

# SCIENCE DIPLOMACY REVIEW

Vol. 3 | No. 2 | July 2021

## EDITORIAL

## ARTICLES

**Channeling the Sun: Ideas, Institutions and India's New Climate Diplomacy**

*Vyoma Jha*

**Water Diplomacy: Science Diplomacy for Seeking Legal Solutions to Ocean Change**

*Joanna Siekiera*

## PERSPECTIVES

**The Role of Science and Technology on the International Relations of a Small Country: The case of Greece**

*Evi Sachini, Nikos Karampekios*

**Insights from the Vaccine Development: Strengthening the Power of Health Diplomacy**

*S. K. Varshney, N. K. Prasanna*

**Science Diplomacy for Scientific Advancement and Achievement of SDGs in Bangladesh**

*Monir Uddin Ahmed, Iftekhhar Rafiqullah, Saiful Islam*

*(Continued on outside back cover)*

## Science Diplomacy Review

---

### *Editors*

<b>Sachin Chaturvedi</b>	Director General, RIS
<b>Bhaskar Balakrishnan</b>	Science Diplomacy Fellow, RIS
<b>Krishna Ravi Srinivas</b>	Consultant and Senior Fellow, RIS

### *Associate Editors*

<b>Kapil Patil</b>	Research Associate, RIS
<b>Sneha Sinha</b>	Research Associate, RIS

### *Editorial Advisory Board*

<b>Pierre-Bruno Ruffini</b>	Professor, Faculty of International Affairs, University of Le Havre, France
<b>Partha P Majumder</b>	National Science Chair, Science & Engineering Research Board, Government of India; Distinguished Professor & Founding Director, National Institute of Biomedical Genomics, Kalyani
<b>Ravi B Grover</b>	Emeritus Professor, Homi Bhabha National Institute, Mumbai Former Member, Atomic Energy Commission
<b>Skand Ranjan Tayal</b>	Former Ambassador of India

The editorial correspondence should be addressed to the Editor, Science Diplomacy Review, Research and Information System for Developing Countries (RIS), Core IV-B, Fourth Floor, India Habitat Centre, Lodhi Road, New Delhi-110 003, India. Phone: +91-11-24682177-80, Fax: +91-11-24682173-74. Email: [science.diplomacy@ris.org.in](mailto:science.diplomacy@ris.org.in) and [dgoffice@ris.org.in](mailto:dgoffice@ris.org.in).

© RIS, 2021.

RNI Registration No. DELENG/2021/79753.

The views expressed in science diplomacy review are those of authors and not necessarily those of the RIS or the organizations they belong to.

# SCIENCE DIPLOMACY REVIEW

Vol. 3 | No. 2 | July 2021

# The Role of Science and Technology on the International Relations of a Small Country: The case of Greece

Evi Sachini\* and Nikos Karampekios\*\*



Evi Sachini



Nikos Karampekios

## Setting the tone

Issues of science and technology (S&T) have been a prime focus for policy-makers and academics within the practice of international affairs. Focusing on countries with a global footprint (or even serving under respective governmental structures), their main objective has been to contextualize S&T within the conduct of a country's foreign affairs (Skolnikoff, 1993; Osiris, 2006). Given the implications of such issues on matters of knowledge, collaboration, entrepreneurial activities, the establishment of networks, and financial rewards, scholars and practitioners have seen the potential to project power to be exploited.

To be fair, great powers pursued international collaboration on such matters in the past because they revolved around national security topics and potentially catastrophic events such as nuclear proliferation, bioterrorism, weapons and missile defense, and other equally sensitive technological issues. A case in point here is the scientific collaboration between the US and USSR during the Cold War (Sher, 2019). These issues, in turn, were directly linked to real-life concerns such as security-related export control considerations, or the extent to which scientific collaboration between domestic and foreign scientists can be initiated/sustained unhindered,

\* Director, National Documentation Centre (EKT). She holds a Ph.D. in Chemical Engineering.

