

# Atmosphere and Land System Level Changes

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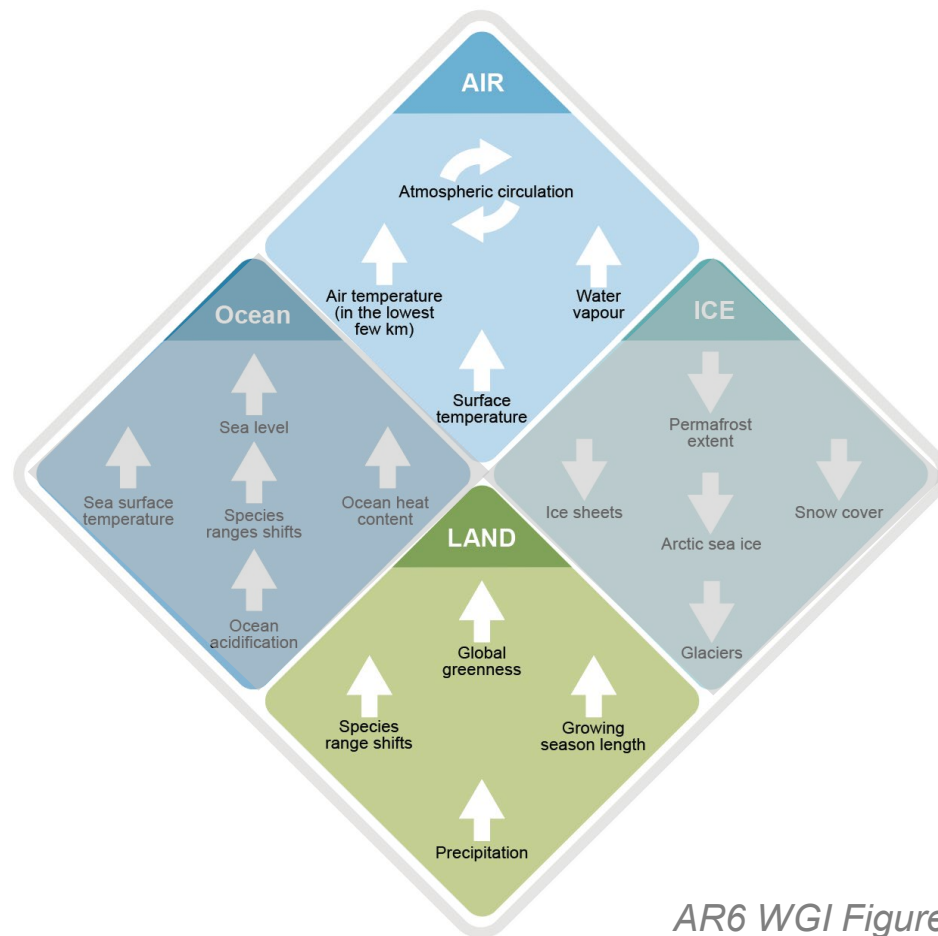
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## Key point 1

The **observed changes** in climate system including **atmosphere** and **land** are **widespread, rapid, and intensifying**.

