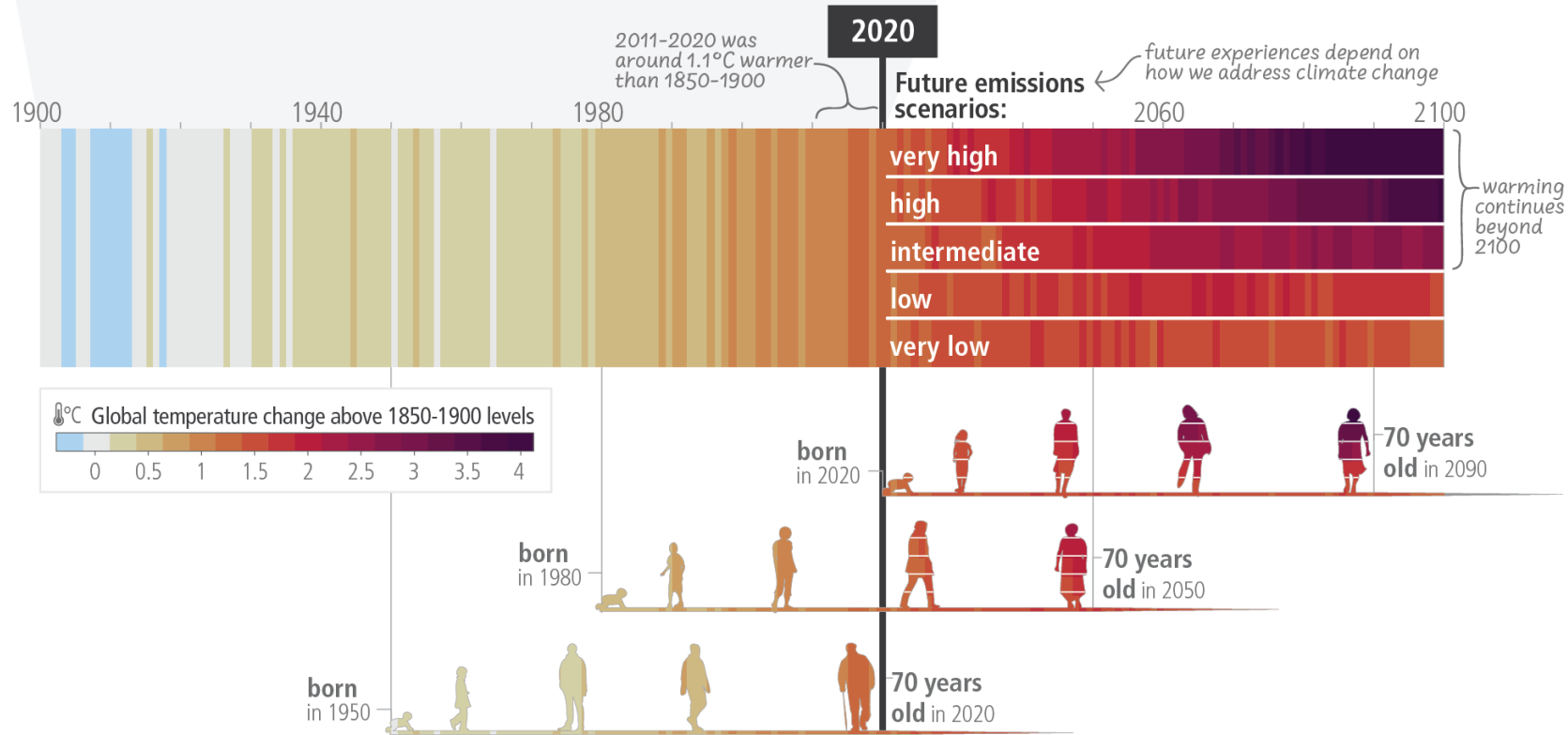


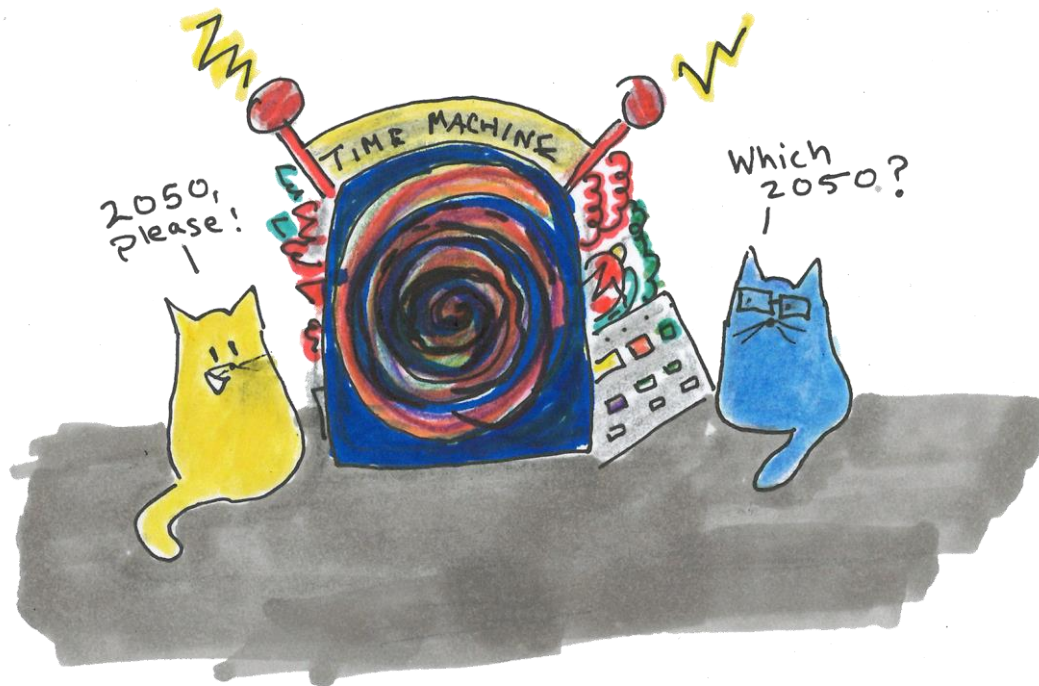
Upper ocean acidification



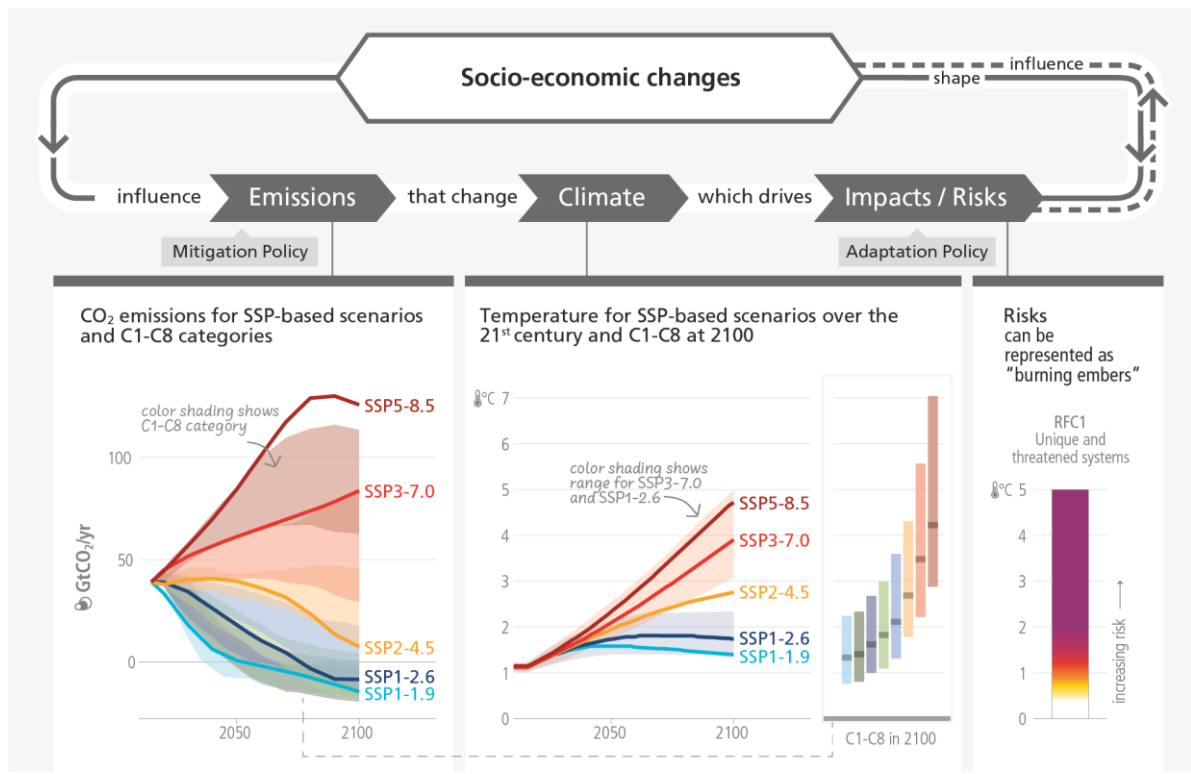
Increase in hot extremes

The extent to which current and future generations will experience a hotter and different world depends on choices now and in the near-term



