

The Impact of the Greater Mekong Subregion East-West Economic Corridor on Agricultural Economic Growth in Mukdahan Province

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Abstract

The Research objectives were to study 1) the geography, economy, and society of Mukdahan province, and 2) the Impact of the Greater Mekong Subregion East-West Economic Corridor on Agricultural Economic Growth in Mukdahan Province. The secondary data were collected from the official database. The data analysis composed of 1) the measurement of economic level, 2) the measurement of economic growth, 3) Gross Provincial Product per capita (GPP per capita) and 4) the econometric model of time trend analysis. The findings were 1) the Mukdahan land size was 4,507 square kilometers with the border of Laos People's Republic, the north border connected with Nakhonpanom and Sakonnakon Province, the south border connected with Yasothon Province, and the east border connected with of Laos People's Republic with was bordered by the Mekong River. Mukdahan economy relied on both agricultural and non-agricultural sectors. Mukdahan's population held the educational level ranged from primary to bachelor's degree with the ration of students per teacher of 19:1. People were Buddha of 96.80 percent, have strong belief in customs and folkways, and 2) the greater Mekong Subregion East-West Economic Corridor (GMS-EWEC) had a positive impact on the agricultural economic growth with the average growth rate of agricultural economic of 8.34 percent from 1999 to 2018, led to continuously agricultural economic growth, had a positive impact on the Mukdahan's Gross Provincial Product per capita (GPP per capita) continuously. Moreover; it still had a positive impact on the entire Mukdahan's Gross Provincial Product. It could be concluded that the GMS-EWEC obviously had a positive impact on Mukdahan's Provincial Gross Product.

Keywords: The Economic Corridor Project, Agricultural Economic Growth, Mukdahan Province.

Introduction

The Greater Mekong Subregion East-West Economic Corridor (GMS-EWEC) is the 6-country cooperation project--Thailand, Myanmar, Laos, Cambodia, Vietnam, and China. It was launched in 1992 by the Asian Development Bank as the main supporter. The area of GMS-EWEC is about 2.3 million kilometer square which is about all areas of Western European Continental with a population size of 250 million. The GMS-EWEC is still abundant natural

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The Impact of the Greater Mekong Subregion East-West Economic Corridor on Agricultural Economic Growth in Mukdahan Province Thailand.

resources and still be the center of connectivity to South Asia, East Asia, and South-East Asia (The Division of Economic Cooperation, Department of International Economic, Ministry of Foreign Affair, Thailand, 2019).

The Greater Mekong Subregion East-West Economic Corridor (GMS-EWEC) has the main objectives to promote trade expansion, industrial investment, agriculture, and services. It is also to promote employment and better people's standard of living, to promote and develop technological and technological cooperation as well as the efficiency of natural resource use, to promote and increase the capacity of economic opportunity in global trade. From 4th -5th of July 2005, China had been the GMS-EWEC conference host at Kunming led to the Kunming Declaration. This has the goal of embracing and enriching GMS-WEC including the promotion of sustainable development which encourages intra communication and competition among the country member of GMS-EWEC in order to deduce the region poverty. Finally, they decided to sign the GMS Cross-Border Transport Agreement. The GMS-EWEC county members had the idea of the conservation of biological diversification conservation, the protection of ecology, forestry, and rivers in this region under the GMS Bio-diversity Corridor project.

Also, they totally agree with this project among the country members included the topic of transportation, energy, trade, animal decease control as well as communication. Laos People's Republic held the host of GMS-EWEC concluded with the 9-discipline cooperation---communication and transportation, energy, trade, investment, agriculture, environment, tourism, and human resource development. (The Department of International Economic, Ministry of Foreign Affair, 2019).

According to the master plan of Asia Development Bank (ADB), Manila, the Philippines, identified the 9 disciplines of GMS-EWEC project---transportation, communication, energy, trade, investment, environment, tourism, and human resource development. Also, the ADB the 11 Flagship Programs which were 1) North-South Economic Corridor 2) East-West Economic Corridor 3) Southern Economic Corridor 4) Telecommunications Backbone 5) Regional Power Interconnection and Trading Arrangements 6) Facilitating Cross-Border Trade and Investment 7) Enhancing Private Sector Participation and Competitiveness 8) Developing Human Resources and Skills Competencies 9) Strategic Environment Framework 10) Flood Control and Water Resource Management and 11) GMS Tourism Development. (The Asia Development Bank, 2019).

