The Truck Terminal Project in Sa Kaeo Province: Implications of Border Trade between Thailand and Cambodia

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Abstract

Thailand has recently put in place a logistics development plan for a network of road transport. Included among several projects is one for setting up truck terminals in border cities to act as centers for the pooling and distribution of goods. Sa Kaeo is considered a promising border city. This study investigates the impacts of a truck terminal project in Sa Kaeo province on border trade between Thailand and Cambodia using secondary data and in-depth interviews that are analyzed under the SWOT Matrix. The analytical results have led to several recommendations, as follows: The Thai government should complete the project at Ban Nong Ian as soon as possible by including it in the formation of a special economic zone in the province. The reason is that Aranyaprathet Customs House, the existing check point, is no longer able to serve the major increase in border trade. However, there are certain concerns about an insufficient distribution of benefits to the general public in the province. It is therefore suggested that investment in the animal feed industry should be promoted in Sa Kaeo for export to Cambodia. Also, there are some concerns that Cambodian enterprises may be reluctant to transfer their products to the new customs house as they may have to bear more expenses. In this regard, the Thai government may offer temporary remedies for Thai entrepreneurs within a certain limit of time through a subsidy against the margin to maintain export prices at competitive levels to motivate Cambodian entrepreneurs to adapt their operations.

Keywords: truck terminal, border trade, trading between Thailand and Cambodia

บทคัดย่อ

ประเทศไทยมีแผนพัฒนาโครงข่ายเพื่อเพิ่มประสิทธิภาพการขนส่งสินค้าทางถนนด้วยรถบรรทุก โดยมีโครงการการจัดตั้งสถานีขนส่งสินค้าในเมืองชายแดน เพื่อทำหน้าที่สำคัญในการเป็นศูนย์กลางการรวบรวมและกระจายสินค้าปลายทาง ซึ่งจังหวัดสระแก้วนับเป็นเมืองชายแดนที่มีศักยภาพสูง บทความวิจัยนี้จึงมีวัตถุประสงค์เพื่อศึกษาว่าแผนก่อสร้างสถานีขนส่งสินค้าในจังหวัดสระแก้วมีนัยอย่างไรต่อการค้าชายแดนไทยและกัมพูชา โดยนำข้อมูลทุติยภูมิและการสัมภาษณ์เชิงลึกกับผู้มีส่วนได้ส่วนเสียหลักไปวิเคราะห์ SWOT Matrix ซึ่งผลการวิเคราะห์นำไปสู่ข้อเสนอแนะที่สำคัญดังต่อไปนี้ รัฐบาลไทยควรเร่งผลักดันการดำเนินงานโครงการที่บ้านหนองเอี่ยนให้สำเร็จ โดยบรรจุโครงการนี้เข้าไปในการก่อตั้งเขตเศรษฐกิจพิเศษของจังหวัดอย่างเป็นรูปธรรม เนื่องจากด่านอรัญประเทศซึ่งเป็นด่านเก่าเดินมาถึงจุดที่ไม่สามารถรองรับการขยายตัวทางการค้าชายแดนที่เพิ่มขึ้นสูงมาก อย่างไรก็ตามความกังวลในผลประโยชน์ที่จะกระจายไปสู่ชาวบ้านในจังหวัดอาจมีน้อยจึงควรส่งเสริมการลงทุนอุตสาหกรรมอาหารสัตว์ในจังหวัดสระแก้วเพื่อการส่งออกไปยังประเทศกัมพูชา รวมทั้งจากปัญหาระดับการพัฒนาที่แตกต่างกันมากระหว่างไทยและกัมพูชา ดังนั้นควรพัฒนาระบบการทำธุรกรรมการค้าชายแดนร่วมกันระหว่าง 2 ประเทศ และพัฒนาถนนของกัมพูชาที่เชื่อมต่อชายแดนภายใต้ความช่วยเหลือของไทย นอกจากนี้จากความกังวลที่ผู้ประกอบการกัมพูชาอาจบ่ายเบี่ยงที่จะย้ายการขนส่งจากด่านเก่ามาที่ด่านใหม่ เนื่องจากต้องแบกภาระต้นทุนที่สูงขึ้น ในการนี้รัฐบาลไทยอาจมีมาตรการเยียวยาชั่วคราวให้กับผู้ประกอบการไทยในระยะสั้นผ่านการจ่ายเงินชดเชยส่วนต่างที่ราคาส่งออกควรจะต่ำลงจนเป็นแรงจูงใจให้ผู้ประกอบการกัมพูชาปรับตัว แต่ที่สำคัญ คือ มาตรการนี้ต้องมีเวลาสิ้นสุดที่ชัดเจนในระยะเปลี่ยนผ่านเท่านั้น

