



THE OFFICE FOR CLIMATE EDUCATION: AN INTERNATIONAL INITIATIVE

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EUROPEAN GEOSCIENCES UNION GENERAL ASSEMBLY – VIENNA, 8 APRIL 2019



ARTICLE 12 OF THE PARIS AGREEMENT

“Parties shall cooperate in taking measures, as appropriate, **to enhance climate change education**, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.”

INTERACADEMY PARTNERSHIP FOR SCIENCE (IAP)

“Climate education must become **a prime component of science education** at all educational levels.”

IPCC SPECIAL REPORT „GLOBAL WARMING OF 1.5°C“

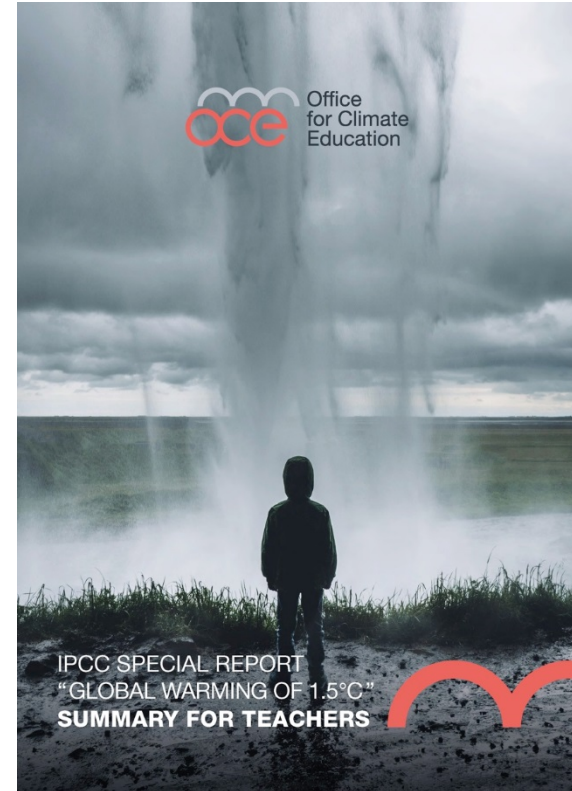
Summary for Policymakers



Source: IPCC 2018



Summary for Teachers



Intensity of heat waves
 At +1.5°C: maximum temperature higher by 3°C
 At +2°C: maximum temperature higher by 4°C

Heavy rains
 Higher risk at +2°C than at +1.5°C
 in high latitudes of the Northern hemisphere,
 East Asia and North America

Biodiversity loss
 Loss of half of the natural habitat for:
 - 4% of vertebrates at +1.5°C
 vs. 8% at +2°C
 - 6% of insects at +1.5°C
 vs. 18% at +2°C
 - 8% of plants at +1.5°C
 vs. 16% at +2°C

Cereal crops
 Greater decline in yield
 at +2°C, especially in
 Sub-Saharan Africa,
 Southeast Asia and
 Latin America

Corals
 Loss of coral reefs:
 - up to 70-90% at +1.5°C
 - up to 99% at +2°C

Sea level rise
 At +1.5°C:
 26 cm to 77 cm higher than today by the year 2100
 At +2°C:
 10 cm higher than at +1.5°C
 an additional 10 million people will be exposed

Fisheries
 Annual fish catch reduced by:
 - 1.5 million tonnes at +1.5°C
 - more than 3 million tonnes at +2°C

Arctic sea ice
 Free of ice:
 - one incidence per century at +1.5°C
 - several incidences per decade at +2°C

SUMMARY FOR TEACHERS – FEATURES

SCHOOL ACTIVITY

TASK Compare the global warming potentials (GWP) of methane, nitrous oxide and hydrofluorocarbons with the GWP of CO₂.
 See, for example, table 8.7 in the IPCC report AR5, chapter 8, p. 712:
http://www.climatechange2013.org/images/report/WG1AR5_Chapter08_FINAL.pdf

TASK Explain what is meant by global warming.

QUESTIONS CO₂ is emitted when burning fossil fuels. How can we reduce the emission of CO₂? How can we reduce the emission of other greenhouse gases like methane (CH₄) or nitrous oxide (N₂O)?
 Keywords: biogas production, reforestation, less fertilisers in agriculture, renewable energy, energy saving.

TASK Explain the connection between hydrofluorocarbons, the ozone layer and global warming.