The East-West Economic Corridor is 1 of 11 plans which had been included in the 11 Flagship Programs and also it is very important to implement. This development project obviously brought the development of this region. The result of this project led to the linkage of Myanmar, Thailand, Laos, and the east coast of Vietnam---Mukdahan---Savannakret---DongHous---Vae. There is the Mekong Bridge as the connectivity of two countries---Thailand and Laos---financial supported by the Japan Bank of International Cooperation (JBIC).

The project was founded by JBIC of 4,700 million yen, contract signed off the building process of the 3rd December 2003 and finished in 2005. This connected the 9th route of Laos

People Republic and Mukdahan province, Thailand. Nowadays, they still have a bit maintenance. This made the connectivity of Savannakret-Mueang Pin-Dan Savan of the distance of 210 kilometers financial supported by Japan International Cooperation Agency and Asia Development Bank. The Bridge was opened on 23 April 2004. Moreover, the Vietnamese government supported financially to build the route of Laos broud-Dong Ha- Umong Hai One, and develop the deep Danong Harbor. (Asia Development Bank, 2019. Japan Bank for International Cooperation, 2019, and the Division of Economic Relationship, Department of International Economic, Ministry of Foreign Affair, 2019).

It is obviously to say that Mukdahan province, Thailand is one of the areas in the strategic plan of Greater Mekong Subregion East-West Economic Corridor. Moreover, Mukdahan province is now the connected trading point between Laos People Republic and Socialist Republic of Vietnam. It is known as Mukdahan is a well-known inter bordered trade center. Mukdahan economy has been increasingly grown for 15 years. The growth of Mukdahan economy had been obviously driven by the Greater Mekong Subregion East-West Economic Corridor (GMS-EWEC). In this research, the researcher examined the Impact of the GMS-EWEC on agricultural economic growth of Mukdahan economy. Mukdahan economy mainly relied on agricultural economic sector. Whenever Mukdahan economic growth resulted from GMS-EWEC would be driven the agricultural economic sector as well.

The Research Objectives

The research objectives were:

1. To study geography, economic and general society of Mukdahan province
2. To study the impact of Greater Mekong Subregion East-West Economic Corridor on the agricultural economic growth of Mukdahan economy

Research Methodology

Data Collection

In this research, secondary data were collected from the governmental agencies---The Bank of Thailand, The Office of National Economic and Social Development, Asia Development Bank, Japan Bank for International Cooperation, the Mukdahan Committee of Commerce, the Department of International Economic, Ministry of Foreign Affair, The Royal Thai Government.

The Data Analysis

The data analysis of the Impact of Mekong Greater Subregion East-West Economic Corridor on the agricultural economic growth of Mukdahan province following the theory of economic development as following:

1. The measurement of agricultural economic growth level of Gross Provincial Product (GPP) .
2. The measurement of agricultural economic growth rate by the change of Gross Provincial Product in a certain period of time such as 1 year, 5 years, and 10 years .

3. The ratio measurement of Gross Provincial Product per capita by a certain period of time such as 1 year, 5 years, and 10 years .

4. The time trend analysis with time series data applying the time trend econometric growth model .

The Research Results

The research results following the research objectives were:

1 To study geography, economic and general society of Mukdahan province as follow:

1.1 Mukdahan Geography

Mukdahan province has a total area of 4,497 square kilometers, 642 kilometers distant from Bangkok, the capital city of Thailand. Mekong River is a border divided between Mukdahan, Thailand, and Savannakret, Laos People Republic with a length of 72 kilometers. The following border of Mukdahan was followed--Mueang Mukdahan opposite of Kaisorn Phomvihan, Laos, Wann Yai opposite Chaiburi, Laos, Dontan opposite Chaiphutong, Laos.

Mukdahan province connects with the following direction--the north connects with Nakae district, Nakorn Panom province, and Toangoa district, Skolnakorn province, the south connects with Langnokkata district, Yasothorn province, Chanuman district, Ubonratchatani province, and Nongpok distrect, Roiet province, the east connects with Savannakret, Laos People Republic while Mekong river bordered, the west connects with Kuchinarai district, Kalasin province, and Maewadee district, Roiet province.

