



## POLICY BRIEFS

# Global resilience through knowledge-based cooperation: a new Protocol for Science Diplomacy [version 1; peer review: 1 approved with reservations]

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## Abstract

The world is currently dealing with one of the most severe health, economic and social crises in recent memory, through coronavirus disease 2019 (COVID-19). Scholars are converging on the perspective that traditional means of addressing these crises have served their time. On the additional backdrop of a global political landscape in transition, realising a post-pandemic recovery will require new modes of international collaboration with scientific knowledge and expertise figuring more prominently. A smart approach to science diplomacy—to global resilience through knowledge-based cooperation—does not prescribe the content, but rather focuses on the process of science-based international exchange. The new Protocol for Science Diplomacy presented in this policy brief inspires the alignment of shared, cosmopolitan interests and their application to cross-border societal challenges. It comprises a set of 12 procedural and infrastructural principles with which actors can create a space for constructive and productive science diplomacy interactions. These principles are: sensitivity; inclusiveness; transparency; deliberation; reciprocity; complementarity & manoeuvrability; legitimacy; alignment; evaluation; capacities; capabilities; trust. Our Protocol for Science Diplomacy identifies ground rules for international scientific and policy collaboration that enable us, *inter alia*, to make meaningful steps towards tackling the United Nations' (UN) Sustainable Development Goals (SDGs) by their 2030 deadline. As such, it offers a roadmap for science diplomacy in the next decade and beyond.

## Keywords

science diplomacy, cosmopolitan realism, knowledge-based cooperation, protocol

## Open Peer Review

### Reviewer Status

Invited Reviewers

1

### version 1

18 Aug 2021

report

1. Nicolas Rüffin, WZB Berlin Social Science Center, Berlin, Germany

Any reports and responses or comments on the article can be found at the end of the article.

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**Commented [MLG2]:** Frame this in terms of contemporary times. Because world wars were the same thing for other generations. This is a generational thing.



This article is included in the [Research on Research, Policy & Culture gateway](#).

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**Author roles:** **Aukes E:** Conceptualization, Investigation, Writing – Original Draft Preparation, Writing – Review & Editing; **Wilsdon J:** Conceptualization, Funding Acquisition, Writing – Original Draft Preparation, Writing – Review & Editing; **Ordóñez-Matamoros G:** Conceptualization, Funding Acquisition, Writing – Original Draft Preparation, Writing – Review & Editing; **Kuhlmann S:** Conceptualization, Funding Acquisition, Writing – Original Draft Preparation, Writing – Review & Editing

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## Introduction

As 2021 gets underway, large parts of the world are grappling with one of the most severe health, economic and social crises of our lifetimes. Coronavirus disease 2019 (COVID-19) is laying bare the interdependence, complexity and fragility of our societies (Young, 2020). As the President of the European Commission has argued, the crisis also reminds us that “never before has [the] enduring promise of protection, stability and opportunity been more important than it is today” (von der Leyen, 2020). Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel virus, but it has thrown into sharp relief a series of longstanding global challenges, well-articulated by the United Nations’ (UN) 2030 Sustainable Development Goals (SDGs), that are increasingly difficult to address by traditional means (Beck, 2009; Haas, 2016; Kuhlmann & Rip, 2018). Vaccine nationalism; recent assaults on democracy in Washington DC; the departure of the United Kingdom (UK) from the European Union; geopolitical and security tensions with Russia and China; policy failures over climate change—all reflect a fragmentation of national interests, instead of a cooperative pooling of expertise and capacity. Faced with competing claims to knowledge and truth, realising the European Union’s ambitious post-pandemic recovery plan—NextGenerationEU—will require new modes and methods of (funding) international collaboration, in which the role of scientific knowledge and expertise in tackling these challenges is more prominent (European Commission, 2020). A smart approach to science diplomacy—to global resilience through knowledge-based cooperation—does not prescribe the content of science-based international exchanges and related processes, e.g. funding instruments. Rather, it outlines the characteristics of the process by which science diplomacy actors decide on what mechanism is best applied in their specific situation. As we have explored elsewhere (Aukes *et al.*, 2020):

- Grand societal challenges require diplomatic efforts and science-based knowledge,
- Science-based knowledge production is diverse and evolving,
- Diplomacy means reconciling a variety of interests, and
- Science diplomacy requires both science literacy and diplomacy literacy.

