



International Technical Assistance: Lessons Learned from Cambodia-China STEM Diplomacy

This policy brief summarises a study conducted by CDRI to examine how China is using its support for Cambodian higher education science, technology and ICT to both promote a scientific community and to strengthen Cambodia-China relations. This so-called STEM diplomacy reflects the characteristics of Chinese assistance and thus contributes to the discussion about China's international development model and its rising role as a global leader. It outlines the implications and provides recommendations for improving collaboration. It is part of the current research work of CDRI's Education Unit.

INTRODUCTION

A brief history of Cambodia-China relations

Cambodia-China trade and cultural ties go back to more than 2,000 years. However, it was not until the 1950s that more formal diplomatic relations between the two countries began, when Prince Norodom Sihanouk and Premier Zhou Enlai struck up a friendship at the International Asia-Africa Conference in Bandung in 1955. The common ground between their foreign policies on peace, neutrality and non-interference in other countries' internal affairs drew them close, resulting in the establishment of formal bilateral relations in July 1958.

This year marks the 60th anniversary of Cambodia-China diplomatic relations, which are more comprehensive and strategic than ever. The two countries have become the closest friends in the region, by any definition. China is Cambodia's largest foreign investor and biggest aid donor; between 1994 and 2016, Chinese investments amounted to USD14.7 billion and official development aid (USD400 million a year since 2011) to USD4.2 billion (CRDB/CDC 2016).

China's education assistance

China's higher education (HE) engagement with Cambodia started with the provision of university-level scholarships for Cambodian students to pursue their studies in China. More than 2,000 Cambodians have graduated from Chinese higher education institutions (HEIs) over the past 20 years (Xia 2017). China

recently increased its scholarships for Cambodia and other developing countries, mainly through the Chinese government, the Confucius Institute and Chinese universities. In academic year 2017/18, 181 Cambodians received scholarships from the Chinese government. China has increasingly become a popular destination study country, attracting more than 440,000 international students in 2016, up 35 percent from 2012.¹

China is putting more emphasis on investing in new buildings, laboratories and equipment at some Cambodian HEIs. Prek Leap National School of Agriculture and the University of Kratie recently received USD10 million each through the Chinese embassy. A number of HEIs and research institutes are intent on establishing China study centres to promote academic and cultural exchange and to meet growing interest in learning Chinese. CDRI, with financial support from the Chinese embassy, recently set up a China Studies Centre to promote and support scholarly study and research on Cambodia-China relations. China has also increased its aid for education in developing countries through multilateral donors such as UNESCO.

China's increased support for HE in Cambodia and other developing countries has been commensurate with its rise to global economic superpower as the second largest economy. This support is strategically linked to China's Belt and Road Initiative, initiated in 2013 by President Xi Jinping to transform the economic capacity of Asia, Africa and Europe. Only six years earlier, former President Hu Jintao declared that China must "enhance

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1 Of these students, 50,000 (11%) were funded by the Chinese government –up 70% on 2012 (Chinadaily 2017).

culture as part of the soft power of our country to better guarantee the people's basic cultural rights and interests", emphasising the use of educational support as one of the means (Chinadaily 2007). Since then, China's relatively new aid modality has introduced flexibility into development agenda that were formerly shaped by the aid conditionality of traditional donors.

This brief examines how China is using its assistance for Cambodian higher education science, technology and ICT development to both build an international scientific community and to strengthen China's bilateral relations with developing countries, including Cambodia.

THE STUDY

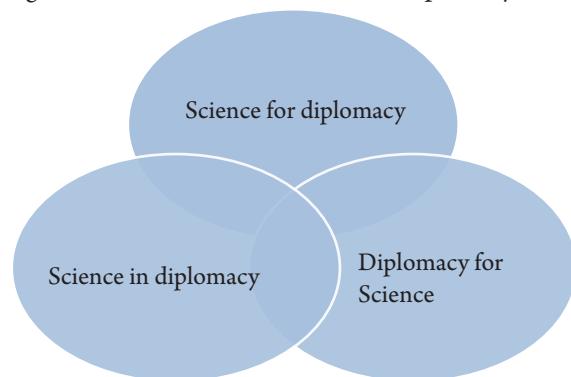
The brief draws on a case study of the collaboration between the International Centre for Higher Education Innovation (ICHEI), established in 2016 in Shenzhen, China, as a UNESCO Category 2 Institute, and the Royal University of Phnom Penh (RUPP), Cambodia's oldest and largest public university.

In alignment with UNESCO's objectives, the collaboration focuses on two priority areas: improving teaching and research at RUPP by building its ICT capacity and providing scholarships for Cambodian students to pursue engineering and science degrees in China. In its initial phase, 15 Cambodian teaching and support staff from three units at RUPP, namely the Department of Computer Science, the Faculty of Engineering and the IT Centre, attended a 10-day training course in Shenzhen. Also, in the past two years, 15 Cambodian undergraduates received scholarships to study at the Southern University of Science and Technology (SUSTech) in Shenzhen – a newly established Chinese university which uses English as the primary medium of instruction. The study drew on 26 interviews with Cambodian participants, Chinese participants in Shenzhen and UNESCO staff in Bangkok.