คำสำคัญ: สถานีขนส่งสินค้า การค้าชายแดน การค้าระหว่างไทยและกัมพูชา

Introduction

A project for the construction of truck terminals in border provinces is included in the master plan drawn up by the Thai government to enhance the performance of linkage between different gateways and between international transport gateways with domestic transport (Figure 1) (Sukmanop, 2011). The Department of Land Transport, Ministry of Transport, as a key agency in charge of regulating domestic and international logistics, since 2000 has initiated setting up three government truck terminals in Bangkok and its outskirts. During the fiscal years 2012-2017, it has a plan to set up truck terminals in border provinces in which goods transported between Thailand and neighboring countries takes place (Table 1). The total budget required for the two phases is about 3,356 million baht. The terminals will enhance the performance of road transport and reduce the overall cost of domestic road transport while the Thai transport industry's competency will be developed so that it can compete at an international level (Department of Land Transport, n.d.).

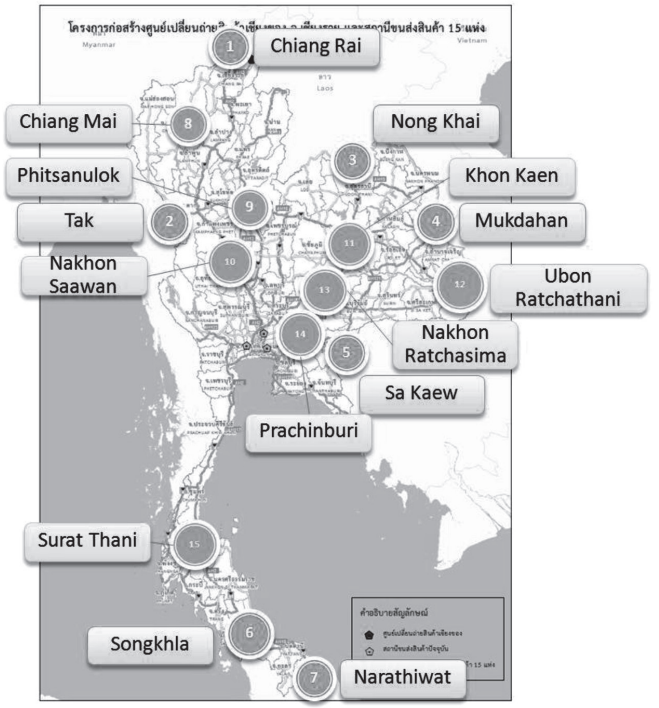

Figure 1. Project for the construction of truck terminals
Source: Freight Transport Development & Promotion Group, Freight Transport Bureau, Department of Land Transport

Table 1. Setting up truck terminals in seven border cities

Phase I		Phase II	
Province	Budget Operation Plan 2012-2014 (million baht)	Province	Budget Operation Plan 2015-2017 (million baht)
Songkhla	640.00	Sa Kaeo	335.00
Ubon Ratchathani	355.00	Mukdahan	398.00
Tak	300.00	Nongkhai	660.00
		Chiang Rai	668.00
Total	1,295.00	Total	2,061.00

Note. (Department of Land Transport, n.d.)

Having considered the value of border trade between Thailand and its neighboring countries during 2013 and 2014 as sorted by countries, it interesting to note that the total value of border trade between Thailand and Malaysia comprised the largest proportion compared to the value between Thailand and Burma, Lao PDR and Cambodia, respectively. However, the total value of border trade between Thailand and Cambodia clearly showed a higher growth rate, especially that of 2014 which was a 21.98 percent increase when compared to that of 2013 (Table 2). For this reason, study is limited to the border trade between Thailand and Cambodia. It should be noted that this trade currently takes place through six permanent crossing points and that more than half of the total value originates from this border trade at Aranyaprathet Customs House, Sa Kaeo. In 2014 alone, this customs house showed a growth rate of total trade value as high as 20.80 percent. Although almost 30 percent of the total value initiates from such border trade at Khlong Yai Customs House in Trat, this customs house revealed a growth rate of the total value as low as 7.21 percent. Apart from this, Chong Chom Customs House in Surin showed a growth rate of total trade value as high as 55.86 percent while almost two percent of the total value initiates from such border trade at this custom house (Table 3). This has led us to the research question of whether it is reasonable for the Thai government to implement a project for the construction of a new truck terminal in Sa Kaeo province and how this new terminal may have an impact upon border trade between Thailand and Cambodia.

Table 2. Value and balance of border trade between Thailand and neighboring countries

	2013		2014		Growth rate of trade value (%)
	Trade value (million baht)	Trade balance (million baht)	Trade value (million baht)	Trade balance (million baht)	
Malaysia	501,402.01	74,700.45	507,655.46	42,328.92	1.25
Myanmar	196,861.58	-37,967.18	214,387.23	26,373.89	8.90
Lao PDR	132,137.16	85,073.60	151,063.69	96,810.73	14.32
Cambodia	93,836.31	74,339.49	114,465.84	78,986.60	21.98
Total	924,237.06	196,146.36	987,522.22	191,752.36	6.85

Note. (Office of Trade and Investment Cooperation, n.d.)