Building on these points, the Madrid Declaration on Science Diplomacy, and other recent contributions (Flink, 2021; Melchor *et al.*, 2020; S4D4C, 2019), we now present a new Protocol for Science Diplomacy, designed to inform a new procedural turn in scientific-diplomatic interactions. The Protocol envisages science diplomacy as less about soft power being deployed in pursuit of national interests, and more about shared, cosmopolitan interests being aligned and applied to cross-border societal challenges (Beck, 2009). The Protocol should be deployed as a set of practical guidelines, primarily aimed at science diplomatic exchanges involving the European Union (including Member States and strategic partners), intergovernmental organizations, science and knowledge institutions, and civil society and philanthropic organizations.

## Principles of the new Protocol for Science Diplomacy

Science diplomacy occurs at the intersection of foreign policy, problem articulation (e.g. the UN SDGs), scientific knowledge, technology and innovation, and is characterised by fluidity. Its definition, stakeholders and job descriptions are not fixed. This new Protocol for Science Diplomacy should be applied in collaborative situations based on shared interests. This will help to create a constructive and productive interaction space. The protocol proposes principles of agency and governance that are applicable to various configurations of stakeholders and topics pertaining to the challenges societies face today. The new Protocol for Science Diplomacy outlines a set of 12 procedural and infrastructural principles that need to be considered in the design and delivery of transformative science diplomacy interactions. Not all are applicable to every situation, but it will be useful to consider several of the principles in most situations. Depending on the specific situation, it is possible that several of the principles need to be balanced against each other and some trade-offs between them are inevitable. The choice of which principles to combine in tackling a specific societal challenge highlights the importance of ensuring such interactions remain flexible and contextually sensitive.

*Note: each principle is explained by means of a definition and key questions, as well as illustrated with a fictive case. Each fictive case is an excerpt of a full example on the S4D4C website. Each principle presented here is provided with a link that leads to the full principle description.*

### Procedural principles

#### Sensitivity

Science diplomatic activities should respect the specific political, socio-economic and environmental context they are designed for and be able to adapt to changes in them.

This principle would be demonstrated, for example, in a case in which country A has a rather elaborate science diplomacy scheme running that supports brain circulation and capacity building with a focus on biomedical and health sciences. Country B is a participant in the scheme but takes a turn for the worse regarding democratic values and misuse of resources gained through the scheme. Based on a contextual risk assessment, programme mechanisms for speaking up against infringements are reinforced and frequently used by the programme management.

#### Inclusiveness

Science diplomatic activities should be aware of different degrees of inclusiveness vs. exclusiveness as well as that inclusion is a political, strategic choice and a component of the diplomatic game, too. Where useful, one should involve a broadly representative portion of the relevant scientific, political and diplomatic communities.

This principle would be demonstrated, for example, in a case in which the review committee of an international joint research laboratory discusses the statistics of accepted

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**Commented [MLG9]:** Ideally the manuscript offers more guidance on this?

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**Commented [MLG5]:** I don’t understand this or the following sentence, but I believe they are important for the paper?

**Commented [MLG10]:** One thing I am confused about is whether or not these activities or principles are actually occurring in real life right now? I think they are...so is the idea that they need to keep occurring? Or is the thesis of this paper that they are not occurring at all and should be?

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**Commented [MLG7]:** Perhaps it is better to propose then to present? Again, the New Protocol is a bit counterintuitive to me?

