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PERCEPTION OF MEDICAL PROFESSIONALISM AT THE UNIVERSITY OF HEALTH SCIENCES, CAMBODIA

Introduction

Healthcare quality is on the national agenda. The Ministry of Health, the Medical Council of Cambodia, the public, development partners and NGOs working in the health sector have expressed great concern about the quality of medical education and the quality of healthcare delivered in the country. A policy roundtable on Medical Professionalism in Cambodia co-organised by the Cambodia Development Resource Institute (CDRI) and the National Institute of Public Health (NIPH) in August 2015 identified challenges and solutions for improving medical practices in Cambodia. Notably, support for medical schools to enable faculty to strengthen the ethics curriculum and train medical practitioners and students in ethics and professionalism was brought to the fore.

CDRI, in partnership with the Faculty of Medicine at the University of Health Sciences (UHS), has carried out action research to assess the self-reported level of medical professionalism among medical students and medical faculty at UHS (Chhim forthcoming). The study was based on the assumption that a high standard of medical ethics education in medical schools will lead to better professional conduct, better patient experience and



Most medical students would rather work in the public sector than the private sector.
Phnom Penh, Dec 2018

better health outcomes. This raised two questions: What is the level of understanding about medical professionalism among medical students? How is medical ethics taught at UHS?

The project aimed at drawing attention and providing educational resources for Faculty of Medicine leadership and medical educators to update the deontology (medical ethics) curriculum. The overall objective was to improve UHS students' knowledge and attitude towards deontology. The

In this Issue

Perception of Medical Professionalism at the University of Health Sciences, Cambodia	1
Special Economic Zones as a Tool for Accelerating Economic Growth: A Literature Review	7
Economy Watch – External Environment	11
– Domestic Performance	13
CDRI Update	20

Prepared by Dr Chhim Sarath, DPH MSc MDS, research fellow in the Health Unit, with researchers from the University of Health Sciences. This project was funded by GlaxoSmithKline (Cambodia) Co., Ltd. Citation: Chhim Sarath. 2018. "Perception of Medical Professionalism at the University of Health Sciences, Cambodia." *Cambodia Development Review* 22 (1): 1–6.

specific objectives were (1) to assess medical students' knowledge and attitudes towards deontology, and (2) to identify medical lecturers' perceptions and experiences of teaching deontology. This article provides a summary of the research findings, which can be used as educational aid to remind medical students about their obligations towards the population's health.

Background

Cambodia has put a lot of effort into various health sector reforms since the mid-1990s. Health system performance and the health status of the population have significantly improved. The country also met or exceeded most of its health-related Millennium Development Goal targets. Having made impressive strides towards universal health coverage and expanding access to essential services, policy focus has now turned to healthcare quality, with more attention paid to medical education and practice.

Aware of declining public confidence in the Cambodian healthcare system, the Ministry of Health has introduced measures designed to improve the quality and increase the accountability of individual practitioners and institutions. Those measures include Health Strategic Plan 3 2016–20 and the Cambodia-WHO Country Cooperation Strategy (WHO 2016). Public spending on health has increased, and a new Royal Decree on Implementation of Medical Profession Law was issued in 2016. The latter represents an important step towards reinforcing good medical practice at a time when some physicians in Cambodia are influenced by financial interests. The Medical Council of Cambodia subsequently developed legislative framework to strengthen the regulation of health professions.

Ethics education at medical school and enforcement of professional ethics by medical governance bodies should ensure proper medical practice and a standard of conduct that maintains public trust and confidence in doctors and healthcare services. But healthcare-seeking behaviour in Cambodia suggests otherwise, with three times as many people choosing the private sector over the public sector (67 percent versus 22 percent) for initial treatment, according to Cambodia Demographic and Health Survey

2014 (NIS 2015).¹ Anecdotal reports suggest that hundreds of thousands of Cambodians seek health screening and treatment, even emergency care, in Thailand, Vietnam or Singapore: 24 percent (336, 000) of outbound Cambodian tourists in 2016 visited Thailand and 30 percent (420, 000) visited Vietnam for medical purposes (AKP 2017 cited in Marady and Huaifu 2017, 2). According to Cambodia-WHO, shortage of well qualified and motivated health workers in both the public and private sectors adds to the challenges of providing acceptable quality of care (WHO 2016, 20).

Practitioners' professionalism forms the basic contract between doctors and society. Cruess (2006, 170) describes this as a social contract where "society's expectations of medicine are the services of the healer, assured competence, altruistic service, morality and integrity, accountability, transparency, objective advice, and promotion of the public good". That there is a marked deviation in the implementation of this contract in Cambodia has become a matter of great concern to medical practitioners, policymakers and especially the public. This underscores the importance and timeliness of our research, the results of which confirm that reviewing and improving the medical ethics in Cambodian medical schools will promote the ethical and professional conduct of medical students and assure a common standard of entry to the profession.

Concept of medical professionalism

Professionalism is defined variously in the literature (see, for example, Passi et al. 2010; Tallis 2006), and can be summarised as "the foundation of trust on which the doctor-patient relationship is built" (Ahadi et al. 2015, Abstract) and "in medicine requires the physician to serve the interests of the patient above his or her own self-interest" (ABIM 1995, 5). More specifically, "professionalism aspires to altruism, accountability, excellence, duty, service, honor, integrity and respect for others" (ABIM 1995, 5).

Similar concepts are encompassed in the works of Tallis (2006), Mueller (2009) and the Accreditation Council for Graduate Medical

¹ Based on a sample of 9,656 (7,902 rural, 1,755 urban) ill or injured people seeking treatment.

Table 1: Core attributes of medical professionalism as commonly defined in the literature

ABIM 1995	Tallis 2006	Mueller 2009	ACGME 2007	Mueller 2015
<ul style="list-style-type: none"> • Altruism • Accountability • Excellence • Duty • Honour • Integrity • Respect for others 	<ul style="list-style-type: none"> • Altruism • Excellence • Teamwork • Integrity • Compassion • Continuous improvement 	<ul style="list-style-type: none"> • Altruism • Accountability • Excellence • Integrity • Compassion • Empathy • Sound medical ethics • Effective communication • Clinical competence 	<ul style="list-style-type: none"> • Altruism • Accountability • Excellence • Integrity • Respect • Compassion • Sound ethics • Responsiveness • Sensitive to diversity 	<ul style="list-style-type: none"> • Altruism • Accountability • Excellence • Humanism • Sound medical ethics • Effective communication • Clinical competence

Education (ACGME 2007),² as shown in Table 1. *The Physician Charter*, a joint work of American and European boards of medicine (ABIM, ACP-ASIM and EFIM 2002), established three fundamental principles and 10 professional responsibilities (Table 2). These attributes of medical professionalism have since been validated in various countries across the globe. The American Board of Internal Medicine (ABIM 1995, 6–9) describes seven signs and symptoms of unprofessionalism that weaken the core elements of professionalism (Table 3). ABIM emphasises that these unprofessional or unethical behaviours erode public trust and breach standards for ethical conduct.

In summary, all these elements of medical professionalism are encompassed in Cambodia's Sub-decree on the Code of Medical Ethics (RGC 2003), as well as the Oath of Allegiance of Medical Professionals, which all medical students take before they embark on their studies and all newly qualified Cambodian doctors take on registering as a physician (RGC n.d.).

Methods and data analyses

This was a cross-sectional mixed methods study combining qualitative and quantitative data analyses. Qualitative and quantitative data were collected concurrently. The setting for this study was the Faculty of Medicine, UHS, Phnom Penh.

² The Accreditation Council for Graduate Medical Education (ACGME) of the US is an independent, not-for-profit, physician-led organisation that sets and monitors the professional educational standards essential in preparing physicians to deliver safe, high-quality medical care to all Americans.

Table 2: The Physician Charter on Medical Professionalism

Fundamental principles

1. Primacy of patient welfare
2. Patient autonomy
3. Social justice

Professional responsibilities

Commitment to:

1. Professional competence
2. Honesty with patients
3. Patient confidentiality
4. Maintaining appropriate relations with patients
5. Improving quality of care
6. Improving access to care
7. A just distribution of finite resources
8. Scientific knowledge
9. Maintaining trust by managing conflicts of interest
10. Professional responsibilities

Source: Mueller 2015

Table 3: Seven signs and symptoms of unprofessionalism

1. Abuse of power (e.g. bias, sexual harassment, breach of confidentiality)
2. Professional arrogance
3. Greed
4. Misrepresentation (e.g. lying and fraud)
5. Impairment (e.g. mental health)
6. Lack of conscientiousness
7. Conflicts of interest (e.g. self-referral, acceptance of gifts)

Source: ABIM 1995

Data collection took place in December 2017 through to January 2018.

The qualitative component involved in-depth key informant interviews (KIIs) with 23 faculty members including the dean and vice-dean, representatives of the Medical Council of Cambodia, and lecturers in various disciplines spanning gynaecology and obstetrics, medicine, surgery, paediatrics and deontology. The KIIs were designed to capture information about perceptions and experiences of the Cambodian healthcare system and the teaching of deontology at the Faculty of Medicine, UHS.

