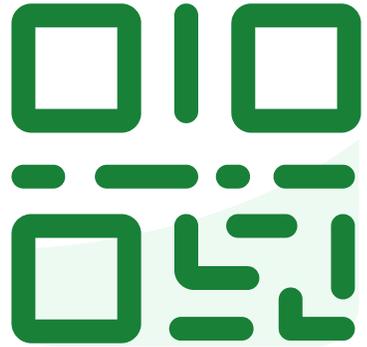




Pacific
Community
Communauté
du Pacifique

Climate change terminology and glossary

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My understanding of Climate Change & Fisheries is?

① Start presenting to display the poll results on this slide.



MY UNDERSTANDING OF CLIMATE CHANGE IMPACTS ON FISHERIES

- I AM A COMPLETE NOVICE TO THESE TOPICS
 - I UNDERSTAND A LITTLE
 - I UNDERSTAND SOME OF THE ASPECTS OF IT
 - I UNDERSTAND A LOT ABOUT IT
 - I AM AN EXPERT IN CLIMATE CHANGE & FISHERIES
- 

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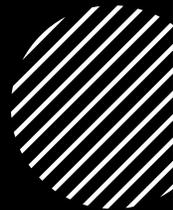


What Climate Change Terms do you want to know more about

ⓘ Start presenting to display the poll results on this slide.



TELL US
CLIMATE
CHANGE
TERMS YOU
WANT TO
KNOW MORE
ABOUT.



SLIDO WORD CLOUD



DRAFT GLOSSARY HANDOUT

– LINK TO VIEW FILE

[https://docs.google.com/document/
glossary](https://docs.google.com/document/glossary)



PLEASE SUGGEST ANY KEY
MISSING TERMS +
FISHERIES EXAMPLES

Climate

it is the long-term average of weather, typically averaged over a period of 30 years.

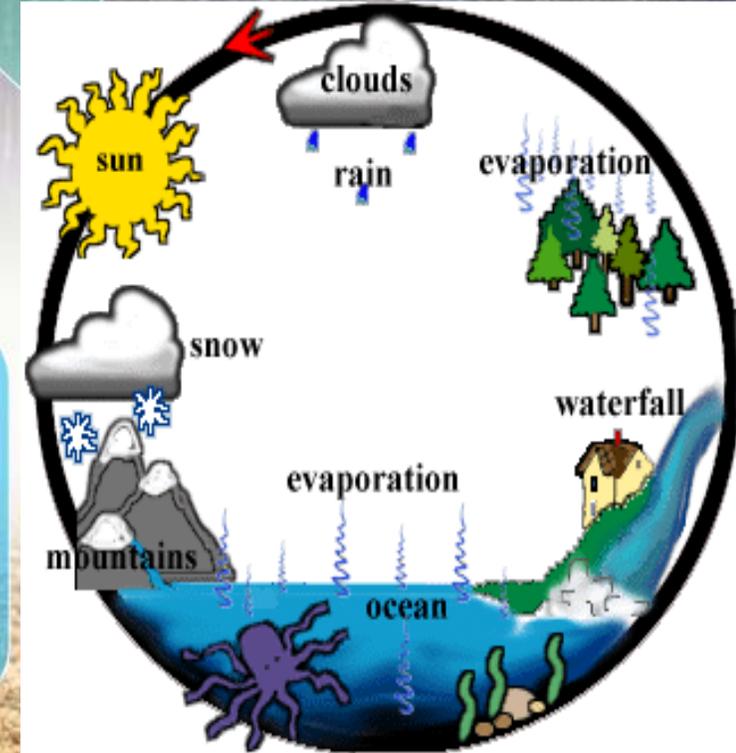


Weather

It is the short-term changes we see in temperature, clouds, precipitation, humidity and wind in a region.

Climate change

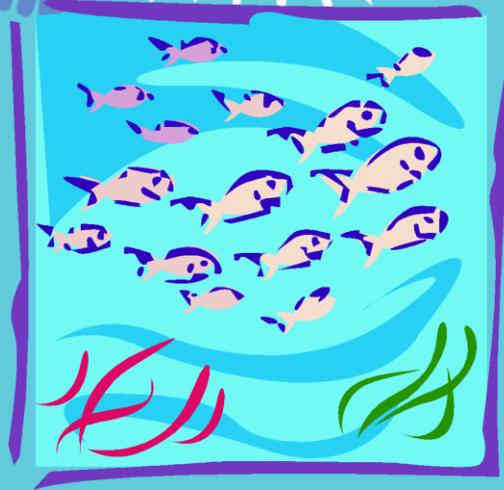
it refers to any long term change in the earth's climate or in the climate of a region or city.



WHAT IS CLIMATE VARIABILITY?

- Climate variability refers to the climate aspect of a region varying from its long-term average (also referred to as “climate extremes”).
- Upcoming presentation by Moleni
- Examples of natural climate variability include droughts, cold snaps, storms, heat waves, as well as some cyclical patterns eg ENSO (term in glossary), PDO, ...
- Variability on time scales longer than a few decades (longer than 30 years) is usually referred to as climatic change





- ENSO See Moleni presentation for more detail
- El Niño” is when a cold current of water that normally flows up the west coast of South America, slows and brings unusually warm water along with ‘miracle’ unusual fish to South America (happens around Christmas so named after the Christ Child/Baby Boy).
- “La Niña” is the opposite “stronger than normal” condition when the cold current of water is slightly stronger.

CLIMATE VARIABILITY VS CHANGE

- persistence of "anomalous" conditions:
 - events that used to be rare occur more frequently (summertime maximum air temperatures increasingly break records each year),
 - Events that used to be frequent occur more rarely (duration and thickness of seasonal land ice decreasing with time).
- an event or sequence of events occurs never witnessed (or recorded) before could still be variability
 - exceptional hurricane season in the Atlantic in 2005.. If such a season does not recur within the next 30 years, just an exceptional year, not 'just' climate change.