**Commented [MLG11]:** I’m not clear as to what the distinct definition about this principle and I am also not clear about inclusivity vs. exclusivity? The example doesn’t help me sufficiently understand, either

**Commented [MLG8]:** I love Beck, seriously. But, I am confused here about how this paper unilaterally shifts the focus of science diplomacy here? Also, I don’t really think Beck addresses this idea sufficiently in the book...perhaps he does and it can be further unpacked? It is a very interesting integrative idea but I am not sure I wholly see the steps in between?

proposals in their yearly meeting. Significant differences between acceptance rates of research proposals from the various participating countries are discussed. Due to the collaborative nature of the laboratory's mission, the committee agrees to implement anti-discrimination rules into the proposal review process to pre-empt potential issues.

### Transparency

Science diplomatic activities should be appropriately visible to enable monitoring and accountability activities by observing communities, thereby increasing the legitimacy of the activity.

This principle would be demonstrated, for example, in a case in which relations between countries are asymmetrical in terms of socio-economic and governance performance, constructing a stable, accountable quality management system for jointly setting up, evaluating and managing international research projects, takes great efforts in terms of science diplomacy. Transparent, permanent and thorough documentation can not only help alleviate potential conflicts over decisions due to those asymmetries, but also ensure sustainability of programs through political upheavals and management changes.

### Deliberation

Science diplomatic activities should encourage mutual understanding of actors' perspectives, needs and objectives, as well as of problem definitions and associated solutions, the disciplinary and interdisciplinary knowledge required (incl. probing for other relevant scientific disciplines) and common narratives for the support of science diplomacy processes.

This principle would be demonstrated, for example, in a case in which several representatives of international institutions (policymakers, non-governmental organizations [NGOs], experts) discuss how to tackle water-related challenges on the global level during a sequence of international negotiations. Having shared and discussed each others' divergent viewpoints, two framings or definitions of the water-related issues dominate debate: water quality and water security. Often a problem framing is complex, which makes agreeing on a problem definition hard to achieve, however, by including mediation experts conflicting parties can find common ground.

### Reciprocity

Science diplomatic activities should foster an attitude of understanding and cooperation leading stakeholders to trust that each actor is contributing to addressing grand challenges in roughly equivalent ways according to their relative abilities, through knowledge or other resources.

This principle would be demonstrated, for example, in a case in which the topic of research cooperation with a country in the global south arises in an inter-ministerial government meeting. Two representatives from the science ministry and foreign ministry quarrel about how to view the research cooperation funds invested in another country. While the latter proposes to use it as leverage to push this country on controversial policy issues, the science ministry officer maintains

that the status quo of open communication channels would be threatened with such reinterpretation of the investments. She proposes to focus on improving the capacity building and the conditions for enhanced scientific reciprocity so that these countries can be better partners in their efforts on global challenges. Maybe promoting more research cooperation on the controversial topics could also be a way to draw more attention to them.

### Complementarity & Manoeuvrability

Science diplomatic activities should build on stakeholders' strengths to balance out others' weaknesses and embed them in governance arrangements that leave enough room to manoeuvre for these strengths to flourish.

This principle would be demonstrated, for example, in a case in which science policymakers, managers and academics of two states aim at setting up a bilateral funding mechanism based on a common pot system (each party paying a share), joint calls for proposals for bi-national consortia and a joint evaluation procedure under an international joint programming initiative. The joint programming setting is asymmetrical concerning the question how many and which resources each country should contribute. While country A has more financial resources and more advanced management systems to provide, country B also contributes its considerable regional expertise. The art of science diplomacy in such an initiative is to create an atmosphere allowing each country's actors to play to their strengths and pursue their interests without either side feeling less respected or unqualified.

### Legitimacy

Science diplomatic activities should strive for the mutual acceptance of shared "rules of the game" in the interaction space, respecting the expertise and framings of participating stakeholders. Science diplomacy activities should enable 'democratic quality' of proposed and implemented mechanisms, processes and solutions.