The quantitative component entailed a cross-sectional survey, which was administered via face-to-face interviews to 110 year-5 students and 126 year-6 students randomly selected from a total of 625 students (319 year-5 and 306 year-6). The year-5 students had not started the deontology course and the year-6 students had completed it. The survey comprised 22 statements designed to capture their level of understanding about medical professionalism using a five-point Likert scale. Participants were asked to indicate their level of agreement or disagreement with each statement using the following ratings: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree.

The survey questionnaire and interview questions were developed based on a literature review of the core elements of medical professionalism, namely: altruism, communication, commitment to excellence, patient autonomy, duty, beneficence and non-maleficence, accountability, professional responsibility, respect, justice, self-improvement and adaptability. For non-professionalism, we included statements to assess participants' understanding about conflicts of interest.

Thematic analysis was carried out on the KII transcripts to obtain a holistic picture of key informants' responses, perceptions and opinions. Descriptive statistics were generated from the survey data to describe students' characteristics and to identify the frequency and distribution of responses. The chi-square test was used to determine whether or not differences, if any, in the distribution of responses between year-5 and year-6 students were significant.

The findings

Students' understanding of medical ethics

When asked about their preferred work setting, 95 percent of the surveyed students would rather work in a clinical hospital environment than in public health or healthcare management. Similarly, 95 percent of them would rather work in the public sector than the private sector. Year-5 and year-6 students showed a similar level of understanding.

Table 4 gives the distribution of total mean scores for all 22 responses, which range between 77 and 107 (compared to minimum-maximum values of 22 to 110). The sums of the ratings of 25 percent of all students lie between 77 and 88, indicating a somewhat negative to neutral attitude towards professionalism, while those of 50 percent of students fall between 89 and 97, indicating a somewhat positive attitude towards professionalism.

Table 4: Distribution of total mean scores for 22 responses

	Percentile (%)					Mean (SD)
	Minimum	25	50	75	Maximum	
Average rating	77	88	93	97	107	92.37 (6.68)

Note: SD=standard deviation.

Sixteen (73 percent) of the 22 statements covered the attributes of altruism, respect, accountability and duty, patient autonomy, communication and commitment to excellence. The mean scores of 4.00 to 4.98 (out of 5) for those statements indicate high to very high levels of understanding among the students. In contrast, the mean scores of 3.1 for the statement "doctors must not harm patients" and 2.71 for "students must recognise the limits of their competence" point to low levels of understanding. The lowest mean score of 2.46 goes to conflict of interest. Students' ratings of the last three items suggest the potential for unprofessional behaviour.

Specifically, 54 percent of the survey respondents either agreed or strongly agreed that "medical students, during their medical placement, must perform everything that the supervising doctor asks them to do". This suggests they might carry out procedures that they have not been trained to do. In short, they were not aware of the importance of knowing and working within the limits of their competence and informing supervising doctors

of their level of competence. Seventeen percent either agreed or strongly agreed that “doctors should not accept any mistakes or errors reported by nurses and midwives”. These students have not fully understood what commitment to excellence means in practice. Twelve percent either agreed or strongly agreed that “health professionals need continual reminders from both peers and supervisors about fulfilling responsibilities to patients and to other healthcare professionals”. This means that they do not fully recognise the behaviour and responsibilities expected of them as a professional.

We found no significant differences in the distribution of responses of year-5 and year-6 students. This suggests that students learn and absorb professional and nonprofessional behaviours by observing the practices of medical practitioners in clinics and hospital wards. The lessons students learn from this so-called hidden curriculum are by nature obscure and difficult to qualify.

Lecturers’ perceptions

Findings from some of the KIIs suggest that most students are not especially interested in deontology. This is because they think of it as an abstract field, rather than as integral to clinical practice. They therefore do not take deontology instruction seriously, instead studying pre-answered multiple-choice questions (MCQs). In addition, the limited number of MCQs and the late introduction of deontology in semester 2 year 5 lead to gaps in students’ knowledge of medical ethics, leaving them susceptible to copying unethical practices during their medical placements.

Interviewees gave a variety reasons for students’ apparent disinterest in deontology. They are, in no particular order: lecturing is the sole teaching method, students can pass the subject without going to lectures, some students believe the topic is not relevant to curing diseases, UHS does not prioritise deontology, weak disciplinary action for skipping deontology lectures, and students do just enough to get a pass mark.

The KIIs did not capture a clear picture of some aspects of unprofessionalism. Regarding conflicts of interest, some lecturers said that doctors can accept gifts and donations (e.g. cash, food, desserts, fruits and drinks) that are voluntarily given by patients or their families in exchange for services provided by

hospital staff. They perceived this as synonymous with the Cambodian “culture of giving”.

Conclusion

The majority of the surveyed year-5 and year-6 medical students at UHS have a rough understanding of the concept and practice of medical professionalism. The four areas that scored lower in both years were preventable harm to patients; poor rapport with patients and their families; unmet professional responsibilities; and resistance to constructive criticism, counter to the principle of self-improvement and adaptability.

The findings illuminated some misunderstanding among students and medical educators about the concept of conflict of interest. Gifts from pharmaceutical companies to healthcare providers and informal payments in public facilities were considered normal and acceptable, rather than a breach of professional ethics. Such conflicts of interest can damage physicians’ reputation and public trust in healthcare services and should be strongly discouraged. Refocussing commitment to ethical behaviour would help repair public trust in the medical profession.

Perhaps the most alarming finding was that most students rated preventable errors that could result in patient harm as normal and acceptable. This implies that as future doctors, they may have an inappropriate high risk-taking propensity, especially if ethical boundaries are blurred by conflicts of interest, and could possibly cause harm to patients. In principle, interactions between physicians and patients should not compromise patient care or exploit vulnerable patients.

The majority of the students exhibited lack of effort towards self-improvement and adaptability, mainly because they were unaware of their inadequacies. In principle, medical students must be able to recognise and work within the limits of their competence. Failure to do so indicates unmet professional responsibilities, meaning students do not meet the standards of professional behaviour expected of them.

An underlying confounding issue is that students appear to learn a lot from hidden informal curriculum, which most probably plays an important role in reinforcing behaviours and attitudes towards professionalism. This suggests that the way deontology is taught needs to be reviewed in order

for students to actively attend the entire deontology course and gain a thorough grounding in medical ethics. Students' acquisition of the attributes of good medical practice will be enhanced if the hidden curriculum they learn from during their medical placements is better understood and incorporated into the formal curriculum.

In sum, medical educators need to rethink training routes and student-teacher relationships. One way forward would be to switch from a teacher-centred to a student-centered approach through more interpersonal interactions in teacher-student relationships, using students' experience as the starting point. Ideally, all doctors and other health personnel in hospitals should be good role models as they have a special responsibility for instilling the principles of good medical practice in the students and young doctors under their supervision.

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Special Economic Zones as a Tool for Accelerating Economic Growth: A Literature Review

Concept and definition

Special economic zones (SEZs) have long existed in various forms, but it was not until the mid-1900s that they were used as a deliberate policy tool. The US built its first SEZ in New York in 1937, then in 1942 constructed SEZs in Puerto Rico (Pakdeenurit, Suthikarnnarunai and Rattanawong 2014). However, the first modern industrial free zone was introduced and constructed in Shannon, Ireland, in 1959 (Farole and Akinci 2011). Since the 1960s, SEZs have become critical components of national industrial and economic strategies around the world, especially in East Asia and Latin America. Colombia, for instance, established its first zone called Barranquilla in 1964. A year later, the Dominican Republic followed Colombia by creating La Romana zone in 1965 (Farole 2011). In Asia, India set up its first SEZ in 1965, Taiwan in 1966, South Korea in 1970 and China in 1980 (Aggarwal 2012). Although the US was the pioneer of modern SEZs, India has the largest number and China's SEZs, especially Shenzhen, are considered the most successful. The success of China's SEZs has attracted much interest among academia, policymakers and industrial developers around the world. So far, SEZs, such as free trade zones, export-processing zones, industrial parks, freeports and enterprise zones, have been used by developing countries to expedite exports, attract foreign direct investment (FDI) and industrialise the economy.

The notion of an SEZ can conjure up very different images: an industrial enclave in a developing country, filled with footloose multinational companies; the economic "miracle of Shenzhen", the remote fishing village that grew into one of the world's most dynamic metropolises and China's capital of innovation; and the world-class trade and logistics hubs of Dubai and Singapore (Farole and Akinci

2011). In general, most SEZs share the following features: (1) a secured demarcated area, (2) managed by a single management or administrative body, (3) providing advantages depending on their location, (4) under special customs regimes and streamlined procedures (Shakya 2009). Among the four features, the last one is the most important determining feature of an SEZ (Farole 2011), because other SEZ features are very heterogeneous. In contrast, the Chinese SEZ model has been conceptualised as a complex of related economic activities and services rather than a single-function entity. Thus, China's SEZs are larger and cover a wider range of functions than SEZs elsewhere (Wong 1987; Zeng 2010).

