



USING SCIENCE DIPLOMACY  
FOR ADDRESSING GLOBAL CHALLENGES

# Science Diplomacy in the European Union: Practices and Prospects

## Executive Summary

The European Commission has recently started to revamp its institutional setting and policies, also in order to engage more explicitly in science diplomacy (SD). While this initiative has been appreciated, it comes along with a variety of challenges. This policy brief identifies three particular and interrelated challenges pertaining to SD in the European Union: (i) defining science diplomacy as a variable, yet encompassing and succinct framework, (ii) the coordination between member states and the EU, and (iii) the training of staff engaging in SD. First, it is key to comprehend that SD is a variable but not an arbitrary concept. We suggest conceptualizing SD by applying a meta-governance

framework that is sensitive to changing configurations of actors, governance arrangements and policy practices in a case-specific way. Second, the Commission and the member states institutions are advised to revisit and clarify where and how SD should be applied in a coordinated way given numerous challenges that all actors are facing. Third, there is a need for training skills in SD, starting with raising awareness within institutions of the manifold dimensions that SD has at the intersection of S&T and foreign policy. Avoiding academic prescriptions, we follow and synthesize the advice from SD practitioners in the EU who shared their experiences and needs with us.

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Networks  
and dialogue



Governance  
framework



Knowledge  
resources



Trainings for  
science diplomats



The S4D4C project is coordinated by the Centre for Social Innovation (ZSI)



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# Science Diplomacy in the European Union: Practices and Prospects

## Introduction

The pressing nature of complex societal challenges has become an increasingly important rationale for policymaking in the EU. Since these challenges are becoming more interdependent and often global in their scope (cf. Swedish EU Presidency, 2009; Cagnin et al., 2012; Hicks, 2014), their effective addressing requires coordinated international efforts, which renders them central to foreign policymaking. Diplomacy is the most obvious skill and activity of foreign policy that should enable actors to establish and uphold communication and, if possible, attune their interests and capacities. Beyond and as part of diplomatic dialogue and negotiations, however, scientific knowledge and technical expertise are needed to provide prudent and competent answers to complex issues. While most diplomats (or policymakers in general) are not (former) scientists, there is a growing awareness that foreign

policy needs to explore new and technology (S&T). This includes taking up knowledge and responding to the latest developments in S&T. It may even include integrating S&T into foreign policy's own institutional portfolio (via competent staff members, advisory mechanisms, funding programs etc.).

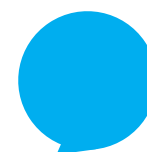
Collaborative aspects aside, internationality has also become pivotal for the competitiveness of national innovation systems. S&T are an essential part of the global scramble for economic growth and prosperity that the 35 member states of the OECD and other rich and emerging countries are eager to secure for themselves. Science diplomacy (SD) is one conceptual attempt to frame and verbalize the growing relevance of the intersection of science, technology and foreign policy and also to direct more political awareness to its global importance.

The latest generation of SD was championed by a community of experts and policymakers in Washington DC (Lord/Turekian 2007) with the intention to re-establish the US' international reputation as a benign soft power in the Muslim world.<sup>1</sup> Ever since, discussions with reference to SD have seen a worldwide proliferation, as is reflected in the activities of a transnationally active and mutually observing community of scientists, science attachés and policymakers (cf. the works of Yakushiji 2009; Berg 2010; Flink/Schreiterer 2010). Given the wide and sustainable resonance and its embeddedness into aspects of international collaboration and competition, SD has the potential to marry foreign policy and (international) S&T policymaking (Royal Society, 2010; see already Skolnikoff 1993).

Likewise, the European Commission has recently started to revamp its institutional setting and policies in order to engage in SD. This initiative gets strong backing from the Directorate General of Research (DG RTD) and the European External Action Service (EEAS). With this process under way, also the European Commission will devote "extra attention to strategic partnerships because many

of Europe's challenges are linked to those of the entire international community, such as climate change, migration, and energy security" (Moedas, 2016). This initiative is promising in EU SD, but it comes with a variety of challenges.

In this policy brief, we argue that, first of all, SD does not offer a single and ready-made approach but should rather be treated as variable form, i.e. depending on the concrete issue at stake its properties will change. Depending on the specific issue, we also find varieties of different actors, governance arrangements, and policies as well as styles of policymaking that need to be taken into consideration in analyses and concrete actions. Second, coordinating SD efforts between the national member states and the EU level vis-à-vis non-European partners is important, but has not been successfully developed. Third and most importantly, competences and needs of staff members (especially in foreign policy) linked to SD should be assessed and appropriate training should be offered. We will discuss in the conclusion why these three challenges are interdependent and should not be treated separately.