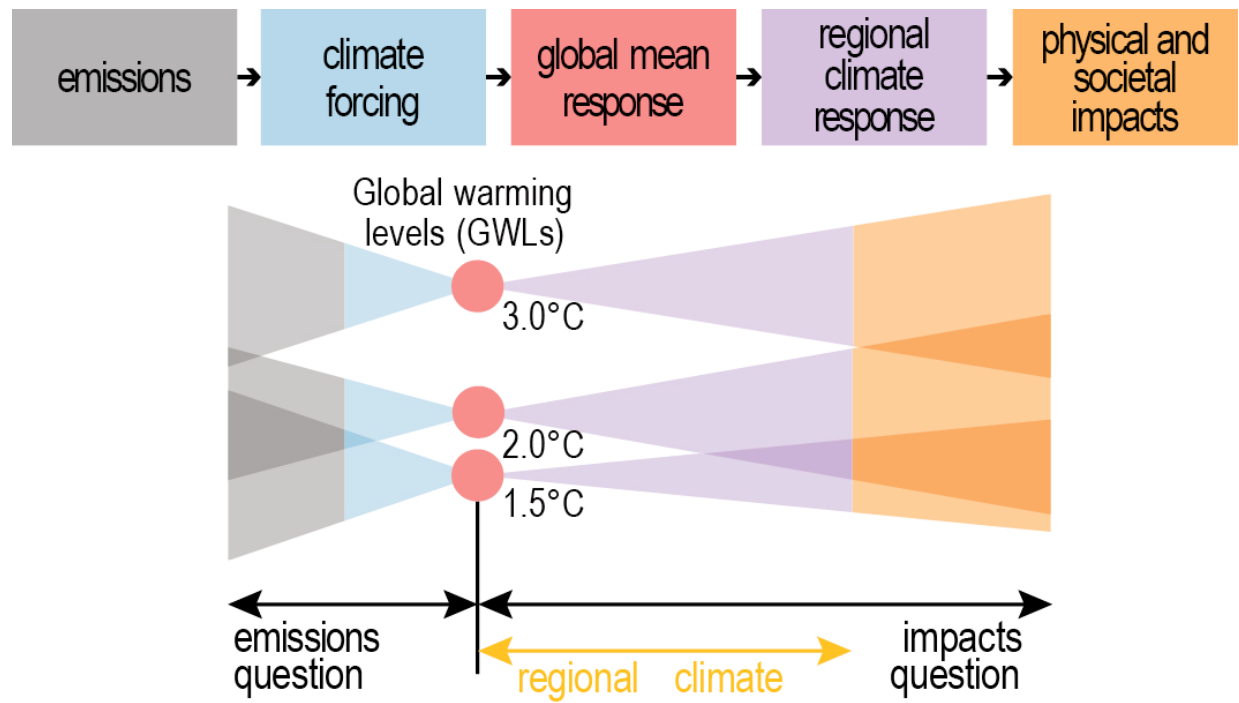


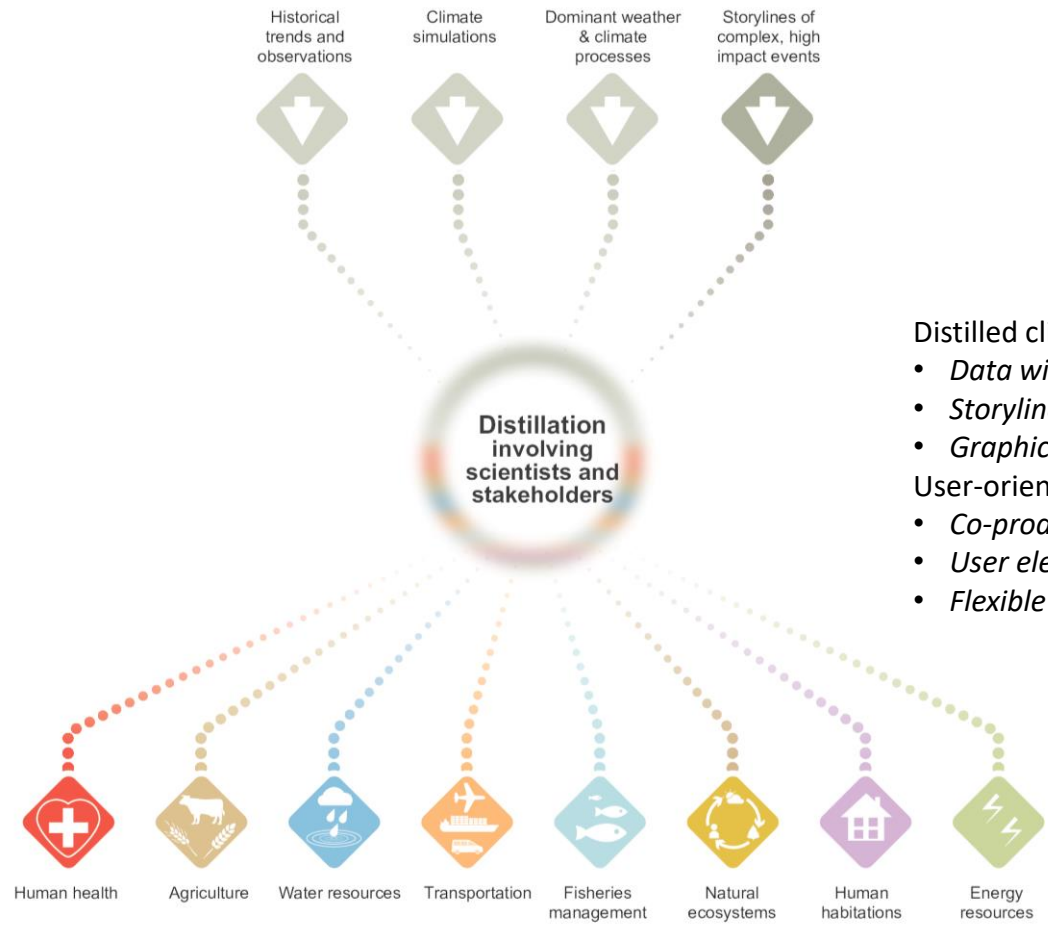
Scenarios and warming levels structure our understanding across the cause-effect chain from emissions to climate change and risks