Shah (2008, 4) defines SEZs as "contained geographic regions within countries—a demarcated area of land used to encourage industry, manufacturing, and services for export—typically characterized by liberal tax laws and economic policies". Similarly, but more comprehensively, Farole (2011, 23) defines SEZs as:

... demarcated geographic areas contained within a country's national boundaries where the rules of business are different from those that prevail in the national territory. These differential rules principally deal with investment conditions, international trade and customs, taxation, and the regulatory environment; whereby the zone is given a business environment that is intended to be more liberal from a policy perspective and more effective from an administrative perspective than that of the national territory.

Modality of SEZs

A wide variety of SEZ modalities exists due to each country's policy objectives, conceptualisation of SEZs, and competitive differentiation strategy. This makes classifying SEZs a difficult task. Building on the classifications suggested by Akinci and Crittle (2008) and Farole (2011), Farole and Akinci (2011) categorise SEZs into five modalities based on their development objectives, size, location, activities

and markets: free trade/commercial-free zone (FTZ), traditional export processing zone (EPZ), free enterprise (FE)/single-unit EPZ, hybrid EPZ, and freeport, as summarised in Table 1.

SEZs as a policy tool

The rationale for establishing SEZs is that they are expected to accelerate economic development by accomplishing policy goals faster than would otherwise be possible. They have typically been used to attract FDI, reduce unemployment, support economic reforms and test new policy approaches and mechanisms (Akinci and Crittle 2008; Farole 2011; Farole and Akinci 2011).

Attracting FDI: The primary objective of SEZs is to attract FDI. This is especially the case in developing countries, where almost all SEZs are set up to attract investment in labour-intensive, export-oriented sectors such as garment and shoe manufacturing and electronics and automotive component assembly.

Reducing unemployment: Many developing countries have a large reserve of low-wage, low-skilled workers. SEZs are able to absorb this abundant workforce, which would otherwise be underused or unemployed. The SEZs of Tunisia and

the Dominican Republic are often cited as examples of SEZ models that have continued to create jobs.

Supporting a wider economic reform strategy: SEZs are easy mechanisms that allow countries to diversify exports and lower export barriers while retaining protective measures elsewhere in the country. The SEZs of China, South Korea, Mauritius and Taiwan follow this pattern.

Testing new policy approaches and mechanisms: China used SEZs as laboratories for its Open Policy and economic reforms in the 1980s while the country was still a closed economy. This experimental approach, coupled with a reform-oriented mindset, proved very successful.

Development and contribution of SEZs

SEZs have contributed significantly to national development in ways that go beyond their primary policy purposes. The contributions can be categorised as static and dynamic. Static contributions are FDI, employment and export growth. Dynamic contributions include skills upgrading, technology transfer, export diversification, improved trade efficiency of domestic firms, industrial cluster formation and global value chain integration. However, evidence shows that the contributions

Table 1: Characteristics of SEZ modalities

	FTZ	EPZ	FE	Hybrid EPZ	Freeport
Objective	support trade	accelerate exports of manufactured products	accelerate exports of manufactured products	accelerate exports of manufactured products	promote integrated development by pooling economic resources
Size	<50 ha	<100 ha	no demarcated zone	- part designated as traditional EPZ - part open to all types of firms	vast (largest type), with residential areas and transport hubs (e.g. ports and airports)
Location	seaports and airports	no common location	anywhere or in designated areas	N/A	N/A
Activities	- trans-shipment - trade	- manufacturing and processing mainly for export - some modified to cover many other activities	export-oriented manufacturing and processing activities	- manufacturing and processing mainly for export - some modified to cover many other activities	all economic activities
Markets	domestic, re-export	export	export	export, domestic	within the zone domestic, export
Exemplars	Panama's Colón FTZ (opened in 1948)	South Korea's Masan FTZ (opened in 1970)	Mauritius and Mexico	Thailand's Lat Krabang	Jordan's Aqaba China's SEZs

Sources: Akinci and Crittle 2008; Farole 2011; Farole and Akinci 2011

Table 2: SEZs' characteristics and impacts at different stages of host country development

Development stage		Expected contributions	
SEZ catalyst	Host country	Static	Dynamic
Enclave	Agriculture-based economy Low income Low-cost, unskilled labour	FDI Employment Export growth	
Linkage to local economy	Middle-income status Well-established domestic firms/ value chains Increasing labour cost Semiskilled or skilled labour		Skills upgrading Technology transfer Export diversification Enhancing trade efficiency of domestic firms Industrial cluster formation Global value chain integration
Facilitate formation of industrial clusters, innovation and specialised SEZs	Industrialised economy		Industrial cluster formation Innovation

Source: adopted from Warr and Menon 2015

of SEZs vary across countries, depending on the development stage of the host country. Warr and Menon (2015) have categorised the characteristics and impacts of SEZs according to the host country's development stage, as presented in Table 2.

Performance and challenges of SEZs

Many SEZs are successful, yet many others fail to achieve their policy purposes. SEZs in India, for example, have experienced both failure and success. Empirical research shows that many SEZs have been successful in creating employment and increasing exports, and have proved marginally positive in cost-benefit analyses (Chen 1993; Jayanthakumaran 2004; Monge-González, Rosales-Tijerino and Arce-Alpizar 2005; Warr 1989 cited in Farole and Akinci 2011).

Global experiences with SEZs indicate that SEZs play an important role in economic growth, industrialisation and economic diversification. The four Asian tigers (Hong Kong, Singapore, South Korea and Taiwan) have maintained very high growth rates since the early 1960s, followed by the rise of China since the mid-1980s. SEZs played a vital role in their industrial upgrading and modernisation and rapid economic restructuring. In the Middle East and North Africa, SEZs have been instrumental in catalysing export growth and diversification. In Sub-Saharan Africa, SEZs have contributed significantly to successful economic diversification and industrialisation. And in Latin America, the Dominican Republic, El Salvador

and Honduras have used SEZs to transition from reliance on agricultural commodities to large-scale manufacturing and exploit preferential access to US markets (Farole and Akinci 2011).

SEZs also have a downside, however. Evidence shows that investment in SEZ infrastructure has often outweighed the benefits; firms exploited the incentives and privileges available in SEZs even as many schemes failed to meet their objectives (Farole and Akinci 2011). Many SEZs achieved the static benefits only and not the dynamic benefits (Kaplinsky 1993). Some scholars view SEZs as a second- or third-best policy instrument for improving competitiveness, arguing that SEZs only prosper in certain situations over a restricted period (Hamada 1974; Madani 1999; World Bank 1992). SEZs will not be successful unless sufficient supporting infrastructure is in place and their development effects will depend on the stage of the host country's economic development.

Key success factors of SEZs

Many factors contribute to the success of SEZs, including rapid customs clearance, lax regulation, high global connectivity, highly developed infrastructure, abundant skilled and semiskilled workforce, lucrative incentives, minimal red tape, open macroeconomic regime, and sound monetary and fiscal policies for financial stability. The domestic investment environment also influences SEZ performance; fast expansion of internal trade attracts trade and more FDI (Aggarwal 2012).

Lessons learned from China's SEZs

China set up its first SEZs as laboratories for experimenting with market-oriented reform in the 1980s while the centrally planned economy was still effective. The important objective was to test new policies and institutions for the market economy. Shenzhen SEZ has been very successful and SEZs have sprung up all over the country. Many factors contributed to the success of China's SEZs, as highlighted by Zeng (2010):

- Strong commitment, practicality, flexibility and independence of the top leaders provided a high degree of policy stability and assured investors in the SEZ incubation sites.
- The practical step-by-step approach, as opposed to rapid reform, avoided unfavourable economic, social and political consequences; as Deng Xiaoping in his reform philosophy said, "Crossing the river by touching the stones".
- The SEZs had in place essential infrastructure and services. This laid the foundation for emerging specialised markets, technological innovation platforms and R&D centres. SEZs also had authority to establish their own regulations, contributing to efficient business management. The government made strong efforts to upgrade technology and innovation by escalating investment in R&D infrastructure and providing special incentives to attract high-tech companies and highly qualified scientists and engineers. Public-private partnerships, including in building infrastructure and R&D centres, also played an important role.
- The Chinese diaspora contributed significantly, especially through knowledge transfer in the forms of skills and technologies, capital investment and entrepreneurship in the 1980s. At that time, Hong Kong, Macao and Taiwan were poised to relocate their labour-intensive manufacturing production bases. Because of the similar culture and language and proximity, FDI flowed from these regions into China's SEZs.
- China's SEZs have clear development plans and objectives to contribute to GDP growth, generate employment, accelerate exports and attract FDI, as well as earn tax revenues. They are fiercely competitive among themselves, which encourages firms to be efficient and enhances productivity. The government controls and monitors the development plans, objectives and competition closely.

