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U.S.-DPRK  
EDUCATIONAL  
EXCHANGES:  
ASSESSMENT AND  
FUTURE STRATEGY

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THE WALTER H. SHORENSTEIN  
ASIA-PACIFIC RESEARCH CENTER

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# OVERVIEW AND ASSESSMENT

# CORNELL-DPRK EDUCATIONAL EXCHANGES: ASSESSMENT AND FUTURE STRATEGIES

*James Haldeman*

Over the course of the last decade, interactions involving scientists and administrators from the Democratic People's Republic of Korea (DPRK) and Cornell University (CU) have been intermittent at best. Having said that, one can point to some important activities and contributions that demonstrate an interest in and commitment to the DPRK. These activities serve as building blocks for what is hoped will be a long-term relationship.

## History

During the ten-year period between 2000 and 2010, the DPRK-CU exchanges have been facilitated by two NGOs, the American Friends Service Committee (AFSC) and the Asia Foundation (TAF), and have taken place primarily under the auspices of Cornell's International Programs/College of Agriculture and Life Sciences (IP/CALS). Examples of interactions include:

- In 2000, through TAF, Cornell sent shipments of cold-tolerant apple, grape, and strawberry lines to the Fruit Research Center located near Pyongyang. (New York and DPRK winters are similar.) This was followed by annual exchange visits by the center's director, Mr. Ri, to Cornell between 2000 and 2002.
- Following the aforementioned shipments, Cornell received several delegations of North Korean scientists at IP/CALS for visits lasting two to three days; each delegation consisted of three to four people. The North Korean delegations were interested in collaborating in the fields of horticulture and plant sciences: tree fruits, grapes, entomology, and plant breeding.
- In April 2005 Cornell was invited to New York City to meet with the DPRK Mission to the UN and a delegation from the DPRK. In this meeting, which was coordinated by TAF, there were discussions about additional steps in building cooperation. During the course of this full-day meeting, participants discussed areas of interest and the possibility of expanding the length of visits to Cornell. The meeting concluded with a feeling of optimism but was followed by a suspension in communication.
- In late 2005, the DPRK Academy of Agricultural Sciences (AAS)

again indicated an interest in developing programs with Cornell, particularly in the area of soils. As a result, Professor John Duxbury of the Department of Crop and Soil Sciences visited the DPRK. This was followed by a visit of six scientists to Cornell. Discussions centered on potential areas of collaboration and short-term (that is, three- to six-month) visits of DPRK scientists to Cornell.

- In 2006, James Haldeman, senior associate director of IP/CALS, was invited to visit the DPRK to discuss the administrative procedures involved for having small groups of scientists visit Cornell for an extended time (defined by Cornell as three months). The focus of discussions was on steps toward building a collaborative program. Priority areas identified by AAS for collaboration included:
  1. Biotechnology: Research in rice genome mapping and gene constructs.
  2. Information technology: Information technology priorities including modeling, data processing, systems for the surveillance and forecasting of pests, and land survey systems.
  3. Plant protection: Improved strains of beneficial fungi and pest management in crop production.
  4. Agriculture information: Increased access to non-DPRK journals and other scientific publications.

Also in 2006, the long-awaited shipment of rice seeds to the AAS was facilitated and the Agriculture Experiment Station in Geneva, New York, sent a selection of apple rootstocks to the Academy.

- Under the auspices of TAF, approval was given by the DPRK for a March 2009 visit by Dr. Norman Uphoff, former director of the Cornell International Institute for Food, Agriculture, and Development and leader of the System of Rice Intensification (SRI) at Cornell, and James Haldeman (IP/CALS). The visit had two primary purposes: (1) to follow up on expressed DPRK interest in SRI, a methodology for increasing the productivity of irrigated rice cultivation by changing the management of plants, soil, water, and nutrients, and (2) to reopen discussions, after a three-year lapse in communication, on the administrative procedures for having DPRK scientists at Cornell for extended periods of time.

Unfortunately, this planned visit had to be canceled for reasons for which the DPRK had no responsibility (broken travel connections and traveler health difficulties). In lieu of the visit, plans evolved for an international seminar on SRI planned and conducted in Hangzhou, China, at the end of February 2010. This event was organized and hosted by the China National Rice Research Institute

and supported by TAF. It included participation by representatives of the AFSC and the Mennonite Central Committee (MCC). Subsequently, both AFSC and TAF organized visits to China and Vietnam for DPRK delegations to allow delegates to become better acquainted with SRI and other rice-improvement methods.