Determinants of risk







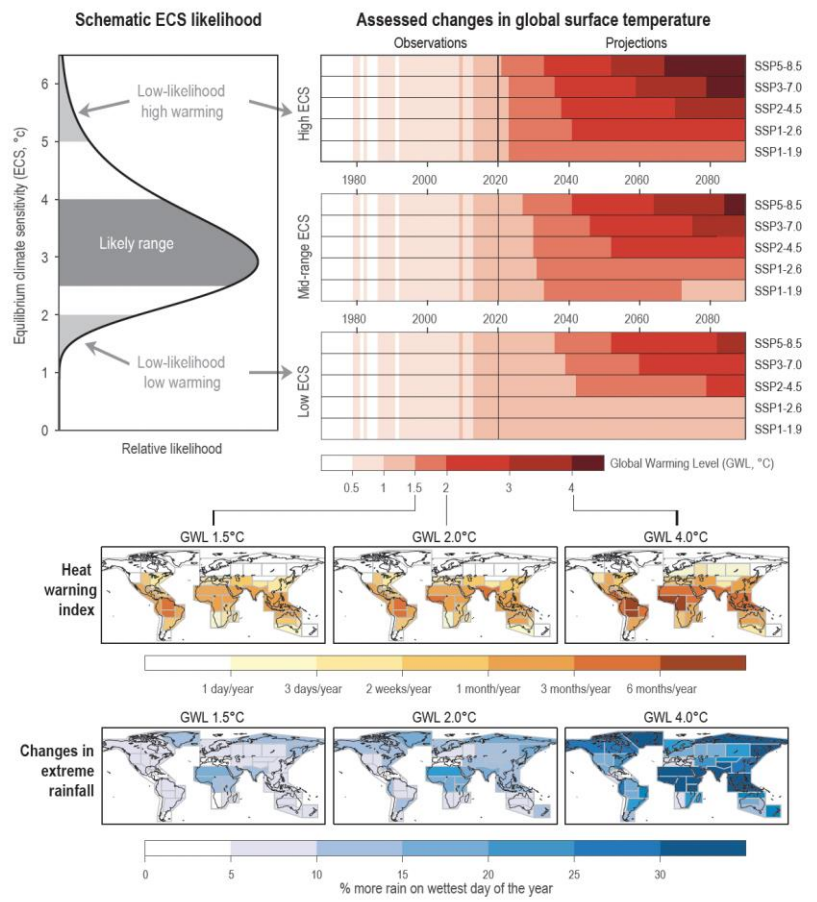
Distilled climate information :

- *Data with uncertainty estimates*
- *Storylines of plausible futures*
- *Graphics*

