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A Consortium Model for Science Engagement: Lessons from the U.S.-DPRK Experience

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IN general, relations between the United States and the Democratic People’s Republic of Korea (DPRK) have undergone many years of tension. There has been little communication between citizens in the two countries. Traveling and organizing professional meetings has been challenging. But those of us on the front lines of engagement with our DPRK colleagues are encouraged by both dialogue and action that have the potential to usher in breakthroughs that could strengthen this relationship. Science engagement may well be one of our best options for forging and maintaining the kind of long-term communications and cooperation that can pave the way to formal diplomatic relations.

Science and academic engagement between the DPRK and the United States is still fairly new, but there are precedents. One model is the U.S.-DPRK Scientific Engagement Consortium. This article presents unique challenges, reasons for cautious optimism, and a look forward in anticipation that these experiences will prove instructive for outreach to nations with which official relations are strained or little cooperation exists. Somewhat analogous to the roles that science engagement played in building ties with the USSR during the Cold War and normalization of diplomatic relations with the People’s Republic of China, science cooperation with the DPRK, particularly involving nongovernmental organizations (NGOs) from

the United States, represents an important way to build bridges between the two countries.

The Setting

The DPRK has been politically isolated and economically dislocated for more than fifty years, with few opportunities for its people to engage with and learn about the outside world. Earlier this year, there was enthusiasm when U.S. aid workers were to receive unprecedented access to the DPRK to set benchmarks to help ensure food aid would reach the very needy North Koreans. This optimism was short lived, however, when Pyongyang announced its intention to launch a satellite using ballistic missile technology, in honor of the one hundredth birthday of its late Great Leader Kim Il Sung. The United States responded that this action would compromise aid and nuclear talks. Although the April 13, 2012, launch failed, it nevertheless undermined the so-called Leap Day agreement and resulted in the cessation of food aid agreed to less than two months earlier. These developments were the latest in a series of diplomatic disappointments.

It is within—and in spite of—this volatile political climate that DPRK and U.S. scientists are engaging. Although political relations have deteriorated, both governments have permitted this channel of engagement through science to remain open.

A Model for Progress with the DPRK

A budding culture of NGO activity has been gaining acceptance. The Congressional Research Service reports that a number of NGOs have been active in the DPRK since the mid-1990s, primarily in humanitarian relief, health, communication, and education.¹ Although the involvement of scientific and higher education organizations has been limited, one in particular stands out.

The relationship between Syracuse University (SU) in New York and Kim Chaek University of Technology (KCUT) in Pyongyang provides an instructive model. In 2001 SU and KCUT embarked on an academic engagement, in cooperation with the New York City-based NGO the Korea Society (TKS). The SU-KCUT relationship has been the example to follow and was instrumental in paving the way for the U.S.-DPRK Scientific Engagement Consortium.²

This relationship led to the first DPRK digital library, established in 2006, as well as the Regional Scholars and Leaders Seminar (RSLs) program started in 2005, which focused on developing language skills to facilitate participation in scientific conferences. This led to technical English and Internet-based competition training, which helped DPRK teams from multiple universities to enter the Association for Computing Machinery's International Collegiate Programming Contest. In the 2007 competition, the KCUT team won an invitation to the world finals in Canada. Although Pyongyang ultimately did not send a team, its performance indicates

that the best KCUT students were competitive with top undergraduates from around the world.

U.S.-DPRK Scientific Engagement Consortium

Influenced by the achievements of the SU-KCUT collaboration and recognizing the potential to help facilitate broader relationships between the United States and the DPRK, the U.S.-DPRK Scientific Engagement Consortium was established in 2007 to expand academic science engagement between the two nations. The current consortium members are the American Association for the Advancement of Science (AAAS, publisher of *Science & Diplomacy*), CRDF Global, the Pacific Century Institute (PCI), and SU. The consortium members are NGOs, which is deliberate as its approach is to offer the DPRK a pathway to cooperation that is outside official government channels. With the emphasis on promoting academic science exchanges, the consortium's mission has been distinct from delegations whose purposes are humanitarian, economic, or nonproliferation. This important distinction is one that consortium members have consistently stressed with their DPRK counterparts.

