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# UNDERSTANDING CLIMATE CHANGE LOSS & DAMAGE FOR FISHERIES

Presented by Pasha Carruthers, SPC Loss & Damage Advisor,  
CLAW Workshop, Wellington, NZ 22 February 2024



# Outline - Understanding loss & damage and fisheries

- Review of Defining Loss & Damage
- Slow onset Rapid Onset and combined events
- Types of loss and damage: economic (ELD) and non economic (NELD)
- 15 minute Table discussions of fisheries loss and damage in countries
- Understanding what is being done on loss and damage
  - International WIM, Santiago Network, Paris Agreement
  - Regional & SIDS
  - National Local
- More Resources

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## Climate change terminology recall



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- **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 marine species due to coral reef ecosystem collapse (bleaching and acidification), and loss of socio-economic viability of a fisheries due to changes in distribution/migration of fish
  - **damages** refer to recoverable or reparable harm like damage to boats, lines, processing plants,

**Loss and damage** are caused by

- **rapid-onset events** that tend to be discrete, identifiable events (e.g. storm surge, cyclones, marine 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 cyclone intensity from higher storm surges and breaking up of already bleached corals). Such combined events might lead to displacement of communities.

# LOSS AND DAMAGE ASSOCIATED WITH THE IMPACTS OF CLIMATE CHANGE



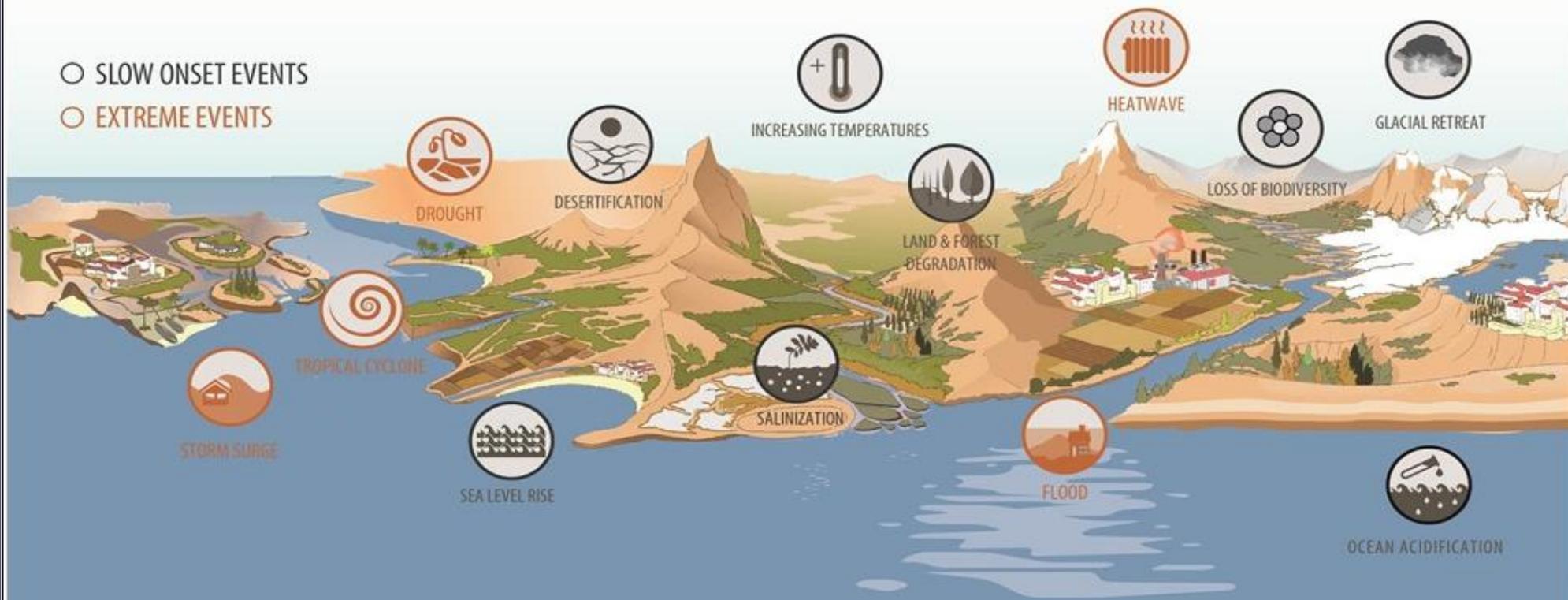
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○ SLOW ONSET EVENTS

○ EXTREME EVENTS



## ECONOMIC LOSSES

## NON-ECONOMIC LOSSES

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### INCOME

### PHYSICAL ASSETS

### INDIVIDUALS

### SOCIETY

### ENVIRONMENT



# OVERVIEW

## IMPACTS OF CLIMATE CHANGE

Impacts of climate change include slow onset events\* and extreme weather events\*\* which may both result in loss and damage.

### Slow Onset Events

Slow onset events usually develop gradually over time, and their impacts are often based on a confluence of several different events (UNFCCC, 2012).

