



The Problem of Economic Development Strategy in Cambodia: The Case of the Road Network

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Received 01 October 2018

Revised 28 December 2018; Accepted 28 December 2018

Abstract: Bổ sung tóm tắt tiếng Anh.

Keywords: Bổ sung từ khóa.

1. Introduction

At the upcoming Cambodia national election in July 2018, the Sixth Legislature of the National Assembly will be officially born and also the next national development plan. At present, the five years development plan, called the National Strategic Development Plan 2014-2018 (NSDP 2014-2018) serves as a roadmap for the government to achieve its policy.

The goal of NSDP 2014-2018 is to push for a sustainable and equal economic growth. The Cambodian road network connects economic activities from rural areas to urban areas with rural roads and national roads. So, the adverse health of Rural Roads will reduce the chance for rural people to gain benefit from economic growth. The suggestion in the ADB report related to inequality is to establish a strategy that generates an absolute increase in income for the rural majority which will lower inequality. Furthermore, infrastructure

development influences income growth directly, and the road network is one of the keys¹.

Acknowledging the importance of infrastructure development, NSDP set out rehabilitation of the Road network as a priority agenda. The development of the road network in Cambodia is known simply as the rehabilitation and construction of the National Roads and Rural Roads. The government has paved the National Roads with DBST or concrete, but the Rural Roads with laterite and earth. The National Roads can serve all year round, but the Rural Roads can be used only during the dry season. This shows the unequal development between the National Roads and the Rural Roads.

Previous research about infrastructure and economy is that of First, Ifzai Ali and Ernesto M. Pernia (2003) and Sum, M. (2008). Ifzai Ali

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<https://doi.org/10.25073/2588-1108/vnueab.4178>

¹ International Monetary Fund (2016), *CAMBODIA: STAFF REPORT FOR THE 2016 ARTICLE IV CONSULTATION*, IMF Country Report, No. 16/340, Washington, D.C, pp.1-40.

and Ernesto M. Pernia (2003) studied the connection between poverty reduction and infrastructure. This study mentioned that investment in road development could result in directly raising wages and increasing employment for the poor in rural areas. In addition, Sum, M. (2008) states that Cambodia still lacks road networks and the existing roads are in poor condition. These two types of research focus on the current situation and the economic influence of the road network. However, none of these researches identified the cause of this unequal road network development.

Because road network development is one of the priority agendas of the NSDP, we can consider that the policy of the NSDP has influenced the road network development. This paper's purpose is to analyze the policy of NSDP 2014-18 that is related to road network development, to identify the problems of those policies in developing infrastructure. This research hypothesizes that the NDSP intends to enhance urban growth rather than rural development and that this trend is the primary cause of unequal development between the National Roads and Rural Roads. This paper is divided into five sections. The second section discusses the situation of income distribution; the third session describes the infrastructure situation; the fourth section we will analyze NSDP2014-18, and the fifth section will provide conclusions and some policy requests related to investment in infrastructure.

2. Poverty and inequality

2.1. Poverty

The current health of Cambodia's economy is expected to be based on some components such as GDP growth, increasing GDP per capita, FDI inflow, exportation, and decreasing the poverty rate and inequality. The decreasing of the poverty

rate and of inequality can be considered as a reflection of the efficiency of government in implementing its economic strategy.

In 1993-1994, the poverty rate was estimated by the government at 39% according to the first poverty line drawn up in the 1990s. According to this poverty line, the poverty rate was 14.6% in 2009. However, the government redefined the poverty line in 2011, raising the poverty line. The definition of the poverty line is based on daily food consumption, none food allowance, and water consumption; so each person should be entitled to income or resources allowing the consumption of an appropriate quantity of food providing 2,200 K-calories daily. A comparison of the new poverty line with the earlier poverty line is shown in Table 1.

Based on the new poverty line, the poverty trends were estimated, and the overall trend is respectfully decreasing. As shown in Figure 1, there was an overall decrease in the poverty rate by region. in Cambodia from 2007 to 2012. There was a remarkable reduction in the rural poverty rates from about 53% in 2007 to about 20% in 2012. In 'Other Urban' areas, the reduction in poverty rates is similar, decreasing from 41% in 2007 to about 14.4% in 2012. Phnom Penh, which was previously lowest in its poverty rate showed a gradual fall. However, it did have a slight increase in 2012.