Table 3. Value and balance of border trade between Thailand and Cambodia sort by customs house

	2013 (Jan-Aug)		2014 (Jan-Aug)		Growth rate of trade value (%)
	Trade value (million baht)	Trade balance (million baht)	Trade value (million baht)	Trade balance (million baht)	
Aranyaprathet Customs House, Sa Kaeo	39,949.22	28,516.20	48,256.84	29,473.87	20.80
Chong Chom Customs House, Surin	860.75	615.59	1,341.59	724.43	55.86
Chong Sa-ngam Customs House, Si Saket	580.88	494.98	729.77	629.53	25.63
Chong Meg Customs House, Chong An Ma Customs House, UbonRatchathani	318.57	318.57	285.04	285.04	-10.53
Chanthaburi Customs House, Chanthaburi	3,939.97	3,241.27	4,456.14	3,713.47	13.10
KhlongYai Customs House, Trat	18,038.14	16,251.47	19,339.48	16,517.97	7.21
Total	63,687.53	49,438.08	74,408.86	51,344.31	16.83

Source of data. International Trade Office Region 4, Sa Kaeo

Literature review

The Thai government has drawn up a plan for setting up a truck terminal in Sa Kaeo province in two possible areas (Rattanawong, 2011), namely, Ban Nong Ian and Ban Rai of Aranyaprathet district, Sa Kaeo province, which will have linkage with the establishment of a special economic zone. The pattern of truck terminal and warehouse shall be a closed system in order to make it easier for personal and goods management, access control and security. The main activities in the terminal would consist of the following: (a) goods inspection and acceptance as to its volume, quality and storage for use when needed; (b) a stock-keeping unit that records barcodes and keeps quantity data; (c) sorting out of goods to be kept under a suitable environment for each type of goods; (d) storing and maintaining goods under conditions that they be ready for use; (e) searching for and delivering goods as requested; (f) contacting transport department to make an arrangement on timing, vehicle type and loading volume; (g) collecting, packing, and preparing invoices and accounts; and (h) preparing inventory reports for goods receipt and delivery to transport department. The plan is divided into three phases; short-term, medium-term and long-term, according to the increase in goods volume and change in type of goods from industrial estates and special economic zones.

A financial feasibility study revealed that investment in the area of Ban Nong Ean shows promising results to the extent that if this project is invested in and managed by the government for the entire period, it will give maximum yield when compared with joint investment with the private sector. The potential internal rate of return (IRR) is about 12.37 percent, while unilateral investment by the private sector for the entire project shows no promising result; this is the same if investment is made in the area of Ban Pa Rai (Rattanawong, 2011). It is generally accepted that this project would play a key role in driving the growth of border trade between Thailand and Cambodia, but the question that must be answered first is, "what is the definition of border trade?"

Border trade includes several kinds of trading carried out by people or enterprises residing in the provinces, districts or villages located at the border adjacent to the neighboring country. It also covers the trade or exchange of goods between people living along the border of the two countries in non-sophisticated transactions but in a convenient manner. Border trade includes legal commerce through the local customs house and illegal trade by smuggling or bootlegging. Currently, official trade channels through which legal trade can take place are categorized into three types, as follows: permanent crossing points, check point border trade and temporary crossing points, all of which are distributed along the border provinces. Each channel has a different type of trading. Trading in large volume and transported by container or truck usually takes place at permanent crossing points, while check point border trade is normally a natural channel and is generally distributed along the border where general trading would take place (Wongwitayapanich, Rojprasertkul, & Soysoadsri, 2011). The further question is what would be the impacts of the truck terminal project on border trade?

Having explored relevant resources about this question, it appears that no paper has yet directly addressed this issue. This may be due to the fact that construction of a truck terminal is only a part of the infrastructure project for international trade development. Moreover, economic research frequently focuses on the role of public expenditures for investment in infrastructure projects and national development in which econometric models are used in the case study analysis of developed and developing countries (Esfahani & Ramı´rez, 2003; Fan, Jitsuchon & Methakunnavut, 2004; Fan & Rao, 2003). When study of a specific country is concerned, e.g. the Netherlands (Groote, Jacobs, & Sturm, 1999) and developing countries e.g. Egypt (Loayza & Odawara, 2010), India (Fan, Hazell, & Thorat, 1999) and Thailand (Jaroensathapornkul, 2010), findings from those studies share the same view that government investment in infrastructure is an economic driving force in the long term, including rural area development. It was also discovered that railroad infrastructure plays a significant role in the country becoming an economic and tourism center (Thailand Development Research Institute, 2013).