\*\* Head, RDI Analysis Unit of the National Documentation Centre EKT. He holds a Ph.D. in European technology policy.

etc. (Evans and Valdivia, 2012; Weiss, 2005).

Lately, the second wave of interest in S&T in connection to foreign affairs has been on the rise. Dual in its approach, a) it seeks to frame S&T as a subfield of the scientific field of International Relations, and, thus, to imbue academic credence to an interdisciplinary domain *par excellence*. The creation of the 'Science, Technology, Art in International Relations' chartered section in the International Studies Association is a testament to this.<sup>1</sup> Secondly, the growing awareness that global environmental, health, educational, energy, and sustainable problems can be tackled through S&T and, in turn, the placement of the responsibility for the execution of policies at the national level (Mayer *et al.*, 2014a; Mayer *et al.*, 2014b) sets the framework conditions for the involvement of scholars and policy-makers. A case in point here is the Sustainable Development Goals as set by the UN. Universal in scope, they need to be addressed on the country level to be truly efficient.

Another example that highlights the dichotomy between the international versus domestic character of science collaboration is the case of USAID - an agency that seeks to extend medical and developmental aid towards a select list of countries and thus offers a humanitarian helping hand. This hand, though, is extended to those countries with which a minimum level of accordance on specific global issues has been achieved or to countries that the US establishment does not see eye to eye, yet, realize the opportunity for major geopolitical breakthroughs. Another case is the Chinese Belt and Road Initiative. At its greatest scale involving

more than 120 nations, China's mega-plan for global infrastructure aims to transform the lives and work of tens of thousands of researchers by establishing science links (Nature, 2019). Neither of these endeavors is criticism-free. Too much resilience on cutting-edge information-technology infrastructure, e.g. 5G network, environmental concerns, and too much China-centered S&T priorities are some points of geopolitical friction with other global players that perceive the initiative in competitive terms. These examples indicate how deep science is embedded in the everyday foreign policy conduct of great power.

For all their worthiness, the existing literature missed the question of how small countries could incorporate S&T issues in their foreign relations. While a clear-cut definition of what stands as the archetype of a small state has not been achieved (Keohane, 1969; Neumann and Gstöhl, 2004), scholars have agreed that a "small" country should be considered in terms of population size and density, size of the economy, import and export demands, etc. Small, though, is by no means weak. Alliance building, veto power, and agenda-setting capability are mechanisms to project power for a small country (a case in point here is the institutionalization of the European Defence Agency, see Karampekios 2015).

Concerning science activities within the conduct of foreign affairs, most scholars, however, focused on the S&T workings of large countries.<sup>2</sup> This paper aims to address this gap by way of providing a viewpoint of such a small country - Greece. Taking a cue from the above considerations, the paper seeks to provide a real-life macro-image of actions

that can be taken to formulate the linkages between science and technology policy and their foreign relations.

## A connection long overdue

S&T issues have not attracted the interest of Greek foreign policymakers. Traditionally, these issues were viewed as political issues of low importance due to several reasons. For example, they could not fit squarely with bilateral relations on this thorny corner of the Balkan Peninsula – relations that were more realistic than collaborative in principle. Moreover, such matters mature in periods that are more extended than the standard four-year electoral cycle. This presented a reality hard to accept for politicians who understood scientific collaborations as potential capitalization avenues to be exploited for electoral purposes.

Short-sighted approaches missed the high impact potential found in formulating international scientific networks that could be turned into, or, at least contribute to geopolitical alliances. Indeed, capitalizing upon this exact characteristic, i.e. regional (i.e. Balkan) leaders looking down upon science as a low priority theme, presents a window of opportunity for Greek policymakers to actively support their regional interests. This can be achieved by way of building long-lasting relations with their neighbours. This includes relations on topics that do not raise eyebrows, such as exchange programmes, science collaboration, technological partnerships, etc. However, this has not been the case so far.