2.2. Income inequality

The growth of annual GDP will contribute to increasing the GDP per capita. Practically, the GDP per capita has also grown dramatically over 1,000 US Dollars since 2013 along with the average annual GDP growth rate at 7%. However, the GDP per capita doesn't represent equality in the income distribution in Cambodia. For the real situation of the effectiveness of economic growth to the income distribution to be seen, calculation of the Gini coefficient of income is needed.

Table 1. Comparing poverty lines of 1997 and new poverty lines, Riels/day

Region	Old Poverty Lines (1997)	New Poverty Lines (2009)
Cambodia	3,332	3,871
Phnom Penh	4,185	6,347
Other Urban	3,438	4,352
Rural	3,213	3,503

Source: Ministry of Planning (2013), *Poverty in Cambodia: A New Approach*, Phnom Penh: Royal Government of Cambodia, Table 3, p. 6.

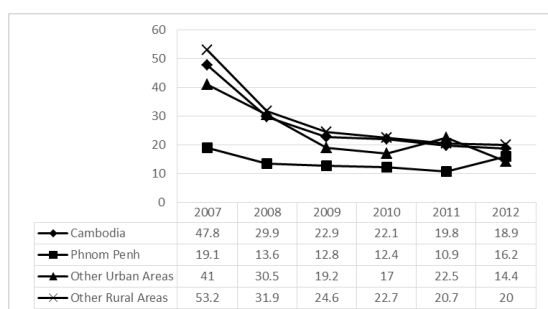


Figure 1. Trend in the poverty rate in Cambodia, 2007-2012.

Source: Ministry of Planning (2014), *POVERTY ALLEVIATION: AN APPROACH TO AN ACTION PLAN FOR CMDG-1*, Phnom Penh: Royal Government of Cambodia, Figure 1, p.3.

The calculation of income inequality is achieved by using the income data source from the CSES report from 2009 to 2015, and the Gini coefficient method. Table 2 summarizes the regional quintile group disposable income by capita per month from 2009 to 2015. The share of the lowest quintile in the Other Urban areas was increasing from 3% in 2009 to 4.4% in 2011, and decreased to 4.1% in 2012 to 2013. Besides that, the share of the highest quintile increased from 49.6% in 2012 to 58.8% in 2013. The percentage of the lowest quintile in the Other Rural gradually increased from 3% in 2009 to 4.4% in 2013, then immediately decreased to 1.3% in 2014. On the other hand, the share of the highest quintile increased to 51.2% in 2014.

To estimate income inequality by region in Cambodia, we use the Gini coefficient equation as below. The word Gini represents the Gini coefficient, and $G(x)$ represents the Lorenz curve.

$$Gini = 1 - 2 \int_0^1 G(x) dx$$

Figure 2 presents the calculated result of the Gini coefficient on the income. The Gini coefficient of all regions remarkably declined from 2009 to 2015; however, most of the coefficients lay above the Gini index standard line of 0.4. The Gini index of the Other Urban fell from 0.48 in 2009 to 0.41 in 2011, and then rose to 0.48 in 2013 before it went down to 0.42 in 2014. The Gini index of the Other Rural fell from 0.49 in 2009 to 0.41 in 2013 and then rose to 0.45 in 2014.

According to the result of the calculation of the Gini coefficient for income and Table 2-3, the relationship is indicated of the Gini Coefficient with the quintile of income. Practically, the Gini index shows a higher number when the share of the lowest quintile falls, and the percentage of the wealthiest quintile increases. This study suggests increasing the lowest quintile income to reduce income inequality. To increase revenue for the poor, it should increase the chance for the poor, primarily in rural areas to benefit from GDP growth.

2.3. Income source

According to the influence of GDP growth, the primary income source has changed recently. The contribution to income growth in rural areas has changed from agriculture activities to wages and salaries. Wage and Salary income sharing accounted for 33% to 47% out of total income in the Rural Areas from 2011 to 2015².