CLIMATE CHANGE HISTORY

- **Natural Global climate changes** have happened in the past (ice ages due to volcanoes, meteors etc).
- Important in colonisation of the pacific:
 - sea level rising, making islands smaller, too many people, too little land. People with canoes look for new islands
- **Rates of change** have not been so fast in past
- People on all island groups now - no new lands to find, and people do not want to move from the land they own



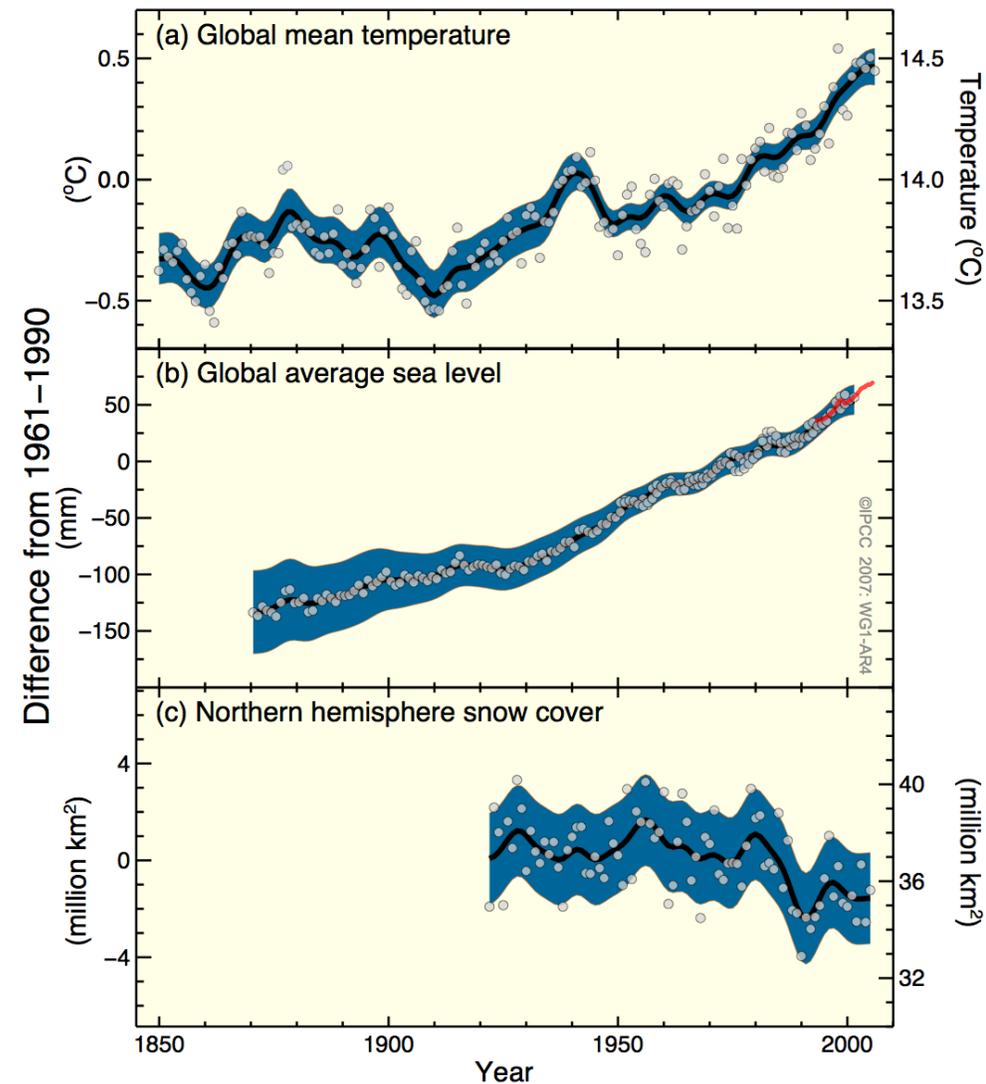
DIRECT OBSERVATIONS OF RECENT CLIMATE CHANGE

Global mean temperature

Global average sea level

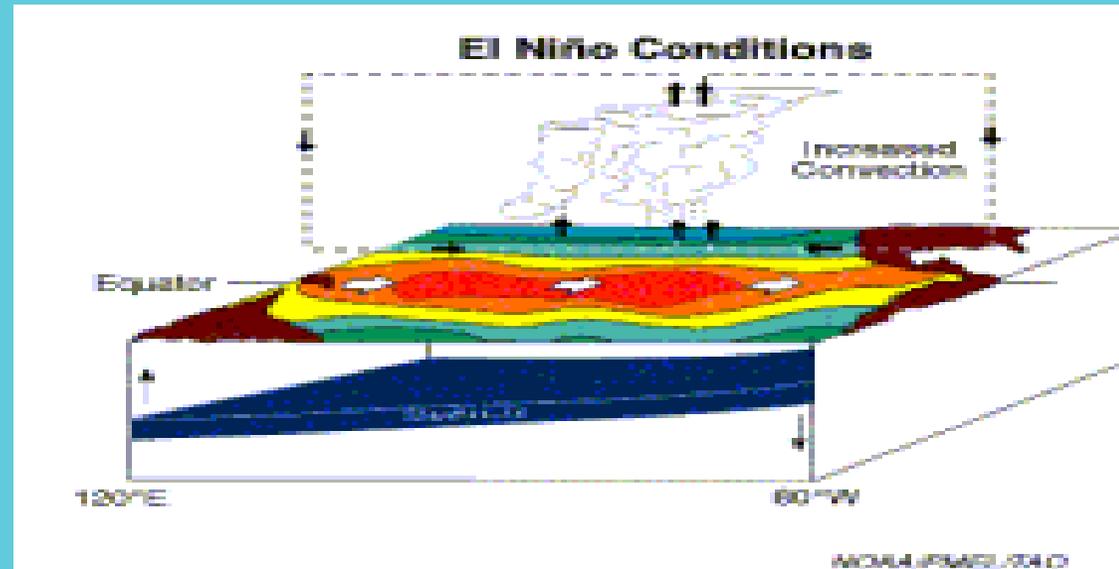
Northern hemisphere Snow cover

Changes in Temperature, Sea Level and Northern Hemisphere Snow Cover



WHAT ARE CLIMATE TRENDS?