Another group of research papers focuses on the policy of trade between Thailand and neighboring countries. Their research methodology applies the analysis of secondary data and interviews with interested parties in order to obtain primary data for analysis mainly involving the problems and obstacles of international trade. Those findings therefore reflect policy issues on how to remedy problems and prevent them in the future (Centre for Academic Services, 2005; Institute of East Asian Studies, 2009; Sikharet, 2011). At the same time, there are other research papers underlining border trade, e.g. Thai-Cambodian (Nongkhoo, 2007; Samaikul, 2014; Wongwitayapanich, Rojprasertkul, & Soysoadsri, 2011), Thai-Lao (Rattanasarn & Wattananimitkul, n.d.; Tunskul, Jarujittipan & Houbcharaun, 2004), Thai-Burmese (Takulreungsri, 2011). The latter group of research papers has led to the conceptual framework of this study as shown in Figure 1.

There is also a body of research on border trade in African countries, such as a case study by Masvingo, Zimbabwe which reveals that border trade is one of the strategies for freeing a country from poverty (Muzvidziwa, 1998). Some studies extend to the impacts of illegal border trade or smuggling on a country's development, e.g. in terms of the reform of trading facilities in Sub-Saharan Africa (Lesser & Moisé-Leeman, 2009) or of food security in the case of the border between Kenya and Uganda (Ackello-Ogutu & Echessah, 1997) or of Mozambique and its neighboring countries (Macamo, 1999). Other research papers analyze the economic issues of border trade, e.g. relations between border trade and foreign direct investment in the service sector (Castejon, Francois, & Woerz, 2008), or power markets and border trade (Parisio & Bosco, 2008).

Conceptual Framework and Method

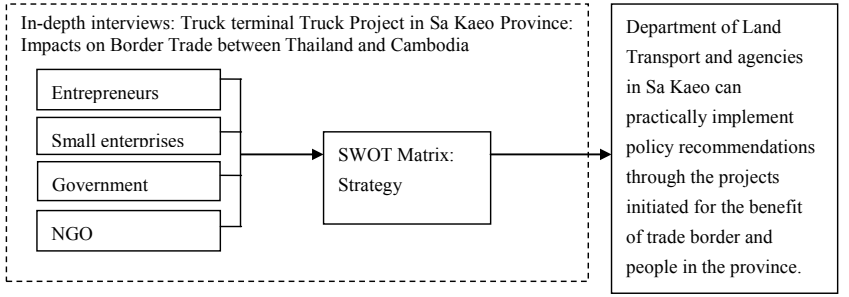

Figure 2. Conceptual framework of research

The conceptual framework above schematically represents the linkages underlying the in-depth interviews among four stakeholders from the truck terminal project in Sa Kaeo. The contents from their opinions are categorized by Strength, Weakness, Opportunity and Threat, which is the so-called SWOT analysis. Afterward, the strategies are drawn from SWOT Matrix. It leads to the policy recommendations for the Department of Land Transport and government agencies in Sa Kaeo. Further, the conceptual framework in Figure 2 led to the research procedures as follows:

1. First Step

Develop an Autoregressive Integrated Moving Average (ARIMA) model and time trend model to predict border trade between Thailand and Cambodia over the short and long term, based on monthly data of exports and imports between January 2009 and September 2014, collected by the International Trade Office Region 4, Sa Kaeo.

2. Second Step

Conduct in-depth semi-structured interviews with five key groups of people, including four entrepreneurs carrying out export/import and tourism business along the border of Thailand and Cambodia, 11 vendors at Talad Rong Klua, four representatives from agencies including the Office of Commercial Affairs, Aranyaprathet Customs House, Provincial Highway District and Provincial Land Transport Office, and a representative from non-government organizations.

3. Third Step

Apply the data obtained from the first and second steps as well as secondary data from relevant literature to analyze the strengths, weaknesses, opportunities and threats of the truck terminal project in Sa Kaeo in regard to border trade between Thailand and Cambodia; then develop a SWOT Matrix to further develop strategic policy.

Results

Using the primary data from in-depth interviews and secondary data from relevant literature as well as the estimates from the Autoregressive Integrated Moving Average (ARIMA) model (Appendix a.) and time trend model (Appendix b.) for predicting border trade, we can analyze the strengths, weaknesses, opportunities and threats of the project regarding border trade between Thailand and Cambodia in order to seek policy recommendations. The SWOT Matrix is shown in Figure 2.

1. Strength: S

This project has undergone a financial feasibility study (S1) and it appears that if investment is injected by the government for the entire period, the Net Present Value (NPV) and Internal Rate of Return (IRR) will be approximately equal to 769,651,290 baht and 12.37 percent, respectively, which is higher than what would be gained from joint investments with or sole investments by the private sector (Rattanawong, 2011). In addition, Ban Nong Ean is located in an area not included in the dispute between the two countries (S2). According to the responses from in-depth interviews with the entrepreneurs, they appeared to be in agreement with the government about the two areas chosen, namely, Ban Rai and Ban Nong Ean. However, Ban Rai may have some problems about demarcation which involves national security and international politic issues. In the case of Ban Nong Ean, however, the two countries have already made a bilateral agreement.