### Extreme Weather Events

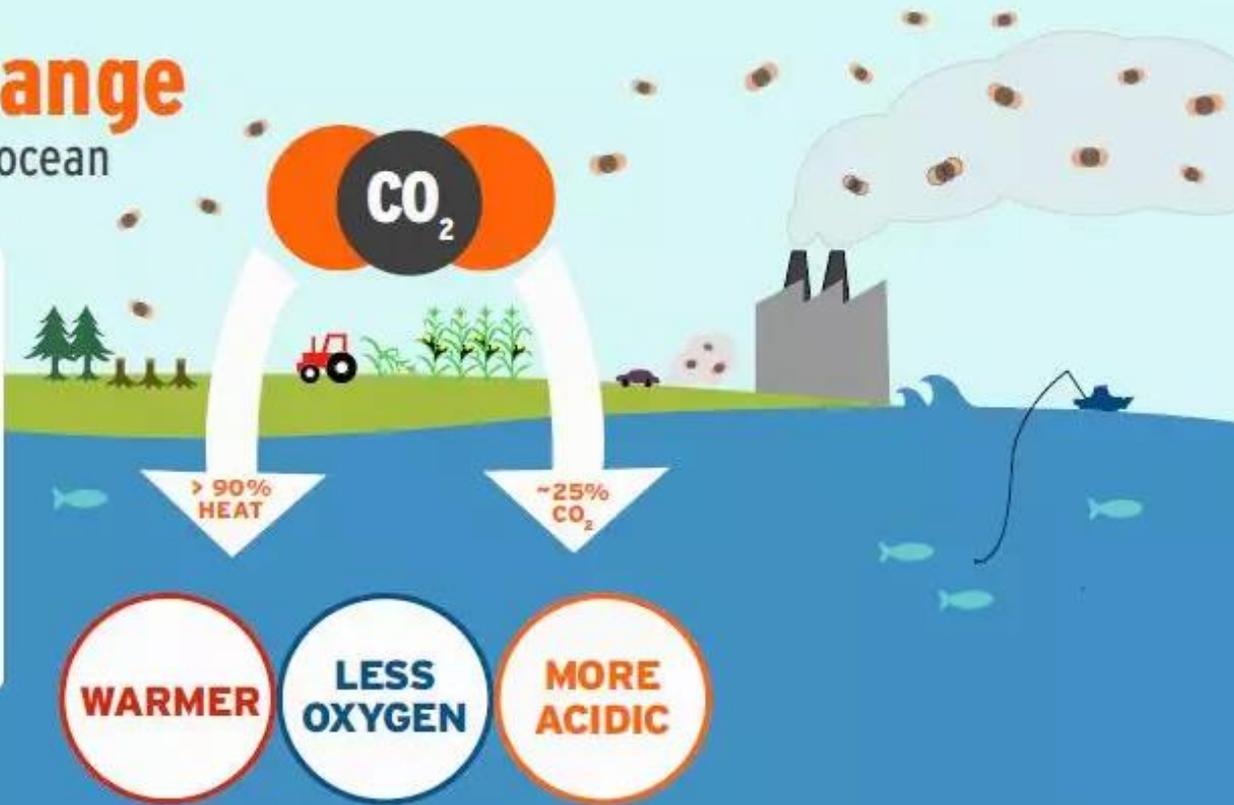
An extreme weather event is an event that is rare at a particular place and time of a year (IPCC, 2012).



# Climate Change

## A triple threat for the ocean

Burning fossil fuels, deforestation and industrial agriculture release carbon dioxide (CO<sub>2</sub>) 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 CO<sub>2</sub>, 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.

Source: IPCC, 2019: Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC)

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Research Institute

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## RECALL

CLIMATE CHANGES AND  
THEIR IMPACTS ON  
FISHERIES AND OCEANS  
ALREADY PRESENTED IN  
DEPTH

ADAPTATION AND  
RESILIENCE BUT

TIPPING POINTS

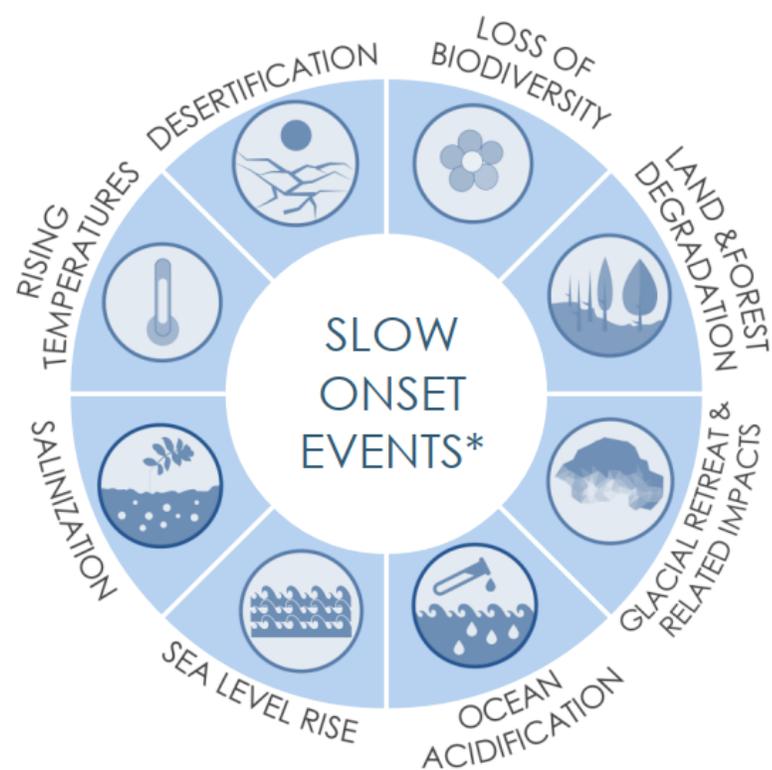
EXTREME DAMAGES

IRREVERSABLE LOSSES

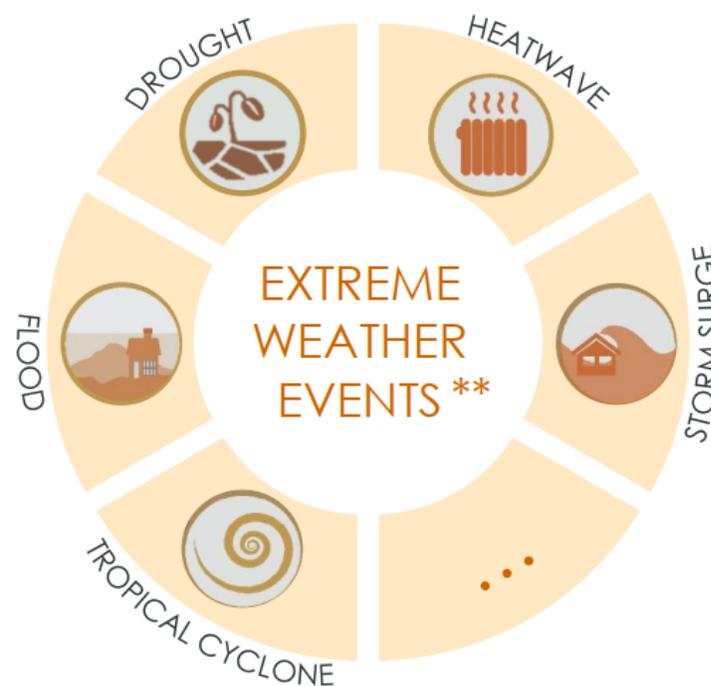


# OVERVIEW

## EXAMPLES OF SLOW ONSET EVENTS AND EXTREME WEATHER EVENTS



\*As referred to in [Decision 1/CP.16](#)