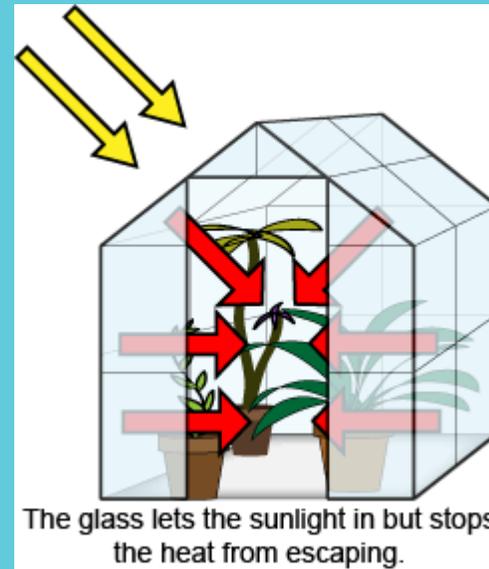
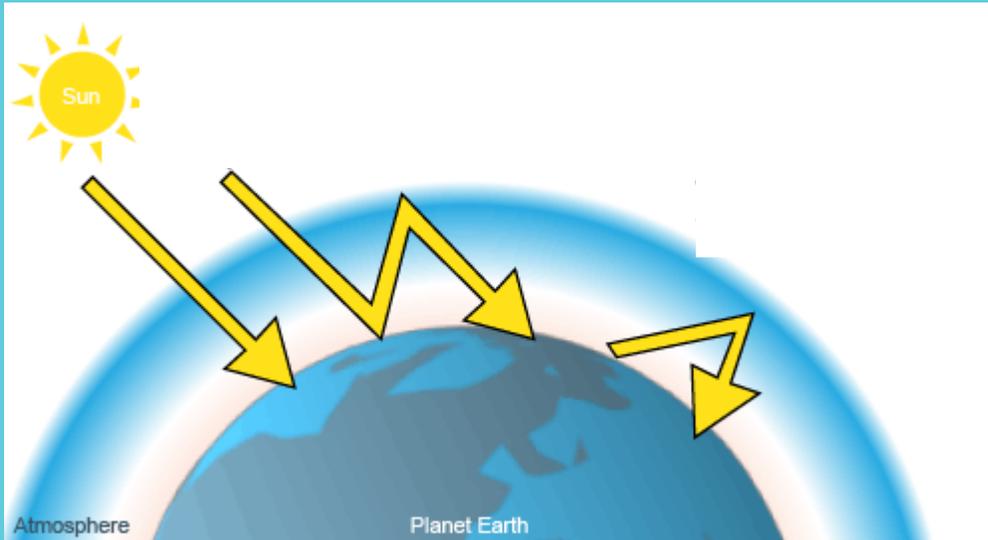
- The study of climate uses statistics or the gathering and analyzing of measured changes over a long period of time (usually 30 years or more data) which shows climate patterns.



- Today such statistics, models and analysis of climate trends are handled by powerful super computers.
- Also see scenarios presentation by Beth next.

What are Greenhouse Gases and how do they Affect the Climate?

- Natural feature of the atmosphere
- Traps solar heat



Greenhouse gases:

Natural and human-generated gaseous constituents of the atmosphere that absorb and emit radiant heat energy at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds.

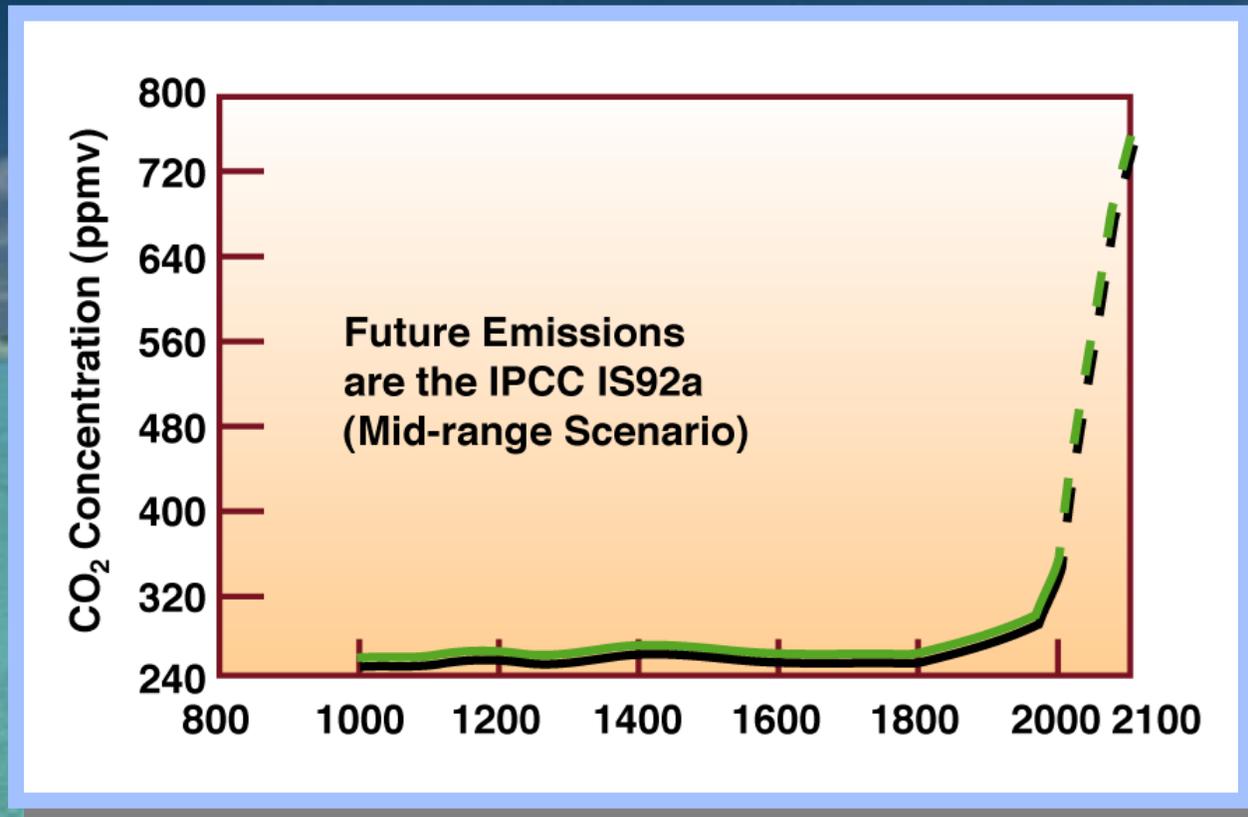
These characteristics cause the '**greenhouse effect**', whereby absorption of infrared radiation by the atmosphere warms the Earth;

