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Recommendations for a Science  
Diplomacy strategy for the  
safeguarding of the

# AMAZON

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# WHITE PAPER: RECOMMENDATIONS FOR A SCIENCE DIPLOMACY STRATEGY TO SAFEGUARD THE AMAZON

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## EXECUTIVE SUMMARY

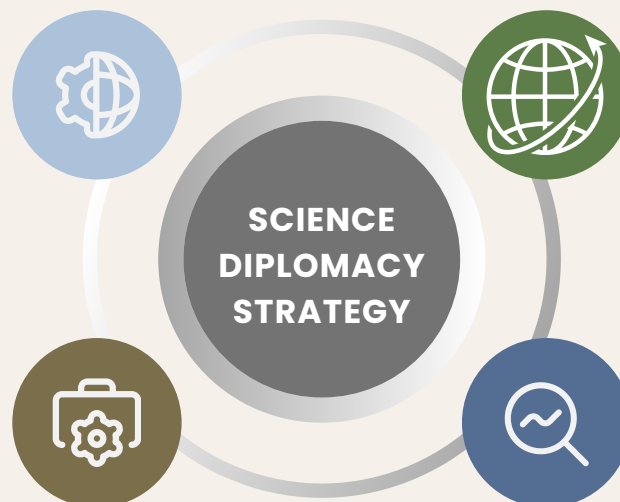
The present white paper outlines a comprehensive strategy for the conservation of the Amazon through science diplomacy. It addresses the critical situation of this vital region, highlighting its ecological and cultural importance. This document is the result of a methodology based on two participatory processes, the first being a collaborative exercise within the Sustainability Research and Innovation Congress (SRI), and the second a focus group with experts in science diplomacy from Latin America, along with literature analysis. As a result, they propose a series of practical and feasible recommendations grouped into 4 categories: 1) transboundary cooperation, 2) strengthening a joint monitoring platform, 3) establishing a Science-Policy Hub, and 4) capacity development. These recommendations are further categorized into public policy instruments: regulatory (R), operational (O), financial (F), and soft (B). An integrated approach that combines research, indigenous knowledge, and international cooperation is suggested, along with other general recommendations, to effectively address the ecological and social challenges facing the Amazon.

### Science-Policy Hub

Establish an advisory center for public policies in the Amazon, integrating science and local wisdom for sustainable development.

### Capacity Development

Generate dialogues between diverse knowledge systems to build together paths to strengthen capacities.



### science and academic transdisciplinary cooperation

Promote international science cooperation with a transdisciplinary approach, intercultural dialogue and effective financing.

### Joint monitoring platform

Strengthen the Amazon Regional Observatory by improving monitoring platforms and data management.

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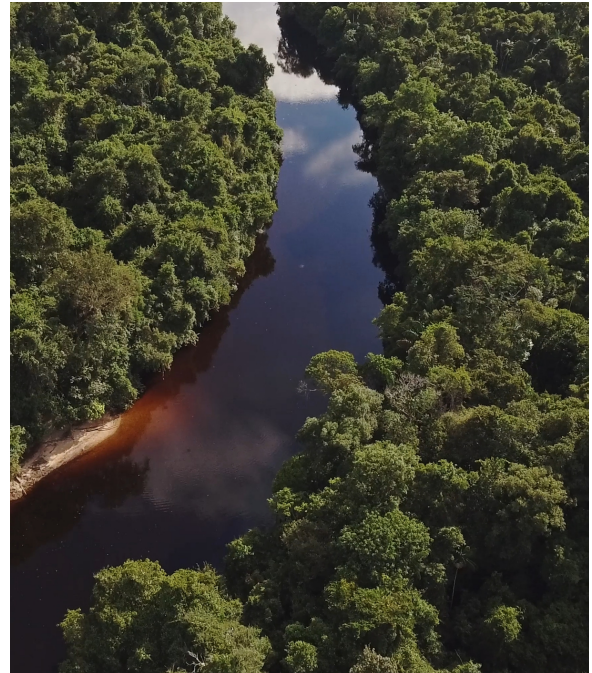
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# Introduction

*It is important to understand what makes up the Amazon and how international relations have developed in the region to know the strengths and weaknesses that facilitate the development of effective and viable science diplomacy to safeguard the area.*

The Amazon covers 7 million square kilometers in nine countries with 47 million inhabitants, including 2 million indigenous people representing more than 500 ethnic groups. The Amazon is the largest tropical forest in the world, as is the Amazon River, commonly called the Amazon biome and basin respectively, and they play a fundamental climate regulation function not only for the region but for the entire world (Albert et al, 2023). Although this ecosystem has undergone multiple transformations throughout history, the last 50 years have represented an accelerated transformation of the ecosystem due to anthropogenic actions that are reflected in significant deforestation and degradation (Fearnside, 2005). Approximately 17% of the tropical forest has been transformed and another 17% degraded due to agricultural and livestock expansion, illegal logging, fires, poor urban planning, and illegal trafficking of native species (Vergara et al., 2022). These transformations can lead to the point of no return, where their environmental ecosystem functions would be lost (Walker, 2020; Bittencourt et al 2020; Fearnside, 2005).



