Background Paper 3A

Human Capital Development in the Greater Mekong Subregion

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Human Capital Development in the Greater Mekong Subregion

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1. Introduction

The Greater Mekong Subregion (GMS) is a geographical area comprising Cambodia, the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, Viet Nam, and China (Yunnan Province and Guangxi Zhuang Autonomous Region). These areas are commonly referred to as developing areas in Southeast Asia and China. In such regions, human capital is seen as an important resource. However, it is usually the case that human capital – the main catalyst for development – is low.

The origin of the notion of human capital was introduced by Adam Smith, who emphasised the importance of the valuable capacities of people (Smith, 1776). However, the idea of treating an individual's abilities as an asset or production input was only recognised in the 1960s when Theodore Schultz defined human capital as acquired knowledge and skills (Schultz, 1961). Since then, the concept of human capital has often been used in development studies and within economic and social research. At the macro level, human capital can contribute to poverty reduction, social cohesion, political stability, and national security. At the micro level, individuals with higher human capital tend to have better employment opportunities and higher earnings.

One of the most popular descriptions of human capital was proposed by the Organisation for Economic Co-operation and Development (OECD), which defined it as 'the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being' (OECD, 2001:18). This definition is all-encompassing. It covers various aspects of human capital: skills; competencies; and the physical, emotional, and mental health of individuals. The World Bank recently used this concept to assess the level of human capital based on health and education dimensions in the Human Capital Project (World Bank, 2017).

The objective of this chapter is to provide an overview of the status of human capital in GMS countries and provide recommendations for a way forward in fostering it. The study will (i) assess the current status of human capital, including skills and health, using available data and information; (ii) give a critical overview of the education and health systems in GMS countries through the lens of human capital development; and (iii) propose policy recommendations to promote human capital development in GMS countries.

2. Human Capital Concept, Role, and Drivers

The relationship between human capital and economic growth is mentioned in the Solow economic growth model, even though he did not specifically call it 'human capital' (Solow, 1956). In his theory, education has been determined to be a key determinant of economic growth (Solow, 1956). Later, the role of human capital and economic growth was developed by many other scholars. Nelson and Phelps (1966) described how investment in humans can promote economic growth because education helps workers utilise new technologies, increase their productivity, and spur economic growth. Becker (1962) and Mincer (1974) suggested investing in human capital via education and training. They believed it could improve knowledge and skills, raise productivity, and increase the earnings of individuals. Therefore, human capital is a strong driving force in economic growth (Becker, 1962; Mincer, 1974).

Numerous cross-country studies have found a positive correlation between human capital and economic growth. For example, Azariadis and Drazen found that the literacy rate is a significant factor in gross domestic product (GDP) per capita (Azariadis and Drazen, 1990). Barro discovered that school enrolment rates at the primary and secondary levels are positively associated with economic growth and investment (Barro, 1991). Barro and Lee found that each additional year of schooling can increase GDP per capita by 1.7% to 12.1% (Barro and Lee, 2001). Hanushek and Woessmann provided evidence that every unit increase in a country's average cognitive test scores is associated with increases in a country's GDP per capita in the form of a growth rate of 1.2–2.0 percentage points (Hanushek and Woessmann, 2012). Many researchers agree that human capital is a key determinant in explaining impoverished and wealthy nations (Acemoglu, Gallego, and Robinson, 2014; Gennaioli et al., 2013; Jones and Romer, 2010). Furthermore, Hanushek showed that human capital plays the role of a driver in economic growth for developing countries. To achieve economic growth, developing countries need to promote their school attainment (Hanushek, 2013).

As human capital is proxied by education, skills and health factors influencing these individual characteristics are considered primary determinants. Current studies show that these factors can be divided into two groups: macrostructure forces and microstructure levels (Buchmann and Hannum, 2001). The macrostructure forces – including national conditions such as national economic growth, education systems, health service systems, state policies, and global forces – can promote or prohibit human capital. Theoretically, economic growth and social development provide more resources for education and healthcare. However, initial observations in many developing countries have shown that socioeconomic development does not bring the same benefits to everyone (Brady, Kaya, and Beckfield, 2007). The nation state shapes the provision of educational opportunities and regulates the structure of the educational system through its educational laws and policies (Brown and Park, 2002; Hannum, 2002). For example, passing laws on compulsory schooling may spark demand for education. By privatising and decentralising their educational and healthcare systems, states may prompt schooling and healthcare costs

to increase, thus lowering overall educational participation and health service access, and exacerbating inequality (Brown and Park, 2002; Hannum, 2002).

At the microstructure level, the effects of family background and school characteristics on children's education and health are well documented. Socioeconomic status, family size, structure, and family decision-making processes are often related to educational disparities in both developed and developing countries (Chudgar and Shafiq, 2010; Edmonds, 2008; Haller and Portes, 1973). The positive correlation between household income and educational attainment is found in many studies (Anh et al., 1998; Filmer, 2000; Gumus, 2014; Hannum, 2003; Israel, Beaulieu, and Hartless, 2001). For example, children with low socioeconomic status often have lower rates of school enrolment and attainment than children in better-off families, and single-parent households have negative effects on children's educational outcomes due to lack of human or social capital in the home (Dika and Singh, 2002). Parents' education can contribute to their children's education in several ways: being able to help children with their homework, being knowledgeable about and providing for their health and nutritional needs, and being able to produce safety nets that prevent shocks from disturbing the children's education (Chudgar and Shafiq, 2010).

School-level effects on children's educational outcomes are also evident. Differences in school inputs, infrastructure, and teacher quality result in inequality in educational achievements. Lastly, although research on the role of community-level factors in children's educational outcomes is still limited (Buchmann and Hannum, 2001), studies have found community factors such as the concentration of poverty and the community's adult literacy level to be significantly associated with educational disparities (Binder, 1999; Brown and Park, 2002; Chudgar and Shafiq, 2010).

3. Human Capital in the GMS Countries

3.1. Background

The current level of human capital in the GMS varies by country. On average, a child born in the GMS today will only achieve 56% of its potential productivity when he or she grows up, according to the World Bank Human Capital Index (HCI) (World Bank, 2020a). Excluding China, the HCI of GMS countries that are Member States of the Association of Southeast Asian Nations (ASEAN) is 53%. Amongst the GMS countries, the Lao PDR's HCI is the lowest, at only 45%, while Viet Nam's HCI is the highest, at 67%.

