

**G20 Research Ministerial Meeting
Mumbai
July 5, 2023**

Outcome Document and Chair's Summary

The Outcome Document pertains to paragraphs 1 to 14 and paragraphs 17 to 20, which have been unanimously agreed to by all G20 delegations. The Chair's Summary pertains to paragraphs 15 and 16.

1. We, the Research Ministers of the G20 members and invitee countries, met in Mumbai, India, on July 5, 2023, to re-affirm the critical role of research and innovation as an enabler for inclusive and sustainable development; gender equality; diversity; empowered citizenship; environmental integrity and protection; peace, prosperity and wellbeing in the spirit of Vasudhaiva Kutumbakam (One Earth, One Family, One Future).
2. We recognize the importance of responsible research and innovation guided by the best available science; just and inclusive transitions; digital technologies and their impact on societal and industrial transformation; adoption of initiatives that promote lifestyles for sustainable development¹ to accelerate the implementation of the 2030 Agenda for Sustainable Development and achievement of its Sustainable Development Goals (SDGs); goals of the Paris Agreement and objective of the UN Framework Convention on Climate Change; goals of the Kunming-Montreal Global Biodiversity Framework; and are committed to achieving a resilient, inclusive, and sustainable future.
3. Research and Innovation Initiative Gathering (RIIG) meetings, hosted by India during its G20 Presidency, were held under the theme "Research and Innovation for an Equitable Society" and provided a platform for government and non-government stakeholders to share ideas and create new partnerships, while recognizing the role of research and innovation as a key driver to achieving socio-economic and technological progress. We encourage working towards common principles that underpin open, transparent, reciprocal and accountable international research cooperation through dedicated multilateral dialogues. We recognize that research and innovation have the potential to positively impact global sustainable development and foster a better understanding between nations through science diplomacy.

¹ On 12 June 2023, the G20 Development Ministerial Meeting adopted the High-Level Principles on Lifestyles for Sustainable Development.

4. We encourage research and innovation cooperation in the areas of Materials for Sustainable Energy; Circular Bio-Economy; Eco-Innovations for Energy Transition; and Sustainable Blue Economy, which were the priority topics of the G20 RIIG during India's Presidency.
5. We reaffirm our commitment to open, equitable and secure scientific collaboration, and recognize the important contribution that open science policies make in the development of solutions to address societal and global challenges. The cross-cutting value of open science to tackling global challenges was noted by G20 members at all RIIG thematic meetings and we encourage more actions to address these challenges.
6. We support global efforts in our academic communities to engage in dialogue and collaborations, particularly with developing countries, based on reciprocity, to identify and address the challenges to progressing open science policies, and encourage countries to develop open science policies and the necessary legal frameworks. In countries where open science policies and collaborations support equitable dissemination of, access to, and reuse of appropriate public-funded research outputs, including scholarly publications, efforts need to be made to mitigate risk of unfair exploitation or distortion, especially of the traditional knowledge of Indigenous Peoples and local communities. We recommend that such policies should align with the Findable, Accessible, Interoperable, and Reusable (FAIR) data principles.
7. We recognize the important contribution which the knowledge produced by research and innovation activities can have in designing better public policies for our societies, and therefore encourage actions to foster the uptake of scientific evidence into our policymaking processes.

Materials for Sustainable Energy and Eco-Innovations for Energy Transition

8. We acknowledge that in the pursuit of sustainable development, we need to expand the production and utilization of clean energy in line with the findings of the Intergovernmental Panel on Climate Change (IPCC), and to promote affordable, reliable, modern and sustainable energy for all.
9. In supporting progress towards achieving a prosperous, inclusive, resilient, secure and sustainable society that leaves no one behind, and in order to accelerate the implementation of Nationally Determined Contributions (NDC) and just transitions towards net zero greenhouse gas (GHG) emissions/carbon neutrality by or around midcentury, we encourage research partnerships in areas of generation, conversion and storage of sustainable, clean and renewable energy, including wind and solar energy and clean hydrogen and its derivatives; end-to-

end production of energy storage devices; resilient supply chain management; and end-of-life management of technological waste.