The eight countries with territory in the Amazon – Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela – recognize the importance of protecting this ecosystem and coordinating cross-border actions. Thus, the Amazon Cooperation Treaty Organization (OTCA, for its acronym in Spanish) was established in 1978 by the leaders of the eight countries of the Amazon region to promote equitable and sustainable development.

In 2022, presidents-elect Inacio Lula da Silva of Brazil and Gustavo Petro of Colombia prioritized within their government proposal the need to accelerate efforts to protect the Amazon ecosystem, participating in international scenarios such as COP27 and seeking resources and projects towards conservation and mitigation. Likewise, both presidents have ratified their commitment to OTCA through the technical-scientific preparatory meeting in Leticia (Camino a la Cumbre Amazónica, 2023), which laid the foundations for the Presidents OTCA Summit in August 2023 where the joint Declaration of Belem do Pará was established for the Amazon conservation (Presidential Declaration on the Occasion of the Amazon Summit IV Meeting of Presidents of the States Party to the Amazon Cooperation, 2023). Both scenarios prioritized the need to develop public policies based on scientific knowledge incorporating the traditional knowledge of indigenous peoples.

In 2021, the report “The Amazon We Want” was presented by the Scientific Panel for the Amazon, supported by the United Nations program and its Network of Solutions for Sustainable Development (Science Panel for the Amazon, 2021). This report was the product of the collaboration of more than 200 researchers and is divided into three parts: an analysis of the Amazon as a territorial entity, its socio-ecological transformations, and potential solutions to the current crisis. Despite demonstrating that there is extensive scientific knowledge of the Amazon, investment in economic resources and scientific capacity is needed to conserve the Amazon. Additionally, it is important to integrate the ancestral knowledge of indigenous peoples given that their territories demonstrate the greatest conservation in biodiversity and environmental protection, as demonstrated by the indigenous territorial governance of the Ka’por, Yanomami, Timbira, Achuar, Tikuna, and Piaroa, to mention some (Becerra et al, 2021). The Belmont Forum (Amazonia at the Crossroads, 2023) and the Inter-American Institute for Global Change Research (IAI) are contributing to these efforts through the design of a transdisciplinary call for research in tropical forests focused on:

- 1) deforestation
- 2) environmental and financial crimes
- 3) territorial planning
- 4) social processes
- 5) biodiversity
- 6) climate change and governance

Highlighting the participation of scientists, research funding agencies, local and indigenous communities for their ancestral knowledge and the need to strengthen data monitoring and governance.



These political and scientific efforts are a fertile scenario and represent a window of opportunity to protect the Amazon through cross-border cooperation and science diplomacy, which encompasses a set of practices in which science and technology are linked to environmental issues, foreign affairs, and international relations. The Leticia Pact was established in 2019 to strengthen joint actions to preserve the natural resources of the Amazon region (Pacto de Leticia por la Amazonía, 2019). Recently, the Belem do Pará Declaration established by OTCA in August 2023 prioritizes 113 actions to advance the development of a science, education, and innovation agenda to address the climate crisis, the loss of biodiversity, water and soil pollution, and deforestation in the Amazon. These actions can significantly benefit from the development of a science diplomacy strategy that supports their implementation.

## Scientific Diplomacy in the Amazon

Science diplomacy focuses on three areas: **science for diplomacy**, where scientific cooperation is used to improve international relations between countries; **science in diplomacy**, where foreign policy objectives are informed by scientific advice; and **diplomacy for science**, where international scientific cooperation is facilitated (The Royal Society & AAAS, 2010).

In Latin America, local scientists have identified that science diplomacy should focus on capacity development, cooperation in the face of global challenges, and the mobilization of resources in science, technology, and innovation (CTel) (Echeverría King et al., 2021; Soler et al. al, 2021). A science diplomacy strategy aligned with the Belem do Pará Declaration will allow resources to be used more efficiently, including human capital and financing, for the conservation and sustainable management of the Amazon and regional and international cooperation.