\*\* Those presented are examples



### Slow-onset processes (SOP)

-  Sea level rise
-  Increased ocean temperature
-  Alterations in ocean circulation patterns
-  Increased ocean acidification
-  Changes in freshwater and nutrient input
-  Glacial retreat and melt of cryosphere elements



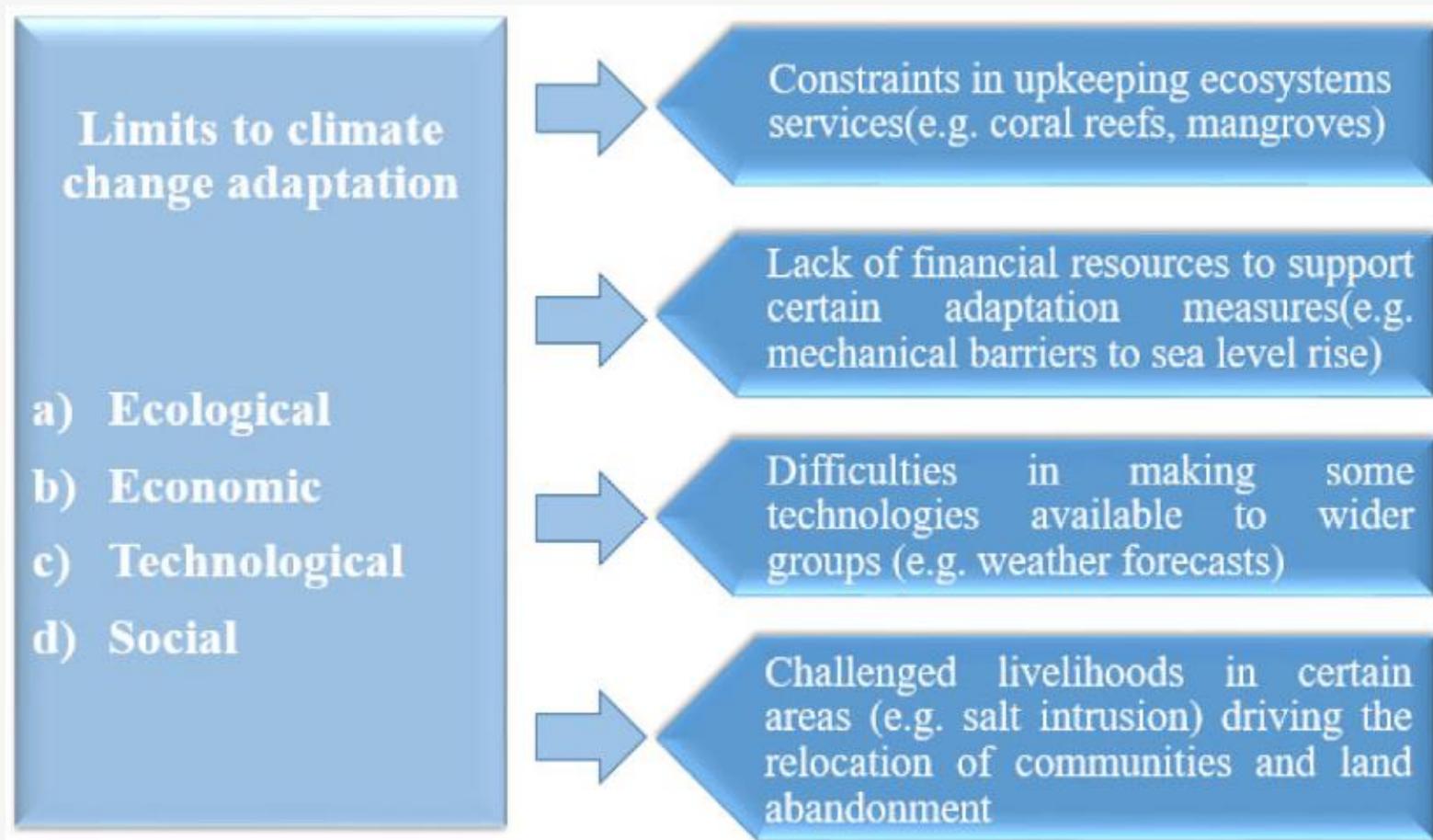
### Extreme weather events (EWE)

-  Storms (incl. cyclones, hurricanes, typhoons)
-  Marine heatwaves
-  King tide/ storm tide flooding

