

Asia-Europe **Science & Technology Diplomacy** Report

Mapping Science & Technology Diplomacy
Strategies and Actions in the Two Regions



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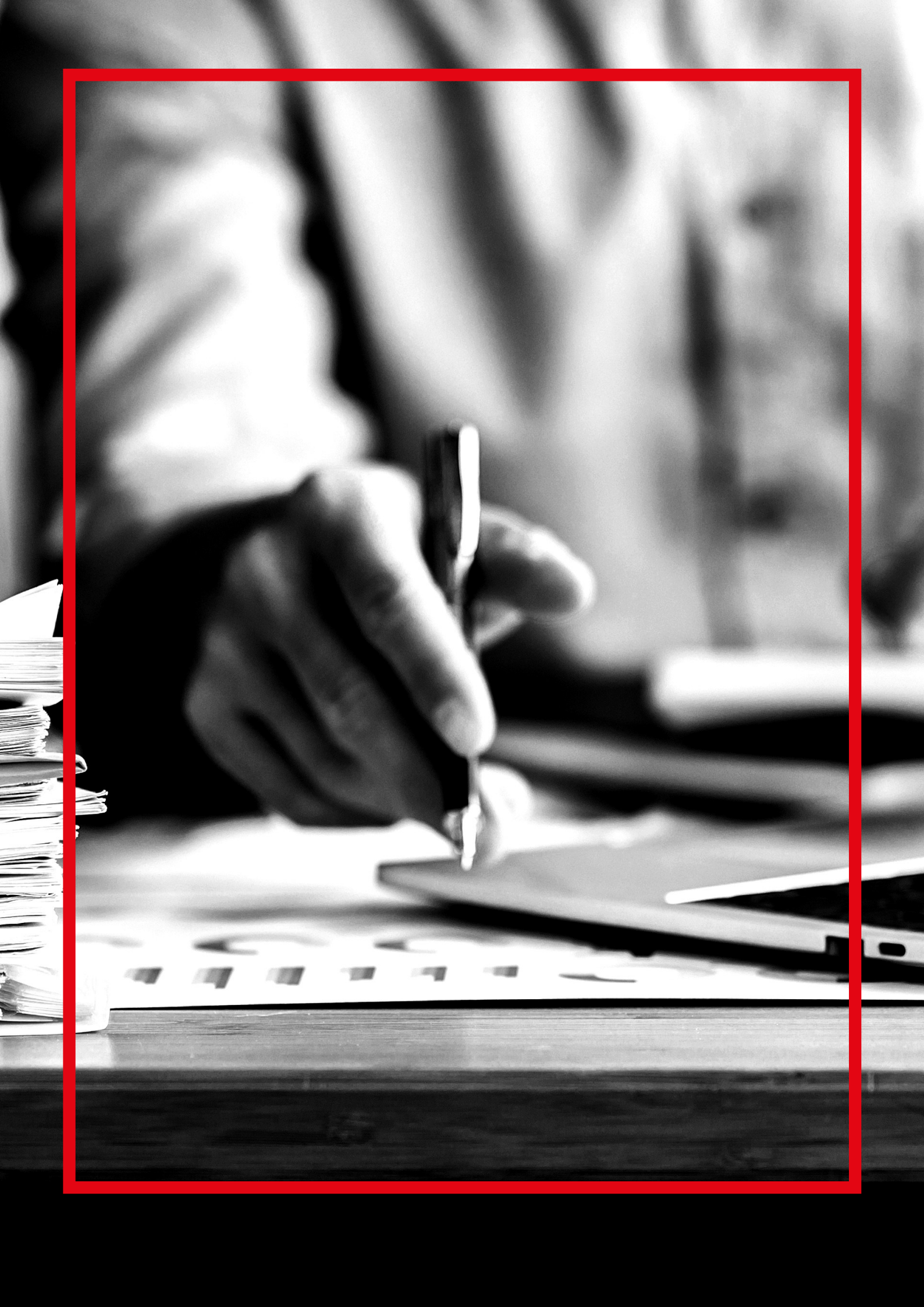
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Disclaimer: The data presented in this Report is based on research conducted by ASEF and its contributors between July 2024-March 2025. The views and information presented in the Comparative Report and the Country Reports are the sole responsibility of the Country Informants and do not necessarily reflect the official position of the Asia-Europe Foundation (ASEF) or its partners, or the interviewee(s) for the reports. The Country Informants bear full responsibility for the content, contextualisation of information and any potential inaccuracies.

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FOREWORD

We are proud to present the *'Asia-Europe Science & Technology Diplomacy Report: Mapping Science and Technology Diplomacy in the Two Regions'*, a collective effort mapping the current state of Science and Technology Diplomacy across 41 ASEF member countries and the European Union.

Science and Technology Diplomacy is increasingly recognised as a powerful instrument for fostering international cooperation, addressing global challenges, and promoting sustainable development. Recognising its growing importance, the Asia-Europe Foundation (ASEF) launched the *'Asia-Europe Science & Technology Diplomacy Initiative for Young Leaders'*, aiming to enhance mutual understanding of strategies, tools and institutions across the two regions, and unlock further opportunities for collaboration.

This Report, built upon insights from 41 national Country Reports authored by dedicated young academics, students, diplomats, and professionals, provides a comparative analysis of the diverse approaches to Science and Technology Diplomacy in Asia and Europe. The invaluable contributions of these young researchers highlight the potential of emerging leaders to shape the future of science diplomacy – and builds our confidence that they are not only inheriting a world fraught with complex challenges but are also equipped with fresh perspectives and innovative approaches to tackle them.

We extend our sincere appreciation to the Country Informants and stakeholders whose expertise and dedication made this project possible. While this Report maps and celebrates the achievements of ASEF member countries in advancing Science and Technology Diplomacy, it also acknowledges the challenges that remain and we hope to inspire deeper discussions on cooperation between Asia and Europe at the intersection between science, technology, innovation, and diplomacy.

Aligned with ASEF's mission to strengthen dialogue and cooperation, we hope this report serves as a valuable resource for policymakers, diplomats, researchers, educators, and industry leaders navigating the evolving landscape of global science diplomacy. As we move forward, ASEF remains committed to facilitating collective action and shared knowledge to build a more sustainable and interconnected world.

It is my hope that this report inspires all stakeholders to embrace Science and Technology Diplomacy as a cornerstone of international cooperation in this era of uncertainty.



Ambassador Beata Stoczyńska
Executive Director
Asia-Europe Foundation (ASEF)



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First and foremost, we thank the Country Informants (young academics, students, diplomats, and professionals) whose extensive research and insightful contributions build the core of this report. Our deepest appreciation goes to (in alphabetical order of their family names): Tomas Akynov, Htay Aung Pyae, Ioannis Batas, Kotchaphan Bowonchaiyarit, Joël Brunner, Carlos Capdeliva, Cissy Chen, Agnese Cigliano, Marian Fila, Xin Chen Gan, Gunter Gaublomme, Olivia Geymond, Tomaz Gorenc, Muhammad Raka Hadiyan, Nan Hao, Tim Hildebrandt, Elsa Huhtala, Vihang Vivek Jumle, Jana Kazarjan, Vilaysone Leuang, Alexander Lindqvist, Yunkang Liu, Sarah Mackel, Gabrielė Niekytė, Jonas Nitschke, Sheena Joy Palcis, Merilin Reede, Mirko Savković, Karolína Schwabová, Zane Šime, Kerstin Sirk, Antonis Stylianou, Bálint Szabó, Ryotaro Takano, Tibor Toro, Chi Ha Tran, Chiara Treglia, Muhammad Umar, Maxim Vandekerckhove, Lyubov Vlasheva, Vongmonasekar Vuthy, Sandra Wohlauf, and Elaine Yeap.

We also express our appreciation to the 70+ interviewees from government, academia, and various agencies, who dedicated their time to share valuable insights, and whose feedback helped validate and enrich the findings of this report. Their contributions are acknowledged in detail within the individual country reports.

Special thanks and our sincere appreciation goes to Ms Linnéa Regnell, ASEF Project Executive, for guiding the Country Informants through the research process, organising regular check-ins, and compiling and analysing the collected data which shaped the comparative part of this Report. We thank Ms Réka Tózsá, Director of ASEF's Education Department, for conceptualising and editing both this comparative report and the Country Reports, ensuring coherence and comprehensiveness throughout. We also thank Ms Freya Chow-Paul, ASEF Youth Project Lead, for her thoughtful contributions and careful editing, which helped to elevate this report to reach its full potential.

We are particularly grateful to Jan Marco Müller, Team Leader Global Approach, Multilateral Dialogue and Science Diplomacy, DG Research and Innovation, European Commission, whose intellectual guidance and encouragement greatly supported this endeavour.

We want to further acknowledge Ms Patricia Senge and Mr Adhiraaj Anand for their thorough proofreading and Mr Mikhail Plata for the design and layout of the report.

Finally, ASEF is particularly thankful to the European Union and Denmark for providing the funds for this publication, contributing to raising awareness and increasing the information available on the Science & Technology Diplomacy ecosystems across Asia and Europe.

EXECUTIVE SUMMARY

The ‘Asia-Europe Science & Technology Diplomacy Report: Mapping Science and Technology Diplomacy in the Two Regions’ was developed to improve understanding of how Science and Technology Diplomacy is defined, prioritised, and practiced across Asia and Europe. As the world navigates urgent global challenges such as climate change, pandemics, energy security, digital transformation, and geopolitical tensions, there is growing recognition that scientific collaboration and diplomatic engagement must go hand-in-hand to build shared, sustainable solutions. Science and Technology Diplomacy sits at this intersection.

While Science and Technology Diplomacy is gaining increasing attention, there are significant gaps in information available on how different countries and regions approach it in practice; particularly in the context of interregional cooperation between Asia and Europe. To bridge this gap, the Asia-Europe Foundation (ASEF) launched the ‘Asia-Europe Science and Technology Diplomacy Initiative for Young Leaders’ in 2024. This report is one of the first outputs of this initiative: a collaborative effort to map national strategies, actors, actions, and tools related to Science and Technology Diplomacy across the two regions.

The report set out to answer two core questions:

- 1) What strategies do countries in Asia and Europe have for Science Diplomacy?
- 2) What initiatives and tools are being used to implement these strategies?

To explore these questions, the report draws on the insights and research of 43 Country Informants (young scholars, professionals, and diplomats from ASEF’s member countries) who conducted desk research based on publicly available sources; held interviews with key stakeholders in government, academia, and research to validate and enrich their findings; and analysed the findings in their respective national contexts from July 2024 to March 2025.

Each Country Informant submitted their questionnaire responses and authored a full-length narrative Country Report, offering both quantitative data and qualitative insights to the topic. ASEF analysed the combined questionnaire input to create a comparative synthesis of national strategies and actions, presented in this Report. The narrative Country Reports are available in full in the Annexes, providing a more detailed look into each country’s unique context.

Findings

1) Majority of Countries Have a Strategy - But Few Standalone Ones

The Report findings show that a majority of the countries have a Science and Technology Diplomacy strategy, either as a standalone document or **integrated into broader policies**. Whilst France, Germany, and the United Kingdom have published explicit strategies focusing on Science and Technology Diplomacy, most countries have their Science and Technology Diplomacy strategy and objectives embedded within broader foreign policy or science and innovation strategies rather than publishing standalone documents.

2) Countries Pursue Multi-Dimensional Objectives, with Economic Competitiveness and Research Cooperation Leading

Country Informants were asked to identify the core objectives of their countries' Science and Technology Diplomacy strategies. The responses reveal that countries pursue a range of objectives, with the most frequently cited being: **Increasing Economic Competitiveness** and **Facilitating Research Cooperation** (both at 90.2%), followed by **Soft Diplomacy** (85.4%) and **Developing Research & Development Capacity** (82.9%). Other objectives include Tackling Global Societal Challenges (63.4%), Infrastructure Access (51.2%), and Supporting Evidence-Based Decision Making (39%).

Asian countries tend to adopt a broader and more multifaceted approach than European ones. On average, Country Informants in Asia reported their countries pursuing six different core objectives, compared to five in Europe. Notably, 100% of Asian countries reported prioritising Developing Research & Development Capacity and Increasing Economic Competitiveness, compared to 76% and 84% respectively among European countries. A significant gap was also observed in Infrastructure Access, with 75% of Asian countries highlighting it as a priority, versus just 32% in Europe. These findings underline the broader scope of objectives guiding Science and Technology Diplomacy strategies in Asia and suggest diverse opportunities for collaboration across thematic and geographic lines.

3) The Utilisation of Science and Diplomacy Differs Between Asia and Europe

Furthermore, using the three-category framework developed by the Royal Society and the American Association for the Advancement of Science (AAAS) in 2010, European countries are reported to best fit the description for **Diplomacy for Science** (facilitating international science cooperation in research and collaboration between scientists and researchers) reflected in their top core objectives being to facilitate research cooperation and soft diplomacy. Respectively, Asian countries are reported to best fit the description for **Science for Diplomacy** (using science cooperation to improve international relations between countries) which is reflected in their top core objectives reported as increasing economic competitiveness and to develop research and development capacity for the country, followed closely by the objective to facilitate research cooperation.

4) Strategic Focus on Natural Sciences, Engineering, Health, and Emerging Technologies

Country Informants were asked to identify which scientific and technological fields are prioritised in their national strategies. The data reveals that **Natural Sciences** are the most commonly prioritised area (82.9% of countries), followed closely by **Engineering and Technology** and **Medical and Health Sciences** (both at 75.6%). In contrast, Humanities were the least prioritised field, reported for only 24.4% of countries to be in the focus of their strategies. This underscores a gap in interdisciplinary integration despite their relevance for global dialogue and mutual understanding.

Country Informants also flagged cross-cutting themes (particularly Artificial Intelligence, Climate Change, Digital Transformation, Space Sciences) as emerging priority areas embedded within broader categories. Together, these findings reveal shared priorities and opportunities for international collaboration, especially around digital transformation, climate action, and global health.

5) Opportunities for Interregional Cooperation Exist

Asia and Europe are shown to **prioritise their Science and Technology Diplomacy efforts within their own geographical regions**. However, the findings also show that both regions **also dedicate efforts to each other**, creating opportunities for interregional cooperation in the field. Here, scientific fields such as *Natural Sciences, Engineering and Technology, and Medical Health and Sciences*, which are prioritised by both regions are indicated as potential avenues for exchange and collaboration.

6) Different Stakeholder Dynamics in Asia and Europe

Country Informants were asked to collect information and analyse the engagement of different stakeholders in Science and Technology Diplomacy in the countries. **Governmental** and **Research and Academic stakeholders** are key drivers of Science and Technology Diplomacy across both regions, however, in Europe, where *Diplomacy for Science* is leading, **Research and Academic stakeholders** are more frequently driving in Science and Technology Diplomacy activities compared to Asia. **Industry stakeholders** are also important in driving Science and Technology Diplomacy in the two regions. **Civil society stakeholders**, on the other hand, are reported to a larger extent to only play a somewhat active or marginally active role driving Science and Technology Diplomacy in the countries.

7) Diverse Actions and Tools Support Science and Technology Diplomacy Goals

The report highlights a wide array of actions and tools that countries employ to implement their Science and Technology Diplomacy strategies. Country Informants reported that the most commonly used mechanisms include **bilateral or multilateral cooperation agreements** (95.1%) and **national or regional research funding schemes** (92.7%), underlining the emphasis on formal collaboration frameworks and financial support for research as key instruments. Around two-thirds of countries were reported having **Science & Technology advisors** attached to embassies and offering **fellowships or internships** in Science and Technology Diplomacy.

When categorising actions based on the three descriptions of Science Diplomacy actions proposed by Gluckman et al. in 2017, Country Informants concluded that most activities are geared toward **advancing national interests** (accounting for 263 reported actions), followed by actions **supporting cross-border collaboration** (154 actions) and finally those aimed at **addressing global challenges** (115 actions). This tiered focus suggests that countries primarily deploy science diplomacy to meet domestic goals before engaging in broader regional and international cooperation.

8) Varied Levels of Personnel and Resources

The Report also shows that approaches may vary across regions due to differences in priorities and available resources. The findings highlight the differences in the type and number of personnel dedicated to Science and Technology Diplomacy **vary greatly in Asia and Europe**, where many countries covered in this Report have no personnel specifically dedicated to Science and Technology Diplomacy, whilst others have a large representation of Science and Technology Diplomacy counsellors or attachés on missions abroad. This shows the discrepancy between countries in the resources available and utilised for Science and Technology Diplomacy efforts.

9) Coordination and Monitoring Structures Differ Across Countries

To organise the stakeholders and actions of Science and Technology Diplomacy, countries employ diverse governance structures. Whilst a few countries report a **centralised approach** to the coordination and monitoring of Science and Technology Diplomacy in the country, with one ministry or agency responsible, most countries are reported to rely on **cross-sectoral partnerships** between government agencies, academic institutions, and private sector stakeholders. Ministries involved in these coordination efforts include ministries of foreign and international affairs, ministries of education, ministries of science, technology and innovation, and ministries of commerce, trade, and economy.

10) A Path Forward for Asia-Europe Cooperation

Through the Asia-Europe Science & Technology Diplomacy Report, ASEF underscores the critical role that Science and Technology Diplomacy can play in addressing global challenges while fostering innovation-driven growth. By mapping strategies, activities, tools, and other initiatives in Asia and Europe, this Report invites stakeholders to discuss the possible reasons behind the findings and identify opportunities for enhanced collaboration between Asia and Europe. To help guide these discussions, ASEF proposes topics and questions for consideration, encouraging further dialogue.



INTRODUCTION

Science and Technology Diplomacy is increasingly recognised as a crucial element in addressing global challenges, fostering international cooperation, and driving innovation-led economic growth. At the intersection of science, technology, foreign policy, innovation strategies, economic competitiveness, and education, Science and Technology Diplomacy provides powerful tools for collaboration, dialogue, and trust-building among nations. In an era characterised by complex global issues such as climate change, pandemics, digital transformation, and geopolitical tensions, strengthening capacities in science diplomacy has become not just beneficial, but essential.

The significance of Science and Technology Diplomacy becomes especially clear in the context of Asia-Europe cooperation. Europe and Asia jointly account for a significant share of the world's population (almost 70%) (United Nations Department of Economic and Social Affairs, Population Division (2022), World Population Prospect 2022) collectively contributing to over 60% of the world's gross domestic product (GDP) (International Monetary Fund, IMF Data Mapper). Asia and Europe stand as powerhouses in the realm of Science, Technology, and Innovation, hosting numerous world-class research centres, universities, and international organisations that uphold their research and development capacities. By cooperating together and leveraging their strong diplomatic ties, they can harness their collective scientific and technological progress to develop cutting-edge solutions and innovations, thereby establishing a solid foundation for science diplomacy and international cooperation.

Recognising the opportunities of this landscape, the Asia-Europe Foundation (ASEF) launched the '*Asia-Europe Science and Technology Diplomacy Initiative for Young Leaders*' in 2024 to increase mutual understanding in Asia and Europe, unlocking opportunities for collaboration, and promote the role of young leaders in the field.

A first milestone of this initiative is the '*Asia-Europe Science and Technology Diplomacy Report: Mapping Science and Technology Diplomacy in the Two Regions*', which maps, analyses and documents the current state of Science and Technology Diplomacy across ASEF member countries, spanning both regions.