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Economy Watch—External Environment

This section presents economic indicators of major world economies and economies in South-East Asia during the fourth quarter of 2017.

Indonesia's real GDP growth was 5.2 percent year on year, only 0.1 percentage point higher than in the third quarter, driven by strong private and public investment. Growth in Malaysia was 5.9 percent, compared to 6.2 percent in the third quarter, driven by private demand and external sectors. Singapore's growth eased to 4.3 percent year on year from 5.2 percent in the previous quarter, while the growth of manufacturing moderated to 6.2 percent year on year from 19.2 percent in the previous quarter. Thailand's economy expanded by 4.0 percent over the 12 months, 0.3 percentage points less than in the preceding quarter, as manufacturing expanded by 3.0 percent and tourism recovered strongly. Vietnam's growth was 7.7 percent, compared to 7.5 percent in the previous quarter, driven by the expansion of manufacturing, stimulated by robust export growth of 21.1 percent.

China's growth stabilised at 6.8 percent, the same as in the previous quarter. Old sectors such as heavy industry and property were cooling down, while new sectors including services and high tech showed good performances. The economy of Hong Kong grew by 3.4 percent, less than the preceding quarter's 3.6 percent. South Korea's growth decreased to 2.9 percent from 3.6 percent in the previous quarter, as private consumption and construction investment lost momentum. GDP in Taiwan expanded by 3.3 percent over the year, the highest growth since 2014.

The eurozone's real growth increased to 2.8 percent in this quarter, from 2.5 percent in the previous quarter. Japan's economy expanded by 2.0 percent, compared to 1.7 in the previous quarter, thanks to the robust investment in the country's high-end sectors such as automotive, electronics and precision machinery, which were stimulated by world demand for high-tech goods. Growth in

the United States was 2.6 percent year on year, amid strong business investment and consumption spending.

World inflation and exchange rates

All Asian and ASEAN countries had inflation: in Cambodia 2.3 percent, Indonesia 3.4 percent, Malaysia 1.3 percent, Singapore 0.2 percent, Thailand 0.8 percent and Vietnam 2.7 percent. Inflation in China was 2.2 percent, Hong Kong 2.4 percent, South Korea 1.2 percent and Taiwan 1.6 percent. Inflation in the eurozone was 1.3 percent, Japan 1.3 percent and the United States 2.2 percent.

In the fourth quarter, the USD-KHR exchange rate was KHR4,036.4/USD, the riel appreciating by 1.3 percent from a quarter earlier. The Thai baht appreciated by 1.5 percent from the preceding quarter to THB32.9/USD, and the Vietnamese dong by 0.1 percent to VND22,717.5/USD. The Chinese yuan appreciated by 1.5 percent to CYN6.6/USD, and the Japanese yen depreciated by 1.8 percent to JPY112.9/USD.

Commodity prices in world markets

Prices of most major commodities in world markets rose in this quarter; only those of palm oil and rubber dropped. The price of palm oil decreased by 0.5 percent to USD703.0/tonne and rubber by 5.5 percent to USD1,466.0/tonne. The price of maize rose by 0.5 percent to USD148.8/tonne, of rice by 2.6 percent to USD422.3/tonne and of soy beans by 1.1 percent to USD399.7/tonne. The price of crude oil increased by 12.5 percent to USD59.4/barrel, of gasoline by 1.4 percent to US cents 45.0/litre and of diesel by 6.6 percent to US cents 48.2/litre.

Table 1: Real GDP growth of selected trading partners, 2012–17 (percentage increase over previous year)

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Selected ASEAN countries												
Cambodia	7.3	7.4	7.1	7.0	-	-	-	-	-	-	-	-
Indonesia	6.3	5.8	5.2	4.8	4.9	5.2	5.0	4.9	5.0	5.2	5.1	5.2
Malaysia	5.4	4.6	6.0	4.9	4.2	4.0	4.3	4.5	5.6	5.8	6.2	5.9
Singapore	1.3	3.8	3.0	2.0	1.8	2.1	1.1	2.9	2.7	2.9	5.2	4.3
Thailand	6.7	2.8	1.6	2.8	3.2	3.5	3.2	3.0	3.3	3.7	4.3	4.0
Vietnam	5.2	5.4	5.9	6.6	5.5	3.5	6.4	6.7	5.1	6.2	7.5	7.7
Selected other Asian countries												
China	7.7	7.7	7.3	7.0	6.7	6.7	6.7	6.8	6.9	6.9	6.8	6.8
Hong Kong	2.9	3.0	2.3	2.3	0.8	1.7	1.3	3.1	4.3		3.6	3.4
South Korea	2.1	2.8	3.4	2.6	2.7	3.2	2.3	2.3	2.8	2.7	3.6	2.9
Taiwan	1.2	2.2	3.5	0.6	-0.8	0.7	2.0	2.9	2.6	2.1	3.1	3.3
Selected industrial countries												
Euro-12	-0.5	0.1	0.7	1.3	1.5	1.6	1.7	1.7	1.7	2.1	2.5	2.8
Japan	1.7	1.7	0.6	0.3	0.2	0.8	1.1	1.6	1.6	2.0	1.7	2.0
United States	2.1	1.8	2.4	2.3	2.1	1.2	1.3	1.9	2.1	2.1	2.3	2.6

Sources: International Monetary Fund, *Economist* and countries' statistics offices

Table 2: Inflation rate of selected trading partners, 2012–17 (percentage price increase over previous year—period averages)

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Selected ASEAN countries												
Cambodia	3.0	3.0	3.9	1.2	2.4	3.1	3.0	3.6	4.2	2.7	2.5	2.3
Indonesia	4.3	7.0	6.4	6.4	4.3	3.5	3.0	3.3	3.6	4.1	3.8	3.4
Malaysia	1.7	2.1	3.2	2.1	3.4	1.9	1.4	1.7	4.3	4.0	3.7	1.3
Singapore	4.6	2.3	1.0	-0.5	-0.8	-0.9	-1.5	0.0	0.7	0.8	0.5	0.2
Thailand	3.0	2.2	1.9	-0.9	-0.5	0.3	0.3	0.7	1.1	0.2	0.5	0.8
Vietnam	9.3	6.6	4.8	0.6	1.3	2.2	2.8	4.4	5.0	0.8	2.8	2.7
Selected other Asian countries												
China	2.7	2.6	2.0	1.4	2.1	2.1	1.7	2.2	1.4	1.4	1.6	2.2
Hong Kong	4.1	4.0	4.4	3.1	2.9	2.6	3.1	1.2	1.0	2.4	1.8	2.4
South Korea	2.1	1.1	1.3	0.7	0.2	0.9	0.8	1.3	2.0	2.0	2.3	1.2
Taiwan	1.9	0.8	1.5	0.6	1.7	1.3	0.7	1.8	0.8	0.6	0.8	1.6
Selected industrial countries												
Euro-12	2.5	1.4	0.4	0.0	0.1	0.2	0.3	0.7	1.8	1.2	1.4	1.3
Japan	-0.03	0.4	2.8	0.9	0.2	-0.4	-0.5	0.3	0.2	0.3	1.1	1.3
United States	2.1	1.5	1.6	0.0	1.1	0.7	1.1	1.9	2.5	1.9	1.9	2.2

Sources: International Monetary Fund, *Economist* and National Institute of Statistics

Table 3: Exchange rates against US dollar of selected trading partners, 2012–17 (period averages)

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Selected ASEAN countries												
Cambodia (riel)	4037.8	4027.2	4037.6	4060.4	4022.4	4056.3	4094.1	4041.9	4015.8	4048.2	4087.8	4036.4
Indonesia (rupiah)	9363.0	10419.2	11850.2	13394.8	13627.3	13324.1	13136.6	13265.3	13344.7	13312.8	13327.0	13534.8
Malaysia (ringgit)	3.1	3.1	3.3	3.9	4.2	4.0	4.0	4.3	4.4	4.3	4.3	4.2
Singapore (S\$)	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Thailand (baht)	31.1	30.7	32.5	34.2	35.6	35.3	34.8	35.4	35.1	34.3	33.4	32.9
Vietnam (dong)	20856.9	20990.3	21138.2	21917.7	22929.4	22314.5	22292.2	22493.7	22429.1	22704.3	22732.8	22717.5
Selected other Asian countries												
China (yuan)	6.3	6.1	6.2	6.3	6.5	6.5	6.7	6.8	6.9	6.9	6.7	6.6
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	1200.8	1163.4	1120.9	1159.0	1152.4	1129.9	1132.8	1107.0
Taiwan (NT\$)	29.6	29.7	30.3	31.8	33.1	32.4	31.7	31.8	31.1	30.3	30.3	30.1
Selected industrial countries												
Euro-12 (euro)	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8
Japan (yen)	79.8	97.6	105.9	121.0	115.3	107.9	102.4	109.5	113.7	111.1	110.9	112.9