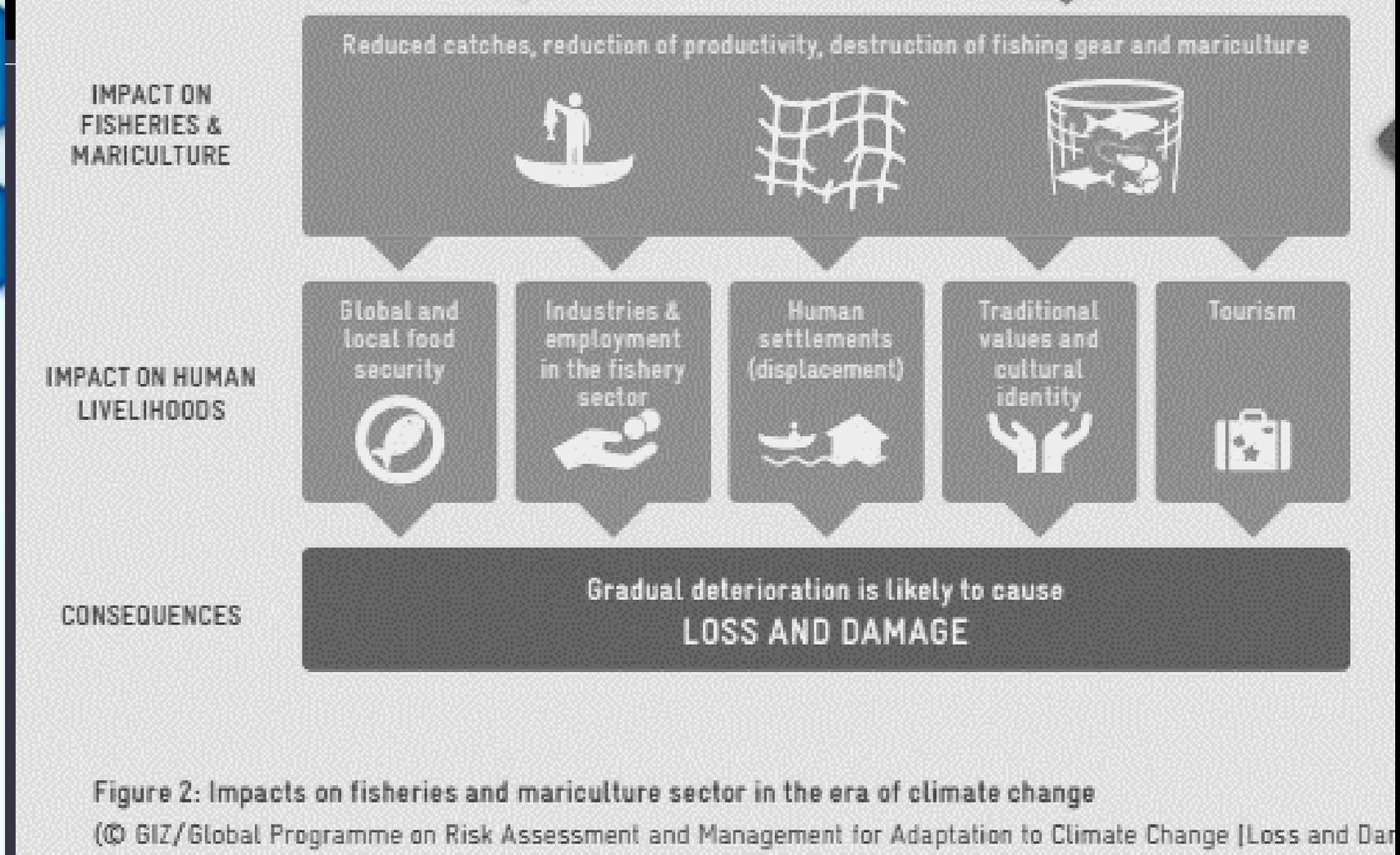
Figure 4: Climate-related hazards in coastal zones. Source: GIZ GP I&D.



**Figure 1.** Examples of the limits to climate change adaptation.



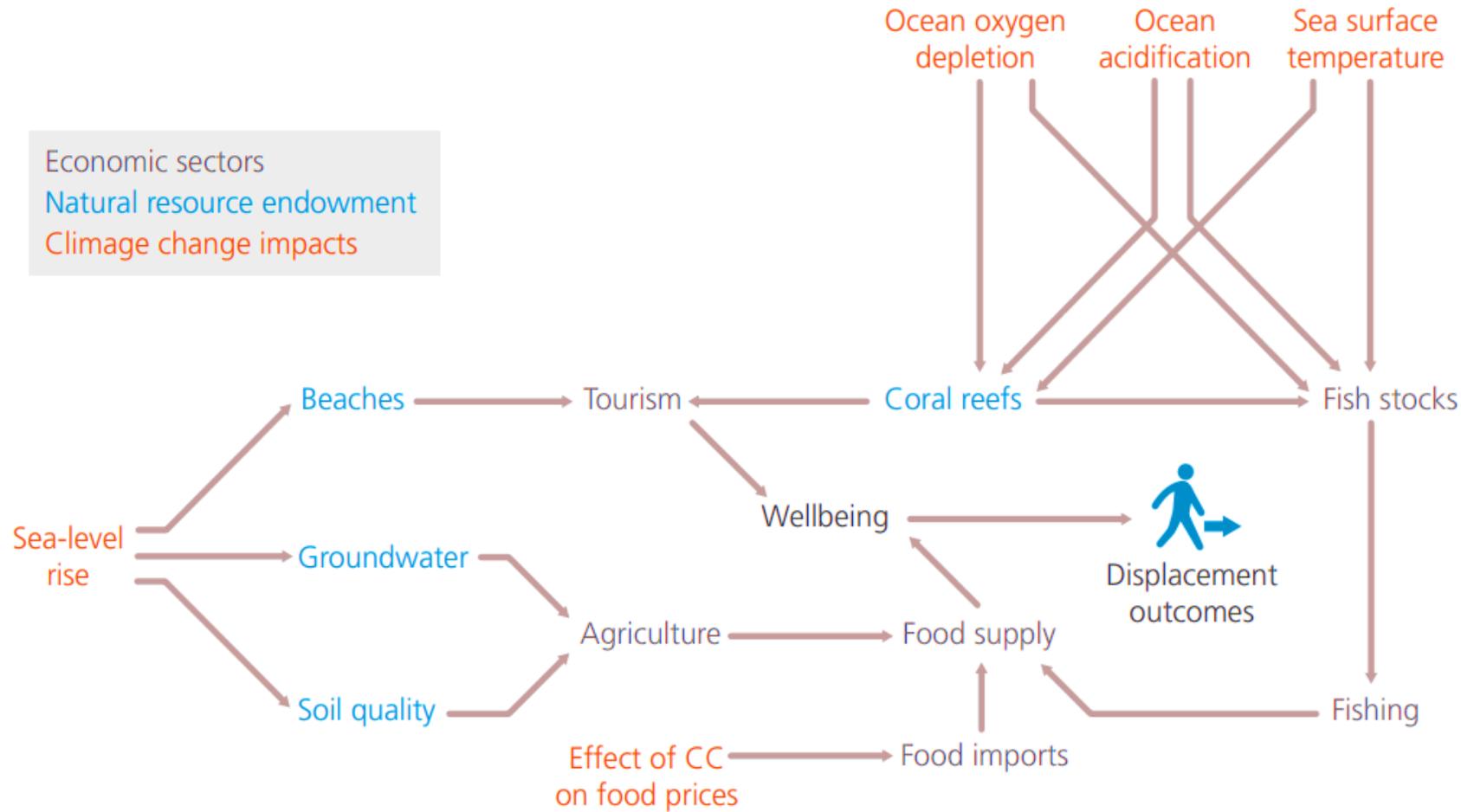
# Limits to Climate Change Adaptation



INSERT SLIDO QUESTION

Now that we know about the climate-related hazards and impacts in marine and coastal zones, which category of hazards do you think is the greater threat to people living there?

