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BUILDING STEM LITERACY IN CAMBODIAN HIGHER EDUCATION

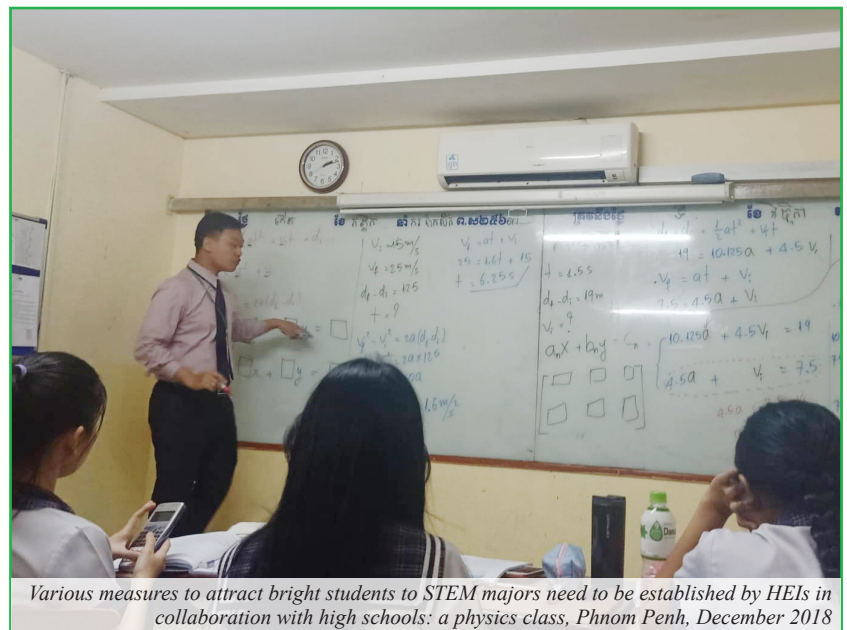
*Technology alone is not enough.
It's technology married with
liberal arts, married with the
humanities, that yields us the
results that make our heart sing.*

Steve Jobs 2011

Introduction

STEM – the acronym for science, technology, engineering and mathematics – has become a dominant education discourse, and already a buzz word for many, around the globe. Policymakers view STEM skills as a means for a country to build a truly competitive economy. Similarly, STEM-qualified workers hold a comparative advantage in the job market. This importance has resulted in the promotion of students' interest in STEM subjects and selection of STEM majors at degree level, as well as government capital investment in STEM-related courses, at both general and higher education levels.

As in other countries, efforts to promote STEM education and professions in Cambodia have been largely linked to the increasingly vital role of science and technology in society, as set out in key national plans, strategies and policies. One such pivotal policy document is Industrial Development Policy 2015–25, launched in 2015, which aims to



Various measures to attract bright students to STEM majors need to be established by HEIs in collaboration with high schools: a physics class, Phnom Penh, December 2018

transform Cambodia from a low-skilled labour-intensive economy into a highly skilled and higher value-added competitive economy by 2025 (Council of Ministers 2015).¹ Policy to promote and strengthen STEM education and learning was introduced a year later with a focus on improving the ability of higher education institutions (HEIs) to produce multi-competent graduates in related disciplines with the personal, practical and technical skills needed to support Cambodia's economic capacity. The importance of STEM cannot be emphasised enough. The prime minister recently reaffirmed the government's commitment to

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¹ Other key national science, technology and innovation-related policies include the 2013 Cambodia National Science and Technology Master Plan 2014–20 and the 2014 Cambodia ICT Master Plan 2020. The government also established the National Science and Technology Council and its general secretariat in 2014 and 2015, respectively.

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promoting the development of science, technology and innovation, stating that the “Development of science and technology will enhance productivity, growth, knowledge and technological capacity, which will help Cambodia build a knowledge-based society” (CDRI 2018, 1).

Despite strong commitment, STEM is still a relatively new term in Cambodia, carrying different meanings for different people. Although the term is widely used, policy documents rarely give a definition of STEM; and when they do, there is no clear elaboration. Both STEM Policy and the Higher Education Vision 2030 still treat STEM as siloed disciplines taught in a classroom setting. The Education Strategic Plan 2014–18 and the Higher Education Roadmap 2030 refer to STEAM, simply highlighting the equal importance of arts-related majors. None of the policy documents discuss STEM or STEAM as an emerging integrative paradigm, with STEM literacy as a goal, suggesting the lack of a clear definition of STEM and related concepts. This raises the question of the true meaning of the term and how, without regard for context-specific understanding, Cambodia can improve the quality of STEM graduates to meet the challenges of the fast-changing national and global landscape.

The paper draws on a study conducted by the Cambodia Development Resource Institute (CDRI) to review modern STEM programs in Cambodian HEIs. The paper begins with a brief overview of the study. It then describes the conceptual framework for integrative STEM education used to explore the current teaching and learning of STEM subjects in Cambodian HEIs, focusing on progress made towards achieving STEM literacy. The final section offers some recommendations for future studies.

The study

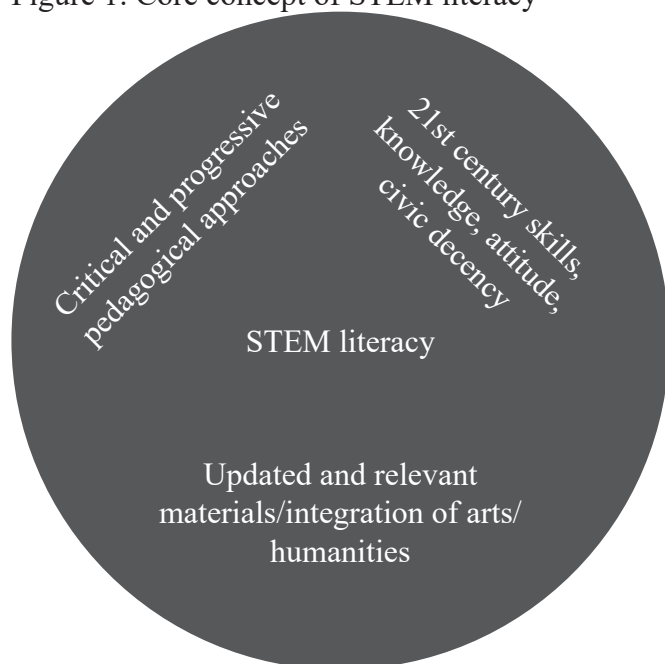
This paper supplements a large-scale study of Cambodian STEM higher education, conducted by CDRI’s Education Unit from May to November 2017 at 15 selected HEIs. Data was collected from documents and over 100 semi-structured interviews with Cambodian policymakers, educators, students and employers. STEM programs across different disciplines were examined including agricultural science, information technology, biology, chemistry, maths, medicine, environmental science and engineering.

STEM literacy as a paradigm

STEM education, restricted to the teaching of science, technology, engineering and mathematics as individual subjects (silos), has a long history. However, as a paradigm, STEM only entered into public discourse in the 1990s. Initially the term was used to simply refer to the importance of these individual disciplines, with utilitarian aims of building national economic competitiveness and employability skills and attributes (Chesky and Wolfmeyer 2015). Such aims have in many ways restricted how STEM programs have been delivered, not only reinforcing traditional teacher-centred instruction, but also overlooking the interconnectedness or interdisciplinarity of these subjects in a real-world situation. The result has been the privileging of certain hard skills over the acquisition of soft skills such as collaborative teamwork, critical thinking and creativity and the development of values and virtues such as compassion and ethical responsibility. Not surprisingly, STEM graduates are commonly cited as ill-equipped with intellectual development, personal values and social responsibility, beyond their technical expertise.

In efforts to imbue students with a healthy balance of soft and hard skills, STEM education has gradually developed into an integrative paradigm, where the purpose is to produce graduates with 21st century skills, knowledge, personal values and virtues. Also referred to as STEM literacy (Bybee 2013), this paradigm requires interdisciplinary STEM curricula that “explore teaching and learning between/among any two or more of the STEM subject areas, and/or between a STEM subject and one or more other school subjects” (Sanders 2009, 21). At the higher education level, integrative STEM emphasises the inclusion of social sciences and humanities/arts. Pedagogical approaches have to be critical and progressive, encompassing the interaction between the learner and the instructor. Problem-solving or project-based learning is also key to providing students a real-world experience beyond learning theoretical concepts in the classroom. Overall, building STEM literacy requires a strong connection between vision and mission statements and practices on the ground, particularly the pedagogical approaches used and the curriculum content taught, as summarised in Figure 1.

Figure 1: Core concept of STEM literacy



Findings

Purpose of STEM programs

The mission of Cambodian higher education is “To build a quality higher education system that develops human resource [sic] with excellent knowledge, skills and moral values in order to work and live within the era of globalization and knowledge-based society” (MOEYS 2014, 3). Two key national policy interventions reflect this intention. One is the Foundation Year Program, introduced in the mid-2000s, which is arguably rooted in liberal arts philosophy and requires that first-year undergraduates take a variety of basic courses in sciences, social sciences, humanities and foreign languages before progressing to their specialisation. The other is the Cambodian Qualifications Framework (CQF), introduced in 2012, which provides guidance for the development of education at all levels. At the higher education level, the CQF highlights the development of graduates with knowledge, interpersonal skills, digital and ITC literacy, numerical skills, and a sense of civic responsibility.

