SYNTHESIS NO. 2

SCIENCE DIPLOMACY ACTION

An Incidental Serial for Rigorous Meeting Syntheses

November 2018

Science Diplomacy – To 2030 and Beyond

Talloires Dialogue Team

Science Diplomacy Center

The Fletcher School • Tufts University

The Fletcher School

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ABOUT THE SERIAL

This incidental serial will share rigorous syntheses of meetings that relate to science diplomacy. The spirit of this serial is to be holistic (international, interdisciplinary and inclusive) in a manner that will be helpful to the future of our globally-interconnected civilization.

This serial is intended to integrate stakeholder perspectives, holistic evidence and governance records in a manner that reveals options (without advocacy), which can be used or ignored, with the goal of contributing to informed decision-making in our world.

Informed decisions are at the summit, overlying options and evidence. The evidence itself is distilled from data, with observations and information integrated from questions at the earliest stage possible for stakeholder engagement, which is the reason for the meetings in the first instance.

The decisions relate to the combination of fixed, mobile, and other built assets (including communications, research, observing and information systems) that require capitalization and technology PLUS regulatory, policy, legal, official-statement and other governance mechanisms (including insurance). Behind the decisions is the science, as the study of change, including natural and social sciences as well as indigenous knowledge. Change itself reveals patterns and trends over time and space – to anticipate as well as respond to issues, impacts and resources – across generations within, over and beyond the boundaries of nations.

Science Diplomacy Action addresses an immediate and long-term need to publish rigorous syntheses and summaries of meetings associated with science and technology advice in government at all levels, especially among the foreign ministries of nations. This need is reflected by the rapidly growing number of meetings that focus on science diplomacy as a holistic process of evidence integration to balance national interests and common interests for the benefit of all on Earth. The value of these science-diplomacy meetings (or any meetings) is largely limited to those that attend. *Science Diplomacy Action* recognizes this unrealized opportunity to extend value beyond the meetings by soliciting and publishing rigorous meeting syntheses.

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Synthesis No. 2
(November 1, 2018)

Science Diplomacy – To 2030 and Beyond

Talloires Dialogue Team[#]

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Science Diplomacy – To 2030 and Beyond

ABSTRACT

The *2nd International Dialogue on Science and Technology Advice in Foreign Ministries* was co-convened at the Tufts European Center in Talloires, France, from 15-17 September 2017 by the International Network for Government Science Advice (INGSA) and the Science Diplomacy Center (Fletcher School of Law and Diplomacy, Tufts University). 'The Talloires Dialogue' engaged the Foreign Ministries Science and Technology Advice Network (FMSTAN) and other representatives from foreign ministries of sixteen nations to address developments in our globally-interconnected civilization that require science and technology advice for informed decision-making. Multi-stakeholder fora, including INGSA and FMSTAN, provide global and international venues for dialogues among allies and adversaries alike to build common interests with continuous progress, responding to crises and emergencies, disruptive technologies, global spaces and the United Nations Sustainable Development Goals beyond 2030 on a planetary scale. Progress with science diplomacy was discussed as an evolving international, interdisciplinary and inclusive process that requires training to balance national interests and common interests for the benefit of all on Earth across generations.

KEYWORDS: Sustainable Development Goals; FMSTAN; INGSA; science and technology advice; training; science diplomacy.

Science Diplomacy – To 2030 and Beyond

INTRODUCTION

In September 2017, the International Network for Government Science Advice (INGSA) in partnership with the Fletcher School of Law and Diplomacy of Tufts University held a workshop on science diplomacy at the Tufts European Center in Talloires, France. Some 45 participants from academia and foreign affairs from 16 countries and international organisations were present. The focus of the meeting was on how science diplomacy could assist progress towards the 2030 agenda as reflected in the Sustainable Development Goals (SDGs). This paper does not attempt a full record of that meeting but rather reflects on the discussion and provisional conclusions reached.

THE EVOLUTION OF SCIENCE DIPLOMACY

Prof. Paul Berkman in his introductory remarks made the important observation that science diplomacy is not the same as international science cooperation although in practice there may be some overlap. International science activity has the primary motivation to create new knowledge. Science diplomacy has different motivations that were parsed out by Prof. Sir Peter Gluckman and Dr. Vaughan Turekian. Ultimately diplomacy is about promoting national interests in the international arena. This can be very direct such as in the case of using science to promote soft power or influence, to access technologies, to promote security or to advance trade. Or it can be used where science has an important part to play in a bilateral or regional issue such as common resource management or it can be where there is an interest in the global commons, for example with respect to climate change.

Science diplomacy in practice can involve actions at many levels including via non-governmental actors, technical ministries, foreign ministries and heads of state but should not be seen as *ad hoc,* but rather is built on a number of structures and institutions.