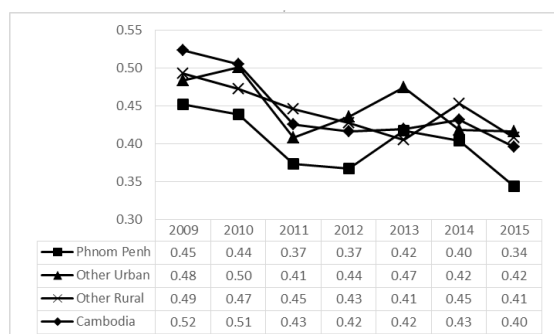
² NIS (2016), *CSES2005*, Table 1, p. 70.

Table 2. Quintile group disposable income by capita per month

Domain/Quintile groups	Value in thousand riels							Share in Percentage							
	CSES 2009	CSES 2010	CSES 2011	CSES 2012	CSES 2013	CSES 2014	CSES 2015	CSES 2009	CSES 2010	CSES 2011	CSES 2012	CSES 2013	CSES 2014	CSES 2015	
Cambodia	Lowest fifth	19	28	41	49	67	46	82	2.0	2.8	4.1	4.3	4.6	2.8	4.4
	Second fifth	49	69	89	106	135	162	190	6.0	7.0	9.0	9.3	9.3	9.8	10.3
	Middle fifth	88	113	142	165	204	246	284	11.0	11.4	14.3	14.5	14.1	14.9	15.3
	Fourth fifth	148	180	213	248	298	359	406	19.0	18.3	21.5	21.8	20.6	21.8	21.9
	Highest fifth	488	595	506	571	744	838	890	62.0	60.5	51.1	50.1	51.4	50.8	48.1
Phnom Penh	Lowest fifth	82	85	126	137	159	166	200	4.0	4.0	6.2	6.3	5.3	4.9	6.2
	Second fifth	177	190	217	229	285	344	373	8.0	8.9	10.7	10.6	9.6	10.2	11.5
	Middle fifth	271	290	298	324	395	476	526	13.0	13.6	14.5	15.0	13.2	14.2	16.2
	Fourth fifth	405	438	415	454	574	679	737	20.0	20.4	20.6	21.0	19.2	20.2	22.7
	Highest fifth	1,140	1,135	973	1,017	1,571	1,695	1,412	55.0	53.1	48.0	47.1	52.6	50.5	43.5
Other Urban	Lowest fifth	33	50	59	69	103	92	129	3.0	3.0	4.4	4.1	4.1	4.3	4.9
	Second fifth	90	118	129	153	203	213	248	8.0	7.2	9.7	8.9	8.1	9.9	9.4
	Middle fifth	143	188	199	229	295	310	358	12.0	11.5	14.9	13.4	11.7	14.3	13.7
	Fourth fifth	238	299	286	362	435	436	541	20.0	18.1	21.5	21.2	17.3	20.2	20.6
	Highest fifth	667	992	661	896	1,478	1,109	1,348	57.0	60.2	49.6	52.4	58.8	51.3	51.4
Other Rural	Lowest fifth	17	25	28	33	47	17	57	3.0	3.2	3.4	3.6	4.4	1.3	3.7
	Second fifth	43	61	67	80	103	124	154	7.0	7.9	8.3	8.9	9.6	9.4	10.1
	Middle fifth	74	97	114	132	164	202	236	12.0	12.7	14.1	14.7	15.1	15.3	15.4
	Fourth fifth	121	149	177	200	241	301	337	20.0	19.4	21.8	22.3	22.3	22.8	22.0
	Highest fifth	352	433	425	453	526	676	746	58.0	56.7	52.4	50.4	48.7	51.2	48.8

Source:

- (1) Income data in 2009-2014: NIS (2015), *Cambodia Socio-Economic Survey 2014*, Phnom Penh: Ministry of Planning, Table 4, p. 94.
- (2) Income data in 2015: NIS (2016), *Cambodia Socio-Economic Survey 2015*, Phnom Penh: Ministry of Planning, Table 4, p. 72.