The research underpinning this report was conducted by Country Informants (young academics, diplomats, and professionals) who gathered comprehensive data from their respective countries. Building on their efforts, this report addresses two primary questions:

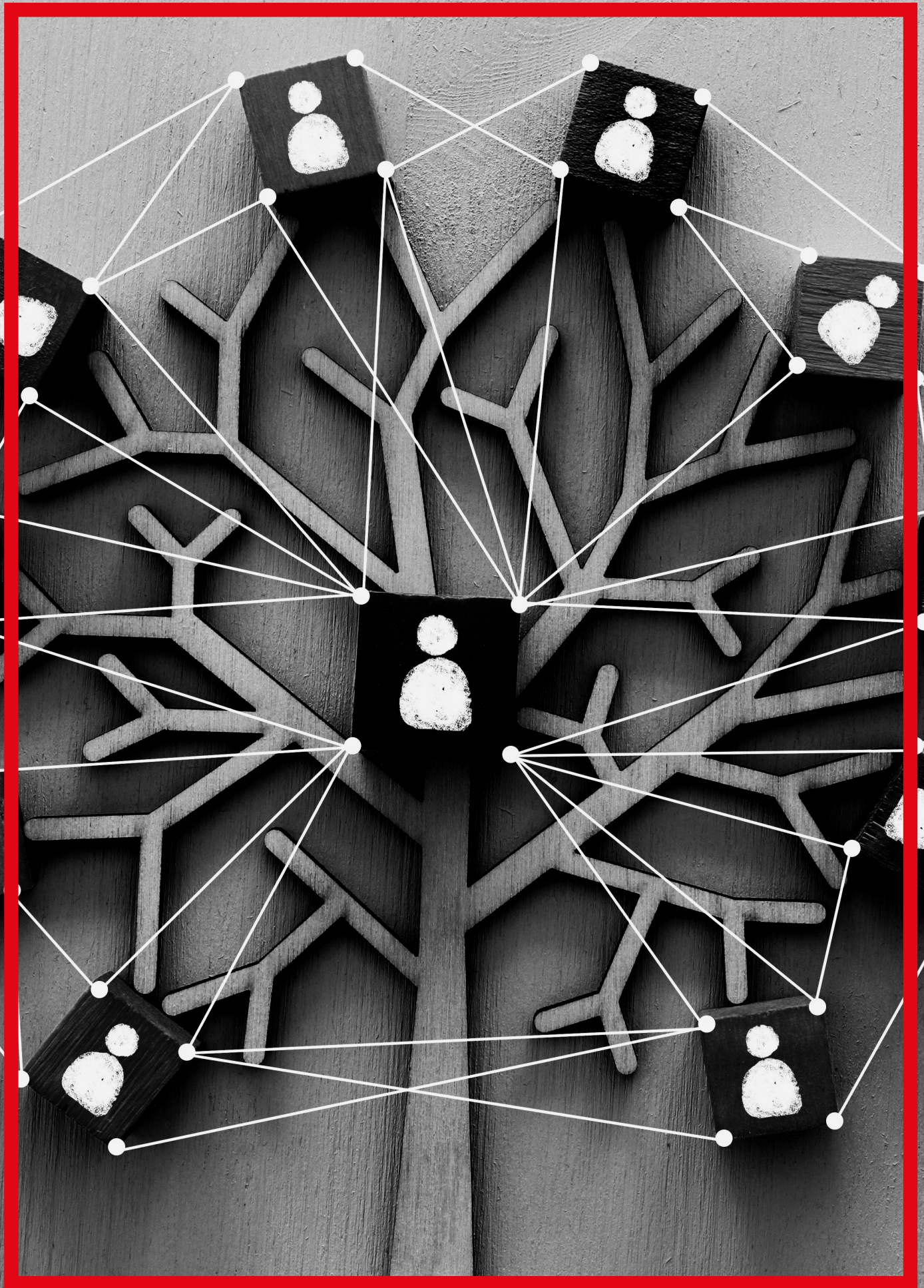
- 1) What strategies do countries in Asia and Europe have for Science Diplomacy?
- 2) What initiatives and tools are being used to implement these strategies?

This Report provides a comparative analysis of strategies, stakeholders, policy tools, and coordination mechanisms used across 41 countries in Asia and Europe, and the European Union. It highlights how governments strategically use scientific and technological collaboration to tackle global societal challenges, enhance economic competitiveness, attract talent and investment, facilitate international research cooperation, and position themselves as key players in global innovation ecosystems. The report not only maps the diversity of national approaches but also identifies key stakeholders in academia, industry and civil society, contributing and driving the vibrant Science and Technology Diplomacy scene. It also has a section exploring the personnel working on Science and Technology Diplomacy topics and their training mechanisms.

The Comparative Report is structured into three main parts:

- 1) National Science and Technology Diplomacy Strategies and Coordination Mechanisms
- 2) Actions and Tools to Implement Science and Technology Diplomacy Strategies
- 3) Conclusions

Overall, this mapping report seeks to build awareness and understanding, strengthen existing partnerships, and inspire new forms of cooperation between Asia and Europe. Ultimately, it aims to contribute to the creation of robust, interconnected Science and Technology Diplomacy ecosystems that can effectively respond to global challenges, improve societal wellbeing, and promote sustainable and inclusive growth across both regions.



RESEARCH FRAMEWORK

1. Definitions

1.1 Science and Technology Diplomacy

There are many ways to refer to the intersection between Science, Research, Innovation, and Diplomacy. This means that there is no clear definition of Science Diplomacy nor of Technology Diplomacy, though many different definitions or explanations have been proposed over the years.

By using the term Science & Technology Diplomacy in this Report, we are attempting to bring together different definitions and conceptualise this overlap between science, technology, and diplomacy.

This term is informed by the definition of Science Diplomacy put forward by the Royal Society and the American Association for the Advancement of Science (AAAS) in 2010, which divides Science Diplomacy into three categories with their respective descriptions:

- 1) **Diplomacy for Science:** Facilitating international science cooperation in research and collaboration between scientists and researchers.
- 2) **Science for Diplomacy:** Using science cooperation to improve international relations between countries.
- 3) **Science in Diplomacy:** Informing foreign policy objectives with scientific advice.

Furthermore, the definition takes into consideration the three parts of Science Diplomacy proposed by Gluckman et al. in 2017. In their article '*Science Diplomacy: A Pragmatic Perspective from the Inside*', they propose three new categories for science diplomacy:

- 1) Actions designed to directly advance a country's national needs.
- 2) Actions designed to address cross-border interests.
- 3) Actions primarily designed to meet global needs and challenges.

Finally, the Report takes into account the definition of Technology Diplomacy proposed by Mr Eugenio V. Garcia who acted as the Senior Adviser and the Team Leader on Peace and Security, Humanitarian and Legal Affairs in the Office of the President of the 73rd Session of the United Nations General Assembly. He describes it as "the conduct and practice of international relations, dialogue, and negotiations on global digital policy and emerging technological issues among states, the private sector, civil society, and other groups" (Garcia, 2022). Technology Diplomacy has otherwise also been considered to be a type of Science Diplomacy (Royal Society & AAAS, 2010).

As of finalising this Report, the newly published *European Framework for Science Diplomacy: Recommendations of the EU Science Diplomacy Working Groups* (European Commission: Directorate-General for Research and Innovation, et. Al., 2025) published by the European Commission propose adding a category of Science Diplomacy to the AAAS and Royal Society definition; *Diplomacy in Science*, referring to the use of diplomatic skills and tools in and by science.

In addition, the Royal Society and AAAS have published *Science diplomacy in an era of disruption* (Royal Society & AAAS, 2025) in which they propose a new definition of Science Diplomacy, simplifying the concept into two categories; 1) science impacting diplomacy and, 2) diplomacy impacting science.

However, this new definition, as well as the new category proposed by the EU Working Groups will not be considered throughout this report, as they succeed the research conducted for this Report.

1.2 Country Informant

‘Country Informant’ refers to the students, academics, diplomats, and professionals (targeting young people below the age of 35) whom ASEF engaged as individual researchers for the Report. These Country Informants were selected through an Open Call and allocated to a country or to the European Union, either based on citizenship or on a strong connection to and knowledge (inclusive of language) of that country. The Country Informants are not representatives of their institutions or workplaces, but have been engaged as individual researchers. Their tasks and role are further outlined under 2. *Methodology*. When referring to the Country Informants and ‘their country’, we are referring to their allocated research country, not their country of citizenship.

See the profiles of the Country Informants [here](#).

1.3 Country Report

A ‘Country Report’ refers to the document written by the Country Informants as a narrative summary of the data collected on the Science and Technology Diplomacy strategies and actions in the respective country. We recognise that the European Union is not a separate country, but as a standalone ASEF member, the report for the EU will be referenced as a Country Report.

2. Methodology

ASEF recognises that research has already been conducted in the field of Science and Technology Diplomacy that maps Science and Technology Diplomacy approaches and activities. Examples of such Science Diplomacy strategy mapping studies are:

- ‘*Analysis on Science Diplomacy Strategies, Activities and Actors of EU Member States and Associated Countries*’ conducted by the European Union and the Strategic Forum for International S&T Cooperation (SFIC) Task Force on Science Diplomacy in 2021. (SFIC Task Force on Science Diplomacy, 2021)
- ‘*The Current State of the Art of Science Diplomacy*’, conducted by Tim Flink and Nicolas Rüffin, in 2019. (Flink, T. and Rüffin, N., 2019, p. 104-121)
- ‘*Science Diplomacy at the Intersection of S&T Policies and Foreign Affairs: Toward a Typology of National Approaches*’, conducted by Tim Flink and Ulrich Schreiterer in 2010 (Flink, T. and Schreiterer, U., 2010).

Informed by the above-mentioned research and with the aim of building on their findings, ASEF designed a questionnaire building upon the questions in the ‘*Analysis on Science Diplomacy Strategies, Activities and Actors of EU Member States and Associated Countries*’ by the EU, to gather quantitative and qualitative information and input to contribute with a unique, cross-regional perspective on Science and Technology Diplomacy in Asia and Europe.

The Report aims to answer two main questions:

- 1) What strategies do countries in Asia and Europe have for Science Diplomacy?
- 2) What actions and tools are being used to implement these strategies?

To answer these questions, ASEF issued an Open Call for interested individuals to apply to be a Country Informant and to contribute to the Report by conducting the research on their selected country. The Open Call was open between 14 May - 9 June 2024 and received 126 applications from 41 countries. The applications were reviewed by ASEF and 43 people were selected as Country Informants to represent and conduct the research on 41 ASEF member countries and the European Union.

The research for the Report was carried out by the Country Informants between July 2024 and March 2025. Based on the ASEF questionnaire, the Country Informants carried out desk research, using publicly available data sources, and conducted interviews with 70+ key stakeholders driving Science and Technology Diplomacy in their respective country. The interviews informed the findings, validating the information gathered by the Country Informants, and provided qualitative input to the Country Reports, complementing with additional information, real-life examples and case studies.

The Country Informants submitted their answers to the questionnaire, as well as a written narrative Country Report, to ASEF. The data from the questionnaire responses (quantitative and qualitative) was then compiled by ASEF (the analysis of which can be found in the findings under Part 1 - 3).

3. Scope

Covering 41 countries in Asia (16) and Europe (25), and the European Union, this Report combines the quantitative and qualitative data collected from the Country Informants, including their Country Reports.

ASEF Member Countries in Asia included: Australia, Cambodia, China, India, Indonesia, Japan, Kazakhstan, Korea, Lao PDR, Malaysia, Myanmar, Pakistan, the Philippines, Singapore, Thailand, and Viet Nam.

ASEF Member Countries in Europe included: Austria, Belgium, Bulgaria, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Malta, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

ASEF recognises that the European Union encompasses all the EU member states, including 22 of the European countries in this research. Therefore, findings from the research done on the European Union (EU) will not be included in the quantitative data presented throughout the report but key information from the research done by the Country Informant will be highlighted to provide regional context where justified. The Report did not have a Country Informant for the ASEAN Secretariat, however, using the same reasoning as for the EU, references will be made to ASEAN strategies and frameworks where relevant, based on data collected by ASEF.

Information on individual countries can be found in the full narrative Country Reports provided by the Country Informants – summarising and developing on the key findings presented in the Annexes.

4. Limitations

This Report aims to map the current existing strategies, policies, tools, and personnel active in the Science & Technology Diplomacy field in Asian and European ASEF member countries. Though efforts were made to include all ASEF countries in the Report, not all ASEF countries are presented. The Report can therefore be seen as providing a comprehensive overview of Science and Technology Diplomacy efforts in Asia and Europe, though not complete and exhaustive.

The research was conducted by individuals engaged as Country Informants, whose input has informed the overall findings for the Report and any regional comparisons made. They were selected from a diverse pool of applicants and their varied backgrounds, research experience, and expertise of Science and Technology Diplomacy will impact the final results. The views and information presented in their Country Reports (Annexes) are the sole responsibility of the Country Informant and do not necessarily reflect the official position of the interviewee(s) or the Asia-Europe Foundation (ASEF). The Country Informants (as authors of the Country Reports) bear full responsibility for the content, contextualisation of information and any potential inaccuracies.

Language and translations may affect the way Science and Technology Diplomacy is referenced in the Country Reports. Furthermore, there is no officially acknowledged definition and there are many different and sometimes regional approaches to Science and Technology Diplomacy. Therefore, references may be done throughout the report and in the Country Reports to areas, activities, strategies etc. using other terms which still may fall within what is to be considered Science and Technology Diplomacy, within the scope of this Report. Here, we refer to the explanation provided under section *1.1 Definitions*.

Finally, the data collected and presented in this Report will be dependent on what information was publicly available in each country during the research period and to what extent the Country Informants were able to conduct interviews with different stakeholders in the country which informed their findings. Therefore, the Country Reports may vary in length and detail, and a large margin of appreciation should be applied, especially in comparing the data from the included countries.



Part I. National Science and Technology Diplomacy Strategies and Their Coordination Mechanisms

1. Understanding Science & Technology Diplomacy Strategies Across Asia and Europe

1.1 Existence of a Strategy

35 Country Informants (85.4%) report that their countries have a Science and Technology Diplomacy Strategy, either as a standalone or, more commonly, as part of other national strategies. Out of these 35 countries, there are:

3 countries (7.3%) where the strategy is a standalone document:

- **France:** Explicit Science and Technology Diplomacy strategy entitled 'Une diplomatie scientifique pour la France' (Science Diplomacy for France) (Ministry of Foreign Affairs, France, 2013)
- **Germany:** The Strategy on Science Diplomacy was published in 2020 (Federal Foreign Office, Germany, 2020)
- **The United Kingdom:** The UK's International Technology Strategy was published in 2023 (UK Government, 2023).

33 countries (78%) where science diplomacy is embedded within different strategies. It lies most often at the intersection of public diplomacy, research and innovation policy, education and cultural policy, and economic strategies. This reflects a key challenge in mapping Science and Technology Diplomacy: the field is inherently interdisciplinary and cross-sectoral.

6 Country Informants (14.6%) report that a strategy is currently being developed: Indonesia, Lao PDR, Myanmar, Pakistan, Spain, and Sweden.

Does your country have a Science and Technology Diplomacy Strategy?

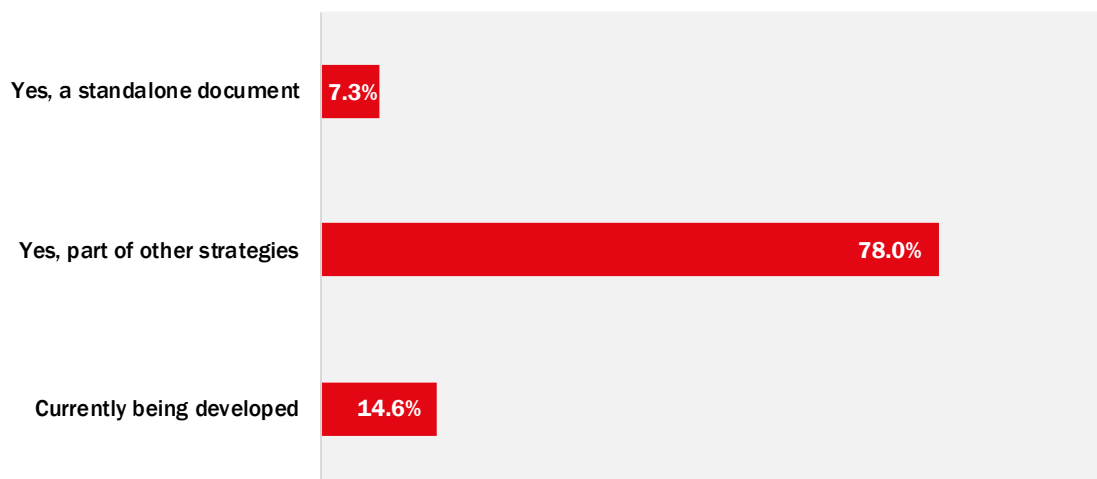


Figure 1: Existence of Science and Technology Diplomacy Strategies

In some cases there are overarching visionary documents that guide science and technology diplomacy strategies. Examples include the ‘*Pagtanaw 2050*’ (Looking Ahead) (DOST, 2021) foresight strategy in the **Philippines**, which highlights the significance of scientific and technological advancements as the foundation for the country’s economic success; or ‘*Lithuania 2050*’, which established the development and deployment of technology and innovation as one of the fundamental principles for **Lithuania’s** prosperity in the future, and ‘*Australia 2030: Prosperity Through Innovation*’, a strategy emphasising partnerships with global research institutions and industries to support **Australia’s** economic and diplomatic positioning in science and technology.

The **EU** has developed Science and Technology Diplomacy strategy as part of the ‘[EU’s Global Approach to Research and Innovation](#)’ (European Commission, Directorate-General for Research and Innovation, 2021).

The **ASEAN** also integrates Science and Technology Diplomacy in their ‘[Plan of Action On Science, Technology and Innovation \(APASTI\)](#)’ (ASEAN Secretariat Jakarta, 2017)

1.2 Categories of Science Diplomacy Strategies

We asked the Country Informants to assess which description of Science Diplomacy fits their respective countries best, by using the three-category framework developed by the Royal Society and the American Association for the Advancement of Science (AAAS) in 2010. Using a structured matrix, Country Informants indicated to what extent the below categories describe the strategies in place in their countries. The categorisation was made based on the Country Informants analysis of available data, their understanding and interpretation of the institutional practices, and their own judgement:

- 1) **Diplomacy for Science:** Facilitating international science cooperation in research and collaboration between scientists and researchers.
- 2) **Science for Diplomacy:** Using science cooperation to improve international relations between countries.
- 3) **Science in Diplomacy:** Informing foreign policy objectives with scientific advice.

This exercise aimed to provide insights on how the interface between science and technology, and diplomacy is structured and promoted in Asia and Europe.

In your assessment, which one of the following descriptions fits the Science and Technology Diplomacy strategy and mechanisms of your country the most?

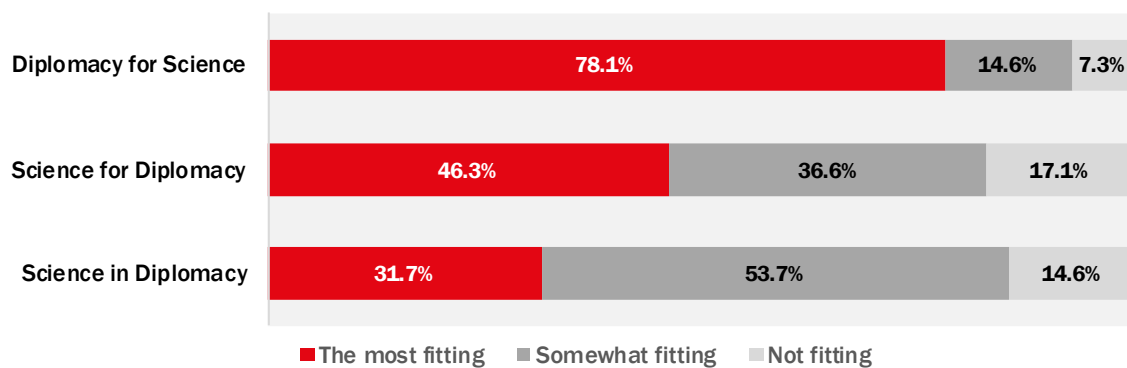


Figure 2: Categories of Science Diplomacy

Diplomacy for Science

38 Country Informants (92.7%) indicate that the strategies and mechanisms in their country can be seen as examples of *Diplomacy for Science* (facilitating international science cooperation in research and collaboration between scientists and researchers), with 32 (78.0%) indicating it as *The most fitting* and 6 (14.6%) as *Somewhat fitting*.