Across all Cambodian HEIs, the integration of the foundation year and credit transfer system into their undergraduate programs, in principle, suggests their alignment with the national education goal, which is to produce competent graduates who can actively contribute to the country’s socioeconomic and political development. Hence, we can conclude

that the goals of STEM programs across the 15 surveyed universities have embraced the national higher education vision.

However, STEM Policy, introduced in 2015, is narrowly oriented, mainly supporting a national plan for the economic transformation of Cambodia, as set out in IDP 2015–25. This emphasis on a utilitarian approach means the goal of STEM policy overlooks the sociocultural dimensions of education, as highlighted in the national vision for Cambodian higher education and the missions and objectives of the 15 studied HEIs.

STEM pedagogy and curriculum content

Although the goals of Cambodian higher education at both national and institutional levels are in many ways aligned with the goal of STEM literacy, there is a clear discrepancy between the vision and mission inherent in STEM literacy and the pedagogical approaches and the curriculum materials used in STEM education. In reality, STEM teaching and learning remain constricted by a silo mentality. The implementation of the CQF and the credit system has yielded mixed results, with most HEIs offering courses based on prescriptive curricula with few options or little flexibility for learners. The implementation of integrative STEM education in Cambodia faces several challenges, as elaborated below:

Traditional teacher-centred approach

One-way face-to-face classroom lectures still dominate Cambodian higher education, with teachers regarded as the sole repositories and dispensers of knowledge. There is little interaction between students or between students and teachers at many HEIs, generating a submissive graduate workforce rather than one with the key competencies for the 21st century – collaboration, creativity, critical thinking and communication (the “Four Cs”). A constraint on STEM graduates’ creativity and innovation is their lack of exposure to the arts and humanities – a consequence of the rigidity of the curriculum and limited interdisciplinarity. Relatively few universities have successfully adopted the academic credit system, which is aimed at providing options and flexibility for students in both core and elective courses. Course selection at most HEIs therefore remains prescriptive by nature. Even the foundation year programs are seen simply

as a bridge between high school and university, rather than the added value of interdisciplinarity between science and arts/humanities. Indeed, many employers complained about graduates' lack of soft skills, including team spirit and communication. According to some, it usually takes graduates at least three to six months to adjust to the workplace.

Another issue highlighted by the study is the scant professional development opportunities for academics across Cambodian HEIs. As a result, few instructors have adopted new approaches such as project-based learning or internship in their programs, even though such learning pathways are made explicit in the CQF. Also, many instructors were locally and traditionally educated and therefore had little to no experience of student-centred approaches themselves. On becoming instructors, they simply adopted the same conventional teaching-learning approaches.

Little integration of information and communication technology

While the world is becoming increasingly digitalised, with Industry 4.0 and artificial intelligence looming large, information and communication technology (ICT) remains on the margins in curricula and in the operations of HEIs. In addition to insufficient resources, many faculty members had no prior training in using digital teaching platforms. This is concerning because digital illiteracy is preventing faculty members and students from accessing a wealth of online resources. It is also undermining Cambodia's efforts to widen access to higher education for the general public, 70 percent of whom are under the age of 30, even though half of the population owned smartphones as of 2016 (Phong, Lihol and Sola 2016).

Obsolete and discipline-based content

The contents of STEM majors in Cambodia are very much discipline-based, with students mainly oriented towards acquiring the technical skills required in their career field. The contents of a number of majors, including mathematics, physics, biology and chemistry, were outdated. In almost every discipline, the instructors used only locally produced textbooks compiled by adapting materials and contents designed for use in a foreign teaching environment, supplemented by imported foreign-language textbooks. This is a root cause of the

irrelevance of curriculum content to the fast-changing labour market and to society at large. In addition, many faculty members who participated in the study had limited exposure to research, and therefore had limited capacity for engaging in curriculum renovation. Even those with research experience had barely updated their courses, largely due to their teaching workload either at one or many HEIs – a persistent issue omnipresent in developing countries.

Poorly equipped libraries and laboratories

Most HEI libraries are under-resourced, with books mainly donated by development partners and charitable organisations. The irrelevance of such study materials to the local reality is one of the main challenges besetting national efforts to promote reading and research culture. This is not to mention the lack of reading culture in Cambodian society in general and among students in particular. The students interviewed for the study reported using the library just once or twice a week, particularly when their regular classes were cancelled. Furthermore, the teaching and learning of science is severely handicapped by the lack of modern and state-of-the-art laboratories, with serious implications for the country's socioeconomic development.

Compromised quality of STEM programs

Access to STEM education is a complex issue. Government efforts to promote student interest in these disciplines have compromised education quality, particularly in the private sector. At high school, the majority of students opt for the science stream but, when it comes to higher education, the opposite holds true. At university, the majority of high school graduates, including talented maths and science students, select social science majors. To expand access to higher education and address enrolment issues, many HEIs have lowered their entry requirements, attracting both highly qualified and poorly prepared students. To accommodate the wide range of abilities, HEIs have to modify their STEM programs and curriculum contents, which can compromise the quality of STEM education.

Recommendations

The discussion has highlighted the complex issues relating to the development of STEM literacy in Cambodia and pinpointed the crux of the matter: how Cambodia can in the short term provide quality

education and in the long run, produce well-rounded graduates as responsible citizens and key enablers to realise its vision of becoming an upper-middle-income country by 2030 and a high-income country by 2050. From our findings, we propose five key recommendations for Cambodia to achieve STEM literacy:

STEM literacy for Cambodia. STEM policy has to be revised to incorporate sociocultural dimensions into its vision. Innovative and progressive pedagogy, with the support of ICT, needs to be integrated into STEM programs, but with adaptation and adjustment to ensure the right fit with the Cambodian social system. The review of STEM content has to be conducted by all HEIs and should engage faculty members, employers, students and their parents.

Centres for excellence. Each HEI has to develop a centre for teaching and research excellence, with its mandate to support faculty members and administrators in integrating innovation, ICT and critical pedagogy in teaching and learning STEM. Not only will international best practices and lessons be shared among them but also research on the practical challenges facing teachers in the classroom will be conducted. These centres will play a role in initiating outreach programs that provide students opportunities to apply their knowledge in a real-world setting, bridging the gap between school and workplace.

Science park. This will provide a space for collaboration between the government, industry and HEIs in the promotion of science and innovation in Cambodia. It will manage the flow of knowledge and ideas emanating from university research to the private sector for commercialising research and developing products. Properly managed, the science park will allow Cambodia to develop high-tech industry, as demonstrated in many developed and emerging economies.

A supportive ecosystem. STEM needs a healthy and supportive higher education ecosystem. To enable cross-disciplinary STEM teaching and learning, HEIs and the government have to strengthen such programs as the foundation year and provide more courses in arts and humanities for STEM students. New courses need to be created and integrated into

existing programs, including entrepreneurship, so that STEM graduates become job creators, not just job seekers. Taking this a step further, certain non-STEM courses should be compulsory for STEM students before they can graduate.

Professional development training for support and teaching staff has to be initiated and institutionalised. Such approaches as project-based learning would not be possible without support from open-minded and well-informed administrators, through motivating instructors, establishing a system of collaboration and providing them with necessary resources. Student support services of all kinds are needed, including libraries, dormitories, counselling, employment and careers advice. This means HEIs should begin to look at the development of students as whole human beings, rather than just consumers of skills.

STEM for the bright mind. Although student interest in STEM should be promoted, STEM has to be for the best and the brightest, with strong science and maths backgrounds as prerequisite. Poor doctors can cause needless deaths just as mediocre engineers can cause buildings to collapse. Various measures to attract bright students to STEM majors need to be established by HEIs in collaboration with high schools. These range from regular talks by successful scientists (role models) to national science and innovation competitions.

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Gender Analysis of Survey on Cambodia's Young and Older Generation: Family, Community, Political Knowledge and Attitudes, and Future Expectations

Introduction

Cambodia, following more than two decades of impressive economic performance and development, is fast becoming one of Asia's new tiger economies. It has achieved impressive rapid economic development over the last 20 years, sustaining robust GDP growth of over 7 percent, scaling up and improving infrastructure, and making remarkable progress in poverty reduction. Consistent socioeconomic performance is paving the way for rapid urbanisation, which along with demographic change, improved access to better quality education, and widened internet coverage and use, is significantly shaping and changing Cambodian citizens', especially women's, perceptions, thoughts and behaviours.

Without doubt, women have contributed importantly to Cambodia's reconstruction, economic development and future prospects. It is not surprising then that accelerating gender equality and the empowerment of women often top the agenda of development projects, especially those led by international and local NGOs. Women's empowerment and gender equality have long been at the heart of government, as evident in the establishment of the Ministry of Women's Affairs in 1993. Yet, although Cambodia is a matrilineal society and women play active roles in both family and social life, women abilities and opportunities to influence decisions in household, community and politics sphere remains challenging (Baudinet 2018, 6; MOWA 2014; Thon 2017, 32).

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This article summarises a gendered analysis (Un, Saphon and Sok 2019) of the results for the nationally representative survey conducted by CDRI's Governance Unit for the research study "Cambodia's Young and Older Generation: Views on Generational Relations and Key Social and Political Issues" (Eng et al. 2019). Gender analyses and studies generally focus on the situation of women or women's perceptions of certain issues, assuming all women are the same. What makes this gender analysis unique is that instead of treating women as a homogenous group, it examines the interactions and relations and the factors explaining differences between women, and between women and men, by disaggregating data across different attributes. The aim was to examine whether or not women with different attributes have different perceptions about certain issues.