Science diplomacy is not new in concept or practice – for example the peace treaty between Ramses II and the Hittites in 1300 BCE includes a request for scientific aid*: "Could you send me one of your doctors to help my sister get pregnant."* But science diplomacy as we now know it was given an initial framing in 2009 when the American Association for the Advancement of Science (AAAS) and The Royal Society held a meeting where science diplomacy was given a formal taxonomy; science in diplomacy, science for diplomacy and diplomacy for science. While that taxonomy has been useful in academic circles, the practitioner community, especially in foreign ministries require a different frame. In reality, most activities do not neatly fall in each of these activities and the category science for diplomacy embraces such a broad canvas of activities that it does not help a foreign ministry see how science helps it advance its mission. Hence, the more utiliatrian taxonomy alluded to above and first presented at a forerunner to the Talloires Dialogue at the International Institute for Applied Systems Analysis (IIASA) in late 2016[1] and detailed in a recent paper in *Science & Diplomacy.*[2]

Science diplomacy is now entering a new era where more and more foreign ministries see the need for formal links to the science community. There is an urgency that is created by consideration of

[1] Vienna Dialogue Team. 2017. "A Global Network of Science and Technology Advice in Foreign Ministries." *Science Diplomacy Action* 1:1-20. https://sites.tufts.edu/sciencediplomacy/files/2017/12/SCIENCE-DIPLOMACY-ACTION_Synthesis-No-1_Vienna-Dialogue-Team_ST-Advice-in-Foreign-Ministries_PRINT_13SEP17-1.pdf

[2] Gluckman, P.D., Turekian, V., Grimes, R.W. and Kishi. T. 2017. "Science Diplomacy: A Pragmatic Perspective from the Inside." *Science & Diplomacy*, Vol. 6, No. 4 (December 2017). http://www.sciencediplomacy.org/article/2018/pragmatic-perspective

globalisation, the power of new technologies, the disruption to a semi-equilibrium created, the power of non-state actors including the platform technology companies, increased access to knowledge of varied reliability leading to increased nationalism and polarisation, disruption to the stable global architectures on one hand and yet on the other the recognition of the essential importance of data, technologies and science including social science to address the major global challenges including but not limited to those encapsulated in the SDGs. Indeed, an increasing number of diplomatic training programmes are giving greater weight to the role of Science, Technology and Innovation (STI).

The discussion pointed out the importance of greater access to STI to allow for greater and more effective uptake and adoption of useful knowledge within the global south. But there are many challenges in ensuring that the adoptive capacity is there. There is clear need for institutional building from universities, Indigenous research, and a respect within the policy community to develop mechanisms that promote and use evidence informed policy making. The lack of domestic science advisory mechanisms was pointed out at the STI forum of the Technology Facilitation Mechanism (TFM) of the United Nations (UN) in 2017 and remains a major barrier to progress in many countries. It was not picked up at the High Level Political Forum that followed and the UN and key agencies such as the World Bank and United Nations Development Programme (UNDP) need to take this gap on board.

Science advice can help countries understand complex systems and the options that then emerge, and to understand the implications of each option. It is in the interest of diplomatic goals that science advisory mechanisms are developed and include the ministries of foreign affairs. They also allow for a greater culture of evaluation.

CRISES AND EMERGENCIES

Both natural and human induced emergencies and crises represent an area where international collaboration and assistance can involve science diplomacy. In 2015, the Sendai mechanism led to a major report on disaster risk management and reduction and much of that report focuses on the role of science. Currently the Organisation for Economic Co-Operation and Development (OECD) has a project on international cooperation in disaster management. Its chair, Prof. Robin Grimes (United Kingdom), reviewed the elaborate and formal mechanisms the UK has established for managing emergencies and ensuring high quality scientific input via the Science Advisory Group for Emergencies (SAGE) mechanism. Example of international cooperation in crisis management included the Fukushima tsunami and associated nuclear concerns, the West Africa Ebola epidemic, the Iceland volcanic ash crisis and many weather-related events. In the discussion that followed the importance of a science advisory network was noted so liaison across borders could be better expedited.

GLOBAL SPACES

About 70% of the planet is not under national jurisdictional control – these are the oceans and polar regions. But beyond that one must consider outer space, the sea bed and arguably the cyber-world. It should be manifestly obviously that in contrast to the 30% of the planet's surface which is under jurisdictional control, there must be a level of common interest in managing these global spaces. Already science diplomacy has demonstrated its critical role in this regard.

Prof. Berkman reviewed the history of the Antarctic Treaty, the 1959 treaty that suspended territorial claims in the Antarctic and restricted activities there to peaceful purposes that did not involve resource

extraction. In practice this is meant that the only significant terrestrial activities in the Antarctic are science and a small amount of tourism. Indeed, such science has become of increasing importance with respect to climate change research. In many ways this example is used to highlight what science diplomacy can achieve. But there have been challenges – the effort required to deal with marine protection in the Antarctic has been much more drawn out – witness how long it took to establish the Ross Sea Marine Protection Area.