Figure 2. Trend in income inequality by regions
Source:

- 1) Estimated from Income data in 2009-2014: NIS (2015), *Cambodia Socio-Economic Survey 2014*, Phnom Penh: Ministry of Planning, Table 4, p.94.
- (2) Estimated from Income data in 2015: NIS (2016), *Cambodia Socio-Economic Survey 2015*, Phnom Penh: Ministry of Planning, Table 4, p.72.

Recently, the amount of industry labour is increasing; so the Wage and Salary income referred to is income from working in factories. A study of the connection between poverty reduction and infrastructure suggested that investments such as road investment could result in directly raising wages and employment for the poor in rural areas (Ifzal Ali and Ernesto M. Pernia. 2003). In Cambodia, Rural Road

development still falls behind National Road development. Around 35 percent of all villages in the country reported accessibility to the nearest National Road, and 53 percent of communities said they were within 4 kilometres of the closest National Road. On the other hand, around 30 percent of villages nationwide were 10 kilometres or more from the nearest National Road (NIS 2013). This means most of the people in the country face the difficulty of access to good quality roads, which is a cause of the inequality in income distribution in rural areas.

In 2005, the government introduced the SEZ system out of Phnom Penh city to support greater exports, while directly consuming the surrounding rural labour. Without migrating, the workers go to work at a nearby urban factory in their village, so their income contributes to the rural income directly. In short, Road Networks play an essential role in providing rural income by connecting factories and laborers.

3. Road network

In Cambodia, the Road Network is the most significant transport subsector. It provides access and rural connectivity; the regional need is to facilitate connectivity and trade within the Greater Mekong Sub-region and with the ASEAN countries. The Road Network comprises National Roads, Provincial Roads, and Rural Roads. The Road Network in Cambodia has a total length of more than 55,000km, out of which National Roads account for more than 11,000km, Provincial roads more than 4,000km, and Rural Roads approximately 40,000km. The National Roads are divided into National Roads (1-digit) and National Roads (2-digit), while Provincial roads include all the (3&4-digit) roads. The National Roads are under the management of the Ministry of Public Works and Transport (MPWT); the Rural Roads are under the supervision of the Ministry of Rural Development (MRD), and the Provincial Roads are under discussion between these two Ministries³.

The first challenge of the Road Network in Cambodia is low Road Density. Table.3-1 shows the road density⁴. In Cambodia and other

countries. Cambodia's road density is currently estimated at a ratio of 0.3, and the National Road Network Density at a ratio of 0.06. This Road density ratio is the lowest figure compared to that of neighboring countries and developing countries in the region such as Thailand and Japan, and the United Kingdom. According to the Table, Cambodia's Road Network Density is more than two times lower than the Philippines and Vietnam, and almost six times and thirty times smaller than the United Kingdom and Japan.

Similarly, the National Road Network density is also the lowest compared to other countries. Cambodia's National Road Network Density is smaller than most of the world's nations. It is almost two times lower than the Philippines and Thailand, and more than two times lower than Japan and the United Kingdom. The Road Network in Cambodia is less developed; so the government should have put more attention into developing the Road Network.

Table 3. Road Density

Description	Japan	Philippines	UK	Cambodia	Vietnam	Thailand
Road Network Density (km/km ²)	8.97	0.67	1.72	0.30	0.78	0.38
National Road Network Density (km/km ²)	0.14	0.10	0.19	0.06	0.05	0.11

Source: IRITWG (2015), Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia, Phnom Penh: MPWT, Table 2-8, p. 29.

In addition, the Road Network condition is also a problem. There is an imbalance in developing the National Roads, the Provincial Roads, and the Rural Roads. Most of the National Roads and Provincial Roads are being improved while the Rural Roads are less developed. The figure shows the pavement ratio of the National Road network. Most of the

National Roads and Provincial Roads are paved with DBST, AC or concrete. According to the MPWT, the pavement ratio of the National Roads (1-digit) is 100%, 38% for the National Roads (2-digit) and 10% for the Provincial roads⁵. It appears in the figure, that 60% of the National Roads (1-digit) are completely paved with DBST, and 40% with AC; for the National Roads (2-digit) 40% are paved with DBST, and 60% with laterite; the Provincial Roads have

³ IRITWG (2015), *Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia*, MPWT, Phnom Penh, Table 2, p. 14.