The study – method and data

The survey was conducted from October 2017 to January 2018 and administered to 1,600 Cambodian citizens in 101 (72 rural, 29 urban) villages in five provinces and Phnom Penh (Eng et al. 2019). The sample frame comprised 957 female and 643 male respondents classified into two groups: young people or youth (aged 16–30), and older respondents (30–65). The former constituted 24.9 percent and the latter 75.1 percent of the total sample. The survey questionnaire comprised 101 questions divided into six sections covering demographics, identity and values, trust and respect, outlook, political participation, and the media.

The gendered analysis (Un, Saphon and Sok 2019) drew on the survey responses as sole primary data, classifying them into four broad themes: family, attitudes towards community, political knowledge and attitudes, and future expectations. Responses under each theme were clustered under several subthemes and coded by seven attributes (Tables 1 and 2).

Table 1: Main themes and subthemes

Main theme	Subthemes
Family	Generation gap Decision making in the family Decision making about marriage
Attitudes towards community	Social and institutional trust Caring for country Community participation
Political knowledge and attitudes	Gendered perspectives on leadership Social and political participation Concern about social issues and services
Future expectations	Direction the country is taking Personal prospects

Table 2: Data coding

Attribute	Measure
Age	Youth or young people (16 to 30 years old) Older adults (30–65 years)
Place of residence	Phnom Penh Non-Phnom Penh
Educational attainment*	Basic education or lower Higher than basic education
Marital status	Single Non-single (married, cohabiting)
Employment type	Paid employment Unpaid employment
Mobility	Migrant worker Non-migrant worker
Internet access	Internet users Non-internet users

Note: * These categories were chosen because the Cambodian Constitution defines basic education as nine years of schooling, yet the mean years of schooling in the country is low, standing at 4.8 in 2017 (hdr.undp.org/sites/all/themes/hdr_theme/country-notes/KHM.pdf).

Crosstabulation of data on the seven selected attributes generated a huge number of tables. The following criteria were therefore used to identify the most pertinent results:

- Relevance of the survey questions to the four themes selected for study.
- Percentage differences between the responses against each attribute. Differences were ascertained with statistical testing, data allowing; otherwise, a 10 percent difference was used as the threshold.
- Frequency with which the same or similar questions have been raised, discussed and prioritised by government agencies, scholars, research surveys and studies.

The findings

The results indicate that the selected attributes engender women into different types of person and have an important influence on women's social and political participation and perceptions. This finding has critical implications for gender policy and practice, and indeed future research, in that any attempt to empower women and promote gender equality and equity that treats women as a homogeneous group will likely fall short of expectations.

Family

Generational gap: Demographic change due to the baby boom after the Khmer Rouge period combined with improvements in education, access to media, and urban multi-cultural lifestyle has brought about a generational gap. The majority of respondents recognised that their generation is very different from other generations, with just over half of them agreeing that it is acceptable for young people to disagree with their parents. Among female respondents, the higher percentages of perceptual differences were found among Phnom Penh residents, those with higher than basic education and internet users.

Decision making in the family: The generation gap not only affects who should make certain decisions, but also what and why such decisions must be made. Although parents still take responsibility for decision making, young people are increasingly perceived to be responsible for making their own life decisions about education, employment and marriage. For instance, parental decision making about their children's education remains significant, whereas parents are less involved in decision making about their children's employment. Again, among female respondents, the higher percentages of perceived youth decision-making authority were found among Phnom Penh residents, those with higher than basic education and internet users.

Marriage: Marriage is highly valued and desired in Cambodian society as it represents the only acceptable and respectable step towards forming a family or entering parenthood. Living together before marriage is therefore neither widely valued nor considered acceptable, with about 80 percent of female respondents stating that couples should not live together before marriage. Almost all female respondents thought it very important to marry and

have a family, and just over half of them considered it extremely important. That is not to say that this traditional way is not being challenged, however. Among the female respondents who agreed with the idea of couples living together before marriage, Phnom Penh residents (18.7 percent) outnumbered non-Phnom Penh residents (11.5 percent); and, somewhat surprisingly, older women (13.8 percent) outnumbered younger women (9.8 percent).

Attitudes towards community

Social trust: Social trust is as important to a country's socioeconomic outcomes (e.g. economic growth and life satisfaction) as capital investment, physical infrastructure and skills development. In the 2003–06 Asia Barometer Survey of 29 countries, Cambodians reported the lowest level of social trust (Tokuda, Fujii and Inoguchi 2010). This is largely the legacy of almost three decades of war, successive authoritarian regimes, the impact of the Khmer Rouge (Zucker 2013; Scheer 2017), and corrupt services delivery during post-conflict reconstruction (Baker and Milne 2019). Encouragingly, the survey results shown in Table 3 indicate moderately high to high levels of trust in schools and hospitals, local institutions, the media, police and courts, and politicians, though to different degrees. Notably few respondents selected the statement “I do not trust any of these institutions or people”.

Table 3: What or who do you trust most? (percent) (N=1,600)

	Male	Female
Hospitals/schools	89.4	92.3
Local institutions	87.5	88.7
The media	77.5	75.6
Police/courts	71.4	78.3
Politicians	65.7	65.6
I don't trust any of these	3.8	2.8

Despite remarkable successes, Cambodia is still a developing country and relies on support from civil society institutions and international development partners. The positive impact of civil society institutions, especially NGOs, in Cambodia is undeniable. But, as many observers claim, their presence is not without controversy (Domashneva 2013). There may be some truth in this as surprisingly few female respondents, even

better educated and Phnom Penh residents, felt they could completely trust the development workers in their community. Notably, a high proportion of women across all attributes said they “somewhat trust/somewhat distrust” development workers. This is a serious concern given that Cambodia has the second highest number of active NGOs per capita in the world (Domashneva 2013).

Caring for country and community participation: Just over half of the female respondents said they care about their community and country. Disaggregation by attribute shows that more older women (59.3 percent) and non-Phnom Penh residents (58.4 percent) care about their country than younger women (48.6 percent) and Phnom Penh residents (47.6 percent). Care does not necessarily translate into active community and social participation, however, especially among female respondents residing in Phnom Penh, those with higher than basic education and non-internet users. In fact, participation is mostly passive. The majority of women who had joined in local events did not speak or ask questions even though, as most of them claimed, they were not afraid to do so.

Political knowledge and attitudes

Gendered perspectives on leadership: The empowerment of women is strongly promoted in Cambodian society and significant behavioural change is observed, yet gender stereotypes and social norms and attitudes still pose barriers for women and women are still under-represented, especially in decision-making positions. Masculinity remains strongly embedded in Cambodian society and is respected by both male and female respondents as the privileged gender norm and behaviour. Perhaps the most difficult challenge to address in this respect is not social discrimination against women per se, but women's acceptance of being socially objectified and stereotyped (Saphon 2015). More female than male respondents agreed that men make better political leaders than women. Similarly, more female than male respondents, especially those aged above 30 and those with basic education or lower, admitted feeling afraid to discuss political views openly.

Gender bias in education: In CDRI's survey (Eng at al. 2019), 75 percent of respondents believed women and men should be entitled to the same opportunities for tertiary education; and about 90

percent of them valued people who have completed tertiary education. However, gender bias is still evident. Even a fair number of female respondents agreed that it is better for a boy than a girl to study at university; this view was most prevalent among women older than 30 (30.3 percent), who are non-Phnom Penh residents (28.1 percent), married or cohabiting (28.1 percent).

Participation in elections: The vast majority of respondents, especially internet users, exercise their right to vote. Almost all older adults (94.3 percent of males, 92.4 percent of females) voted in the 2013 national election compared to less than half of younger adults (43.1 percent of males, 44.1 percent of females). Of those who voted, 71.5 percent use the internet. The high voter turnout in national elections can be taken to indicate that Cambodians value their right to vote, realise that voting is both an important responsibility and important to democracy, and feel their vote matters.

Voting intention: More female (25.0 percent) than male respondents (16.7 percent), and far more women aged above 30 (81.6 percent) than those aged 16–30 years (23.7 percent), were likely to always vote for the same political party in national elections. This intention is consistent with how most respondents vote, that is, based on political party rather than the candidate's credentials or other influence.

Concern over social issues and services: Among 13 different national social issues and services (infrastructure, education, health, economy and jobs, environment, poverty, landlessness and indebtedness, crime and security, corruption, political party conflict, injustice, border issues, widening wealth inequality between the poor and the rich, and migration), both male and female respondents ranked infrastructure, education, health, economy and jobs, and environment as the most important issues requiring the government's urgent attention.

Future expectations

Direction the country is taking: Most respondents believed the country to be on the right track, mainly referring to socioeconomic development. Among female respondents, 59.7 percent of those with higher than basic education compared to 72.0 percent of those with basic education or lower held this view. However, the standout finding here is the

difference internet access makes. Among female respondents, only 16.7 percent of non-internet users held this view compared to 59.0 percent of internet users.

Individuals' future prospects: A significantly higher percentage of female respondents expressed concern that gender stereotyping poses a barrier to their career success. Specifically, among female respondents, older women, non-Phnom Penh residents and those with basic education or lower consider gender stereotyping to be more of an obstacle to their success than younger women, Phnom Penh residents and those with higher than basic education.

