

Climate Change 2022

# Impacts, Adaptation and Vulnerability

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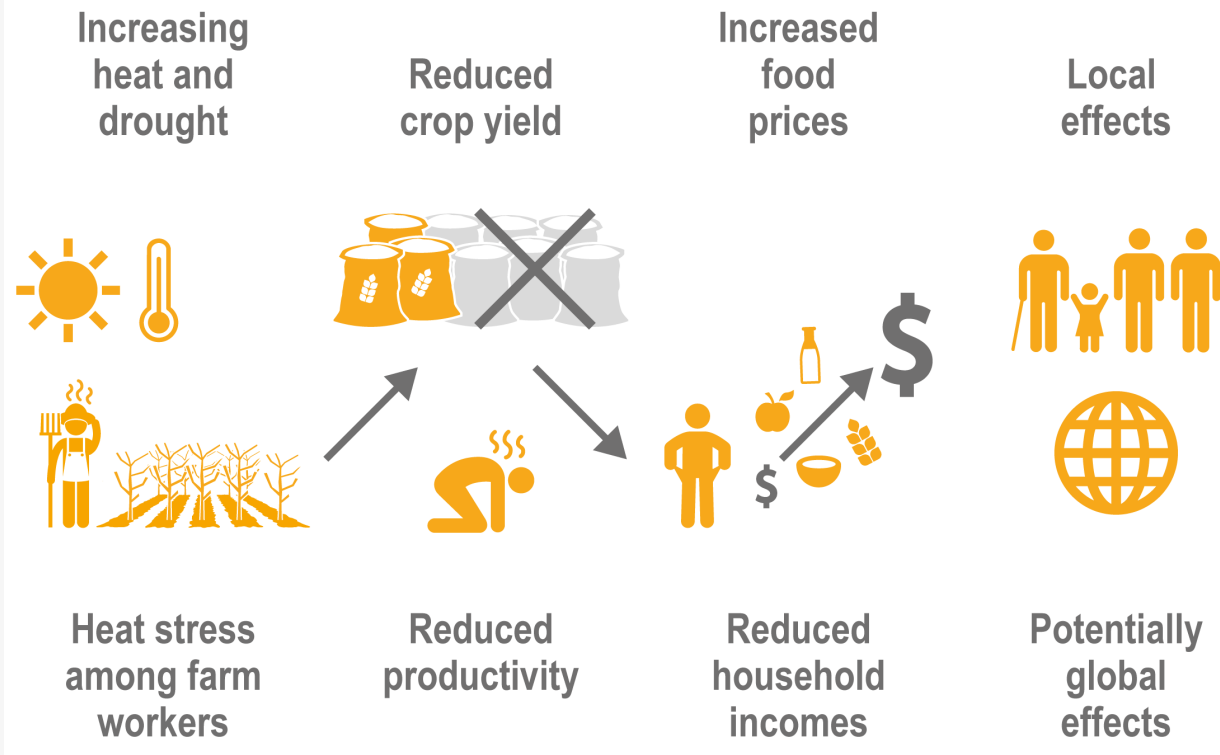
## Current warming of 1.1 °C has already caused dangerous and widespread disruption in nature and the lives of people

- The increased frequency, intensity and duration of extremes have driven mass mortalities (e.g. tree and coral loss) and hundreds of local extinctions.
- Losses and damages to ecosystems as well as peoples' lives and livelihoods have increased due to human-induced intensification of tropical cyclones, sea level rise and heavy rainfall.
- About half of plants, animals and marine species studied globally are moving poleward or, on land, to higher altitudes to find conditions they can survive in.
- Millions of people have been pushed into acute food and water shortages, particularly in Africa, Asia, Central and South America, and Small Islands..
- Higher temperatures, increased rainfall and flooding are resulting in increases in disease.
- Livelihoods have been affected by reduced crop yields, impacts on health and food security



## Simultaneous or cascading events compound risks

- Multiple extreme events that compound the risks are more difficult to manage



## Beyond 2040 the threats from climate change could be many times higher than we experience today.



### Heat stress

Exposure to heat waves will continue to increase with additional warming.



### Biodiversity loss

9% of species assessed are likely to face a high risk of extinction at 1.5°C



### Food security

Climate change will increasingly undermine food security.



### Health risk

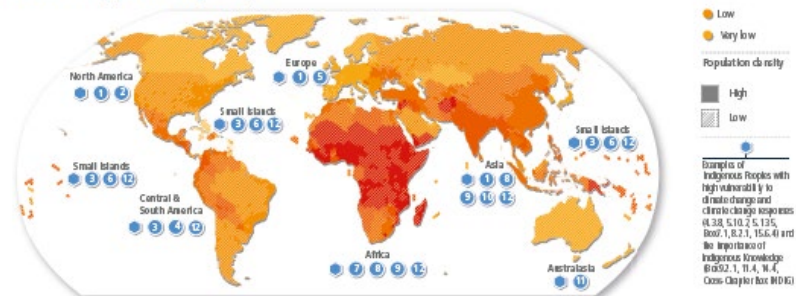
Disease risks are projected to increase unless action is taken. An additional 2.25 billion people will be at risk of Dengue under 2.6°C of global warming by 2080.

## Vulnerability:

- Global hotspots of high human vulnerability are found particularly in West-, Central- and East Africa, South Asia, Central and South America, Small Island Developing States and the Arctic
- Vulnerability is higher in locations with poverty, governance challenges and limited access to basic services and resources, violent conflict and high levels of climate-sensitive livelihoods (e.g., smallholder farmers, pastoralists, fishing communities).
- In regions where this occurs, deaths from floods, droughts and storms were 15 times higher than in more resilient countries in the last decade, reflecting climate injustice.
- Present development challenges causing high vulnerability are influenced by historical and ongoing patterns of inequity such as colonialism, especially for many Indigenous Peoples and local communities.

Observed human vulnerability differs between and within countries and strongly determines how climate hazards impact people and society

Map of observed human vulnerability based on two comprehensive global indicator systems using national data plus examples of selected local resilience populations and Indigenous Peoples



“ There are increasing gaps between adaptation action taken and what’s needed.

These gaps are largest among lower income populations.

They are expected to grow.

## Water management for food production



### Options on farms:

- Irrigation
- Rainwater storage, water-saving tech
- Moisture conservation in soils

*Economic and ecological benefits; reduced vulnerability*

### Wider options:

- Securing drinking water
- Flood and drought risk management
- Working with nature, land-use planning

Effectiveness declines with increased warming



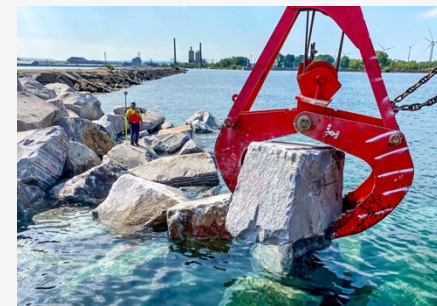
## There are limits to adaptation

- Even effective adaptation cannot prevent all losses and damages
- Above 1.5°C some natural solutions may no longer work.
- Above 1.5°C, lack of fresh water could mean that people living on small islands and those dependent on glaciers and snowmelt can no longer adapt.
- By 2°C it will be challenging to farm multiple staple crops in many current growing areas.



## Financial constraints

- Current global financial flows are insufficient
- Most finance targets emissions reductions rather than adaptation
- Climate impacts can slow down economic growth



# Climate Resilient Development in action



# THANK YOU

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