Table 11: Human Capital Index of the GMS, 2018

Country	Human Capital Index	Expected years of school	Learning-adjusted years of school	Harmonised test scores	Probability of survival to age 5	Adult survival rate	Healthy growth
Cambodia	0.49	9.55	6.90	452	0.97	0.83	0.68
China (mainland)	0.67	13.20	9.67	456	0.99	0.92	0.92
Lao PDR	0.45	10.84	6.39	368	0.94	0.81	0.83
Myanmar	0.47	9.85	6.70	425	0.95	0.81	0.71
Thailand	0.60	12.37	8.64	326	0.99	0.85	0.89
Viet Nam	0.67	12.30	10.02	519	0.98	0.88	0.75

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

Despite the number of years in school, children are not receiving a high-quality education. While children in the GMS complete 11.35 years of school on average, what they learn is equivalent to just 8.05 years of school. In reality, the GMS has a learning gap of 3.30 years. Amongst the GMS countries, China has the highest expected years of school, at 13.20 years, and its learning gap is 3.50 years. Cambodia has the lowest expected years of school, at 9.55 years, and its gap is 2.70 years. Viet Nam has the lowest learning gap, at only 2.28 years (12.30 expected years of school and 10.02 learning-adjusted years of school), while Thailand has the highest learning gap, at 3.80 years (12.37 expected years of school and 8.64 learning-adjusted years of school). Vietnamese students have the highest harmonised test scores (519), while Thai students have the lowest harmonised test scores (326).

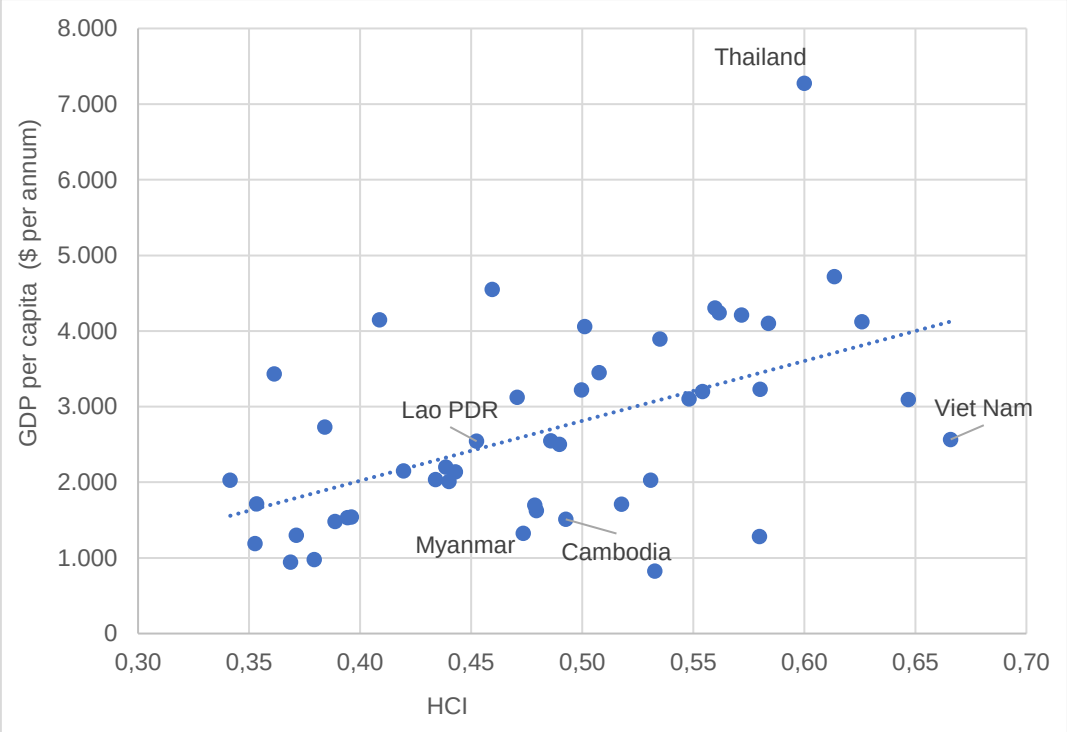
In terms of nutrition, 21% of children in the GMS (except for the Lao PDR for which data were not available) under 5 years of age are stunted due to chronic malnutrition, which puts them at high risk of cognitive and physical development that can last a lifetime. Amongst those countries, China has the highest healthy growth (0.92), while Cambodia has the lowest rate (0.68). Some 15% of 15-year-olds in the GMS will not live until the age of 60, mainly due to non-communicable diseases (diabetes, cancer, and cardiovascular and respiratory illnesses) and injuries. Of those countries, China has the highest adult survival rate (0.92), while Myanmar has the lowest adult survival rate (0.81).

In terms of gender differences, even though the differential is not significant, all indicators favour girls. Most differences occur in standardised test scores and adult survival rates. Being a girl brings a likelihood of having a test score 10 points higher than boys in the Lao PDR, Myanmar, Thailand, and Viet Nam. These data are not available for Cambodia, and China does not have a gender difference. The adult survival rate does not differ significantly between boys and girls (only about 0.02). The average rate for all the GMS countries is 0.85.

3.2. Human Capital and Economic Development in GMS Countries

Human capital in the GMS countries has been growing significantly compared with income per capita. The HCI of GMS countries is higher than that of other lower middle-income countries. Viet Nam's HCI is the highest of the lower middle-income countries (0.67 points). This figure is equivalent to the HCI of China (0.67 points), whose GDP per capita was $9.771/year in 2018, three times higher than that of Viet Nam ($2.567/year). Thailand has GDP per capita 2.8 times higher than that of Viet Nam, but its HCI is lower than Viet Nam's HCI. The Lao PDR approaches the common trend line of lower middle-income countries and is far ahead of Myanmar and Cambodia, but is left behind by the other GMS countries in terms of HCI. This finding suggests that GDP per capita does not always correlate with the HCI in the GMS countries.