Science for Diplomacy

34 Country Informants (82.9%) indicate that the strategies and mechanisms in their country can be seen as examples of *Science for Diplomacy* (using science cooperation to improve international relations between countries), with 19 (46.3%) indicating it as *The most fitting* and 15 (36.6%) as *Somewhat fitting*.

Science in Diplomacy

36 Country Informants (87.8%) indicate that the strategies and mechanisms in their country can be seen as examples of *Science in Diplomacy* (informing foreign policy objectives with scientific advice), with 15 (31.7%) indicating it as *The most fitting* and 23 (56.1%) as *Somewhat fitting*.

Regional Comparison

European countries report a higher connection to the definition for *Diplomacy for Science*, with an average of 2.80 (out of 3) compared to the Asian average of 2.44.

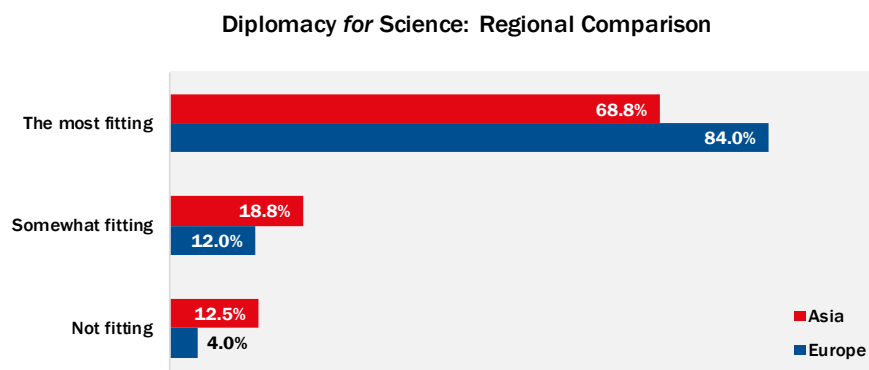


Figure 3: Regional Comparison of Diplomacy for Science in Asia and Europe

Asian countries are reported to have a slightly higher connection to the definition for *Science for Diplomacy*, with an average of 2.44 (out of 3) compared to the European average of 2.36.

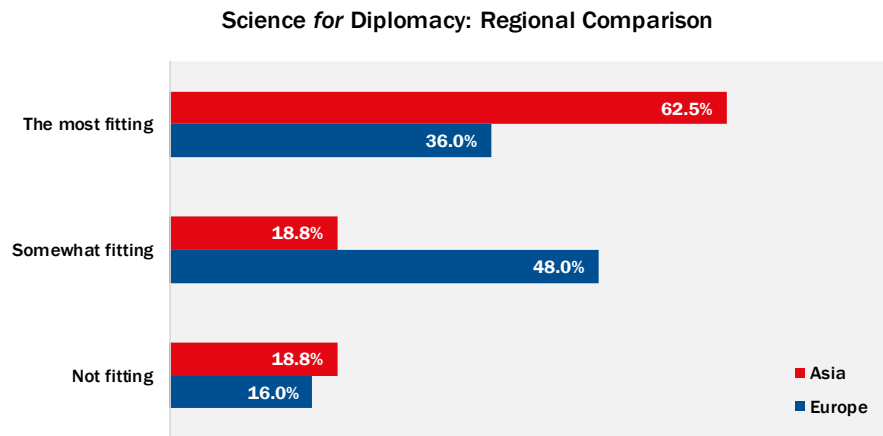


Figure 4: Regional Comparison of Science for Diplomacy in Asia and Europe

Asian countries report a slightly higher connection to the definition for *Science in Diplomacy*, with an average of 2.50 (out of 3) compared to the European average of 1.96 (out of 3).

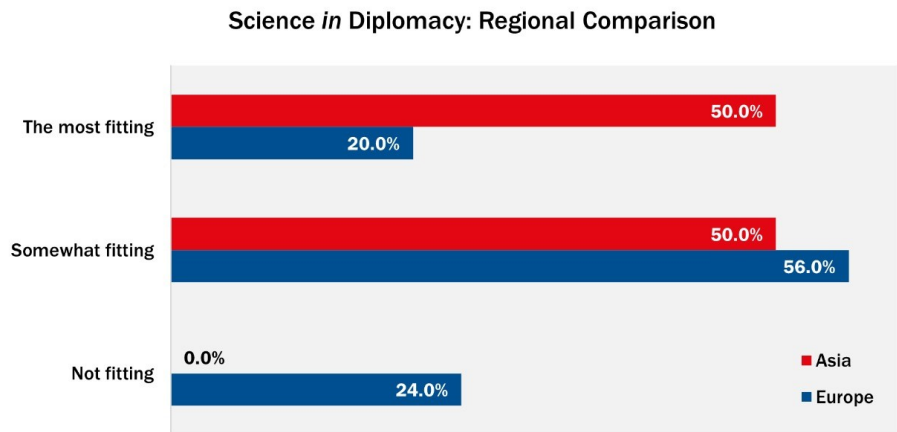


Figure 5: Regional Comparison of Science in Diplomacy in Asia and Europe

To summarise, European countries are reported to have the highest connection to *Diplomacy for Science* (2.8 out of 3), whilst Asian countries report the highest connection with *Science for Diplomacy* (2.5 out of 3).

The Country Informant for the **EU** note that the EU’s strategy and mechanisms relates to all approaches to some extent. Here, the EU builds international research partnerships using *Diplomacy for Science*, strengthens its global influence through *Science for Diplomacy*, and finally, ensures the role of science in shaping international policies through the integration of *Science in Diplomacy*.

The **ASEAN** APASTI framework (ASEAN Secretariat Jakarta, 2017) uses *Science for Diplomacy* in promoting cross-border research and development partnerships, for example through talent mobility schemes. Furthermore, the strategy frames the focus on using *Science for Diplomacy* to reinforce ASEAN’s cohesion amongst countries to build global partnerships. The strategy does not, however, include any explicit reference to the use of *Science in Diplomacy* to shape or inform policy decisions.



1.3 Objectives of Strategies

We asked the Country Informants to analyse their country's strategy and indicate what its core objectives are. This was done using the below list, adapted from the SFIC Task Force on Science Diplomacy 'Analysis On Science Diplomacy Strategies, Activities And Actors Of EU Member States And Associated Countries' (SFIC Task Force on Science Diplomacy, 2021). Country Informants were able to select multiple options to reflect the multi-dimensional nature of national strategies:

- Increase Economic Competitiveness
- Tackle Global Societal Challenges
- Facilitate Research Cooperation
- Soft Diplomacy (increase influence and visibility of the country)
- Infrastructure Access
- Develop Research & Development Capacity for the country
- Support Evidence-Based Decision Making
- Other

The Country Informants report that the objectives most frequent across Asian and European Science and Technology Diplomacy strategies are:

1) Increase Economic Competitiveness (37 countries at 90.2%)

Attracting Foreign Investment and Talent

Country Informants found that countries use Science and Technology Diplomacy to position themselves as attractive destinations for R&D investment, high-tech businesses, and international talent. For example:

- **Finland** utilises Science and Technology Diplomacy strategically to attract foreign talent and build contacts for sharing Finnish knowledge, expertise, and educational innovation through the 'Team Finland Knowledge Network'.
- **Luxembourg** promotes itself as a gateway to European markets through organisations like LuxInnovation or the Luxembourg House of Financial Technology, building global partnerships to attract companies in finance and sustainable technologies.
- **Pakistan** is developing Special Technology Zones to attract foreign investment, promote technology transfer, and enhance local manufacturing capabilities in high-tech industries.
- **Spain** aims to create a favourable environment to attract tech investment, especially in new disruptive technologies, while promoting Spanish businesses abroad.

- **The United Kingdom** focuses on positioning itself as a global tech hub, promoting the UK as the best place for technology companies to raise capital and attract foreign direct investment.

Strengthening Innovation Ecosystems and High-Tech Industries

Science and Technology Diplomacy is used to foster local innovation, boost productivity, and develop globally competitive high-value sectors. A few examples from the narrative Country Reports:

- **Estonia** channels resources into technological innovation through strategies like the '*Research and Development, Innovation and Entrepreneurship (RDIE) Strategy for 2021–2035*' and aims to scale its tech sector, which has already shown strong economic returns.
- **Kazakhstan's** S&T strategies are rooted in a national objective to modernise its economy, diversify beyond oil and gas, and foster innovation-led growth. '*Digital Kazakhstan*' exemplifies this approach, focusing on integrating advanced technologies and digital solutions to enhance Kazakhstan's global economic competitiveness.
- **Malaysia's** '*National Science, Technology, and Innovation Policy*' integrates STI into broader national development agenda to transition towards a high-tech economy by 2030.
- **Viet Nam's** '*Resolution No. 57*' marks a major policy shift by placing STI at the heart of the country's economic development and digital transformation goals.

2) Facilitate Research Cooperation (37 countries at 90.2%)

Facilitating international research cooperation is another core objective of Science and Technology Diplomacy in both Asia and Europe. With 90.2% of Country Informants reporting this as a top priority, it is one of the most consistently pursued goals across national strategies. Countries achieve this by:

Building and Expanding International Scientific Networks

Many Country Informants found that diplomacy is strategically used to establish or strengthen international research networks and cross-border institutional partnerships. Examples from the narrative Country Reports include:

- **Austria's** '*Science Diplomacy in Austrian International Cultural Relations*' strategic document frames S&T diplomacy as a mechanism to promote value-based international cooperation and strengthen international networks in science and technology.
- **China's** '*14th Five-Year Plan and 2035 Vision*' sets clear priorities for mutually beneficial international scientific exchange and integration into global innovation networks. It also supports capacity-building in developing countries through knowledge transfer.
- **India's** '*Science, Technology and Innovation Policy 2020*' involves diplomacy to facilitate constructive dialogue and international consensus making around technology standards, protocols and use to tackle global challenges, particularly through adoption of clean/green energy and biotechnologies.

- **Spain's** '*Foreign Action Strategy*' (2021–2024) places science and innovation at the heart of foreign policy, emphasising research collaboration as a tool for development and global engagement.

Positioning as International Research Hubs

The narrative Country Reports also reveal that countries also aim to enhance their attractiveness as research destinations by strengthening domestic research environments, such as:

- **Korea** strengthens its global presence through robust partnerships with leading research institutions and foreign governments.
- **Luxembourg's** '*Research Luxembourg*' strategy is designed to build world-class domestic research capacity while actively developing global research partnerships.
- **Romania** is integrating its research infrastructure into European and international frameworks and networks to become a hub.

3) Soft Diplomacy (35 countries at 85.4%)

Science and Technology Diplomacy is widely employed as a soft power tool to enhance national visibility, promote cultural and scientific values, and build lasting diplomatic ties. Country Informants found that soft diplomacy is an integral part of science diplomacy strategies and countries achieve this by:

Engaging Diaspora and Alumni Abroad

Countries recognise that individuals who have studied, worked, or conducted research abroad can act as bridges for international cooperation, helping to maintain long-term connections, foster innovation partnerships, and amplify their country's global scientific presence. Country Informants shared in their narrative Country Reports examples such as:

- **France** has developed a national alumni strategy to complement academic networks. The '*France Alumni*' digital platform, supported by French embassies, connects international graduates of French higher education institutions, nurturing ongoing ties and potential scientific cooperation.
- **Indonesia** uses Science and Technology Diplomacy to assert leadership among middle powers, with strong engagement through education and diaspora networks.
- **Poland** links Science and Technology Diplomacy with cultural heritage through support for the humanities and a new diaspora strategy aimed at maintaining ties with Poles abroad.
- **Spain's** '*RAICEX network*' represents over 4,500 Spanish researchers and scientists working abroad across five continents. RAICEX not only connects Spanish researchers globally but also advises the Spanish government and promotes science diplomacy through international collaboration and knowledge exchange.

Establishing Awards and High-Visibility Platforms

Several countries use scientific awards and recognitions as a strategic form of soft diplomacy, celebrating excellence while simultaneously promoting their values. Some have created enduring platforms for international dialogue, promoting values and setting agendas through science. Country Reports list examples such as:

- **China** has established the ‘*Friendship Award*’ in 1991 and the ‘*China International Science and Technology Cooperation Award*’ in 1994, which honour foreign experts and organisations that have made outstanding contributions to China’s development and scientific progress.
- **Japan’s** ‘*STS Forum*’, often dubbed the “Davos of Science,” convenes global leaders annually to discuss science-policy issues, alongside science ministers’ roundtables and other high-level events.
- **Latvia**, often in collaboration with its Baltic neighbours, promotes regional scientific excellence and heritage through several prestigious awards, such as the ‘*Baltic Assembly Prize for Science*’, the ‘*Baltic Scholarship for Women in Research*’ (in cooperation with UNESCO commissions), and the ‘*Paul Walden Commemorative Medal*’, awarded on organic chemistry.
- **Norway** plays a leading role in promoting international science diplomacy through its extensive award ecosystem, that includes ‘*The Holberg Prize*’ and ‘*Nils Klim Prize*’, recognising scholars in the humanities and social sciences, while the ‘*Abel Prize*’ and ‘*Kavli Prize*’ honour excellence in mathematics and natural sciences. Prizes such as the ‘*Fridtjof Nansen Awards*’ and the ‘*Nordic Council Environment Prize*’ reinforce Norway’s commitment to sustainable development.

Promoting National Expertise and Scientific Excellence

Many countries use Science and Technology Diplomacy to brand themselves as leaders in innovation, research, and technology, thereby strengthening their international image.

- **Austria** appointed a ‘*Special Envoy on Cyber Foreign Policy and Cyber Security*’ to lead multilateral negotiations, conduct cyber dialogues, and engage in the EU Network of Cyber Ambassadors in 2020, which serves as a tool of S&T Diplomacy.
- **Belgium** builds a strong “Belgian Brand”, that unites regional and federal efforts, boosted by the Belgian Royal Trade Missions, and is worldwide recognised for its highly skilled diplomatic corps and deal-breaking abilities.
- **Malaysia** draws global attention through symbolic scientific achievements, such as its astronaut programme, while building long-term partnerships in space and research.
- **Slovenia** has strategically focused its Science and Technology Diplomacy on areas where the country has demonstrated substantial expertise and has gained international recognition, such as AI, water diplomacy and space sciences.

Providing Capacity Development

Science and Technology Diplomacy is increasingly intertwined with international development cooperation, where countries use scientific expertise and technical assistance to support capacity-building in developing nations. This form of development diplomacy not only strengthens global partnerships but also enhances a country’s influence and leadership in regional and international arenas. Country Informants noted examples such as:

- **Japan** takes a long-term view by building educational and research institutions abroad (e.g. in Southeast Asia and Africa), and through its Official Development Assistance (ODA) policy programmes such as the '*Science and Technology Research Partnership for Sustainable Development (SATREPS)*' promotes co-creation and international brain circulation in science and technology.
- **Kazakhstan** is positioning itself as a regional leader in Central Asia through initiatives like '*KazAID*' and '*Dostyk Diplomacy*', which focus on youth development, technology sharing, and educational exchange.
- **Malta** and **Switzerland**, through the DiploFoundation, advance digital diplomacy and capacity development globally. Its outreach in Africa, Asia, and Latin America supports inclusive governance and international engagement in digital and tech policy.
- **Singapore** contributes to regional capacity-building by offering digital diplomacy training workshops for diplomats from small states, helping to enhance their engagement in international science and technology discussions.
- **Thailand**, through the Thailand International Cooperation Agency, provides scholarships, technical training, and collaborative projects in areas such as agriculture, health, and sustainability. These programmes strengthen human capital in partner countries while expanding Thailand's diplomatic influence.

4) Develop Research & Development Capacity for the Country (34 countries at 82.9%).

A core objective of Science and Technology Diplomacy in many countries is the development and strengthening of domestic research and development (R&D) capacity. This includes building robust research infrastructures, attracting and retaining talent, aligning research priorities with national development goals, and increasing integration into global knowledge networks. Country informants offer many examples in their narrative Country Reports, such as:

- **Cyprus** aims to establish internationally recognised research infrastructures, attract top researchers, and build partnerships with global institutions to create a thriving and competitive academic environment.
- **Greece**, through its '*Greece 2.0*' strategy and the '*National Strategy for Smart Specialisation (ESEE)*', supports academic-industry collaboration, strengthens research centres, and enhances participation in global research and innovation value chains.
- **Myanmar**, through its '*Sustainable Development Plan (2018–2030)*', prioritises the development of R&D systems that support innovation in key sectors such as healthcare, education, and environmental sustainability. This includes investing in STI ecosystems aligned with national development goals.
- **Poland** develops its R&D capacity through institutions such as the '*Łukasiewicz Research Network*' and prioritises the internationalisation of its higher education and research ecosystems to foster global partnerships.

- **Romania** aims to enhance its Research, Development, and Innovation (RDI) environment by increasing the number and scientific calibre of researchers, improving international visibility. Research funding mechanisms prioritise projects that contribute to global research output and institutional prestige.

5) Tackle Global Societal Challenges (26 countries at 63.4%)

The objective of Tackling Global Societal Challenges was less prioritised, but examples show that many countries actively mobilise their scientific and diplomatic resources to address global issues such as climate change, public health, sustainable development, and cybersecurity. Below are a few examples from the Country Reports:

- **France** prominently leads international dialogues on climate and ocean protection, exemplified by COP21 and the 2022 One Ocean Summit in Marseille, demonstrating a comprehensive approach to environmental and health-related challenges.
- **Germany** explicitly targets societal issues including climate change, resource management, sustainable economies, public health, and migration, aligning diplomacy with broader global responsibilities.
- **Indonesia** employs South-South cooperation frameworks, focusing S&T diplomacy to collaboratively solve cross-border societal challenges.
- **Malaysia** leverages its scientific expertise for global impact, notably through Antarctic diplomacy and the sustainable development of the palm oil industry, significantly contributing to environmental protection and reducing geopolitical tensions.
- **Switzerland** has elevated this objective to the next level by aiming at creating a new form of diplomacy: “Swissnex advances its mission with initiatives like ‘Swissnex for the Planet’, which uses science and technology to address global environmental challenges. Its goal is to create “a new form of diplomacy,” focused on rebalancing human and nonhuman interests on the planet.”

6) Infrastructure Access (21 countries at 51.2%).

Infrastructure Access is indicated by the Country Informants to be a lower priority in only 51.6% of countries. However, the importance of strong, interconnected research and innovation ecosystems and infrastructure cannot be underestimated, and access to shared scientific and technological facilities and infrastructures in the European Union is a crucial foundation of Science and Technology Diplomacy. The following examples from the Narrative Country Reports help us to understand this objective better:

- **Croatia** and **Poland** point out the high added value of participation in EU programmes such as the European Research Area (ERA) and Horizon Europe. These frameworks enhance their research infrastructure, provide access to critical data and technologies, and position them as active players in international scientific collaboration, as a foundation for their science diplomacy.

- **Hungary** demonstrates a strong commitment to infrastructure access through its participation in numerous international platforms such as the Central European Research Infrastructure Consortium (CERIC ERIC), European Research Infrastructure Consortia (ERICs), E-RIHS European Research Infrastructure for Heritage Science (E-RIHS), and several others spanning sectors from life sciences to social sciences.
- **Japan's** '6th Science and Technology Diplomacy Basic Plan' includes explicit objectives to strengthen infrastructure supporting its strategic science diplomacy, including the development of international research networks where Japan plays a central role.
- **Lao PDR** emphasises the dual need to improve infrastructure and build human capital in science and technology, recognising these as interdependent drivers of innovation and sustainable development.