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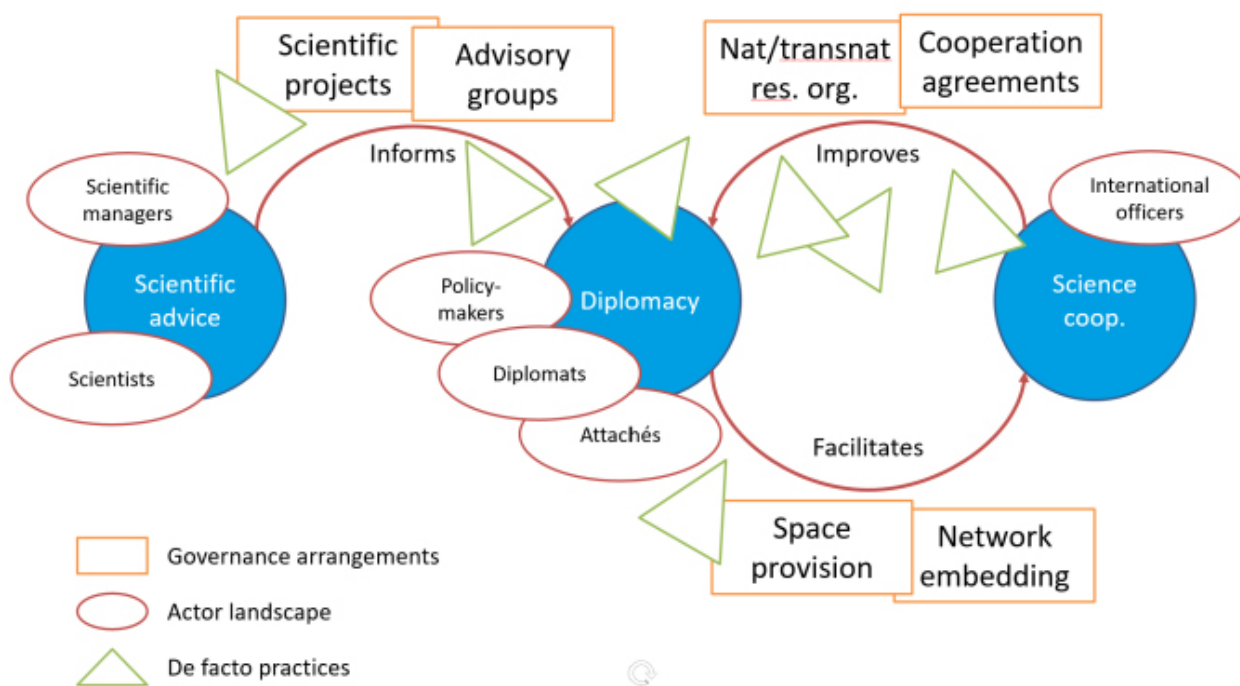
<sup>1</sup> One central aim of this group was to resurrect the US' image abroad, and for some time the group's initiative was successful, as SD enjoyed personal presidential support by Barack Obama and institutional support by the US Department of State.

## Challenge 1: Comprehending the Variable Geometry of Science Diplomacy<sup>2</sup>

The strength of SD is its ability to accommodate the complex interaction between different and often interdependent societal actors. Therefore, it is impractical to define SD as a rigid mechanism with clear-cut demarcations. The heuristic potential of SD can be reaped more effectively by keeping it open as a fluid concept that needs to be amended according to individual cases. As comparative policy analysis has already illustrated for six leading

industrial countries (Flink/Schreiterer 2010), there is empirically no one-size-fits-all model of SD, for instance, with respect to their differing activities in the BRIC states. Germany, for example, follows different goals in international S&T than, say, the United States, and this applies to each country's pursuit of different strategic intentions depending on the target country/region of engagement and depending on the specific S&T-issue at hand.

**FIGURE 1: META-GOVERNANCE  
FRAMEWORK OF SCIENCE DIPLOMACY.**



<sup>2</sup> This brief summary on challenges pertaining to idiosyncratic governance arrangements is based on a joint scientific presentation at the EU-SPRI conference in Paris, June 2018, entitled "Science Diplomacy for Global Sustainability – Towards a Supportive Governance Framework" by Alexander Degelsegger, Stefan Kuhlmann, Gonzalo Ordóñez-Matamoros and the author; figure one was drafted by our colleagues Ewert Aukes.