The question of whether any parallel approach to the Artic was possible was raised. Clearly there are major differences. For many decades the Arctic has been a place where military and strategic interests have played out. It is largely a matter of marine space with overlapping claims to exclusive economic zones. Global warming is exposing a number of economic, political, cultural, environmental and strategic concerns. Science has an important role in helping interested nations come to solutions that ameliorate some of these concerns.

The complexity of dealing with the issues of global commons was discussed. The challenge of negotiating the Paris climate accord was but one example. It was suggested that the changed climate was such that the capacity to now negotiate a new space or Antarctic Treaty was doubted in an increasingly multi-valent global environment.

DISRUPTIVE TECHNOLOGIES

Further complexity arises because of the growing impact of the technology platform companies. These clearly impact on the jurisdictional autonomy of individual countries and have impacts that clearly extend well beyond economic impacts. These include capacities of countries to regulate domains such pornography or regulate some industries (e.g. AirBNB, Uber) to impacts on citizens, their attitudes and behaviours and on the democratic process itself. Indeed, the question emerges as to whether the nature of global commons is being redefined by the private sector (for example as they enter the space market, deep sea mining, etc). Already they have pulled the internet from the world of science into the world of commerce. Yet at the same time these technologies have empowered many people, made knowledge accessible, allowed some countries to leapfrog their development (e.g. banking services in Kenya). The challenges and opportunities of these technologies to the international landscape will increasingly be a focus for science diplomacy.

The pace of disruptive technological development is fast and all-encompassing. The 2017 Global Sustainability Report highlights many technologies that could be important to planetary progress. These include many life sciences technologies as well as the increasing application of artificial intelligence and machine learning and the potential for geoengineering.

Yet each of these brings potential societal concerns. The challenge of achieving social license has largely been one for the market place in the case of mechanical and digital technologies and via democratic and regulatory processes in the case of life science technologies. But the concerns over the role of platform companies and their broad impact on society and the power of the nation state raises questions about whether the passive nature of the State with regards the former class will remain. Global trade has relied on phyto-sanitary and other regulatory frameworks and standards to reduce the risk of scientific disagreement becoming the source of non-tariff trade-barriers. But as advanced life science technologies develop further, the disagreements about for example whether genetic

editing is a form of gene modification and should be regulated as such could become major issues for trade ministries. And there are technologies such as synthetic biology and the use of meiotic gene drive where transnational considerations will rapidly arise for bacteria and insects do not respect national boundaries. If geoengineering is needed in the future what global mechanisms exist to consider its use or non-use.

These are all issues where the role of science in diplomacy and promoting national interest within a global arena will become more important.

THE SUSTAINABLE DEVELOPMENT GOALS

While the SDGs may be a somewhat idealistic and aspirational description of the global agenda, they are an inspirational framing around which progress can be made and assessed. The 17 goals, 169 targets and 230 indicators emerged out of a complex process largely driven by the UN agency community. Countries are engaged in a voluntary process to report against them. Few countries have effectively shaped their national agenda around them – Japan and Finland being two good examples amongst high income countries. The Addis Ababa Action Agenda and SAMOA Pathway for Small Island Developing States (SIDS) highlight how developing countries see value in their framing.

But there are difficulties: the SDGs do not give countries a tool kit on which to prioritise; while the interaction between each of the SDGs is acknowledged, it is only through an understanding of these interactions that the implications of the tradeoffs inherent in any decision can be understood. The International Council of Science has recently explored the nature of these tradeoffs for some of the SDGs using science to explore the interactions. The insights gained from such studies might allow countries to identify how to prioritise within the SDG framework and which indicators to focus on or even indicate where more useful indicators might be developed. Indeed, this was seen as an area where science diplomacy has much to offer, in exploring where available knowledge could be better applied, where new knowledge was needed and where evidence-informed policy development might assist progress. Indeed, roadmap development was likely to become a central component of global activity on the SDGs.

DISCONNECTS

However, while it is generally accepted that STI have a critical role to play in making progress on the SDGs there was a sense of frustration at the disconnects between those setting the agenda and the science community. Indeed, the sense of disconnection was a frequent observation during the meeting – both horizontally between agencies within countries (and in particular between the science and diplomatic communities) and vertically between those setting the agenda within the UN system and member states.

The reality is that the UN does not have an effective mechanism for linking its considerations of science to those of member states. Decisions at the UN level are largely made by member states through their diplomatic representatives and few member states have formal science inputs it their ministries of foreign affairs. It was however noted that a new network, the Foreign Ministries Science and Technology Advice Network (FMSTAN) has been recently established supported by INGSA. At the time of writing this report the network has grown to over 25 members from both developed and low and

middle-income countries. FMSTAN had a brief business meeting during the course of the Talloires workshop.