7) Support Evidence-Based Decision Making (16 countries at 39%)

This relatively low percentage is particularly notable given the frequent global discussions around the role of Science and Technology Diplomacy in bridging the gap between scientific evidence and policymaking. Country Informants' assessment suggests that the link between science and policy is still insufficiently developed or poorly institutionalised in many countries. Nevertheless, several positive examples indicate the growing importance of this objective:

- **Australia** integrates scientific expertise into diplomatic and policy efforts through responsive mechanisms like the 'Rapid Response Information (RRI) Reports', coordinated by the National Science and Technology Council. These reports provide the Australian Government with timely scientific and technological insights, ensuring policy decisions are consistently informed by robust scientific evidence.
- **Estonia** demonstrates its commitment to science advice through the creation of the Ministry of Climate, which incorporates scientific expertise into environmental policy and long-term sustainability strategies.
- **Japan** recognises the growing importance of scientific advice for public policy, with national leaders and advisory bodies calling for more structured integration of science into policymaking processes.
- **Luxembourg** leverages advanced data science—particularly in AI and FinTech solutions—to guide policy development. These technologies not only strengthen internal governance but also enhance Luxembourg's contributions to evidence-based policymaking within the EU.
- **Sweden** applies scientific research to inform foreign policy, particularly in matters related to security, climate action, and technological advancement, explicitly aiming for diplomacy grounded in robust evidence.

Other objectives mentioned by the Country Informants can be grouped around two issues:

National and economic security is mentioned as an objective of science and technology diplomacy strategies. Examples include securing semiconductor and advanced manufacturing supply chains in **Korea**; preventing misuse of sensitive technologies and securing critical raw materials in **Norway**; and safeguarding critical technology capabilities domestically in the **United Kingdom**. **China**, **India**, and **Korea** highlight the need to ensure stability and resilience of national economic and technological infrastructures, such as energy, food, and health security.

Academic freedom and openness of research is another objective of science and technology diplomacy strategies, addressing the importance of protecting academic independence while mitigating risks associated with international collaboration and open scientific exchanges. **Germany** explicitly prioritises strengthening academic freedom globally, while **Japan** similarly emphasises responding effectively to risks arising from the internationalisation and openness of research.

Regional Comparison:

The data shows that, overall, **Asian countries** are reported as focusing on a more diverse range of **objectives** than European countries. On average, Country Informants for Asian countries report their country focusing on average on 6.0 different core objectives, compared to Country Informants for European countries, reporting an average of 5.0. This suggests a broader approach in Asian countries to Science and Technology Diplomacy.

What are the core objectives of the national Science and Technology Diplomacy strategy?

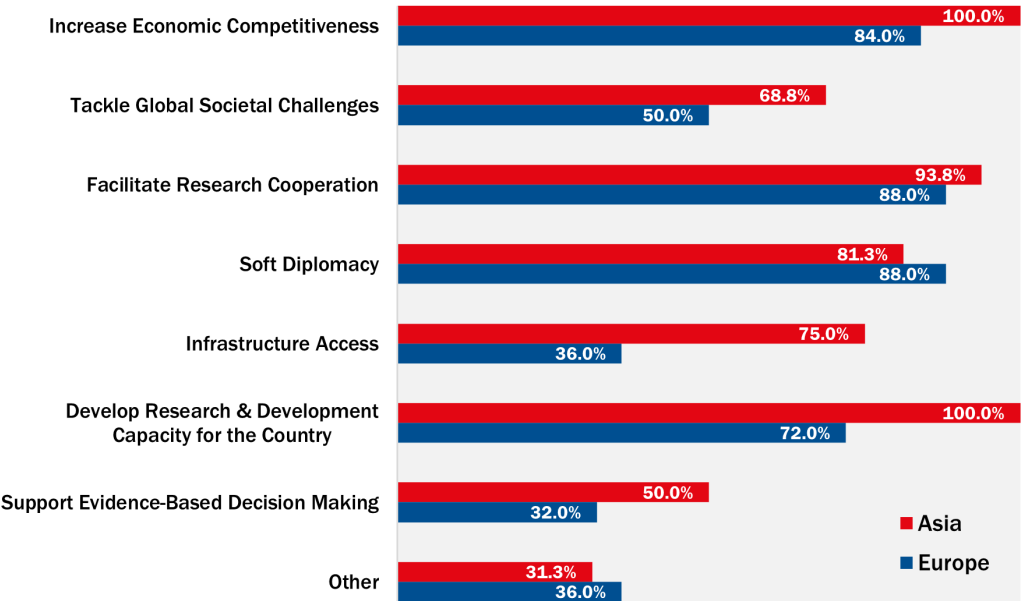


Figure 6: Regional Comparison of Objectives of Science and Technology Diplomacy Strategies

Looking at individual objectives, all Country Informants for Asian countries (100%) indicate the objective to *Develop Research & Development Capacity* for the country, compared to Europe’s 76%. The most significant difference can be seen in the objective of *Infrastructure Access* to which a substantially higher percentage of Asian countries indicated as a focus area compared to European countries (75% of Asian countries compared to 32% of European countries). The narrative Country Reports reveal examples such as:

Japan: “The current 6th *Science and Technology Diplomacy Basic Plan* promotes strategic science and technology diplomacy, including “strengthening the infrastructure to support the strategic development of science and technology diplomacy”.”

Lao PDR: “Enhance the capabilities of scientists and improve science and technology infrastructure.”

Viet Nam: “[Viet Nam’s objectives include] investing in high-tech zones, research laboratories, and national STI infrastructure - including artificial intelligence (AI), Internet of Things (IoT), big data, and cloud computing - to drive digital transformation and support priority development and research areas.”

100% of Asian countries are reported as having interest in *Increasing economic competitiveness* compared to only 84% of European countries.

Cambodia: “[...] the Kingdom underscores the importance of S&T for growth and development, as enshrined in the Constitution of the Kingdom of Cambodia, particularly Article 61, which states that “The State shall promote economic development in all fields, especially in agriculture, handicraft, industry, to begin with the remotest areas, with concern for water policy, electricity, roads and means of transportation, modern techniques and credit system”.”

India: “To advance economic growth and employment, [India] involves diplomacy to advance economic competitiveness by constructing balanced economic structures around key digital technologies like semiconductors, electronics, telecommunications or digital public infrastructure”

Malaysia: “Malaysia’s S&T diplomacy strategy has several core objectives. The first is to enhance the country’s economic competitiveness by forming partnerships with developed countries, attracting technology-driven foreign direct investment (FDI), and promoting Malaysia’s international standing in strategic areas.”

Thailand: “Thailand emphasises partnerships for development with neighbouring countries to achieve integrated and strategic economic growth. Thailand’s STI diplomacy is closely linked to national goals, particularly in emerging technologies that bolster economic resilience and capacity-building.”

For the **EU**, the core objectives are related to *Facilitate Research Cooperation*, strengthening European scientific leadership (*Soft Diplomacy*), as well as *Tackle Global Societal Challenges*, connected to the work in supporting the Sustainable Development Goals (SDGs).

For the **ASEAN**, the goals of the APASTI strategy can be generally categorised to focus on the objectives to *Increase economic competitiveness*, to *Develop Research & Development Capacity for the country* and to *Facilitate Research Cooperation*.

1.4 Prioritised Scientific Fields

We asked the Country Informants to assess what scientific areas are prioritised in their country based on the following list (based on the OECD, Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities):

- Natural Sciences (e.g. Mathematics, Computer and Information Sciences, Chemical Sciences, Biological Sciences)
- Engineering and Technology (e.g. Electrical, Mechanical, Chemical, Medical, Environmental Engineering, Nanotechnology)
- Medical and Health Sciences (e.g. Basic, Clinical Medicine, Medical Biotechnology)
- Agricultural Sciences (e.g. Agricultural biotechnology, Veterinary science)
- Social Sciences (e.g. Economics, Education, Media and Communications)
- Humanities (History, Languages, Philosophy, Arts)
- Other

The data shows that the following fields are the most highly prioritised (ranked in order of most mentions):

- 1) *Natural Sciences* (35 countries at 85.4%)
- 2) *Engineering and Technology* (31 countries at 75.6%),
- 3) *Medical and Health Sciences* (31 countries at 75.6%)

Humanities was reported the least number of times as a prioritised field, with 10 mentions at 24.4%.

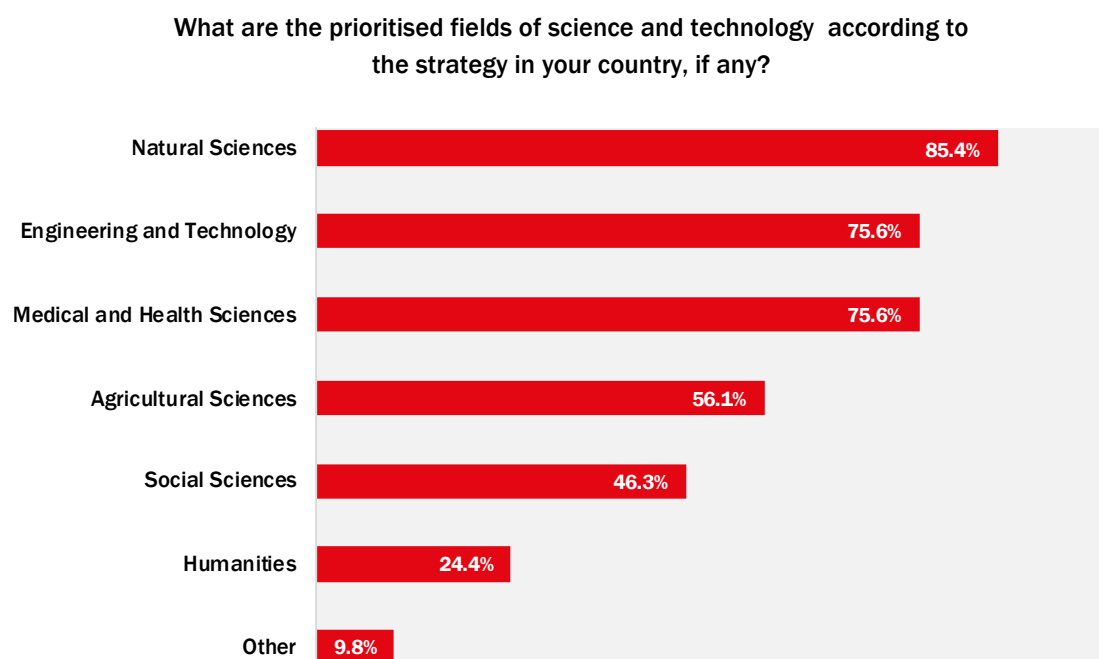


Figure 7: Prioritised Scientific and Technological Fields

Other prioritised fields mentioned by Country Informants were specifically related to *Climate Change and Sustainable Development*; *Research and Innovation*; and *Computer and Information Sciences*. *Artificial Intelligence* was mentioned by several countries as a specific focus, under *Engineering and Technology*.

When looking at the **keywords within these fields**, the most frequently cited keywords in the narrative Country Reports can be grouped around:

- **Digital Technologies** are prominent in many countries, the most mentioned keywords are #ArtificialIntelligence, #QuantumTechnology, #NanoTechnology, #BioTechnology, and #Computer and #Telecommunication related technologies.
- **Climate and Environmental Sustainability** related keywords are the second most often mentioned as strategic priorities, including #Climate, #EnvironmentalSciences, #Sustainability, #Biodiversity, #Recycling and #CircularEconomy, #GreenTransition.
- **Health and Life Sciences** are also strongly featured encompassing keywords such as #Healthcare and #PublicHealth improvement, #Pharmaceuticals, #Medical and #LifeSciences, #Agriculture, #FoodSecurity and #Biology.
- **Infrastructure** related issues also emerge as key areas of concern, evolving around keywords such as #Energy, #Transport, #Water, #SmartCities and #Construction.
- **Space Exploration and Astronautical Sciences** are strategically important for several countries, although also often linked to prestige and strategic autonomy.
- **Security Related Sciences and Technologies** also feature prominently when looking at the prioritised scientific and technological fields of countries, with keywords as #CyberSecurity, #FoodSecurity, #NationalSecurity, #Defence.

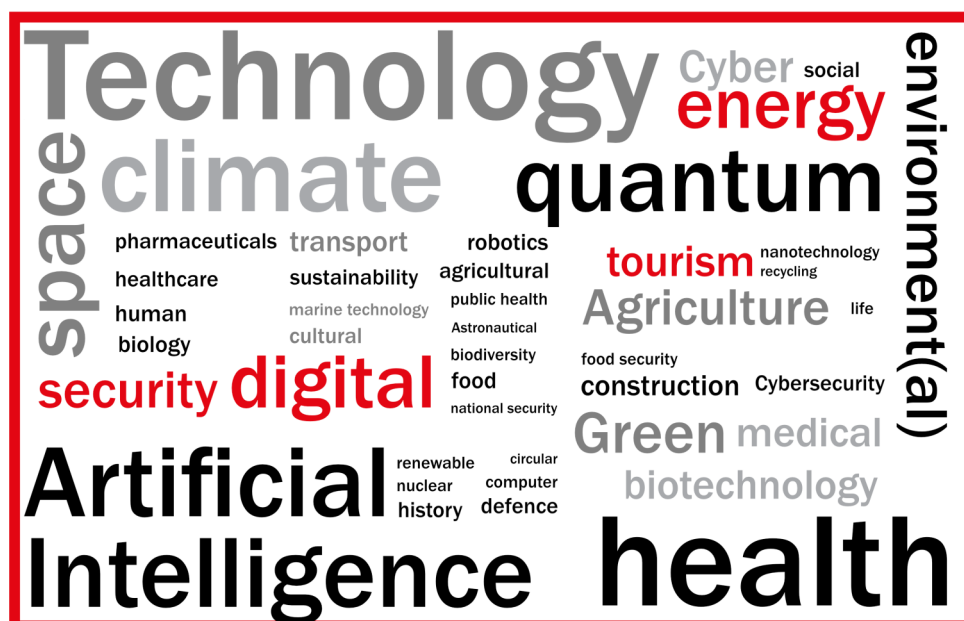


Figure 8: Frequently Cited Keywords for Prioritised Scientific and Technological Fields

The following examples from the narrative country reports illustrate some unique approaches to the prioritisation of different science and technology fields:

Austria: “Thematic priorities align with key areas essential for addressing global challenges, including “Green Diplomacy” (sustainability, environment, climate change), “Tech Diplomacy” (digitalization, smart cities, cybersecurity, AI, biotechnology, quantum computing), and “Health Diplomacy” (health science, public health). Additionally, with its primary placement under the cultural diplomacy [...], humanities also play a significant role, aiming to foster dialogue and mutual understanding.”

Italy: “Furthermore, Italy is increasingly active in Space Diplomacy, with a growing network of Space Attachés. The country is involved in major international space initiatives such as the ‘Artemis Programme’, satellite collaborations, and the expansion of the Space Economy sector.”

Malta: “The ‘Foreign Policy Strategy’ highlights Malta’s dedication to enhancing intergovernmental trust in cyberspace, advancing science diplomacy, and engaging in cyber diplomacy. The overarching objective is to facilitate multilateral agreements on cyber norms, ensuring responsible behaviour among state and non-state actors to establish a stable and secure cyberspace in line with international law.”

The Philippines: “These include blue economy, governance, business and trade, digital infrastructure, science education and talent retention, food security, health systems, energy, water, climate change, shelter and transportation.”

Regional comparison:

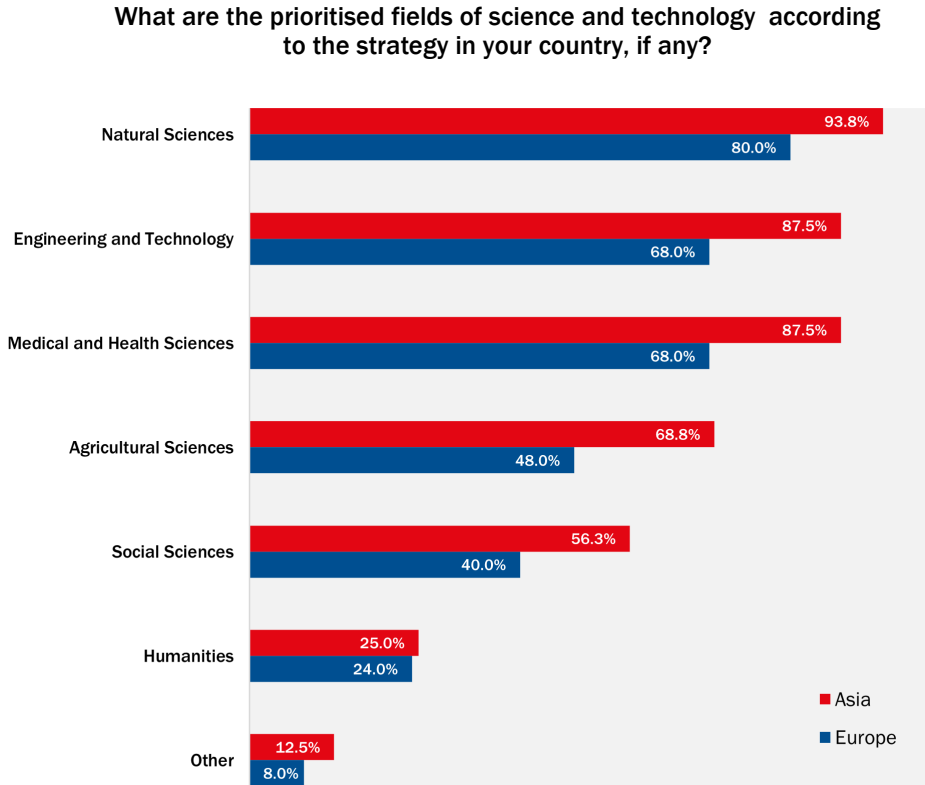


Figure 9: Regional Comparison of Prioritised Scientific and Technological Fields



Similarly to the core objectives of the Science and Technology Diplomacy strategies, Asian countries have a broader approach to science and technology with a higher number of different scientific areas prioritised compared to European countries. On average, Asian countries are reported as prioritising 4.25 different areas compared to 3.16 for European countries.

For specific scientific areas, the most significant difference can be seen in the interest in **Agricultural Sciences**, where 68.8% of Asian countries are indicated as having this as a prioritised field compared to only 48.0% of European countries.

Kazakhstan: “With agriculture holding significant potential for economic expansion, Kazakhstan aims to boost food security and agricultural exports by integrating new technologies. Improving public health, life expectancy, and healthcare infrastructure is another top priority.”

Myanmar: “This focus is evident in the prioritisation of natural sciences, engineering, medical sciences, and agriculture, suggesting a pragmatic approach aimed at tangible outcomes.”

A similar difference can be found in the reported priority of Asian countries in **Engineering and Technology**, and **Medical and Health Sciences**, where both are indicated as fields of priority for 87.5% of Asian countries, compared to 68.0% of European countries.

China: “...such as Artificial Intelligence, Quantum Information, Integrated Circuits, Life and Health, Biological Breeding, Space and Astronautical Science and Technology, Deep Earth and Deep Sea, and other Frontier Fields.”

India: “The focus predominantly remains on engineering, technology, computer and medical sciences with some extensions into agriculture, education and natural sciences.”

1.5 Geographical Focus

When looking at which regions the Science and Technology Diplomacy efforts are focused on, *Europe* is reported by Country Informants as an important region for 36 Asian and European countries (87.8% overall, with 68.8% for Asian countries and 100% for European countries), closely followed by *Asia and the Pacific* according to 31 Country Informants (75.6% overall, with 81.3% for Asian countries and 72% for European Countries); indicating the strongest interest for Asian and European countries is in their own regions.

26 Country Informants (63.4%) indicate their country’s focus on *North America*, with 12 (respectively) indicating *Africa* and *Latin America and the Caribbean* (29.3%).

In addition to the listed regions, other specific regions are mentioned, such as the Arctic, the Middle East, Central Asia.

Which region of the world does your country focus its Science and Technology Diplomacy efforts?