No matter if doing or reflecting on SD, a good way of conceptualising it is via a so-called meta-governance framework. This heuristic can help policy-makers to structure the governance field in question, e.g. SD at the intersection of science and foreign policy at EU level. Meta-governance frameworks help to take stock of all formal and informal measures, interrelationships and procedures aiming to achieve certain decisions in a way that participating actors (who can be quite heterogeneous) consider legitimate (Kuhlmann 2001; Hoppe 2005). The following figure is a first sketch of a possible governance framework applied to the different but overlapping worlds of science and diplomacy, spanning their different logics and rationales (Hoppe 2005).

A meta-perspective can reveal that governance frameworks contain of (at least) three elements: (i) the governance arrangements, (ii) the actors' landscape, and (iii) de facto practices (including communication).<sup>3</sup> The governance arrangement (i) might feature a hierarchical, top-down technocratic approach of politically steering a group of staff who e.g. should try to win over partners abroad in order to engage in joint activities. At the other extreme, it might reveal a bottom-up, principle-based and learning-oriented approach, it might follow a more competitive style

or governance or advance a network approach etc. Equally, a governance framework might differ with respect to the question who is taking part in SD at what point of policymaking, including or excluding actors from state entities (foreign ministries, research ministries and agencies), from the sciences (individual, teams or entire organizations of researchers, advisory boards etc.). And not least, the actual practices (iii) within a framework of SD differ: they might be about promoting or influencing S&T-related issues, or actors might want to get access to distinct information, to resources, to markets (see figure 1, next page). Moreover SD governance frameworks are not static but dynamic, thus they must be understood in their procedural flow to find legitimate agreements that contribute to one of the dimensions of science diplomacy.

With respect to its operations, a governance framework for EU-wide SD includes guidance on identifying adequate research policy instruments for SD; models for recruiting, employing and training science diplomats; models for providing scientific advice (Pielke 2007) in an EU foreign policy setting. In summary, a governance framework on science diplomacy helps to navigate the multiple forms of interaction between S&T and foreign policy and to identify interfaces for their effective communication.



*„A governance framework helps to navigate the multiple forms of interaction between S&T and foreign policy.“*

<sup>3</sup> Oriented at Bob Jessop's thinking in terms of meta-governance, the framework has been successfully applied to cases of Responsible Research and Innovation as a navigator for both practitioners and scholars; see [www.res-agera.eu](http://www.res-agera.eu) and Walhout, Kuhlmann, Ordonez-Matamoros et al. (2016). The application and testing of such a framework is an integral of the S4D4C project.

## Challenge 2: Coordination Between EU Member States And the Commission

Ever since the institutionalization of the European Communities (and the EU in 1992/1993), scholars and practitioners have been puzzled by the dynamics of European integration and – later on – by Europeanization effects. The underlying questions essentially revolved around issues of coordination and even the delegating of competences from national towards transnational and supranational levels of governance. Policy fields that palpably touch upon security issues, such as defence and foreign affairs, or that would obviously result in a risky zero-sum game for powerful actors within the EU, were confined to loose and sometimes noncommittal coordination.

Coordination is also the *modus operandi* in European research policy, especially in terms of the programming of international research funding and capacity-build-

ing via the EU Research Framework Programmes. And this is an important starting point to where S&T and foreign policy actors can join forces in SD activities abroad, as recently announced by the European Commission (Moedas 2016). Yet, according to most staff members in ministries, embassies and delegations, *vis-à-vis* foreign countries and regions, the coordination between the EU and its member states' representatives is limited: the latter sometimes operate in competition to one another, and do not want to be coordinated or sounded out by EU delegation staff.

As a consequence, third country representatives are facing manifold activities from Europe, and either get confused by this fuzzy kaleidoscope or play European actors off against each other.

