

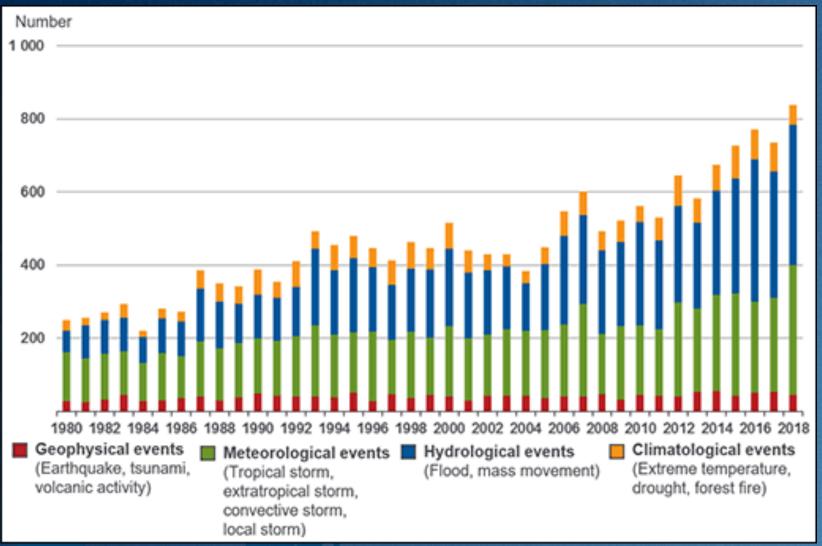
# FOOD SECRUITY AND BIODIVERSITY THROUGH THE LENS OF DRR, CCA AND ECOSYSTEM BASED ADAPTATION

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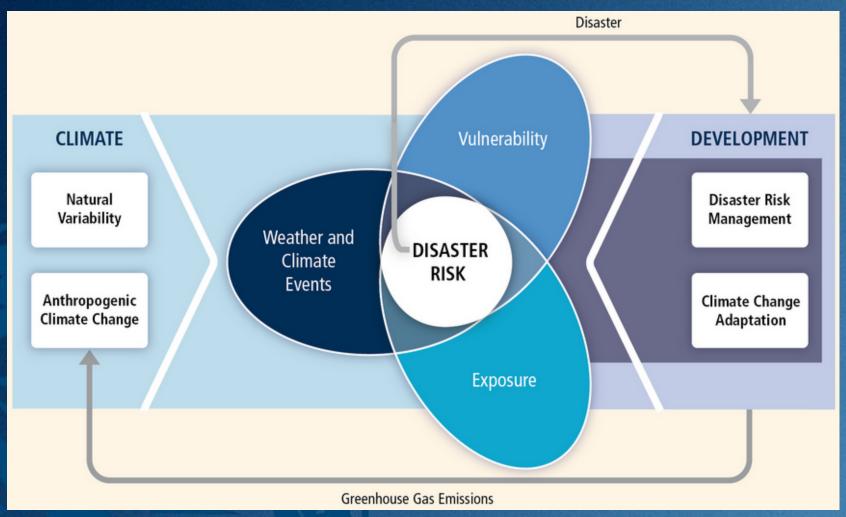
It is a policy objective that aims to prevent new disaster risk, to reduce existing disaster risk and to manage residual risk, all of which contributes to strengthening resilience (UNISDR 2015)

# Climate Change Adaptation (CCA)

The process of adjustment to actual or expected climate change and its effects. In human systems, adaptation seeks to moderate or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (UNISDR 2015).



# How climate change is influencing disaster risks



The interlinkages between climate change and disaster risk Source: IPCC 2012

# Synergies between DRR and CCA



DRR

COMMONALITIES

CCA

#### **Geo-physical hazards:**

- Earthquakes
- Tsunamis
- Landslides
- Volcanic eruptions

#### Risk assessment

Based on hard historical evidence as part of disaster risk assessment

### **High levels of certainty** (in disaster planning)

Average to low political commitment

Long history (over 1,000 years)

#### Climatic hazards:

Storms / floods / landslides / temperature extremes / droughts / fires / rising sea levels / avalanches / climate change following volcanic eruptions

#### Impacts of climate hazards:

Population shifts / international conflict / impacts on health services, agriculture and fisheries, economies on human settlements / institutional adaptation

Joint DRM & CCA programmes to create resilience

# Non-disaster aspects of CCA:

(including the positive benefits from climate change)

