THE ROLES OF TVET AND HIGHER EDUCATION IN ECONOMIC DEVELOPMENT IN CAMBODIA[1]

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1. Introduction

Since the early 1990s, Cambodia has moved from a planned economy to a market economy and from isolation to regional and global integration. During the last few decades, the economic structure has gradually shifted from agriculture to industry and services. This change, coupled with the intensification of ASEAN integration, has posed new challenges for technical and vocational education and training (TVET) as well as for higher education (HE) to transform itself and expand to ensure that the economy is competitive regionally and globally. Cambodia has diversified and strengthened its low human resources base as a strategy to promote new and sustainable sources of economic growth and improvement in living standards. These are core goals in its development plans, including poverty eradication and educational development plans.

This paper discusses changes in the Cambodian economy through a lens of labour force requirements, and how TVET and higher education can better contribute to the changes. A particular focus is on skills demanded by the growth sectors of the economy.

2. Changes in Economic Structure and Implications for Skills Demand

The Cambodian economy has experienced an average annual growth rate of over 8 percent since 2000 (World Bank 2012). Real GDP expanded by 6.9 percent in 2011 and 6.6 percent in 2012. The figure for 2013 is anticipated to be 6.7 percent. The economy is forecast to grow about 7.0 percent annually over the next five years (Huot 2013). Agriculture grew 3 percent in 2011 and 4.5 percent in 2012. The growth of industry and services decreased from 8.6 percent in 2011 to 7.2 percent in 2012 (Tong & Madhur 2013).

Garments, tourism, construction and agriculture have been the key propellers of economic growth. Industry's proportion of GDP increased from 22.4 percent in 2008 to 26.4 percent (of which garments and textiles accounted for 12 percent) in 2010 and that of services grew from 38.8 percent to 40.6 percent (of which hotels and restaurants contributed 4.4 percent) in the same years (NIS 2008; Hing *et al.* 2012). Agriculture's share of GDP dropped from 38.8 percent in 2008 to 33 percent in 2010. Consequently, there have been more jobs in industry and services. Industry employed 8.5 percent of the labour force in 2008 and 12 percent in 2010, and services' shares were 19.2 percent and 20 percent respectively. Agriculture's share of the labour force shrank from 73.2 percent to 68 percent in the same period.

Although the Cambodian economy is moving towards industry and services, these sectors are still small, employing relatively small proportions of the labour force. Furthermore, industry has a narrow base dominated by the low-tech garment industry, which employs almost 80 percent of the labour force in the sector. However, there is an increase in investment in higher value-added products (such as automotive parts and electronics) by Japanese and South Korean companies (Carteret 2013). The growth in services is mainly in tourism-related businesses. Although the shares of agriculture in GDP and the labour force have declined, this sector remains a significant source of both economic growth and employment.

This economic structure signifies that there is a low demand for skilled labour, especially high skills. However, certain types of skill are needed for poverty reduction, productivity improvement and sustainable economic development. At this early stage of economic development, in which agriculture is predominant (especially where the majority of those employed in agriculture live at a subsistence level) and industry is still in its infancy, but the importance of technological innovation and adaptation to economic structural transformation and development processes is increasing, the skilled labour force most

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needed includes a large mid-skilled section in technical and vocational fields and a small highly skilled section in sciences, engineering, manufacturing, construction and technology rather than in humanities, arts, social sciences, business and management (Un 2012).

Although Cambodia has a younger population than the other ASEAN countries, it has a lower productivity. In 2010, 64.30 percent of the population was aged 15-64 years old (UNPD 2011, cited in Heng 2013); however, the production of the working-age population was only USD3400, compared to the ASEAN average of USD10,400 (APO 2011, cited in Heng 2013). This means that Cambodia needs to improve its labour force productivity in order to bolster its regional competitiveness.

3. The Role of TVET in Economic Development

3.1. Support to TVET in the 1990s

In the early 1990s, studies on the role of education in the development of Cambodia similarly concluded that TVET institutes, which annually produced only about 2000 graduates, could not satisfy the need for skilled labour and complete the task of rehabilitating and reconstructing the devastated country (ADB 1997). Furthermore, development partners' assessments of Cambodia's future investment and development argued that the strengthening of the nation's economy could be achieved most rapidly by investment in education and training, which provided immediate returns (Duggan 1997). This argument led to priority being given to TVET over higher education by the government and development partners, in particular ILO, UNDP and JICA.