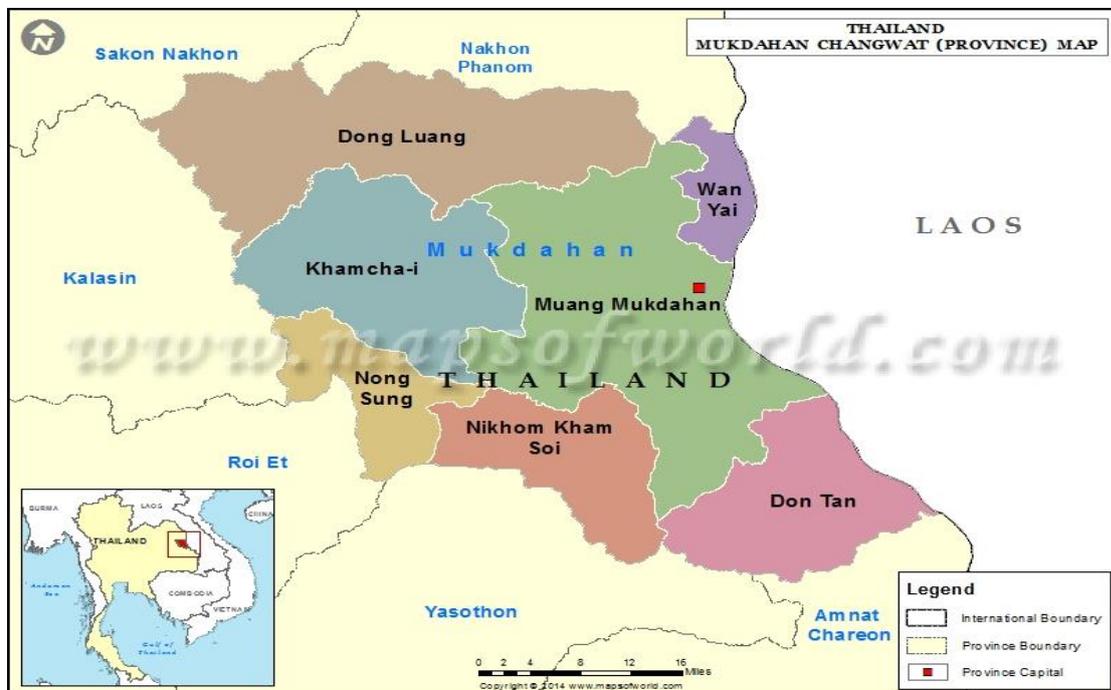


Figure 1: The Map of Mukdahan Province, 2019

Source: <http://www.mukdahan.go.th/gandurntang.htm>

Mukdahan's Border Crossing Points

Mukdahan province has 2 border crossing points: 1) the provincial border crossing between Mueang Mukdahan and Kaison Phomvihan, Laos, opened on 20th December of 2006, 2) the 2nd Thai-Laos relationship bridge which combined the land of Thailand and Laos at Mueang Mukdahan and 2) the traditional border crossing composed of 8 sub-points---1) Ban Songkon, 2) Ban Wann Yai, 3) Ban Chanod, 4) Ban Bangchainoi, 5) Ban Sompoi, 6) Ban Bangchai yai, 7) Ban Nasrinuean, and 8) Ban Dontan.

Mukdahan's Terrain

The north and south of Mukdahan province is the plateau area while the west is mountain range. The east of Mukdahan is the plain area and forest while there is Mekong River bordered between Thailand and Laos People's Republic of 72-kilometer range. Mukdahan's plain area is about 20 percent of the total land, it is abundant of natural resources. The total forest area of 953,300 rai accounted for 35.15 percent of the total land.