2. Weakness: W

The project site is on a flood a plain resulting in on-and-off flooding (W1) which is a political concern of both the government and the private sector. However, a representative from Sa Keao Highway District stated that road construction of the truck terminal at Ban Nong Ean has already taken into account flood problems by making tunnels or bridges to allow water to drain through the area. The issue that attracts more concern from the Highway District is whether the Cambodian side can improve the area in order to prevent back flow, which causes flooding in Sa Kaeo. The problem is relatively minor compared with the benefits that will be distributed to people in Sa Kaeo (W2); this point was made by the NGO representative through an in-depth interview who added that this project has merely resulted in higher land prices in the project area while most people in the province still work in the agricultural sector. According to data provided by the Sa Kaeo Provincial Administration, important crops include wet season rice, cassava, sugarcane, corn, eucalyptus, etc. These products are not key items for export through the border to Cambodia. Furthermore, the NGO representative observed that border trade promotion would benefit only those in the area of Talad Rong Klua as most export items do not originate in Sa Kaeo. Local people would only get wages in return for their labor, such as loading or transferring goods. The entrepreneurs also worried that the terminal at Ban Nong Ean might not be completed within three years (W3) because at that time, in 2014, no such access road had been constructed while the expropriation process was still being done and was thus taking quite a long time. Another concern was the issue of the flexibility of the truck terminal as it might be unable to facilitate certain goods, such as tractors, cement etc. (W4) which rank 4th and 6th in terms of key export items. (Table 4) These products will be transfered to the warehouse at the wharf in Cambodia not by truck-to-truck transport. Definitely, relocation of the truck terminal to Ban Nong Ean would cost more for those entrepreneurs in Cambodia and become the burden of their Thai partners in the future.

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Table 4. List of export and import items via the border of Thailand-Cambodia at Aranyaprathet Customs House during January-August 2014

Export		Import	
Description	**Value (million baht)**	**Description**	**Value (million baht)**
1) Engine/parts	2,639.34	1) Cameras/photo recorders/ structures for inserting optical film	4,526.07
2) Spare parts for cars/ motorcycles	1,948.99	2) Cassava/fresh pieces,products	1,450.28
3) Electric appliances and accessories	1,891.12	3) Scrap aluminium and items made of aluminium	1,043.87
4) Tractors/ body parts/ agricultural equipment	1,827.06	4) Electric appliances and accessories	580.71
5) Cars/trucks	1,279.34	5) Pet foods/pet chews and toys	372.69
6) Cement	1,227.83	6) Gas tanks/empty tanks/iso tanks	340.10
7) Mobile phones/ accessories/ antennas/ telecommunication transmitters	1,207.15	7) Scrap copper and items made of copper	221.52
8) Feed/shrimp food	1,112.47	8) Ready-to-wear clothing	157.15
9) Cameras/binoculars	1,062.33	9) Used clothing	120.02
10) Tractors/road rollers/ cranes/ trucks/lift trucks	909.10	10) Scrap iron	83.37
Total	15,104.73		8,895.78

Source of data. International Trade Office Region *4*, Sa Kaeo

3. Opportunities: O

Opportunity analysis covers several issues as follows: Aranyaprathet Customs House has been in existence for a long time and now its service area has become limited and overcrowded. (O1) This is a good opportunity to build up a new customs house. In particular, the existing structure cannot support the daily high volume of border trade. It also has no waiting area for checking cargo. According to in-depth interviews with the entrepreneurs and the customs officer, they reached the same conclusion that severe traffic congestion occurs every day as waiting trucks have to occupy one traffic lane resulting in a traffic jam. At the same time the front of the customs house is overcrowded with Cambodian vendors entering and exiting the check posts and transferring goods each day. Those vendors who need to cross the border every day had a common view that the customs house was very overcrowded.