FIGURE 2: Highlighted impacts of slow-onset events on natural resources, economic sectors and displacement risk for small island developing states (SIDS)



## Combined impacts slow onset and rapid onset events eg

- Higher sea surface temps feed stronger cyclones – humanitarian disasters
- Higher sea levels mean storm surge more likely to overtop and damage facilities like fish markets/wharves/processing facilities
- Coral habitats degraded by ocean acidification more likely to bleach/die off in a marine heatwave



# OVERVIEW

## TYPES OF LOSS & DAMAGE

**Economic losses** can be understood as the loss of resources, goods and services that are commonly traded in markets.



**Non-economic losses** can be understood as the remainder of items that are not commonly traded in markets.



## Losses and damages in coastal ecosystems can be of different nature:

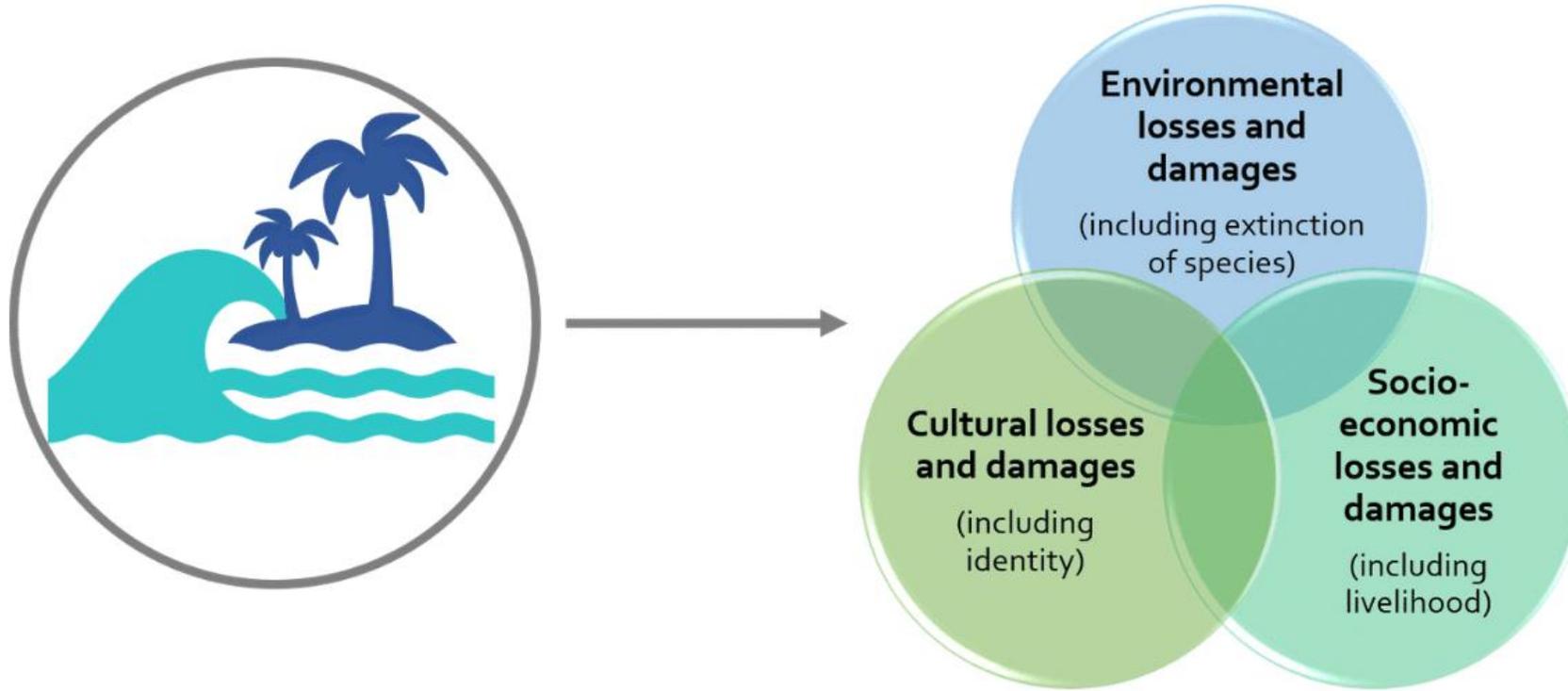


Figure 8: Climate-related losses and damages in coastal ecosystems. Source: GP L&D..



