INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)

Lisbon, Portugal
6-7 November 2023

Contribution by Brazil

to the CSTD 2023-2024 priority theme on "Global cooperation in science, technology and innovation for development"

PRIORITY THEME 2: Global cooperation in science, technology and innovation for development

1. **What STI cooperative mechanism(s) at global or regional levels has your country joined in?**

General Coordination of Sciences for the Ocean and Antarctica, Ministry of Science, Technology and Innovation – Brazil:

AAORIA - ALL-ATLANTIC OCEAN RESEARCH AND INNOVATION ALLIANCE - https://allatlanticocean.org/

Belmont Forum - https://www.belmontforum.org/about

BRICS - Ocean and Polar Science and Technology Working Group -https://brics.land-ocean.ru/

IODP International Ocean Discovery Program - https://www.iodp.org/

IOCARIBE - The IOC of UNESCO Subcommission for the Caribbean and AdjacentRegions - https://iocaribe.ioc-unesco.org/

IOC-UNESCO - Intergovernmental Oceanographic Commission - UNESCO -https://www.ioc.unesco.org/en

OCEATLAN - Aliança Regional para a Oceanografia no Atlântico Sudoeste Superior eTropical - http://www.oceatlan.org/

PIRATA - https://www.pmel.noaa.gov/gtmba/pmel-theme/atlantic-

ocean-pirata SCAR - Scientific Committee on Antarctic Research

- https://www.scar.org/ SCOR - Scientific Committee on Oceanic

Research - https://scor-int.org/

UN Regular Process - United Nations Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socioeconomic Aspects -https://www.un.org/regularprocess/

CNI – Brazilian National Confederation of Industry:

The Brazilian National Confederation of Industry is the highest level industrial business association in Brazil and has always stimulated international cooperation, at all levels, to foster economic, scientific, technological and innovation development. The Entrepreneurial Mobilization for Innovation (MEI), coordinated by CNI, is the leading

platform for dialogue among all actors in the Brazilian Innovation Ecosystem. With more than 500 C-level leaders, promotes constant exchanges between Brazilian companies and institutions with the most critical international ecosystems worldwide and STI institutions.

MEI/ CNI has an International Consultive Board, with exceptional members from different countries in the world, contributing to the strategic dialogue for innovation in Brazil and deeper international insertion. Furthermore, MEI/ CNI is associated with WIPO and Portulans Institute to publish the Global Innovation Index, annually, and also organizes immersions to innovation ecosystems, the International Industry Innovation Summit, international open innovation projects, and other events and publications to promote and accelerate innovation in the Brazilian Industry.

At the private and supranational levels, CNI is engaged with similar institutions worldwide, as well as with global non-governmental organizations such as OEA, WIPO, OECD, WTO, WEF, UNCTAD, ECLAC, GFCC.

Cooperation mechanisms are, among others:

Exchange of information and studies
Development of joint research
Support joint events
Technical missions and researcher's exchange
Technology transfer projects

2. To what extent the existing cooperation programmes are aligned with the development priorities of participating developing countries?

General Coordination of Sciences for the Ocean and Antarctica,Ministry of Science, Technology and Innovation – Brazil:

It varies.

The alignment is dependent on whether research priorities and thematic areas are chosen in accordance with the national scientific community´s input and if research is determined by national needs.

Some mechanisms, such as the UN Regular Process, have mechanisms that ensure globalparticipation and representation of different regional groups.

A relevant development in Ocean Science is the The United Nations Decade of Ocean Science for Sustainable Development (2021-2030) that serves as an organizing framework and is used as an element to align priorities and action. It calls for transformative science, that is:

- "uses the 2030 Agenda as a central framework to identify and address thequestions that are most important to society;
- is co-designed and co-delivered in a multi-stakeholder environment and that involves the generators of knowledge and the users of knowledge;
- is solutions-focused;

- where needed, is big, audacious, forward-looking and spans geographies;
- embraces local and indigenous knowledge holders;
- is transformative because of who is doing it or where it is being done, including in both less developed and developed countries;
- strives for generational, gender and geographic
- diversity in all its manifestations;
- is communicated in forms that are widely understood across society and that trigger behavior change; and
- is shared openly and available for re-use". UNESCO-IOC (2021).

General Coordination of Ecosystems and Biodiversity, Ministry of Science, Technology and Innovation of Brazil:

The vast majority of international cooperation programs are aligned with national priorities. As an example, one can mention the alignment between the Brazilian Biodiversity Information System - SIBBr and the Global Biodiversity Information Facility - GBIF.

CNI – Brazilian National Confederation of Industry:

From CNI's experience, there are not many cooperation programs that consider private priorities in their design.

If we consider private platforms, for instance, the B20, cooperation mechanisms for R&D&I are suggested, by MEI/ CNI, to promote international connections among academia, researchers' networks, companies & startups, and venture capital.

3. What are the main outcomes of such mechanism(s)? And what are the impacts of the resultant cooperation on your country? Pls. include the gender dimension.