Why is Climate Changing?



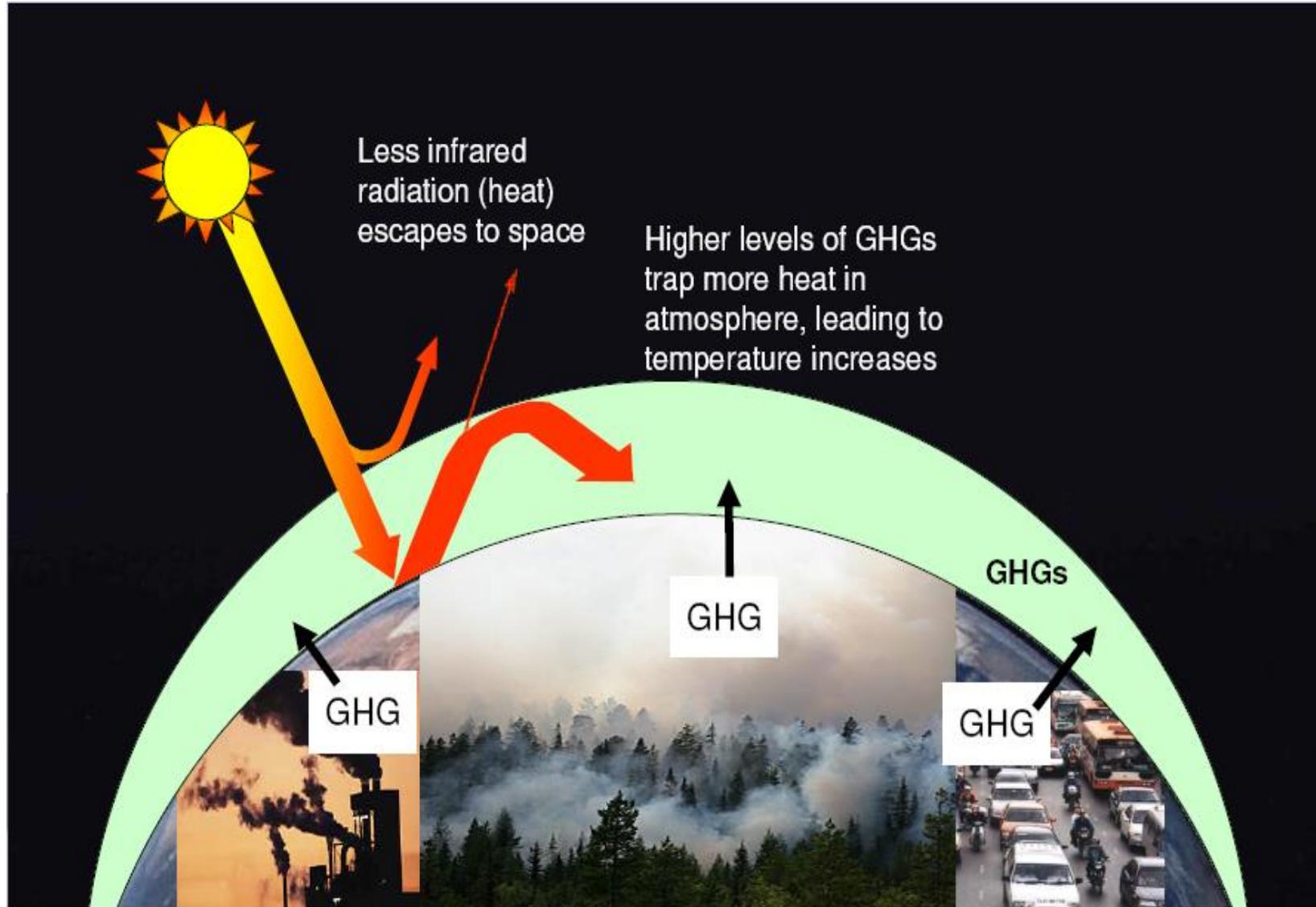
The main gas that traps the heat is carbon dioxide, others like methane and nitrous oxide do too.

