Regional fact sheet – Central and South America

Common regional changes

- Mean temperatures have very likely increased in all sub-regions and will continue to increase at rates greater than the global average (high confidence).

- Mean precipitation is projected to change, with increases in North-West South America (NWS) and South-East South America (SES) (high confidence) and decreases in North-East South America (NES) and South-West South America (SWS) (medium confidence). This is consistent among model projections by mid- and end of the 21st century for RCP4.5 and RCP8.5 scenarios.

- Compared to global mean sea level, over the last three decades, relative sea level has increased at a higher rate than global mean level in the South Atlantic and the subtropical North Atlantic, and at a lower rate in the East Pacific.

- Relative sea level rise is extremely likely to continue in the oceans around Central and South America, contributing to increased coastal flooding in low-lying areas (high confidence) and shoreline retreat along most sandy coasts (high confidence).

- Marine heatwaves are also projected to increase around the region over the 21st century (high confidence).

Projected changes in annual maximum temperature (TXx), annual total precipitation, annual maximum 5-day precipitation (RX5day) and annual consecutive dry days (CDD) at 1.5°C, 2°C, and 4°C (in rows) global warming relative to 1850–1900.

Results are based on simulations from the CMIP6 multi-model ensemble (32 global climate models) using the SSP5-8.5 scenario to compute the warming levels.

Results expanded in the Interactive Atlas (active links)

Links for further information:
TS sections: TS.4.3.1, TS.4.3.2, Box TS.6, Box TS.13, Figure TS.21a, Figure TS.24. Chapters: 8.3, 8.4, 8.6, 10.4, 11.3, 11.4, 11.9, Tables 11.5, 11.13, and 11.14, 12.4, Atlas.7.1, Atlas.7.2
### Southern Central America (SCA)
- Aridity and agricultural and ecological drought are increasing (*medium confidence*). Fire weather is projected to increase (*medium confidence*).

### Northern South America (NSA)
- The intensity and frequency of extreme precipitation and pluvial floods are projected to increase (*medium confidence*) for 2°C of global warming level and above.
  - There is *high confidence* in a dominant increase in the number of dry days and drought frequency.

### North-Western South America (NWS)
- Decreases in snow and ice and increases in pluvial/river flooding are projected with *high confidence*.
- Glacier volume loss and permafrost thawing will likely continue in the Andes Cordillera under all greenhouse emissions scenarios in this report, causing important reductions in river flow and potentially high-magnitude glacial lake outburst floods.

### North-Eastern South America (NES)
- The intensity and frequency of extreme precipitation and pluvial floods are projected to increase (*medium confidence*) for 2°C of global warming level and above.
  - There is *high confidence* in a dominant increase in drought duration.

### South-Western South America (SWS)
- The total land area subject to increasing drought frequency and severity will expand (*high confidence*). Projections of fire weather indices indicate an increased risk in the region (*high confidence*).
- Increases in one or more aspects between drought, aridity, and fire weather (*high confidence*) will potentially impact a wide range of sectors (including agriculture, forestry, health, and ecosystems), which are assessed in the IPCC Working Group II report.
- Glacier volume loss and permafrost thawing will likely continue in the Andes Cordillera under all greenhouse gas emissions scenarios in this report, causing important reductions in river flow and potentially high-magnitude glacial lake outburst floods.

### South-Eastern South America (SES)
- Increases in mean and extreme precipitation are observed since the 1960s (*high confidence*). Drivers of this change include internal variability as well as external forcing, like increases in greenhouse gases and aerosols and ozone depletion.
- The intensity and frequency of extreme precipitation and pluvial floods are projected to increase (*medium confidence*) for 2°C of global warming level and above.

### Southern South America (SSA)
- The intensity and frequency of extreme precipitation and pluvial floods is projected to increase (*medium confidence*) for 2°C of global warming level and above.
- The region has projections of increased agricultural and ecological drought for the mid-21st century, for 2°C of global warming level and above (*high confidence*).

### South American Monsoon (SAM)
- There is *low confidence* in projected precipitation changes, but *high confidence* that the South American monsoon will be delayed during the 21st century.
- There are projections of increased agricultural and ecological drought for the mid-21st century, for 2°C of global warming level and above (*high confidence*).
- Increases in one or more aspects between drought, aridity, and fire weather (*high confidence*) will affect a wide range of sectors, including agriculture, forestry, health, and ecosystems.
- The intensity and frequency of extreme precipitation and pluvial floods are projected to increase (*medium confidence*) for 2°C of global warming level and above.
- Over the Amazon, the number of days per year with maximum temperatures exceeding 35°C would increase by more than 150 days by the end of the 21st century in the SSP5-8.5 scenario, while it is expected to increase by less than 60 days under the SSP1-2.6 scenario (*high confidence*).