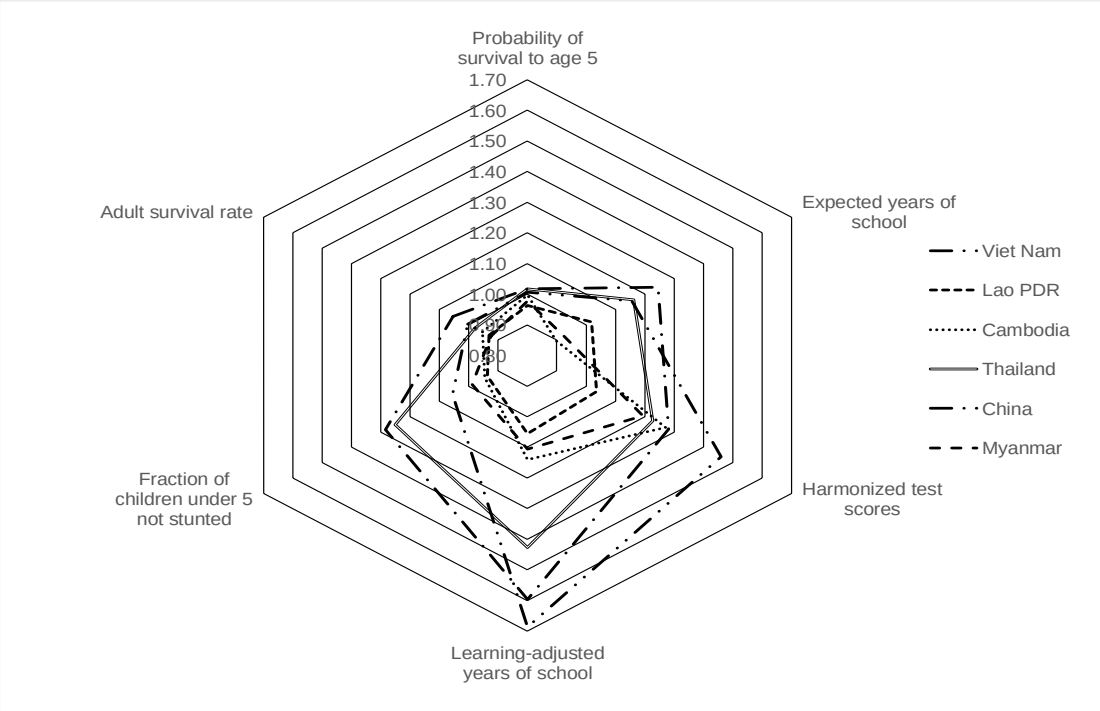
Figure 1: HCI in GDP of Lower Middle-Income Countries



GDP = gross domestic product, HCI = Human Capital Index, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

Decomposing the HCI into its components shows that the human capital of GMS countries is developed mainly within education, while health indicators are the same as the average level of lower middle-income Asia-Pacific countries. Table 1 illustrates that Viet Nam's high HCI score mainly comes from success in narrowing the learning gap and improving harmonised test scores and adult survival.

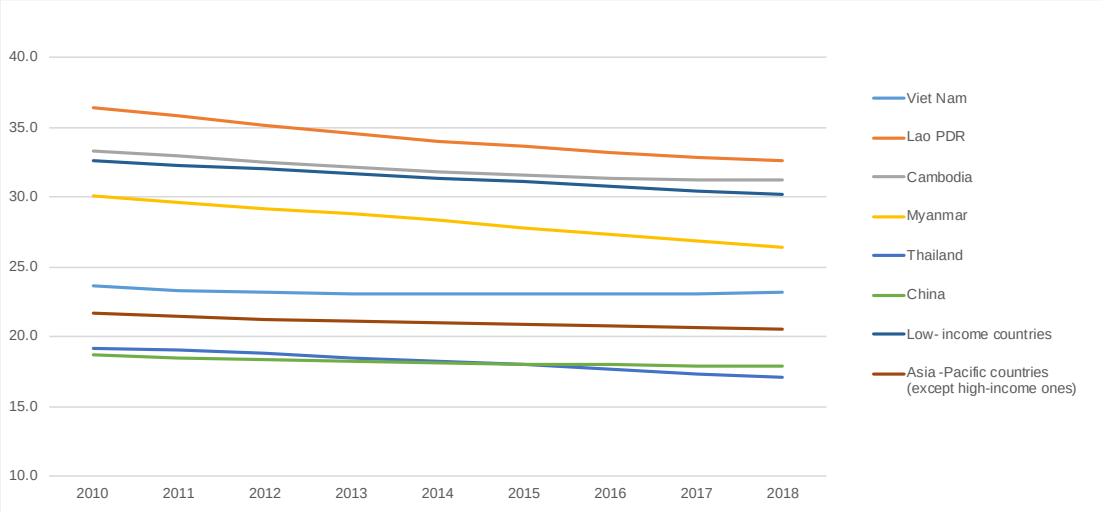
Figure 2: HCI indicators in GMS Countries Compared with the Asia-Pacific Region



GDP = gross domestic product, HCI = Human Capital Index, Lao PDR = Lao People's Democratic Republic.
Note: For the Asia-Pacific region, the average indicators for lower middle-income countries are estimated.
Source: World Bank (2020a).

Figure 1 shows the proportion of the component indicators in GMS countries, compared with the average of lower middle-income countries. It illustrates the most significant disparities in human capital indices in Viet Nam, China, and Thailand, especially in terms of the learning-adjusted school years. It also shows the great learning pressure in these countries, compared with the average of lower middle-income countries in the Asia-Pacific region.