In many ways, the consortium's approach builds on the U.S. science engagement with the USSR and the People's Republic of China. The most obvious commonality is the underlying recognition of the value of science engagement during periods of strained official relations between countries. Even at the height of the Cold War, U.S. and Soviet scientists were meeting through informal venues such as the Pugwash Conferences, begun in 1957, and the interacademy exchanges that began in 1959. By creating channels of communication and demonstrating models for engagement, these exchanges set the stage for the government-to-government cooperation that followed. By the early 1970s science and technology figured prominently in the U.S.-USSR agenda with new agreements signed in science and technology, environment, space cooperation, and medical sciences and public health. Similarly, as part of his historic opening to China in 1972, President Richard Nixon included science as one of the main directions for building a new relationship with China.

The consortium's emphasis on academic exchanges also parallels the early years of the U.S. engagements with the USSR and China. For example, several high-level U.S. university research scientists began exploratory talks with Chinese officials on the eve of President Nixon's 1972 visit. The Shanghai Communiqué committed both sides to facilitate nongovernmental contacts and exchanges in science and technology, as well as other fields. This ushered in a period of rapidly increasing exchanges of U.S. and Chinese scientists and students, which generated increased interest in cooperation among scientists and significantly expanded the knowledge of each other's systems and priorities. These exchanges set the stage for the launch of a formal government-to-government relationship in science and technology with the 1979 signing of the intergovernmental science and technology agreement.³

Similarly, the 1972 Science and Technology Agreement signed between the U.S. and USSR governments drew on the experiences of the interacademy exchanges begun over a decade earlier. The 1959 agreement between the National Academy of Sciences and the Academy of Sciences of the USSR established a framework for cooperation, with an emphasis on exchanges of leading scientists to give lectures and conduct research. Participation was open to academy members and nonmembers. The number of exchanges began slowly, but by the mid-1970s the annual level of exchanges reached 167 person-months in each direction. These exchanges were an extremely important signal to the research communities in both countries that cooperation was acceptable and possible.⁴ The consortium's goal is to do the same for U.S. and DPRK scientists.

The work of the consortium has been steady, but slow. This is not surprising given the very limited history of contact between the science communities of both countries. One initial challenge the consortium faced was to identify a partner organization in the DPRK. The consortium began by approaching the DPRK Mission to the United Nations, the only official North Korean presence in the United States. Several meetings in New York were held, and the Mission representatives were invited to attend annual meetings of AAAS, one of the largest general scientific conferences in the world, to reinforce the consortium's scientific bona fides. The confidence-building activities with the Mission were essential to ultimately being connected with the DPRK State Academy of Sciences (SAOS).

But to move the relationship toward a more concrete set of activities required direct researcher-to-researcher interaction. Developing an approach that would ultimately lead to such interactions became a key focus of the consortium. In a landmark development, the SAOS invited the consortium to send a delegation to Pyongyang in December 2009. The six-person team, led by Nobel laureate and former president of the AAAS Peter Agre, was granted wide-ranging access to DPRK scientists.

The delegation toured government research institutions and laboratories in and around Pyongyang; met DPRK scientists specializing in information technology, environmental research, and life science-related fields; met with university and science policy officials; and received formal and informal presentations on research. The meetings were notable in the ease of those discussions, and the trip concluded successfully with a signed agreement to pursue cooperation in several topics of mutual interest, including a reciprocal visit to the United States. That reciprocal visit occurred in early 2011, when an SAOS delegation traveled to Atlanta, Georgia, for meetings with consortium members. This was reportedly the first DPRK delegation to receive U.S. visas in more than a year.

The ability to access a diverse range of expertise, from both university and private organizations, is a key advantage of the consortium approach. Consortium members contribute complementary skills and experiences, including research, policy, and operational experience in establishing and advancing international

science collaborations. The four consortium members also have extensive networks that they can tap to explore topics of mutual interest with the DPRK counterparts. Expanding the participation of a diverse group of scientists is the long-term goal for the consortium and an important indicator of success. Meanwhile, the consortium offers a valuable single point of contact to our DPRK counterparts for reaching out to other potential collaborators. The 2011 SAOS visit to Atlanta enabled the consortium to expand U.S. participation to include representatives of local universities, including the Georgia Institute of Technology and the University of Georgia. In the most recent U.S.-DPRK meetings, held in April 2012 in Bellagio, Italy, and funded by the Rockefeller Foundation, several research scientists, university officials, and foundation representatives joined the U.S. delegation.