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# 10 MIN DISCUSSION

EACH TABLE IS GIVEN A DISCUSSION TOPIC/QUESTION FOCUSSED ON LOSS AND DAMAGE AND FISHERIES EXAMPLES / UNDERSTANDING IN YOUR COUNTRIES

FROM UNFCCC LOSS AND DAMAGE DIAGRAM NON ECONOMIC LOSSES, ECONOMIC LOSSES FROM SLOW ONSET OR RAPID OR COMBINED

# LOSS AND DAMAGE ASSOCIATED WITH THE IMPACTS OF CLIMATE CHANGE



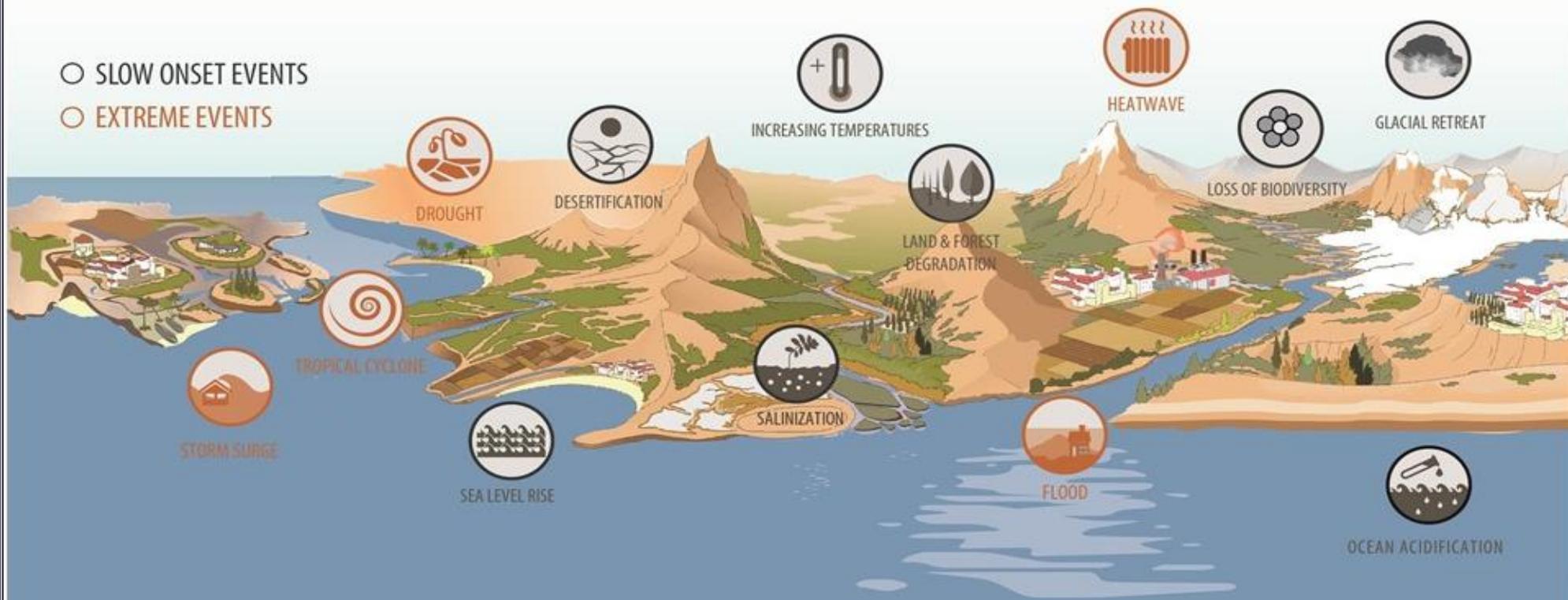
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# UNDERSTANDING WHAT IS BEING DONE ON LOSS & DAMAGE

LITTLE SPECIFIC FOR FISHERIES, OPPORTUNITIES TO ADVOCATE MORE TO BE PRESENTED BY ESPEN  
LATER.

# WARSAW INTERNATIONAL MECHANISM

The [Warsaw International Mechanism](#) for Loss and Damage (WIM) was established at COP19 in 2013.

It is the main vehicle in the UNFCCC process to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change, in a comprehensive, integrated and coherent manner.



## SANTIAGO NETWORK

The [Santiago Network](#) for averting, minimizing and addressing loss and damage associated with the adverse effects of climate change was established at [COP 25/CMA 2](#) as a result of the 2<sup>nd</sup> review part of the WIM.

Its aim is to **catalyse technical assistance** of relevant organizations, bodies, network experts, for the implementation of relevant approaches to avert, minimize and address loss and damage at the local, national and regional level, in developing countries that are particularly vulnerable to the adverse effects of climate change.

At [COP 26/CMA 3](#) Parties further strengthened the Santiago Network by:

- Agreeing on the six [functions](#) of the Santiago Network
- Deciding that the Santiago network will be provided with **funds** for implementing its functions
- Establishing a process for the further development of its **institutional arrangements**

# PARIS AGREEMENT

[Article 8](#) anchored loss and damage in the [Paris Agreement](#) which was adopted at COP 21. Areas of cooperation and facilitation to enhance understanding, action and support include:



The COP also requested the ExCom to establish a [clearing house for risk transfer](#) and a [task force on displacement](#) in [Decision 2/CP.21](#).

# EXPERT GROUPS



## EXPERT GROUPS OF EXCOM

Task Force on Displacement

Technical Expert Group on Comprehensive Risk Management

Expert group on Slow Onset Events

Expert group on Non-Economic Losses

Expert group on Action and Support



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## Where does fisheries fit?

Strategic to ensure fisheries are considered by the different expert groups

# FIVE-YEAR ROLLING WORKPLAN

## STRATEGIC OUTLOOK

The following strategic outlook informed the development of the workplan activities:

- 1 Loss and damage being incorporated into global and national policy and practice;
- 2 A focus on vulnerable people, communities, developing countries and ecosystems;
- 3 Being better equipped to avert, minimize and address loss and damage;
- 4 Effective systems for delivering effective action and support.

# FIVE-YEAR ROLLING WORKPLAN

## CROSS-CUTTING APPROACH

The workplan takes into account, in a cross-cutting manner:

-  Actions to complement, draw upon the work of and involve other bodies under and outside the Convention;
-  Particularly vulnerable developing countries; segments of the population that are already vulnerable owing to geography, socioeconomic status, livelihood, gender, age, indigenous or minority status or disability; and the ecosystems they depend on;
-  The role of sustainable development, including policy and regulatory enabling environments;
-  Events that may involve irreversible and permanent loss and damage.