User-oriented climate information construction

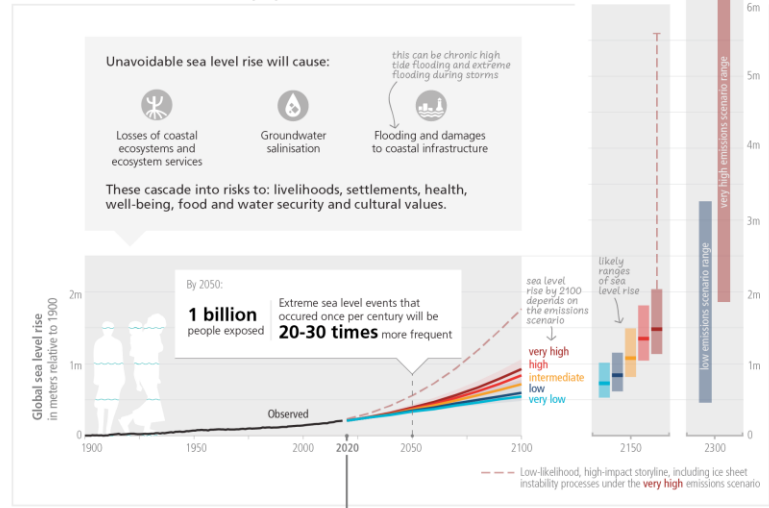
- *Co-production for user action*
- *User elements*
- *Flexible output format determined by user needs*

Low likelihood, high warming storyline



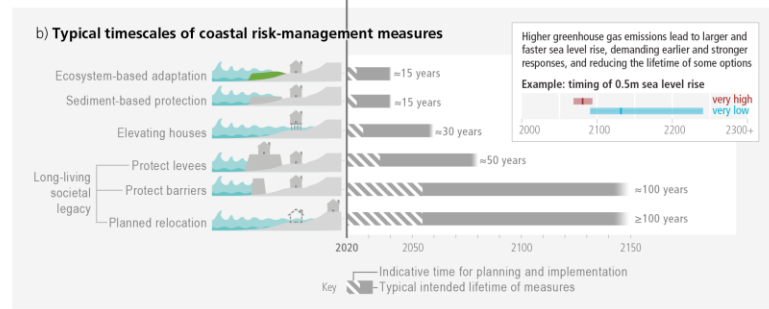
Sea level rise will continue for millennia, but how fast and how much depends on future emissions

a) Sea level rise: observations and projections 2020-2100, 2150, 2300 (relative to 1900)

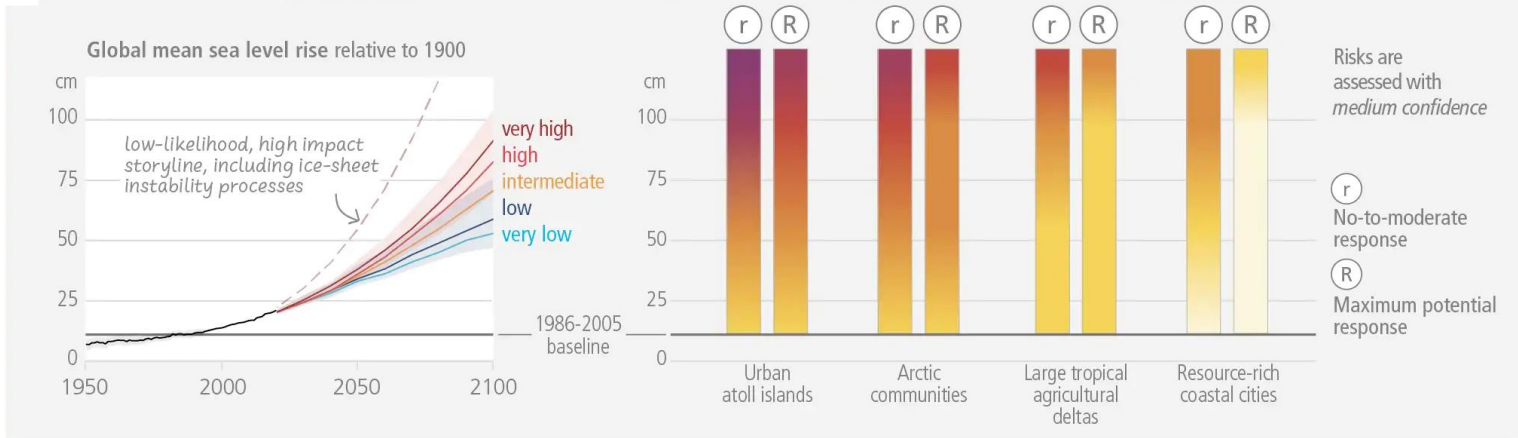


Low likelihood,
 high impact storyline

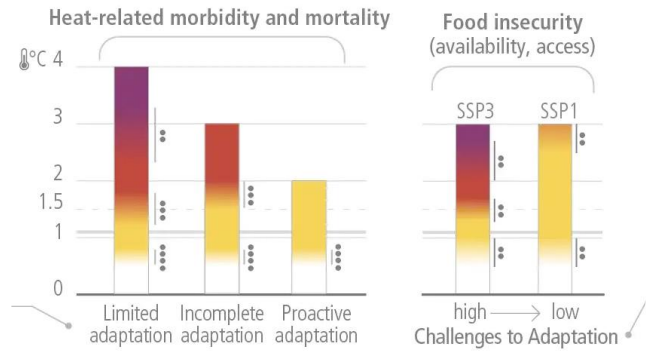
Responding to sea level rise requires long-term planning