# Methodology

*This white paper collected input from three sources:*

- Sustainability Research and Innovation Congress (SRI) – June 2023 in Panama: Within the framework of this congress, members of the Science Diplomacy Network in Latin America and the Caribbean (DiploCientifica) led a session titled “Science diplomacy for the safeguarding of the Amazon: A collaborative exercise leading to a policy brief for governments and stakeholders.” Approximately 30 participants contributed to the session; their input was collected around the following questions: 1) What type of policies and programs should be generated to safeguard the Amazon?; 2) What type of actors should be linked?; and 3) How should the financing of these actions be?
- Focus group with experts in science diplomacy from Latin America – August 2023: The results and emerging recommendations of the SRI were validated and deepened by a group of six regional experts in science diplomacy accompanied by representatives of the academic sector, public sector, and third sector.
- Analysis of relevant literature: The authors of this document integrated into the analysis science diplomacy literature, official government documents including regional declarations and treaties linked to the Amazon and its safeguarding, as well as reports from panels and international spaces of relevance on this topic.



# RECOMMENDATIONS

This process converged into four groups of recommendations that address and promote 1) scientific and academic transdisciplinary cooperation; 2) strengthening a joint monitoring platform; 3) the creation of a Science-Policy Hub; and 4) the development of capacities for science diplomacy. Likewise, these recommendations were structured under four types of public policy instruments, including regulatory (R), operational (O), financial (F), and soft instruments (S). In each of the recommendations, the type of instrument is indicated with the respective letter.



## Scientific and academic transdisciplinary cooperation

1. Promote transdisciplinary research around the Amazon with active participation of Amazonian entities and communities
2. Create platforms for knowledge exchange between scientists and indigenous communities
3. Establish a funding strategy that enhances the coordination among the OTCA counties and creates mechanisms to channel funds from other donors



## Joint monitoring platform

1. Strengthen existing efforts in mapping organizations and science capacities for monitoring
2. Promote the adoption of unified and standardized systems for information reporting
3. Create a science diplomacy strategy to support the operation of the ORA



## Science-Policy Hub

1. Create a repository of international, national and regional public policies of the Amazon
2. Develop science advisory programs for the design and implementation of public policies in the Amazon
3. Support public institutions to integrate scientific knowledge in the design and implementation of public policies



## Capacity Building

1. Train the academic community in diplomacy and science dissemination to effectively influence policy
2. Offer specialized training to officials in the application of science and traditional wisdom for decision making
3. Enable indigenous peoples in project management and leadership of university extensions with a focus on ancestral knowledge



## Scientific and academic transdisciplinary cooperation

### 1. Promote transdisciplinary research around the Amazon with active participation of Amazonian entities and communities.

- **Promote the adoption of transdisciplinary research guidelines from and for the Amazon (R):** Within the framework of OTCA and through the member institutions of the Association of Amazonian Universities (UNAMAZ), carry out a process of co-creation of guidelines for the design and implementation of transdisciplinary research methodologies. These guidelines must incorporate the principles established in the International Labour Organization (ILO) Convention 169 regarding the autonomy and integrity of indigenous and tribal people.
- **Create incentives for the dissemination and awareness of transdisciplinary research guidelines from and for the Amazon (B):** Develop a strategy for higher education institutions to generate training programs for capacity building in transdisciplinary research in their academic communities and promote an open and virtual access strategy to these contents.
- **Promote cooperation agreements within the scientific ecosystem that encourage transdisciplinary research and allow the shared use of facilities and technologies (O):** There are efforts to map scientific capabilities in terms of facilities, infrastructure, and technologies. Allowing the shared use of these capacities will enhance collaborations between disciplines and actors in the territory under the principle of efficient resource management.
- **Develop models of cooperation agreements between higher education institutions, indigenous peoples, local communities, the private sector, and public institutions (O):** It is important to have clarity about the roles in decision-making, knowledge transfer processes, and intellectual property in transdisciplinary research to develop inclusive processes and build trust with different actors. For this reason, it is recommended to support institutions through the generation of cooperation agreement models.