This principle would be demonstrated, for example, in a case in which a new and contagious virus breaks out in country A and spreads quickly. Country A realizes soon that it needs to put the fight against the virus on the international agenda of the upcoming G20 summit to secure support for substantial funds and multinational research efforts from partner countries. Country A's academy of sciences works with its prime minister's office to prepare thoroughly in advance of the G20 Sherpa meetings and the summit. It turns out to be a success: all G20 countries commit to the new global health agenda and a fund for international and multidisciplinary research on the virus is set up.

### Alignment

Science diplomatic activities should address problems on the lowest, i.e. most local and concrete, appropriate policy/instrumental level while coordinating all involved scales (temporal, spatial and administrative), governance dimensions (horizontal and vertical) and communities.

This **principle** would be demonstrated, for example, in a case in which country A identifies the need to conduct more research on rising sea levels and adaptation strategies. Although a partner country is found in country B, the political and research systems of both countries are drastically different, which complicates the work of negotiators. The negotiating funding agency has several instruments available, including a set of expert guidelines on how country B's systems work and how to negotiate with its representatives, from which negotiators benefit greatly. The funding agency is also in constant communication with the foreign affairs office and works closely with the science attaché posted in country B. Both countries eventually agree to a mutually beneficial scheme to fund research on rising sea levels.

### Evaluation

Science diplomatic activities should be reflective and facilitate learning throughout the process. As is common practice in other policymaking, evaluating the activities undertaken also needs to become a routine part of science diplomacy. This process should include, among others, not only reflecting on the frames, ambitions, interests, outcomes of the involved countries and other actors, but also comparing various similar science diplomacy activities to gauge the efficacy of the one in question.

This **principle** would be demonstrated, for example, in a case in which for a long time, a world leading research institution has searched for ways to cope with the Zika virus which affects thousands of pregnant women in tropical countries in the Americas, causing certain birth defects. An evaluation process brought to light that the research process would become more efficient if performed by a broader international collaboration program that also involved scientists located in the global south. The integrated research group of natural scientists, health scientists and social scientists both from the global north and from several of the targeted countries in the global south succeeded in bringing the Zika virus under relative control in tropical countries such as Colombia.

### Infrastructural principles

#### Capacities

Science diplomatic activities should create, reinforce and/or draw on suitable and sufficient institutional, organizational, and management resources (e.g. budgets, staff etc.), political will, reliable and inclusive knowledge resources, and gatekeeping proficiency.

This **principle** would be demonstrated, for example, in a case in which a joint scientific infrastructure was established to bring together scientists from countries traditionally in conflict. As a next step to achieving its goals of intercultural cooperation and knowledge-sharing, the joint scientific infrastructure board launched new interaction mechanisms such as international teams, deliberation and dialogue structures based on sharing distinct perspectives of relevant actors. Eventually, these mechanisms improved inter-group cooperation and communication leading to a more constructive attitude within the whole institution.

### Capabilities

Science diplomatic activities should empower individuals to become trained 'translators', 'multilingual' in the sense of speaking the languages of science and diplomacy and able to opportunistically or incidentally interact with communities beyond their daily circles both in the domain of science and/or diplomacy.

This **principle** would be demonstrated, for example, in a case in which a nuclear disaster occurs in country A. Country B with considerable expertise in nuclear sciences, nuclear crisis management, and an international cooperation mission, offers its support including the involvement of her chief scientific adviser. A scientific task force set up for the purpose is the platform for the chief scientific adviser to engage with other scientific experts and chief scientific advisers from country A throughout the crisis management period. The chief scientific adviser acts as a linchpin between peers in country A, diplomats and policy makers, adapting the communication style and taking into account cultural differences.

### Trust

Science diplomatic activities should produce mutual recognition and credibility on an individual level as well as clear 'rules of the game' on the process level, thereby stabilizing the process and contributing to the legitimacy of the process and involved individuals alike.

This **principle** would be demonstrated, for example, in a case in which a science attaché from country A deployed to her embassy in country B, and a science attaché from country B deployed to her embassy in country A, interact with each other for the first time during a coffee break of a scientific conference in country B. They develop a good mutual feeling out of which a long-standing diplomatic collaboration between their home countries develops.