HISTORICAL AND PROJECTED FUTURE CO₂ CONCENTRATIONS



Source: Based on IPCC (1995). Derived from ice-core measurements (Siple and South Pole) and direct observation (Mauna Loa, Hawaii)

The enhanced greenhouse effect



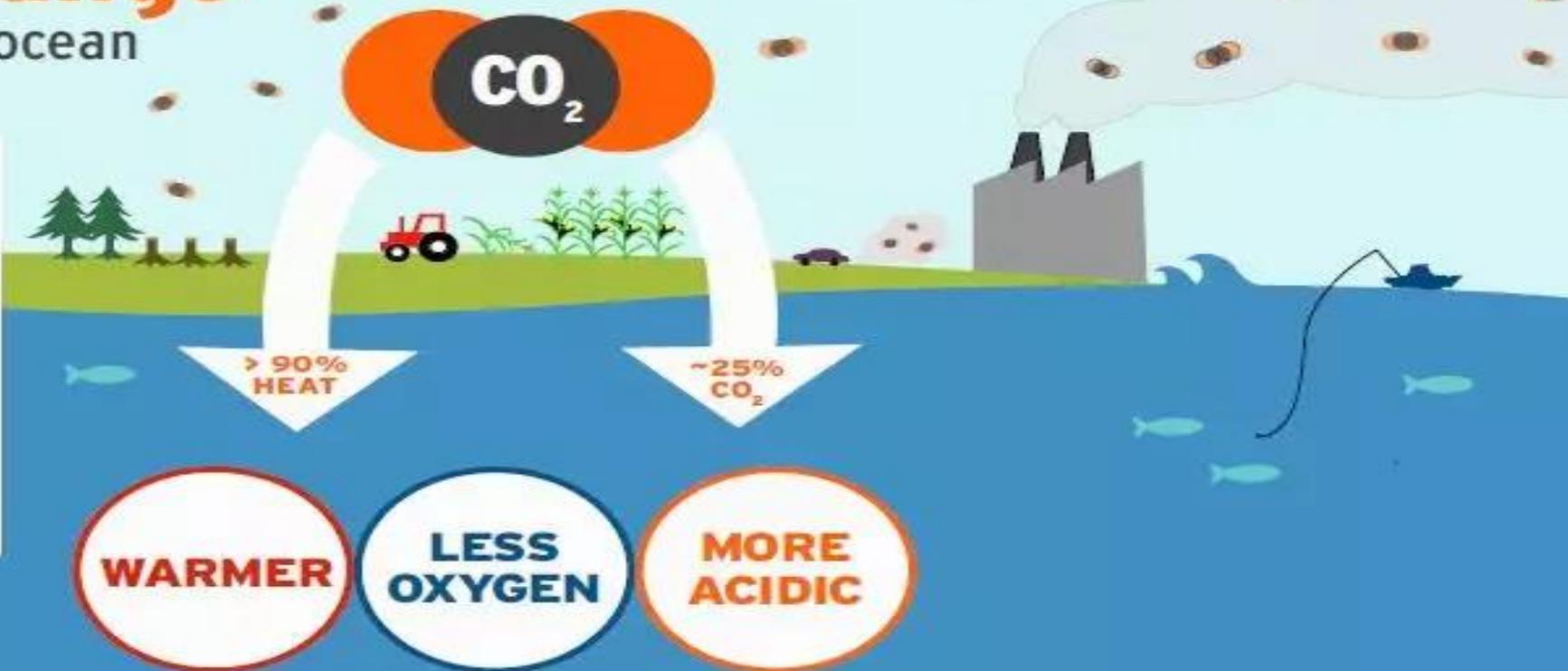
Water vapour, carbon dioxide, nitrous oxide, methane and ozone are the primary greenhouse gases in the Earth's atmosphere; other greenhouse gases include sulphur hexafluoride, hydrofluorocarbons and perfluorocarbons.



Climate Change

A triple threat for the ocean

Burning fossil fuels, deforestation and industrial agriculture release carbon dioxide (CO₂) and other heat-trapping gases into our atmosphere, causing our planet to warm. The ocean has buffered us from the worst impacts of climate change by absorbing more than 90 percent of this excess heat and about 25 percent of the CO₂, but at the cost of causing significant harm to marine ecosystems.



SEA LEVEL

Sea level rise is accelerating, flooding coastal communities and drowning wetland habitats.



BLEACHING

Warm-water coral reefs (marine biodiversity hotspots) could be lost if the planet warms by 2°C (3.6°F).



TOXIC ALGAE

Larger and more frequent blooms are making fish, birds, marine mammals and people sick.



HABITATS

Lower oxygen levels are suffocating some marine animals and shrinking their habitats.



ACIDIFICATION

More acidic water harms animals that build shells, such as corals, clams, and oysters.



FISHERIES

Disruptions in fisheries affect the marine food web, local livelihoods, and global food security.



Monterey Bay Aquarium
Research Institute



Monterey Bay
Aquarium

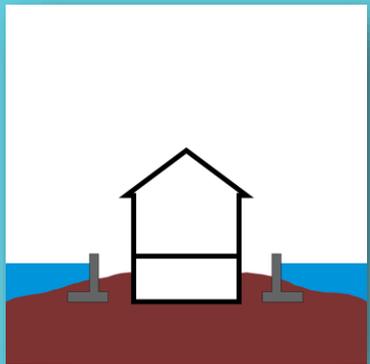


MITIGATION – actions which minimize loss and damage at the source of the event/problem *disaster mitigation different from climate change mitigation

CLIMATE CHANGE MITIGATION actions which actively reduce the impacts of climate change by decreasing the amount of **GREENHOUSE GASES** in the atmosphere.

ADAPTATION – actions which react to the effects of climate change

Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.