The next issue is that border trade at this customs house has a promising future (O2). Thailand's trade volume has always exceeded that of Cambodia. Moreover, the predicted outcomes by the ARIMA model (Appendix a.) suggest that in 2015, the export value through Aranyaprathet Customs House would be as high as 62,002.59 million baht or a 7.13 percent increase over that of 2014. By contrast, the import value in 2015 through Aranyaprathet Customs House would equal 14,424.33 million baht or a 23.56 percent decrease compared to that of 2014. It was also discovered from the results predicted by the time trend model (Appendix b.) that the value of exports through the Aranyaprathet Customs House would increase to 97,165.62 million baht by 2019 or an average increase of 9.83 percent per year from 2015, while the value of imports through Aranyaprathet Customs House would increase to 3,356.73 million baht by 2019 or an average increase of 25.94 percent per year from 2015. Although import value tends to increase, the total value is still very low when compared to the export value. At the same time, in-depth interviews with representatives from the both the private and government sectors shared the view that border trade indicates a promising future. One significant reason is that products from Thailand are popular among Cambodians and this is seen as an opportunity for Thai border trade (O3). According to International Trade Office Region *4*, the key export items are industrial goods and capital goods such as engines, auto parts, tractors, cars and cement (Table 4). The entrepreneurs feel that if the truck terminal at Ban Nong Ean is completed, goods previously checked at other border trade check points or check posts could be transported and processed at this new post more conveniently.

In addition, the highway network connecting the crossing point at Ban Nong Ean and Stung Bot has already undergone a feasibility study (O4) and at this early stage, there are three alternative routes. However, after having carried out environmental and cultural impact studies, it has been agreed to choose the route starting from Ban Bee, Phakkha sub-district, Wattana Nakhon district, along a 30-kilometre route to Ban Nong Ean (Survey and Design Office, 2014). If the road line cuts through any piece of land with a title deed, the government is authorized by law to expropriate such pieces of land upon paying a reasonable amount of compensation. The new route is supported by the entrepreneurs as the existing customs house has a very limited area and is overcrowded.

The last two opportunities are the establishment of a special economic zone (O5) and AEC (O6). In July 2014, the government agreed to set up special economic zones in five boundary areas with good potential in response to the effort to completely embrace AEC in December 2015. One of the areas is Aranyaprathet district. The criteria and methods for setting up special economic zones involve the following four issues: (a) incentives for investment, (b) one-stop service, (c) supporting measures for employment of foreign workforce and (d) development of infrastructure and customs houses in the areas to be able to support anticipated activities in special economic zones and efficiently link with other part of the region. At the same time, the government has drawn up a policy on establishing an agricultural product buying center along with the special economic zone. Major crops include corn, cassava, oil palm and sugarcane. This can partly help prevent smuggling from neighboring countries. Such products will be processed for quality improvement and then sold abroad, which will benefit local people. The Sa Kaeo Provincial Administration has taken several steps to facilitate the establishment of such a special economic zone in the province (Saifon, 2014). However, in-depth interviews have brought up some interesting points, such as the question of incentives for investors in special economic zones as most of the entrepreneurs have already had the benefit of those offered by the government. Furthermore, setting up special economic zones should take into account the issue of anti-dumping policies from trading partners.

With respect to AEC, in-depth interviews with representatives from Aranyaprathet Customs House revealed that although the main issue is taxes and duties, which have decreased to zero percent since 2010, there are still other trade facilitating measures, such as self-certification by exporters by printing or stamping on an invoice to be eligible for certain tax/duty preferences from importing countries. This can help save costs on exports. Sa Kaeo Provincial Administration also has a long-term plan to cover the next five years, that is, improvement of the logistics and production systems.

4. Threats (T)

Different levels of development between the two countries are still have many consequences (Centre for Academic Services, 2005; Institute of East Asian Studies, 2009; National Institute of Statistics, 2013). Nevertheless, we can divide the key problems into five issues. The first is the difference in rules and working procedures between the two countries due to significant differences in the level of development (T1). Cambodian rules and regulations may be fully supportive of goods, transport and tourism but he clearance process in Cambodia still takes too much time as there is yet no computer system in place. By contrast, the Thai customs system and procedures have already been standardized to meet international requirements while a computer system is fully equipped for operation. Another problem is that the officers at the customs house in Cambodia do not work efficiently (T2). The entrepreneur group observed that goods are always left at the Cambodian side for a very long time after having passed the Thai customs house. The Cambodian vendors were in agreement that Cambodian officers are not "service-minded." In addition, the road network in Cambodia has not been prepared to support the new truck terminal in Thailand (T3), which will be another obstacle for goods distribution. Moreover, there have been frequent political rallies in Cambodian border towns that have resulted (T4) in the closing of Aranyaprathet Customs House several times and the new customs house in Ban Nong Ean might encounter

this problem in the future. The last issue is that Cambodian entrepreneurs will have to bear more costs as they have to build new warehouses, and thus transport charges may increase (T5). For instance, merchandise such as tractors and cement will have to be transferred to warehouses in Cambodia and Cambodian entrepreneurs have to build new warehouses if the Aranyaprathet Customs House is transferred to Ban Nong Ean. This can also be a burden to Thai entrepreneurs during the transitional period.