⁴ Road density is the ratio of the total road network length of the country to 100 km² of the country's land area (MPWT).

⁵ IRITWG (2015), *Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia*, Phnom Penh: MPWT, Table 2-11, p.28.

10% paved with DBST pavement, 80% with laterite, and 10% with earth.

From 2009-2013, 26,000km of the Rural Roads have been rehabilitated and paved with laterite, which is equal to 65% out of the total Rural Road Network, and 125km paved with DBST or concrete, which is only 0.03% of the overall Rural Road network (NSDP 2014-2018). The government plans to increase the paving of Rural Roads up to 32,000km which is 80% of the total Rural Road network, and also to increase paving up to 2,330km of rural roads with DBST, which is nearly 6% of the overall Rural Road network, by the end of 2018.

The problem is that the poor are underserved by physical infrastructure, which is inadequately developed and maintained. The secondary road network is so rundown as to virtually isolate many rural areas, while most tertiary roads are impassable during the wet season³. The roads paved with laterite and earth, tend to deteriorate during the rainy season while the roads paved with DBST or concrete can last in a usable state all year round.

These conditions effectively ban the poor from daily transportation to work at their nearest urban factories.

In this case, agricultural labor still needs to migrate to urban areas to work; however, their income will become as the urban income. Remittances from factory workers can contribute to rural income but currently remittances cover only a small share of the rural income. As mentioned in CESE 2015, the remittance from factory workers' share is less than 8 percent out of the total rural income.

Rural Roads are particularly important to facilitate rural development and rural-urban linkages are a strategic priority. The current lack of an adequate nationwide Road Network not only affects the pattern of growth, but it also worsens income inequality. As it prevents agricultural labour accessing industrial work, especially factories, it restricts the distribution

of Wage and Salary income which is the most significant income source in rural areas. The investment in Rural Roads through construction and the maintenance of all-weather feeder roads, is crucial to provide the poor with easier access to factory work.

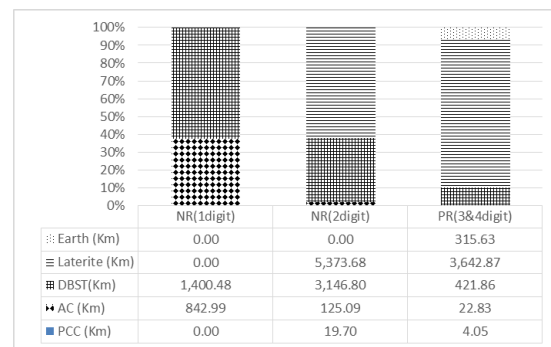


Figure 3. Pavement Status by Road Classification (as of 2014)

Source: IRITWG (2015), Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia, Phnom Penh: MPWT, Table 2-12, p.28.

4. Economic development strategy

4.1. Introduction to strategy

The national election in 1993 brought Cambodia a sense of peace, so to re-start developing its economy the Royal Government of Cambodia set out development plans every five years. From 1994 to 2018, there have been six Economic Development Strategies; they are named: (1) the National Program to Rehabilitate and Develop Cambodia (NPRD), (2) the Socio-Economic Development Plan (SEDP I, 1996-2000), (3) the Second Socio-Economic Development Plan (SEDP II 2001-2005), (4) the National Strategic Development Plan (NSDP) 2006-2010, (5) the NSDP Update 2009-2013, and (6) NSDP 2014-2018.

The Cambodian government outlined NPRD in 1994 as the process of rebuilding and rehabilitating the social, physical, and institutional infrastructure. Based on this vision, they formulated the First Five Year Socio-Economic Development Plan (SEDP I, 1996-2000).

³ Royal Government of Cambodia (2002), *SECOND FIVE YEAR SOCIAL ECONOMIC DEVELOPMENT PLAN*, Phnom Penh, p. 20.