- In 2009, TEEAL, the Essential Electronic Agriculture Library—a compact, self-contained agricultural library—was presented to representatives from the DPRK. TEEAL contains 149 journals, most spanning from 1993 through 2008. These journals encompass diverse fields of the agricultural sciences, from agricultural economics and crop improvement to food science, nutrition, and natural resources management. One has access to the full text of each article indexed in TEEAL, with no need for Internet access. TEEAL is easy to share on a network or to set up on a single computer. Information did find its way to Cornell from the DPRK regarding the usefulness of the TEEAL materials.

### Constraints and Lessons Learned

As one reviews the list of activities, there is a difference of opinion with regard to the level of success. Success is a relative term and needs to be measured on a small scale. Three examples of success include the delivery of TEEAL, the shipments of apple and grape stock to the DPRK, and the SRI workshop held in China. TAF was instrumental in facilitating all of these activities. However, we at Cornell have seen and experienced many roadblocks that are preventing us from engaging in a more meaningful and productive way. Some of the constraints include:

1. Communication, or a lack thereof, is a major problem at all levels. There is little or no information sharing taking place within and between organizations and institutions.
2. DPRK's scientists do not have the access to the outside world granted by email and the Internet. In today's world of collaborative research, having access to reliable communication channels is an absolute necessity.
3. Because of language barriers, Cornell scientists have had great difficulties responding to requests from the DPRK. First, requests are not made scientist to scientist. Instead there is generally an intermediary in the DPRK who tries to interpret needs and then convey them through the proper channels—and eventually to Cornell. These intermediaries in the DPRK are not scientists or English speakers; thus, either they do not have an understanding and knowledge of agricultural terminology, or things are lost in

translation, or a combination of both.

4. Another key constraint is not being able to get into the field to interact with farmers, their family members and the farm managers. If the faculty at Cornell are to make any significant and relevant contributions it will be very important, and necessary, for scientists to visit farmer cooperatives. To date this has not been possible.
5. Long lapses of time without communication are discouraging to faculty. In some cases the lapses have lasted three years or more.
6. The greatest challenge has been to develop good personal links with key individuals within the university system and agriculture research establishment. It has been nearly impossible to establish long-term, productive relationships.

There have been several lost opportunities over the course of the past ten years. For example, the dean of Cornell's College of Agriculture and Life Sciences made a significant offer to the AAS—an official invitation to participate in Cornell University's International Agricultural Sciences Fellowship Program, a nine-month program focusing on agricultural science research relevant to the Academy's research objectives. Unfortunately the nine-month period was unacceptable to the DPRK.

Each side has experienced a little of the other's agricultural production and research situations and has shared some scientific knowledge and even materials (at least from the United States to the DPRK). This is the extent of the interaction and is limited by DPRK scientists' choice. DPRK scientists have sought interactions focused on state-of-the-art science—e.g., biotechnology—whereas the major agricultural need of the country is to increase food production, which can be accomplished by the application of well-known and available basic knowledge. The AAS lacks Internet and email connections, making it nearly impossible to directly follow up with the organization.

### Education Exchanges

As we consider areas of educational exchanges and think about which ones should be the focus in the coming years, one must first consider the short term, which is likely to be a period of continued instability in the DPRK and less than friendly relations between the DPRK and the United States. The initial focus should be on teaching/education given the state of the educational system in North Korea. Where possible, efforts should be made to establish and strengthen research capabilities. Language is a problem, so educational exchanges involving English conversation and scientific writing would also be very productive. Intensive English instruction is available at Cornell and at a local community college. In addition there are several South Korean

faculty members who would be able to assist with language issues. Breeding and genetics, particularly to improve cold tolerance in rice, apples, and pears and to improve disease resistance, are other priority areas to pursue. Any educational exchanges that would help to develop basic knowledge of molecular breeding strategies would be useful.

Certificate courses, two to three weeks in length, could be developed and if necessary, implemented outside of the DPRK. Eventually, DPRK students could enroll in Cornell's Masters of Professional Studies (MPS) program. This is a one-year graduate program that does not involve quantitative research. The next step would be to enroll in a PhD program. At this time, a top priority of DPRK universities is education, not research; improving the content of the curriculum and developing students' analytical skills should be top priorities. We could even consider a program similar to the one that we have in Ethiopia, where an Ethiopian student can be awarded a Cornell MPS degree without leaving his or her country.

Transnational Learning, a project of IP/CALS, brings CU's leading-edge faculty and curriculum to students around the world. Through state-of-the-art digital technologies, graduate students in Africa, South Asia, East Asia, and Mexico have access to Cornell University classes and can discuss their research projects with Cornell's faculty. Transnational Learning was created in 2002 in an effort to improve food security across the globe by giving research and educational institutions in developing countries access to current information and knowledge in the agricultural sciences. Customized digital learning packages have been drawn from over 600 lectures, covering topics such as plant breeding, crop and soil sciences, agricultural economics, horticulture, animal sciences, and communications.