Figure 3: Proportion of the Population Aged 0–14 in GMS Countries

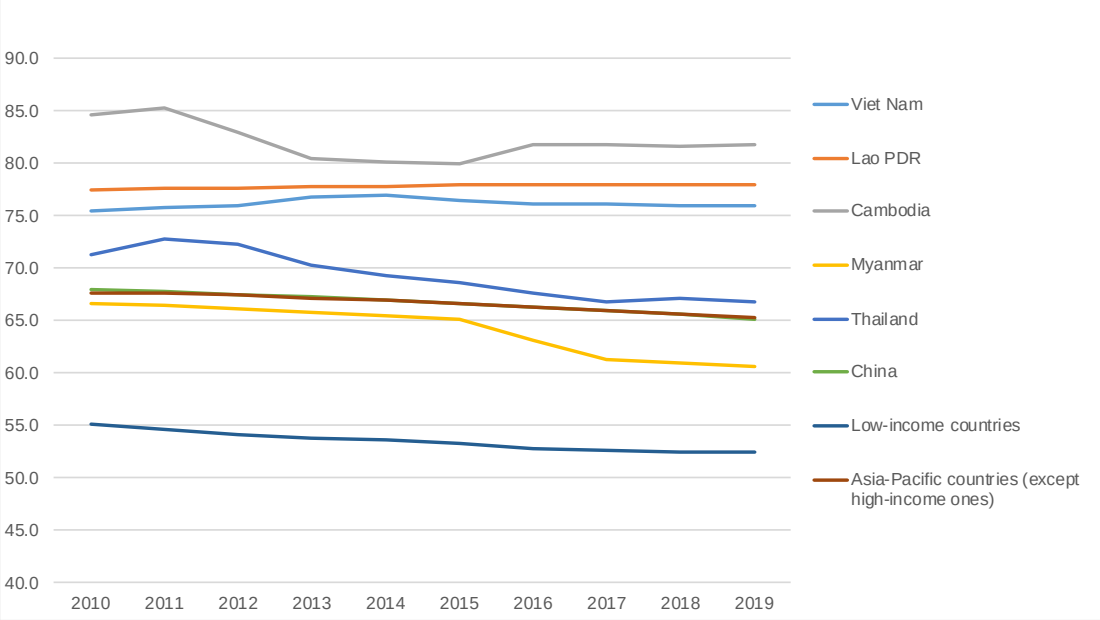


GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

The pressure to improve the quality of human capital in GMS countries is set in the context of the future labour force tending to decrease. Figure 3 shows that the scale of the potential workforce of the GMS countries tends to decrease gradually. The workforce is also different amongst the GMS countries. The proportion of people aged 0–14 in the Lao PDR and Cambodia is high (more than 30% in 2018 and higher than the average of low-income countries). The proportions in Viet Nam and Myanmar are also higher (23.2% and 26.4%, respectively) than the averages of countries in the Asia-Pacific region. Meanwhile, the rate in Thailand, 17.1% in 2018, is quite a bit lower than the regional average (excluding high-income countries) of 20.5% This partly reflects the pressure on GMS countries to improve the potential labour productivity of their workforces to guarantee production capacity in the future.

In addition, GMS countries have generally mobilised a significant part of their population into the production of goods and services. The ratio of labour force participation among GMS countries is quite high. It is higher than the general proportion of the Asia-Pacific region (except Myanmar) and much higher than the proportion of low-income countries. It is highest in Cambodia, at 81% of the population aged 15 and above in 2019 (Figure 4).

Figure 4: Current Workforce in GMS Economies



GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

Table 12: Education Levels of Workers Over 15 Years of Age in GMS Countries

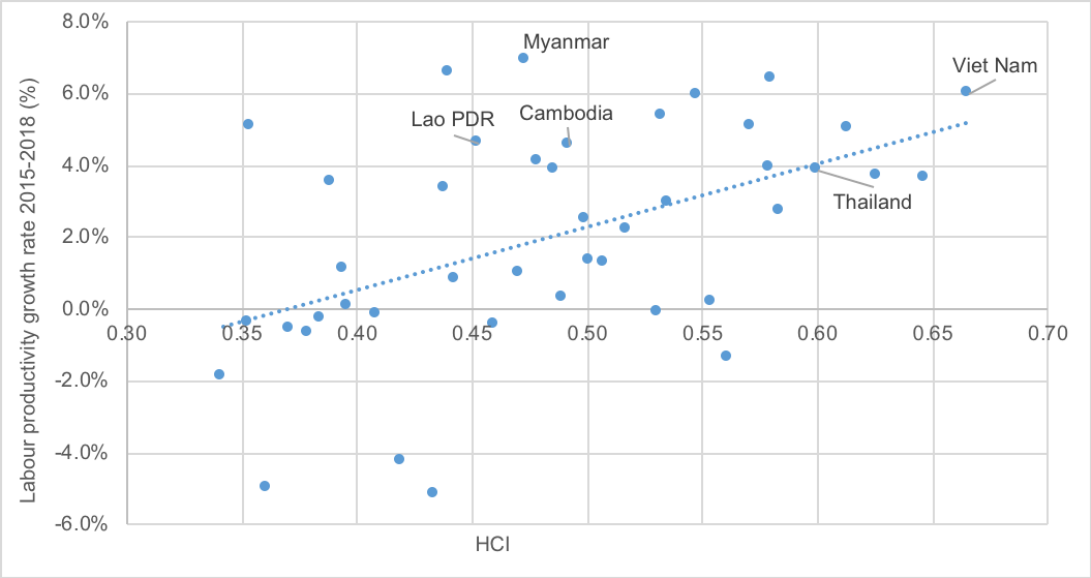
Education level	Viet Nam (2019)	Lao PDR (2017)	Cambodia (2016)	Thailand (2019)	Myanmar (2018)
Under basic level	10.9	9.9	32.8	20.8	21.2
Basic level	49.9	55.8	43.2	39.4	61.5
Intermediate level	27.6	21.0	7.5	22.4	8.0
High level	11.7	13.2	5.9	16.4	9.3
Unidentified	0	0.1	10.5	1.0	0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Notes: Under basic level = no training or education at the preschool level; basic level = education at primary school, secondary school, or equivalent; intermediate level = high school and above; high level = university and postgraduate education.
Source: International Labour Organization (2020), ILOSTAT Database. Labour Force Surveys. https://ilostat.ilo.org/data/ (accessed 2 June 2020).

The education levels of people aged 15 and above working in economies of the GMS countries are generally low. The proportion of labour that is below the basic level[28] is still high, especially in Cambodia, Thailand, and Myanmar. Employees with intermediate or high levels of education in GMS countries number less than 30%. This proportion is only 13.4% in Cambodia and 17.3% in Myanmar.

[28] No education, or education at preschool level.

Figure 5: HCI and Labour Productivity Growth in GMS Countries Compared with Low- to Middle-Income Countries, 2015–2018



GMS = Greater Mekong Subregion, HCI = Human Capital Index, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a; 2020b).

Regarding labour productivity, human capital correlated positively with improved labour productivity in GMS countries from 2015 to 2018. In general, GMS countries had positive growth in labour productivity, when comparing the correlation between the HCI and labour productivity growth during this same period. The rate of improving labour productivity is the highest in Myanmar (6.9% per year, while the HCI in this country is 0.47 points). The Lao PDR, Viet Nam, and Cambodia show the same trends, with a large gap between themselves and other lower middle-income countries. The rate of labour productivity growth in Thailand was 3.8% per year from 2015 to 2018 (the HCI in this country is 0.6 points). For reference, the rate of labour productivity growth in China is 6.7% per year and its HCI is 0.67 points (Figure 5).

Despite a relatively high rate of labour productivity growth, labour productivity within GMS countries is still low, and there are large gaps amongst them. For example, Viet Nam's labour productivity reached $11,142 in 2018, only higher than Cambodia's labour productivity at $6,936, and equivalent to 37% of Thailand's labour productivity at $30,115 (General Statistics Office of Viet Nam, 2019).