1.2 Mukdahan's Economy

Mukdahan's Gross Provincial Product of 2016 was 16,999 million Thai Bath increased from 2015 of 1,849 million Thai Baht accounted for 12.20 percent of the whole Gross Provincial Product resulting from the increasing of the agricultural economic sector and non-agricultural sector. The Mukdahan Gross Provincial Product per capita (GPP per capita) was 49,416 a year. The 2016 Mukdahan economy structure has relied on 5-main economic subsectors which are 1) agricultural subsector worth of 1,315 Million Thai Baht, 2) the wholesale and retail subsector worth of 1,173 Million Thai Baht, 3) the educational subsector worth of 704 Million Thai Baht, 4) the industrial subsector worth of 596 Million Thai Baht, and 5) the transportation subsector worth of 481 Million Thai Baht accounted for 20.49, 18.27, 10.97, 9.38 and 7.50 percent respectively. The main economic drivers of Mukdahan economy were agricultural economic sector which comprised of rice, tapioca, sugarcane, and rubber following by the trade of wholesale and retail.

1.3 Mukdahan's Society

Education: Mukdahan has 313 educational institutions classified by the regional education office. There is 246 primary schools depends upon the Mukdahan government office the 22nd area of 30 schools, the Mukdahan private office of 10 schools, the special educational office of 2 schools, the office of ministry of educational secretary of 8 schools, the office National Police Office of 1 school, the office higher education of 8 schools, the office of Vocational school of 3 schools, the office national Buddhism of 2 schools, the local government office of 3 schools. The total student numbers of Mukdahan province was of 73,348 students with the total teacher's number of 3,831 teachers meanwhile the ratio of students per teacher was 19:1.

Religion Mukdahan's major religion has Buddhism accounted for 96.80 percent following by Islam and Christianity accounted for 0.2 and 3 percent respectively. There are 349 Buddhism temples where have 183 temples have received the certificate from the office

of the national religion of Thailand, The Royal Thai Government. There are 168 temples as the houses of priests, 210 of monk residents. For Christianity, there are 9 churches while there is only one Muslim Church.

Culture and Tradition, people in Mukdahan province hold continuously the strong beliefs of the folkway tradition. The folks have their good hearts, warm and friendly manners, humbleness, generosity. According to the documental evident, there are 8 local tribes of Mukdahan known as 8-local tribe city of Mukdahan which are 1) Phu Thai tribe 2) Thai Yay tribe 3) Thai Kha tribe 4) Thai Choe tribe 5) Thai Kalay tribe 6) Thai Sak tribe 7) Thai Kuloa tribe and 8) Thai I-san tribe. The majority of people are Buddhism with the strong beliefs of tradition and continuously practice known as 12-traditional practices and 14-way of life. From past to present, people have the cultures conservative way of their life in order to promote the local tourism such as the tradition of closed-house, Song-Hua tradition, Khunlon tradition, Sohngpung tradition, Yoa tradition, Baysrisukhaun tradition, Rumtay Hau Dondan dancing, Rum Phu Thai, and Rum Pha Ya. The important tradition of Mukdahan is Boat competition for Buddha which is the 2-country cooperation between Thailand and Laos starting from 13-15 of December yearly which is a part of Mukdahan provincial festival.

Mukdahan's Public Health: Mukdahan has both public and private health institutions of 86 agents which are 7 public hospitals, 1 private hospital, and the 78 sub-district health promotional hospitals. The statistics of public health was composed of 1) 42 numbers of medical doctors, 20 numbers of dentists, 26 numbers of pharmacists, 457 numbers of nurses and medical technicians, and 286 numbers of health promotion officers. The capacity of medical services of 600 beds for the whole numbers of Mukdahan province. The ratio of population per medicine doctor of 8,056:1, population per dentist of 16,918: 1, population per pharmacist of 13,014, population per nurse of 740:1, and population per the health promotion officer of 1,183: 1. For the demographic change of Mukdahan province, there are 1) the birth rate per thousand of population of 10.61 2) the death rate per thousand of population of 6.18 while the population growth rate is 0.44 percent.