With support from development partners, the government established a task force to develop new curricula and strategies to improve TVET. Later, a National Training Board, comprising government officials, training providers and employers, was established under the leadership of the Ministry of Education, Youth and Sport (MoEYS) to design policy to align training and education with labour market needs. A national training fund was allocated to expand the coverage of TVET. This was reflected in the establishment of technical and vocational centres in all provinces.

Development partners also supported a large number of local and international NGOs to provide flexible, quick-response programmes to a range of groups. During this period, there was an increase in private providers, mainly of English language and computer skills. This situation reflected the priority given to short-course training rather than formulating a formal TVET system.

The assistance to TVET during this period was ad hoc, fragmented and centred on immediate needs, without considering systematic development of policy and planning for long-term skilled labour needs, quality assurance or aid coordination mechanisms. In this context, the government asked development partners to assist in developing a comprehensive TVET system that addressed two critical issues. The first was the abolition of job guarantees in the public sector which requires a good market analysis to address the needs for skilled labour. The second is to establish a coordination agency because the formal TVET institutes were run by different ministries (ADB 1997).

Although this reform led to an increase of enrolment (to about 10,000 students), this increase is vey marginal and within studies of limited skills that could not respond to the labour market (ADB 2004). The skills gap later culminated in fewer job-seekers than vacancies. According to the National Employment Agency, in 2010-12 there were 35,976 jobs available, but only 6860 applicants (19.06 percent) (NEA 2012, cited in Heng 2013). Lack of labour market information and career guidance or planning among youth could also contribute to the job mismatch (Hay 2012).

3.2. Constraints on TVET Development

Financial shortages, fragmentation[2] and limited staff capacity were the main constraints on expansion of TVET coverage. In addition, several other issues need to be taken into consideration. First, the concentration of TVET institutes in urban areas, limited access to credit and market information asymmetry prevented private providers enlarging their coverage (ADB 1997).

Second, the formal TVET requirement of basic education reduces enrolment because many students drop out before this level. Third is the inability of the government to create supportive policies and mechanisms and to promote equality between TVET and higher education by stressing an alignment between industrialisation and the development of skilled labour (Barber & Cheng 2010). The education system failed to prioritise vocational training over higher

[2] *For instance, when the Ministry of Labour and Vocational Training was created in 2005, the MoEYS launched a new curriculum for upper secondary schools that includes elective vocational training in grades 11 and 12. Recently, the MoEYS established a Vocational Orientation Department.*

learning to better match skills to the labour market and to supply skilled labour that could diversify the economic base and move to the next stage of industrialisation (Green 2009). There were about 250,000 university students in 2012 (MoEYS 2012, cited in Heng 2013). There is also a greater preference among young people to enrol in higher education than in TVET although there is a stronger demand for skills. In 2008-10, about 87 percent of jobs required by investments approved by the Council for Development of Cambodia were skilled and unskilled manual workers (CDC 2011, cited in Heng 2013). Only the services sector needed a small number of staff in accounting, management, law and economics.

Finally, the lack of participation by training providers in policy making contributed to the unwillingness to invest in TVET (Knight & MacLeon 2004). Consultation occurred mostly between government officers, donors and to some extent NGOs (MoEYS & Education Sector Working Group 2005).

3.3. Renewed Investment in TVET

Since the birth of the Ministry of Labour and Vocational Training (MoLVT) in 2005, more resources have been invested in TVET. The government budget for MoLVT soared from USD750,000 in 2006 to USD13.34 million in 2012, of which about 65 percent was devoted to training institutes (ADB 2008a; Chan 2008). Better coordination has occurred with private providers to create more diverse programmes and institutes.

The ADB increased its support to the MoLVT from USD10 million in 2005 to USD25 million in 2010 to implement a pilot project on strengthening TVET. The government also committed to strengthening it by contributing about USD100 million. In 2003, South Korea provided USD50 million to establish a National Polytechnic University in which up-to-date programmes and equipment were installed (ADB 2008b).