In summary, despite recent improvements, the human capital of GMS countries still has many limitations, such as the low education level, limited health conditions, low productivity, and plentiful labour force but lack of sustainability. Given the population of more than 300 million in the GMS, these features of labour forces can create obstacles to economic growth in GMS countries. In particular, the impacts of the recent spread of economic nationalism and protectionism have led to an increasing number of companies moving their production out of the GMS countries back to their home countries or regions. Furthermore, the Fourth Industrial Revolution no longer considers human resources as an advantage of economic growth. Even in developed countries, workforces are facing increased competition from automation and robotic technologies.

3.3. Human Capital and Health

Human capital, in terms of health, reflects the capacity to participate in the workforce during the present and future. The World Bank specifies human capital in terms of health through three indicators: (i) the survival rate of children under 5 years old, (ii) the survival rate of adults (15–60 years old), and (iii) the proportion of children under 5 without stunting (healthy survival rate for children under 5). While the mortality rate and stunting rate of children under 5 years old reflect the capacity to develop physically and intellectually, meeting the requirements of human resources in the future, the survival rate of adults reflects the capacity to participate in the workforce.

Table 13: Health Indicators in Human Capital in GMS Countries(%)

Item	Survival rate of adult (estimated in 2017)	Survival rate of children under 5 years old (2018)	Rate of children under 5 years old without stunting
Lao PDR	81.25	95.3	66.9 (2017)
Viet Nam	87.80	97.9	76.2 (2017)
Cambodia	83.32	97.2	67.6 (2014)
Myanmar	80.81	95.4	70.6 (2016)
Thailand	85.45	99.1	89.5 (2016)
China	92.12	99.1	91.9 (2016)
Asia-Pacific (except for high-income countries)		**98.4**	
Low-income country average		**95.1**	**69.9 (2019)**

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

Human capital, in terms of health in the GMS countries, can be divided into three groups when compared with the average level of lower middle-income countries in the Asia-Pacific. In Thailand, where the average income is high, there are many outstanding indicators; in Viet Nam, the indicators are equivalent to the average level of countries in the region (its GDP per capita is equivalent to 95% of the average GDP of lower middle-income countries), while there is a large gap between the rest of the countries and the average level. The Lao PDR's GDP per capita in 2018 was equivalent to the GDP per capita of Viet Nam ($2,542/year), but the health indicators in these countries were the lowest of all GMS countries. This reflects the physical potential of the Lao PDR's citizens, which has not kept up with economic growth. This may become an obstacle in the future.

Table 14: Human Capital and Health of GMS Countries

Year	Cambodia	China	Lao PDR	Myanmar	Thailand	Viet Nam	Asia-Pacific (excluding high-income countries)	Lower middle-income countries
2010	44.3	15.8	68.1	63.3	13.3	23.1	23.1	65
2018	28	8.6	47.3	46.2	9.1	20.7	15.7	49.1
Change	*−16.3*	*−7.2*	*−20.8*	*−17.1*	*−4.2*	*−2.4*	*−7.4*	*−15.9*
2010	39.8	9.4	44.2	-	16.4	22.7	-	37.1
2018	32.4	8.1	33.1	29.4	10.5	23.8	-	30.8
Change	*−7.4*	*−1.3*	*−11.1*	-	*−5.9*	*1.1*	-	*−6.3*
2010	72.5	86.3	68.4	69.6	84.2	86.2	83.9	71.1
2018	77.6	89.0	73.8	74.7	87.6	86.8	86.4	74.3
Change	*5.1*	*2.8*	*5.4*	*5.0*	*3.5*	*0.6*	*2.4*	*3.3*
2010	63.7	80.2	60.7	55.2	71.0	71.4	76.4	63.7
2018	67.9	83.3	66.2	61.6	74.4	72.0	78.9	66.9
Change	*4.2*	*3.1*	*5.6*	*6.3*	*3.4*	*0.6*	*2.5*	*3.2*

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.

* The stunting rates were taken for the following years: Cambodia (2010, 2017); China (2010, 2013); Lao PDR (2011, 2017); Myanmar (2016); Thailand (2010, 2013); Viet Nam (2010, 2017); and lower middle-income countries (2010, 2017).

** The survival rate to age 65 (females) and survival rate to age 65 (males) for the average of lower middle-income countries and countries in the Asia-Pacific region (excluding developed countries) represent the data for 2010 and 2017.

Source: World Bank (2020a).

Overall, the indicators that reflect health in human capital in GMS countries are improving year by year. However, the improvement in Viet Nam is slower than in other GMS countries. It is also slower than the common average speed of the Asia-Pacific region (excluding developed countries) and low-income countries. From 2010 to 2018, the mortality rate of children under 5 years old per 1,000 children decreased 2.4 percentage points, and the stunting rate reduced by only 1.1 percentage points. The rate of survival to 65 years old for females and males increased by only 0.6 percentage points. The speed of improvement in the Lao PDR, Cambodia, and Myanmar is the highest in all four indicators (Table 4).

3.4. Human Capital and Education

Human capital, in terms of education, reflects the knowledge and skills that train people to participate in the future workforce. It is specified by the following indicators: (i) expected completed school years, (ii) learning-adjusted school years, and (iii) standardised test scores. These indicators show the duration and quality of education. The expected school years and adjusted school years show the actual learning time and conversion time for students in a country to obtain the amount of knowledge and skills, respectively. Standardised test scores illustrate the quality of education (knowledge and

skills obtained) and are calculated from the test scores from the Trends in International Mathematics and Science Study (TIMSS), an international examination on student achievement that is applied in most countries.

Table 15: Education Indicators in Human Capital in GMS Countries

Country	Expected school years (years)	Adjusted school years (years)	Standardised test scores (points)
Cambodia	9.55	6.90	452
China	13.25	9.67	456
Lao PDR	10.84	6.39	368
Myanmar	9.85	6.70	425
Thailand	12.37	8.64	436
Viet Nam	12.30	10.21	519

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

As analysed above, human capital in terms of education in GMS countries is relatively high in relation to GDP per capita, especially in Viet Nam. The education indicators for Viet Nam are equivalent to or higher than those of other GMS countries and ASEAN Member States, especially in standardised test scores.