2 The Impact of Greater Mekong Subregion East-West Economic Corridor on Agricultural Economic Growth of Mukdahan Province

2.1 The Impact of Greater Mekong Subregion East-West Economic Corridor on the level of Mukdahan's agricultural economic growth can be expressed as table 1 as follow:

Table 1: The Level of Agricultural Economic Sector and the Growth of Agricultural Economic Sector of Mukdahan Province from 1999 to 2018

Year	GPP Agriculture (Million) ¹	GPP Ag Economic Growth Rate (%) ²
1999	1,117.18	
2000	1,184.12	5.65
2001	1,170.89	-1.13
2002	1,301.58	10.04
2003	1,082.50	-20.24
2004	1,147.19	5.64
2005	1,345.80	14.76
2006	1,491.94	9.80
2007	1,935.22	22.91
2008	1,944.56	0.48
2009	2,032.54	4.33
2010	2,480.21	18.05
2011	2,761.24	10.18
2012	3,032.06	8.93
2013	3,567.40	15.01
2014	4,500.93	20.74
2015	5,914.32	23.90
2016	5,909.70	-0.08
2017	7,768.72	23.93
2018	6,794.78	-14.33
Average	3019.25	8.34

Sources: ¹GPP of Agriculture from the Bank of Thailand, 2018,

²Agricultural Economic Growth Rate from Calculation

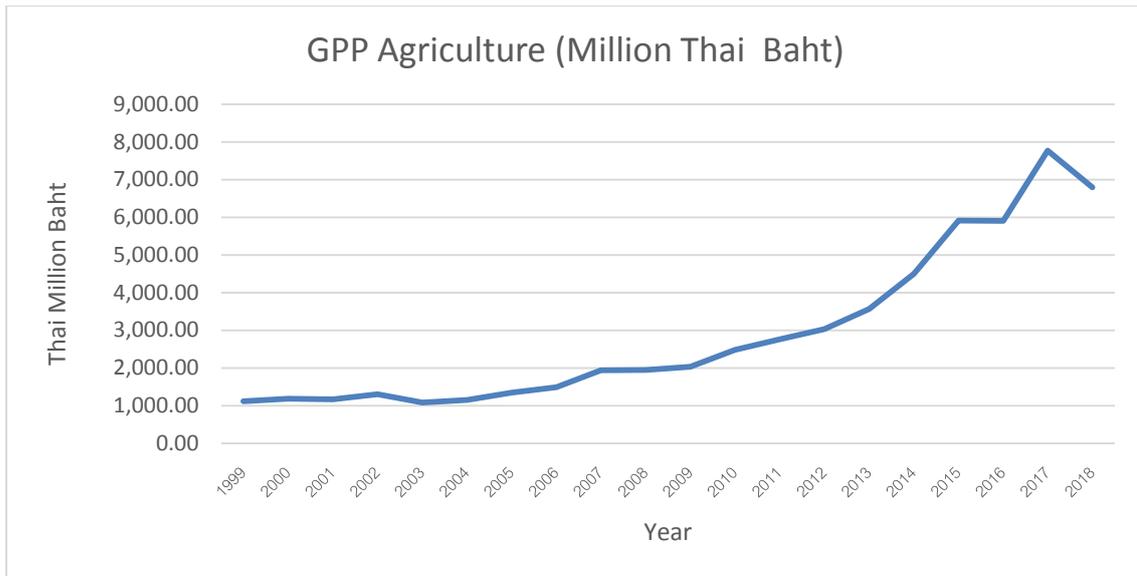


Figure 2: The Gross Product Province of Agricultural Product Value of Mukdahan Province from 1999 to 2018