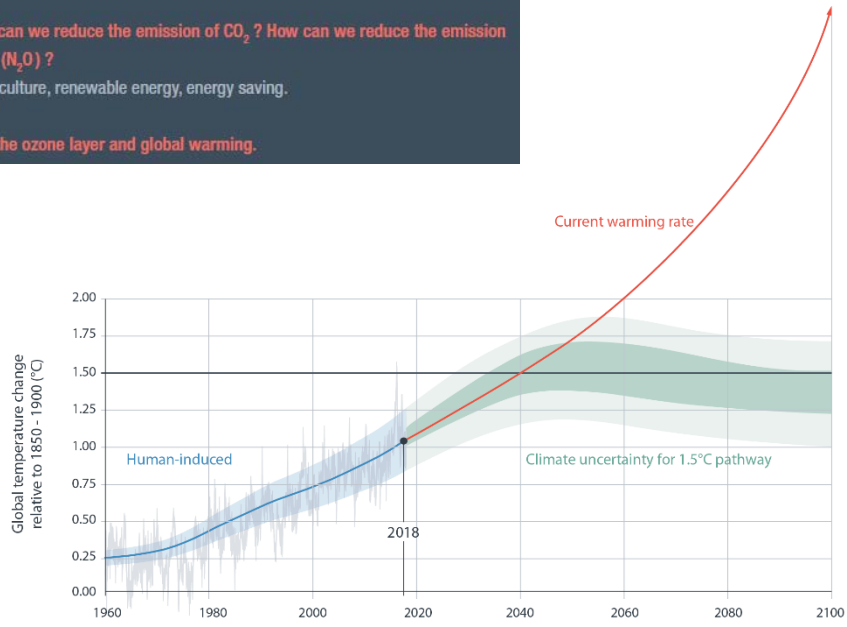
TO SUM UP

Human activities have caused a 1.0°C rise in the global temperature over the past 150 years.

Global warming is likely to reach 1.5°C between 2030 and 2052, if warming continues at the current rate.

Our CO₂ emissions will remain in the atmosphere for centuries to millennia, maintaining the warmer