From the start, the consortium has presented itself as an “action-oriented” group with an emphasis on developing specific projects for collaboration. One strength of scientific engagement is the collaborative element. Consortium members launched two activities that address agreed priorities identified during the reciprocal visits—technical English-language training and access to public scientific publications through a virtual science library (VSL). In August 2011 a consortium delegation of technical experts traveled to Pyongyang to learn more about the system for teaching English at SAOS. CRDF Global and SU experts conducted an English-language “needs assessment” and provided training on four major online, publicly available journal systems to prepare for developing a DPRK VSL program. In March of this year, the consortium again visited Pyongyang to develop training activities for teachers and scientists in English and to finalize next steps for a joint proposal that could develop an English Language Training Program for Scientists (ELPS). This is part of a three-year grant awarded by the Henry Luce Foundation to help launch ELPS, as well as a VSL that would provide free access to openly available scientific publications. During that March trip, the SAOS demonstrated its ongoing commitment to building an English-language program and improving knowledge access by demonstrating a computer lab where Internet access was active and operating for their scientists, as required for a VSL. These two projects have been prioritized to be able to demonstrate concrete results. Other possible topics have also been explored, including forestry, biodiversity, salmon restoration, and flood management.

Despite the inevitable time and resources needed to coordinate consortium activities, the consortium approach has been advantageous to building a foundation for science engagement by combining the expertise and efforts of the four consortium members. Through a regular exchange of information and ideas, the consortium has performed a role, though nongovernmental, similar to the coordination and information-sharing functions of the joint commissions established under bilateral government-to-government science and technology agreements. In addition, the members are able to leverage “economies of scale” in

navigating the complexities of cooperation between two countries that do not have formal relations.

While the consortium is purely nongovernmental, its members update and inform both governments as well as stakeholders about their activities and the value of science engagement for fostering better relations between the two countries. For U.S. stakeholders, this has required a significant number of sessions with scientists, university officials, U.S. government and congressional officials, and the donor community. In working with the DPRK, this has meant initially engaging with its UN Mission in New York and ultimately with the SAOS. The combined efforts of the four organizations have made it easier to address the approvals needed to arrange travel. They have also helped with the much more difficult challenges of identifying projects for collaboration, as well as securing funding, and helping ensure compliance with all applicable laws and regulations. The distribution of workload across four organizations has also made it somewhat easier to adjust to the inevitable starts and stops of early engagement efforts and to sustain a long-term commitment, which is critical to developing a trust-based relationship.

Reasons for Optimism

The consortium has made progress in the last four years despite the political climate. There is reason to be guardedly optimistic about continued progress. Since the initial 2009 visit, the engagement activities have resulted in learning about each other's systems of science, approaches to international cooperation in science, and current priorities and constraints. Consortium members and DPRK counterparts have developed a level of trust that is reflected in the growing ease with which individuals within the consortium can discuss their many differences and the challenges to long-term cooperation.

Overcoming these challenges will take sustained interest, patience, and perseverance. One key obstacle that the consortium—or anyone who deals with the DPRK—faces is the lack of direct communication. For both technological and political reasons, it is not possible for the consortium to have direct communication with its SAOS counterparts between meetings. The one channel of communication through the DPRK Mission in New York is vital. Even during the Cold War, there was a formal, and frequently used, channel of communication between collaborating U.S. and Soviet scientists. They were able to communicate—albeit somewhat slowly—through telex and U.S. Department of State cables. Direct communication between the consortium and the SAOS, and at some point between U.S. and North Korean scientific communities, will be necessary to build a robust and sustainable relationship.