Some examples of the climate change terminology you will be hearing over the next few days

□ □ **Vulnerability**

□ *‘the degree to which a system is susceptible to climate change, and is unable to cope with the negative effects of climate change’ (IPCC,2007)*

□ **Resilience**

□ *“the ability to recover from, or adjust easily to change”*

□ □ **Adaptive capacity**

□ *“Abilities and resources to cope with climate-related changes”*

□ □ **“No-regrets” strategy**

□ *“Actions contributing to CC adaptation or mitigation that make sense, without even taking account of CC”*

□ *“steps to reduce GHGs that would pay for themselves even without a climate change”*

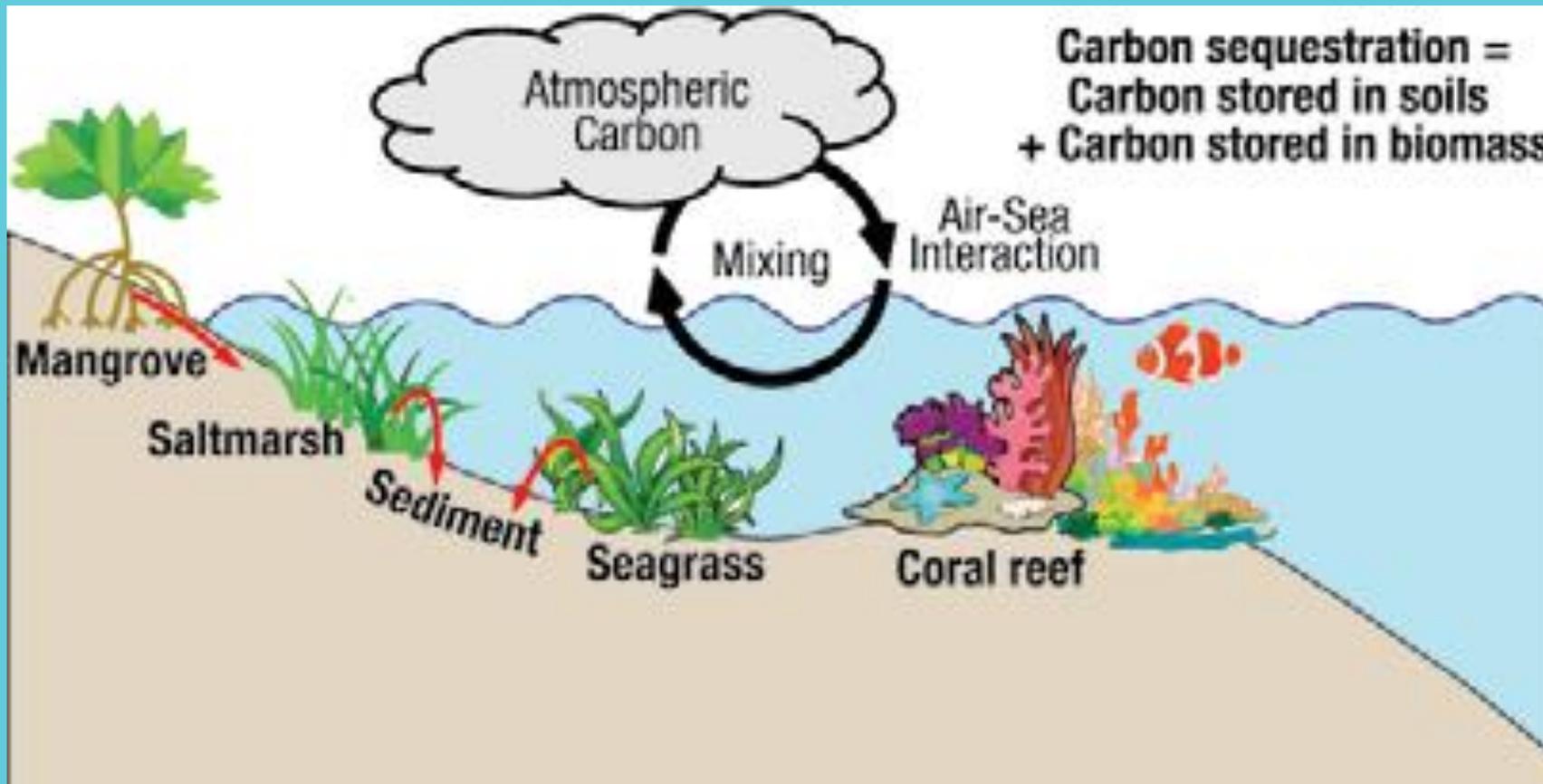
Climate change terminology (continued)

- **Mitigation:** the process of reducing the amounts of GHGs emitted into the atmosphere, or by absorbing and sequestering GHGs through physical or chemical processes, or simply by planting and caring for trees.
 - *“Actions taken to reduce effect of climate change drivers (typically greenhouse gas reduction) “*
- **Scenarios** - a plausible description of how the future might develop, based on a coherent and internally consistent set of assumptions ('scenario logic') about the key relationships and driving forces (e.g. rate of technology change or prices). (Next presentation)
- **Carbon intensity:** CO₂ equivalent emissions per unit of gross domestic product.
- **Carbon Footprint:** measure of the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community. volumes of carbon emissions from vessel use, transport and processing of seafood to point of sale; volumes of carbon extracted directly from the fish, and estimated impact on carbon storage through interruption of functional, behavioural and trophic interactions.

Bunker Fuels: fuels used in marine and aviation vessels, international bunkers – used for transport between countries/fishing in international waters.