Table 4. List of the Economic Development Strategies in Cambodia

Year of establishment	Strategy name
1994	National Program to Rehabilitate and Development Cambodia (NPRD)
1996	Socio-Economic Development Plan (SEDP I, 1996-2000)
2002	Second Socio-Economic Development Plan (SEDP II 2001-2005)
2005	National Strategic Development Plan (NSDP 2006-2010)
2010	National Strategic Development Plan (NSDP Update 2009-2013)
2014	National Strategic Development Plan (NSDP 2014-2018)

Source: Ministry of Planning (2014), National Strategic Development Plan 2014-2018, Phnom Penh, pp.1-2.

This Plan focused on establishing macroeconomic fundamentals, social development contours, and poverty alleviation strategies. Then, SEDP II 2001-2005 was prepared and focused on economic growth and poverty reduction. The Development Plan for 2006-2010 was renamed as the National Strategic Development Plan (NSDP 2006-2010). Following the Socio-economic Policy Agenda of the Fourth Legislature 2008-2013, the new plan was named NSDP Update 2009-2013 and was drawn up to replace NSDP 2006-2010 to synchronize the planning process with the political mandate. The planning methodology in NSDP Update 2009-2013 was defined so as to prepare the country for shocks and yet to progress it on the path to development. NSDP 2014-2018 was formulated by carrying out the same existing procedures and mechanisms as NSDP Update 2009-2013, with the identification of the priorities, indicators, and a timeframe. NSDP 2014-2018 has as its vision to gain high benefits from ASEAN Economic Integration in 2015 and to move out of the Least Developed Countries and to become an Upper-Middle-Income Country by 2030.

4.2. Policy on Road Network

To achieve this vision, NSDP 2014-2018 put the Development of Physical Infrastructure as one of the key priorities. The strategy in the development of Physical Infrastructure included The Development of transport and urban infrastructure, water resources and irrigation

system management, electrical power development; and development of information and communication technology. Among the four policies, the Road Network is of vital importance in the infrastructure sector to support macroeconomic growth. The National Road network connects within country borders, supports cross-border trade with the Greater Mekong Sub-region and the ASEAN countries, and tourism transportation. The Rural Road Network transports agriculture products, connects to the market, and increases economic activities. Two ministries are assigned to undertake the responsibility to develop the transport infrastructure. They are the Ministry of Public Works and Transport and the Ministry of Rural Development. Mentioned in NSDP 2014-2018, MPWT manages the developing of the National Road Network, and MRD leads on the Rural Road Network.

Table 5 shows the achievement plan for Road Network development in NSDP 2014-2018. The MPWT will improve more than 3,500 Km of the road network in a five year plan. The project includes enhancing 1-Digit National Roads such as expanding from DBST pavement to AC pavement, widening the 1-Digit National Road from 2 lanes to 4 lanes in and around major cities, and increasing the pavement ratio in 2-Digit National Roads from 50% to 90%. The MRD will continue carrying out maintenance and repair of Rural Roads. The crucial indicator shows that MRD will carry out the plan to increase laterite paved Rural Roads up to 32,000 km equal to 80 percent of total Rural Roads, and improve the Rural Road

surfaces from laterite to double bituminous surface up to 2,330 km or equal to less than 6 percent of the entire Rural Road length.

Table 5. Road Network development plan (2013-2018)

Particulars		2013	2014	2015	2016	2017	2018
National Road	NR (1,2,3&4 digit)	12,263	12,263	12,263	12,263	12,263	12,263
by MPWT	of wich paved	500	600	500	500	500	500
Rural Road by	Rehabilitation of Rural Road -out of total 40,000 km	26,900	28,600	29,450	30,300	31,150	32,000
MRD	Rural Road covered with DBST or concrete	125	550	980	1,430	1,880	2,330

Source: Ministry of Planning (2014), *NSDP 2014-2018*, Phnom Penh, Table 6.2 & Table 6.3, pp. 223-232.