Source: Calculation

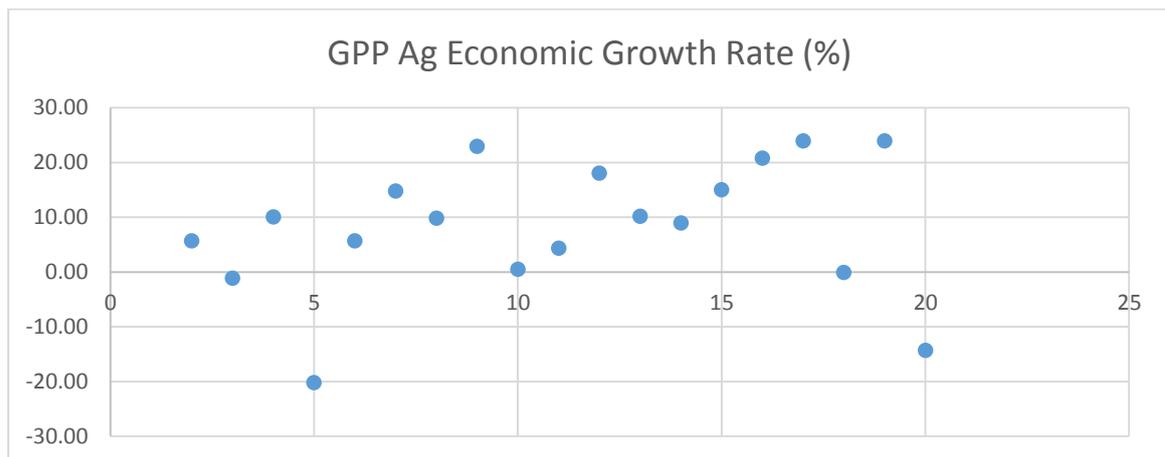


Figure3: The Growth Rate of Gross Provincial Product of Agricultural Economic Growth Rate of Mukdahan Province from 1999 to 2018

Source: Calculation

According to table 1, fig 1 and 2, the impact of the Greater Mekong Subregion East-West Economic Corridor (GMS-EWEC) on the level of Agricultural Economic Growth of Mukdahan province from 1999 to 2018. For the whole picture, it has been increased for 20 years at 3,019.25 Thai Baht and the average agricultural economic growth rate of 8.34 percent which has been resulted from GMS-WEC.

2.2 The Forecasting of Impact of the Greater Mekong Subregion East-West Economic Corridor (GMS-EWEC) on the Value of Agricultural Economic Sector of Mukdahan Province from 2018-2047

The forecasting of Impact on GMS-EWEC on the value of agricultural economic sector on Mukdahan province from 2018 to 2047 by the time trend econometric growth model through 10, the results were expressed by table 2 as follow:

Table 2: The Forecasting of Impact of GMS-EWEC on Value of Agricultural Economic Sector of Mukdahan Province from 2018 to 2047

Year	Agriculture (Million) ¹	Growth Rate (%) ²
2018	1,117.18	
2019	1,184.12	5.65
2020	1,170.89	-1.13
2021	1,301.58	10.04
2022	1,082.50	-20.24
2023	1,147.19	5.64
2024	1,345.80	14.76
2025	1,491.94	9.80
2026	1,935.22	22.91
2027	1,944.56	0.48
2028	2,032.54	4.33
2029	2,480.21	18.05
2030	2,761.24	10.18
2031	3,032.06	8.93
2032	3,567.40	15.01
2033	4,500.93	20.74
2034	5,914.32	23.90
2035	5,909.70	-0.08
2036	7,768.72	23.93
2037	6,794.78	-14.33
2038	6,319.81	-7.52
2039	6,643.21	4.87
2040	6,966.61	4.64
2041	7,290.00	4.44
2042	7,613.40	4.25
2043	7,936.80	4.08
2044	8,260.20	3.92
2045	8,583.59	3.77
2046	8,906.99	3.63
2047	9,230.39	3.50
Average	4,541.13	6.49