A second key challenge is the difficulty in finding common understandings in the mechanics and norms of two clearly different scientific systems. This is an extremely important issue whenever and wherever science engagement is launched

between countries with a limited history of cooperation. Such harmonization of systems can take various forms depending on the specific topics of cooperation. In the more than thirty other countries that CRDF Global has worked, the topics raised include merit-based peer review as the mechanism for selecting projects for funding; laboratory practices consistent with global standards; proposal writing skills; publishing scientific articles in peer-reviewed journals; and common standards for data sharing. Efforts in all of these areas are important to building a common approach to science cooperation. Similar efforts are needed to facilitate the science cooperation with the DPRK. Science, like commerce and trade, requires both transparency and international standards if it is to realize its inherent promises.

Ideally, science engagement with the DPRK could evolve in a way that has been successfully applied elsewhere. For example, a useful next step would be to organize one or more scientific workshops that convene a small group of scientists from both the United States and the DPRK to identify potential areas of research collaboration. Such a workshop could lead to the identification of a pilot project that would enable scientists to collaborate on a topic of common interest. These scientists could meet periodically, including in a third country if necessary, to exchange research findings. The value of a pilot project is that it is small and specific, yet would enable scientists to pursue joint work while collaboratively working through the administrative, legal, and cultural differences that can affect cooperation.

Until there is a solid record of success in increasing the number of academic exchanges and collaborative projects, consortium—and any other bilateral scientific engagement—efforts need to be separate from any ongoing government dialogue, such as the six-party talks. The six-party talks involve a complex set of issues and players and already have a long history that colors the dynamics of the official relationship. The science engagement efforts are still in their infant stage. There is not yet sufficient broad-based interest, experience, or understanding of the key needs and most promising areas of collaboration to make a direct link effective.

Unflinching commitment is a critical factor for successful dialogue and engagement. Institutions engaging with the DPRK must hold firm to seeing initiatives through, even as those initiatives may morph and shift, and regardless of the political climate at the time. Political climates change, but those engaging through science must persist. Time and again, the perseverance of individuals and institutions on the front lines of international science—and equally important, those that support them—is what forges the way for the lasting legacy of science engagement.

That is why it is important for the consortium to provide a nongovernmental mechanism that could withstand the ups and downs of the government-to-government interactions. Directly linking the science engagement efforts to progress on the six-party talks would eliminate this important value of the consortium and

negatively affect its existing advancement, and probably make it difficult to resume engagement should governmental interactions further deteriorate.

That said, the consortium cannot and does not operate completely outside of the diplomatic relationship. In this regard, the consortium represents a potentially successful pathway of engagement that can help inform other efforts, much like the early science engagement with the USSR and China helped advance those relationships.

Conclusion

Scientific engagement between the United States and the DPRK requires extraordinary patience and will in the absence of formal government-to-government relations and against the backdrop of recurrent political crises and the DPRK leadership transition and consolidation. The consortium model has helped contribute to this resilience. Members have shared the burden of pressing regulations and ongoing political challenges. The diversity of experiences of the consortium members is its strength. That strength facilitates the building of stronger and fuller relationships with the DPRK through a broad network of willing partners in the United States and elsewhere. There has also been substantial consistency in the composition of each U.S. delegation to the DPRK. This reinforces the critical message that the consortium member institutions, and the people who are involved with them, are committed to the long term. The consortium's methodology is, necessarily, one of adaptability and flexibility, based on the collective experiences of its members and their commitment to sustained engagement with the DPRK.

In an increasingly interconnected world, isolation will become more difficult for the DPRK. We're seeing a glimmer of that slow evolution in the country's use of the Internet, participation in some international competitions, standardization of systems, exchange of scientists, invitations to and willingness to travel, English-language training, and access to external scientific resources. Beyond the continued efforts in English-language training for scientists and virtual science libraries, there are potential new opportunities for collaboration in areas of mutual concern: sustainable forestry, biodiversity, salmon fisheries restoration, and flood management. Considering all the challenges involved, it is clear that science engagement with the DPRK is a long process. Yet, as the consortium has demonstrated, with willing and determined groups and individuals, it is possible. Science engagement through a broad-based group also provides one of the few possibilities for sustained and sustainable interactions. Given the importance of the DPRK to the broader policy discussions in northeast Asia, these connections are especially important. **SD**

Endnotes

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