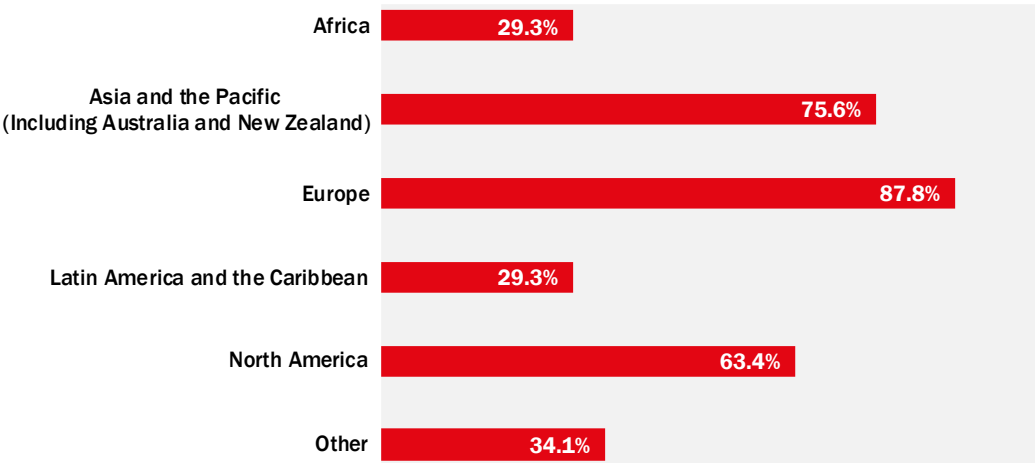


Figure 10: Geographical Focus of Science and Technology Diplomacy Efforts

Regional comparison:

Not surprisingly, the most important region for Asian countries is *Asia and the Pacific* (81.3% of countries list this as a regional focus). For European countries, the interest in their own region is even higher, with 100% of European countries indicating *Europe* as a regional focus. This indicates that, whilst countries have a wider international interest, neighbouring and regional countries are still the most important regions of interest.

The data from the two regions also shows that both Asia and Europe are interested in each other, with the Country Informants for European countries reporting a slightly higher interest in *Asia and the Pacific* (72.0%) to Country Informants for Asian countries in *Europe* (68.8%). This is reflected as well in the Country Report for the EU which notes EU’s focus on neighbouring countries (European non-EU member states), as well as in Asia, with countries like China, India, Japan, and Korea.

A higher percentage of Country Informants indicate their country’s focus directed at *North America* compared to Asian Country Informants (72% of European countries compared to 50% of Asian countries).

Which region of the world does your country focus its Science and Technology Diplomacy efforts?

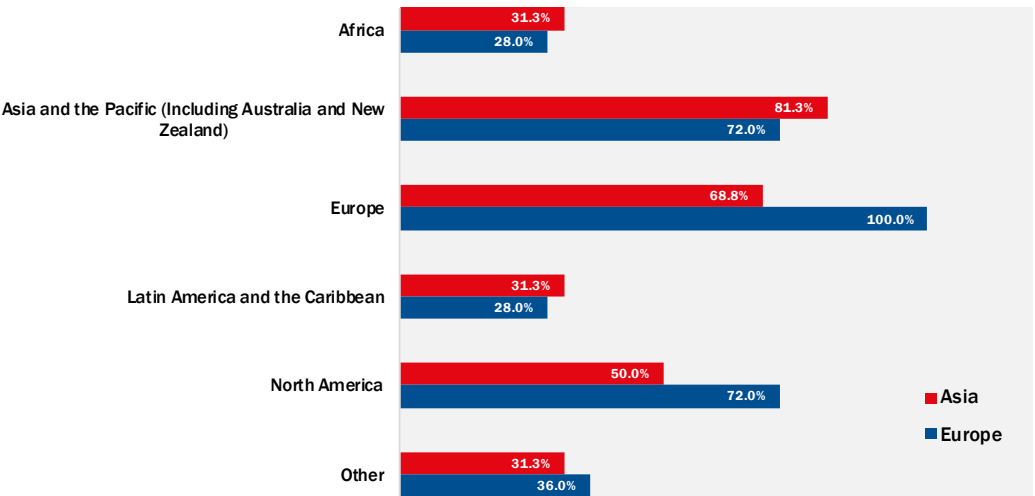


Figure 11: Regional Comparison of Geographical Focus of Science and Technology Diplomacy Efforts

2. Stakeholders in Science and Technology Diplomacy Across Asia and Europe

2.1 Overarching Government Approach Towards Science and Technology Diplomacy

We asked the Country Informants to indicate which governmental department(s) / ministry(ies) / agency(ies) is (are) in charge of the overarching national approach / strategy towards Science and Technology Diplomacy.

Only 3 countries were reported as having one **single ministry as the organ in charge** of the overarching national approach, with the Country Informants reporting:

- 1) The Council for Science, Technology and Innovation (CSTI) in Japan
- 2) The Ministry of Science, Technology and Innovation (MOSTI) in Malaysia
- 3) The Office of Chairman of the State Administration Council (formerly Office of the President of the Republic of the Union of Myanmar) in Myanmar

The Country Informants input show that, depending on the type of activity, scientific area and technological focus, multiple different ministries and agencies are in charge or cooperate on the coordination of national initiatives and the strategies in place in the country for Science and Technology Diplomacy – indicating a multifaceted and layered approach to coordinating national efforts in Science and Technology Diplomacy.

The answers as to which departments / ministries / agencies / institutions are in charge of the Science and Technology Diplomacy approach in the country can be generally categorised into the following classifications (ranked in order of the most mentions. Not exhaustive):

- 1) Foreign and International Affairs
- 2) Education and Research
- 3) Science, Technology, and Innovation
- 4) Commerce, Trade, and Economy

The national ministerial structures vary significantly between countries, where areas of responsibility are often combined in various constellations under the same ministry or agency. Furthermore, these structures do not always remain static and can undergo changes due to shifts in government rule or otherwise through reorganisation over time. This means that the institution/agency responsible for Science and Technology Diplomacy may not only vary between countries, but also within the same country over a period of time, reflecting ongoing adjustments to meet new and/or evolving needs and priorities.

France: “In France, the Ministry of Foreign Affairs (MEAE), particularly its Research and Scientific Exchanges Sub-directorate, and the Ministry of Higher Education and Research (MESR) lead Science and Technology Diplomacy. MEAE leads on the strategy, leveraging scientific collaborations as a diplomatic tool and deciding on the geographical priorities, while MESR plays a supporting role through funding and policy-making that facilitate international research collaboration.”

Singapore: “[The] Overarching national approach [is] largely informed by the Ministry of Foreign Affairs (MFA). However, other organisations in Singapore are also involved in initiating and maintaining initiatives/collaborations in fields that are relevant to their purview as well. Some of these organisations are the Infocomm Media Development Authority (IMDA), Agency for Science, Technology and Research (A*STAR).”

Within the **EU**, it's reported that the Science and Technology Diplomacy efforts are managed by several departments and agencies with joint responsibility between EU member states and their Ministries of Foreign Affairs and Ministries for Research, Innovation, Science or Higher Education, and EU institutions such as the European Commission through the Directorate-General for Research and Innovation (DG RTD), as well as the European External Action Service.

In the **ASEAN** Secretariat, the ASEAN Committee on Science, Technology and Innovation (COSTI) is responsible for all aspects related to Science, Technology, and Innovation, including cooperation and integration of objectives outlined in the action plans of ASEAN; amongst which includes the 'ASEAN APASTI 2016-2025'.

2.2 Stakeholder Engagement and Involvement in Science and Technology Diplomacy

We asked the Country Informants to indicate their perception of how active different stakeholders are in driving Science and Technology Diplomacy in their country.

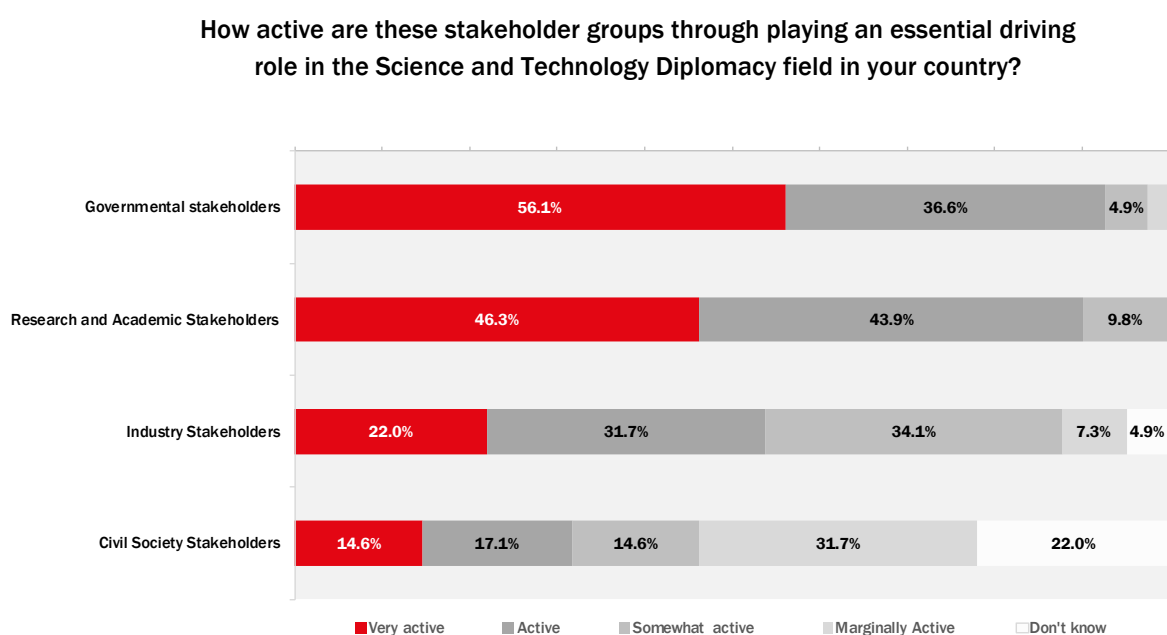


Figure 12: Stakeholders' Active Role in Driving Science and Technology Diplomacy

Governmental Stakeholders

38 Country Informants (92.7%) report that *Governmental stakeholders* to be either *Very active* or *Active* in driving Science and Technology Diplomacy in their country, with only Myanmar reporting Governmental stakeholders as *Marginally active*, and Indonesia and Greece reporting them as *Somewhat active*.

Austria: "A mapping of 157 relevant institutions conducted for the same study confirmed that Austria's S&T Diplomacy landscape is dominated by governmental actors and research institutions, with government stakeholders accounting for 34.8% of all organisations."

We also see that some countries are reported to apply a conscientious **decentralised or bottom-up approach**, where government entities take a broader approach, and empower their institutions to autonomously drive science and diplomacy efforts.

Thailand: “Thailand employs a decentralised strategy that empowers educational and research institutions, alongside governmental agencies, to autonomously engage in international relations based on their specific needs and contexts. This approach is crucial for adapting to shifting geopolitical landscapes and fostering partnerships that support Thailand’s strategic goals.”

Switzerland: “Switzerland’s science diplomacy is guided by the principle that education, research, and innovation (ERI) cannot be imposed top-down. Instead, ERI actors adopt a bottom-up approach, identifying and addressing emerging trends and challenges.”

Regional Comparison

With an average score of 3.50 (out of 4), Asian countries are reported as having a higher involvement of governmental stakeholders compared to the average score of 3.44 in European countries.

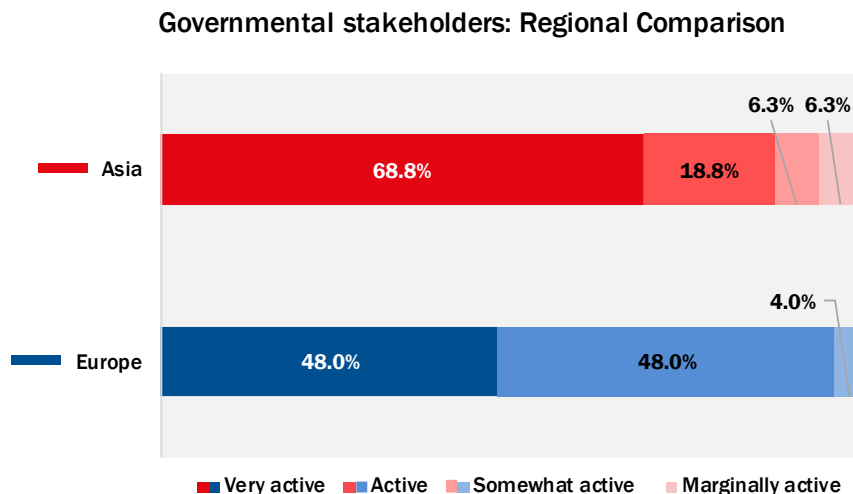


Figure 13: Regional Comparison of Government Stakeholders’ Active Role in Driving Science and Technology Diplomacy

A higher percentage of Asian countries are reported as having *Governmental stakeholders* as *Very active* in driving Science and Technology Diplomacy, with 68.8% compared to Europe’s 48%. However, when looking at the overall numbers, European countries are still reported as having a higher overall active role of *Governmental stakeholders* with 96% reporting *Very active* or *Active* involvement, compared to 87.5% in Asian countries – indicating a greater variety of the involvement of *Governmental stakeholders* in Asian countries compared to European countries. Greece is the only European country which was indicated as having a *Somewhat active* role of *Governmental stakeholders* in the field.

Research and Academic Stakeholders

Similarly to *Government stakeholders*, 37 countries (90.2%) are reported as having *Research and Academic stakeholders* to be either *Very active* or *Active* in driving Science and Technology Diplomacy in the country. Cambodia, India, Romania, and Slovakia are the 4 countries in which *Research and Academic stakeholders* are indicated as only *Somewhat active*. In no country are these stakeholders indicated as only *Marginally active*.

Cyprus: “Research and academic stakeholders, including Cyprus’s 10 universities (three public, seven private), contribute significantly to the country’s science diplomacy footprint through international collaboration, exemplified by the University of Cyprus’s leadership in energy and digital transformation.”

Korea: “Institutions such as KAIST and the National Research Foundation of Korea (NRF) are crucial to driving innovation and facilitating international research collaborations.”

Norway: “University of Bergen with its research and science diplomacy initiative ‘Sustainable Development Goals Science Advice’ and other resources can link its science diplomacy expertise to peers across the world.”

Regional Comparison

With an average score of 3.40 (out of 4), European Country Informants report a higher involvement of *Research and Academic stakeholders* in their countries compared to the average score of 3.31 in Asian countries.

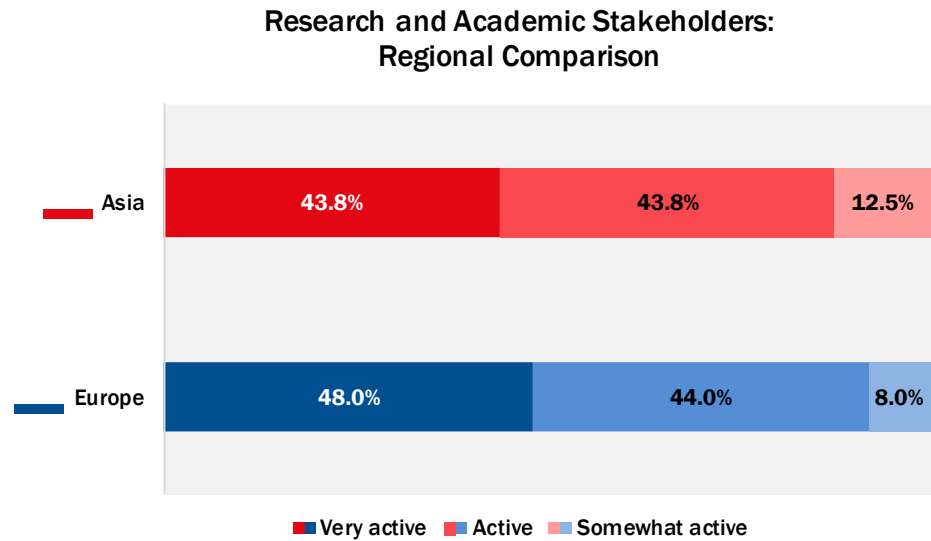


Figure 14: Regional Comparison of Research and Academic Stakeholders’ Active Role in Driving Science and Technology Diplomacy

It is reported that in a higher percentage of European countries *Research and Academic Stakeholders* are *Very active* with 48.0% of Country Informants indicating this, compared to in 43.8% of Asian countries. A higher percentage (12.5%) of Asian countries are reported as having *Somewhat active* involvement of this type of stakeholder compared to European countries (8.0%).

Industry Stakeholders

When it comes to *Industry stakeholders*, we see a lower level of engagement compared to *Government* and *Research and Academic Stakeholders*. 22 countries (53.7%) are reported as having *Industry stakeholders* as either *Very active* or *Active* in playing an essential driving role in the Science and Technology Diplomacy field, with only 9 countries (22.0%) indicating a *Very active* role of *Industry stakeholders* (Belgium, India, Latvia, Luxembourg, Myanmar, Norway, Singapore, Thailand, and Viet Nam).

Belgium: “The impact of industry and employers in Belgium on Science and Technology diplomacy cannot be emphasized enough. [...] They measure the impact of geopolitical governance on Belgium’s trade power. Additionally, other employers’ federations like the Flemish Network of Enterprises (VOKA) or the Belgian Network of Enterprises (VBO) are highly influential in setting the tone for Science and Technology Diplomacy.”



Estonia: “Estonia’s tech sector is robust and contributes significantly to domestic innovation and economic growth. However, direct industry involvement in formal science diplomacy initiatives remains marginal, with most efforts focused on expanding the local tech ecosystem and strengthening the country’s digital economy.”

Korea: “Leading companies such as Samsung and Hyundai play a vital role in driving technological advancements. These corporations engage in public-private partnerships and participate in international technology consortia, aligning corporate innovation with national strategic goals.”

Viet Nam: “Collaboration and coordination extends beyond the government, involving the non-government actors such as the private sector, academia, and the public. [...] This is evident in recent achievements in scientific diplomacy, where leading technology companies in Vietnam have become central to STI development. Two major corporations, Viettel and NVIDIA, established a strategic partnership in AI, marking the beginning of AI research and application activities in Vietnam in 2022.”

Regional comparison

With an average score of 3.06 (out of 4), Asian countries are reported as having a significantly higher involvement of *Industry stakeholders* compared to the average score of 2.28 in European countries.

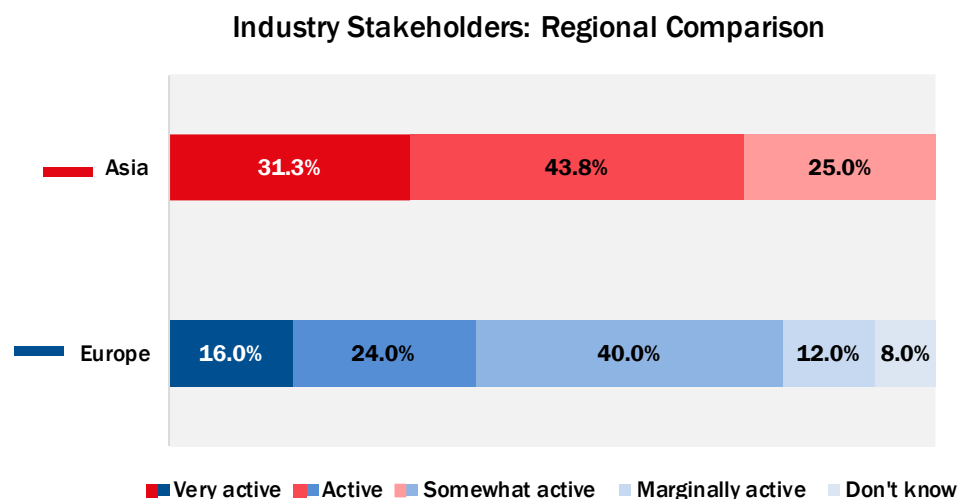


Figure 15: Regional Comparison of Industry Stakeholders' Active Role in Driving Science and Technology Diplomacy

More Asian countries compared to European countries are reported as having *Industry stakeholders* playing a *Very active* or *Active* role in the Science and Technology Diplomacy field (75% compared to Europe’s 40%), with 52% of European countries reporting *Industry stakeholders* only playing a *Somewhat active* or *Marginally active* role in their countries. Comparatively, only 25% of Asian countries are reported to have a *Somewhat active* role of *Industry stakeholders* in this matter.