Sources: International Monetary Fund, *Economist* and National Bank of Cambodia

Table 4: Selected commodity prices on world market, 2012–17 (period averages)

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Maize (US No. 2)—USA(USD/tonne)	298.4	259.4	192.9	169.8	160.0	171.1	153.5	152.2	160.6	157.7	148.1	148.8
Palm oil—north-west Europe (USD/tonne)	999.3	856.9	821.4	622.7	586.9	647.8	714.7	753.0	773.0	696.3	706.3	703.0
Rubber SMR 5 USD/tonne)	3200.7	2575.3	1755.6	1392.7	1190.0	1408.1	1349.4	1716.9	2147.7	1568.1	1551.7	1466.0
Rice (Thai 100% B)—Bangkok (USD/tonne)	594.8	533.8	434.9	395.5	385.3	465.0	430.3	376.0	537.0	431.0	411.7	422.3
Soybeans (US No.1)—USA (USD/tonne)	591.4	538.4	491.8	390.4	328.0	418.7	416.7	411.7	419.1	385.7	395.3	399.7
Crude oil—OPEC spot (USD/barrel)	109.5	105.9	96.2	49.6	31.2	44.7	43.3	47.9	52.0	47.9	52.8	59.4
Gasoline—US Gulf Coast (cents/litre)	74.6	71.2	65.6	41.0	27.9	37.5	36.8	38.5	41.0	40.3	44.4	45.0
Diesel (low sulphur No.2)—US Gulf Coast (cents/litre)	80.7	78.4	71.5	41.7	27.2	35.6	36.3	40.2	41.4	39.0	45.2	48.2

Sources: Food and Agriculture Organisation and US Energy Information Administration

Economy Watch—Domestic Performance

Main economic activities

In the fourth quarter of 2017, total fixed asset investment approvals decreased from USD3,005.4 m in the previous quarter to USD114.3 m. Year on year, they dropped by 77.5 percent. Compared to the previous quarter, investments in all sectors decreased considerably. There were no investment approvals in all sectors except industry. Total industrial investment approvals were USD114.3 m, compared to USD486.6 m in the previous quarter. Investments in garments dropped from USD78.9 m in the previous quarter to USD56.3 m.

Total international tourist arrivals expanded from 1,147,500 persons to 1,689,400 persons year on year. Chinese tourists accounted for the largest proportion of the total, 369,400 persons in this quarter, followed by those from Vietnam (241,900), Thailand (152,100), South Korea (88,600), the US (71,100), Japan (56,400), Malaysia (56,400), France (47,700) and the UK (47,700).

In this quarter, total exports were USD2,825.6 m, a decrease of 8.8 percent from the previous quarter. Year on year, they rose 15.1 percent. Garment exports decreased by 14.4 percent to USD1,960.0 m from the previous quarter and rose 11.5 percent year on year. Compared to the previous quarter, Garment exports to EU, Japan, UK, US and the rest of the world decreased; only those to ASEAN countries increased. Exports of electronic components were USD96.9 m, 17.9 percent higher than the previous quarter. Exports of automotive parts increased from USD1.1 m in the previous quarter to USD1.8 m.

Agricultural exports expanded by 6.0 percent to USD185.9 m from the previous quarter, and increased by 3.6 percent from the same quarter of the previous year. Compared to the previous quarter, exports of rice, timber and fish increased while those of rubber decreased.

Total imports dropped by 20.4 percent from a quarter earlier, but were 11.1 percent higher than in the previous year, at USD3,424.2 m. Imports of gasoline were valued at USD65.8 m, diesel fuel USD102.2 m, construction materials USD68.8 m and other imports USD3,187.5 m. In this quarter, Cambodia had a trade deficit of USD598.7 m.

Public finance

In this quarter, the government budget had a deficit of KHR1,284.8 bn. Total government revenue in the quarter was KHR4,307.2 bn, 11.3 percent more than a quarter earlier, and 26.2 percent more than in the same quarter of the previous year. Current revenue was KHR4,278.5 bn, 11.4 percent more than the last quarter. Tax revenue was KHR3,500.0 bn, 5.5 percent more than in the previous quarter, while non-tax revenue was KHR778.5 bn, 49.5 percent more than in the preceding quarter.

Total expenditure was KHR5,591.9 bn, 26.5 percent more than a quarter earlier, and 61.6 percent more than in the same quarter of the previous year. Capital expenditure was KHR1,785.9 bn, 48.6 percent more than the previous quarter. Current expenditure was KHR3,806.0 bn, 18.2 percent more than a quarter earlier.

Inflation and foreign exchange rates

The overall consumer price index (CPI) in the fourth quarter of 2017 was 2.2 percent, compared to 2.5 percent in the previous quarter. The prices of food and non-alcoholic beverages increased by 1.9 percent, 0.6 points less than in the previous quarter. Transport prices rose 4.1 percent year on year.

Compared to the previous quarter, the riel depreciated by 1.3 percent against the dollar, to KHR4,036.4, and by 1.1 percent against the Vietnamese dong to KHR17.9 per 100 dong. The riel appreciated by 0.5 percent against the Thai baht to KHR123.4 per baht.

The price of gold rose 0.9 percent to USD155.5/chi. The price of diesel fuel increased 3.1 percent to KHR3,472.4/litre. Likewise, the gasoline price rose by 2.6 percent from the previous quarter, to KHR3,819.7/litre.

Poverty situation

This section describes the situation of vulnerable workers and garment workers based on a survey of 320 vulnerable workers and 120 garment workers in February 2018.

Garment workers' daily wages increased by 2.5 percent from a year earlier, to KHR15,268. On average, they were around 29 years old. Their average level of education was fifth grade.

Generally, they had worked in the factory for about four years. Seventy-two and a half percent of them said that they had no skills training before their employment, and they received training in the factory. Four point two percent said they had trained by themselves at home, and 23.3 percent did not have any training at all. Asked whether their wage could support their family, 15.0 percent said that it could not, 81.6 percent said it could partially do so, and 3.3 percent said it could. Sixty-seven and a half percent were optimistic about the future of their factory, 7.5 percent said that it would not be so good, 5.8 percent said that it would be the same, and the rest did not know.

Rice-field workers' earnings rose to KHR8,774 per day, a 5.3 percent increase year on year. Seventy-five percent of those interviewed were the main earners for their families. Their income had decreased compared to the previous quarter, 75.0 percent said. Half stated that their income during February could partially support their families, while the other half said it could not. Forty-seven point five percent were in debt; the average interest rate on their borrowing was 1.6 percent per month.

Earnings of small vegetable vendors decreased to KHR18,343 per day, 0.4 percent lower year on year. Most of them came from Kandal, Svay Rieng, Prey Veng, Kompong Speu, Takeo, Kampot, Kampong Cham and Phnom Penh. Fifteen percent had no agricultural land, 2.5 percent had less than 0.5 hectare, 30.0 percent had between 0.5 and 1 hectare, and another 52.5 percent had between 1 and less than 2 hectares. All of the respondents were the main income earners in their families. Forty percent indicated that they were in debt.

Scavengers' earnings decreased by 7.1 percent from a year earlier, to KHR10,664 per day. Compared to the previous three months, the number of scavengers rose, but the source of rubbish and its price dropped, the majority of them said. Ninety two and a half percent of the scavengers interviewed were the family breadwinners. On average, scavengers worked 10.7 hours per day and 27.4 days per month. On average, they spent mainly on food (68.3 percent of their total spending), rent (17.7 percent), healthcare (0.8 percent) and other expenses (13.2 percent).

Daily earnings of unskilled construction workers increased by 8.5 percent from a year earlier, to KHR18,082 per day. Compared to the previous three months, the number of unskilled construction workers expanded, amid an increase in construction activities, the majority of the workers said. Eighty seven and a half percent of these workers migrated alone to Phnom Penh or Siem Reap for work; 12.5 percent migrated with family. They worked 9.3 hours per day and 24.4 days per month on average. They spent 74.3 percent of their total spending on food, 13.9 percent on rent, 0.3 percent on healthcare, and 11.5 percent on other things. Their income could only partially support their families, 92.5 percent of them said.

Compared to the same month last year, porters' earnings dropped by 0.3 percent to KHR15,123 per day. Seventy two and a half percent of these workers migrated alone to Phnom Penh or Siem Reap for work; 27.5 percent migrated with family. They mostly spent on food (74.1 percent of total spending), rent (16.2 percent), healthcare (0.3 percent) and other expenses (9.4 percent). Since they started as porters, their families were better off, 67.5 percent reported, while 25.0 percent said that their families' livelihoods remained the same, and 7.5 percent said their families were worse off.

The daily earnings of waiters/waitresses increased by 4.1 percent compared to the same month last year, to KHR8,226 per day. On average they have worked as waiters/waitresses for 4.7 years. They worked on average 12.4 hours per day and 30 days per month. They spent 79.1 percent of their total spending on food, 4.7 percent on healthcare and 15.2 percent on other spending.