Source: ^{1,2} Calculation

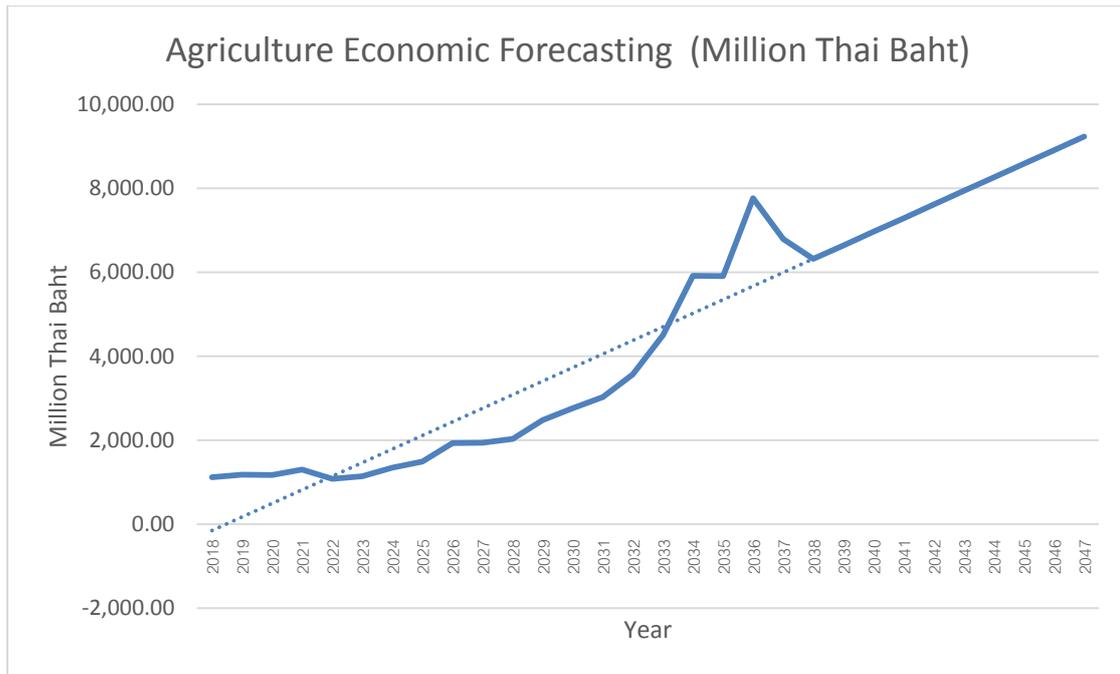


Figure 4: The Forecasting of Impact of GMS-EWEC on Value of Agricultural Economic Sector of Mukdahan Province from 2018 to 2047

Source: Calculation

The forecasting of Impact of GMS-EWEC on Value of Agricultural Economic Sector of Mukdahan Province from 2018 to 2047, with the 20 year forecasting by time trend econometric growth model found that the whole picture of value of agricultural economic sector has been still increased with the average of 4,541.13 Million Thai Baht and the economic growth rate of 6.49 percent.

2.3 The Impact of Greater Mekong Subregion East-West Economic Corridor on Gross Provincial Product Per Capita which could be expressed as table 3:

Table 3: The Value of Mukdahan Gross Provincial Product per Capita (GPP per capita)

Year	GPP Per Capita (Baht) ¹	Growth Rate (%) ²
1999	19,982.53	
2000	21,713.91	7.97
2001	21,278.49	-2.05
2002	20,740.16	-2.60
2003	20,475.99	-1.29
2004	22,388.63	8.54
2005	22,303.13	-0.38
2006	24,036.57	7.21
2007	26,494.64	9.28
2008	27,746.17	4.51

Year	GPP Per Capita (Baht) ¹	Growth Rate (%) ²
2009	29,045.12	4.47
2010	32,520.61	10.69
2011	33,998.40	4.35
2012	35,202.50	3.42
2013	40,080.27	12.17
2014	44,607.58	10.15
2015	54,451.86	18.08
2016	56,122.03	2.98
2017	64,239.88	12.64
2018	63,718.27	-0.82
Average	34,057.34	5.75