THE FINDINGS

To understand China's motivation and modality for HE aid in Cambodia, the findings are framed in the three aspects of science diplomacy: (1) science for diplomacy, using science cooperation to improve international relations between countries; (2) diplomacy for science, facilitating international science and technology

Figure 1: Three dimensions of science diplomacy



cooperation through national and human connections; and (3) science in diplomacy, informing policy with scientific advice (Royal Society/AAAS 2010).

Science for diplomacy

ICHEI, through its support to science, technology and ICT development in Cambodian HE, intends to strengthen China-Cambodia relations and improve China's image in the country. In so doing, ICHEI has aligned its assistance program with RUPP's needs, based on the university's ICT master plan to integrate digital technology into teaching, learning and research. Many Cambodian participants welcomed ICHEI's support, seeing it as necessary for RUPP to realise its vision to become a flagship university. For instance, they found the training they attended in Shenzhen relevant to their teaching and university operations management.

To continuously improve the quality of Cambodian science and engineering programs, every academic year ICHEI offers undergraduate scholarships for Cambodians to study at SUSTech, which all Cambodian participants acknowledged as a high-level and innovative research university. During the interviews, Chinese participants kept referring to their Cambodian colleagues as ambassadors for SUSTech and China in that they will continue to play a critical role in building and sustaining relationships between the two countries. This is consistent with the global literature which suggests that enhancing and building on knowledge exchange between early-career researchers and scientists is an effective means to promote and optimise international cooperation (National Research Council 2012).

Diplomacy for science

ICHEI aims to address the challenges facing science, technology and ICT in developing countries, and to become a global think-tank and platform for the advancement and transfer of new knowledge and technological innovation. To that end, ICHEI has drawn on the expertise and experience of UNESCO and its affiliated institutes, including the Asia-Pacific Centre of Education for International Understanding, a South Korean UNESCO Category 2 Institute, to provide technical support, including for capacity development and program design. Most Cambodian participants agreed that the strong global reputations of these well-known international institutions are vital for a new and relatively inexperienced ICHEI to gain the trust and confidence of international scholars, researchers and policymakers who know little about China, let alone its HE system.

Moreover, strengthened bilateral relations are key to building international scientific collaborations, as contacts and exchanges between Chinese scientists, scholars and researchers and their counterparts in ICHEI's partner countries have been minimal. Even during the planning stage, ICHEI's staff had little knowledge about the HE systems in these countries. Likewise, many of

their counterparts in partner countries were educated in countries other than China.² Thus to launch their assistance program at RUPP, ICHEI consulted a policymaker at MOEYS and Cambodian scholars who had helped facilitate the RUPP-ICHEI collaboration and recruit Cambodian students for the scholarship program. Such academia-government collaboration underpins the effectiveness of ICHEI's activities with RUPP and its partner universities in other countries.

Science in diplomacy

One of ICHEI's core functions is to "provide evidence based policy advice on higher education innovation to less developed countries in the Asia-Pacific and African regions" (ICHEI n.d.). Although it is too early to measure impact, its ICT support for RUPP and the scholarship program have projected a positive image of China, correcting some inaccurate stereotypes. Largely due to the polarised debate about China's growing strength and future foreign relations conditioned by mass media, as well as the limited exposure of Cambodian academics and researchers to Chinese society and culture, China has often been portrayed as a poor and backward communist country. Consequently, China has never been deemed the first destination study country for Cambodians. After six months at SUSTech, however, all six Cambodian students in the first group felt satisfied with student life in China, viewing Shenzhen as a progressive, technologically advanced and safe city. Likewise, many of the 15 trainees from RUPP changed their perceptions after their training; to quote one of them:

Based on what I heard in the media, I used to think that China was a communist country. However, when I was there, the country was completely different from what I expected. It is well developed and civilized. (Interview, 21 April 2017)

At SUSTech, the stereotype of international students changed with the first intake of Cambodian students. Because of the differences between the Chinese and international education systems, there are two education systems in Chinese HEIs: one for local and the other for foreign students. Unusually, Cambodian and Chinese students study together at SUSTech. The parents of many Chinese students were upset about this at first, believing that most international students come from affluent families with the intent of having a good time rather than studying hard, unlike local students who are considered industrious and diligent. However, after one semester, the grade point average for Cambodian students was 3.6 compared to 3.4 for Chinese students, changing perceptions about the attitude and capability of foreign students. From then on, Chinese students were

encouraged by their parents to mingle with their brilliant Cambodian peers.

These preliminary findings suggest that the RUPP-ICHEI collaboration and SUSTech scholarship program have allowed those involved to make better informed decisions based on scientific and hands-on experience, countering the stereotypes often portrayed by the media or fragmented and inaccurate information.