Civil Society Stakeholders

For the involvement of *Civil Society stakeholders*, the findings show a significantly lower engagement compared to the other types of stakeholders. Only 13 Country Informants (31.7%) note *Civil Society stakeholders* as having a *Very active* or *Active* role in driving the Science and Technology Diplomacy field in their respective countries. Another 13 (31.7%) report only a *Somewhat active* role of *Civil Society stakeholders*. *Civil society stakeholders* are reported in 14 countries to only play a *Marginally active* role, accounting for over a third of the responses (34.1%).

9 Country Informants (22%) reported that they were not able to find out the activity of civil society in Science and Technology Diplomacy in the country. The regional differences were minimal.

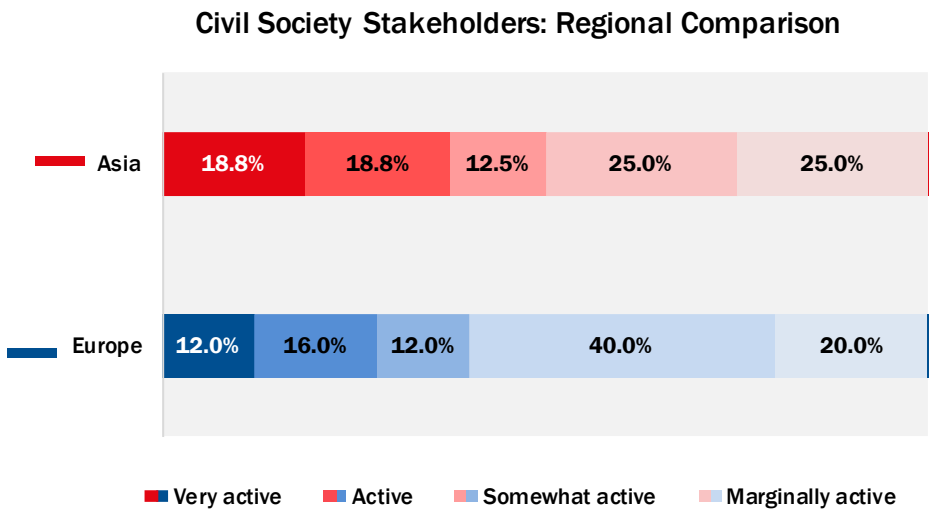


Figure 16: Regional Comparison of Civil Society Stakeholders’ Active Role in Driving Science and Technology Diplomacy

France: “During COP21, France made a notable effort to create space for both industry and civil society to contribute to climate solutions through the ‘*Agenda des Solutions*’ (Solutions Agenda), allowing non-state actors to engage alongside official negotiations. The scientific diaspora has also contributed in times of political strain, as seen during Brexit, when French researchers maintained ties with the UK, leading to the creation of the French Education and Research Network (FERN), now supported by both French and UK funding to sustain bilateral collaborations.”

Germany: “The goal is to anchor cooperative relationships between foreign policy, science, citizen science, and science communication with a committed civil society in permanent international processes.”

Korea: “NGOs, think tanks, and advocacy groups contribute by promoting ethical standards, raising public awareness, and ensuring that broader societal concerns are integrated into technological development.”

In the **EU**, the European Commission is the body that drives the Science and Technology Diplomacy in the EU, specifically in key units such as the Directorate-General for Research and Innovation (DG RTD) and the Directorate-General for International Partnerships (DG INTPA). The EU member states play an essential role in the implementation of initiatives on a national level, with the support of the different ministries. The European Parliament plays a role in influencing policies and funding decisions on Science and Technology Diplomacy. *Research and Academic stakeholders* are also involved in research projects, with *Industry stakeholders* playing an increasingly important role in the development of specific technologies.



3. Coordination Mechanisms in Science and Technology Diplomacy

3.1 Coordination Mechanisms

Coordination of Science and Technology Diplomacy efforts can take place in various forms. For this purpose, we asked the Country Informants to indicate the type of coordination conducted in their country based on the following list:

- Regular Coordination on a National/Regional Level between the Governmental Actors
- Ad-Hoc Coordination on a National/Regional Level between the Governmental Actors
- No coordination on a National/Regional Level

The findings indicate that all countries do coordinate their Science and Technology Diplomacy efforts in some way. 20 of the Country Informants indicated that the coordination is done on a regular basis (48.8%) and the other half, with 21 answers, indicate the countries coordinate the efforts on an Ad-hoc basis (51.2%). This division is reflected in the results from both regions with only minor differences.

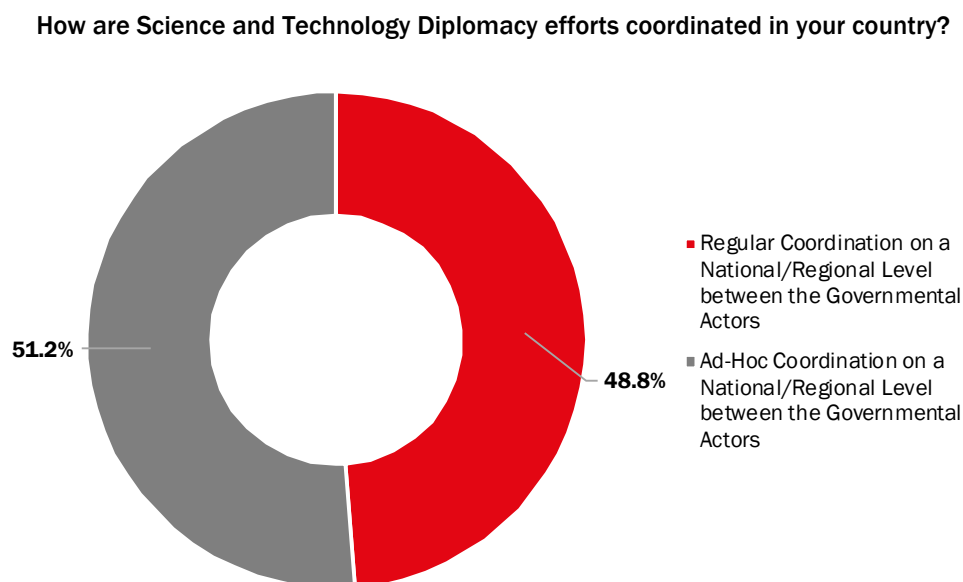


Figure 17: Coordination Mechanisms between Governmental Actors

All Country Informants report involvement of non-governmental stakeholders in this process. Examples of non-governmental stakeholders include academic institutions and universities; private cooperations and industry actors; research institutions; and non-governmental organisations.

The input provided by the Country Informants indicates that depending on the situation, different actors can be engaged either on an advisory basis, or to cooperate on bigger cross-industrial issues.

China: “In terms of interdepartmental coordination, China's Ministry of Science and Technology (MOST) currently takes the lead in establishing a national coordination mechanism for international S&T cooperation. [...] The Inter-Ministerial Coordination Mechanism for International Science and Technology Cooperation launched [...] includes 23 departments such as MOST, the Chinese Academy of Sciences, and the Chinese Academy of Engineering.”

India: “At the top, these activities are coordinated by the Principal Scientific Adviser to the Prime Minister and their office. In 2018, a new Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC) was further constituted within the Office of Principle Scientific Adviser to “assess the status of various science and technology-related matters, comprehend challenges, formulate interventions, develop a futuristic roadmap, and advise the Prime Minister accordingly”.”

The Philippines: “To ensure the realignment of agendas with national and global goals, the Department of Foreign Affairs organises annual meetings as an avenue to discuss the most pressing issues in Science & Technology with the government, non-governmental, industry and civil society stakeholders. These meetings include a review of performance of existing programmes and initiatives, resulting in their revision based on target indicators.”

Switzerland: “In Switzerland, as a federal state, coordination between actors is essential. The constitutional principle of subsidiarity (2024) (Article 5) divides responsibilities between the Confederation (Bund) and the cantons, ensuring that decisions are made at the most local level capable of handling them. According to the ERI Dispatch the Bund leads in international relations in the ERI sector only when Switzerland's involvement is necessary for cooperation with other countries. These principles necessitate coordination between federal authorities like SERI and FDFA, especially in international matters, and extensive collaboration among government and non-governmental actors like universities, research institutions, and private actors within Switzerland.”

3.2 International Coordination Efforts

41 (100%) of the Country Informants indicate that their countries coordinate their Science and Technology Diplomacy efforts at an international level.

The Country Informants were asked to indicate examples of international coordination platforms their country is involved in, which has been summarised into a list below (ranked in order of the most mentions).

- 1) United Nations (UN) and its agencies
- 2) European Union (EU)
- 3) Organisation for Economic Co-operation and Development (OECD)
- 4) European Organization for Nuclear Research (CERN)
- 5) European Space Agency (ESA)
- 6) Asia-Pacific Economic Cooperation (APEC)
- 7) Association of Southeast Asian Nations (ASEAN)
- 8) Group of 20 (G20) and Group of 7 (G7)
- 9) Central European Initiative (CEI)
- 10) Union for the Mediterranean (UfM)
- 11) North Atlantic Treaty Organization (NATO)

Specific platforms under the UN were mentioned, such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), the World Intellectual Property Organization (WIPO), the World Academy of Sciences (TWAS) under UNESCO, the International Labour Organization (ILO) and the United Nations Group on the Information Society (UNGIS).

Examples of other **intergovernmental organisations and platforms** for dialogue and coordination mentioned as active in promoting intergovernmental science and technology dialogue were: the Asia Cooperation Dialogue (ACD), the Asia-Pacific Space Cooperation Organization (APSCO), the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), the BRICS (Brazil, China, Egypt, Ethiopia, India, Indonesia, Iran, Russian Federation, South Africa, United Arab Emirates), the IBSA (India, Brazil, South Africa) Dialogue Forum, the Ministerial Standing Committee on Scientific and Technological Cooperation (COMSTEC), the Organization of Islamic Cooperation (OIC), the International Astronautical Federation, Market-Oriented Research and Development Cooperation (EUREKA), the International Atomic Energy Agency (IAEA), the Indian Ocean Rim Association (IORA), the Centre for Science and Technology of the Non-aligned and Other Developing Countries (NAM S&T Centre), Visegrad Cooperation (V4), the Foreign Ministries Science and Technology Advice Network (FMSTAN) within the International Network for Government Science Advice (INGSA), the South Asian Association for Regional Cooperation (SAARC), and the Shanghai Cooperation Organisation (SCO).

Science and Technology Diplomacy is also advanced through **regional projects and initiatives** that bring together multiple countries to address shared challenges. These initiatives provide platforms for scientific collaboration, capacity building, and policy alignment across borders. Country reports include examples such as the *EU Strategy for the Danube Region (EUSDR)* and the *Eastern Mediterranean and Middle East Climate Change Initiative (EMME-CCI)*, promoting coordinated responses to regional environmental and development issues. The *Norway-European Union Science Diplomacy Network (2017–2023)* built a cluster of scientists and diplomats focused on Arctic, UN, and ocean policy engagement. Another major example is the *South East European International Institute for Sustainable Technologies (SEEIIST)*, a regional collaboration involving South European and Western Balkan countries to create a shared research infrastructure, promoting both scientific advancement and regional peacebuilding.

There were **other non-governmental organisations** mentioned by Country Informants that are designed for not specifically government level coordination but contribute to fostering science and technology diplomacy in their countries, such as the [All European Academies \(ALLEA\)](#), the [China Association for Science and Technology](#), the [China Association for International Science and Technology Cooperation](#), the [DiploFoundation](#), the [European Association of Research and Technology Organisations \(EARTO\)](#), the [European Network of Innovation Agencies \(TAFTIE\)](#), the [European Union Science Diplomacy Alliance \(EUSDA\)](#), the [Geneva Science and Diplomacy Anticipator \(GESDA\)](#), [Science Europe](#), and the [Word Futures Studies Federation](#).

In parallel, many other research organisations and university networks, university research centres were mentioned as important in contributing to science diplomacy efforts by leveraging their scientific expertise and international networks.



Part II. Actions and Tools to Implement Science and Technology Diplomacy Strategies

1. Understanding the Implementation of Science and Technology Diplomacy Strategies

1.1 Types of Science and Technology Diplomacy Actions

We asked the Country Informants to collect the actions, mechanisms, and tools that are in place in their country to support the Science and Technology Diplomacy strategic goals. They were asked to choose which categories (with the option to choose all they felt applicable) they would allocate them to, out of the following list (informed by the categories of objectives outlined in the survey by the SFIC Task Force on Science Diplomacy in 2021, with some adjustments):

- Bilateral or multilateral S&T cooperation agreement
- S&T advisors attached to Embassies
- Ad-hoc S&T advisory boards
- Permanent S&T advisory board or single experts
- National or regional research funding schemes
- Fellowships or internships for Science Diplomacy
- Pairing schemes between scientists and diplomats/policy makers
- Other

The categorisation was made based on the Country Informants data collection, perception and analysis of this data to determine which category best suited the approach by the country.

The data shows these categories as the most frequently applicable:

- 1) Bilateral or multilateral S&T cooperation agreement (39 countries at 95.12%)
- 2) National or regional research funding schemes (38 countries at 92.68%)
- 3) Fellowships or internships for Science Diplomacy (25 countries at 65.79%)
- 4) S&T advisors attached to Embassies (25 countries at 65.79%)

From the categories, *Pairing schemes between scientists and diplomats/policy makers* ranked lowest, with 17 Country Informants indicating that their country takes actions which may fall into this category (44.7%).

Examples of other categories mentioned are “National technology-focused policies” (**India**), “Science parks and Innovation hubs” (**Thailand**), “Higher education and scientific cooperation” (**Croatia**), and to

“Create a new Technology Centre of Expertise to support sustainable economic growth around the world” (the United Kingdom).

Collect all the actions / mechanisms / tools that are in place in your country to support the Science and Technology Diplomacy strategic goals. Which of the following categories do they fall into?

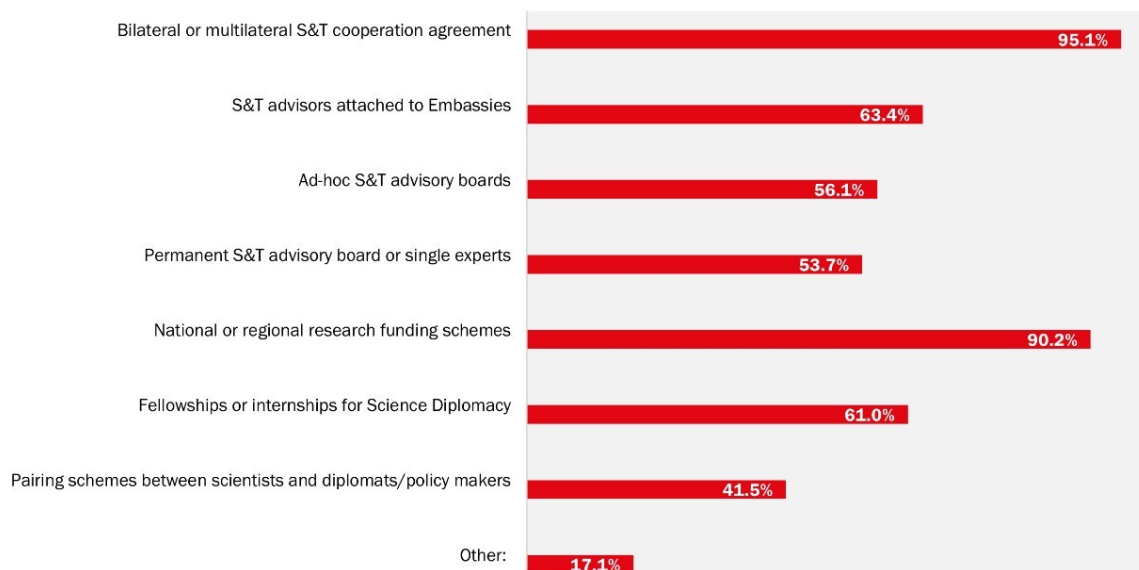


Figure 18: Science and Technology Diplomacy Actions/mechanisms/tools

Following the collection of actions, we asked the Country Informants to categorise the activities and actions based on the following descriptions (Gluckman et al., 2017):

- Actions designed to directly advance the country's national needs
- Actions designed to address cross-border interests
- Actions primarily designed to meet global needs and challenges

Out of 41 countries, 28 Country Informants provided a specific estimated number of actions. Based on the answers received, the categories of the different actions in Asia and Europe can be listed as follows (ranked on the total number of actions listed for each description):

- 1) Actions designed to directly advance the country's national needs (on average: 9.25 actions; total: 263 actions indicated)
- 2) Actions designed to address cross-border interests (on average: 5.5 actions; total: 154 actions indicated)
- 3) Actions primarily designed to meet global needs and challenges (on average: 4.1 actions; total: 115 actions indicated)

The data indicates that national interest is prioritised through the countries' actions, followed by a regional focus, and continued scaling to global needs and challenges.

As the EU works at a multilateral level, their approach may differ greatly from that of individual countries. The EU Country Informant reports this different approach, where, whilst actions span across all categories, most actions for the EU can be classified under *Actions primarily designed to meet global needs and challenges*.

Examples from the Country Informants elaborating on their answers in the survey questionnaire are below:

Belgium: “The actions [...] are covered by the activities programs of the 3 export and investment promotion agencies in Belgium (FIT, AWEX, HUB Brussels), with a total of approximately 150 activities.”

Finland: “For Finland, this is hard to assess as there is no single science & technology diplomacy strategy. Instead, different governmental actors, institutes, research organisations, higher education institutions and other key players have their own strategies and priorities.”

2. Monitoring Mechanisms

33 Country Informants (80.5%) reported that their country has monitoring systems in place for assessing Science and Technology Diplomacy efforts, while 8 Country Informants (19.5%) reported that information was unavailable on the monitoring mechanisms (Austria, China, Cyprus, Finland, Germany, Indonesia, Poland, and Singapore). Examples of monitoring mechanisms from the narrative country reports include:

- **Estonia** lacks explicit metrics for science diplomacy itself but monitors research infrastructure through the Research Infrastructure Roadmap, assessing outcomes against national and international strategic objectives.
- **Korea** implements structured evaluations via regular reports from the National Research Council, Ministry of Science and ICT KPIs, periodic S&T Cooperation reviews, and dedicated public-private collaboration metrics to assess international cooperation outcomes.
- **Philippines** utilises a systematic approach through 12 operational areas outlined in PAGTANAW 2050, with clear public-private indicators and annual performance assessments ensuring transparency and alignment with global standards.
- **The United Kingdom** employs comprehensive monitoring through its International Technology Strategy (ITS), involving regular horizon-scanning, comparative assessments of technological strengths, and adaptive strategic reviews to ensure relevance.

Are there any monitoring mechanisms in place in your country to measure success?