In the long run, when we may see a more open DPRK and more positive and consistent relations between the DPRK and the United States, one might consider scientific exchanges that would be for longer periods of time, workshops, training programs (in the United States, DPRK and/or third countries), graduate programs, and PhD research opportunities. Many other programs will be available if and when the environment is right. Some engagements are possible even under current conditions in the North, while others require a much more stable environment.

Looking very long term, there are several excellent professional development opportunities that could become available to the DPRK or, in some cases, could be adapted to fit the needs of the DPRK. This will require an even more stable and friendly environment and will require a major financial commitment on the part of both countries.

1. *The Hubert H. Humphrey Fellowship Program*: With primary support from the U.S. Department of State, this program provides professionals from developing countries and emerging democracies an opportunity to enhance their leadership potential and managerial



skills. This non-degree program is intended to strengthen and develop the Fellows' capacities to assure greater professional responsibilities, to give them an opportunity to broaden their perspectives, and to establish international professional contacts.

2. *Brain Korea 21*: This program could be tailored to fit the needs of the DPRK. Initiated by South Korea's Ministry of Education, this program targeted seven important fields in science and technology necessary for enhancing national competitiveness in the twenty-first century. The objective of BK21 is to produce the next generation of world-class leaders in selected fields by upgrading research infrastructure and graduate-level training in Korea. PhD students from Seoul National University came to Cornell for periods of three to twelve months to carry out part of their research. Each student was paired with a Cornell faculty member who was carrying out similar research.
3. *The Tang Cornell-China Scholars Program*: Established in 1999 and funded by the Tang family, the goal of the program is to enhance scientific and technological collaboration throughout the world by developing cooperative relationships between the best scholars at the threshold of their careers in China, and established research and education leaders at CU. The program was designed to provide opportunities for the most distinguished scholars from the People's Republic of China—those in the early stages of careers in the agricultural and biological sciences and biological engineering—to spend up to two years at CU undertaking research in their field of specialty.

## Strategies

Emphasis needs to be placed on educational exchanges that help to strengthen the DPRK university system. We must be careful not to overestimate the capacity of the North Korean universities. Their infrastructure is poor; they have had very little access to current information; and their main function is to teach. Extension and research are coordinated by the Ministry of Agriculture, so the primary mission of the university is educational. For them to progress, improving the quality of the education that students receive is a top priority.

A strategy that deserves serious consideration is to train young scientists through shorter scientific exchange visits, as young people are more open to change. Shorter exchanges could be focused on specific topics that would improve DPRK capacity in a way that could have some impact when they return home. Various information technologies would be relevant, of which geographic information systems (GIS) is one example. Resource-conserving technologies in agricultural production could be another topic that would

be relevant to the DPRK situation.

Starting educational exchanges focused on learning to communicate in English, both verbally and in writing, would be helpful. Cornell would welcome visiting scholars and PhD students, although not at the moment because it may be difficult to identify people who have the necessary background. Starting with certificate courses and then going to the Masters of Professional Studies (MPS) makes sense, as does the prospect of progressing in several years to PhD programs.

Improving the content of the curriculum and the development of students' analytical skills should be top priorities. With those improvements made, there would be a cadre of scientists with whom we could work. This would not be training for the sake of training. PhDs could be the start of long-term professional relationships between DPRK and Cornell scientists and institutional partnerships. Priority areas for study and research would include agriculture (for example, getting seed and other plant materials imported or applying "molecular breeding" strategies to rice improvement), engineering, and technical areas such as TEEAL.

Key factors leading to the success of a cooperative effort are continuity and ensuring that those responsible for the program know exactly what kind of results they are seeking and the ways in which to attain them. The broad outline of any program must be established at the very beginning. Enough time must be allocated to secure results. There need to be adequately trained people who can maintain continuity, particularly when working in an unstable environment. A good example of a program that demonstrated these characteristics is the Cornell-Nanking Cooperative Crop Improvement Program (CIP) conducted approximately 85 years ago. More recent successes have also occurred.

During the 1920s and 1930s, Cornell became involved in China in a very significant way. Annual famines were common and the country was experiencing major political instability. The CIP was developed with a period of five to ten years for its completion. It was endorsed by Cornell's president, the dean of Cornell's College of Agriculture, and the dean of the University of Nanking. It was approved by the Board of Trustees at Cornell and by authorities at the University of Nanking.