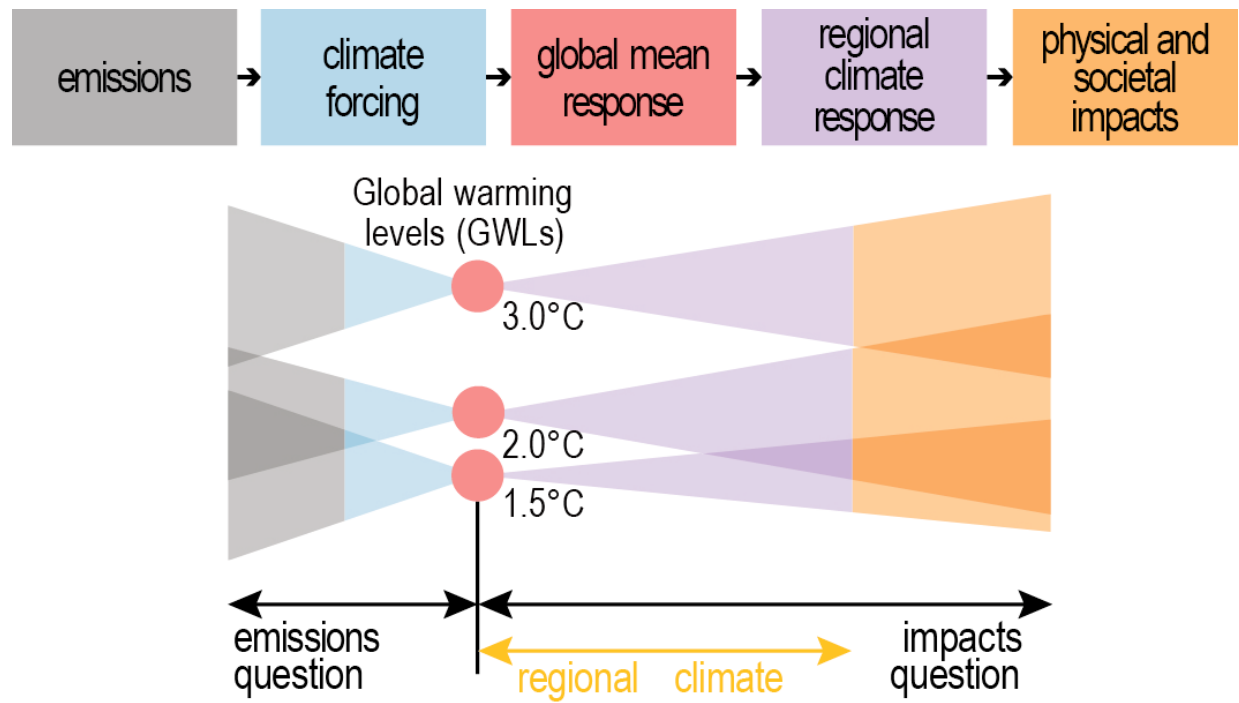


Risks to coastal geographies increase with sea level rise and depend on responses



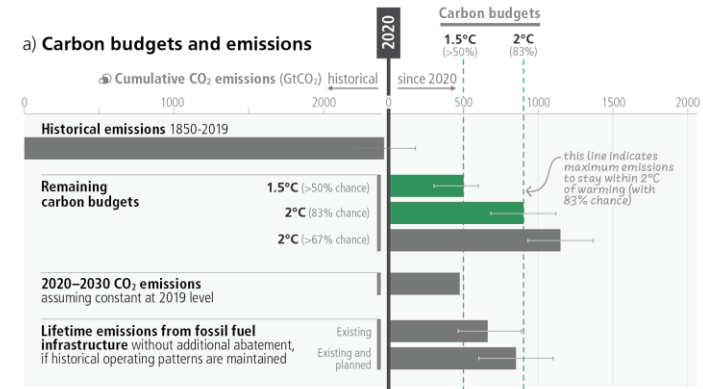
Adaptation and socio-economic pathways affect levels of climate related risks