### 2. Create platforms for knowledge exchange between scientists and indigenous communities.

- **Create participation mechanisms in decision-making bodies for representatives of indigenous communities (O):** The genuine participation of indigenous peoples in decision-making bodies will materialize when they are fully integrated with both a voice and a vote. Some decision-making bodies where it is necessary to incorporate the participation of indigenous peoples to advance science diplomacy include:
  - **Higher education institutions:** ethics committees, faculty committees, research councils, among others.
  - **Ministries of science:** selection committees for funding calls for projects in the Amazon, mobility programs, and other scientific and innovation investment projects.
  - **Other ministries:** selection committees for investment projects in the Amazon.



#### RECOMMENDATION:

Promote the development and advancement of international scientific cooperation programs that endorse transdisciplinary research methodologies, and create platforms for knowledge exchange between scientists and indigenous communities while establishing effective financing mechanisms.



- **Design a program for the identification and participation of the scientific diaspora of indigenous peoples (F):** There are a large number of members of indigenous communities who have relocated to urban centers to advance their education and scientific careers. Identifying this diaspora and generating incentives and programs for their active participation in projects in their places of origin is a priority. Their return should not necessarily be a condition, but rather opportunities so that they can contribute and channel resources and capabilities from their place of residence.
- **Institutionalize annual international meeting spaces for the exchange of ancestral knowledge by thematic areas (O):** Create spaces for the exchange of knowledge by thematic areas prioritized by the indigenous peoples of the Amazon. The thematic areas must be proposed by the people themselves and, as possible, be aligned with those prioritized by the ministries and secretariats of science.





## Joint monitoring platform

### 1. Strengthen existing efforts in mapping organizations and scientific capacities for monitoring.

- **Classify mapping initiatives by thematic modules (O):** There are several diagnostic initiatives for mapping efforts in different fields of knowledge. It is necessary to recognize these processes and articulate them under the thematic modules proposed by the ORA, integrating the leading institutions per module (including universities, research centers, civil society organizations, and local communities).
- **Identify good practices for monitoring and use of technologies (O):** Under the thematic modules proposed by the ORA, generate a strategy to identify good practices for data reporting and adoption of technologies for data analysis.

### 2. Promote the adoption of unified and standardized systems for information reporting

- **Co-creation of standardized reporting systems (R):** Together with the leading institutions per thematic module, carry out a process of co-creating a proposal for standardized information reporting.
- **Promote the adoption of an intergovernmental agreement to implement the reporting principles framework (R):** Through the diplomatic mechanisms established by OTCA, promote the adoption of an intergovernmental agreement that encourages the adoption of the reporting principles generated under the ORA thematic modules.
- **Promote the adoption of an intergovernmental open data agreement for the ORA (R):** Through the diplomatic mechanisms established by OTCA, promote the adoption of an intergovernmental agreement that facilitates the publication of ORA data on open access platforms.

### 3. Create a science diplomacy strategy to support the operation of the ORA.

- **Create a multilateral fund to finance the ORA (F):** Channel resources from development cooperation funds and multilateral entities to finance the ORA. This must include a strategy that allows the development of efficient administration and financing schemes for each of the thematic modules under a decentralized and autonomous model.
- **Articulate funding calls from each OTCA member country to strengthen reporting systems to the ORA (F):** Each OTCA member country has its own scientific ecosystem and financing schemes. Through the diplomatic mechanisms and working groups of OTCA, it is recommended to agree on the articulation of calls under the internal mechanisms of each country to promote the adoption of the minimum and unified principles of standardized information reporting.



#### RECOMMENDATION:

Support the strengthening of the OTCA Regional Amazon Observatory (ORA) in coordination with the ministries and/or secretariats of science, technology, and innovation of each country. This process must start with strengthening existing monitoring platforms and articulating their data collection, integration, and analysis processes.



## Science-Policy Hub

### 1. Create a repository of international, national and regional public policies of the Amazon:

- **Identification and classification of public policies by thematic areas (O):** Create a repository of public policies from different countries that can be classified by thematic areas prioritized by OTCA and the ORA. This repository can be developed through interdisciplinary university alliances.
- **Information dissemination (B):** Create communication platforms to report on relevant policies and news about the Amazon. This includes organizing informational events, such as workshops and seminars, to inform civil society, local communities, and authorities about public policies and their impact.

### 2. Develop science advisory programs for the design and implementation of public policies in the Amazon:

- **Strengthen the Scientific Panel for the Amazon (F):** One of the great efforts of science diplomacy in Latin America has been the creation of this panel which has the participation of more than 200 researchers from the region in various disciplines. It is necessary to achieve the commitment of multilateral organizations and international cooperation to continue financing the activities of this panel since its results and reports are required inputs for the formulation of public policies.
- **Strengthen science advisory internship programs for the development of public policies (B):** Promote the creation, strengthening, and financing of internship programs for researchers and scientists in public institutions at the regional, national, provincial, and municipal levels and in diplomatic missions.