EXAMPLE TERMS BLUE CARBON

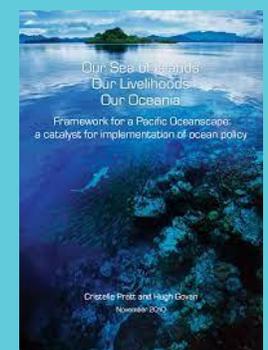
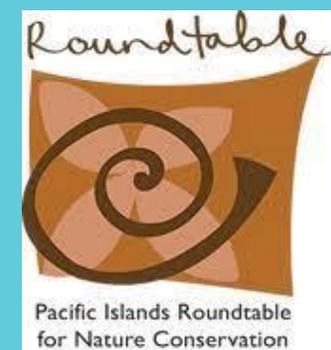
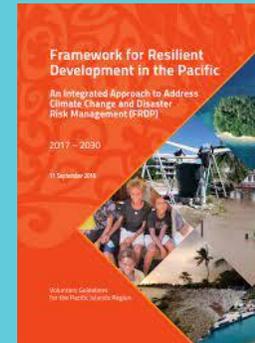
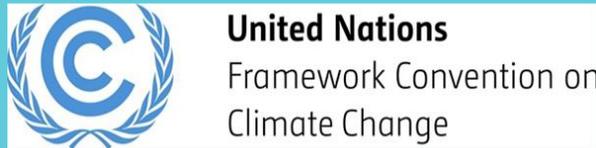
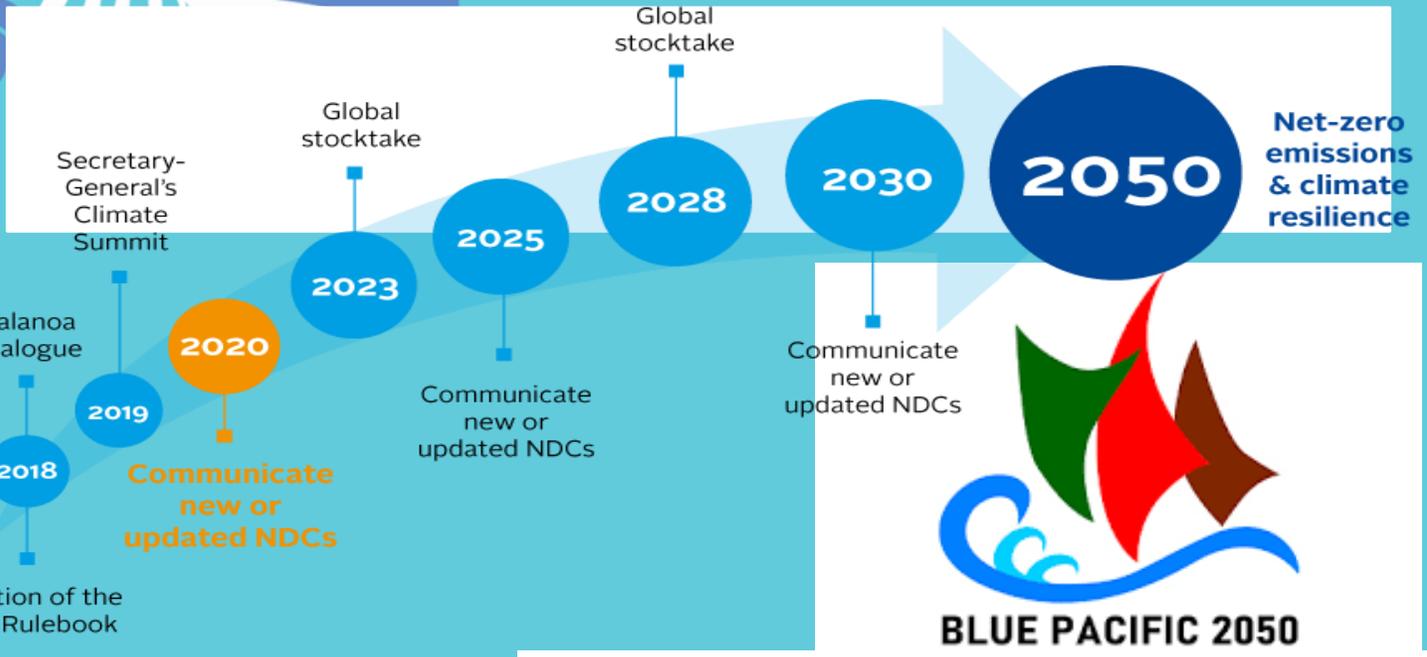
- Blue carbon is any carbon stored by the ocean. Coastal blue carbon is carbon stored in the vegetation and soils of mangroves, salt marshes, and seagrasses.



GLOBAL POLICY CONTEXT

See MFAT Presentation Day 3

More terms for glossary?



Blue Pacific Economic Strategy Pacific Climate Finance Strategy



What is the United Nations Framework Convention on Climate Change (UNFCCC) Objective

The United Nations Framework Convention on Climate Change is a treaty adopted at the Earth Summit in Rio in 1992. The UNFCCC sets an overall framework for intergovernmental efforts to avoid the risks of human-induced climate change. Its ultimate objective is:

‘... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.’