While the capacities of EU's supranational and its member states' SD should be reinforced, an equally important task in this strengthening effort is to set up a joint and comprehensive strategy for effective coordination (if it is wanted politically). This can be supported by using and applying the above-mentioned governance framework, i.e. to get a clearer picture about situations where coordination is needed, but also by provision of knowledge resources especially to EU science diplomats.<sup>4</sup> While decision-making with respect to S&T will ultimately remain a matter of diplomacy – including political decisions that cannot be modelled, the knowledge involved in SD increases in quantity and complexity, and so do its interdependent properties. With this in mind, knowledge resources and interfaces must be built up to facilitate better joint decision-making of the EU and its member states science diplomats. These resources include process knowledge (e.g. science diplomacy cases and best practices), knowledge on science policy and science collaborations (curated collections of data and other material available in secondary sources, relevant statistical sources, information on innovation systems in partner regions, etc.) as well as information sources on European and global research (e.g. relevant blogs and twitter channels, outputs from projects like KNOW – European map of knowledge production). The S4D4C project will assess on nine case studies, how and why interfaces between the different levels of governance are working or not, which will be integrated into training modules and discussed with decision-makers.

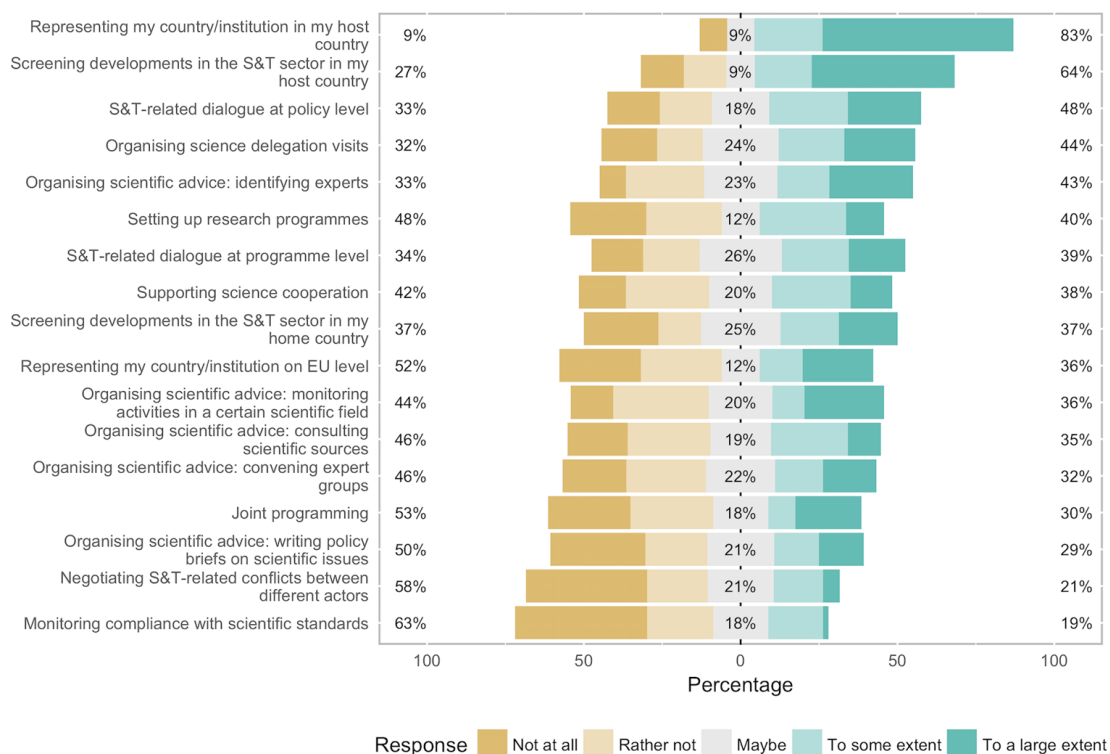
<sup>4</sup> Another more radical option would be a mixture of staff members from national member states' and the EU delegation under one premise and with shared responsibilities.

## Challenge 3: Recruiting And Training of Science Diplomats, Raising Awareness

Science diplomacy is currently not institutionalized as a profession. The expertise, skills and sensitivities required in SD are practised in a limited number of non-university trainings and are a required part of diplomats' pre-job or on-the-job trainings in national Ministries. SD skills are, however, not systematically incorporated into any university degree or curriculum so far. More training opportuni-

ties would be in demand, however, as is also shown by our S4D4C needs assessment exercise – an anonymous survey addressed to individuals working at the interface of S&T and foreign policy, consciously avoiding narrow definitions of SD and explicitly inviting respondents from around the globe. Respondents reported on their daily routines, challenges and needs on the job.<sup>5</sup>

**FIGURE 2: TASKS OF EU SCIENCE DIPLOMATS - SELF ASSESSMENT**



<sup>5</sup> Interviews and the survey (N=130) were designed and carried out by Alexander Degelsegger-Márquez, Tim Flink and Charlotte Rungius. A detailed analysis of the result is available on S4D4C's website as of October 2018.