As a result, enrolment increased from roughly 10,000 students in the late 1990s to 90,000 in 2007 (ADB 2008b). Although the enrolment represented only 1.10 percent of the labour force, it accounted for 30 percent of new entrant labour force. In 2010, there were 114,138 short-term TVET students (MoLVT 2011, cited in Heng 2013). Among them, 64.30 percent studied agriculture and only 8 percent learned technical skills.

There have been awareness-raising initiatives to change young people's and their parents' views about TVET. TVET graduates are paid more than white-collar workers and average government officials, and there is no significant wage difference between TVET and higher education graduates (NIS 2010). TVET students from recognised institutions earn more than university graduates (D'Amico 2012). Moreover, TVET graduates hold more professional positions than university graduates (CSES 2009, cited in World Bank 2011).

Meanwhile, there have been more short-term (three months to one year) TVET courses, which widened the delivery capacity. Enrolment in short courses is higher than that in two-year associate degree courses (D'Amico, 2009). This change corresponds to the structure of the economy, in which the share of formal waged employment is low and agriculture still employs the bulk of the labour force, which requires low-level skills that can be offered in short courses.

The MoLVT has not attempted to take over all TVET institutes run by different ministries. It has only strengthened its coordination role (Pich 2008). This stance enables TVET institutes not only to operate normally but also to improve steadily.

4. The Role of Higher Education in Economic Development

4.1. Support to Higher Education in the 1990s

Higher education has been under-invested, receiving only 2 percent of the total public budget allocated to education since the early 1990s. Before the late 1990s, higher education was provided predominantly by the state, and the coverage was very low. Annually, the government provided about 2000 scholarships; recently the figure has been around 4000 scholarships.

In the early 1990s, development in higher education was mainly driven by external support, especially bilateral aid. Support focused on expansion of foreign (French and English) language training and research into the reform of education (Denham 1997; Sloper 1999).

In the late 1990s, privatisation began in response to an increase in the number of high school graduates. Since then, the number of higher education institutions (HEIs) has increased rapidly, rising from 18 in 1997 to 97 in 2011 (Mak 2012). Enrolment increased from about 10,000 in the early 1990s to more than 220,000 in 2011.

4.2. Constraints on Higher Education Development

Despite their increase, HEIs have failed to meet labour market needs. Many graduates are either unemployed or underemployed. Only around 10

percent of university graduates were employed in 2008 (CAMFEBA 2008). It was projected that in 2012 the labour market would demand about 16,000 graduates, but HEIs produced around 29,000; the figures will be 22,000 versus 70,000 in 2014 (HRINC 2010, cited in D'Amico 2012). As mentioned, the labour market demands vocational and technical skills.

Poor entrance standards and instruction quality are blamed for graduates' unemployability. Employers needed more professional staff and managers or supervisors (HRINC 2011, cited in D'Amico 2012). Seventy-three percent of employers indicated that university graduates did not have the right skills and 62 percent of them said the same of TVET graduates. This implies poor quality and course content. Even within the limited enrolment in information technology,[3] only 62 percent of graduates were employed in 2009, and this figure dropped to 33 percent in 2010 (CIST 2009). Nonetheless, there was a shortage of programme developers and graphic designers.

The graduate pool lacks the skills to fill available quality or value-added jobs, even in lucrative professions. For instance, about 50 percent of IT jobs are "low value-added" (IT support and system and network administration), designed for technicians (TVET graduates) (CIST 2009). However, within these jobs more than half of the staff hold bachelor and master's degrees. The workforce also needs to diversify its language and soft skills (problem solving, communication and critical thinking) (D'Amico, 2012).

The labour supply from higher education tends to favour services over agriculture and industry (Chet 2009). Between 2000 and 2005, the enrolment in four disciplines (sciences and engineering; manufacturing and construction; health and welfare; and agriculture) considered the core of economic development was only 26.64 percent. In 2001-04 enrolment in agriculture was only 3.30-3.80 percent despite agriculture having the highest employment rate for graduates (Un 2012). In 2012, about 50 percent of university students studied economics and business (MoEYS 2012, cited in Heng 2013). Only 4 percent studied agriculture and 2.50 percent sciences among all tertiary enrolment.