Table 16: Education Indicators of HDI in GMS Countries, 2010–2018

Year(s)	Cambodia	China	Lao PDR	Myanmar	Thailand	Viet Nam	Developing countries	Asia-Pacific region
Human Development Index of Education								
2010	0.44	0.60	0.43	0.39	0.61	0.58	0.54	0.59
2015	0.47	0.64	0.48	0.44	0.64	0.62	0.58	0.63
2018	0.48	0.65	0.48	0.45	0.67	0.63	0.58	0.64
Change 2010–2018	*0.03*	*0.05*	*0.05*	*0.06*	*0.05*	*0.04*	*0.05*	*0.04*
Expected school years in HDI								
2010	10.7	12.9	10.0	9.2	13.3	12.0	11.3	12.5
2015	11.2	13.8	11.3	9.9	13.9	12.7	12.0	13.3
2018	11.3	13.9	11.1	10.3	14.7	12.7	12.2	13.4
Change 2010–2018	*0.6*	*1.0*	*1.1*	*1.1*	*1.4*	*0.7*	*0.9*	*0.9*

GMS = Greater Mekong Subregion, HDI = Human Development Index, Lao PDR = Lao People's Democratic Republic.
Source: United Nations Development Programme (2019), Human Development Reports, Human Development Data (1990–2018). http://hdr.undp.org/en/data (accessed 2 June 2020).

The improvement in education indicators in the GMS countries can be reflected through indicators of the Human Development Index (HDI). The GMS countries can be divided into two groups: (i) Viet Nam and Thailand, which are in the upper average or are approaching the common average of developing countries in the Asia-Pacific region; and (ii) Myanmar,

the Lao PDR, and Cambodia, which have a large gap between themselves and the common average of the region and the average of developing countries.

In general, the education indicators of the HDI in GMS countries have improved year by year, but slowly. From 2010 to 2018, the HDI gap in education amongst GMS countries in group 2 and the averages of the region and developing countries remained unchanged (these countries increased about 0.05–0.06 percentage points, while the common average of developing countries increased 0.05 percentage points and the average of the Asia-Pacific region increased 0.04 percentage points). Meanwhile, the disparity in the score of Viet Nam decreased slightly (0.01 percentage points). This shows that reforms in Viet Nam's education were slower than in other countries in the region and lower than the common average of developing countries.

4. Human Capital and its Drivers in GMS Countries

4.1. Healthcare System in GMS Countries

There is a significant difference in the budget allocation for healthcare amongst the GMS countries. Viet Nam and Thailand have high rates of budget spending on healthcare services, while those of the Lao PDR, Cambodia, and Myanmar are quite low (Table 7). Even so, resources for healthcare systems in the Lao PDR and Cambodia are supported significantly by non-governmental organisations and sponsors (Phanphairoj and Loa, 2017). However, this partly reflects the high level of out-of-pocket payments for healthcare services in Cambodia and Myanmar (61.13% and 76.23%, respectively). High private payment rates for healthcare services also reduce the ability to access these systems.

Table 17: State Spending Budgets on Healthcare Systems in GMS Countries, 2017

Item	Viet Nam	Lao PDR	Cambodia	Thailand	China	Myanmar	Lower middle-income countries	Asia-Pacific (excluding developed countries)
Percentage of state budget spending on health (% of total budget expenditure)	9.48	4.04	6.08	15.03	9.07	3.49	5.65	
Percentage of state budget spending on health (% of GDP)	2.69	0.89	1.41	2.85	2.92	0.69	1.29	2.74
Share of social spending on health/GDP in 2017 (%)	5.53	2.53	5.92	3.75	5.15	4.66	3.86	4.91
Social spending on health per capita in 2017 ($)	129.58	62.12	82.08	247.04	440.83	58.04	79.41	313.64
State budget spending on health per capita ($/person)	63.00	21.84	19.54	188.06	249.83	8.59	25.59	177.95
Private health expenditure (% of total social spending on health)	49.38	48.20	61.13	20.91	43.33	76.23	64.45	42.99

GDP = gross domestic product, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

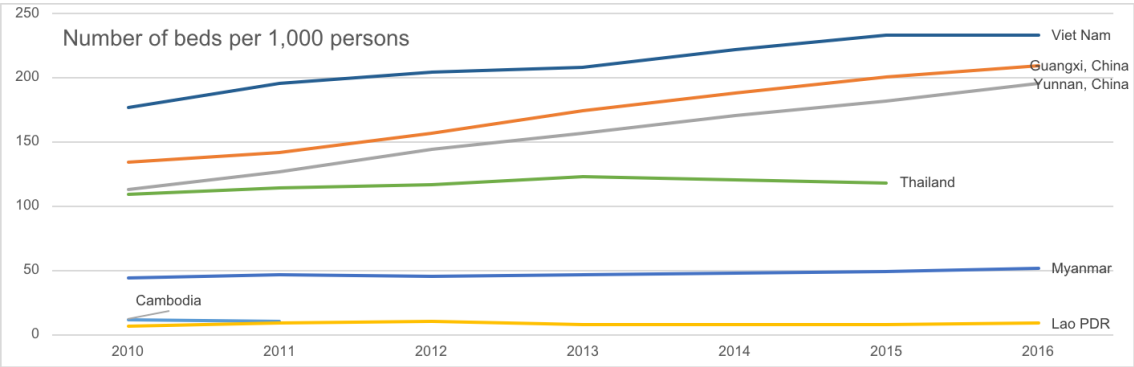
Thailand has a low rate of people paying for healthcare services (20.91%) due to the ability to access a universal healthcare programme (98% of the population), in comparison to Viet Nam (65%), Cambodia (24%), and the Lao PDR (15%).