With a balanced mix of academic backgrounds (29% natural science, 28% social sciences, 20% engineering/technology, others around 7-8%), deployed staff members agreed to large or some extent (83 %) that their main activity is essentially diplomatic, i.e. representing their country and institution abroad. The second most important task for over two thirds of all deployed staff is to screen scientific and technological developments in their hosted country, while organising or engaging in S&T-related dialogue is an important task for over 40% of all respondents.

Not many staff members report that they are responsible for monitoring compliance with science standards (19%) and neither do many of our respondents agree that their main responsibility is to mediate international conflicts pertaining to S&T (e.g. pertaining to intellectual property, misconduct or fraud, scientific independence or, in general, collaborative work processes). As regards the mainstream activities that fall under the heading of 'diplomacy for science', such as supporting science cooperation and joint programming, the picture looks quite varied and similar holds true for issues of scientific advice: some staff members report they are responsible for these activities, while others state that they are only partly responsible for them or not at all. Interviewees have explained that there is potential for enhancing scientific advice in foreign affairs, yet, the preferences how it should be done differ (personal advisor, advi-

sory boards, inter-ministerial/-agency exchange etc.). Unsurprisingly, policy and administrative staff at the intersection of S&T and international relations report that they require more human resources: Despite the undoubted economic relevance of S&T and higher education, science diplomacy is not a mainstream issue in foreign policy, as is also reflected in organisation charts. In most foreign ministries, S&T staff are subsumed under either economic or cultural departments, and some of the most advanced industrial states have only few staff members detached as science attachés abroad. As a second need, more than half of all respondents explicitly want training on science diplomacy. While scientific and technical knowledge do not pose a problem, training on negotiation techniques and knowledge on the interaction of science and foreign policy are highly sought after.



**FIGURE 3: REPORTED NEEDS  
OF SURVEYED STAFF**



In addition, most respondents state that they need better information about the stakeholder landscape, the functioning and legal background of S&T-agreements and about host/collaboration countries. Nearly all staff made clear that that they do not obtain information by relying on new social media and the internet too much, but that the validity of information requires participation in face-to-face communication, be it private and confidential meetings or public events,

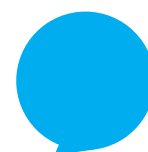
such as conferences, workshops and other networking events. Similar holds true for promoting activities. To sum up, if decision-makers are interested in strengthening SD capacities, a set of training formats and knowledge resources for current and future science diplomats needs to be developed. These resources will better prepare science diplomats at EU and member states level, increase their profile and improve their decision-making capacities.

## Recommendations: Connecting Challenges of Coordination, Case-oriented Science Diplomacy and Training

If actors in the EU aim at strengthening their engagement in SD and become more effective and visible, the three afore mentioned challenges call for answers. This is best done in an integral way, making use of a meta-governance framework as a structuring policy-making device. Involved actors need to be aware that SD cannot follow a standard approach, but that each case features idiosyncratic governance arrangements, actors' landscapes and policy styles. And this is why we propose to jointly (i.e. both practitioners and scholars) think in variable governance frameworks that can help deal with the complexity at hand, especially if grand societal challenges should be tackled effectively. One should not forget that these challenges, such as climate change, also often promise economic payoffs (e.g. S&T pertaining to a green economy), and thus, they comprise both collaborative and competitive elements that call for mediation by competent and prudent policymakers. Thus, a meta-governance framework can help the EU and its member states to clarify in a case-specific way how and when a coordinated approach between European actors vis-à-vis non-European actors should be enhanced, or when competition for resources,

infrastructures and talents should be allowed to take preferences.

That said, working in the field of science diplomacy calls for better skills training of current and future professionals at the intersection of science and foreign policy. The training activities will also help shape the profile and identity of science diplomats in the EU and create a community of professionals, increasingly aware of the opportunities and challenges S&T and international affairs. Additional networking activities need to be made available for science diplomats in the EU and in its member states to further strengthen their ties. It is, in particular, the variability of scenarios inherent to many possible cases that calls for a better mutual understanding of the logics of science and foreign policy, respectively. Also, training raises awareness in science and foreign policy that the two realms are actually greatly interdependent. The S4D4C project, together with its sister projects ELCSID and InsSciDE provides conceptual and practical tools that can help decision-makers continue to build EU science diplomacy.



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