Perspective

Fast and Slow Issues in Science Diplomacy: Towards an Equitable Global Metis of Science Diplomacy

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The World Academy of Sciences (UNESCO-TWAS) and the InterAcademy Partnership (IAP) are closely linked. While TWAS hosts one of the secretariat offices of IAP at its headquarters in Trieste, Italy; as an academy of science, TWAS is also a member of IAP. TWAS, however, is dedicated to building scientific capacity in the South, on the understanding that having access to local expertise and local understanding is the best way for nations to tackle their science and technology (S&T)-related challenges. TWAS also focuses on building the capacity of young scientists in the South to engage in science diplomacy. IAP, on the other hand, promotes the use of the best available scientific knowledge in national, regional and global policymaking. Both organizations are also dedicated to promoting the use of S&T to achieve the UN 2030 Agenda, the Sustainable Development Goals (SDGs).

In this article, we argue that for the international science community to move concretely towards sustainable development outcomes, they must work towards developing a practice of Science Diplomacy that is based on three tenets: international scientific knowledge and methods, a local experience which we characterize borrowing James Scott's notion of *metis*,[1] and an unwavering commitment to SDG#17 (Partnerships for the Goals) and SDG#10 (Reduced Inequality). By doing so, we can tackle both fast and slow-burn issues in science diplomacy, effectively working towards progress across the SDGs, supporting women in science, and welcoming refugee and displaced scientists.

Science Diplomacy and the SDGs

The issues behind the SDGs run along with a gamut of time-scales. SDG#13 as well as the Paris Climate Accord commits countries to 'Climate Action', while SDG#14 commits them to protecting 'Life Below Water', and SDG#15 to protect 'Life On Land'. Global responses to these issues, which are playing out over decades, have been similarly laboured.

In the case of the current COVID-19 pandemic, however, there was just one month between the report of a cluster of cases of pneumonia in the city of Wuhan, China (31 December 2019), and the World Health Organization (WHO) Director-General, Tedros Adhanom Ghebreyesus, announcing that the outbreak (caused by a virus we now know as SARS-COV-2) constituted a Public Health Emergency of International Concern (PHEIC) (on 30 January 2020).[2] The first reported infection outside China was in Thailand (13 January 2020) and by March, the WHO announced that more than 100 countries had been affected. At the time of writing (31 March 2021), the WHO is confirming 127,877,462 cases and 2,796,561 deaths.[3]

One would think that a PHEIC that emerged and spread so quickly and has reached such global proportions would have generated a concerted global science diplomacy response. Despite the best efforts of the WHO to coordinate such a response, in fact, quite the opposite happened. Countries unilaterally closed borders and issued travel restrictions (in most cases, too late), and there was a scramble by many nations to secure personal protective equipment (PPE) that would allow, especially, health care workers and other front-line personnel to carry on their work in safety.[4-6]

The lack of international cooperation, even after the insistence of the WHO and other bodies (including IAP[7]), seems to have been a failure for science diplomacy. If nations cannot work together during such a rapidly-developing international emergency and when the public can judge politicians' words and actions almost in real-time, then how can countries be persuaded to work together when the emergency is perceived to be more slow-burning such as climate change or biodiversity loss?

Refugee and Displaced Scientists

As international science organizations, TWAS and IAP have both acted quickly in response to the COVID-19 pandemic.[8,9] They are also both collaborating (also with the International Science Council, ISC) on a 'slow-burn' science diplomacy issue – the case of refugee and displaced scientists.[10]

The movement of people across borders, often fleeing war or civil strife, is increasingly accompanied by those fleeing the effects of climate change.[11] Some even argue that the ongoing Syrian civil war has been in part caused by climate change.[12,13] Among those forced to leave their homes under such circumstances are scientists, engineers, medical personnel and other highly-trained individuals, as well as those perhaps still undertaking PhD studies. Such individuals are national investments, especially in poorer countries such as Yemen. The TWAS-IAP-ISC initiative aims to promote ways in which such people can continue their studies and research wherever they end up and thus, remain up-to-date to assist in rebuilding their home countries when it is safe for them to return.

Indeed, COVID-19 has highlighted the need for joined-up thinking in these two matters of science diplomacy – a rapidly-spreading pandemic and ongoing migration of trained professionals forced from their home countries. As of April 2020, for example, there were some 14,000 Syrian doctors in Germany alone who were waiting for their qualifications to be approved before they could practice in Germany.[14]

In this context of global displacement, the pandemic has highlighted both existing and new vulnerabilities for those who fled as well as for those left at home. Significant reductions of remittances caused by illness, lockdowns and limited opportunities for migrants to work had the knock-on effect of reducing access to health services back home. Thus, containment in one country may have even led to the epidemic spreading elsewhere.[15]

Despite the fundamental differences between the COVID-19 crisis and the global refugee crisis, both the pandemic and the need for more joined-up policies and programmes to assist refugee and displaced scientists have a common underlying challenge: How can countries be encouraged to work together on these

two (and other) issues of science diplomacy? What tools and practices can they use? In working towards a more level playing field in the international arena, and towards a truly global, and sustainable, development, science diplomacy can be a key tool and method for building partnerships, equity and equality. How do we improve our practical knowledge and experience of these methods and make the most out of the science diplomacy framework? After all, this is built into Agenda 2030: SDG#17 calls for Partnerships for the Goals and SDG#10 calls for Reduced Inequality, both of which, alongside the more thematic SDGs, are a rallying cry for global equity and sustainable development.