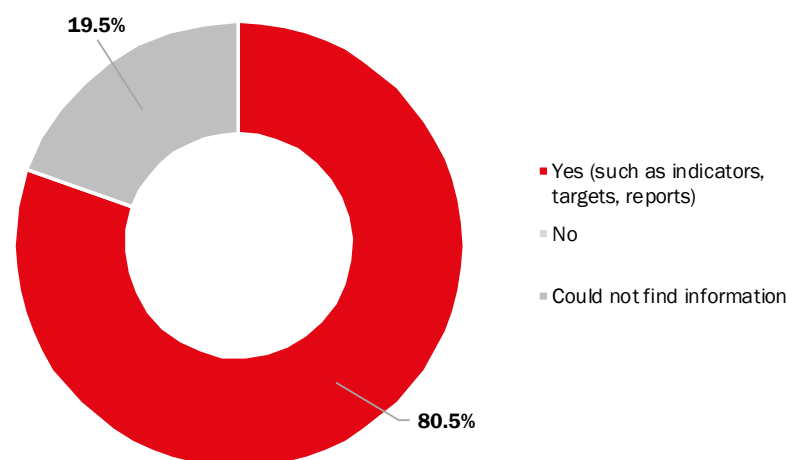


Figure 19: Monitoring Mechanisms to Measure the Success of Science and Technology Diplomacy

3. Personnel Engaged in Science and Technology Diplomacy

3.1 Dedicated Science & Technology (S&T) personnel

We asked the Country Informants to indicate how many Science & Technology (S&T) counsellors or attachés are appointed by their country to represent it in a mission overseas. It is worth noting that these numbers are presented as of when they were collected, being mindful that personnel changes happen quite frequently which can affect the data.

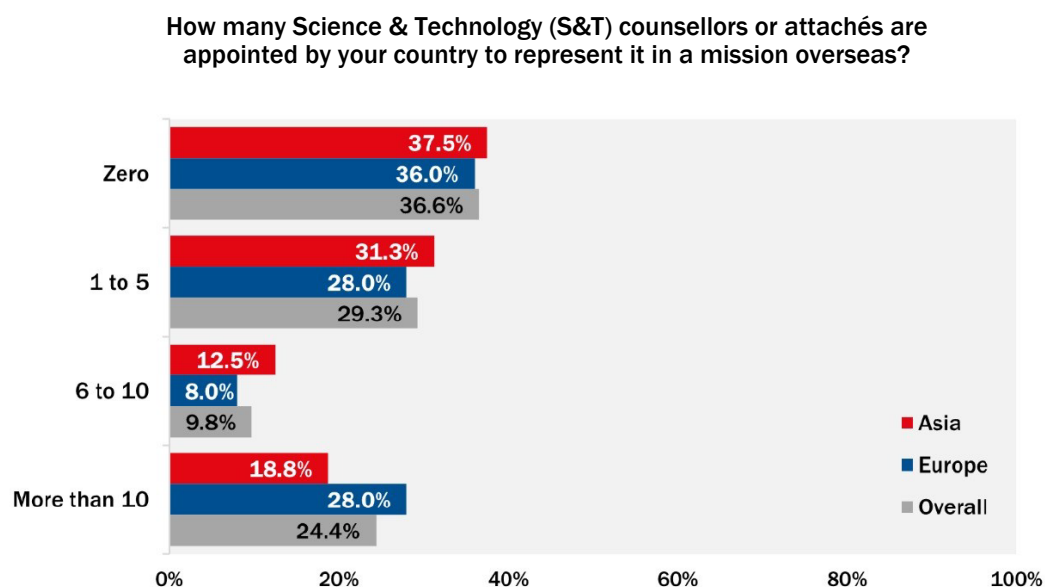


Figure 20: Regional Comparison of Science & Technology Diplomacy Personnel

25 countries (63.4%) are reported as having 1 or more Science & Technology counsellors or attachés on missions overseas.

15 countries (36.6%) are reported as not having any specific Science & Technology Diplomacy counsellors or attachés on missions overseas. For Latvia, Norway, and the Philippines it was noted in particular that the work falls under a number of different thematic areas, though this is also understood by the Country Reports to be the case in many countries both in Asia and Europe.

For those that reported having counsellors and attachés posted abroad, we asked the Country Informants to indicate where these personnel are posted.

The data can be summarised in the following list (ranked in order of the most mentions)

- 1) The United States
- 2) The United Kingdom
- 3) China
- 4) France
- 5) Germany

Other countries mentioned include Australia, Austria, Belgium, India, Japan, Russian Federation, Singapore, and South Africa.

In the **EU**, the work of Science and Technology Diplomacy is usually managed under larger portfolios related to research, innovation, trade, and foreign affairs at different EU Delegations. For example, EU Delegations sometimes have Science and Technology Counsellors, such as the Science and Technology Adviser at the EU Delegation to the United States, and the Science and Technology Adviser at the EU Delegation to China.

Across both regions, the data shows that personnel are mainly deployed in countries which are major economic and diplomatic powers. For example, the United States is the country with the most stationed personnel from both Asia and Europe, followed by the United Kingdom and China. Smaller differences can be seen in the five countries with the most personnel. For Asian countries the five countries with the most personnel are the United States, Germany, China, Japan and the United Kingdom, and for European countries, the five countries with the most for S&T personnel are the United States, France, Belgium, China, and the United Kingdom. This indicates that a country's geographical focus (see more under 1.5) may impact how many personnel are deployed to a specific country/region.

Hungary: “Hungary maintains an extensive international STI network, which is unique relative to the country's size. International STI relations are supported by S&T attachés stationed at 15 key locations in major STI partner countries and centres of competitiveness and innovation, including Berlin, Brussels-EU, London, Moscow, New York, Paris, Beijing, San Francisco, Tel Aviv, Tokyo, Seoul, New Delhi, Vienna, Stuttgart, and São Paulo.”

For the countries without dedicated S&T personnel appointed overseas, we asked Country Informants to indicate which counsellors or attaché portfolios that Science and Technology Diplomacy fall under. The data can be summarised in the following list (ranked in order of the most mentions):

- 1) Economy/Economic affairs/Trade/Commercial
- 2) Science and Technology (without mention of diplomacy)
- 3) Culture/Cultural diplomacy
- 4) International Relations
- 5) Defense/Defence

Other areas mentioned were Healthcare and Bioengineering; Agriculture, Aquatic and Natural Resources; Industry, Energy and Emerging Technologies; Environment; Finance; and Digitalisation.

The data shows that, whilst for some countries, Science and Technology Diplomacy is its own portfolio, many countries are reported as having a varied approach, where the responsibility falls under other portfolios and that the personnel engaged in Science and Technology Diplomacy activities may depend on the topic and the activity in question – where interest within different ministries or agencies could affect who is ultimately responsible.

Regional Comparison:

According to the data reported, Asian countries have a higher average of total Science and Technology counsellors and attachés appointed overseas with an average of 14.4 compared to 13.7 from European countries. However, the median for both regions is very similar, with 2 for Asian countries and 2.5 for European countries. It is worth noting that the size of the population of a country and the size of its ministries may impact the number of diplomatic officials and therefore the amount of Science and Technology Diplomacy personnel deployed.

3.2 Meetings among S&T counsellors or attachés on a governmental or institutional level

Out of the 26 countries for which Country Informants indicated that their country has dedicated S&T personnel, the percentage of those having regular meetings is 57.7%.

Are there regular meetings among S&T counsellors or attachés on a governmental or institutional level in the country?

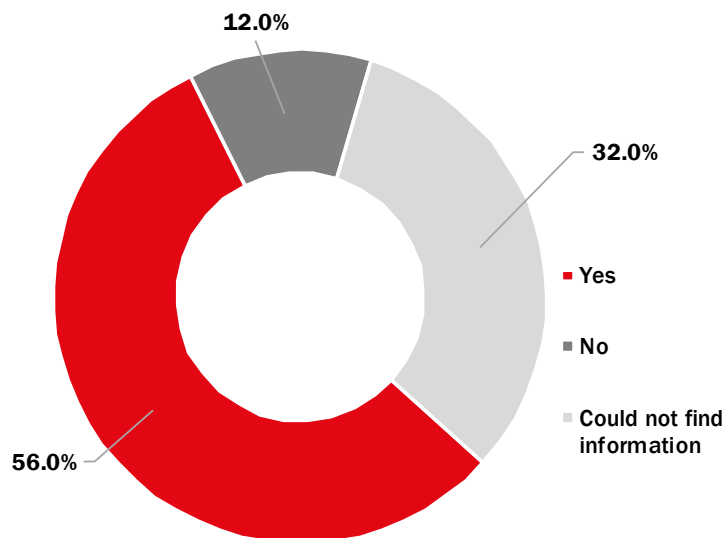


Figure 21: Meetings Among S&T Personnel on a Governmental or Institutional Level

Examples of the types and formats of the meetings from the narrative country reports include:

Estonia: “Regular meetings are held among science advisors from various ministries in Estonia. Counsellors from each ministry, with the exception of the Ministry of Justice, convene once or twice a month to discuss and coordinate science and technology-related matters. Additionally, science attachés stationed abroad participate in weekly meetings to ensure alignment and consistent communication on international science diplomacy efforts.”

Italy: “Coordination among Italy's S&T attachés is ensured through regular meetings and workshops organised by the Ministry of Foreign Affairs and International Cooperation (MAECI). These sessions, held both virtually and in person, bring together attachés from across the globe to align their activities with Italy's national scientific and technological priorities. Discussions during these meetings cover emerging trends, challenges in global scientific diplomacy, and ongoing projects.”

Korea: “Korea holds regular coordination meetings among its Science and Technology (S&T) counsellors and attachés. These meetings often serve as a platform for exchanging insights, discussing bilateral and multilateral cooperation agreements, and aligning strategies for promoting science diplomacy. The Ministry of Science and ICT plays a central role in organizing these meetings to ensure that the diplomatic personnel are in sync with national priorities and global S&T trends.”

Pakistan: “There are regular meetings held among the S&T counsellors, which facilitate the exchange of information and best practices in science diplomacy. These meetings involve discussions on current projects, collaboration opportunities, and alignment of strategies with national science and technology priorities. The coordination mechanism is organized by the Ministry of Science and Technology (MoST) in collaboration with the Ministry of Foreign Affairs (MoFA).”

EU: “[...] within the EU’s external relations structures, S&T counsellors and attachés often participate in meetings organized by the Directorate-General for Research and Innovation (DG RTD), which regularly engages with EU delegations to coordinate global research and innovation efforts. These meetings enable S&T attachés to report on the state of international research collaboration and inform EU-level decision-making related to global scientific priorities. The EU Research and Innovation Missions also create opportunities for regular meetings between science diplomats from various EU member states.”

Regional Comparison

A higher amount of European countries are reported as having regular meetings between their S&T personnel than in Asian countries – 68.8% compared to 40.0%.

3.3 Training of Science and Technology Diplomacy Personnel

26 Country Informants (63.4%) reported that their country has some sort of training mechanisms in place for diplomats responsible for Science & Technology Diplomacy.

10 Country Informants (24.4%) reported that there are no mechanisms in place in their countries: Austria, Cambodia, Croatia, Germany, Greece, Indonesia, Kazakhstan, Luxembourg, Malta, and Myanmar.

5 Country Informants (12.2%) reported not being able to find information on the question: Australia, Cyprus, Lao PDR, Singapore, and Slovakia.

The **EU** conducts training through the European External Action Service (EEAS) and the EU diplomatic service, where science and technology in diplomacy, global governance, and international relations is covered. The regional differences in offering training for diplomats is marginal.

Are there training mechanisms in place for diplomats who are responsible for Science and Technology Diplomacy?

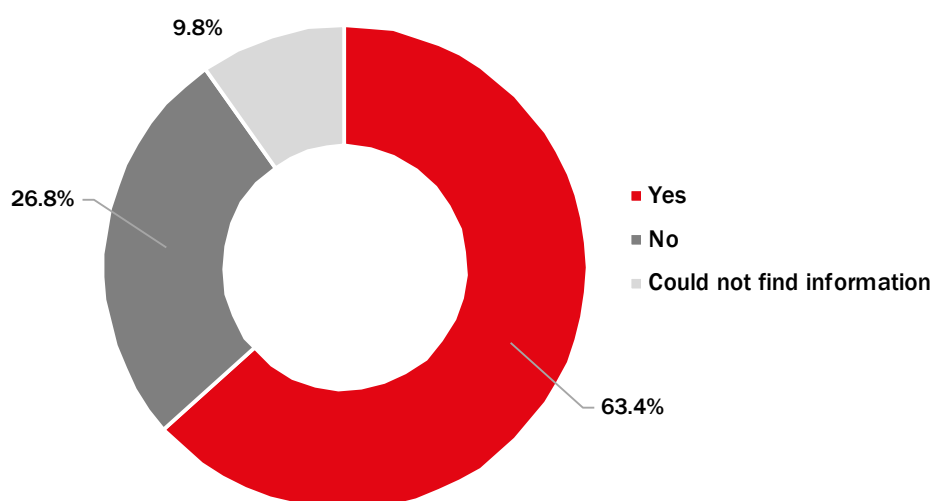


Figure 22: Science and Technology Diplomacy Training Mechanisms for Diplomats

For those that indicated they have training mechanisms, we asked the Country Informants to indicate what type of training is conducted based on a proposed list, where they could choose more than one of the options:

- 1) Online courses
- 2) Academic and university courses
- 3) Workshops and seminars
- 4) Other

The findings show that the most popular training is *Workshops and seminars*, with 19 countries (73.1%) reported as using this type of training. This is followed by *Academic and university courses* in 12 countries (46.2%) and *Online courses* in 10 countries (38.5%).

If yes, which training mechanisms are in place for Science and Technology Diplomacy?

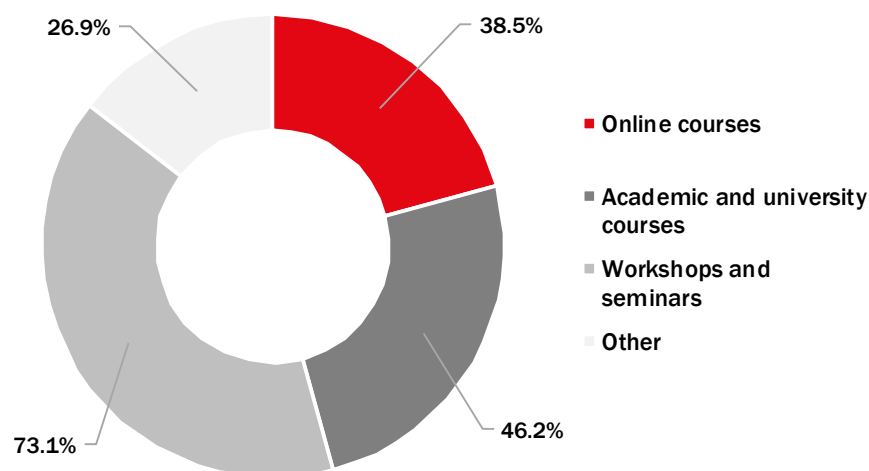


Figure 23: Types of Science and Technology Diplomacy Trainings for Diplomats

Examples of other mechanisms mentioned were on-the-job training and secondments (**Thailand**), in-house training (**Latvia**), and annual gatherings and trainings (**Lithuania**).

For the **EU**, the Directorate-General for Research and Innovation (DG RTD) plays a key role in organising training for diplomats and officials involved in Science and Technology Diplomacy through seminars and workshops on topics such as research cooperation, policymaking, and EU mechanisms to advance EU's science and technology interests internationally.

Regional comparison

A significantly higher number of Asian countries are reported to offer *Workshops and seminars* compared to the European countries, with 100% of the Country Informants for Asian countries reported to conduct these trainings compared to 60% of the Country Informants for European countries. The data shows that Asian countries are reported to have a greater variety of types of training offered compared to European countries, where Asian countries (out of 4 options) on average identify 2.7 out of the training mechanisms compared to European countries' 1.5.

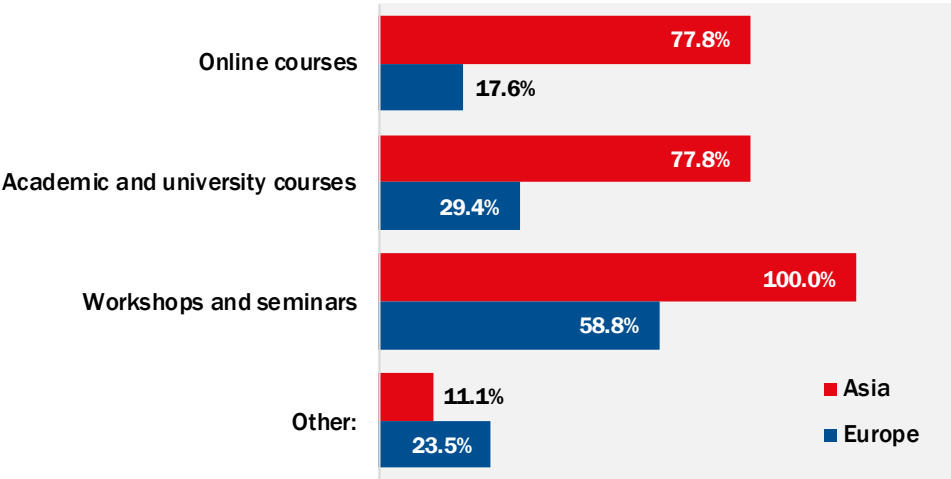


Figure 24: Regional Comparison of the Types of Science and Technology Diplomacy Trainings for Diplomats

For those that indicated they have training mechanisms, we asked the Country Informants to determine who is in charge of training activities related to Science and Technology Diplomacy for personnel, using the following categories, where they Country Informant could indicate more than one option, as applicable:

- 1) Government
- 2) Diplomatic academy
- 3) Others e.g. private sector providers

17 countries (65.4%) are reported to have *Diplomatic academies* in charge of training activities, followed closely by the *Government* with 15 countries (57.7%). It is worth noting that Diplomatic academies do fall under government management in some countries.

If yes, who is in charge of the training activities?

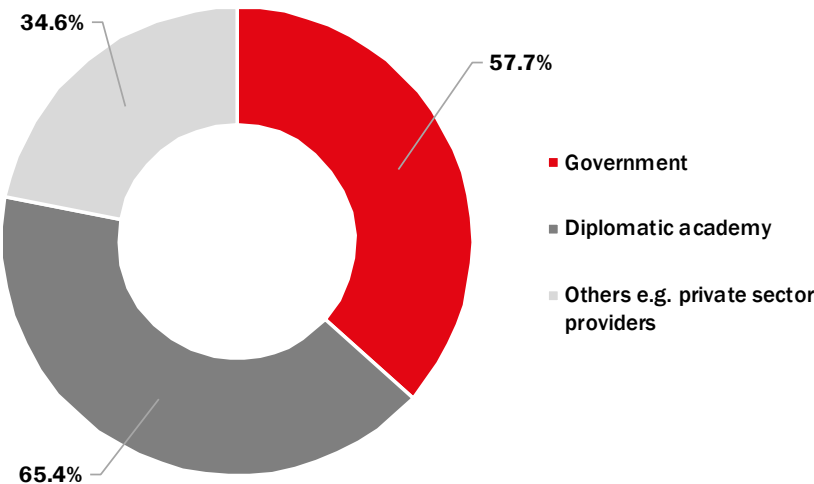


Figure 25: Actors in Charge of Science and Technology Diplomacy Training for Diplomats

Regional comparison

A significantly higher percentage of Country Informants for Asian countries indicated *Diplomatic academies* being in charge of training activities compared to Country Informants for European countries, with 88.9% of Asian countries compared to 52.9% of European countries. The data indicates a broader range of stakeholders in Asian countries are in charge of leading the training initiatives *together* in Asia compared to Europe, where it is more often one in charge.