General Coordination of Sciences for the Ocean and Antarctica, Ministry of Science, Technology and Innovation – Brazil:

- Joint research projects;
- Sharing of infrastructure, including sharing of ship time;
- Meetings of Research groups;
- Alignment of research priorities whose results feed public policies towards overcoming national challenges;
- Establishment of mobility and capacity development programs;
- Enhancing science excellence through collaboration;
- Exchange of resources - human, material (equipment) and financial.

General Coordination of Ecosystems and Biodiversity, Ministry of Science, Technology and Innovation of Brazil:

The results of cooperation programs take place in different dimensions; just as an example, one can cite training/qualification and exchange of knowledge, including the issue of gender equality; partnerships between Brazilian universities and research institutes and their counterparts abroad; and technology transfer to developing countries.

CNI – Brazilian National Confederation of Industry:

From CNI/MEI perspective, creating mechanisms to promote international cooperation between companies and STI institutions is fundamental. Through global platforms of open innovation, for instance, CNI/MEI is able to promote Brazilian startup technologies, support leapfrogging for corporations and increase internationalization potential. The results of this private international open innovation program are being processed.

4. What are the main difficulties member countries have encountered or are facing whenimplementing the cooperation mechanisms?

General Coordination of Sciences for the Ocean and Antarctica,Ministry of Science, Technology and Innovation – Brazil:

- Different countries and institutions have different ways to finance and organizeresearch projects, including different reporting and auditing practices;
- Budget cycles not always align - joint long term funding of activities can a be achallenge;
- Participants from the Global South face many challenges in being accounted as participants on equal footing with the others. Many project proposals arrive fully formatted, with little or no room to consider local ideas or priorities. See also:

Amano T, Ramírez-Castañeda V, Berdejo-Espinola V, Borokini I, Chowdhury S, Golivets M, *et al*. (2023) The manifold costs of being a non-native Englishspeaker in science. PLoS Biol 21(7): e3002184. https://doi.org/10.1371/journal.pbio.3002184

Gewin, V. (2023). Pack up the parachute: Why global north–southcollaborations need to change. *Nature*, *619*(7971), 885–887. https://doi.org/10.1038/d41586-023-02313-1

Polejack, A. (2023). Coloniality in science diplomacy—evidence from theAtlantic Ocean. Science And Public Policy. doi: 10.1093/scipol/scad027

General Coordination of Ecosystems and Biodiversity, Ministry of Science, Technology and Innovation of Brazil:

Financing issues, which impact the implementation of joint R&D projects.

CNI – Brazilian National Confederation of Industry:

The difficulty in converging long-term perspectives on Science and Technology with business requirements on technological development.

Lack of internal mechanisms to promote international business, such as business-academic dialogue and the costs implied in international research, consultancy, or services (double taxation, visa requirements, and import barriers, to mention a few).

5. In respect of achieving the objectives and goals, what are the factors contributing to the successor failure of the cooperation mechanism(s) that your country has joined in?

General Coordination of Sciences for the Ocean and Antarctica, Ministry of Science, Technology and Innovation – Brazil:

- Inclusion of local academic community and stakeholders in decisions and design ofactions;
- Sustainable funding.

General Coordination of Ecosystems and Biodiversity, Ministry of Science, Technology and Innovation of Brazil:

For the effective success of the cooperation, the continuity of the programs is essential and, in a complementary way, the main cause of failure is the discontinuity of the programs, as well as the lack of resources to finance joint activities.

CNI – Brazilian National Confederation of Industry:
From the CNI/MEI perspective, proper financing and public–private coordination seems to be the two main challenges to successful implementation.

6. In your country's view, what role could CSTD play in coordinating and imparting directionality to international STI collaboration and technology sharing?

General Coordination of Sciences for the Ocean and Antarctica,Ministry of Science, Technology and Innovation – Brazil:

- Empower academics and institutions from the Global South not only participate butalso to lead scientific endeavors;
- Recognize the importance and give credit to the contributions from the global Southand South-North flows;
- Address language barriers and recognize non-English language science;
- Provide mechanisms to coordinate budget and provide steady sources of funding.

General Coordination of Ecosystems and Biodiversity, Ministry of Science, Technology and Innovation of Brazil:

CSTD can play a central role in global coordination, setting guidelines and promoting inclusion and diversity.

CNI – Brazilian National Confederation of Industry:

Technology sharing and global innovation networks are fundamental to emerging economies to foster STI development and to face global challenges properly. The urgency of climate change pressures imposes eco-innovation acceleration and all countries, especially developing ones, must be able to engage, not only for indigenous innovation possibilities and scale, but also as a matter of economic intelligence (implementation costs, local market scale, global impact).

CTSD could help by bringing together representatives from the private sector from developing countries to discuss possible common interests and implement mechanisms for cooperation. This could prompt governments and businesses to discuss a common international agenda on STI, much like CNI does at a national level with MEI. Today, there is little understanding among the business community of other developing economies' capabilities in STI, which hampers interest in collaboration, with attention going to technology sharing with developed economies.