Vaccine Diplomacy

By 12 January 2020, China had publicly shared the genetic sequence of the SARS-COV-2 virus. This quickly allowed other countries to start research and development of vaccines, using both traditional methods as well as testing out new techniques such as mRNA vaccines. Thanks to massive financial support from both public and private sources, the science advanced rapidly and within a year several countries and pharmaceutical companies have run their vaccines through clinical trials and successfully registered them for rollout. But now that we have the vaccines, we are seeing a repeat of the PPE scramble, with concepts such as vaccine nationalism and vaccine apartheid emerging, despite the best diplomatic efforts of GAVI (the Vaccine Alliance), the Coalition for Epidemic Preparedness Innovations (CEPI) and WHO's joint COVAX agenda.[16]

Vaccines and vaccine science have been used before to improve relations between countries more usually considered as having strained relations. For example, during the height of the Cold War, the USA and USSR enabled scientific exchanges between vaccine researchers. These exchanges led to the US-developed oral polio vaccine being produced in the USSR and rolled out in trials large enough to prove its efficacy.[17] The rest, as they say, is history, as polio has since been eradicated from all but two countries of the world.

For many years India and Pakistan, too, have had strained relations. But a meeting between two TWAS Fellows, Dorairajan Balasubramanian of India and Anwar Nasim of Pakistan, led to the availability of the Indian made hepatitis B vaccine in Pakistan, where millions of people were at risk from the disease – a chapter that the two eminent biologists call 'Vaccines for Peace'.[18]

But as rich, developed countries are buying up available stocks of COVID-19 vaccines, developing countries are struggling to source stocks for their populations. This is leading to a state of so-called 'vaccine apartheid', even though the latest epidemiology models tell us that we will not emerge from this pandemic until at least 75% of the global population is vaccinated with even coverage across all countries. As many experts have put it: "Covid anywhere is covid everywhere." And leaving pockets of infections going uncontrolled keeps alive the possibility of the emergence of new strains that may be resistant to our arsenal of new vaccines. To avoid a 'vaccine treadmill', all nations must collaborate to ensure that vaccines are made available on an equitable basis. Signing up and acting in compliance with the COVAX initiative is the best way to achieve this. To promote this agenda and to ensure that nations will work together to ensure health equity, even after COVID-19, IAP has joined the Sustainable Health Equity Movement (SHEM) and is working with the WHO, among others on promoting this idea.[19]

Women, Displacement and Science

The overarching aim of the TWAS-IAP-ISC refugee and displaced scientists initiative is to support affected scholars and thus protect science itself. In this context, it is important to remember that both the global refugee crisis and the pandemic are having a disproportionate effect on the work, scientific outputs and

productivity of women scientists, in different yet similar ways. Academic mobility having largely come to a halt with the pandemic, many scientists around the world have seen their research, their fellowships, and teaching work suspended. As lockdowns and teleworking orders pushed such scientists to work from their homes, it is women who have shouldered the largest share of childcare, housework, and so on. For displaced scientists likewise, following a flight from their home countries, both male and female scientists have seen their careers interrupted. All crises tend to exacerbate gendered dynamics, and women in particular struggle to re-activate their scientific careers.

If career advancement in the sciences is largely based on the number and quality of publications and the ability to obtain funding for new projects, and this is basically incompatible with being the primary caretaker for children[20], it is easy to see how both COVID-19 and forced displacement can both take a toll. Needless to say, this is a monumental loss for science.

It is old news that we live in a highly interconnected world. The links between climate change, rainforest destruction, zoonotic disease, and forced displacement are all in front of us, easy for any of us to grasp in 2021. As we move into the next phase of this pandemic, with highly unequal vaccine production and distribution underway across the planet, and all the while our refugee and displaced colleagues continue struggling to reach safety and resume their scientific research, we believe that effective science diplomacy can help us through these challenges, enabling us to build a more unified global scientific community.

Concluding Remarks

In his classic '*Seeing like a State*', James Scott explores two distinct types of knowledge: *metis* and *techne.* Scott defines *metis* as a "wide array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment." In essence, *metis* can only be learned by practice, and "the practices and experiences of metis are almost always local", and "applicable to similar but never identical situations".[1]

Working towards equitable and sustainable development via science diplomacy is not only a possibility, it is rather our duty as members of the international scientific community. Yet this call to action is not based on a naïve cosmopolitanism: it is based on a very pragmatic understanding of the possibilities that science diplomacy opens before us.

As the renowned historian and philosopher Yuval Noah Harari wrote in his book '*21 Lessons for the 21st Century',* "To have effective politics, we must either de-globalise the ecology, the economy and the march of science or we must globalize our politics. As it is impossible to de-globalise the ecology and the march of science, and since the cost of de-globalising the economy would probably be prohibitive, the only real solution is to globalise politics." [21]

If we consider our *metis* here as a unique 'bundle' of practical knowledge that we can acquire by *doing* science diplomacy in specific local contexts, building on global scientific knowledge and networks, then it is these local to global experiences and practices of science diplomacy that we must cherish, share and unconditionally implement.

Harari didn't use the term 'science diplomacy', but if we take his concept of 'globalising politics' to tackle science-related issues such as ecology and appreciate it alongside a unique science diplomacy *metis,* then that can help us shift towards an increasingly equitable, pragmatic and novel global science diplomacy practice, one that is truly ready to face the incredible challenges that our planet is facing.

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