### 3. Support public institutions to integrate scientific knowledge in the design and implementation of public policies.

- **Create a consultative mechanism for the design of public policies (O):** Promote cooperation agreements between universities, research institutes, and entities attached to the ORA with national and local authorities to collect and analyze relevant scientific data for decision-making and formulating public policies based on scientific evidence.
- **Create an impact monitoring and evaluation mechanism (O):** Through alliances with universities, establish systems for monitoring and evaluating the implementation of public policies in the Amazon. These systems will allow us to identify gaps, areas for improvement, and challenges in the implementation of these policies. These monitoring systems must incorporate citizen science strategies with local communities. It is recommended to publish regular reports that highlight progress and challenges during its implementation.



#### RRECOMMENDATION:

Promote the establishment of a counseling and support center for the design and implementation of evidence-based public policies, incorporating scientific and ancestral knowledge for the Amazon. This center aims to effectively address conservation and sustainable development challenges, fostering collaboration among various stakeholders and ensuring attention at both national and local levels.



## Capacity Building



### RECOMMENDATION:

Create dialogue scenarios among stakeholders from different knowledge systems to understand diverse perspectives and experiences. Collaboratively co-create pathways for capacity-building for various actors.

### To scientists, researchers, teachers, and students

- **Develop training in communication, dissemination, and science diplomacy (B):** Create training in science dissemination to effectively communicate scientific data to public policymakers and other interested parties and influence science diplomacy processes. Likewise, create training programs in skills for science diplomacy, such as negotiation, leadership, and assertive communication, among others.
- **Develop training to implement citizen science programs (B):** It is necessary to design and implement trainings in citizen science that allow the strengthening of capacities, both of researchers and leaders of local communities. For this, community participation mechanisms must be generated from the design of the strategies to the financing schemes for the technologies to be used.

### To public officials and regional, municipal, and private sector decision-makers

- **Promote training for public and private sector officials (B):** Create incentives for universities to develop training for decision-makers in the public and private sectors on the use of scientific evidence and ancestral knowledge for designing public and private policies. It is suggested to establish an emphasis on emerging topics, such as artificial intelligence, remote sensing, bioeconomy, and integrated socio-environmental systems, among others.
- **To the diplomatic officials and staff of international cooperation offices of the national level ministries of the Amazon countries (B):** In collaboration with the diplomatic academies of the Ministries of Foreign Affairs from each country, develop training modules in science diplomacy where leadership capacities for international negotiation are strengthened to promote binational and multilateral projects for the benefit of international scientific collaboration and the incorporation of ancestral knowledge for the Amazon.

### To indigenous peoples and local communities

- **Develop training in project formulation, implementation, and evaluation (B):** It is necessary to develop training for the design, presentation, and implementation of projects. The contents must include modules on project formulation, financial planning and management, monitoring and impact evaluation, and strategic communication.
- **Train indigenous communities to lead university extension processes (O):** Incorporating ancestral knowledge into university extension services led by the communities themselves implies the recognition of ancestral knowledge. Universities must develop training processes for indigenous communities so that they lead extension programs, also incorporating strategies for the social appropriation of knowledge and citizen communication that allow the real exchange of knowledge and permanent dialogue within the framework of research and development.

# General recommendations

- These recommended actions are **highly flexible and dynamic** to respond to changes in the Amazon region and the specific needs of each area. The active participation of stakeholders, such as civil society, non-governmental organizations, public and private sectors, and public policy experts, is crucial.
- The **leadership** of the Ministries of Science, Technology, and Innovation, the Ministries of the Environment, and the Foreign Ministries of the countries in the Amazon **must be reflected in their intersectoral actions** that promote spaces for participation in the design and implementation of these recommendations.
- Universities and research centers, likewise, can develop several of the recommendations included here **regardless** of whether there is institutional or financial support from external actors.
- Indigenous peoples and local communities have an opportunity to be the main leaders in safeguarding the Amazon. For this, it is essential to continue strengthening their **internal participation mechanisms** and community **leadership processes**. Similarly, it is crucial that they can make effective their rights and guarantee the safeguarding of their territory in accordance with the principles outlined in the ILO Convention 169.
- International cooperation agencies, multilateral actors, and international financial institutions have an opportunity to provide funding sources that contribute to the **consolidation of a science diplomacy strategy** that is designed and developed from and for the territory.

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