



# GLOBAL YOUNG ACADEMY

November 2024

## Young researchers and scholars' proposals for action for a sustainable present and future

A GYA Statement for COP29 from the Global Young Academy (GYA) working groups on (1) Climate Change and Disaster Risk Reduction, (2) The GYA and the UN SDGs, (3) Women in Science, (4) Science Education for Youth, (5) Scientific Excellence, and (6) Open Science.

Disasters driven by climate-related hazards such as heat waves, floods, cyclones, droughts, and wildfires, among others, have increased globally during the past decades – because of the increase of sea levels and rainfall rates, soil desertification, the intensification of hurricanes, and the length of forest fire seasons. Climate change is one of the causes of such disasters, which are driven by the warming of the planet due to the emissions of greenhouse gases (GHG), mainly carbon dioxide. The temperature has increased about 1.1 °C from 1850 to 1900, as reported by the National Aeronautics and Space Administration and based on the conclusions of the Sixth Assessment report of the Intergovernmental Panel on Climate Change – IPCC, reported in 2021.<sup>1</sup> Moreover, it is estimated that the planet will continue to heat up, and if the increase in global temperature is higher than 1.5 °C, this may result in climate change effects that are irrevocable. In 2023, the global temperature reached a record temperature increase of  $1.45 \pm 0.12$  °C above the pre-industrial average as reported in the State of the Global Climate 2023.<sup>2</sup> This fact shows the urgent need for humanity to take action to address climate change causes and effects, which are intensifying for the most vulnerable countries, such as small island countries and territories (e.g., Belize, Guinea Bissau, Guyana and Suriname),<sup>3</sup> and most specifically for countries in the global south.

In this sense, the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) has become a very important assembly for discussion, coordination, negotiation, and reporting the progress of actions for tackling

climate change, with delegates from almost every country on earth. The main targets resulting from those meetings have been to take actions to keep global warming below 1.5 °C, and to reduce GHGs to one-third of current levels, to reduce the dangerous effects of climate change.<sup>4</sup> However, progress is behind the agreed targets required to mitigate the effects of climate change and stay within the 1.5 °C warming limit by 2030. The first Global Stocktake reveals a gap of 20.3 to 23.9 gigatons of carbon dioxide equivalent, representing the additional emissions reductions needed. Moreover, GHG emissions should be reduced by 43% by 2030, and by 60% by 2035 compared to 2019.<sup>5</sup>

COP29 will take place in Baku, Azerbaijan, from 11 to 22 November 2024. This meeting presents an avenue for humanity to further discuss and chart a way forward on how the impending danger of climate change can and should be addressed and reversed. The organizers state that COP29 aims to address actions on:

- (1) Avoiding overshooting the 1.5 °C temperature target [by] delivering deep, rapid and sustained emission reductions now to keep temperatures under control and stay below 1.5 °C, while leaving no one behind.
- (2) “[E]nhancing ambition” by combining key elements to ensure all parties commit to ambitious national plans and transparency, and on “enabling action” through reflecting on the critical role of finance as a key tool to turn ambition into action and reduce emissions, adapt to climate change, and address loss and damage.
- (3) Ensuring everyone’s voices are heard and perspectives are considered and included so that we deliver inclusive outcomes based on shared solutions.<sup>6</sup>

A common factor among these aims is the well-being of communities and inclusiveness, ensuring that the COP29 decisions and their implementations will consider the voices of the most vulnerable countries from the global south and those of Indigenous communities.

Considering that framework, the authors of this Statement call on decision-makers and policy-makers to take the following actions to contribute to mitigating the impacts of climate change:

- (1) Accelerate the transition from fossil fuels to renewable energy sources, develop technologies to capture, store and utilize carbon dioxide, elaborate policies, and promote practices to reduce GHG emissions before 2030 to limit global warming to 1.5 °C.
- (2) Accelerate adaptation technologies, policies, and practices that are human-centered and co-created with the communities from the most vulnerable countries and those already affected by climate change effects.
- (3) Enhance a finance framework and its accessibility for conducting actions to mitigate and adapt to climate change effects, assess the impacts of the carbon market, and determine whether it is effectively helping to reduce global warming and climate change effects.

- (4) Establish a harmonized policy or mechanism for carbon credits that will help to cope with climate change issue.
- (5) Prioritize developing and strengthening nature-based solutions that leverage ecosystems to address climate change and biodiversity loss. This includes strategies such as restoring wetlands, conserving forests, and implementing sustainable agricultural practices, all of which help sequester carbon, enhance biodiversity, and provide ecosystem services, creating resilient landscapes that support local communities, protect biodiversity, and contribute to long-term climate stability.
- (6) Promote the active participation of young voices, early-career academics, and scholars from diverse genders, backgrounds, and regions, alongside local and traditional communities, in decision-making and implementation processes. This approach fosters inclusivity and informed decision-making, valuing intergenerational, intercultural scientific excellence, and Indigenous knowledge.
- (7) Set an annual plan to initiate change, including deadlines for each milestone that will assist in measuring practical impact.

## References

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3. <https://climatepromise.undp.org/news-and-stories/small-island-developing-states-are-frontlines-climate-change-heres-why>
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5. <https://www.un.org/en/climatechange/global-stocktake-reports-highlight-urgent-need-for-accelerated-action-to-reach-climate-goals>
6. <https://cop29.az/en/presidency/framework-for-action>

## Authors' note

We, the authors, are all members of one or several of the GYA's working groups, and come from a variety of disciplines such as social sciences, natural sciences, engineering, health sciences, or medicine, as well as from different genders and all regions of the world. We share the common purpose of producing science of excellence with societal impact that contributes to advancing understanding and informing decisions to mitigate climate change effects. Further, we strive to foster the achievement of the UN SDGs and of Open Science principles, offer science education to younger generations, make visible the great contributions and impact of women scientists, and make society aware of its high potential to address global challenges.



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## About the GYA

The vision of the GYA is *science for all; science for the future*, and its mission is to give a voice to young scientists and researchers around the world. The GYA, founded in 2010, is an independent science academy of 200 outstanding early- to mid-career researchers from six continents who are selected from across disciplines based on their academic excellence and commitment to engage with society. GYA members serve five-year terms, and the GYA presently counts members and alumni from over 100 countries. The GYA Administrative Office is publicly funded and hosted at the German National Academy of Sciences Leopoldina. The wide array of GYA activities is supported by a range of international public and private funders.