Conclusion

Although there is much room for improvement in women's empowerment and gender equality in Cambodia, the situation of women in many aspects of life has improved markedly, not only for women themselves but also for their social participation. However, until recently, gender studies and analyses have either compared the situation of women over time or with the situation of men and have generally treated women as a homogenous group. The results indicate that different traits and experiences influence women's perceptions of and participation in socio-political issues. Therefore, any attempt to empower women and to promote gender equality and equity that treats women as a homogeneous group will fall short of expectations.

Of the seven attributes selected for study, we can conclude that age, place of residence, level of education and internet access significantly shape women's perceptions and socio-political participation. The following summarises the key findings and arising issues that warrant further attention from agencies whose mission is to empower women and promote gender equality and equity.

- Family:
 - Young people are increasingly allowed to take responsibility for making their own life decisions. *Young women who have higher than basic education, live in Phnom Penh and use the internet are more likely to challenge the traditional hierarchy in Cambodian society and conservative way of living and thinking than those who have basic education or lower, live outside Phnom Penh and do not use the internet.*

- Attitudes towards community:
 - Whether citizens' trust in national institutions and public servants can recover to that of the pre-war period remains to be seen, but the survey results suggest some positive signs. Hospitals/schools are perceived to be the most trustworthy institutions, though local institutions, the media, police/court and politicians are also seen as fairly trustworthy. *Importantly, very few respondents expressed having no confidence in any of these institutions and people.*
 - There is a large grey area around the perceived trustworthiness of development workers, reported by almost half of female respondents. *This is cause for concern given that Cambodia has the second highest number of active NGOs per capita in the world.*
 - The majority of female respondents either care or somewhat care about the country, though these sentiments apply more to older women and non-Phnom Penh residents than to younger women and Phnom Penh residents. *This issue deserves attention given that youth constitute about 60 percent of the population and the rapid pace of urbanisation in Cambodia.*
 - Caring for country does not translate into active community participation. Even among those who participated in local meetings and claimed they were not afraid to speak up, the majority did not ask any questions. *Further study to explore people's reluctance to speak at public meetings would help improve the quality of civic participation.*
- Political knowledge and attitudes:
 - Despite efforts to empower women and promote gender equality, the widespread perception that men make better leaders than women persists even among women, especially older women, those with basic education or lower, and non-internet users. More women than men find that gender is an obstacle to their success, particularly older women, non-Phnom Penh residents and those with basic education or below. *Addressing gender equality is not just a matter of dealing with men's preconceived notions about women's place, but also women's self-perceptions about their worth and role in society. Women are not only oppressed by men, but also by their internalised oppression as a subordinate group; it is the latter that remains at the heart of Cambodian society.*
 - Most respondents exercise their right to vote and are aware of the significance of their vote for the country's future. *They believe government can address their concerns about various national social issues and services, the most important to them being infrastructure, education, health, economy and jobs, and environment.*
- Future expectations:
 - The majority of respondents believe the country is on the right track, though markedly few women without internet access hold this view. *This points to the need to improve internet literacy and raise awareness and share information about certain social issues and services.*

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Economy Watch—External Environment

This section presents economic indicators of major world economies and economies in Southeast Asia during the third quarter of 2018.

Among the five selected ASEAN countries, compared to the last quarter, only Vietnam saw an increase in real GDP growth, while Indonesia, Malaysia, Singapore and Thailand experienced declines. Specifically, in Indonesia, real GDP growth decreased from 5.3 percent in the second quarter to 5.2 percent in the third quarter, though growth remained higher than in the first quarter. Growth in Malaysia has gradually eased off since the second quarter of 2017, bar a short-lived recovery to 6.2 percent in the following quarter, to 4.4 percent in the third quarter of 2018. Compared to the previous quarter, growth has declined 0.1 percent; but year on year, growth is up 1.8 percent. Singapore's GDP growth has also been on a downward trend since the third quarter of 2017, cooling from 5.2 percent to 2.2 percent by the third quarter of 2018, down from 3.9 percent a quarter earlier. Growth in Thailand has also slowed since the first quarter of 2018, from 4.8 percent to 4.6 percent in the second quarter and to 3.3 in the third quarter. Vietnam recovered from a dip in the second quarter, with growth up from 6.8 percent in the second quarter to 6.9 percent in the third quarter.

In selected other Asian countries, only South Korea achieved an increase in real GDP growth in the third quarter of 2018, from 2.9 percent in the previous quarter to 3.2 percent. China, which has the fastest growth rate in this group, experienced slower growth of 6.5 percent, down from 6.7 percent in the previous quarter. Hong Kong's growth dropped from 3.5 to 2.9 percent, and that of Taiwan declined from 3.3 to 2.3 percent.

Looking at selected industrial countries – the Euro-12, Japan and the United States – only the United States achieved growth, from 2.9 percent in the second quarter to 3 percent in the third quarter of 2018. Japan has been in recession since the fourth quarter of 2017, hitting zero growth in the third quarter of 2018. And the EU-12 have lost momentum, with economic growth sliding from 2.5 percent and 2.8 percent respectively in the third and

fourth quarters of 2017 to 1.6 percent in the third quarter this year.

World inflation

Between the first and third quarters of 2018, two of the six selected ASEAN countries – Singapore and Malaysia – saw drops in inflation, while Cambodia, Indonesia, Thailand and Vietnam experienced increasing inflation rates. At 4.5 percent, Vietnam had the highest inflation rate in the third quarter, followed by Indonesia at 3.1 percent and Cambodia at 2.5 percent. Malaysia and Singapore had low inflation rates at 0.4 percent and 0.7 percent, respectively.

All other selected Asian and industrial countries have experienced fluctuating inflation rates since the fourth quarter of 2017, except Taiwan where the inflation rate has remained stable at 1.6. The United States had the highest inflation rate, standing at 2.6 percent in the third quarter of 2018, though slightly down from 2.7 percent in the previous quarter. China and Hong Kong had the same inflation rate of 2.3 percent. South Korea and Taiwan were also level pegging with inflation rates at 1.6 percent, the difference being that Taiwan has held inflation steady, whereas South Korea has experienced several jumps in inflation from 1.2 percent and 1.5 percent respectively in the first and second quarters. Inflation rates in the eurozone and Japan increased compared to the previous quarter, from 1.7 to 2.1 percent in the eurozone and from 0.6 to 1.1 percent in Japan.

Exchange rate

There were no marked changes in exchange rates in any of the selected countries between the previous quarter and this third quarter in 2018. The USD-KHR exchange rate depreciated from 4,047.0 riels/dollar in the second quarter to 4073.7 in the third quarter. USD-THB depreciated from 31.6 to 33.0 baht/dollar, and VND also depreciated to 22,675.7 dong/dollar.

Commodity prices

Throughout the third quarter of 2018, the prices of rice and rubber showed a downward trend, whereas those of soybeans, palm oil and maize fluctuated.

Among the selected commodities, the price of rubber stayed the highest throughout the last three-quarter period, but dropped sharply from USD1,504/tonne in the first quarter to USD1,433.3/tonne in the second quarter and then again to USD1,365.2/tonne in the third. The price of rice also dropped sharply in this period. It was USD424.7/tonne in the third quarter, down from USD451.0/tonne and USD459.2/tonne in the preceding quarters. The price of maize remained the lowest. It rose from

USD163.7/tonne in the first quarter to USD173.3/tonne in the second quarter, but went down to USD157.9/tonne in the third quarter. The palm oil price dropped from USD673.7/tonne in the first quarter to USD601.0/tonne in the second quarter then recovered some ground to reach USD612.0/tonne in the third quarter. The price of soybeans declined to USD390.6/tonne in the third quarter after climbing from USD418.3/tonne in the first quarter to USD435.6/tonne in the second.

Table 1: Real GDP growth of selected trading partners, 2012–18 (percentage increase over previous year)

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Selected ASEAN countries												
Cambodia	7.3	7.4	7.1	-	-	-	-	-	-	-	-	-
Indonesia	6.3	5.8	5.2	4.8	5.0	5.0	5.2	5.1	5.2	5.1	5.3	5.2
Malaysia	5.4	4.6	6.0	4.9	4.3	5.6	5.8	6.2	5.9	5.4	4.5	4.4
Singapore	1.3	3.8	3.0	2.0	2.0	2.7	2.9	5.2	4.3	4.4	3.9	2.2
Thailand	6.7	2.8	1.6	2.8	3.2	3.3	3.7	4.3	4.0	4.8	4.6	3.3
Vietnam	5.2	5.4	5.9	6.6	6.1	5.1	6.2	7.5	7.7	7.4	6.8	6.9
Selected other Asian countries												
China	7.7	7.7	7.3	7.0	6.7	6.9	6.9	6.8	6.8	6.8	6.7	6.5
Hong Kong	2.9	3.0	2.3	2.3	1.7	4.3		3.6	3.4	4.7	3.5	2.9
South Korea	2.1	2.8	3.4	2.6	2.6	2.8	2.7	3.6	2.9	2.8	2.9	3.2
Taiwan	1.2	2.2	3.5	0.6	1.2	2.6	2.1	3.1	3.3	3.0	3.3	2.3
Selected industrial countries												
Euro-12	-0.5	0.1	0.7	1.3	1.6	1.7	2.1	2.5	2.8	2.5	2.2	1.6
Japan	1.7	1.7	0.6	0.3	0.9	1.6	2.0	1.7	2.0	1.1	1.0	0.0
United States	2.1	1.8	2.4	2.3	1.6	2.1	2.1	2.3	2.6	2.8	2.9	3.0