5. SWOT Matrix

The strengths, weaknesses, opportunities and threats discussed above were then analyzed by SWOT Matrix in order to determine strategies for the truck terminal project at Ban Nong Ean (Fig. 2). We started by using opportunities to support strengths, that is, the establishment of a special economic zone in Aranyaprathet district and the feasibility study of the construction of a road to the new customs house. Having considered problems associated with the existing customs house, it is quite apparent that this is an opportunity to demonstrate that the project at Ban Nong Ean is worthwhile and should be speeded up (S1, O1, O4, O5). At the same time, the six opportunities discussed above should be considered in order to prevent loopholes. It is recommended that an engineering design be set up for the customs house to cope with the flood problem (W1, O4). This issue should be raised for discussion with Cambodian counterparts about the route of the watercourse. Also, we should take the opportunity from the fact that Thai products are popular among Cambodians to promote such products produced in the province. For instance, feed ranks in the top ten products exported to Cambodia while corn is a local product in the province. We should therefore promote the feed industry for export to Cambodia (W2, O2, O3, O5, O6) in order to deal with the weakness that the benefits from border trade have not been distributed to the local community. In addition, there is a concern that this project may be not completed within the next three years. It is therefore suggested that this project should be added to the establishment of a special economic zone in the province (W3, O4, O5).

Details of the use of strengths to balance threats are as follows: The truck terminal project in Sa Kaeo is designed for supporting a modern transport administration system and standardized customs procedures; therefore, this should be used for tackling obstacles existing on the Cambodian side by proposing joint development of a border trade system between the two countries (S1, T1, T2). This will also include labor skill development for Cambodian personnel through training courses to be held by Thai trainers. As the road system in Cambodia needs improvement to enable efficient transport, it is recommended that a road network in Cambodia to connect to the Thai border be developed with Thai support (S1, S2, T3) to allow this project to be of benefit for border trade. Another point concerns the burden to Cambodian entrepreneurs from increasing costs required for building new warehouses and increasing transport charges and the possibility that the terminal may be not suitable for goods such as tractors or cement. In response, the Thai government has proposed covering such burdens by paying compensation to the exporters for the first five years of the transitional period (W4, T5). Thai entrepreneurs should therefore reduce their export prices during this period to motivate Cambodian entrepreneurs to have enough time to adjust after investing in new warehouses and transferring goods from the existing customs house to the new one. To this end, the Thai government may have to pay compensation to Thai entrepreneurs and this will be of benefit for both Thai and Cambodian sides. However, this measure should have a definite expiration date for the transitional period only.

		Strength	Weakness
		S1: Investment in cost-effective project S2: No international disputes in the area	W1: The project is located on a plain area with watercourse, causing flood problems W2: less profit distributed to local people in Sa Kaeo W3: May be not completed within 3 years W4: Truck terminal not suitable for certain goods, e.g. tractors, cement
Opportunity	O1: Aranyaprathet Customs House has limited space and is overcrowded. O2: Border trade at Aranyaprathet Customs House shows promising future. O3: Thai products are popular among Cambodians. O4: Feasibility study of highway network linking the crossing point at Ban Nong Ean and Stung Bot has been completed. O5: Special economic zone O6: AEC	(S1, O1, O4, O5) Speed up project implementation and completion.	(W1, O4) Engineering design of the new customs house that can deal with flood problems. (W2, O2, O3, O5, O6) Promote investment in feeds industry in the province for exporting to Cambodia. (W3, O4, O5) Include this project in the establishment of special economic zone in the province.
Threat	T1: differences in rules and regulations and working procedures between the two countries with different level of development T2: Officers at Cambodian customs house might not perform their work efficiently. T3: Transport network in Cambodia does not support the new truck terminal. T4: political protest in Cambodia T5: Cambodian entrepreneurs will incur higher cost from building new warehouse and increasing transport charge.	(S1, T1, T2) jointly develop border trade system between the two countries. (S1, S2, T3) Develop road network in Cambodia to connect to the border with Thai support.	(W4, T5) Determine payment of compensation to the exporter during the first 5 years of transitional period.

Figure 2. SWOT Matrix of Truck Terminal Project at Ban Nong Ean, Tha Kham Sub-district, Aranyaprathet District, Sa Kaeo Province regarding border trade between Cambodia and Thailand

Discussion and Conclusions

The budget for constructing a truck terminal in Sa Kaeo Province is approximately 335 million baht. This project will be a key to the growth of border trade between Thailand and Cambodia, which is now as much as 70,000 million baht/year and increasing every year compared with border trade between Thailand and other neighboring countries (Department of International Trade Promotion, n.d.; Institute of East Asian Studies, 2009; Office of Trade and Investment Cooperation, 2013; Sensuwan, 2009). Therefore, the outcomes of the SWOT Matrix analysis of this project upon border trade will be a policy guideline for the Thai government, although the literature review suggests that most proposals have been included in the state policy (Bureau of Survey and Design, 2014; Department of Land Transport, n.d.; Office of Trade and Investment Cooperation, 2013). However, the proposals from this sresearch will help clarify such guidelines.

