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SHARING THE BENEFITS OF SPACE & INDIGENOUS KNOWLEDGE

0.0 Chapeau

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0.0 Chapeau:

This input to the “zero draft” of the UN Summit of the Future is based on our important role and related outcome **from three complimentary global forums / initiatives.**

1. **G20 Perspective:** First, with our role as Co-Chair of the two G20-B20 Task Forces -TF (“[Space for sustainable development](#)”, and “[Deep Technologies Commercialisation](#)”) and as contributor to the third Task Force (“[Digital Cooperation](#)”), it enabled us to provide relevant concise and action-oriented recommendations from the G20 - Global South cooperation perspective.
 - For example, the “Actionable Recommendations” we developed for the G20-B20 TF on “Space for sustainable development”, have the potential to transform the benefits associated with the rapid growth of outer space activities, described in **Chapter #1**.
 - These recommendations also offer significant input to **Chapter #5**, proposing updated frameworks for space sustainability, and more inclusive governance approaches for enhanced collaboration between G20 nations and the global south countries.
 - In addition, the “Nurturing Ecosystems” model envisioned by our G20-B20 TF on “Deep Tech commercialization” has the potential to transform the success and efficiency of transitioning emerging science, technology, and innovation concepts for the SDGs, and addressing the key pertinent issues contributing to **Chapters #3 and #5**.
 - Moreover, our contribution to G20-B20 TF on “digital cooperation” and offers concise and concrete recommendations to **Chapter #3** covering “bridging the digital divide”.
2. **STI, Indigenous Knowledge and Digital Cooperation Perspective:** Second, with our role to create and coordinate a global digital infrastructure initiative, “Indigenous Knowledge Research Infrastructure: IKRI”, by integrating Indigenous knowledges and practices with emerging science and technologies, are aimed to offer actionable recommendations to develop a digital global collaboration platform.

These efforts are co-led by our partner, Ms. Simonetta Di Pipo, former Director of the United Nations Office for Outer Space Affairs. UNOOSA, and Ms. Myrna Cunningham of FILAC and “UN Official Spokesperson for Goal 10”, contributing to both **Chapters #3 and #4**.

3. **UN Committee on the Peaceful Uses of Outer Space – COPUOS Perspective:** Third, with our key role as “Permanent Observer Member” of the COPUOS, and our active involvement in its Scientific and Legal Subcommittee’s, we provide practical and workable recommendations covering “international peace and security” in **Chapter #2** and transforming global governance in **Chapter #5**.

Finally, we plan to discuss our input presented in this paper with key stakeholders, and refine it prior to the Summit in September 2024, through relevant forums such as (a) the G20-B20 forum and Working Groups under the Brazilian G20 Presidency in 2024, and (b) the UN-Portugal Conference on "Management and Sustainability of Outer Space Activities" in May 2024.

1.0 Chapter I. Sustainable development and financing for development

Sharing the benefits of Outer Space for Sustainable development

Issue: Thus far, in the 60+ years of existence of Earth Observation Satellites, the data and information from these satellites has had **insignificant impact on daily decision making in multiple sectors**. This is especially critical considering our current environment of **Climate Change-Induced Uncertainties**.

With the growing number of actors in the space sector, and the expected large volume of data and products that could become available, the Summit needs to address the issue of “Space Data Accessibility 4 Sustainable Development - SDA4SD”.

The G-20 is well positioned to **provide leadership** and have the capacity to devise necessary **financing mechanisms** for realizing such **Overarching Vision** providing timely, high-complexity, Actionable Earth Observation Data, and Information at the appropriate spatial, spectral, and temporal resolutions timely to everyone through multi-lateral collaborations between governments and private industries.

Thus, we propose the following **Actionable Recommendation** arising from the G20-B20 Task Force on Space for Sustainable Development.

Recommendation No. 1: Initiate collaboration between G20 nations and the Global south countries on **Data Democratization** and thereby making **Access to Daily, High Complexity Earth Observation Data and Information** a **Fundamental Right of All Human Beings**.

2.0 Chapter II. International peace and security

Issue: Space has the amazing ability of inspiring every human being right from toddlers. No other human endeavor has so effectively captured the imagination of the entire world.

Furthermore, Earth orbiting satellites are now commonly used for communications, entertainment, meteorology, global positioning, and navigation. Even deep space exploration has the potential to impact our daily lives here on earth in more mundane ways than just acquiring the profound knowledge they provide us regarding our celestial environs.

Unfortunately, the problem of interference and long-term threats with the emergence of multi-satellite constellations in low orbits remains a challenge on traditional tasks in space and from space.

We propose the following **Actionable Recommendation** arising from our contribution to OOSA/2021/52.