Sources: International Monetary Fund; *Economist*; countries' statistics offices

Table 2: Inflation rate of selected trading partners, 2012–18 (percentage price increase over previous year – period averages)

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Selected ASEAN countries												
Cambodia	3.0	3.0	3.9	1.2	3.0	4.2	2.7	2.5	2.3	2.2	2.7	2.5
Indonesia	4.3	7.0	6.4	6.4	3.5	3.6	4.1	3.8	3.4	3.3	3.2	3.1
Malaysia	1.7	2.1	3.2	2.1	2.1	4.3	4.0	3.7	1.3	1.8	1.3	0.4
Singapore	4.6	2.3	1.0	-0.5	-0.8	0.7	0.8	0.5	0.2	0.2	0.4	0.7
Thailand	3.0	2.2	1.9	-0.9	0.2	1.1	0.2	0.5	0.8	0.6	1.3	1.5
Vietnam	9.3	6.6	4.8	0.6	2.7	5.0	0.8	2.8	2.7	2.8	3.8	4.5
Selected other Asian countries												
China	2.7	2.6	2.0	1.4	2.0	1.4	1.4	1.6	2.2	2.2	1.8	2.3
Hong Kong	4.1	4.0	4.4	3.1	2.5	1.0	2.4	1.8	2.4	2.4	2.1	2.3
South Korea	2.1	1.1	1.3	0.7	0.8	2.0	2.0	2.3	1.2	1.2	1.5	1.6
Taiwan	1.9	0.8	1.5	0.6	1.4	0.8	0.6	0.8	1.6	1.6	1.6	1.6
Selected industrial countries												
Euro-12	2.5	1.4	0.4	0.0	0.3	1.8	1.2	1.4	1.3	1.3	1.7	2.1
Japan	-0.03	0.4	2.8	0.9	-0.1	0.2	0.3	1.1	1.3	1.3	0.6	1.1
United States	2.1	1.5	1.6	0.0	1.2	2.5	1.9	1.9	2.2	2.2	2.7	2.6

Sources: International Monetary Fund; *Economist*; National Institute of Statistics

Table 3: Exchange rates against US dollar of selected trading partners, 2012–18 (period averages)

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Selected ASEAN countries												
Cambodia (riel)	4037.8	4027.2	4037.6	4060.4	4053.6	4015.8	4048.2	4087.8	4036.4	4012.4	4047.0	4073.7
Indonesia (rupiah)	9363.0	10419.2	11850.2	13394.8	13338.3	13344.7	13312.8	13327.0	13534.8	13576.1	13944.6	14600.2
Malaysia (ringgit)	3.1	3.1	3.3	3.9	4.1	4.4	4.3	4.3	4.2	3.9	3.9	4.1
Singapore (S\$)	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.3	1.4
Thailand (baht)	31.1	30.7	32.5	34.2	35.3	35.1	34.3	33.4	32.9	31.6	31.9	33.0
Vietnam (dong)	20856.9	20990.3	21138.2	21917.7	22507.5	22429.1	22704.3	22732.8	22717.5	22749.5	22483.9	22675.7
Selected other Asian countries												
China (yuan)	6.3	6.1	6.2	6.3	6.6	6.9	6.9	6.7	6.6	6.4	6.4	6.8
Hong Kong (HK\$)	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
South Korea (won)	1126.6	1095.0	1053.6	1131.9	1161.0	1152.4	1129.9	1132.8	1107.0	1072.0	1079.0	1120.9
Taiwan (NT\$)	29.6	29.7	30.3	31.8	32.3	31.1	30.3	30.3	30.1	29.3	29.8	30.7
Selected industrial countries												
Euro-12 (euro)	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.9
Japan (yen)	79.8	97.6	105.9	121.0	108.8	113.7	111.1	110.9	112.9	108.4	109.1	111.4

Sources: International Monetary Fund; *Economist*; National Bank of Cambodia

Table 4: Selected commodity prices on world market, 2012–18 (period averages)

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Maize (US No. 2) – USA (USD/tonne)	298.4	259.4	192.9	169.8	159.2	160.6	157.7	148.1	148.8	163.7	173.3	157.9
Palm oil – NW Europe (USD/t)	999.3	856.9	821.4	622.7	643.6	773.0	696.3	706.3	703.0	673.7	601.0	612.0
Rubber SMR 5 (USD/tonne)	3200.7	2575.3	1755.6	1392.7	1416.1	2147.7	1568.1	1551.7	1466.0	1504.0	1433.3	1365.2
Rice (Thai 100% B) – Bangkok (USD/tonne)	594.8	533.8	434.9	395.5	406.7	537.0	431.0	411.7	422.3	459.3	451.0	424.7
Soybeans (US No.1) – USA (USD/tonne)	591.4	538.4	491.8	390.4	405.7	419.1	385.7	395.3	399.7	418.3	435.6	390.6
Crude oil – OPEC spot (USD/barrel)	109.5	105.9	96.2	49.6	40.7	52.0	47.9	52.8	59.4	64.7	71.9	74.2
Gasoline US – Gulf Coast (cents/litre)	74.6	71.2	65.6	41.0	35.2	41.0	40.3	44.4	45.0	47.9	53.3	54.1
Diesel (low sulphur No.2) – US Gulf Coast (cents/litre)	80.7	78.4	71.5	41.7	34.8	41.4	39.0	45.2	48.2	51.0	55.6	56.6

Sources: Food and Agriculture Organisation; US Energy Information Administration

Economy Watch—Domestic Performance

Main economic activities

In the third quarter of 2018, year on year total fixed asset investment approvals dropped by 55.5 percent to USD1,058.9 compared with the preceding quarter. Services plummeted 72 percent to USD605.5 m. However, agriculture was up by 48 percent to USD45.2 m from the previous quarter. Industry reached USD408.2 m, up from USD193.4 m a quarter earlier, but well below the USD488.6 m achieved in the same quarter last year.

Year on year, total international tourist arrivals expanded to 1,374,373 in the third quarter, a 12.8 percent increase from the previous quarter and a 9.9 percent increase on the same quarter last year. Tourist arrivals from China accounted for 34.5 percent of the total, followed by arrivals from Korea (32.8 percent), Vietnam (13.4 percent), Thailand (5.1 percent), Malaysia (3.3 percent), Japan (3.2 percent), US (3.2 percent), France (2.3 percent) and the UK (2.2 percent).

Total exports grew to USD3,813.7 m, showing increases of 23.1 percent year on year and 27.1 percent from the previous quarter. Garment exports increased to USD2,871 m, up 28.1 percent from the previous quarter. Compared with the previous quarter, exports to the US were up 29.6 percent to USD743.5 m, the EU by 13.8 percent to USD916.7 m, ASEAN by 0.9 percent to USD33 m, Japan by 67.4 percent to USD276.6 m, UK by 87.6 percent to USD382.5 m, and the rest of the world by 12.8 percent to USD518.8 m. Electronics exports contracted by 8.3 percent compared to the previous quarter, while automotives rose 16.9 percent. Agriculture exports grew by 28.7 percent to USD213.6 m from the previous year and by 21.8 percent from the same quarter in 2017. The main contributors to this increase were rubber, up by 63.7 percent to USD56.7 m, wood by 23.6 percent to USD36.3 m and rice by 23.5 percent to USD88.7 m. Fish exports in this quarter shrank by 27.3 percent to USD0.08 m.

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Total imports declined by 12 percent compared with the previous quarter and by 8 percent from the same quarter last year. The decline was due to a 15 percent drop in other imports compared with the previous quarter. Imports of gasoline surged 43 percent to USD87 m, of diesel 39 percent to USD162 m and of construction materials 17 percent to USD162.7 m.

Public finance

Total government revenue in the third quarter was KHR4,670.3 bn, 8 percent lower than the previous quarter but 21 percent higher than the same quarter last year. Current revenue contracted 8 percent to KHR4,625.6 bn from a quarter earlier. Tax revenue dropped 9.0 percent, while non-tax revenue rose 0.9 percent from the previous quarter.

Total expenditure escalated 25 percent from the preceding quarter to KHR5,861.4 bn, a 28 percent increase on the same quarter last year. Capital expenditure expanded 30 percent from a quarter earlier, and 44 percent from the same quarter the previous year to KHR1,978.3 bn.

The overall balance was in deficit to the tune of KHR1,191.1 bn, representing a 64 percent improvement on the same quarter last year.

Inflation and foreign exchange rates

In the third quarter, the overall consumer price index in Phnom Penh was 2.5 percent, compared to 2.7 percent the previous quarter. Prices of food and non-alcoholic beverages increased by 2.5 percent and transport prices by 3.3 percent year on year.

The riel appreciated 0.7 percent against the dollar to KHR4,046.7 compared with the previous quarter, but depreciated 2.5 percent against the Thai baht to KHR124.2 per baht and 0.9 percent against Vietnamese dong to KHR17.7 per 100 dongs.