This is paradoxical given Greece's strong science presence. For example, a systemic over-performance in competitive European collaborative projects – with an

EU average of 11.9 per cent Greece has a 13.4 per cent success rate – (Commission, 2021) and an increasingly good bibliometric performance – for example, high activity and high impact science fields are (to name a few) particle physics, telecommunications, critical care medicine (National Documentation Centre, 2020). This means that existing science networks are there to be used for establishing long-standing relations. Indeed, these relations can be initiated on the grounds of science but they should not only be limited to that.

This omission seems even more paradoxical given Greece's highly educated diaspora individuals (Sachini *et al.*, 2020) occupying a disproportionately high number of academic and research positions in US Ivy League universities (Yuret, 2017). Masters in their fields, these individuals could be enlisted for the cause of establishing formal networks between Greece and the hosting country or with neighbouring countries that would welcome such high-profile mentors. Indeed, of late science diplomacy has been institutionalized as a term and practice in the state affairs of countries with a larger footprint whereby these countries actively seek to build bilateral technological and industrial alliances with countries of interest through high-profile individuals that can garner support for collaboration under the industry and academic standing.

This overdue 'bridge' between two distinct policy realms (foreign affairs and science) seems ripe for a variety of reasons. For example, it should be considered as part and parcel of an active, outward-oriented foreign policy that aims to construct common viewpoints and bank on knowledge creation. Also, and perhaps more importantly, because it is linked to

the country's overall economic progress. Keeping COVID-19 aside, the exploitation of science and its potential, including bilateral relations and technology transfer, are initiatives that can help reinstate Greece into a path of sustainable growth after a decade-long economic crisis. Further, this is consistent with several national development strategies and funding mechanisms that seek to capitalize on the knowledge, create networks, and incentivize technology transfer. Such strategies and mechanisms are the Recovery and Resilience Plan, the New Partnership Agreement, and the Research and Innovation Strategies for Smart Specialization.

## Placing the building blocks

Placing the building blocks of a foreign-centered science and technology policy requires a multi-pronged approach that seeks to "extract" value out of this chain. One such avenue is bilateral science agreements. Currently, such agreements have been signed with four countries (China, Israel, Germany, and the US), yet the number and the scope of these collaborative arrangements should be increased, and countries that are of interest to Greece - not only scientific interest, should be included. A case in point here is India. A major Asian country with a huge science capacity stands as an obvious partner. Indeed, since 2007 an S&T agreement has been signed between the two countries, yet has remained largely inactive and unexploited ever since (Agreement between India and the Hellenic Republic, 2007). As of very recently, the two countries sought to reboot their relations. The Indian Minister of Foreign Affairs met his counterpart in

Athens and talked about of new prospects for consolidating and upgrading their relations. In addition to S&T-relevant endeavours, such as Greece becoming a member of the Indian initiative to promote solar energy, the "International Solar Alliance", the two spoke about larger, geopolitical alignment involving establishing military ties (eKathimerini, 2021).

Science partnerships mean little if an overall strategy connecting these cooperation agreements is not in place on behalf of the Greek Ministry of Foreign Affairs. In essence, S&T ought to be introduced as an upgraded and distinct foreign affairs domain. Science and technology policy, science and industrial diaspora, and technology transfer should be considered as potential subject fields in this new administrative function. These should be coupled with the job of formulating a relevant strategy as well as breaking down this strategy into to-do actions. Additionally, these topics should be introduced in the curriculum of the Greek Diplomatic Academy.

Related to this and as pointed above, science diplomacy has been on the rise (Labrianidis *et al.*, 2019).<sup>3</sup> Establishing bilateral relations to make use of scientific and technological potential and to strengthen ties between two countries have been institutionalized as a distinct state-led domain for countries such as the USA, France, Germany, Japan, and New Zealand seeking to enhance their partnering opportunities with the global best. Selecting a few capitals of the world with rich S&T activities (and, strong science and entrepreneurial diaspora) is an option for Greece to consider. The benefits accruing from this option are self-



evident: partnering with global players and tapping into first-class scientific knowledge is a valid science-centered collaboration approach that can turn into a technology transfer mechanism. An alternative avenue would be to establish an S&T-related network with countries that are not very S&T-competent, yet are located in the geographical vicinity and are central to Greece's foreign policy for several geopolitical reasons. It need not be only Greece learning something from them; it would be them learning something from Greece.