temperatures long after these emissions were released.

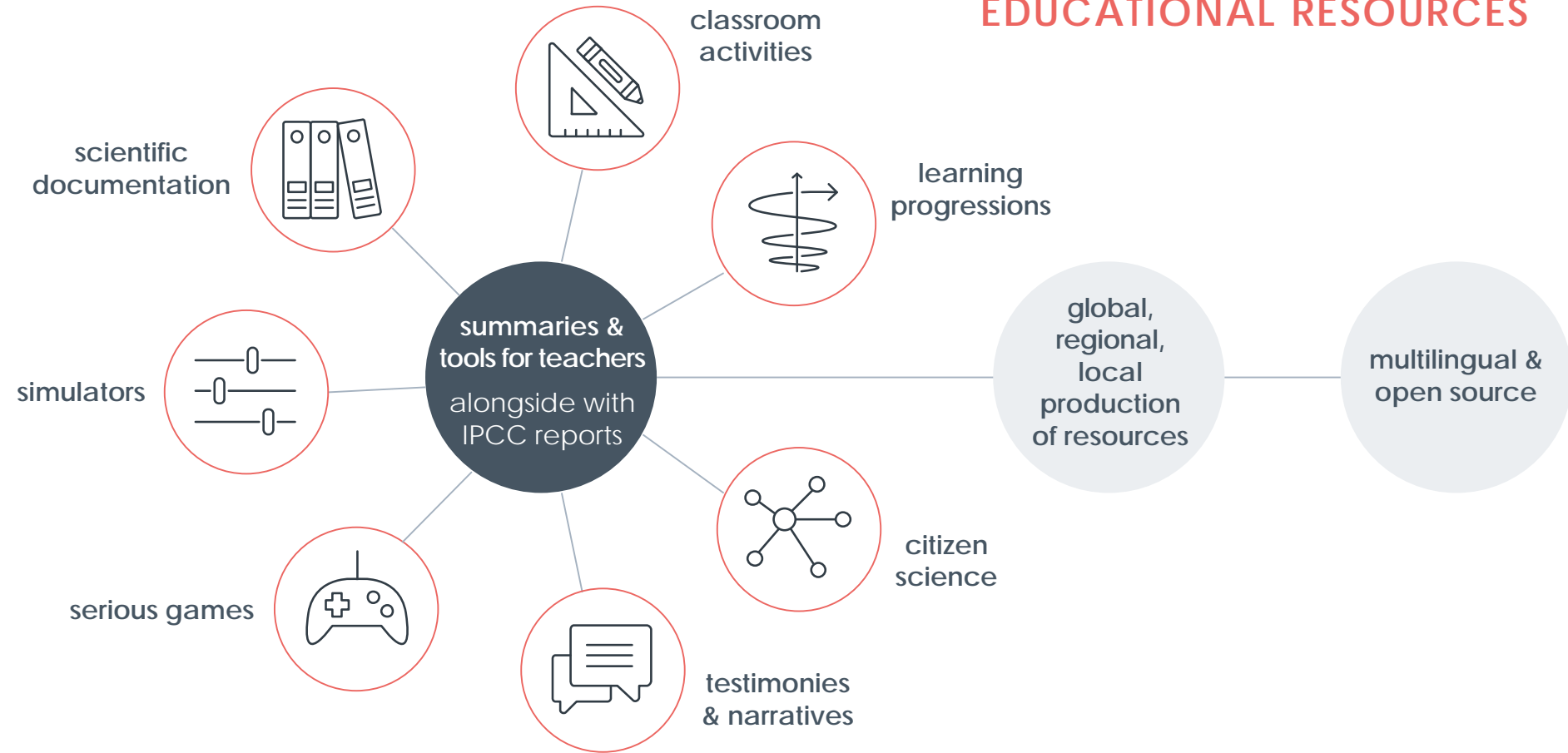
Climate change manifests itself on different time-scales affecting both short-term extreme weather events, as well as causing gradual, long-term changes, including sea level rise, melting of glaciers and ice sheets, and changes in biodiversity.