The price of gold shrank 7.3 percent to USD146.1 per chi. Diesel price dropped 3.4 percent to KHR3,784 per litre, and the gasoline price dropped 2.9 percent to KHR4,003 per litre.

Poverty situation

This section describes the situation of vulnerable workers and garment workers based on a survey of 362 vulnerable workers in November 2018.

Compared to the same month last year, porters' daily earnings rose 6.2 percent to KHR15,454. The majority of porters had migrated to work in Phnom Penh from Prey Veng (45 percent) and Svay Rieng

(37 percent). Eighty-eight percent of them migrated alone. They were the main income earners in the family. Seventy-seven percent of their earnings was spent on food, 14 percent on rent, 1 percent on healthcare and 8 percent on others. Their income can somewhat support their family, stated 95 percent of them.

Earnings of small vegetable vendors increased to KHR21,018 per day, 31.2 percent higher year on year. They came from Kandal (25.0 percent), Svay Rieng (37.5 percent), Prey Veng (17.5 percent), Kampong Speu (2.5 percent), Kampot (5.0) and Takeo (7.5). Forty percent of them owned less than one hectare of land, 37.5 percent owned one hectare to 2.5 hectares of land, and 22.5 percent of them had no land at all. All of them were the main income earner in the family.

Scavengers' daily earnings rose by 17.4 percent from a year earlier, to KHR12,570. Sixty-five percent of them mentioned the rubbish price had increased in the last three months. Eighty-five percent of them are the breadwinner in the family and 92.5 percent of them said their income can somewhat support their family. Their income was mainly spent on food (66 percent), rent (20 percent), healthcare (2 percent) and others (12 percent).

The daily earnings of waiters/waitresses decreased by 1.8 percent compared to the same month last year, to KHR8,346. On average they have worked as waiters/waitresses for four years. Forty percent of them worked 8 hours per day, and the rest worked 14 hours per day. Of total income, 80.5 percent was spent on food, 4.0 percent on rent and 15.5 percent on others.

Ricefield workers' earnings stood at KHR8,984 per day, a 10.4 percent decrease year on year. Sixty-five percent of those interviewed were the main earner for their families. All of them reported that increases in food prices had a direct impact on their livelihood. Fifty-five percent of them said they were in debt, paying monthly interest of around 1.0 percent interest.

Daily earnings of unskilled construction workers dropped 7.3 percent from a year earlier to KHR18,900. Almost all of those interviewed cannot save enough to plan for their future. They spent almost all their income, mainly on food (77.0 percent), lodgings (9.0 percent), transport (0.1 percent), health (1.5 percent) and others (12.0 percent).

Table 1: Private investment projects approved, 2012–2018

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
	Fixed assets (USD m)											
Agriculture	531.6	930.5	56.5	169.8	117.1	8.0	54.9	-	-	99.5	30.4	45.2
Industry	829.3	3257.0	1002.5	1014.7	1436.4	115.6	265.7	486.6	114.3	259.6	193.4	408.2
. <i>Garments</i>	497.0	324.1	393.5	225.2	380.7	54.0	22.0	78.9	56.3	53.2	31.4	49.9
Services	916.6	140.7	622.6	2734.4	1664.3	7.8	1332.0	2518.8	0	110.2	2156.2	605.5
. <i>Hotels and tourism</i>	691.5	106.0	446.9	98.6	1366.9	3.6	237.2	2518.8	0	75.2	106.6	68.3
Total	2278.0	4328.0	1583.9	3918.9	3217.7	131.4	1652.6	3005.4	114.3	469.3	2380.0	1058.9
	Percentage change from previous quarter											
Total	-	-	-	-	-	-74.1	1158.0	81.9	-96.2	310.5	407.2	-55.5
	Percentage change from previous year											
Total	90.1	63.4	147.4	-67.5	-	90.1	98.8	214.5	-77.5	257.2	44.0	-64.8

Note: Including expansion project approvals. Source: Cambodian Investment Board

Table 2: Value of construction project approvals in Phnom Penh, 2009–15

	2009	2010	2011	2012	2013	2014				2015		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
	USD m											
Villas, houses and flats	-	220.1	405.1	547.3	658.9	133.6	84.0	33.1	20.4	122.3	-	637.6
Other	-	217.8	199.9	463.6	859.6	190.0	141.7	105.6	11.7	49.8	-	252.6
Total	-	489.8	605.0	1010.9	1518.5	323.6	225.7	138.7	32.1	172.0	-	897.4
	Percentage change from previous quarter											
Total	-	-	-	-	-	34.3	-30.2	-38.5	-77.8	437.3	-	-
	Percentage change from previous year											
Total	-60.5	11.0	23.5	67.1	28.1	8.0	-9.2	-64.2	-86.7	-46.8	-	-

Source: Department of Cadastre and Geography of Phnom Penh municipality

Table 3: Foreign visitor arrivals, 2012–2018

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
	Thousands											
China	333.9	463.1	560.3	694.7	830.0	273.0	362.0	206.4	369.4	505.9	425.8	509.0
Vietnam	763.1	854.1	905.8	987.8	959.7	203.4	267.3	122.8	241.9	186.8	199.9	197.7
Korea	411.5	435.0	424.4	395.3	357.2	127.7	87.7	41.1	88.6	126.1	48.5	483.9
Thailand	201.4	221.3	279.5	349.9	398.1	95.9	99.5	47.5	152.1	83.7	76.1	75.5
US	173.1	185.0	191.4	217.5	238.7	80.1	76.2	29.2	71.1	79.1	54.6	47.7
Japan	179.3	206.9	215.8	193.3	191.6	60.2	51.4	35.3	56.4	59.0	38.7	47.7
France	121.2	131.5	141.1	145.7	150.3	54.0	43.2	21.5	47.7	56.6	29.4	33.5
UK	110.2	123.9	133.3	154.3	159.5	54.6	48.2	20.6	47.7	51.2	33.7	33.0
Malaysia	116.8	130.7	144.4	149.4	152.8	37.8	53.4	31.8	56.4	44.8	41.0	49.4
By air	1722.1	2017.7	2273.5	2476.0	1995.5	921.4	684.3	777.7	929.3	2308.7	2004.1	954.8
By land or water	1862.2	2192.5	2229.3	2299.2	2331.4	581.5	475.5	472.3	760.1	1138.0	997.5	419.6
Total	3584.3	4210.2	4502.8	4775.2	4980.4	1502.9	1159.8	1250.1	1689.4	3446.7	3001.7	1374.4
	Percentage change from previous quarter											
Total	-	-	-	-	-	-0.03	-22.8	7.3	35.1	104.0	-12.9	-54.2
	Percentage change from previous year											
Total	24.4	17.5	7.0	6.1	4.3	11.9	3.9	22.7	12.4	129.3	-158.8	9.9

Source: Ministry of Tourism

Table 4: Exports and imports, 2012–2018

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
						USD m						
Total exports	6106.4	6982.4	8106.0	9256.4	10043.3	2290.7	2558.4	3098.3	2825.6	2834.6	3000.2	3813.7
Garments	5015.4	5386.1	5960.5	6827.0	7308.0	1856.3	1874.1	2290.3	1999.6	2092.1	2240.6	2871.0
. To US	2143.3	2075.2	1963.6	2009.4	1831.5	452.3	426.0	570.8	474.7	538.4	573.9	743.5
. To EU	1716.9	1969.6	2403.7	2903.9	2928.7	583.0	693.3	787.9	718.1	670.1	805.2	916.7
. To ASEAN	39.4	60.2	83.3	103.4	98.4	24.2	29.0	24.2	29.6	28.6	32.7	33.0
. To Japan	188.6	278.7	383.1	524.2	655.5	196.2	136.7	204.8	163.6	224.7	165.2	276.6
. To UK	-	-	-	-	439.8	214.2	201.6	267.0	221.2	219.5	203.9	382.5
. To rest of the world	927.2	1002.9	1126.8	1286.3	1354.2	386.4	387.6	435.7	392.5	410.9	459.7	518.8
Electronics	-	-	-	-	-	127.1	73.9	82.17	96.87	76.2	90.9	83.4
Automotives	-	-	-	-	-	1.8	6.89	1.14	1.76	11.9	13.1	15.3
Agriculture	376.7	554.5	624.4	548.8	534.1	201.0	144.2	175.4	185.9	205.9	166.0	213.6
. Rubber	176.6	175.2	153.9	165.4	165.3	66.1	65.2	71.7	70.5	52.4	36.5	59.7
. Wood	36.8	73.6	132.0	46.3	47.2	11.7	28.9	24.6	35.3	30.0	34.0	42.0
. Fish	2.0	1.2	0.8	0.5	0.6	0.2	0.1	0.1	0.2	1.0	0.1	0.1
. Rice	146.4	262.3	248.5	315.3	300.8	83.1	35.0	66.5	70.5	106.7	71.8	88.7
. Other agriculture	14.9	42.4	89.1	21.3	20.2	39.9	15.0	12.4	9.4	15.8	23.6	23.2
Others	714.4	1088.2	1520.1	1880.2	2201.2	104.5	459.3	549.3	541.5	448.6	489.6	630.4
Total imports	8593.3	8639.4	10,295.4	11494.5	15013.4	3173.5	5914.4	4303.3	3424.2	4244.5	4496.0	3976.5
Gasoline	308.0	306.4	334.7	377.3	384.8	75.1	57.5	58.3	65.8	64.9	60.8	87.0
Diesel	559.5	569.1	602.3	607.8	709.1	146.4	111.1	113.3	102.2	102.0	116.9	162.0
Construction materials	66.1	80.8	117.6	164.4	253.2	55.6	90.3	89.6	68.8	100.7	138.7	162.7
Other	7659.1	7682.6	9240.7	10345.1	13666.3	2896.4	5655.5	4042.2	3187.5	3976.9	4179.7	3564.8
Trade balance	-1341.6	-1610.9	-2184.3	-2238.1	-4470.0	-641.9	-3287.6	-1205.0	-598.7	-1409.9	-1495.9	-162.8
	Percentage change from previous quarter											
Total garment exports	-	-	-	-	-	5.6	1.0	22.2	-12.7	4.6	7.1	28.1
Total exports	-	-	-	-	-	-6.7	14.7	17.9	-8.8	0.3	5.8	27.1
Total imports	-	-	-	-	-	3.0	86.4	-27.2	-20.4	24.0	5.9	-11.6
	Percentage change from previous year											
Total garment exports	17.7	7.4	10.7	14.5	7.0	5.5	9.1	10.5	13.7	12.7	19.6	25.4
Total exports	16.1			14.2	8.5	-4.1	10.2	10.0	15.1	23.7	14.2	23.1
Total imports	19.7	21.4	19.2	11.7	30.6	14.2	-3.6	42.6	11.1	33.8	-24.0	-7.6