# EXCOM'S FIVE-YEAR ROLLING WORKPLAN (2018 onwards)

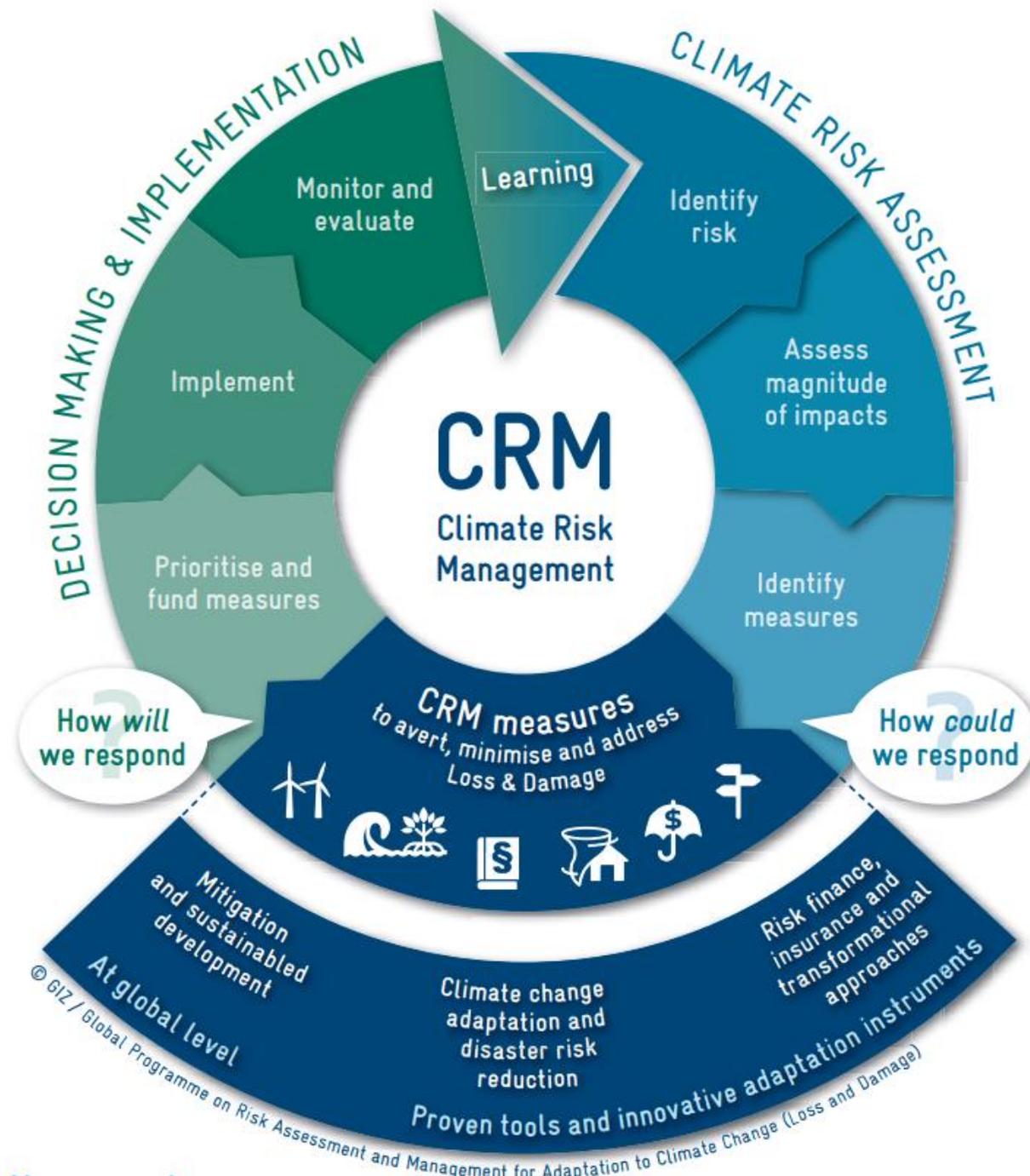
COP 22 (2016) approved the framework for the five-year rolling workplan of the ExCom, building upon the results of the initial two-year workplan.

[Decision 3/CP.22](#), para. 3



The [five-year rolling workplan](#) aims to enhance cooperation and facilitation in relation to the 5 strategic workstreams, and contains associated activities, potential modalities and expected results.





## Comprehensive Risk Management Approaches CRM

- FRAMEWORKS AND CONCEPTUALISING COMING OUT OF THE WORK PLAN, see yesterday presentation by Marina for more detail

## International level

Loss and Damage finance

Knowledge development and sharing

Oversight and monitoring

Capacity building and advice giving

International collaboration within and outside UNFCCC

### Warsaw International Mechanism – for particularly vulnerable countries

Establish a Loss and Damage finance facility

Scale up existing efforts and improve dissemination

Work with global stocktake and transparency framework

Replicate Climate Technology Centre and Network

International convenor



## Regional level

Risk pooling

Cooperation and coordination e.g. on migration and displacement

Knowledge sharing



## National level



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# REGIONAL & NATIONAL ACTIONS



# *International Loss & Damage Mechanism*

## *is a Necessity for SIDS*



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- Dangerous Impacts e.g. extreme weather events, sea level rise, changing precipitation patterns, coral bleaching, coastal erosion already occurring
- Evidence of accelerating impacts
- High dependence on sectors directly impacted by climate change e.g. tourism, agriculture and fisheries
- SIDS have contributed least to climate change but are among first to face its impacts
- An increasing share of national budgets devoted to addressing adaptation as well as loss and damage from climate impacts that SIDS did not cause
- Therefore it is essential to have an equitable outcome for the most vulnerable – redress, rehabilitation, climate justice
- Rather than reliance on ad hoc relief, AOSIS requires predictability of finance and internationally agreed approaches to manage these risks and address loss and damage

*No island left behind*



# Beyond Adaptation



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- Evidence base

- Australia "recent findings have indicated that the climate is changing fast than projected. Under a high emissions scenario, a sea level rise of up to a meter or more is plausible."

<http://www.climatechange.gov.au/government/initiatives/australias-coasts-and-climate-change/understanding-the-risk.aspx>

2009 UN Secretary General's report -potential security implications of climate change, discussion on a variety of security issues including statelessness.

Elaborated more recently May 24th by Janos Pasztor in the UN SG, who noted that low lying nations may become uninhabitable in a matter decades, and specifically picked up on the need to address loss and damage.