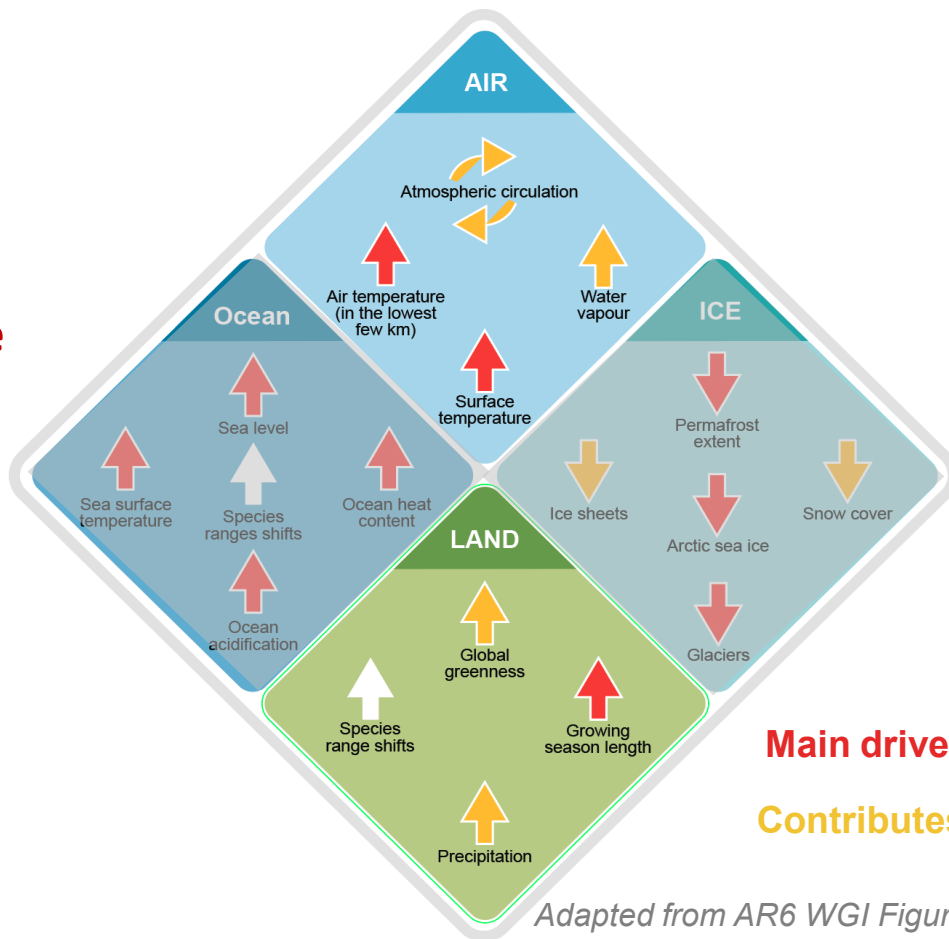


## Key point 1

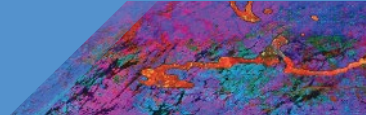
**Widespread changes** are attributed to **human influence**.

This has led to **widespread adverse impacts** and **related losses and damages** to **nature and people** (WGII).

**Vulnerable communities** who have historically contributed the least to current climate change are **disproportionately affected** (WGII).



Adapted from AR6 WGI Figure FAQ2.2



## Key point 2

Many changes in the climate system, including atmosphere and land, become **larger in direct relation to increasing global warming.**

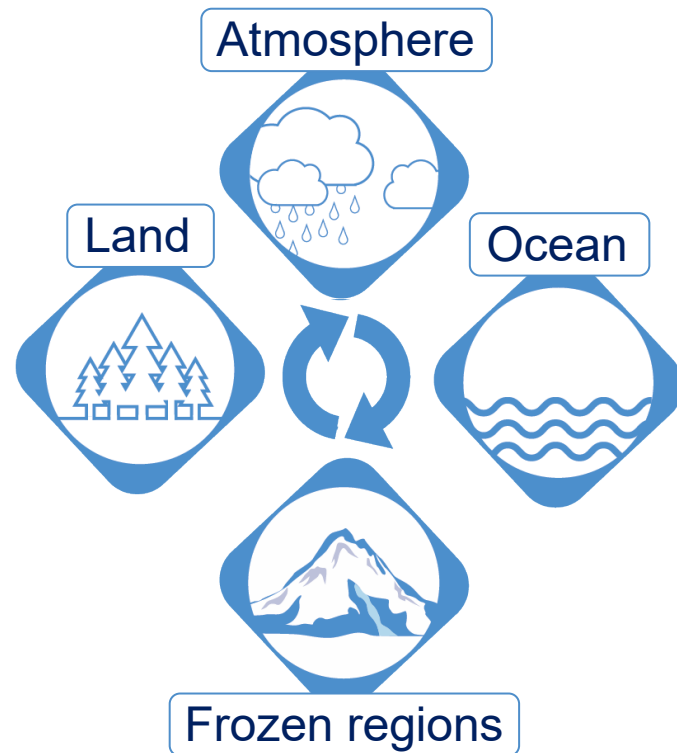
**Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming (WGII).**

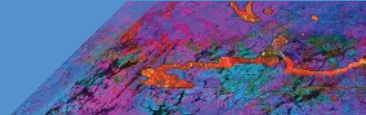
## Key point 2

Continued global warming is projected to further **intensify the global water cycle**, including its **variability**, **global monsoon precipitation** and the **severity of wet and dry** events.