Note: Import data include tax-exempt imports.

Sources: Department of Trade Preference Systems, Ministry of Commerce; Customs and Excise Department, Ministry of Economy and Finance website

Table 5: National budget operations on cash basis, 2012–2018 (billion riels)

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Total revenue	7691.9	8255.2	10543.4	11879.9	14201.5	4261.9	4093.6	3870.8	4307.2	4357.6	5080.6	4670.3
Current revenue	7443.8	8233.2	10359.4	11759.0	14088.7	3261.9	4071.5	3839.2	4278.5	4344.8	5035.2	4625.6
Tax revenue	6334.8	7198.1	8995.2	10502.4	12196.5	3905.8	3580.5	3318.4	3500.0	3984.9	4425.4	4010.2
Domestic tax	5002.8	5728.1	7226.5	8591.7	10185.8	2450.0	3107.5	2844.0	2928.3	3469.8	3850.4	3424.9
Taxes on international trade	1331.7	1470.0	1822.7	1910.7	2010.7	455.8	473.1	474.4	471.8	515.2	575.0	585.2
Non-tax revenue	1118.2	1035.2	1310.3	1256.6	1892.2	356.2	490.9	520.9	778.5	359.8	609.8	615.4
Property income	143.0	84.0	88.5	77.3	116.0	17.4	35.8	39.1	34.9	7.7	130.5	12.6
Sale of goods and services	667.4	750.3	871.2	1047.1	1248.3	272.1	360.3	347.3	537.0	341.0	388.9	527.8
Other non-tax revenue	298.8	200.8	350.5	132.2	528.0	66.6	94.8	134.7	206.5	11.1	87.4	75.0
Capital revenue	247.9	73.4	184.0	121.0	113.4	0.0	22.1	31.5	28.7	12.9	45.4	44.7
Total expenditure	9660.9	12,535.7	13306.5	13849.5	13775.4	3090.9	3878.4	4420.9	5591.9	3583.2	4706.2	5861.4
Capital expenditure	3628.3	5567.5	5590.7	5290.3	3785.3	859.0	1096.0	1202.1	1785.9	812.9	1517.8	1978.3
Current expenditure	6188.4	6968.3	7715.8	8544.6	9990.1	2231.9	2782.4	3218.7	3806.0	2770.3	3188.5	3883.1
Wages	2486.6	2997.3	3755.5	4271.9	5381.7	1567.6	1515.7	1739.3	1820.2	1760.3	1911.1	2148.8
Subsidies and social assistance	1586.8	1563.0	1627.0	1742.9	1774.9	312.9	635.2	617.0	749.6	469.9	621.1	597.2
Other current expenditure	2115.1	2408.0	2333.4	2529.8	2833.5	664.3	1266.7	1479.5	1983.8	1010.0	1277.4	1734.4
Overall balance	-1969.0	-4280.6	-2763.1	-1969.6	426.1	1171.1	215.2	-550.1	-1284.8	774.5	374.4	-1191.1
Foreign financing	2457.8	4326.2	3972.1	3729.4	1878.9	598.5	960.8	640.6	894.1	401.6	1064.4	413.1
Domestic financing	-332.9	824.4	-1428.7	-2034.9	-1858.7	-352.8	-339.1	88.8	82.9	101.7	90.5	-36.3

Source: Ministry of Economy and Finance website

Table 6: Consumer price index, exchange rates and gold prices (period averages), 2012–2018

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Consumer price index (percentage change from previous year)												
Phnom Penh - All Items	2.3	3.0	3.9	1.2	3.0	4.2	2.7	2.5	2.2	2.3	2.7	2.5
- Food and non-alcoholic beverages	2.5	3.9	4.9	4.0	5.6	6.0	3.1	2.7	1.9	1.9	2.9	2.5
- Transport	3.3	-0.6	-1.0	-9.2	-7.0	4.1	4.3	3.8	4.1	3.1	3.9	3.3
Exchange rates, gold and oil prices (Phnom Penh market rates)												
Riels per US dollar	4039.2	4036.2	4060.4	4060.4	4053.7	4015.8	4048.2	4089.5	4036.4	4012.4	4047.0	4073.7
Riels per Thai baht	130.0	124.9	119.4	119.4	115.5	114.9	118.8	122.8	123.4	127.7	127.4	124.2
Riels per 100 Vietnamese dong	19.4	19.1	18.7	18.7	18.2	17.8	17.9	18.1	17.9	17.8	17.9	17.7
Gold (US dollars per chi)	200.9	175.9	152.3	140.6	151.2	145.5	150.9	154.1	155.5	160.3	157.6	146.1
Diesel (riels/litre)	4941.2	4852.1	4934.1	3771.3	3004.0	3391.6	3310.4	3369.0	3472.4	3679.0	3915.7	3784.0
Gasoline (riels/litre)	5312.7	5083.3	5155.7	3951.7	3336.8	3697.0	3625.2	3722.0	3819.7	3914.0	4120.3	4003.0

Sources: NIS, NBC; CDRI

Table 7: Monetary survey, 2012–2018 (end of period)

	2012	2013	2014	2015	2016	2017				2018		
						Q1	Q2	Q3	Q4	Q1	Q2	Q3
Billion riels												
Net foreign assets	18154.5	21260.1	26699.7	26665.5	31814.5	36490.5	40285.4	43301.5	42575.3	46707.0	49421.9	52669.4
Net domestic assets	10437.4	11508.3	15859.8	22157.6	25802.3	24057.0	24985.6	26440.4	28743.5	28457.0	29926.1	31941.8
Net claims on government	-2486.4	-2794.9	-4359.1	-6428.8	-8148.5	-9818.9	-10128.0	-10347.7	-11066.5	-12381.1	-12887.7	-12996.4
Credit to private sector	23536.6	27608.8	36244.6	46071.0	56458.8	57385.9	61189.9	63492.6	66922.6	68686.5	72464.2	77925.6
Total liquidity	28591.9	32768.4	42559.5	48823.1	57616.6	60547.4	65271.0	69741.9	71318.9	75164.0	79348.0	84611.3
Money	4045.7	4878.2	6308.4	6741.4	7273.0	7524.7	8186.1	8925.0	9428.4	9578.5	9553.9	10146.0
Quasi-money	18154.5	21260.1	26699.7	42081.7	50343.8	53022.7	57084.8	60816.9	61890.4	65585.5	69794.1	74465.2
Percentage change from previous year												
Total liquidity	20.9	14.6	29.9	14.7	18.0	19.0	19.7	22.1	23.8	24.1	21.6	21.3
Money	2.3	20.6	29.3	6.9	7.9	12.2	19.1	19.6	29.6	27.3	16.7	13.7
Quasi-money	44.6	13.6	30.0	16.1	19.6	20.0	19.8	22.5	22.9	23.7	22.3	22.4

Source: National Bank of Cambodia

Table 8: Real average daily earnings of vulnerable workers (base November 2000)

	Daily earnings (riels)									Percentage change from previous year		
	2016	2017				2018				2018		
		Feb	May	Aug	Nov	Feb	May	Aug	Nov	May	August	Nov
Cyclo drivers	11516	11092	10916	10804	10362	11042	11285	10267	10503	3.4	-5.0	1.3
Porters	14318	15171	14625	15423	14549	15123	14915	15889	15454	2.0	3.0	6.2
Small vegetable sellers	17177	18411	13980	19655	16015	18343	20999	20141	21018	50.2	2.5	31.2
Scavengers	10297	11478	12428	11754	10703	10664	13931	13288	12570	12.1	13.0	17.4
Waitresses*	7989	7905	8141	8135	8190	8226	8077	7945	8346	14.1	-2.3	1.8
Ricefield workers	8088	8332	7049	8708	8132	8774	8486	8427	8984	6.6	-3.2	10.4
Garment workers	13688	14889	12910	14299	14275	15268	14605	15316	-	3.9	7.1	**
Motorcycle taxi drivers	14509	14770	13888	14370	13895	14901	14429	15293	14637	6.6	6.4	5.3
Unskilled construction workers	17365	16664	14796	17533	20371	18082	15771	17539	18900	6.6	0.0	-7.3
Skilled construction workers	20008	21716	21924	23014	24951	25578	25025	23276	26595	14.1	1.1	6.5

Notes: * Waitresses' earnings do not include meals and accommodation provided by shop owners. Surveys on the revenue of waitresses, rice-field workers, garment workers, motorcycle taxi drivers and construction workers began in February 2000. November 2015 data are not available. **Not available. Source: CDRI

Continued from page 20 **CDRI UPDATE**

CDRI researchers his rich experience in establishing university-industry linkages and suggested some policy options and strategies for promoting similar linkages in Cambodia.