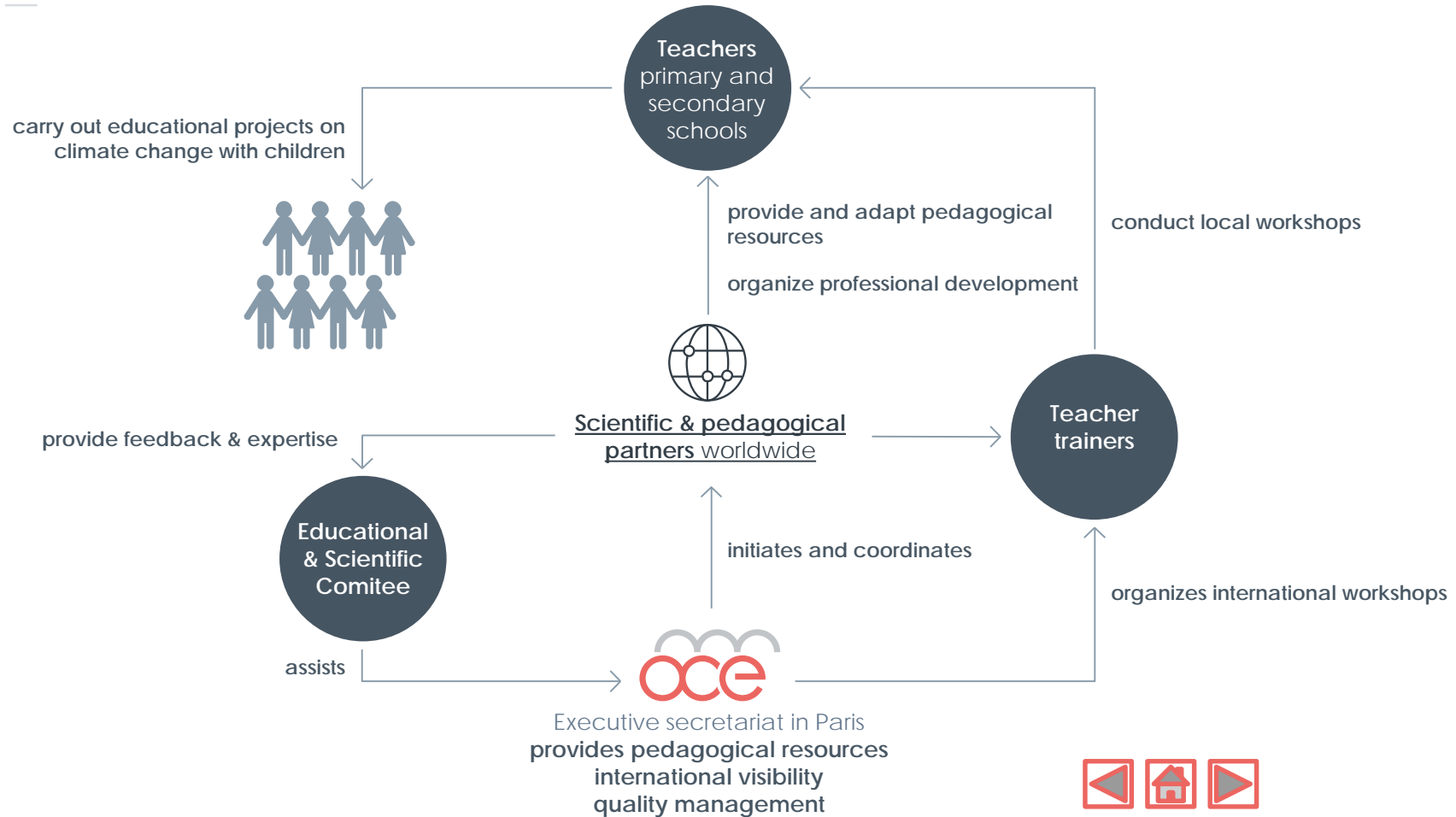
Source: IPCC 2018, adapted



EDUCATIONAL RESOURCES



THE OFFICE FOR CLIMATE EDUCATION AND ITS NETWORK

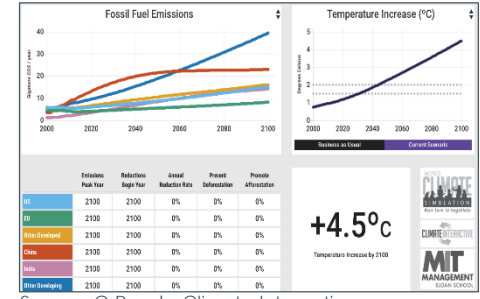
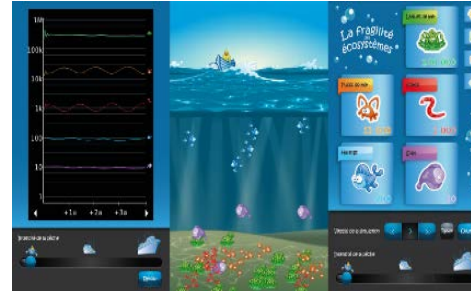
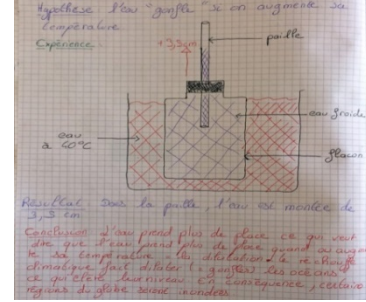


PARTNERS



WHAT WE WANT TO PROMOTE

- Understand complex systems – using experiments, models, simulations, serious games, testimonies, debates, ...
- Critical thinking
- Develop empathy
- Focus on solutions
- Think the future in a changing world
- Act in school & engage in the community