According to the length of pavement roads, it seems that NSDP 2014-2018 puts more focus on the National Roads rather than the Rural Roads. While the National Roads (1-digit) are 100% paved, and National Road (2-digits) will increase up to 90%. On the other hand, upgrading of Rural Roads will increase only 6% until 2018.

5. Expenditure on road transport

The Ministry of Economics and Finance set up recurrent budget expenditure for NSDP 2014-2018. Table 6 shows the indicative allocation of capital investment by sector and sub-sectors from 2014-2018. The Rural development and Transportation sectors got the same 12 percent out of the total capital investment, equal to 910.4 million US Dollars. This capital investment budget shows the equal importance of rural development and the transportation sectors.

However, there are more projects to implement in both sectors which are managed by MPWT and MRD. Table 7 shows the actual annual budget of MPWT and MRD in implementing its plan from 2016 to 2018. First,

MPWT is holding two main projects for completion, namely: rehabilitation and development of Road infrastructure, and Human resource development. The budget provided to MPWT is increasing every year, and the budget for improvement and development of Road infrastructure shares about 70% of the total budget. Second, MRD is holding three main projects, namely: rural infrastructure, rehabilitation and development, enhancement of the rural public service, and the Institute and Human Resource Development. The budget provided to MRD fluctuates; however the budget for rural infrastructure rehabilitation and development has decreased its share from around 80 percent to 58 percent.

The findings from the annual budget is that the MPWT budget is bigger than the MRD' budget. The budget provided to MRD for Rural Road development has declined while the budget to MPWT for National Road development remains unchanged in its share. This indicator shows that in both plans and capital investment, NSDP 2014-2018 put its priority into developing National Roads rather than the Rural Road network.

Table 6. Allocation by Sector and Sub-sector of Total Investment based on NSDP 2014-2018

Sector	% of Total	2014-2018 Allocation	
		Riels (billions)	USD (millions)
Sectors and Sub-sectors			
Education	12	3,732.8	910.4
Technical and Vocational Traininf	4	1,244.3	303.5
Health	12	3,732.8	910.4
Mitigating impact of global financial crisis on the vulnerable and the poor	4	1,244.3	303.5
Sub-Total	32	9,954.2	2,427.8
Economic Sectors			
Agriculture & Land Management	4	1,244.3	303.5
Seasonal Croops: Rice & others	4	1,244.3	303.5
Rural Development	12	3,732.8	910.4
Manuagcturing, Mining & Trade	4	1,244.3	303.5
Sub-Total	24	7,465.7	1,820.9
Infrastructure			
Transportation (Roads, Port, Rlys, Civil Aviation)	12	3,732.8	910.4
Water and Sanitation (excluding rural)	4	1,244.3	303.5
Power & Electricity	4	1,244.3	303.5
Post & Telecommunications	1	311.1	75.8
Sub-Total	21	6,532.5	1,593.2
Service & Cross Sectoral Programs			
Gender Mainstreaming	1.5	466.6	113.8
Tourism	2	622.1	151.7
Environment and Conservation	4	1,244.3	303.5
Community and Social Services	4	1,244.3	303.5
Culture & Arts	1.5	466.6	113.8
Governance & Administration	8	2,488.6	606.9
Sub-Total	21	6,532.5	1,593.2
Unallocated	2	622.1	151.7
Grand Total	100	31,107.0	7,586.8

Source: Ministry of Planning (2014), *NSDP 2014-2018*, Phnom Penh, Table 5.3, p. 212.

Table 7. Annual Capital investment Budget by Ministry

	2016		2017		2018	
	Value	%	Value	%	Value	%
MWPT Expenditure Total	366,277.00	100.0%	388,160.00	100%	399,443.70	100%
1. Rehabilitation and Development						
Road infrastructure	272,104.80	74.3%	281,631.00	72.6%	285,441.00	71.5%
2. Human resource development & Other project	94,172.20	25.7%	106,529	27.4%	114,002.70	28.5%
MRD Expenditure Total	286,124.50	100%	160,806.80	100.0%	169,137.00	100.0%
1. Rural infrastructure						
Rehabilitation and Development	230,532.10	80.6%	94,120.80	58.5%	99,177.40	58.6%
2. Enhance Rural public service	13,837.40	4.8%	15,394.40	9.6%	15,829.10	9.4%
3. Institute and Human resource development	41,755.00	14.6%	51,291.60	31.9%	54,130.50	32.0%