20 December, Phnom Penh

Consultative Workshop on Agricultural Technology Newsletter. The workshop was organised in collaboration with Swiss Contact to launch the quarterly *Agricultural Technology Newsletter* developed by CDRI's Agriculture Unit based on rich data collected through survey research.

RESEARCH

Agriculture

The team is implementing seven projects. The project *Testing Innovative Mechanisms for Agricultural Extension in Cambodia*, funded by the International Food Policy Research Institute, concluded with a national dissemination workshop in December. Data analysis and report writing for the Sida-funded project *On-farm Food Safety in Horticulture in Cambodia: The Case of Vegetable Farming* are pending. In December, the team organised a consultation workshop to gain inputs for a new quarterly *Agriculture Technology Newsletter*, which CDRI is developing with technical support from Swisscontact Cambodia. Pilot testing to finalise the survey tools for *Mango Value Chain Analysis*, a Sida-funded study, was carried out satisfactorily. Work started on three new projects: *Economic Returns to Investment in Education and Technical Vocational Education and Training for Youth Employability and Entrepreneurship Development in Cambodia*, funded by the United Nations Development Programme; *Migration, Remittances and Child Schooling in Rural Cambodia*, funded by the Partnership for Economic Policy; and *Mid-Term Performance Evaluation of HARVEST II (Helping Address Rural Vulnerability and Ecosystem Stability)*, funded by the United States Agency for International Development in partnership with Mitchell Group, Inc.

Economics

Fieldwork for the project *Contribution of Vocational Skills Development to Inclusive Industrial Growth and Transformation: An Analysis of Critical Factors in Cambodia* with around 110 companies started in October and is expected to complete in January 2019.

A two-day Research Methodology Training Workshop for the project *Agricultural Trade between China and Mekong-Lancang Countries: Value Chain Analysis* was held in October. The training, which focused on research design and tools for value chain analysis, was provided by Dr Raymond Trewin from the Crawford School of Public Policy at the Australian National University, with guidance from Dr Jayant Menon, Chief Economist at the Asian Development Bank. Fieldwork for a joint project with the Environment Unit on *Human Response to Environmental Change in the Lower Mekong River Basin*, supported by the Center for International Social Science Research, University of Chicago, started in the first week of December.

Two projects were concluded in December 2018: *Mekong-Lancang Cooperation and the Development of Regional Textile and Apparel Value Chains*, and *Poverty Dynamics: Cambodia Country Case Study*. A desk study on *Industry 4.0: Prospects and Challenges for Cambodia's Manufacturing Sector* was also concluded and published as a CDRI research brief in November 2018. The team also designed a research study on *Street Vendors, Youth Employment and Poverty Reduction* under the Sida-funded five-year program on Industrial Development, Human Capital and SME Development in Cambodia. A new grant agreement for a study on *The Impact of ASEAN-China Free Trade Area on Agri-business Development in Cambodia* was signed between CDRI and the Economic Research Institute for Industry and Trade in Laos.

A senior economist presented research findings on *Vocational Training and Labour Market Transition: A Randomized Experiment Among Cambodian Disadvantaged Young Adults* at an international workshop on Gender, Inequality and Work in Southeast Asia: Promoting Equality in a Changing Work Environment, organised by Canada's International Development Research Centre in November in Bangkok, Thailand.

Education

Data collection for the study *Mapping the Diversity of Higher Education Institutions (HEIs) in Cambodia* started in late November, after the second consultation meeting held at the Directorate General of Higher Education on 22 October. The study is funded by Australia's Department of Foreign Affairs and Trade (DFAT). Its objectives are to promote discussion among scholars, educators, HEI leaders, policymakers and the public; to generate research evidence and have it used by policymakers and other stakeholders to improve Cambodia's higher education system; and to set a baseline for the classification and eventually the ranking of Cambodian HEIs. The findings will be documented in a CDRI working paper. The Sida-funded project on *Social Entrepreneurship and Innovation in Higher Education* is at the data analysis and report writing stage.

Building on the Public-Private Partnership (PPP) Forum held in August, the unit organised a high-level PPP retreat on 24–25 October in Kep province for 15 selected senior representatives from private firms and training centres from different local regions. The purpose of this retreat was to discuss future business development in key sectors, and skills demand and workforce training to support business growth and economic transformation through Industry 4.0.

The third steering committee meeting for the research program *Higher Education Policy Research and Influencing in Cambodia* was organised on 14 December. The committee, which comprises representatives from CDRI, DFAT, Ministry of Education, Youth and Sport, and the Swedish International Development Cooperation Agency, discussed the overall progress of the program and explored future research collaborations.

The team arranged a one-day training workshop on Science Communication Skills on 21 December. The training, which was delivered by two experts from the Institute of Technology of Cambodia, provided junior and senior researchers with hands-on practice of how to communicate effectively with different stakeholders.

Environment

The project team for *Empowering Women on Climate Resilience in Cambodia* organised four

provincial stakeholder consultation meetings. Ten local women's networks received small grants from the project to implement locally appropriate community-based climate change adaptation measures, which with project support they had designed themselves.

The project *Human Response to Environmental Change in the Lower Mekong River Basin* is making good progress. The team conducted six focus group discussions and 30 individual surveys in Phnom Penh with migrant workers from riparian flooded villages. The draft report for *Climate Change Adaptation and Disaster Risk Reduction*, a Sida-funded project, is being revised based on further comments from an external consultant and project team members.

The research teams for the regional project *Contract Farming in the Mekong-Lancang Region* are undertaking fieldwork in their respective countries. CDRI's team, in collaboration with the Department of Agro-Industry (DAI) of the Ministry of Agriculture, Forestry and Fisheries (MAFF), has interviewed farmers, companies, NGOs, development partners and senior government officials. CDRI and DAI-MAFF will co-host a national consultation workshop, which will be presided over by the Minister of Agriculture, Forestry and Fisheries, on 10 January 2019. The project *Impact of Climate Change Programs in Cambodia: Vulnerability, Poverty, Gender and Human Rights* is at the preparatory stage, with arrangements being made for field reconnaissance in Kampong Cham and Kampong Thom provinces, a steering committee meeting, and an inception meeting to engage stakeholders at all levels.

Governance

The team completed a draft working paper in English on *Cambodia's Young and Older Generation: Views on Generational Relations and Key Social and Political Issues*. A researcher attended a workshop on Evolving Dynamics of Civil Society Organisations at Gadjah Mada University in Indonesia from 28 October to 2 November. Associate Professor Cesi Cruz from the University of British Columbia delivered a one-day training course on quantitative methods for gender analysis of our youth survey data.

CDRI Update

MAJOR EVENTS

22 October, Phnom Penh

Improving diversity in Cambodian higher education. CDRI's Education Unit has been working with the General Directorate of Higher Education (GDHE) of the Ministry of Education, Youth and Sport to map diversity in learning and teaching at higher education institutions across the country. Education researchers and GDHE representatives discussed preliminary findings and policy insights from the mapping exercise at a validation workshop. The workshop was opened by CDRI's executive director (ED).

30 October - 1 November, Phnom Penh, CDRI

Intensive short course on research methods for value chain analysis. The training was delivered by Dr Jayant Menon, project advisor and a former senior economist at the Asian Development Bank. The aim was to build the research team's skills and support their activities for the project Agricultural Trade between China and Mekong-Lancang Countries: Value Chain Analysis.

1–2 November, Xi'an City, Shaanxi province, China

Seminar on Rules and Standards Connectivity within the Belt and Road International Cooperation. The seminar brought together around 50 delegates from China, countries located along the corridors of the BRI, and international

organisations to discuss issues related to anti-corruption conventions, sustainable financing, environmental protection and management, ethical and responsible corporate behaviour, and further cooperation on BRI rules and standards. CDRI's ED served as a panel discussant.

6 November, Phnom Penh, CDRI

CDRI officially opens its new China Studies Centre. Present for the inauguration were distinguished guests Mr Li Jie, Counsellor of the Embassy of China in Cambodia, Dr Mey Kalyan, Chairman of CDRI's Board of Directors and senior advisor to the Supreme National Economic Council, and representatives from the Swedish International Development Cooperation Agency, Swiss Agency for Development and Cooperation, Australia's Department of Foreign Affairs and Trade, Royal University of Agriculture and Institute of Technology of Cambodia. The vision of the China Studies Centre is to become a high capacity, professional and influential centre for China studies in Cambodia.

12 December, Phnom Penh, CDRI

University-industry dialogue on research, inventions and innovations. The guest speaker at the seminar was Professor Fred Boey, Deputy President (Innovation and Enterprise) of the National University of Singapore. He shared with

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