Table 1: Private investment projects approved, 2012–17*

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Fixed Assets (USD m)											
Agriculture	531.6	930.5	56.5	169.8	27.6	0.0	7.4	82.1	8.0	54.9	-	-
Industry	829.3	3257.0	1002.5	1014.7	252.4	597.0	266.1	320.8	115.6	265.7	486.6	114.3
<i>Garments</i>	497.0	324.1	393.5	225.2	70.8	239.9	51.1	19.0	54.0	22.0	78.88	56.3
Services	916.6	140.7	622.6	2734.4	643.6	234.1	681.9	104.6	7.8	1332.0	2518.8	0
<i>Hotels and tourism</i>	691.5	106.0	446.9	98.6	611.1	19.8	679.8	56.3	3.6	237.2	2518.8	0
Total	2278.0	4328.0	1583.9	3918.9	923.7	831.2	955.5	507.4	131.4	1652.6	3005.4	114.3
	Percentage change from previous quarter											
Total	-	-	-	-	80.5	-10.0	15.0	-46.9	-74.1	1158.0	81.9	-96.2
	Percentage change from previous year											
Total	-67.5	90.1	63.4	147.4	-67.9	226.4	242.0	-0.8	-85.8	98.8	214.5	-77.5

* 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	213.9	220.1	405.1	547.3	658.9	133.6	84.0	33.1	20.4	122.3	-	637.6
Other	187.8	217.8	199.9	463.6	859.6	190.0	141.7	105.6	11.7	49.8	-	252.6
Total	441.2	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, 2012–17

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
					Thousands							
China	333.9	463.1	560.3	694.7	217.2	161.5	198.6	252.7	273.0	362.0	206.4	369.4
Vietnam	763.1	854.1	905.8	987.8	217.6	244.2	233.9	264.0	203.4	267.3	122.8	241.9
South Korea	411.5	435.0	424.4	395.3	131.5	61.5	70.9	93.3	127.7	87.7	41.1	88.6
Thailand	201.4	221.3	279.5	349.9	85.7	82.2	87.8	142.4	95.9	99.5	47.5	152.1
US	173.1	185.0	191.4	217.5	75.7	50.5	44.0	68.5	80.1	76.2	29.2	71.1
Japan	179.3	206.9	215.8	193.3	55.8	35.1	46.7	54.0	60.2	51.4	35.3	56.4
France	121.2	131.5	141.1	145.7	48.7	25.8	32.3	43.6	54.0	43.2	21.5	47.7
UK	110.2	123.9	133.3	154.3	51.6	31.3	33.1	43.5	54.6	48.2	20.6	47.7
Malaysia	116.8	130.7	144.4	149.4	53.0	17.5	39.3	43.1	37.8	53.4	31.8	56.4
Others	1173.8	1458.7	1506.8	1487.3	405.7	406.6	360.9	498.2	516.2	70.9	693.9	558.1
By air	1722.1	2017.7	2273.5	2476.0	785.0	593.5	602.2	797.4	921.4	684.3	777.7	929.3
By land or water	1862.2	2192.5	2229.3	2299.2	557.4	522.7	545.3	705.9	581.5	475.5	472.3	760.1
Total	3584.3	4210.2	4502.8	4775.2	1342.5	1116.2	1147.5	1503.3	1502.9	1159.8	1250.1	1689.4
	Percentage change from previous quarter											
Total	-	-	-	-	-0.6	-16.9	2.8	47.6	-0.03	-22.8	7.3	35.1
	Percentage change from previous year											
Total	24.4	17.5	7.0	6.1	-2.4	12.3	9.8	5.2	11.9	3.9	22.7	12.4

Source: Ministry of Tourism

Table 4: Exports and imports, 2012–2017*

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
					USD m							
Total exports	6106.4	6982.4	8106.0	9256.4	2388.3	2383.4	2817.7	2454.0	2290.7	2626.9	3098.3	2825.6
Of which: Garments	5015.4	5386.1	5960.5	6827.0	1759.4	1717.8	2072.5	1758.2	1856.3	1874.1	2290.3	1960.0
<i>. To US</i>	2143.3	2075.2	1963.6	2009.4	423.1	440.4	554.5	413.5	452.3	426.0	570.8	474.7
<i>. To EU</i>	1716.9	1969.6	2403.7	2903.9	789.6	776.6	733.4	629.2	583.0	693.3	787.9	718.1
<i>. To ASEAN</i>	39.4	60.2	83.3	103.4	25.6	25.7	21.4	25.7	24.2	29.0	24.2	29.6
<i>. To Japan</i>	188.6	278.7	383.1	524.2	176.0	122.5	216	141.0	196.2	136.7	204.8	163.6
<i>. To UK</i>	-	-	-	-	-	-	251.8	188.0	214.2	201.6	267.0	221.2
<i>. To rest of the world</i>	927.2	1002.9	1126.8	1286.3	345.2	352.7	547.1	548.9	600.6	589.2	702.7	613.7
Electronics	-	-	-	-	-	-	-	-	127.1	73.9	82.2	96.9
Automotive	-	-	-	-	-	-	-	-	1.8	6.9	1.1	1.8
Agriculture	376.7	554.5	624.4	548.8	137.5	98.9	118.1	179.5	201.0	144.2	175.4	185.9
<i>. Rubber</i>	176.6	175.2	153.9	165.4	30.7	26.8	48.3	59.6	66.1	65.2	71.7	70.5
<i>. Wood</i>	36.8	73.6	132.0	46.3	4.9	12.4	11.6	18.3	11.7	28.9	24.6	35.3
<i>. Fish</i>	2.0	1.2	0.8	0.5	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2
<i>. Rice</i>	146.4	262.3	248.5	315.3	91.4	56.1	53.4	99.9	83.1	35.0	66.5	70.5
<i>. Other agriculture</i>	14.9	42.4	89.1	21.3	10.3	3.6	4.6	1.6	39.9	15.0	12.4	9.4
<i>. Others</i>	714.4	1088.2	1520.1	1880.2	491.3	566.6	627.1	516.2	233.4	608.6	632.6	640.1
Total imports	8593.3	8639.4	10295.4	11494.5	2784.7	6136.6	3017.0	3080.8	3173.5	5914.4	4303.3	3424.2
Of which:												
<i>. Gasoline</i>	308.0	306.4	334.7	377.3	95.4	99.2	93.3	97.1	75.1	57.5	58.3	65.8
<i>. Diesel</i>	559.5	569.1	602.3	607.8	163.1	194.6	173.7	178.0	146.4	111.1	113.3	102.2
<i>. Construction materials</i>	66.1	80.8	117.6	164.4	50.8	62.1	83.1	57.4	55.6	90.3	89.6	68.8
Other	7659.1	7682.6	9240.7	10345.1	2475.0	5780.8	2667.0	2748.4	2896.4	5655.5	4042.2	3187.5
Trade balance	-1341.6	-1610.9	-2184.3	-2238.1	-390.7	-3753.3	-199.4	-626.8	882.8	-3287.6	-1205.0	-598.7
	Percentage change from previous quarter											

Total garment exports	-	-	-	-	4.7	-2.4	20.6	-15.2	5.6	1.0	22.2	-12.7
Total exports	-	-	-	-	3.4	-0.2	18.2	-12.9	-6.7	14.7	17.9	-8.8
Total imports	-	-	-	-	-5.8	120.8	-50.8	2.1	3.0	86.4	-27.2	-20.4
Percentage change from previous year												
Total garment exports	17.7	7.4	10.7	14.5	13.6	7.2	3.9	4.6	5.5	9.1	10.5	13.7
Total exports	16.1	-	-	14.2	10.1	9.2	8.6	6.3	-4.1	10.2	10.0	15.1
Total imports	19.7	21.4	19.2	11.7	5.0	2.5	110.1	3.8	14.2	-3.6	42.6	11.1

* Import data include tax-exempt imports. Sources: Department of Trade Preference Systems, MOC and Customs and Excise Department, MEF (website)

Table 5: National budget operations on cash basis, 2012–17 (billion riels)