**Surface water flows** are projected to become more **variable over most land regions** within seasons and from year to year.

## Global Water Cycle





## Key point 3

With further warming, every region is projected to increasingly experience **concurrent and multiple changes** in climate system.

With further warming, climate change risks will become **increasingly complex and more difficult to manage** (WGII).

At **2°C global warming and above**, the magnitude of changes increases for droughts, heavy precipitation and associated flooding events, and for mean precipitation compared to those at **1.5°C**

## NUMBER OF REGIONS

55 45 35 25 15 5 5 15 25 35 45 55

- Mean precipitation
- River flood
- Heavy precipitation and pluvial flood
- Landslide
- Aridity
- Hydrological drought
- Agricultural and ecological drought
- Fire weather

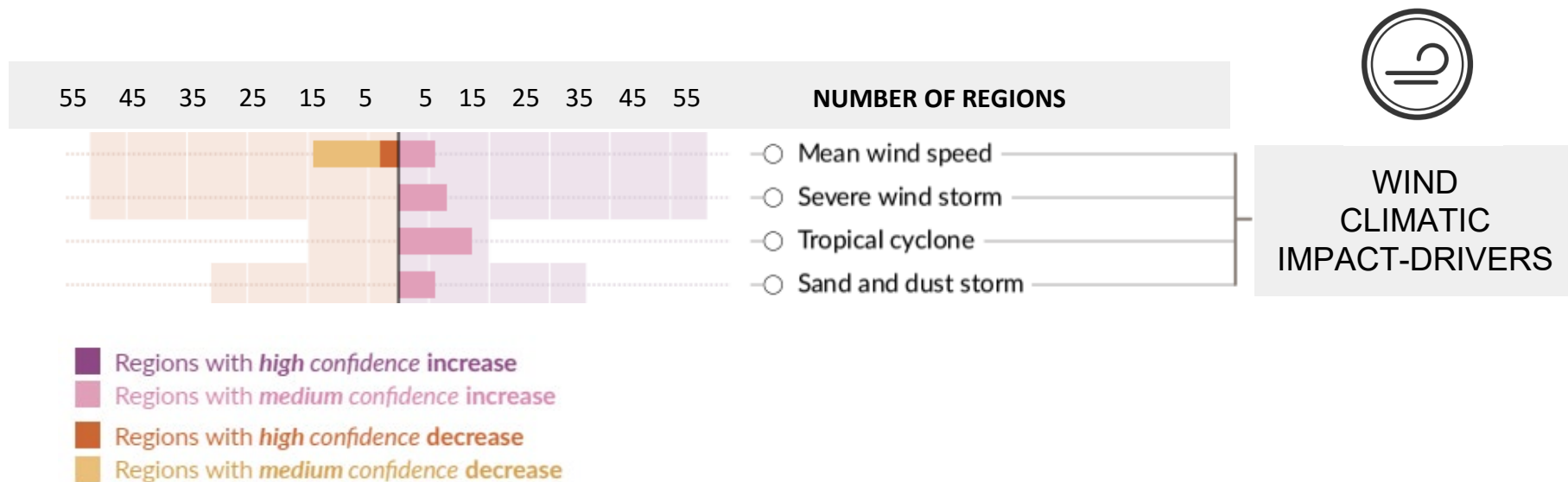


WET & DRY  
CLIMATIC  
IMPACT-DRIVERS

by 2050 compared to 1960-2014 (2°C global warming)

- Regions with **high confidence increase**
- Regions with **medium confidence increase**
- Regions with **high confidence decrease**
- Regions with **medium confidence decrease**

Region-specific changes include **intensification of tropical cyclones** and/or extratropical storms



by 2050 compared to 1960-2014 (2°C global warming)