### Implications

These principles are meant as a guideline to organise science diplomacy activities. It is by no means necessary to apply all of them all the time. Rather, a conscious reflection at the onset of a potential cooperation on the intersection between science and foreign policy should lead to a conscious choice of an appropriate, implementable subset. In turn, these should then guide stakeholders to a collaborative science diplomacy arrangement addressing global resilience based on the 'worldview' sketched above.

### Actionable recommendations

The new science diplomacy protocol is not directed at specific actors but at the system as a whole. It is paramount to build science diplomacy literacy, i.e. for individuals or organisations to be well acquainted with both the world of science (and its diversity) and the world of foreign policy/ diplomacy (and its complexity). To this end, there are training opportunities (also available through S4D4C) and emerging networks (e.g. the European Science Diplomacy Alliance). Some governments and scientific bodies have also appointed

**Commented [MLG12]:** I really like the idea of this section and think it can be elaborated on. The idea of focusing on the system makes sense, but how does the system fit within these actionable recommendations when the examples seem to be top down (e.g. training) versus horizontally implemented? I think these concepts are there but are not sufficiently elaborated on?

dedicated science diplomacy attachés or others with experience of mediating between these worlds.

### Conclusion: 2030, SDGs and a new wave in Science Diplomacy

As the COVID-19 crisis has revealed, international efforts to produce and disseminate scientific knowledge can achieve exceptional results at remarkable speed. The development of various functional vaccines against the SARS-CoV-2 virus in less than a year, the open availability of around 200,000 scientific publications investigating the virus and its effects, and the pivotal involvement of scientific advisors in the management of the crisis prove the possibility of fruitful collaboration between scientists and policymakers in both national and international realms.

Yet there are many other ongoing societal challenges which have lingered, and not been tackled with anything like the urgency of this crisis mode. Here, the ground rules of international scientific and policy collaboration need to change if we are to make meaningful steps towards tackling the UN SDGs by their 2030 deadline. The complexities that come with knowledge-based cooperation can be daunting, but they also offer opportunities – particularly for a European Union looking to renew and reassert its progressive, values-based role in the world.

Reflecting on the lessons of the pandemic in her December 2020 State of the Union Address, EU President von der Leyen said, “When we felt fragility around us, we seized the moment to breathe new vitality into our Union. When we had a choice to go it alone like we have done in the past, we used the combined strength of the 27 to give all 27 a chance for the future. We showed that we are in this together and we will get out of this together” (von der Leyen, 2020). Getting out of COVID-19 together has depended upon – and will continue to demand – knowledge-based cooperation between science, innovation, policy and diplomacy at multiple levels of national, regional and global governance. As vaccination programmes accelerate worldwide, we need to look beyond the present crisis towards the multiple, interdependent challenges of the SDGs, and the wider imperatives of resilience and preparedness that this past year has reminded us of. As a contribution to this task, the new Protocol offers a roadmap for science diplomacy in the next decade and beyond.

### Data availability

No data are associated with this article.

### Acknowledgements

An earlier version of this article can be found on [research.utwente.nl](https://research.utwente.nl), [s4d4c.eu](https://s4d4c.eu), and [eprints.whiterose.ac.uk](https://eprints.whiterose.ac.uk).

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## Open Peer Review

Current Peer Review Status: ?

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### Version 1

Reviewer Report 08 November 2021

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**Nicolas Rüffin**

WZB Berlin Social Science Center, Berlin, Germany

Thank you for the opportunity to read the policy brief with the title "Global resilience through knowledge-based cooperation: a new Protocol for Science Diplomacy". I very much enjoyed reading it.

As the title indicates, the policy brief presents a set of principles that all kinds of actors in science diplomacy (SD) should take into consideration when planning new initiatives. In the following, after a short recap of the content, I will address the questions spelled out in the reviewing guidelines of F1000.