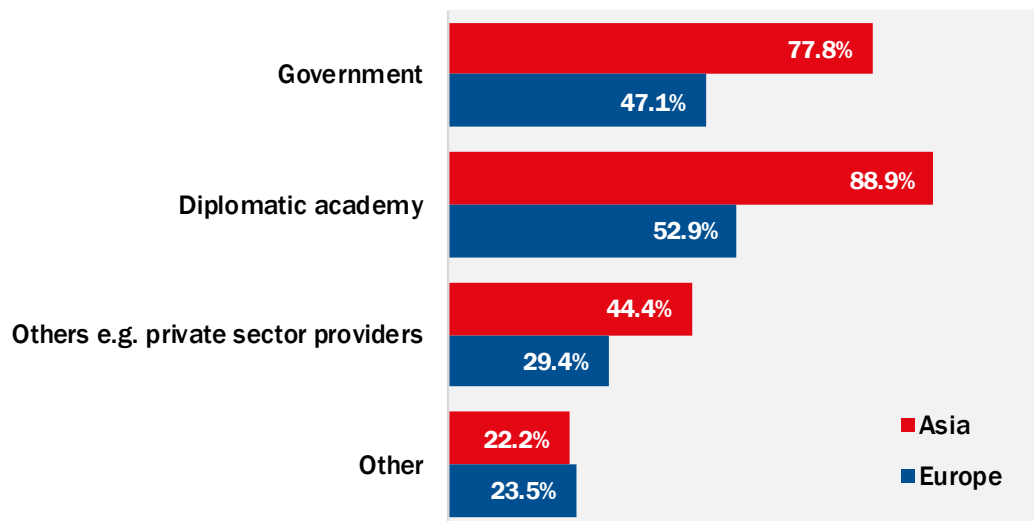
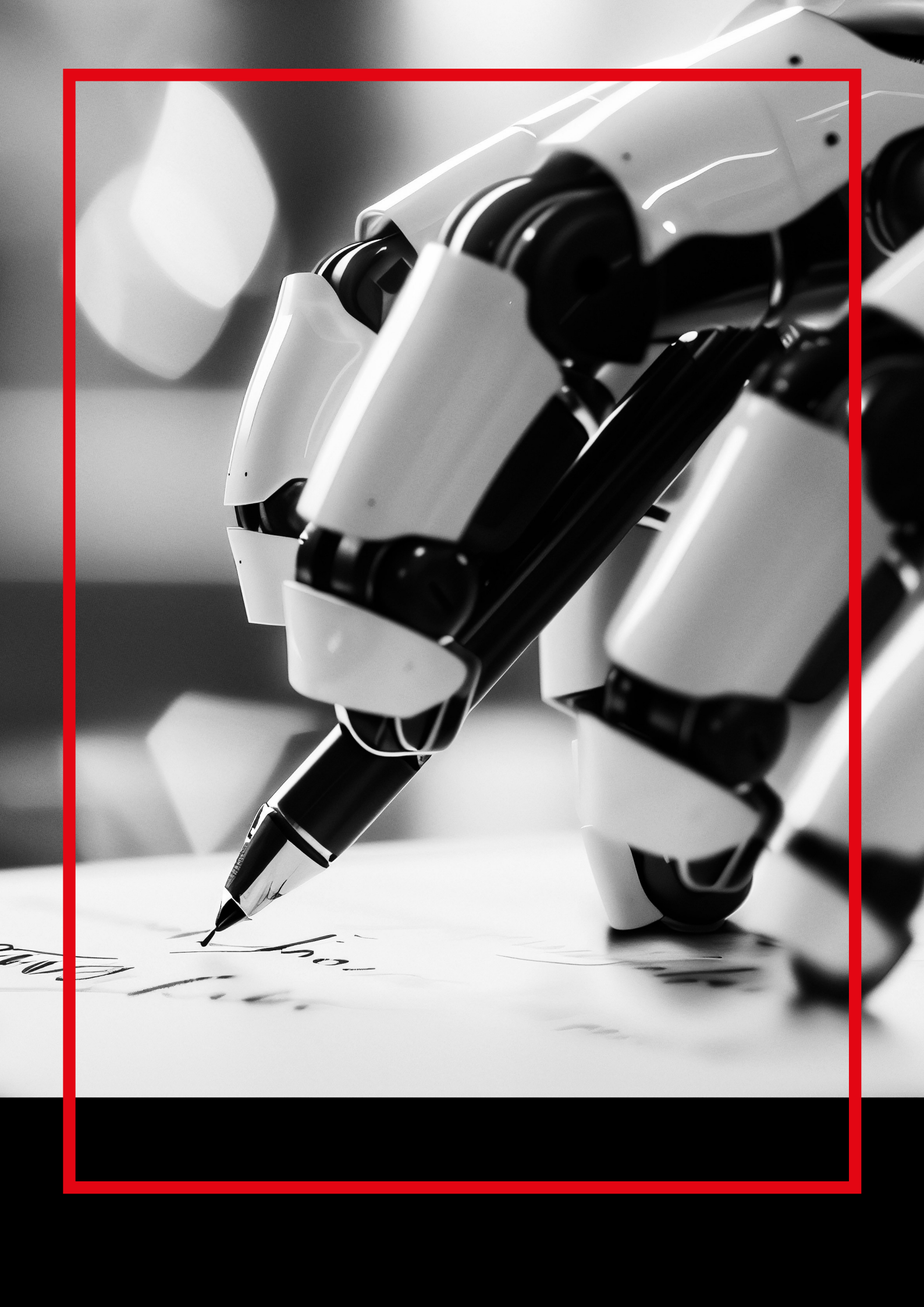


Figure 26: Regional Comparison of the Actors in Charge of Science and Technology Diplomacy Training for Diplomats



Part III. Conclusion

This Report set out to answer the following two questions:

- 1) What strategies do countries in Asia and Europe have for Science Diplomacy?
- 2) What actions and tools are being used to implement these strategies?

The findings presented in this Report reveal the wide range of strategies employed by ASEF member countries to integrate Science and Technology Diplomacy into their national frameworks, and the diverse approach to their implementation, guiding both national and international initiatives.

However, the absence of a universally accepted definition for Science and Technology Diplomacy creates inconsistencies in its application across countries, reflected in the findings in this Report. Additionally, variations in institutional structures and capacities further complicate efforts to harmonise approaches and to provide a complete overview of the status of Science and Technology Diplomacy across continents, especially where efforts are not centralised.

Despite these differences, it is clear that Science and Technology Diplomacy is integrated on many different levels both across Asia and Europe as it continues to play an increasingly important role in furthering national and regional interests and in addressing global challenges; whether it is through facilitating international research collaborations or using science as a soft diplomacy tool to strengthen international relations.

A majority of the Country Informants report that there are plans of introducing new strategies or engaging in other activities to support Science and Technology Diplomacy in their country in the coming years. With this in mind, only time will tell what the future of Science and Technology Diplomacy will look like in Asia and Europe. In Europe, Science and Technology Diplomacy has gained increased visibility and priority in recent years, highlighted by initiatives in Europe such as the 1st European Science Diplomacy Conference in Madrid, Spain 2022 organised by the Spanish EU Presidency (Spanish Presidency, 2022). In addition, with the new European Framework on Science Diplomacy (European Commission, Directorate-General for Research and Innovation, et al., 2025), the interest in Science and Technology Diplomacy may continue to rise in Europe in the coming years; an interest which can be expected to spread to the wider international Science and Technology Diplomacy network. The UNESCO Global Ministerial Dialogue on Science Diplomacy held in March 2025 is already an indication of this wider international focus on Science Diplomacy and its importance in combatting distrust between nations and promoting international dialogue between different stakeholders in the Science and Technology Diplomacy community to foster peace (UNESCO, 2025).

The Asia-Europe Science & Technology Diplomacy Report underscores the critical role of Science Diplomacy in addressing global challenges while fostering innovation-driven growth. In this ever-changing and developing field, continued research and engagement in this field will be crucial in further promoting Science and Technology Diplomacy worldwide and expanding the information available on current and emerging trends in the field. By mapping and analysing existing strategies across 40+ countries in Asia and Europe, the Report identifies overlapping interest in the countries' approaches, both in terms of geographical focus, as well as prioritised scientific and technological fields, highlighting areas for strengthening collaboration to achieve mutual goals. It serves as a valuable resource for stakeholders in the field to harness the potential of Science and Technology Diplomacy effectively to reach common goals.

While this report is a celebration of information and good practices available, it also offers areas for deeper exploration. Science and Technology Diplomacy is a dynamic and evolving field, situated at the crossroads of multiple policy domains and societal priorities. As such, further discussion, research, and reflection are essential for advancing the concept.

Below are some guiding questions proposed for future inquiry and dialogue:

Navigating Complex Intersections Science diplomacy operates at the intersection of foreign policy, innovation strategies, education, research, and economic policy. This multidimensional nature can make coordination and coherence challenging. *How can countries design integrated and adaptive strategies that align across sectors and policy areas? What governance mechanisms can enable effective multi-stakeholder coordination among academia, industry, civil society, and government actors?*

Balancing Competing Objectives Many countries pursue multiple goals through their Science and Technology Diplomacy efforts, ranging from increasing economic competitiveness to addressing global challenges like climate change or pandemics. *How can national strategies effectively balance these different objectives? What frameworks can help countries ensure that science diplomacy delivers both national and global public goods? How can civil society members work with governments on this balance?*

Broadening Disciplinary Focus The report highlights that natural sciences, engineering, technology, and health sciences are the most commonly prioritised domains in science diplomacy. However, global challenges often have complex social dimensions. *What would be the benefits of a more inclusive approach that integrates social sciences, humanities, and human-centered approaches? How might this shift help promote a more holistic and inclusive vision of science diplomacy?*

Strengthening Science for Diplomacy Science-informed decision-making is gaining recognition; gaps remain. Building trust and mechanisms for collaboration between scientists and policymakers is essential. *How can scientific and diplomatic communities work together to institutionalise evidence-based policy processes? What role can civil society and youth play in advancing these collaborations and ensuring their legitimacy and inclusiveness?*

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BIBLIOGRAPHY

AAAS & Royal Society (2010), *New Frontiers in Science Diplomacy: Navigating the Changing Balance of Power*. London: Science Policy Centre, The Royal Society. https://www.aaas.org/sites/default/files/New_Frontiers.pdf

AAAS & Royal Society (2025), Science diplomacy in an era of disruption, London: Science Policy Centre, https://www.aaas.org/sites/default/files/2025-02/Final_Science%20diplomacy_15%20years%20on_report_WEB.pdf

ASEAN Secretariat Jakarta, (2017, October), *ASEAN Plan of Action on Science, Technology and Innovation (APASTI) 2016-2025*, <https://asean.org/wp-content/uploads/2017/10/01-APASTI-2016-2025-FINAL.pdf>

European Commission: Directorate-General for Research and Innovation, Gjedssø Bertelsen, R., Bochereau, L., Chelioti, E., Dávid, Á., Gailiūtė-Janušonė, D., Hartl, M., Liberatore, A., Mauduit, J., Müller, J., & Van Langenhove, L. (2025). *A European framework for science diplomacy : recommendations of the EU Science Diplomacy Working Groups*, (R.Gjedssø Bertelsen, editor, L.Bochereau, editor, E.Chelioti, editor, Á.Dávid, editor, D.Gailiūtė-Janušonė, editor, M.Hartl, editor, A.Liberatore, editor, J.Mauduit, editor, J.Müller, editor, L.Van Langenhove, editor). <https://data.europa.eu/doi/10.2777/9235330>

European Commission, Directorate-General for Research and Innovation (2021) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Global Approach to Research and Innovation,. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2021:252:FIN> Federal Foreign Office, Germany, (2020, December), *Science Diplomacy*, Federal Foreign Office, Germany, <https://www.auswaertiges-amt.de/resource/blob/2436494/2b868e9f63a4f5ffe703faba680a61c0/201203-science-diplomacy-strategiepapier-data.pdf>

Flink, T. and Rüffin, N. (2019), The Current State of the 'Art' of Science Diplomacy, Chapter (copy), In: Dagmar Simon, Stefan Kuhlmann et al. (eds.) *Handbook of Science and Public Policy*. Cheltenham: Edward Elgar, pp. 104–121, https://www.academia.edu/38918284/The_Current_State_of_the_Art_of_Science_Diplomacy

Flink, T. and Schreiterer, U. (2010) Science diplomacy at the intersection of S&T policies and foreign affairs: toward a typology of national approaches, *Science and Public Policy*, Volume 37, Issue 9, Pages 665–677, : https://www.researchgate.net/publication/254440761_Science_diplomacy_at_the_intersection_of_ST_policies_and_foreign_affairs_Toward_a_typology_of_national_approaches

Garcia, E. V. (2022). *What is tech diplomacy? A very short definition*, <https://behorizon.org/what-is-tech-diplomacy-a-very-short-definition/>

Gluckman, P. D., Turekian, V. C., Grimes, R. W., et al. (2017). *Science Diplomacy: A Pragmatic Perspective from the Inside*. Science and Diplomacy, Vol. 6. https://www.sciencediplomacy.org/sites/default/files/pragmatic_perspective_science_advice_dec2017_1.pdf

International Monetary Fund, IMF Data Mapper. <https://www.imf.org/external/datamapper/datasets>

BIBLIOGRAPHY

Ministry of Foreign Affairs, France, (2013, January), '*Une diplomatie scientifique pour la France*' (Science Diplomacy for France), Ministry of Foreign Affairs, https://www.diplomatie.gouv.fr/IMG/pdf/Rapport_Complet_DiplomatieScientifique_2013_cle8a68fb.pdf

OECD (2015), *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development*, The Measurement of Scientific, Technological and Innovation Activities, <https://doi.org/10.1787/9789264239012-en>

Spanish Presidency 2022, (n.d), European Science Diplomacy Conference, EU Science Diplomacy, <https://eu-science-diplomacy.service-facility.eu/>

UK Government, (2023, March), *The UK's International Technology strategy*, gov.uk, <https://assets.publishing.service.gov.uk/media/6419f93fe90e0769ebc31f08/uk-international-technology-strategy-web-version.pdf>

UNESCO, 2025, (n.d), *Global Ministerial Dialogue on Science Diplomacy*, <https://www.unesco.org/en/articles/global-ministerial-dialogue-science-diplomacy>

World Population Prospects (2022). *United Nations Department of Economic and Social Affairs, Population Division*, UN DESA/POP/2021/TR/NO. 3. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf

ANNEXES

1. Questionnaire

Section 1. National Science and Technology Diplomacy Strategies and Their Coordination Mechanisms

Strategies and Objectives

1. Does your country have a Science and Technology Diplomacy Strategy?

- a. Yes, a standalone document
- b. Yes, part of other strategies
- c. Currently being developed
- d. No

Note: think about different documents such as declarations, frameworks, strategies, roadmaps, guidelines, etc. Science and Technology Diplomacy might be part of other overarching strategies e.g. part of foreign policy strategy, or economic strategy, or research strategy.

2. What are the core objectives of the national Science and Technology Diplomacy strategy?

- a. Increase Economic Competitiveness
- b. Tackle Global Societal Challenges
- c. Facilitate Research Cooperation
- d. Soft Diplomacy (increase influence and visibility of the country)
- e. Infrastructure Access
- f. Develop Research & Development Capacity for the country
- g. Support Evidence-Based Decision Making
- h. Others

Note: multiple choice.

3. What are the prioritised fields of science and technology according to the strategy in your country, if any?

- a. Natural Sciences (e.g. Mathematics, Computer and Information Sciences, Chemical Sciences, Biological Sciences)
- b. Engineering and Technology (e.g. Electrical, Mechanical, Chemical, Medical, Environmental Engineering, Nanotechnology)
- c. Medical and Health Sciences (e.g. Basic, Clinical Medicine, Medical Biotechnology)
- d. Agricultural Sciences (e.g. Agricultural biotechnology, Veterinary science)
- e. Social Sciences (e.g. Economics, Education, Media and Communications)
- f. Humanities (History, Languages, Philosophy, Arts)

Note: if there are clear areas or technologies prioritised, please include them into the narrative Country Report.

4. Which region of the world does your country focus its Science and Technology Diplomacy efforts?

- a. Africa
- b. Asia and the Pacific (Including Australia and New Zealand)
- c. Europe
- d. Latin America and the Caribbean
- e. North America
- f. Other

Note: multiple choice, elaborate on each of the choices in your Narrative Country Report. If there are specific countries in the focus, write about them too.

Stakeholders

5. Which governmental department(s)/ministry(ies)/agency(ies) is (are) in charge of the overarching national approach / strategy towards Science and Technology Diplomacy?

Note: open ended.

5. How active are these stakeholder groups through playing an essential driving role in the Science and Technology Diplomacy field in your country?

	Very active	Active	Somewhat active	Marginally active	Don't know
Governmental stakeholders					
Research and Academic Stakeholders					
Industry Stakeholders					
Civil society stakeholders					

Note: indicate the level (from very active to marginally active) for each stakeholder group.

Coordination Mechanisms

7. How are Science and Technology Diplomacy efforts coordinated in your country?

- a. Regular Coordination on a National/Regional Level between the Governmental Actors
- b. Ad-Hoc Coordination on a National/Regional Level between the Governmental Actors
- c. No coordination on a National/Regional Level

7.a. If a) or b), does this coordination mechanism involve non-governmental stakeholders? If yes, which ones?

Note: open ended.

- a. No
- b. Could not find information

8. Are the Science and Technology Diplomacy efforts coordinated at an international level?

- a. Yes
- b. No
- c. Could not find information

8.a. If yes: provide examples of such international coordination platforms (e.g. EU, OECD, UNESCO, G7, G20)

Note: open ended.

9. Can you give examples of Science and Technology Diplomacy Networks where your country is active?

Note: open ended.

10. In your assessment, which one of the following descriptions fits the Science and Technology Diplomacy strategy and mechanisms of your country the most?

Note: indicate the level (from the most fitting to not fitting) for each description.

	The most fitting	Somewhat fitting	Not fitting
Diplomacy for Science			
Science for Diplomacy			
Science in Diplomacy			

Section 2. Actions and Tools to Implement the Strategies

11. Collect all the actions / mechanisms / tools that are in place in your country to support the Science and Technology Diplomacy strategic goals. Which of the following categories do they fall into?

- Bilateral or multilateral S&T cooperation agreement
- S&T advisors attached to Embassies
- Ad-hoc S&T advisory boards
- Permanent S&T advisory board or single experts
- National or regional research funding schemes
- Fellowships or internships for Science Diplomacy
- Pairing schemes between scientists and diplomats/policy makers
- Others: please elaborate

Note: we use the categories for comparative reasons, so try to fit in the actions you collected during your research into them (can be more than one). In the narrative Country Report, you can describe the key actions and tools in more detail and no need to squeeze them into these categories.

12. Are there any monitoring mechanisms in place in your country to measure success?

- Yes (such as indicators, targets, reports)
- Not
- Could not find information

13. In your assessment, how many actions and tools fall into one of the following descriptions?

- Actions designed to directly advance a country's national needs: [number]
- Actions designed to address cross-border interests: [number]
- Actions primarily designed to meet global needs and challenges: [number]

Section 3. Science and Technology Diplomacy Personnel Representing the Country Overseas

14. How many Science & Technology (S&T) counsellors or attachés are appointed by your country to represent it in a mission overseas?

- a. Give the exact number: [number]

14.a. If zero and no such dedicated role, which counsellors or attaché portfolio does S&T fall under (trade, economy, culture, defense, etc.)?

Note: open ended

14.b. If more than zero: Can you list where are they based?

Note: City, Country

15. Are there regular meetings among S&T counsellors or attachés on a governmental or institutional level in the country?

- a. Yes
- b. No
- c. Could not find information
- d. Country does not have dedicated S&T personnel

15.a. If yes, please elaborate on this coordination mechanism.

Note: open ended

16. Are there training mechanisms in place for diplomats who are responsible for Science and Technology Diplomacy?

- a. Yes
- b. No
- c. Could not find information

16.a. If yes, which training mechanisms are in place for Science and Technology Diplomacy?

- a. Online Courses
- b. Academic and university courses
- c. Workshops and seminars
- d. Others: elaborate

16.b. If yes, who is in charge of the training activities?

- a. Government
- b. Diplomatic academy
- c. Others e.g. private sector providers
- d. Could not find information

Section 4. Future Outlook

17. Are there plans to introduce new strategies/activities/tools/programmes to support Science and Technology Diplomacy in the country?

- a. Yes
- b. No
- c. Other





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