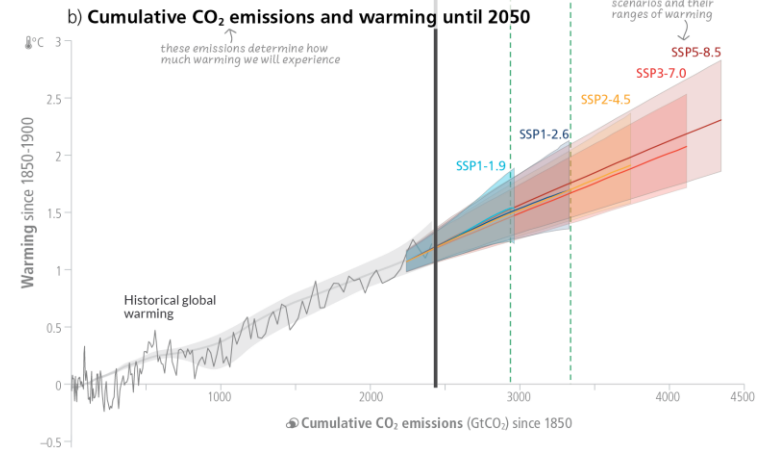


Remaining carbon budgets to limit warming to 1.5°C could soon be exhausted, and those for 2°C largely depleted

Remaining carbon budgets are similar to emissions from use of existing and planned fossil fuel infrastructure, without additional abatement