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Total revenue	7691.9	8255.2	10543.4	11879.9	3533.1	3849.7	3413.7	3405.0	4261.9	4093.6	3870.8	4307.2
Current revenue	7443.8	8233.2	10359.4	11759.0	3514.7	3836.3	3375.9	3361.7	4261.9	4071.5	3839.2	4278.5
Tax revenue	6334.8	7198.1	8995.2	10502.4	3255.5	3368.1	2850.5	2722.4	3905.8	3580.5	3318.4	3500.0
Domestic tax	5002.8	5728.1	7226.5	8591.7	2715.3	2854.5	2378.5	2237.4	2450.0	3107.5	2844.0	2928.3
Taxes on international trade	1331.7	1470.0	1822.7	1910.7	540.1	513.6	472.0	485.0	455.8	473.1	474.4	471.8
Non-tax revenue	1118.2	1035.2	1310.3	1256.6	259.3	468.2	525.4	639.4	356.2	490.9	520.9	778.5
Property income	143.0	84.0	88.5	77.3	8.1	26.1	43.2	38.5	17.4	35.8	39.1	34.9
Sale of goods and services	667.4	750.3	871.2	1047.1	198.5	315.3	294.9	439.5	272.1	360.3	347.3	537.0
Other non-tax revenue	298.8	200.8	350.5	132.2	52.7	126.8	187.3	161.3	66.6	94.8	134.7	206.5
Capital revenue	247.9	73.4	184.0	121.0	18.3	13.4	38.4	43.3	0.0	22.1	31.5	28.7
Total expenditure	9660.9	12535.7	13306.5	13849.5	2364.3	3405.3	3460.8	4509.2	3090.9	3878.4	4420.9	5591.9
Capital expenditure	3628.3	5567.5	5590.7	5290.3	620.9	1091.1	811.3	1225.6	859.0	1096.0	1202.1	1785.9
Current expenditure	6188.4	6968.3	7715.8	8544.6	1743.4	2314.2	2649.1	3283.6	2231.9	2782.4	3218.7	3806.0
Wages	2486.6	2997.3	3755.5	4271.9	1133.1	1418.3	1403.6	1426.7	1567.6	1515.7	1739.3	1820.2
Subsidies and social assistance	1586.8	1563.0	1627.0	1742.9	259.1	439.7	447.5	628.7	312.9	635.2	617.0	749.6
Other current expenditure	2115.1	2408.0	2333.4	2529.8	351.2	456.2	798.1	1228.2	664.3	1266.7	1479.5	1983.8
Overall balance	-1969.0	-4280.6	-2763.1	-1969.6	1168.8	444.4	-47.0	-1104.2	1171.1	215.2	-550.1	-1284.8
Foreign financing	2457.8	4326.2	3972.1	3729.4	266.4	775.6	141.0	661.9	598.5	960.8	640.6	894.1
Domestic financing	-332.9	824.4	-1428.7	-2034.9	-1631.4	-488.5	37.5	342.7	-352.8	-339.1	88.8	82.9

Source: MEF website

Table 6: Consumer price index, exchange rates and gold prices (period averages), 2012–17

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Consumer price index (percentage change from previous year)											
Phnom Penh - All Items	2.3	3.0	3.9	1.2	2.5	3.0	3.0	3.9	4.2	2.7	2.5	2.2
- Food & non-alcoholic bev.	2.5	3.9	4.9	4.0	4.7	6.2	5.5	6.0	6.0	3.1	2.7	1.9
- Transportation	3.3	-0.6	-1.0	-9.2	-6.5	-9.9	-7.9	-3.4	4.1	4.3	3.8	4.1
Exchange rates, gold and oil prices (Phnom Penh market rates)												
Riels per US dollar	4039.2	4036.2	4060.4	4060.4	4022.4	4056.3	4094.1	4041.9	4015.8	4048.2	4089.5	4036.4
Riels per Thai baht	130.0	124.9	119.4	119.4	113.4	115.7	118.1	114.9	114.9	118.8	122.8	123.4
Riels per 100 Vietnamese dong	19.4	19.1	18.7	18.7	18.1	18.3	18.5	18.1	17.8	17.9	18.1	17.9
Gold (US dollars per chi)	200.9	175.9	152.3	140.6	151.2	151.2	157.1	148.3	145.5	150.9	154.1	155.5
Diesel (riels/litre)	4941.2	4852.1	4934.1	3771.3	2903.8	2932.8	3050.2	3129.3	3391.6	3310.4	3369.0	3472.4
Gasoline (riels/litre)	5312.7	5083.3	5155.7	3951.7	3310.6	3318.2	3281.4	3437.1	3697.0	3625.2	3722.0	3819.7

Sources: NIS, NBC and CDRI

Table 7: Monetary survey, 2012–17 (end of period)

	2012	2013	2014	2015	2016				2017			
					Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
					Billion riels							
Net foreign assets	18154.5	21260.1	26699.7	26665.5	29247.8	30138.5	32188.4	32814.5	36490.5	40285.4	43301.5	42575.3
Net domestic assets	10437.4	11508.3	15859.8	22157.6	21643.0	24399.1	24939.2	25802.3	24057.0	24985.6	26440.4	28743.5
Net claims on government	-2486.4	-2794.9	-4359.1	-6428.8	-7621.2	-7977.4	-7916.6	-8148.5	-9818.9	-10128.0	-10347.7	-11066.5
Credit to private sector	23536.6	27608.8	36244.6	46071.1	47627.0	52528.6	54551.1	56458.8	57385.9	61189.9	63492.6	66922.6
Total liquidity	28591.9	32768.4	42559.5	48823.1	50890.9	54537.6	57127.5	57616.8	60547.4	65271.0	69741.9	71318.9
Money	4045.7	4878.2	6308.4	6741.4	6717.8	6822.0	7460.9	7273.0	7524.7	8186.1	8925.0	9428.4
Quasi-money	18154.5	21260.1	26699.7	42081.7	44173.1	47665.6	49666.6	53022.7	53022.7	57084.8	60816.9	61890.4
	Percentage change from previous year											
Total liquidity	20.9	14.6	29.9	14.7	16.5	18.2	21.7	18.0	19.0	19.7	22.1	23.8
Money	2.3	20.6	29.3	6.9	1.4	9.2	18.7	7.9	12.2	19.1	19.6	29.6
Quasi-money	44.6	13.6	30.0	16.1	19.2	19.6	22.1	19.6	20.0	19.8	22.5	22.9

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		
	2013	2014	2015	2016	2017				2018	2017	
					Feb	May	Aug	Nov	Feb	Aug	Nov
Cyclo drivers	10438	10774	12405	11516	11092	10916	10804	10362	11042	-4.4	-7.5
Porters	13247	13580	15631	14318	15171	14625	15423	14549	15123	9.4	7.7
Small vegetable sellers	11366	14751	15867	17177	18411	13980	19655	16015	18343	65.1	-8.4
Scavengers	9819	9173	12344	10297	11478	12428	11754	10703	10664	18.1	-5.7
Waitresses*	6697	7789	8436	7989	7905	8141	8135	8190	8226	3.0	2.2
Rice-field workers	6599	7514	8745	8088	8332	7049	8708	8132	8774	12.8	-1.2
Garment workers	10161	11178	-	13688	14889	12910	14299	14275	15268	10.8	8.7
Motorcycle taxi drivers	13450	13386	14455	14509	14770	13888	14370	13895	14901	5.3	3.3
Unskilled construction workers	13184	13336	15349	17365	16664	14796	17533	20371	18082	26.2	6.2
Skilled construction workers	15442	17420	18624	-	21716	21924	23014	24951	25578	20.0	19.7

* 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. Source: CDRI. November 2015 data are not available.

Continued from page 20 **CDRI UPDATE**

28 February, Phnom Penh

Young Southeast Asian Leaders Initiative (YSEALI) STEM Education Workshop. YSEALI is an initiative of the US Department of State aiming to strengthen leadership development and networking in Southeast Asia. About 100 young women and men from 10 ASEAN countries attended the workshop. CDRI's executive director presented an inspiring keynote speech about STEM (science, technology, engineering, mathematics) career pathways.

28 February–2 March, Phnom Penh

Annual Congress 2018, Ministry of Foreign Affairs and International Cooperation. This was an opportunity for CDRI's executive director to learn about the ministry's strategic directions for 2018. A new initiative is the National Institute of Diplomacy and International Relations (NIDIR), created to serve as a thinktank and training centre for foreign service personnel. CDRI was invited to provide technical support and capacity building assistance in research and library development at NIDIR.

14 March, Phnom Penh

CDRI's annual full Board of Directors Meeting. Dr Mey Kalyan succeeded HE Dr Sok Siphana as board chair. The Board expressed its appreciation to HE Dr Sok Siphana for his strong support and commitment to CDRI.

15 March, Phnom Penh

Cambodia Outlook Conference 2018: Science and Technology for Industrialisation, Economic Growth and Development. The keynote opening address was again delivered by Prime Minister Hun Sen. Through strategic research and dialogue with key ministries, local universities, national and international development partners and the private sector, CDRI has contributed to advancing national science and technology agenda as a best option for further industrial growth. The conference presentations and discussions, along with comprehensive sets of policy options, have been summarised in the Outlook Brief, available at www.cdri.org.kh.

26 March, Kunming, Yunnan province, China

International Workshop on Lancang-Mekong Cooperation (LMC) – Ways Forward. Hosted by the ASEAN Research Center at Kunming University of Science and Technology, the workshop assembled representatives and senior researchers from thinktanks across the six LMC member countries to discuss and establish a strategic research agenda and identify optimal platforms for policy dialogue. CDRI's executive director delivered a set of key messages on the role of thinktanks.