#### Risk assessment

Based on climate risk assessment and climate models

#### Wider aspects of adapation:

Political / social / economic / environmental

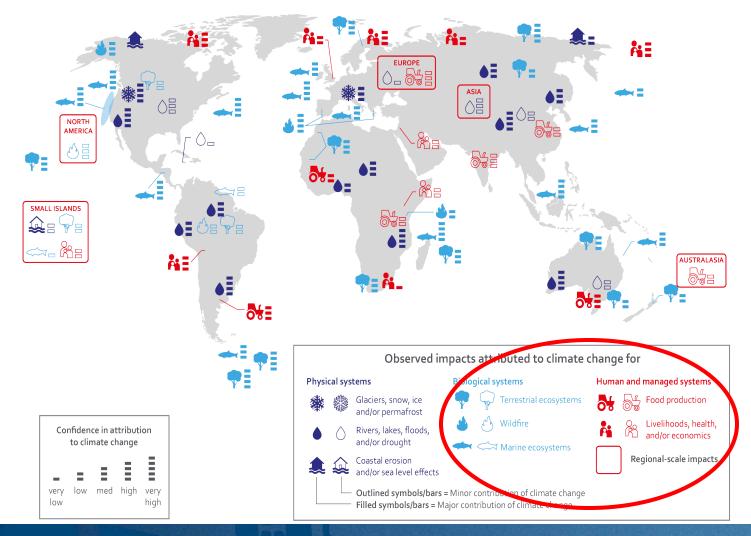
### Low levels of certainty (in climate change)

**High political commitment** 

Short history (since about 1985)

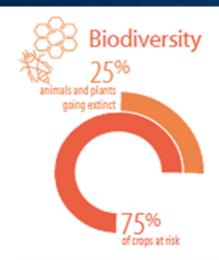






# **Human Survival and Global Commons**





25% of animals and plants are threatened with extinction (nearly 1 million species), many in the coming decades

75% of our crops are at risk due to loss of pollinators

# Atmosphere



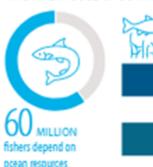
Air pollution kills approximately 8 million people annually

8 MILLION people die annually

Net-zero emissions must be reached in 2050 to keep global warming limited to 1.5°C

#### Cceans

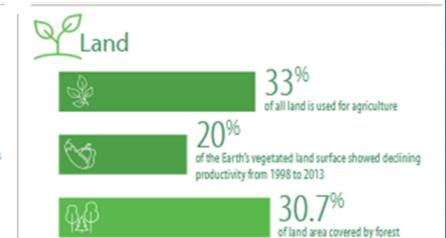
The livelihoods of 60 million fishers depend on ocean resources





33.1% fish stocks are fished at unsustainable levels





Source: GSDR 2019

# Ecosystem based Disaster Risk Reduction and Climate Change Adaptation



Natural resources/ Environmental/ Conservation communities Disasters/
Development/
Humanitarian communities

Ecosystem-based Adaptation

Ecosystem-based DRA

Focus: reduction of long-term climate change induced effects

- Food security
- Drought resistant crops
- Water management
- Invasive species management

- Agroforestry
- Mangrove or wetland restoration
- Forest management
- Sustainable agriculture
- Sustainable land management

COMMON MEASURES

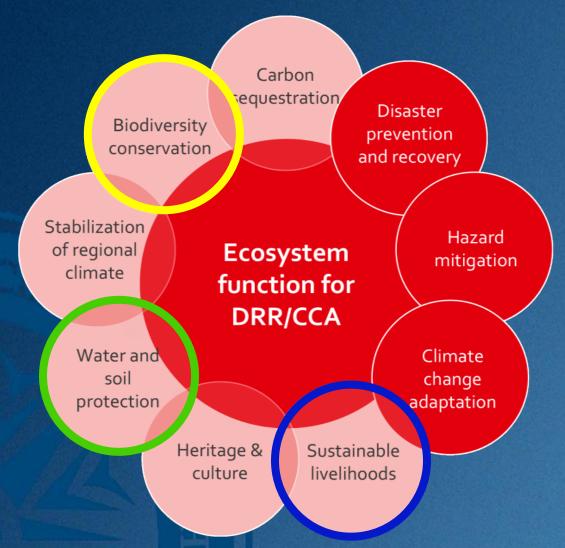
Focus: reduction of immediate risk from hazard events

- Early warning systems
- Evacuation plans
- Disaster management
- Hazard / risk mapping

Source: Lange et. al., 2014







Source: The Partnership for Environment and Disaster Risk Reduction (PEDRR)