The authors begin by observing that many of the contemporary societal problems can only be solved with the help of international cooperation and scientific knowledge, the ongoing COVID-19 pandemic being a case in point. For policies and initiatives at this nexus of science and foreign policy, Aukes *et al.* distilled 12 overarching principles that aim to "help to create a constructive and productive interaction space." They distinguish procedural from infrastructural principles. The former are meant to be considered in the design of actual SD-projects; the latter address prerequisites of successful SD-policies. Yet the authors do not provide the reader with a toolbox of ready-made solutions but rather a framework of ideas that should guide the design of (any) SD-initiative. Nevertheless, the principles are not theoretically deduced guidelines. On the contrary, each point is supported by, and rooted in, empirical findings from a Horizon 2020 research project.

The policy brief is well-structured and well-written. The argument is clear and comprehensible. The introductory remarks on COVID-19 strikingly illustrate current global challenges and their possible solutions via international scientific collaboration.

I have just a minor remark here: What I missed in the introduction was an explicit statement on power imbalances in the relations between the Global North and the Global South that impact science-related interactions. This topic is addressed subsequently in several of the procedural principles. Yet I wonder if it should be elevated from the beginning to the same level as the

challenges already mentioned in the brief which almost all unfold in the north (EU-UK tensions, crises of democracy in the US, conflicts between the EU and Russia/China, etc.).

The text is written for a community that is already involved or interested in the pursuit of SD. In consequence, a certain familiarity with the discourse is helpful for the reader to understand the compact policy brief. For a broader audience, the text can act as a gateway to extended information on the discourse through the cited case studies. The authors manage the balancing act of combining general principles and specific case studies without overemphasizing any side. In this way, they avoid the danger of drawing hasty conclusions from individual anecdotes, as is sometimes the case in the general science diplomacy discourse. They point out that not all principles will always be relevant or effective at the same time.

Relating to this statement I noticed that the implications of the set of principles remain (and maybe: have to remain) on a rather general level. Given the restrictions of a policy brief, this is understandable. Yet I would like to comment on the absence of a more nuanced structure of the principles. For instance, many of the principles presented contain a tendency towards increasing bureaucratic procedures, for instance, adding "programme mechanisms", implementing "anti-discrimination rules", providing "Transparent, permanent and thorough documentation", or increasing the amount of evaluations. In contrast, other principles stress the importance of personal interactions. Good working relations on the "individual level" shine through, for example, in the principles of Evaluation, Capacities, and Trust. The tension between both personal flexibility and administrative procedures is one example of principles that might be at odds with each other. The authors are aware that "it is possible that several of the principles need to be balanced against each other and some trade-offs between them are inevitable". Yet they do not spell out these trade-offs. I wonder whether some examples might be helpful here to illustrate potentially conflicting principles. Maybe it is possible to build on the cases the authors cite to illustrate commonly experienced trade-offs.

The policy brief makes use of pertinent literature and cites relevant sources. However, I noticed that the authors decided to exclusively focus on the collaborative side of SD. This focus is well justified yet it (deliberately) excludes the other side of the coin, i.e. competitive SD in the national interest. This strand of SD is discussed frequently as well (e.g. Flink & Schreiterer, 2010<sup>1</sup>; Gluckman *et al.*, 2017<sup>2</sup>; Ruffini, 2020a<sup>3</sup>, 2020b<sup>4</sup>) but is absent from the policy brief. This made me wonder whether a short reflection is needed dealing with the relation between both types of SD. For instance, does the protocol really exclude/prevent national or particularist agendas of involved actors? Are national interests and common goals orthogonal to each other? Or can they align and co-exist in some cases? Is a "shared worldview" really necessary to design collaborative SD-projects or can self-interested parties also build on the principles in their conduct of SD? I am aware that a policy brief is not the right place to answer these questions in detail but given that the text addresses "the system as a whole", I think it should briefly reflect on this duality.

Apart from these general comments and questions, the policy brief –in my view–already presents a helpful tool of orientation for designing initiatives, policies, and programs relating to SD.

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**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** science diplomacy, scientific infrastructures, international science policymaking, politics of big science

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.**

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