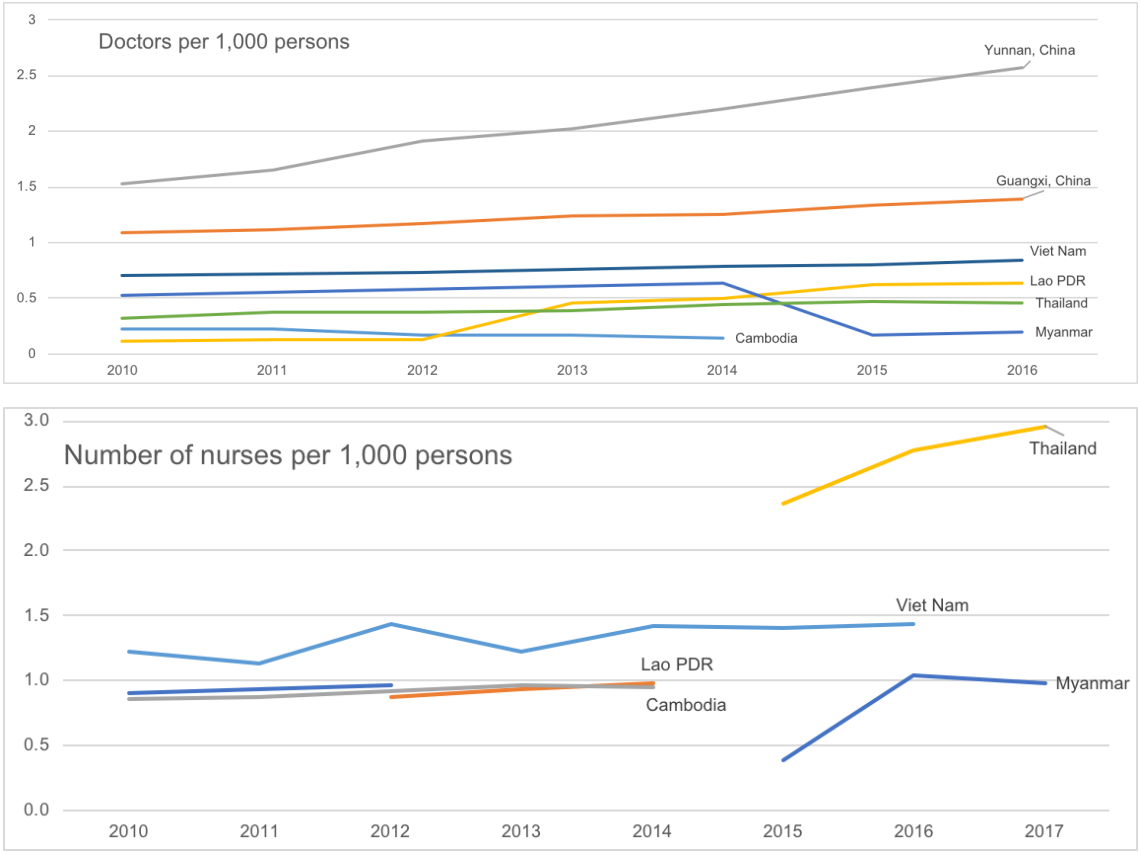
Most hospitals are public in GMS nations. However, the systems have some significant differences. The proportion of public hospitals in Viet Nam (81%) and Thailand (70%) is considerably higher than that of the Lao PDR (32%) and Cambodia (20%). However, comparisons amongst GMS countries show that the level of public services provided in Thai and Laotian hospitals is higher than that in Viet Nam and Cambodia (Phanphairoj and Loa, 2017).

Hospital systems in the Lao PDR, Thailand, and Viet Nam are managed by decentralised management models, while the management system in Cambodia is centralised within the Ministry of Health. In general, decentralised health management systems help provincial health agencies become more responsible in planning, financing, and service delivery – ensuring the ability of local residents to access the appropriate health service.

The health infrastructure of Thailand, Viet Nam, and China's Yunnan Province and Guangxi Zhuang Autonomous Region is generally better than that of the rest of the GMS countries. The number of beds per 1,000 people in China and Viet Nam is higher than in other GMS countries, while Yunnan Province (China) has a higher number of doctors per 1,000 people than in GMS countries. Guangxi Zhuang Autonomous Region (China) and Thailand have a higher number of nurses and midwives than in other GMS countries. The rate of healthcare workers and the number of beds per 1,000 people have a positive correlation with the accessibility and availability of healthcare services, as well as people's health status (Kabene et al., 2006).

Figure 4: Selected Indicators on Health Infrastructure in GMS Countries





GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020a).

The quality of a healthcare system is reflected through the quality of information and communication in GMS countries. This is a key determining factor for the quality of the healthcare system and improving the health of people in Thailand. It is also one of the important factors in Viet Nam and the Lao PDR. Of all four GMS countries, Viet Nam, Thailand, and the Lao PDR use digital health management information systems, while Cambodia still uses a paper system. In Thailand, the Ministry of Public Health restructured the health information system to support the Global Health Insurance Program in 2011. In addition, Thailand has integrated information technology on health management, waste, water supply, and transportation systems in urban development. State budget spending on researching and developing health technology also contributes considerably to improving the quality of health systems and healthcare services. Of all the GMS countries, Thailand (0.39%) has the highest rate of state budget spending on its health system, while Viet Nam only spends 0.19% of the state budget on health. The figures in the Lao PDR and Cambodia are very low (Phanphairoj and Loa, 2017).

4.2. Resource Allocation and Education System in GMS Countries

The share of the budget spent on education development in GMS countries is generally significant. Viet Nam and Thailand have higher rates of state budget spending on developing education compared with the common average of Asia-Pacific countries

(excluding developed countries). In Myanmar, the Lao PDR, and Cambodia, this rate is quite low despite a significant increase from 2010 to 2018.

Table 18: State Education Budget in GMS Countries (% GDP)

Country or region	2010	2011	2012	2013	2014	2016	2017	2018
Viet Nam	5.14	4.81	5.53	5.65	n.a.	4.34	n.a.	4.17
Thailand	3.51	4.81	4.54	4.12	n.a.	n.a.	n.a.	n.a
Myanmar	n.a.	0.79	n.a.	n.a.	n.a.	n.a.	2.16	1.97
Cambodia	1.53	1.51	1.56	2.05	1.91	n.a.		2.16
Lao PDR	1.71	1.71	1.82	3.23	2.94	n.a.	n.a.	n.a.
East Asia and Pacific (excluding high-income countries)	3.16	3.19	3.97	3.74	n.a	n.a	n.a.	n.a.

n.a. = data not available in the database, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
Source: World Bank (2020b).

In mobilising budgets within this sector, GMS countries have different priorities for each level of education. The spending is relatively equal for all levels of education in Viet Nam and Thailand, while levels in Cambodia and the Lao PDR are mainly focused on primary and secondary (accounting for 79% and 89% of the budget expenditures for education in 2013, respectively) (World Bank, 2020b).

Table 19: Quality of Education Systems in GMS Countries

Item	Viet Nam	Lao PDR	Cambodia	Thailand	China
Quality of primary education system	93	88	112	89	38
Quality of higher education system and training	89	75	109	67	39
- Quality of education system	*71*	*53*	*79*	*65*	*29*
- Quality of math and scientific education	*85*	*88*	*111*	*83*	*50*
- Quality of school management	*120*	*80*	*123*	*78*	*50*
- Accessing internet at school	*77*	*96*	*101*	*48*	*50*
Vocational training	94	87	110	65	43
- Specialised training services are available locally	*108*	*95*	*117*	*90*	*55*
- Employee training level	*71*	*74*	*84*	*47*	*36*
*- Quality of vocational training**	*102*	*97*	*112*	*74*	*41*
Primary student–teacher ratio*	75	85	124	56	58

GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic.
* Ranking in 2019.
Sources: World Economic Forum (2017; 2019).