Circular Bio-Economy

10. We recognize the important role science, technology and research play in supporting nature-based solutions and in transitioning to a more circular and sustainable bio-economy and the need for innovation across all industrial supply chains, from raw materials to finished products, while meeting food security needs.
11. We further recognize global efforts underway to review the current regulatory frameworks that reinforce linear production models in view of supporting capacity building and updating production and consumption models to achieve a more circular and sustainable bio-economy, with an integrated approach to land, water, energy and biomass use.

Sustainable Blue Economy

12. We recognize the critical role played by healthy ocean, coastal and marine ecosystems and biodiversity in sustaining life on Earth, and acknowledge the need to protect and restore the marine environment which provides critical services to nature and society. We reaffirm our commitment to the United Nations Decade of Ocean Science for Sustainable Development (2021-2030) and United Nations Decade on Ecosystem Restoration (2021-2030). In this context, we encourage the voluntary sharing on mutually agreed terms of: scientific and technological best practices; lessons learned and expertise developed including in building technical capacities and knowledge; and current, new and emerging marine technologies, through existing and new partnerships in particular with the developing countries. We stress the need to further develop global, regional and national capacities for more and better sustained coastal and ocean observations, monitoring and forecasting systems, through enhanced international coordination and cooperation.
13. We welcome the United Nations Environment Assembly Resolution 5/14 to develop by the end of 2024 an international legally binding instrument to end plastic pollution, including in the marine environment. We encourage the use of science and eco system-based tools such as maritime/marine spatial planning and integrated coastal zone management to balance and effectively accomplish the objectives of a sustainable blue/ ocean-based economy.
14. We welcome the adoption of the new Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of

marine biological diversity of areas beyond national jurisdiction, and encourage working towards an early ratification and entry into force and future implementation of this new Agreement.

Geopolitical Issue

15. The war in Ukraine has further adversely impacted the global economy. There was a discussion on the issue. We reiterated our national positions as expressed in other fora, including the UN Security Council and the UN General Assembly, which, in Resolution No. ES11/1 dated 2 March 2022, as adopted by majority vote (141 votes for, 5 against, 35 abstentions, 12 absent) deplores in the strongest terms the aggression by the Russian Federation against Ukraine and demands its complete and unconditional withdrawal from the territory of Ukraine. Most members strongly condemned the war in Ukraine and stressed it is causing immense human suffering and exacerbating existing fragilities in the global economy – constraining growth, increasing inflation, disrupting supply chains, heightening energy and food insecurity, and elevating financial stability risks. There were other views and different assessments of the situation and sanctions. Recognizing that the G20 is not the forum to resolve security issues, we acknowledge that security issues can have significant consequences for the global economy.²
16. It is essential to uphold international law and the multilateral system that safeguards peace and stability. This includes defending all the Purposes and Principles enshrined in the Charter of the United Nations and adhering to international humanitarian law, including the protection of civilians and infrastructure in armed conflicts. The use or threat of use of nuclear weapons is inadmissible. The peaceful resolution of conflicts, efforts to address crises, as well as diplomacy and dialogue, are vital. Today's era must not be of war.

Way Forward

17. We will continue to work towards transforming our research and innovation ecosystems to responsibly and effectively respond to the societal and environmental challenges which we are facing, including natural hazards, disasters and extreme weather events, and support joint efforts to this effect, where required. In this regard, we will work openly in a transparent manner to build more sustainable, accessible, inclusive, resilient and adaptive systems.
18. We encourage the mobility of students, scholars, researchers and scientists across research and higher education institutions through mobility programs. We

² Russia disassociated itself from the status of this document as a common outcome because of references to Para 15 and 16.

will strive to reduce barriers to cross-institutional collaborations for achieving inclusive and sustainable development and creating vibrant and sustainable economies and societies.

19. Building on the discussion which began in 2022 under the Indonesian G20 Presidency and continued under the Indian G20 Presidency, we recommend for consideration of Sherpas elevating the status of G20 RIIG to a formal Working Group, i.e. G20 Research and Innovation Working Group (RIWG) under the Sherpa Track. The proposed RIWG would, inter alia, maintain the continuity of the inter-year agenda under the Research Ministerial Meeting.
20. We commend and thank India's Presidency for its leadership of the G20 RIIG in 2023. We look forward to our next meeting under the Brazilian Presidency in 2024.