Source: C-Roads, Climate Interactive

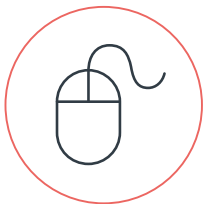


TEACHERS' PROFESSIONAL DEVELOPMENT



Local teacher training sessions

- By local partners



Distant training sessions

- By the OCE + local partners



International events

- COP side events
- Symposia
- Summer schools



ACTIVITIES COMING UP

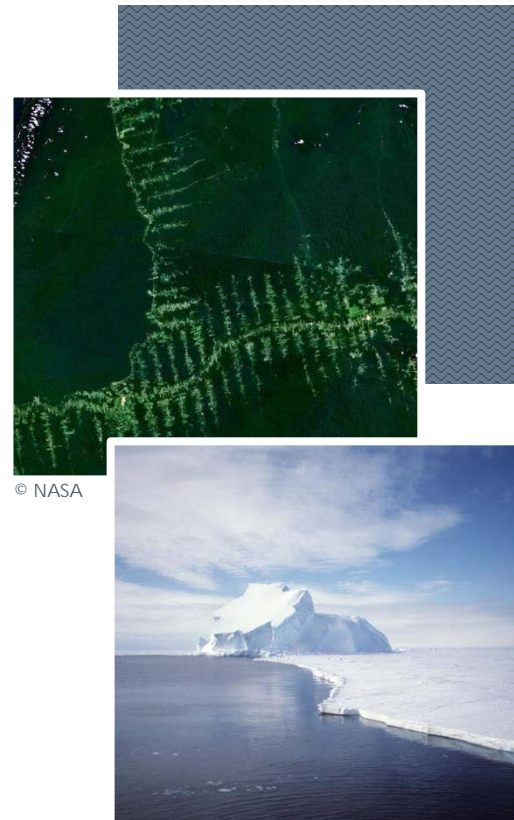
- **IPCC special reports 2019**

- Oceans & cryosphere
- Land use, land use change and forestry

- **Alongside each IPCC report, the OCE will produce**

- A summary for teachers
- Lesson plans (turnkey inquiry-based teaching modules)
- Videos
- Multimedia animations
- “Low tech” serious games

- **Free, open-source, multilingual**

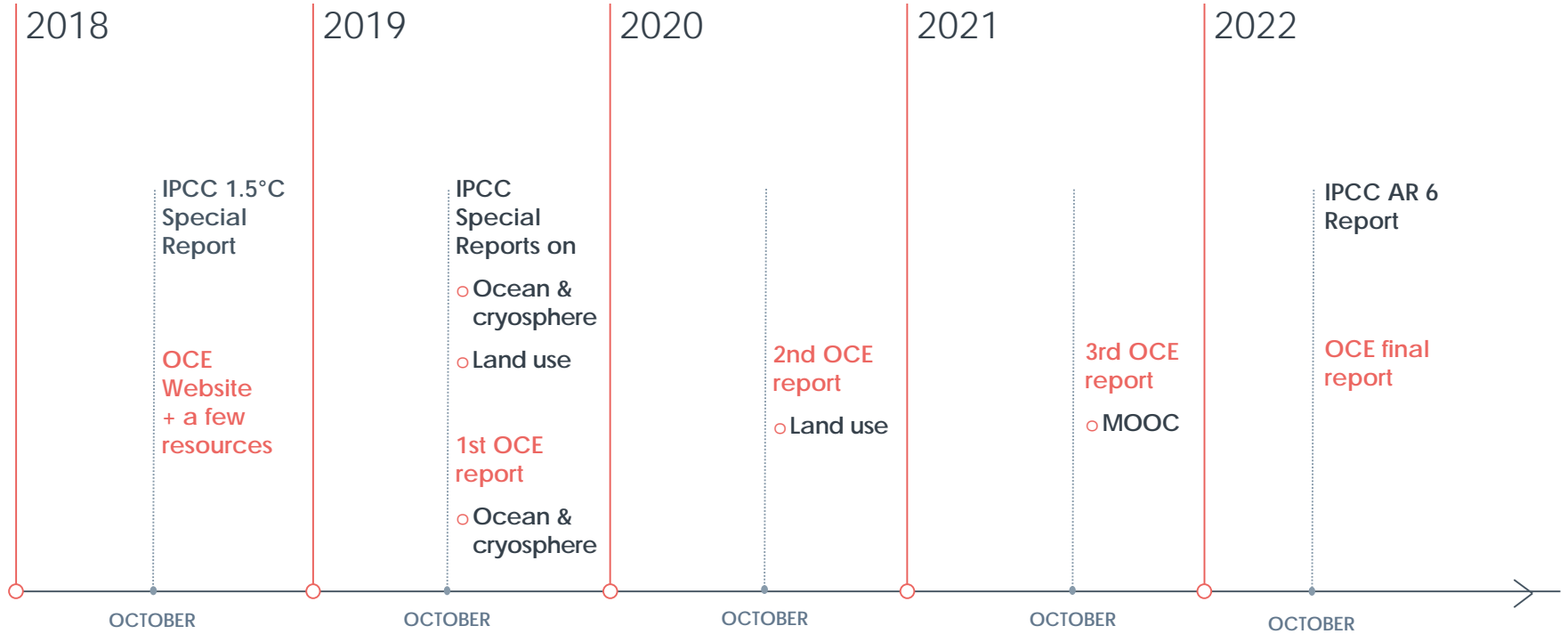


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IPCC REPORTS AND OCE ACTIVITIES