[http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file\\_id=5842](http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=5842)

- In light of the challenges faced by SIDS, these highlight that despite efforts towards early adaptation, unavoidable loss and damage will occur as a result of climate change.

- **Rather than reliance on ad hoc relief, AOSIS requires predictability and internationally agreed approaches to manage these risks and address loss and damage.**

*No island left behind*

# SIDS Challenges



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- **Limited Insurance coverage** withdrawn by private sector as frequency and intensity of extreme events increase, premium increases beyond reach
- **Size matters** – Small markets a barrier to private investment
- **Under-financing** – gap between what is needed, what will be needed in the future, and what is currently being made available.
- Insufficient financing and investment for **concrete adaptation and mitigation projects and activities** – *Many plans little support.*
- Absence of tools to **measure the true economic costs** associated with adaptation and **address the loss and damage from the unavoidable consequences of climate change,**
- High vulnerability to **external economic shocks** – e.g. food and energy crises and natural disasters which can immobilize an entire State
- **Limited access to domestic resources** and **limited capacity** in SIDS
- Climate change represents an **additional** challenge to the development aspirations of SIDS





## Regional level

Risk pooling

Cooperation and coordination  
e.g. on migration and displacement

Knowledge sharing



## National level

Integration of  
climate risk and  
information into  
policymaking

National  
climate relief  
funds

Risk transfer  
mechanisms

Internal  
relocation  
arrangements

Mainstream  
Loss and  
Damage across  
ministries

Social  
protection  
programmes  
and safety nets



## Local level

Capacity building

Disaster  
preparedness

Microfinance

Participatory  
governance



# NEED TO ELABORATE AND CLUSTER BY EXCOM 5 AREAS WORK PLAN MAYBE?

- PCRAFI
- PCRIC
- MIGRATION
- FINANCE
- RESEARCH NON ECONOMIC LOSSES IN COMMUNITY, CULTURE,
- NDCS & NAPS
- GCF
- GEF

# Resources/More info

- Loss and damage online guide UNFCCC WIM
- <https://unfccc.int/topics/adaptation-and-resilience/workstreams/approaches-to-address-loss-and-damage-associated-with-climate-change-impacts-in-developing-countries>
- Fiji Clearinghouse for Risk Transfer
  - <http://unfccc-clearinghouse.org/>
- Technologies for L& D Coasts
  - <https://unfccc.int/topics/adaptation-and-resilience/workstreams/loss-and-damage-ld/policy-technologies-for-averting-minimizing-and-addressing-loss-and-damage-in-coastal-zones>

## POLICY BRIEF

### Technologies for Averting, Minimizing and Addressing Loss and Damage in Coastal Zones





## SUMMARY

LOSS AND DAMAGE DIFFERS FROM ADAPTATION IN THAT

It occurs where adaptation has not been fully implemented or where adaptation limits are reached – because actions are unaffordable, not physically or technically possible, socially difficult or simply not sufficient to prevent some harm to humans, the environment and assets.

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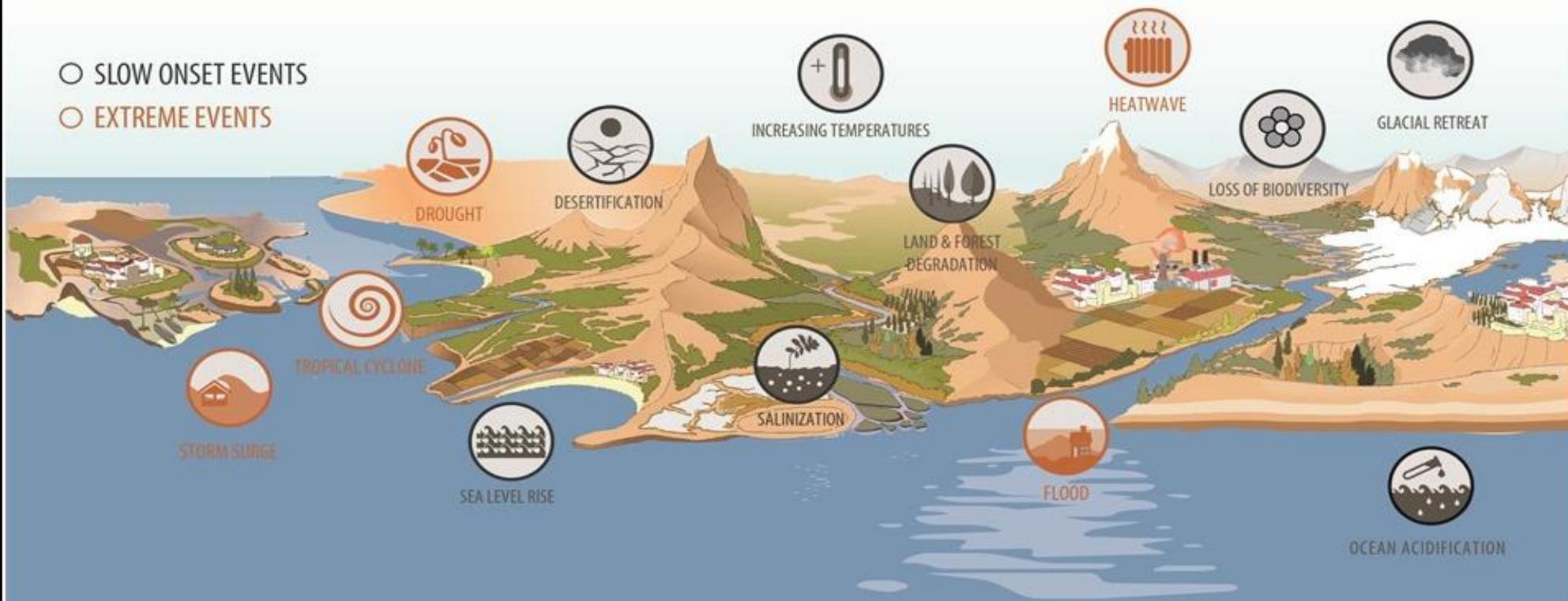
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