Sources:

- (1) Data in 2016: MoEF (2016), *BUDGET IN BRIEF Fiscal Year 2016*, Phnom Penh, Table 6 & 7, pp. 34-36.
- (2) Data in 2017: MoEF (2017), *BUDGET IN BRIEF Fiscal Year 2017*, Phnom Penh, Table 10 & 11, pp. 42-43.
- (3) Data in 2018: MoEF (2018), *BUDGET IN BRIEF Fiscal Year 2018*, Phnom Penh, Table 15 & 16, pp. 59-60

6. Conclusion

In the present situation of increasing the share of wage and salary income in rural areas, the Rural Road network plays an essential role in providing a chance for agricultural laborers to gain income benefit for factory work. However, lacking a Rural Road network is considered as an obstacle for equal income distribution in rural areas.

After analyzing the policy in the National Strategic Development Plan 2014-2018, we understand that the government of Cambodia gives priority to the development of the National Road network more than the Rural Road network. The study found that investment on the National Roads is higher than the Rural Roads, and the total length of National paved roads is much longer than the Rural Roads. This study suggests the government should increase

the range of the paved Rural Road surfaces with DBST or concrete by increasing capital investment for the next coming Development Strategy.

References

- [1] Ifzal Ali and Ernesto M. Pernia, *Infrastructure and Poverty Reduction- What is the Connection?*, Manila: Asian Development Bank, 2003.
- [2] International Monetary Fund, *Cambodia: Staff Report for the 2016 Article Iv Consultation*, IMF Country Report, No. 16/340 (2016), Washington, D.C, pp.1-40.
- [3] IRITWG, *Overview of the Transport Infrastructure Sector in the Kingdom of Cambodia*, MPWT, Phnom Penh, 2015.
- [4] Ministry of Economic and Finance, *Budget in Brief Fiscal Year 2016*, Phnom Penh, 2016.
- [5] ---, *Budget in Brief Fiscal Year 2017*, Phnom Penh, 2017.
- [6] ---, *Budget in Brief Fiscal Year 2018*, Phnom Penh, 2018.
- [7] Ministry of Planning, *Poverty in Cambodia: A New Approach*. Phnom Penh: Royal Government of Cambodia, 2013.
- [8] ---, *Poverty Alleviation An Approach to An Action Plan for CMDG-1*, Phnom Penh: Royal Government of Cambodia, 2014.
- [9] ---, *National Strategic Development Plan 2014-2018*, Phnom Penh: Royal Government of Cambodia, 2014.
- [10] NIS, *Cambodia Socio-Economic Survey 2009*, Phnom Penh: Ministry of Planning, 2010.
- [11] ---, *Cambodia Socio-Economic Survey2013*, Phnom Penh: Ministry of Planning, 2014.
- [12] ---, *Cambodia Socio-Economic Survey2014*, Phnom Penh: Ministry of Planning, 2015.
- [13] ---, *Cambodia Socio-Economic Survey2015*, Phnom Penh: Ministry of Planning, 2016.
- [14] ---, *Census of Agriculture of the Kingdom of Cambodia 2013*, Phnom Penh: Ministry of Planning in collaboration with the Ministry of Agriculture, Forestry and Fisheries, 2015.
- [15] Royal Government of Cambodia, *Second Five Year Social Economic Development Plan*, Phnom Penh, 2002.
- [16] Sum, M., “*Infrastructure Development in Cambodia*”, in Kumar, N. (ed.), *International Infrastructure Development in East Asia – Towards Balanced Regional Development and Integration*, ERIA Research Project Report 2007-2, Chiba: IDE-JETRO, 2008, pp.32-84.
- [17] Sotharith, C., “*Cambodia Country Report*”, in Zen, F. and M. Regan (eds.), *Financing ASEAN Connectivity*, ERIA Research Project Report FY2013, No.15.Jakarta: ERIA, 2014, pp. 63-102.