Challenges

The study highlighted four critical challenges facing ICHEI-RUPP collaboration.

- **Resources and expertise:** ICT access and use remain marginal at RUPP, with most of its teaching and management operations still traditionally implemented. This state of ICT underdevelopment is possibly attributable to unsettled leadership. By contrast, ICHEI is based at SUSTech, one of China's most modern universities with state-of-the-art technology, in Shenzhen, a global epicentre of hi-tech innovations, including telecommunications, drones, artificial intelligence and robotics. The huge disparities in resources and expertise mean that the transfer of knowledge has primarily been a one-way affair – from ICHEI to RUPP.
- **Program management:** China is relatively new to managing large-scale international development programs and lacks properly designed mechanisms suitable for its international partners. For instance, while important decisions are made and implemented quickly in China, such an approach might not be welcomed by its counterparts, including Cambodia. Few participants were aware of the long-term program objectives beyond the 10-day training in which they were directly engaged, although they were curious about future activities and directions. This may have been compounded by RUPP limited internal communication of its internationalisation approach. However, an education expert at UNESCO Bangkok saw this fledgling Chinese model as a positive sign for all developing countries. He opined that recipient countries can constructively contribute to the making of Chinese aid modality – one that is suitable for all, not just China.
- **Internationalisation:** SUSTech's capacity for active internationalisation remains a challenge as many Chinese staff's English proficiency is still limited. This is a challenge for international students and scholars, especially those who do not speak Chinese. The language barrier is a common issue in China, even on campus, where far more materials are available in Chinese than in English, giving competitive advantage to local students. Many Cambodian trainees viewed Chinese people as unwelcoming for foreign visitors, particularly in the public space.
- **Women's participation:** Female science and engineering faculty members at RUPP constitute only 10 percent of the total number of faculty members

2 In 2016/17, around 300 Cambodian students were studying undergraduate and postgraduate degrees in Chinese universities (Xia 2017) and the top five destination countries for Cambodian students were Thailand (1,182), Australia (908), France (555), United States (527), and Vietnam (441) (UIS 2016).

in the three units engaged in the RUPP-ICHEI partnership. Female underrepresentation in education and the workplace in STEM-related fields is a persistent issue affecting many countries; only 28 percent of the world's researchers are women (UNESCO 2017). ICHEI encourages women's participation, but RUPP sent only men on the first training course. Entrenched gender stereotypes in Cambodia create a hurdle to girls' education and women's participation in science and technology.

RECOMMENDATIONS

This study acknowledges the emergence of education diplomacy that China uses as a tool to promote its peaceful rise to a superpower whose international development model benefits all parties involved. The ICHEI-RUPP collaboration has been positively received by both Cambodian and Chinese participants. It can support RUPP's vision to be a flagship university and Cambodia's intention to leapfrog traditional development trajectories to Industry 4.0, spurred by the emergence of blockchain, the Internet of Things, cloud computing, artificial intelligence and machine learning. All this has begun to receive prominent attention from Cambodian experts and top government officials.

ICHEI's HE aid to developing countries is also an opportunity for China to take a global leadership role with more responsibility. The ICHEI-RUPP collaboration offers mutual benefits for Cambodia and China – one of the core characteristics of China's development model (King 2014; Reilly 2015). The following recommendations for improving their collaboration at both academic and national levels merit consideration.

- Strengthen the bridge between academic communities:** To deepen understanding of sociocultural values and to overcome negative stereotypes, both countries need to broaden their collaboration to include faculty and student exchanges. Urgently needed in Cambodia is a branch campus of a Chinese science and technology university. This would help ensure the effectiveness of knowledge and technology transfer and address the issue of poor local capacity.
- Increase participation from local partners:** RUPP should consider tapping the expertise and experience of other local HEIs, including the Institute of Technology of Cambodia, in applying new ICT in teaching and learning. Home-grown enterprises should also be part of the ICHEI-RUPP partnership. Building public-private partnerships will ensure the sustainability of the program at RUPP when Chinese funding and assistance run out.
- Promote internationalisation strategy:** RUPP and other Cambodian HEIs should take a more

strategic approach to internationalisation. Although managers might be aware of ICHEI's program and agenda, an internationalisation strategy would keep those on the ground informed and prepared for bilateral engagement with China. Such strategy could make Cambodian HEIs more proactive in the transfer of science and technology, ensuring their relevance to Cambodia's needs and context. For instance, ICT is simply a tool; pedagogical approaches need to be sensitively aligned with local circumstances so that faculty, students and staff can apply ICT in their work.

- Improve the internationalisation of China's ecosystem:** More English programs and materials would help China fast realise its ambition of becoming a leading destination study country. Internationalisation needs a healthy ecosystem with a strong platform, where both on- and off-campus environments are conducive to international students and faculty. China therefore needs to address the challenges of its local-oriented outside environment to ensure that non-academics can communicate with foreigners and adopt a friendlier attitude.

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