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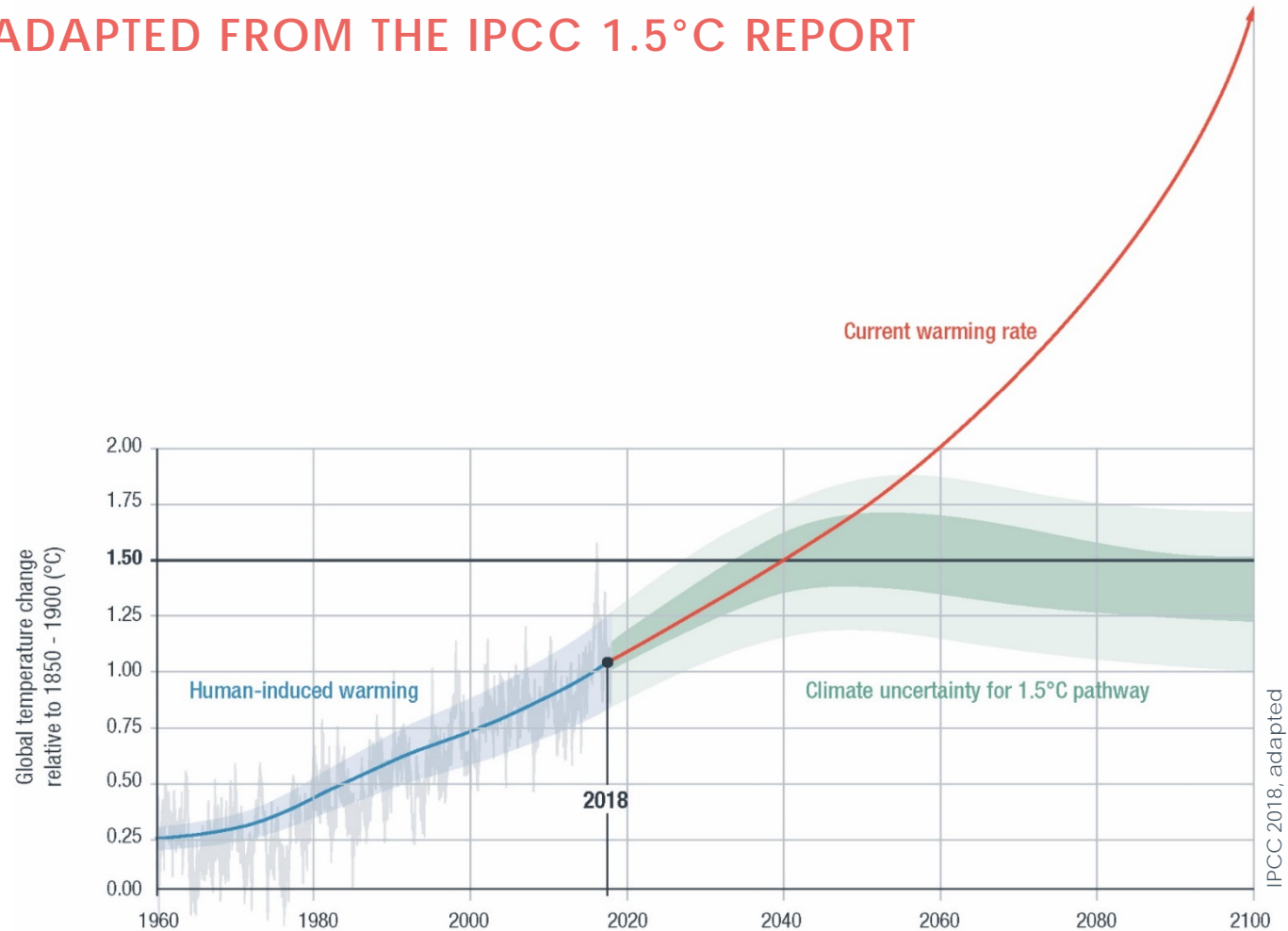
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Climate change manifests itself on different time-scales affecting both short-term extreme weather events, as well as causing gradual, long-term changes, including sea level rise, melting of glaciers and ice sheets, and changes in biodiversity.

The impact of climate change on a community depends not only on the rate and size of the physical changes in climate, but also on how exposed their location is and how vulnerable to the change they are. Adaptation is made more difficult because we can't predict exactly how the climate will change in a given place in the future.



EASY DIAGRAMS – ADAPTED FROM THE IPCC 1.5°C REPORT



IPCC 2018, adapted



IMPACTS AT +1.5°C VS. 2°C GLOBAL WARMING