The program was carried out very successfully during the period between 1925 and 1931, even during some very unstable times. In 1927, the Revolutionary Army reached Nanking and the ensuing disturbances caused the evacuation of all consular staff and other foreign residents in Nanking. However,

[i]n spite of civil wars and the major military disturbances of 1927, no damage was done to the Crop Improvement Program, no plantings were harmed and no seed lost. Much credit must be given to the Chinese associates for their dedication, courage, perseverance and the tact under extremely difficult

circumstances.<sup>1</sup>

The program was successful. Its effects are still evident today as a result of the large number of Chinese specialists in crop improvement that were trained during this period, making it possible for the University of Nanking to maintain its program despite the unstable political conditions. A second effort was initiated in 1930 to achieve comparable results in other parts of China that had been affected by yearly famines for centuries.

An important purpose of CIP was to leave in China a group of well-trained men who could carry on and expand the work after the Cornell representatives had left. This training was carried out by formal lectures and by Summer Institutes. Information training was a continuous process, whether in the office, laboratory or field. By the end of the program, all had come to feel that this had been Cornell's single most important contribution.<sup>2</sup>

The Nanking project has been regarded as a model for institution-building agricultural development because of its emphasis on training Chinese scientists to carry on the crop improvement program. Noteworthy was its multidisciplinary nature; the technical assistance in plant breeding was supplemented by Cornell faculty working in entomology, agricultural economics, and other disciplines.

Patience is key in any successful partnership. Cornell's investments in China in the 1920s carried through some very difficult times and helped to make possible a renewal of the partnership, which is stronger today. Following nearly 50 years of inactivity due to the political situation in China, doors reopened in the late 1970s. Soon afterward the dean of Cornell's College of Agriculture visited Nanking Agricultural University, with support from the U.S. Department of Agriculture, and reestablished ties with Nanking. One outcome of this visit was the establishment of a Nanking-Cornell partnership where several young Nanking faculty members were provided assistantships to complete PhD programs in Cornell's College of Agriculture. This was the first step towards reestablishing long-term scientific collaboration.

It is important to continue to be open to visits from DPRK professionals, individuals, or delegations and, if possible, to the idea of short-term residential hosting of researchers and/or teachers. There is huge intellectual talent, though underdeveloped, in the DPRK, and so it is important to establish an environment in which a true partnership can be realized that would provide opportunities to train scientists is important.

Other strategies include:

- Continuing to work with a trusted partner such as TAF, which has been instrumental in bringing Cornell into discussions with the DPRK.
- Organizing and conducting workshops and conferences in third

countries, similar to the SRI workshop carried out in China.

- Updating TEEAL annually. Updates are shipped to current subscribers every December on a small set of DVDs. In addition, the North Koreans will require TEEAL training in the future. Existing libraries are poor so people need to learn how to use a library in addition to learning how to use TEEAL.
- Establishing relationships with DPRK scientists at international meetings. (They are occasionally in attendance.)
- Identifying top scholars in the DPRK.
- Developing a LISTSERV of U.S. universities and other institutions involved in the DPRK. Further, serious consideration should be given to forming a consortium among these universities with a coordinated program.
- Opening discussions with the U.S. Department of State and the Bureau of Educational and Cultural Affairs regarding possible DPRK involvement in the Hubert H. Humphrey Fellowship Program.
- Establishing some relationships with South Korean institutions that are interested in future partnerships with institutions in the DPRK.

Cornell has a very strong international commitment. In CALS, of the 380 faculty members, 70 are designated international professors. To be designated an international professor, one must devote a significant portion of his or her time to international activities. Cornell, like many other institutions, is inundated with opportunities for international collaboration. Priority is given to those opportunities where the cooperation can be mutually beneficial and result in long-term engagement.

For Cornell, engaging in activities that further strengthen its teaching and/or research program is very important. Financial resources must be available and reliable means of communication are key. Cooperation and collaboration need to take place in an environment that is not labor intensive. If Cornell is to invest resources, faculty and administrators must see a strong commitment on the part of DPRK educators, researchers, and officials.

With a mind to the future, when we may see political stability in the DPRK and more positive and consistent relations between the DPRK and the United States, there are a number of steps that an institution such as Cornell could take to build on past successes and position itself for a mutually beneficial collaboration with the DPRK. For now, it makes sense to maintain a low-profile program with the DPRK that would, hopefully, become more institutionalized over time.

## Notes

<sup>1</sup>Harry Houser Love and John Harry Eisner, *The Cornell-Nanking Story: The First International Technical Cooperation Program in Agriculture by Cornell University* (Ithaca, New York: Cornell University, 1963), 4.

<sup>2</sup>Love and Eisner, *The Cornell-Nanking Story*, 13.