Research

Agriculture

The team is implementing four projects. The endline survey for the project *Testing Innovative Mechanisms for Agricultural Extension in Cambodia*, funded by the International Food Policy Research Institute, started in March and expects to finish in early April. The Sida-funded project *On-farm Food Safety in Horticulture in Cambodia: The Case of Vegetable Farming* is going well. Data entry has been completed and the analysis and report writing have started. Two newly started projects are the development of a quarterly *Agriculture Technology Newsletter*, with the support of Swisscontact Cambodia, and another Sida-funded project on *Mango Value Chain Analysis*. The newsletter aims to reduce the communication gap between farmers, researchers, policymakers and practitioners and provide timely accessible information on the latest agricultural technology, news, best practices and related topics. In line with Industrial Development Policy 2015–25, the value chain analysis aims to map out mango value chains in Cambodia with an emphasis on the relationships among value chain actors and their entrepreneurship.

Economics

The unit received three grants from various research partners. We obtained a grant from the Ministry of Foreign Affairs of China under the Lancang-Mekong River Dialogue and Cooperation framework to lead a regional research program on *Enhancing China-Mekong Research and Policy Dialogue* from March 2018 to February 2020. The program comprises two components: research and

policy dialogue. Research will provide empirical evidence and policy suggestions to the Lancang-Mekong River Dialogue, with a focus on agricultural trade between China and Mekong countries. Policy dialogue consists of a technical workshop and national and regional conferences to disseminate the research findings. The unit was awarded a small grant from the Partnership for Economic Policy for a study on *Migration, Remittances and Child Schooling in Rural Cambodia*. The project leader and members were invited to participate in an intensive online training course on Policy Impact Analysis provided by Université Laval, Canada. The project on *Updating the Non-Tariff Measure Database in Cambodia*, funded by the Economic Research Institute for ASEAN and East Asia, started in March. The team also participated in the workshop and online training on Non-Tariff Measures in ASEAN Phase III in Phuket, Thailand, in March. Finally, we also collaborated with the Institute of World Economics and Politics of the Chinese Academy of Social Sciences (CASS) to conduct a study on *Lancang-Mekong Cooperation and the Development of Regional Textile and Apparel Value Chains*. The Cambodian country research report will be combined with other country reports by CASS.

Education

The 10th DRF Symposium was organised on 12 February. This year's event was supported by Australia's Department of Foreign Affairs and Trade, the Swiss Agency for Development and Cooperation (SDC), the Swedish International Development Cooperation Agency and many local higher education institutions. The theme of the symposium was Postsecondary Education Development through Multi-stakeholder Engagement.

Our team expanded the STEM research study to survey more than 2,000 high school students across the country. The survey aims to understand students' choice of science vs social science streams. The team also embarked on a new project looking at academic identity and accountability in Cambodian higher education. The second intern forum was organised on 12 January, allowing interns to present the findings of projects in which they were engaged.

The Arts in Science Education Retreat was organised on 4–5 January in Kep province to

provide a platform for education policymakers, development partners, scholars and researchers to brainstorm the values of arts in general and science education in Cambodia.

Dr Song Sopheak led a delegation to Shenzhen, China, to learn about the development of technical and vocational education and training (TVET). The delegation was composed of representatives from the government, private sector and development partners. This was part of a comparative study of TVET systems in four countries, namely Cambodia, China, South Korea and Switzerland, funded by SDC.

Environment

The two-year project *Empowering Women on Climate Resilience in Cambodia*, funded by UNDEF, is progressing well. Project participants benefitted from an exposure visit to a community-based climate change adaptation project and 10 women's support networks were established at commune level. These networks are facilitated by local NGO partners, and each network comprises a team leader, subleader, treasurer and team members. They organise monthly meetings to share reliable information on climate change and to develop their skills (communication, facilitation, organising, reporting), knowledge and confidence (social engagement).

The Sida-funded project *Climate Change Adaptation and Disaster Risk Reduction* is at the data analysis and report writing stage. Key informant interviews and focus group discussions for the project *Human Response to Environmental Change in the Lower Mekong River Basin* were conducted in target villages in Kampong Cham, Prey Veng, Takeo, Kandal and Kampong Speu provinces and all field notes and transcripts prepared.

The unit recently signed the contracts for two new projects, which are already underway. Activities for *Contract Farming in the Lancang-Mekong Region* involve organising initial consultation meetings with stakeholders, selecting collaborative regional partners and setting up regional inception workshops. For the second project, *Impact of Climate Change Programs in Cambodia: Vulnerability, Poverty, Gender and Human Rights*, the team is finalising the conceptual framework in consultation with the Ministry of Rural Development and UNDP Cambodia.

Governance

This quarter the unit completed a large nationally representative survey for the project *New Generation: Youth Participation in Development and Politics*. The first comprehensive survey of its kind, it was designed to gain critical insights into young people's perceptions of politics and development, trust and relations with state and non-state institutions, and future aspirations and expectations. The survey was administered via face-to-face interviews in the homes of respondents who were randomly selected using stratified multistage sampling. The sample frame comprised 101 villages across six provinces: Battambang, Kampot, Stung Treng, Svay Rieng, Kampong Cham and Phnom Penh. We recruited 10 experienced enumerators to implement the survey, which was administered using a mobile app with tablet computers rather than paper-based questionnaires. Data collection was completed in January and data analysis and a working paper is being completed for publication and dissemination.

Work on the project *Good Mekong Water Governance* was successfully completed. The team organised a dissemination workshop with key actors concerning Cambodia's hydro development and Mekong water governance on 14 February. The discussions and feedback gathered from the workshop have been incorporated into two reports on "Resettlement and Sustainable Livelihoods: The Case of the Lower Sesan 2 Dam", and "Gender Considerations in the Resettlement Processes: The Case of the Lower Sesan 2 Dam". Our project partners, NGO Forum for Cambodia, made available a documentary video about Lower Sesan 2 dam, and the National University of Singapore published a report on "Social Impacts of Mekong Hydropower: Evidence from the LS2 Dam in Cambodia".

Health

The Health Unit, in partnership with the Faculty of Medicine at the University of Health Sciences (UHS), is implementing an action research project called *Strengthening Medical Professionalism through Improving Knowledge and Attitudes on Medical Ethics*. The project is funded by GlaxoSmithKline. Activities in the last three months focused on data collection, data cleaning and data entry. Data collection involved a survey of 240 medical students and the conduct of 25 in-depth interviews with lecturers at the Faculty of Medicine. Quantitative survey data was analysed using SPSS, and thematic qualitative information from key informant interviews was analysed using NVivo. CDRI and UHS researchers met regularly to discuss the data and interpret the results. The draft report is being written up for publication as a working paper. The results will be shared at a dissemination workshop in May, which will bring together some 80 health professionals from public and private higher education institutions, the Ministry of Health, the National Institute of Public Health, and NGOs working in the health sector.

CDRI Update

MAJOR EVENTS

Between January and March 2018, researchers, the acting director of research and the executive director represented CDRI at the following events.

4–5 January, Kep

Science Education Retreat. Research on science teaching and learning shows that integrating the arts into curricula can unlock learners' creativity and curiosity and make science more appealing. The aim of the retreat was to bring together public and private sector schoolteachers and university lecturers in arts and sciences to explore innovative policy options that can enrich science programs in Cambodian schools through arts integration as a pathway to learning.

8 February, Phnom Penh

Consultation Workshop on CDRI's Research Strategy 2016–21. This event was the culmination of several rounds of discussions and consultations. It brought together more than 40 policymakers and practitioners from government, civil society and the private sector to discuss and further finetune our proposed research themes for the five-year plan. Their comments and suggestions were incorporated into CDRI's Research Strategy, which was endorsed by the Board of Directors at the full board meeting in March.

12 February, Phnom Penh

Cambodia Development Research Forum annual symposium on Higher Education Development through Multi-Stakeholder Engagement. The symposium was co-hosted by CDRI and the Institute of Technology of Cambodia. It brought together around 150 participants from various institutions working directly or indirectly in the area of higher education and technical vocational education and training (TVET) to discuss three core issues; higher education development from a regional perspective, higher education internationalisation and quality improvement, and public-private partnerships for the promotion of TVET as a valued career option.

21 February, Phnom Penh

Mekong Lancang Cooperation (MLC) meeting. Representatives from various ministries and thinktanks attended the meeting, which was organised by the Ministry of Foreign Affairs and International Cooperation to share information about eligibility and the application process for research funding under the MLC program. CDRI subsequently submitted two research proposals and was later awarded a grant of USD1 million.

Continued on page 17



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Cambodia Development Resource Institute
CDRI's Contact Details

☎ 56, Street 315, ☒ PO Box 622, Phnom Penh, Cambodia
☎ +855 23 881701/881384; ☎ +855 23 880734
e-mail: cdri@cdri.org.kh / pubs@cdri.org.kh
website: www.cdri.org.kh



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