A parallel action would focus on promising early-stage civilian researchers. It could be researchers of young age with a promising future - in terms of publications and outreach potential, coming from a select list of countries - for example, those in the geographical vicinity of Greece. These individuals could be offered at least a fully paid semester to conduct research visits and, potentially, collaborate with Greek research centers and universities. This, in turn, could lead to the establishment of research partnerships, co-authoring opportunities as well as much-needed bonds of friendship with the next generation of senior researchers and policy-makers from these countries. Again, talking about individuals that will climb the social ladder, it is in the best interest of Greece to have them immersed in the domestic context and capitalize (in the future) upon then-formed research and technological networks. Existing EU financing schemes (e.g. Erasmus) can be used as blueprints. Yet, they should not constitute the only mechanism to initiate such visits. Enhancing one's own national interest through enabling bilateral science networks should be based on criteria that fit one's purpose.

In the case of military students, Greek defence academic institutions have a long experience in providing education for cadets from quite a few regional as well as more remote countries (from Balkan, Africa, and Armenia). Yet, formalized military networking extends only during the years of military schooling. From then on, these cadets return home and preservation of links with Greece rests entirely upon their predisposition. Some of them may probably reach the higher military echelons and/or are further employed in top industrial, technological, and policy positions. Therefore, maintaining formal links with Greece stands as a valid future-oriented approach that could open up the potential of establishing collaborative scientific, technological, and entrepreneurial arrangements. Closely affiliated is the newly found military Erasmus programme. Participation should be sought, not only because of securing much-needed research funds but as a stepping stone to formulate lasting Greek military partnerships with European countries of interest. Moreover, this should be embedded in the wider techno-industrial military strategy. Perhaps, similar steps can be taken with non-European countries, such as Israel and India through similar customized initiatives that focus on the exchange of military cadets and personnel.

## **The projecting force of the soft kind**

Large countries have long ago realized the political force of S&T activities in terms of establishing common technological, industrial, and, indeed, political trajectories between countries. Yet, as of recently, the renewed emphasis on networks, knowledge creation, and technology transfer increased the importance of



international scientific collaboration among the available foreign policy tools and practices. These activities do not raise eyebrows as core military activities do, countries are increasingly steering towards this direction and are conceptualizing new policy themes, such as science diplomacy and people-to-people contacts, to increase their soft global footprint. It is exactly for the same reasons that Greece should go for it. Especially since its science capabilities are of high quality, in terms of both highly educated individuals and scientific output.

### Endnotes

- <sup>1</sup> Science, Technology and Art in International Relations (STAIR) was chartered in 2014 based on the recognition that science and technology are at the core of global politics shaping much of the everyday reality of international security, statecraft, development, design of critical global infrastructures, approaches to social justice, and the practices of global governance (see <https://www.isanet.org/ISA/Sections/STAIR>) (accessed 09.08.2021). Creation of STAIR points to a wider consideration – that is the set of required skills and dexterities IR scholars and practitioners should possess. In other words, what is the level of technical and scientific expertise required of them?
- <sup>2</sup> A possible exception to the rule is Israel. A country that has worked extensively on issues of nuclear proliferation, bioterrorism, weapons and missile defence. These steps, however, were undertaken for the purposes of national security and deterrence.
- <sup>3</sup> Since 2017, “Knowledge Bridges” (<https://www.knowledgebridges.gr/>) has been seeking to connect Greeks, irrespective of the physical presence globally. Aspiring to create networks between highly educated and capable individuals and firms that can be turned into collaboration schemes, the initiative is founded on the notion of both physical and digital return to Greece.