Most private HEIs operate on a small scale with limited capital and survive solely on students' fees. This forces them to lure students rather than to do research and offer skills required by the economy or labour market. Furthermore, the bulk of their revenue is spent on administration, leaving them unable to diversify their programmes, especially in expensive science subjects.

Both HEIs and the MoEYS lack a long-run vision. Many universities do not have a strategic plan. HEIs are regulated by 14 ministries and authorities, fragmenting policy (Mak 2012). A draft Higher Education Vision 2020 was not approved by the ministry. However, a recent draft Higher Education Vision 2030 "more responsive to the socio-economic development contexts and the market needs" is in the process of being enacted (Mak 2012: 31).

Moreover, the government lacks corrective measures. Chet (2009) asserts that public universities compete with private ones in the social sciences but fail to invest in physical sciences that private HEIs cannot afford. Despite a greater demand for scientists, engineers, technicians and skilled agricultural workers, the government allots an equal proportion of scholarships to physical science and social science students.

Development partners also contribute to insufficient enrolment in priority areas. An overwhelming share of higher education aid since the early 1990s has gone to non-science disciplines. This is a stark contrast to the 1980s, when most Cambodian students took hard-science courses in the Communist bloc. Only a few donor countries (Japan, France and South Korea) provide scholarships for hard sciences, and the number is minimal (Barton 2008).

4.3. Renewed Investment in Higher Education

Only recently has the government invested better in higher education. The government is contributing 50 percent of funding for a "Higher Education Quality and Capacity Improvement Project" with the World Bank (Mak 2012). This project intends to refine governing, instruction and research capabilities of HEIs, both public and private. A joint "Technical Working Group on Higher Education", engaging development partners and the private sector, has been formed.

In response to the increasing investment in high-tech (automotive parts and electronics) manufacturing, the government is committed to improving workforce skills through accelerated spending and policy coordination. It may create a "specialised training facility" (a "high-tech, technical university or vocational training centre") to meet the demand for more highly skilled labour (Carteret 2013).

[3] *In 2011, 4 percent of undergraduate students enrolled in this subject (Mak 2012).*

5. Conclusion and Policy Implications

The Cambodian economy keeps growing and is diversifying toward manufacturing. However, agriculture and services still contribute substantially to economic growth and to jobs. Although Cambodia enjoys the advantage of a young, economically active population, the productivity of its workforce is low. The way to make the economy more competitive is to better align the demand and supply for human resources. First, data on labour market needs should be better collated and shared, particularly among HEIs and TVET institutes. Once students are better informed on the knowledge and skills required by the world of work, they will make an informed decision to study the right subjects and thus help close the demand-supply gap. Second, more needs to be done to coordinate human resources development policies and make them responsive to the growth/industrialisation strategy. Third, more investment is needed to fix the curriculum mismatch and enhance the quality of HE and TVET; public-private partnerships between educators and employers could help.

The future of the Cambodian economy lies in its young workforce being adaptable and competitive regionally and globally. It is high time that serious investments are made to address the priority challenges of improving the employability and productivity of the labour force.

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About DRF

The Development Research Forum (DRF) of Cambodia was established following the All-Partners Forum organised by the International Development Research Centre (IDRC) in September 2007.

The DRF vision is of a high capacity, professional and vibrant Cambodian development research community. Its goal is to support and strengthen the capacity of the Cambodian development research community.

The DRF partnership involves the Cambodia Development Resource Institute (CDRI), Cambodian Economic Association (CEA), Learning Institute (LI), National Institute of Public Health (NIPH), Royal University of Agriculture (RUA), Royal University of Phnom Penh (RUPP), Supreme National Economic Council (SNEC) and the International Development Research Institute (IDRC).

In DRF Phase II 2012-15, with financial support from IDRC, the partners intend to work together to build research culture and capacity and to share research knowledge through workshops, policy roundtables and symposiums as well as training and online discussion (www.drfcambodia.net) on six research themes: growth and inclusiveness, governance of natural resources, social policy – education, social policy – health, agricultural development, and Cambodia and its region.

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