Nevertheless, the quality of education in GMS countries is generally quite low. The rankings of some indicators of GMS countries' quality in education systems show that Viet Nam, the Lao PDR, Cambodia, and Thailand are all low on the list (World Economic Forum, 2017). Compared with other GMS countries, Thailand has the highest-ranking position for all indicators. The gap between Thailand and other GMS countries is quite large. Although the rate of budget spending on education in Viet Nam is higher than the rest of the GMS countries, except for Cambodia, many educational system quality indicators are low, especially the indicator on the quality of the primary education system, the quality of school management, and the quality of vocational training. This illustrates that the effectiveness of state budget spending on education in Viet Nam is generally low.

5. Issues and Policy Recommendations

Improving human capital has an important relationship to the economic growth and labour productivity of a country (Hamilton et al., 2019). It also helps to enhance the adaptability of employees to rapid changes in science and technology and contributes to reducing the negative effects of the Fourth Industrial Revolution, especially in developing countries (World Economic Forum, 2019). Based on these findings, there are some specific issues in improving human capital in GMS countries.

It is necessary to ensure a balance between human capital development factors in GMS countries, including the health, survival, and knowledge and skills required to join the labour force. Through this, human capital can contribute effectively to improve labour productivity and sustainable development in GMS countries.

Another issue is increasing cooperation mechanisms amongst GMS countries in addressing health and education within the subregion, especially the inflow of resources

(including capital and migration), sharing experiences, cooperating on technology development, and human resources training amongst GMS countries. Cross-border labour migration is increasing rapidly within GMS countries. The total number of migrants amongst ASEAN countries increased four times, from 2.1 million in 1996 to 9.9 million in 2016. One of the main routes was between GMS countries – from Myanmar, Cambodia, and the Lao PDR to Thailand. Sharing a language and cultural ties, short distance, and historical relationships, which can reduce the psychological and financial costs of migration, are considered the main drivers of the labour movement (Kikkawa, Gaspar, and Park, 2019). Since then, the cross-border transmission of communicable infections and drug and human trafficking have been increasing challenges.

Therefore, the strength of each GMS country and the overall development of the subregion need to be promoted. Successful health cooperation amongst ASEAN GMS countries during the severe acute respiratory syndrome (SARS) epidemic illustrated the role of regional collaboration in fighting a common threat to the region. However, cooperation still faces challenges in many other fields. For example, the restrictions and regulations on foreign investment may create obstacles to opening education and health markets to other member countries; and health coverage can create a barrier for migrant workers across borders within the GMS countries.

The final issue is mobilising and using effective resources, especially public investment, in health and education in GMS countries. This will achieve great improvement in human capital in terms of health, survival, knowledge, and skills to adapt to the rapid changes of the Fourth Industrial Revolution. Lessons learned in Thailand and Viet Nam suggest that healthcare system decentralisation and compulsory drug licensing policy can be a good way to use resources effectively. In addition, Viet Nam's experience shows that an imbalanced investment structure in education and training (investing too much in compulsory education but less on tertiary education) lowers the quality of higher education. That, in turn, brings down the quality of the labour force. Therefore, the investment structure influences resource-efficient usage.

To summarise, the educational and health disadvantages distort potential human resources, with a population of more than 326 million in the GMS. Furthermore, they may also threaten the advantages of the GMS, while surrounding areas attract investors and promote their competitiveness. Studying more than 1,500 subnational regions of the world, Gennaioli and colleagues suggested that developing regional human capital is critical to promote regional development (Gennaioli et al., 2013). Based on the current human capital development in the GMS, to reach the goals of promoting socio-economic development in the subregion, this study suggests several policies to enhance human capital:

- Policies targeting health improvements should include (i) enriching nutritional interventions to reduce mortality, especially mortality under the age of 5, and ending all forms of malnutrition, and diet and diet-related non-communicable diseases; (ii) promoting public awareness about nutrition and healthcare, especially for disadvantaged and vulnerable populations in each of the GMS countries; and (iii) building capacity for healthcare systems and incorporating technical support and expertise sharing within GMS countries.
- Policies aiming at education achievements should include (i) reducing the learning gap in each country by focusing on learning outcomes, skills, and competencies so that students are able to adapt their skills, critical thinking, and collaborative attitude in their work; and (ii) harmonising technical and vocational education and training standards. One of the strategies that need to be considered is to promote public–private collaboration in education and employment to meet the regional labour market demand. In other words, education and training standards should be market-oriented via public–private collaboration.
- A commitment to strengthening exchanges between countries via the implementation of the GMS Health Cooperation Strategy, 2019–2023, which includes all three pillars: health security as a regional public good, health impacts of connectivity and mobility, and health workforce development (ADB, 2013). The enhancement of the human resources capacities of the health system should be prioritised.
- Based on the Strategic Framework and Action Plan for Human Resource Development in the GMS, 2013–2017 (ADB, 2013), the strategy for GMS cooperation in human resources development should follow the Asian Development Bank recommendations. Moreover, based on the framework, cooperation mechanisms in student and academic exchanges, and technical and vocational education and training, as well as a mechanism for managing migrant labour amongst countries, should be identified. Regulations should be harmonised. Standards and procedures on labour management amongst GMS countries should aim to form a common labour market in the GMS countries (associated with the formation of the ASEAN Economic Community).
- Strengthening linkages, sharing experiences, and promoting learning amongst GMS countries should be a top priority to enhance the quality of health and education systems. Building databases and sharing information amongst GMS countries – especially in education, public health, and migration research – can also increase cooperation between medical and educational infrastructure systems at the border areas between GMS countries.
- GMS countries should identify their priorities for reforming health and education systems to adjust their investment policies, focusing on improving human capital indicators; determine the appropriate level of priorities to invest in higher

education and basic health systems; promote research and development; and enhance the capacity of small and medium-sized enterprises.

- Enhancing the attraction of private resources for the development of health and education systems in GMS countries, and facilitating the flow of investment capital amongst GMS countries, especially in health and education, need to be considered.

6. Conclusion

GMS countries differ in terms of human capital. Viet Nam and Thailand have a higher level of human capital development than other countries in the GMS (the Lao PDR, Myanmar, and Cambodia). The two top-ranking countries also have higher expenditure on human capital development (health and education). Measures to improve human capital in the GMS countries must focus on the cooperation and linking mechanisms amongst countries to allocate rational and effective resources (labour and capital) as well as addressing issues related to healthcare and education at the subregion scale.

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Background Paper 4C

Water Resources Management in the Mekong Basin

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