### References

- Agreement between India and Hellenic Republic, 2007. *Agreement between the Government of the Republic of India and the Government of the Hellenic Republic on Scientific and Technological Cooperation*. Retrieved from <https://mea.gov.in/Portal/LegalTreatiesDoc/GR07B0422.pdf>, accessed: 12.08.2021.
- eKathimerini. 2021. *Dendias meets Jaishankar in Athens to discuss upgrading cooperation* Retrieved from <https://www.ekathimerini.com/news/1163495/dendias-meets-jaishankar-in-athens-to-discuss-upgrading-cooperation/> on 8<sup>th</sup> August 2021.
- European Commission. 2021. *Horizon 2020 Country Profile for Greece*. Retrieved from <https://webgate.ec.europa.eu/dashboard/sense/app/a976d168-2023-41d8-acec-e77640154726/sheet/0c8af38b-b73c-4da2-ba41-73ea34ab7ac4/state/analysis/select/Country/Greece> on 8<sup>th</sup> August 2021.
- Evans, S.A.W., Valdivia, W.D. 2012. Export Controls and the Tensions Between Academic Freedom and National Security. *Minerva*, vol. 50, pp. 169-190, <https://doi.org/10.1007/s11024-012-9196-4>.
- Karampekios, N. 2015. Understanding Greece’s policy in the European Defence Agency: Between national interest and domestic politics. *Southeast European and Black Sea Studies*, vol. 15(1), pp. 37-52. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/14683857.2015.1007750>.
- Keohane, R. 1969. Lilliputians dilemma: Small states in international politics. *International Organization*, vol. 23(2), pp. 291-310.
- Labrianidis, L. Sachini, E. Karampekios, N. 2019. Establishing a Greek Diaspora Knowledge Network through “Knowledge and Partnership Bridges”. *Science and Diplomacy*, vol. 8(1), May 2019. Retrieved from <https://www.sciencediplomacy.org/article/2019/establishing-greek-diaspora-knowledge-network-through-knowledge-and-partnership-bridges>.
- Mayer, M., Carpes, M., Knoblich R. 2014a. (eds). *The Global Politics of Science and Technology, Concepts from International Relations and Other Discipline*, volume 1, Springer Press.

- Mayer, M., Carpes, M., Knoblich R. 2014b. (eds). *The Global Politics of Science and Technology, Concepts from International Relations and Other Disciplines*, Volume 2, Springer Press.
- Nature. 2019. Build a sustainable Belt and Road. Editorial. *Nature*, vol. 569(5), pp. 5. Retrieved from <https://www.nature.com/articles/d41586-019-01309-0>.
- National Documentation Centre. 2020. *Scientific Publications of Greek Institutions, 2004-2018. Bibliometric Analysis in International Scientific Journals-Web of Science*, National Documentation Centre [in Greek]. <https://metrics.ekt.gr/publications/435>.
- Neumann, I.B., Gstöhl. S. 2004. *Lilliputians in Gulliver's world: Small states in international relations*. Reykjavik: Centre for Small State Studies, University of Iceland.
- Osiris. 2006. Special Volume: Global Power Knowledge: Science and Technology in International Affairs. *Osiris* 21(1).
- Sachini, E., Karampekios, N., Brutti, P. et al. 2020. Should I stay or should I go? Using bibliometrics to identify the international mobility of highly educated Greek manpower. *Scientometrics*, vol. 125, pp. 641-663. Retrieved from <https://doi.org/10.1007/s11192-020-03618-y>.
- Sher, G. S. 2019. *From Pugwash to Putin: A Critical History of U.S.-Soviet Scientific Cooperation*, Bloomington: Indiana University Press.
- Skolnikoff, E. 1993. *The Elusive Transformation: Science, Technology, and the Evolution of International Politics*. Princeton University Press.
- Weiss, C. 2005. Science, Technology and International Relations. *Technology in Society*, vol.27(3), pp. 295-313.
- Yuret, T. 2017. An Analysis of the Foreign-educated Elite Academics in the United States. *Journal of Infometrics*, vol. 11(2), pp. 358-370. Retrieved from <https://www.sciencedirect.com/science/article/pii/S175115771630253X>.