The first issue is that the government should invest by itself (Rattanawong, 2011) and facilitate the project implementation to complete it soon by including this project in the establishment of a special economic zone in the province as the existing customs house cannot support the growth of border trade any further. Such insufficiency has resulted in the delay of transport and overcrowding of Cambodian vendors who travel via the crossing point every day along with tourists. It is recommended that the new truck terminal should have an engineering design for coping with flood problems as the project site is located on the path of a watercourse. Also, support and development should be extended to the Cambodian side as the source of water is in Cambodia. The next issue is that the government should propose the joint development of a border trade transaction system between the two countries and support road development in Cambodia to connect the border. The last issue is the promotion of the feed industry in the province aimed at exporting to Cambodia. Apart from adopting measures to supplement the existing approaches by the government, this research also proposes a measure on compensation payment to the exporters

during the transitional period to enable them to reduce goods prices. This price reduction would motivate Cambodian entrepreneurs to adjust their business operations to respond to the new truck terminal at Ban Nong Ean.

The exploration of previous knowledge and literature reveals that most research papers focus on the macro level while this research underlines the micro level, though it is an important project for the national economy. The findings from this study therefore add useful data for analysis of the impact of investment in infrastructure upon economic development. According to primary data acquired from in-depth interviews with entrepreneurs, vendors and an NGO, the clear conclusion is that moving to the new customs house is warranted and the construction of the truck terminal at Ban Nong Ean will be of benefit to border trade between Thailand and Cambodia. The existing customs house will become a crossing point for villagers and tourists only. These findings also provide an example of the project at the microeconomic level that supports findings from the previous studies at the macroeconomic level, suggesting that investment by the government in infrastructure will play a significant role in economic development (Esfahani & Ramı´rez, 2003; Fan, Hazell, & Thorat, 1999; Fan & Rao, 2003; Groote, Jacobs, & Sturm, 1999; Jaroensathapornkul, 2010; Loayza & Odawara, 2010; Rattanawong, 2011). Moreover, the analytical results of SWOT Matrix have led to policy recommendations. Proposals on joint development of the two countries and support from Thailand to Cambodia have been made in the research body, involving border trade between Thailand and Cambodia rooted in the question of different levels of development and different rules and regulations which need cooperative solutions between the two countries (Institute of East Asian Studies, 2009; Samaikul, 2014; Office of Trade and Investment Cooperation, 2013; Supant, 2012; Yurkprasert & Pinyawat, 2010). A proposal on compensation payment to the exporters may be a challenging question for the Thai.

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Appendix a. Estimation of ARIMA Model

Dependent Variable: D(BORDER_EXPORT)

Sample(adjusted): 2552:03 2557:09

Convergence achieved after 16 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	-0.631556	0.094414	-6.689213	0.0000
MA(4)	-0.524554	0.105785	-4.958661	0.0000
SMA(12)	0.863364	0.027008	31.96668	0.0000
Adjusted R-squared	0.510463	S.D. dependent var		528.1945
S.E. of regression	369.5613	Akaike info criterion		14.70625

Note: D(BORDER_EXPORT) represents the difference in value of border exports at Aranyaprathet Customs House.

Dependent Variable: D(BORDER_IMPORT)

Sample(adjusted): 2553:07 2557:09

Convergence achieved after 12 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(5)	-0.370093	0.128362	-2.883203	0.0059
SAR(12)	0.540869	0.131904	4.100466	0.0002
MA(2)	-0.436111	0.119998	-3.634322	0.0007
SMA(12)	0.865256	0.030387	28.47461	0.0000
Adjusted R-squared	0.639493	S.D. dependent var		158.7506
S.E. of regression	95.31740	Akaike info criterion		12.02749

Note: D(BORDER_IMPORT) represents the difference in value of border imports at Aranyaprathet Customs House.

Appendix b. Estimation of Time Trend Model

Dependent Variable: BORDER_EXPORT

Sample(adjusted): 2552:01 2557:09

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1480.642	100.2057	14.77603	0.0000
TIME_TREND	52.72106	2.543040	20.73151	0.0000
R-squared	0.865136	Mean dependent var		3273.158
Adjusted R-squared	0.863123	S.D. dependent var		1137.169

Note: BORDER_EXPORT represents the value of border exports at Aranyaprathet Customs House.

Dependent Variable: BORDER_IMPORT

Sample(adjusted): 2552:01 2557:09

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	199.7602	26.29158	7.597877	0.0000
TIME_TREND^2	0.219234	0.012576	17.43292	0.0000
R-squared	0.819362	Mean dependent var		540.1580
Adjusted R-squared	0.816666	S.D. dependent var		341.5599

Note: BORDER_IMPORT represents the value of border imports at Aranyaprathet Customs House.