Source: ¹Gross Provincial Product from Bank of Thailand, 2019

²Growth Rate from Calculation

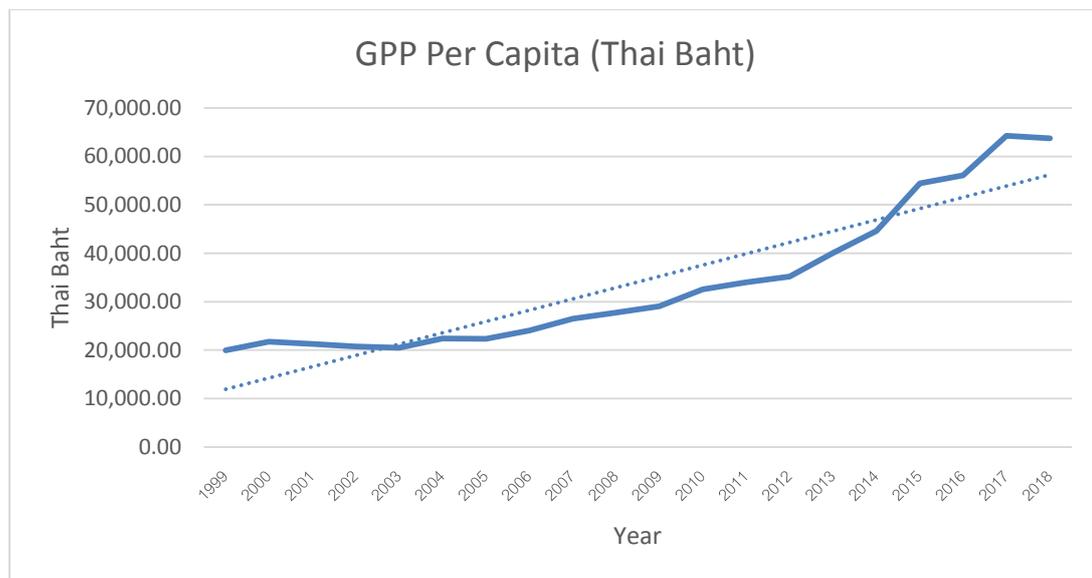


Figure 5: The Value of Gross Provincial Product Per Capita (GPP per capita)

Source: Calculation

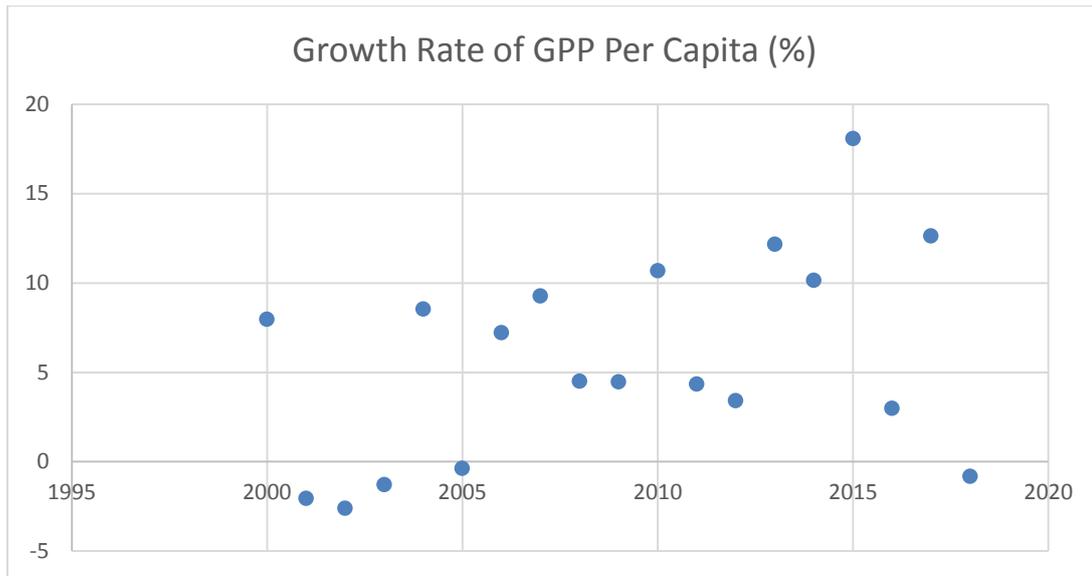


Figure 6: The Growth Rate of Gross Provincial Product Per Capita (GPP per capita)

Source: Calculation

According to Table 3, Figures 4 and 5, the impact of GMS-EWEC on Gross Provincial Product has increased with the average of GPP per capita of 3,405.34 Thai Baht, with the average growth rate of GPP per capita of 5.57 percent. This indicated that the GMS-EWEC has a positive impact on both agricultural economic sector and the Gross Provincial Product per capita (GPP per capita) of Mukdahan province. It seems that Mukdahan's whole economy still has increased over time.

In conclusion, the GMS-WEC has an obviously positive impact on agricultural economic sector. This positive impact led to the increase in Gross Provincial Product per capita (GPP per capita) as well. It could be concluded that GMS-EWEC has a positive impact on Mukdahan's agricultural economic sector.

Conclusion and Recommendation

According to the research results of the Impact of Greater Mekong Subregion East-West Economic Corridor on Agricultural Economic Growth, Mukdahan province. The GMS-EWEC has a positive impact on that of Mukdahan province. It could be stated that the aims of economic development are emphasized on the growth of Gross Provincial Product (GPP) as a whole and agricultural sector still is a crucial part of Mukdahan's economy. It could be the way to make the economic development not only agricultural sector but also non-agricultural sector which is the economy of industry and services.

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