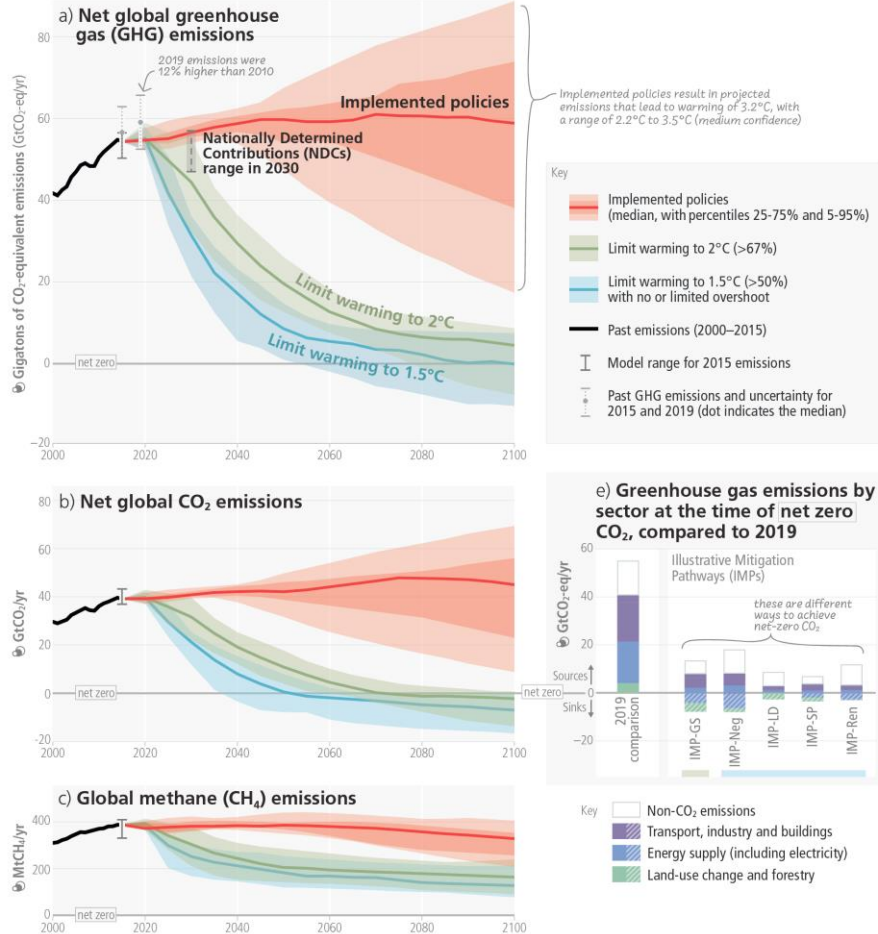


Every ton of CO₂ adds to global warming



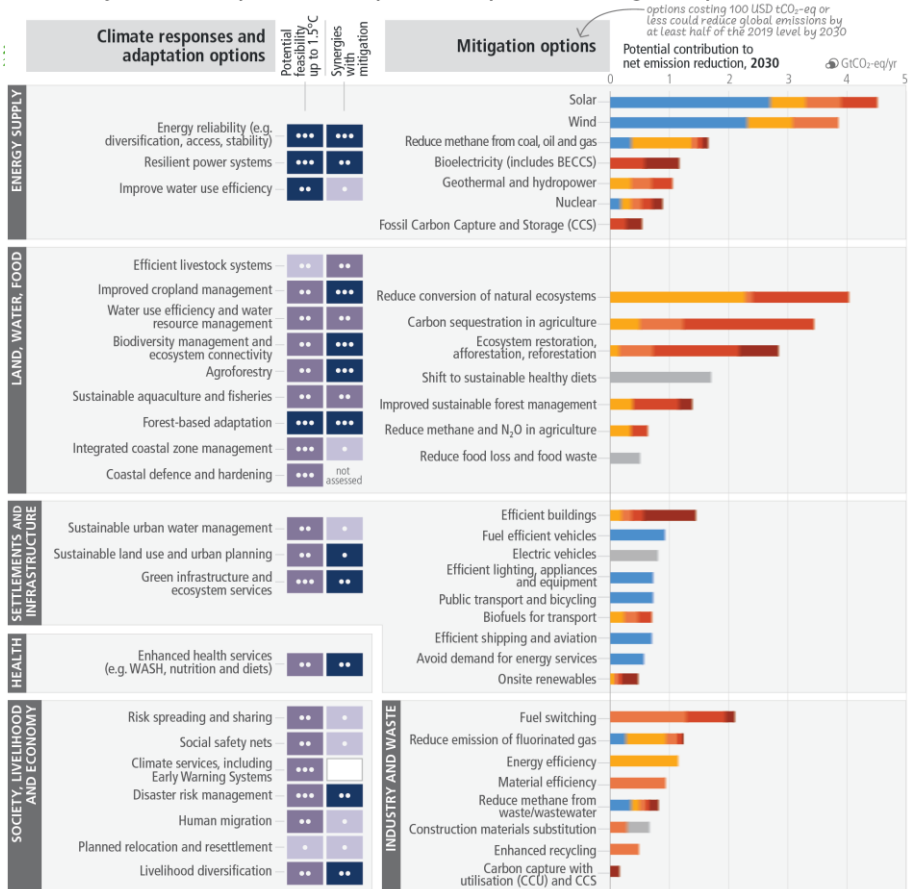
Limiting warming to 1.5°C and 2°C involves rapid, deep and in most cases immediate greenhouse gas emission reductions

Net zero CO₂ and net zero GHG emissions can be achieved through strong reductions across all sectors



There are multiple opportunities for scaling up climate action

Feasibility of climate responses and adaptation, and potential of mitigation options in the near-term



Feasibility level and synergies with mitigation



Confidence level in potential feasibility and in synergies with mitigation



Net lifetime cost of options:



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Potential of demand-side mitigation options by 2050



Conditions that enable individual and collective actions

- Inclusive governance
- Diverse knowledges and values
- Finance and innovation
- Integration across sectors and time scales
- Ecosystem stewardship
- Synergies between climate and development actions
- Behavioural change supported by policy, infrastructure and socio-cultural factors



Conditions that constrain individual and collective actions

- Poverty, inequity and injustice
- Economic, institutional, social and capacity barriers
- Siloed responses
- Lack of finance, and barriers to finance and technology
- Tradeoffs with SDGs

Emissions reductions
Adaptation
Sustainable Development

Climate Resilient Development

Past conditions
Present world
2030
2100 & beyond

Past conditions (emissions, climate change, development) have increased warming and development gaps persist

Early action and enabling conditions create future opportunities for climate resilient development

Sustainable Development Goal (SDG) achievement



Prospects for climate resilient development will be further limited if global warming exceeds 1.5°C and if progress towards the SDGs is inadequate

opportunities missed

warming limited to below 1.5°C

Outcomes characterising development pathways

Low emissions
System transitions
Transformation
Low climate risk
Equity and justice
SDG achievement

High emissions
Entrenched systems
Adaptation limits
Maladaptation
Increasing climate risk
Reduced options for development
Ecosystem degradation



Illustrative 'shock' that disrupts development

Session 1

Partager les connaissances scientifiques pour encourager le passage à l'action en faveur de la transition
Sharing scientific knowledge to encourage transition action

Session 2

Transformer son modèle économique pour contribuer à un développement sobre et collaboratif
Transforming economic models to contribute to sober and collaborative development

Session 3

Accélérer la montée en compétences des médias sur les enjeux climatiques afin d'impulser de nouveaux récits collectifs
Accelerating the development of media skills on climate issues in order to stimulate new collective narratives

Session 1



Ted Shepherd

Université de
Reading



Eric Chaumillon

La Rochelle
Université



Aïda Diongue-
Niang

ANACM



Céline
Guivarch

CIRED



Aurélien Ribes

Météo-France

Session 2



Édouard
Vieillefond

CCR



Anne-Sophie
Grave

CDC Habitat



Jean-Philippe
Dogneton

MACIF



Céline Imart

Agricultrice



Runa Khan

Friendship



Mariam Sow

ENDA Pronat



Eric Duverger

Convention des
Entreprises pour le
Climat

Session 3



Evelyne Dhéliat

TF1. LCI



Valérie Martin

ADEME



Virginie Fichet

France Télévisions



Ruona Meyer

Journaliste et
formatrice



Férís Barkat

Banlieues Climat



Ariel Rodriguez

Telemundo 51