Recommendation No. 2: Create an **International Center for protection of Earth’s ecosystems** under the auspices of the UN, and **new international agreements** involving diverse actors propelling these innovations to ensure peace, security, and the prevention of an arms race in space.

3.0 Chapter III. Science, technology and innovation and digital cooperation

Deep technology (Deep Tech): Many new emerging Deep Tech concepts are being generated and promise to deliver revolutionary solutions to the many global challenges currently faced by our society. These Deep Tech concepts are visionary in nature and address multiple problems/opportunities across many important and yet diverse sectors.

However, these Deep Tech innovations, in addition to novel science and technology expertise, require requisite **Nurturing Ecosystems** environment to successfully transition the infamous Mid-TRL “Valley of Death” (VOD), these include access to resources, funding, infrastructure, Intellectual Property Protection, and governmental policies impacting cross-border collaborations.

We propose the following **Actionable Recommendations** arising from the G20-B20 Task Force on Deep Tech and digital cooperation.

Recommendation No. 3: Undertake Deep Tech Nurturing Ecosystems framework across the G20 and global South countries to ensure the smooth transition of emerging Deep Tech concepts to SDG specific applications.

Recommendation No. 4: Evaluate and enable regulatory frameworks that foster innovation and policies for sustainable solutions and mitigate barriers preventing open cross-border collaborations.

Digital Cooperation: The knowledge possessed by Indigenous community is valuable and can be further complemented by emerging technology-based solutions that focus on ecosystem and environment. However, there are challenges and practical barriers linking emerging technology-based tools with Indigenous knowledge and effective mechanisms to preserve and protect such practices.

We have therefore undertaken a global **collaborative digital infrastructure initiative** called the “**Indigenous Knowledge Research Infrastructure (IKRI)**”, that uses frontier technologies to captures, processes, analyzes, and presents indigenous knowledge from multiple sources, to contribute and accelerate implementation of the SDGs.

The digital collaboration platform will ensure that we preserve the disappearing knowledge and use it for the overall good of society, nature, biodiversity, ecosystem services and nature-based solutions to global challenges. CANEUS and FILAC in partnership with UNOOSA are working on a multi-year cooperation to help the global Indigenous communities bridge the gap with technological equalities.

We propose the following **Actionable Recommendation** arising from the global digital collaborative infrastructure initiative called the “Indigenous Knowledge Research Infrastructure (IKRI)”.

Recommendation No. 5: Develop policy and regulatory frameworks associated with Indigenous Traditional Knowledge – ITK, and support linkages between ITK and other data repositories, including data made available through technology transfer under the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) Art 6.2.

4.0 Chapter IV. Youth and future generations

There is a growing sense amongst Indigenous Youth that frontier technologies have been overlooking them as active participants in attaining the SDGs, as opposed to mere recipients. Specifically, with the emergence of the global data revolution and associated new technologies are a double-edged sword for indigenous youth. Thus, Indigenous youth must be better engaged in skills and capacity-building policies and programming to achieve more inclusive economic growth.

We propose the following **Actionable Recommendations** arising from the CANEUS briefing to UN-COPUOS

Recommendation No. 6: Create a capacity building platform to address the accelerated technological inequalities amongst Indigenous Youth using emerging space science and technology-based tools and solutions that has high relevance to complement the knowledge of Indigenous communities.

5.0 Chapter IV. Transforming global governance

There is a consensus amongst global stakeholders that the existing “**Outer Space governance framework**” has become obsolete, and it has not kept up with the pace of commercialization and technological change in outer space activities.

Therefore, we propose the following **Actionable Recommendations** arising from our recent briefing to the UN-COPUOS.

Recommendation No. 7: Create a new model of space governance that will include diverse space actors and address today's challenges.

This issue needs further consideration, and we plan to submit a detailed paper, in consultation and partnership with sector experts and stakeholders, prior to the Summit. We especially **propose to engage the current G20 Presidency and the UN COPUOS in this process.**

The following **Actionable Recommendations** arising from the G20-B20 Task Forces on “Space for Sustainable Development” and “Deep Tech and Digital Cooperation”, compliments this input.

Recommendation No. 8: Simplify Cross-Border Policies for active participation by non-governmental stakeholders within the space sector.

Recommendation No. 9: Adapt regulatory harmonization within G20 and Global South countries with adherence to global frameworks for Deep tech and digital cooperation.

Furthermore, we propose to address the important issue and the legalities of how near-Earth space impacts Indigenous communities and how Indigenous knowledge is crucial for space-based governance.

Recommendation No. 10: Integrate Indigenous Knowledges and Practices within Outer Space governance framework.