The vertical disconnect is of equally great concern. There is no mechanism by which science advisory input is integrated into the UN system. UN agencies reach out to individual scientists or set up their own advisory boards but these are linked neither to each other nor to domestic science advisory mechanisms. Yet ultimately UN systems must be responsive to national need and national considerations generally override any global decision making. While the previous UN Secretary General had established a scientific advisory board, its mandate and operation did not let it address this disconnect. But the abolishment of that advisory board has left and even greater void which will severely inhibit progress on the SDGs. The TFM is largely UN agency base; the associated 10-member group is sadly both largely disconnected from both the UN processes and from domestic systems. The STI forum is not constituted in a way to fill that void.

THE CONTINUED EVOLUTION OF SCIENCE DIPLOMACY

The practice and scope of science diplomacy is growing. Changing global conditions, the challenges of technologies and the challenges of sustainability all require insights from science and technology, even while science and technology have contributed to these challenging conditions. Urbanisation, resource depletion, changing perceptions by citizens, continuing inequalities, the challenges of climate change and many other factors increasingly concern political leaders. Many of these issues cannot be addressed by nations on their own. Cooperation will be needed even if that cooperation is driven by national self-interest. Each of these issues has a strong scientific component. Nation states will get advantage when they use science better both within their domestic policy setting and in their international agenda. Those whose primary interest is the global commons and advancing global sustainability will achieve more if they recognise the importance of both horizontal and vertical connectivity between the science and policy community.

Science has multiple roles to play within a foreign ministry – science diplomacy will continue to grow in importance. But this requires the training of both scientists and diplomats to relate to each other, and to understand how to work with each other. Several universities around the globe are developing courses to assist by looking at specific elements of science diplomacy. Multi-stakeholder fora such as INGSA and more intergovernmental mechanisms such as FMSTAN provide global and international venues for such discussion. The appointment of science advisors to ministries of foreign affairs is an obvious way of advancing this agenda.

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SCIENCE DIPLOMACY CENTER

Nation states have sovereignty, sovereign rights and jurisdictions across nearly thirty percent of the Earth. In contrast, international spaces established from World War II beyond sovereign jurisdictions exist across nearly seventy percent on the Earth as well as in outer space. On a global scale, across one hundred percent of our home planet, the challenge is to balance national interests and common interests. Recognizing this forever challenge, the Science Diplomacy Center was launched in February 2017 at The Fletcher School of Law and Diplomacy at Tufts University.

With its three triangulated areas of focus – Education, Research and Leadership – the Science Diplomacy Center aims to:

- Educate the next generation of science diplomats;
- Facilitate research to reveals evidence and options that contribute to informed decision-making; and
- Provide leadership with science-diplomacy networks that build common interests among allies and adversaries alike across our globally-interconnected civilization

The decision-support process applied by the Science Diplomacy Center integrates holistic (international, interdisciplinary and inclusive) evidence from the natural and social sciences as well as indigenous knowledge regarding impacts, issues and resources within, across and beyond sovereign jurisdictions. This holistic integration further involves stakeholder perspectives inclusively as well as governance records that represent the operation of government institutions. Importantly, this decision-support process is designed to reveal options (without advocacy), which can be used or ignored explicitly, contributing to informed decision-making across diverse jurisdictions, ultimately by nations individually and collectively.

To help with informed decisions, involving the combination of built elements and governance mechanisms for sustainable infrastructure development, the Science Diplomacy Center operates across the 'continuum of urgencies,' which exists from security time scales (responding to the risks of political, economic and cultural instabilities that are immediate) to sustainability time scales (balancing economic prosperity, environmental protection and societal well-being across generations).

SUBMITTING MEETING SYNTHESES:

As an incidental serial for rigorous meeting syntheses, the intention is to grow this serial in a manner that is both practical and helpful. The standard for the publication in *Science Diplomacy Action* is represented by Synthesis No. 1 (September 1, 2017), which emerged from the *1st International Dialogue on Science and Technology Advice in Foreign Ministries* in October 2016.

In a holistic (international, interdisciplinary and inclusive) manner – *Science Diplomacy Action* seeks syntheses to share questions, observations, information, data, evidence and options that contribute to informed decision-making about issues, impacts and resources across jurisdictions in our globally-interconnected civilization. *Science Diplomacy Action* will operate as a rigorous publication with peer review, considering the overall quality, relevance and integrity of each submission. Each accepted synthesis will be an authoritative outcome of the relevant meeting with an author point-of-contact and other meeting participants listed as co-authors with their approval.

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