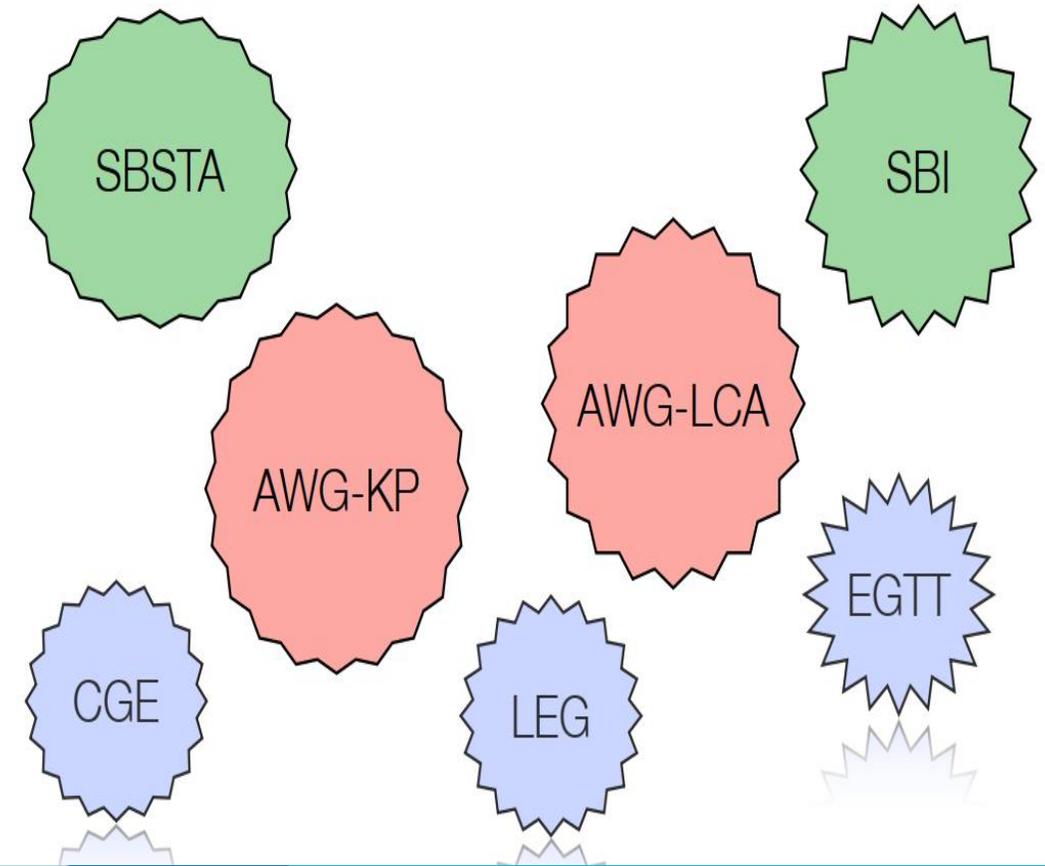
the definition of “dangerous” is debated... The IPCC sees this as a political decision.

Developed countries should take the lead, and support developing countries with finance, technology and capacity building. It also seeks to keep tabs on progress, through a regular reporting process.

The climate change process

- The UNFCCC established the institutional arrangements for the climate change intergovernmental process:
- A supreme governing body, the Conference of the Parties: the COP for the Convention, the CMP for the Kyoto Protocol and the CMA for the Paris Agreement. The process management of the COP rests with the Bureau of the COP.
- There are two permanent subsidiary bodies – the SBSTA and the SBI – as well as other ad hoc subsidiary bodies established by the COP, the CMP, or the CMA as deemed necessary to address specific issues;
- Technical subsidiary bodies with limited membership (referred to in practice as the constituted bodies) established under the UNFCCC.
- A secretariat; and entities entrusted with the operations of the Financial Mechanism (i.e. the Global Environment Facility -GEF- and the Green Climate Fund -GCF-).
- Collectively, these institutions participate in the process of developing policies and guidance to support Parties in the implementation of the UNFCCC.

who's involved?



Negotiating Groups

PSIDS: Pacific Islands Small Islands Developing States, Currently Chaired by Vanuatu

AOSIS: the Alliance of Small Island States, formed in 1989. All Pacific Island Countries are members. Currently chaired by Samoa.

Group of 77 and China established 1964 by “Joint Declaration of the Seventy-Seven Developing Countries” at the first session of the United Nations Conference on Trade and Development UNCTAD now nearly 140 UN developing countries, currently chaired by Uganda

UNFCCC Process terminology

Conference of the Parties (CoPs) Annual meetings of the association of all member countries (Parties) COP serve three main purposes:

- to review the implementation of the Convention;
- to adopt decisions to further the Convention's implementation; and
- to negotiate substantive new commitments.

COP decisions: textual agreements reached at the COP to guide countries (Parties), the UNFCCC Secretariat, funding institutions, and to send signals to private sector and actors outside the UNFCCC such as other international agreements.

Negotiations mostly in **Subsidiary Bodies** (SBSTA= SB for Scientific & Technical Advice and SBI SB for Implementation) comes up with **[bracketed text]** for each agenda item draft decisions are then forwarded to the CoP for further negotiations or adoption real negotiations are usually finished before plenary if no objections in plenary, "*it is so decided.*"

What is the Paris Agreement?

- The PA is a subsidiary but legally binding agreement to the UNFCCC reached in 2015. It is evident that not enough progress was being made on reducing global emissions.
- It modified the overarching goal of the UNFCCC to hold “*the increase in the global average temperature to well below 2°C above pre-industrial levels*” and pursue efforts “*to limit the temperature increase to 1.5°C above pre-industrial levels.*”
- The PA is based on science, which has described the need to limit global warming to 1.5°C, and that as a result greenhouse gas emissions must peak before 2025 at the latest and decline 43% by 2030. The PA is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings **all nations** together to combat climate change and adapt to its effects.
- Implementation of the PA requires economic and social transformation, based on the best available science. The PA works on a five-year cycle of increasingly ambitious climate action -- or, ratcheting up -- carried out by countries.
- Since 2020, countries have been submitting their national climate action plans, known as **nationally determined contributions (NDCs)**. Each successive NDC is meant to reflect an increasingly higher degree of ambition compared to the previous version.

Climate change terminology (continued)

- **Loss and damage:** the impacts of climate change that cannot be or have not been avoided by mitigation or adaptation efforts.
- **Losses are irreversible and permanent** in nature like loss of land due to sea-level rise, and loss of freshwater resources due to salinisation from flooding, while
- **damages** refer to recoverable or reparable harm like damage to property, or a short coral bleaching event.
- The loss and damage are caused by
- **rapid-onset events** that tend to be discrete, identifiable events (e.g. flooding, hurricanes, heatwaves), or
- **slow-onset events** that unfold over much longer timeframes, gradually manifest and are not as immediately devastating (e.g. sea-level rise, ocean acidification and biodiversity loss).
- In some cases, **combined slow-onset and rapid-onset events** interact with each other to amplify the loss and damage experienced (e.g. sea-level rise leading to greater hurricane intensity from higher storm surges).

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Audience Q&A Session

ⓘ Start presenting to display the audience questions on this slide.