Executive Summary
Industrial Cooperation Development with Neighbouring Countries Project
(Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

In 1993, the governments of Indonesia, Malaysia, and Thailand agreed on an initiative to accelerate economic transformation among three countries in Southern Thailand, Northern Malaysia and Sumatra in Indonesia under “the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT). The IMT-GT is supported by Asian Development Bank or ADB in providing a technical assistance on a feasibility of cooperation framework, scope of Work and areas of cooperation. During the past 16 years since its formation, the IMT-GT can be divided by period as follows; 1993-1998 focused on approaches and the studies on development framework; 1995-2001 accelerated the implementation of cooperation and expanded the areas of cooperation; 2002-2005 adjusted strategies and practices to strengthen and tighten the cooperation by focusing on bringing into practice; and during 2007-2011, the first strategy called “IMT-GT Roadmap for Development 2007-2011 " had been developed. In the first period of the IMT-GT, it consisted of only 5 provinces in Southern Thailand – Songkla, Satun, Pattani, Yala and Narathiwat, 4 states in Northern Malaysia – Penang, Kedah, Perak, Perlis, and 2 provinces of Sumatra in Indonesia. The IMT-GT has grown in geographic scope and activities to encompass 14 provinces in Southern Thailand, 8 states of Malaysia, and 10 provinces of Sumatra in Indonesia.
The main purposes of the IMT-GT are to accelerate the economic transformation of the IMT–GT sub-region by exploiting underlying complementarities and comparative advantages; enhancing the sub-region’s competitiveness for investment and exports; promoting tourism; lowering transport and transaction costs; and reducing production and distribution costs through greater economies of scale. The IMT-GT can seek economic advantages from geographical proximity and close historical, cultural, traditional and linguistic ties. The IMT-GT Roadmap for Development 2007-2011 defined the strategies in 5 strategic trusts which are 1) facilitation and promotion of intra- and inter- IMT-GT trade and investment, 2) promotion of agriculture, agro-industry and tourism, 3) strengthening of infrastructure support and connectivity, 4) addressing human resources development and natural resource management concerns, and 5) strengthening institutional support and public-private sector collaboration. Also, there were 6 focused areas of cooperation which consist of 1) Infrastructure and Transport, 2) Trade and Investment, 3) Tourism, 4) Human Resource Development, 5) Agriculture, Agro-Based Industry and Environment, and 6) Halal Products and Services. Apart from the areas of cooperation mentioned above, the Connectivity Economic Corridor is an important project under the IMT-GT to the cooperation among these three countries. According to the IMT-GT Roadmap 2007-2011, it had indentified 5 economic corridors; which are 1) Songkhla-Penang-Medan Economic Corridor ; 2) Straits of Melaka Economic Corridor; 3) Banda Aceh-Medan-Pekanbaru-Palembang Economic Corridor; 4) Melaka-Dumai Economic Corridor; 5) Ranong-Phuket-Aceh Economic Corridor (see picture 1 and 2).
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.

- 3 -
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
The member countries of the IMT-GT are the large countries and play important roles in ASEAN economies. Total population in these cooperation areas is 68 million-48 million are Indonesian, 14 million are Malaysia and 6 million are Thai. From past to present, Indonesia, Malaysia and Thailand are both competitors and trade partners at the same time, however, the cooperation under the IMT-GT will generate trade and investment among these countries, and develop cooperation in other sectors which will increase trade value and investment in industrial goods in the future. As the importance of the IMT-GT as mentioned before, therefore, it is necessary to study the potentials of Thai industry, connectivity and dependence on industrial goods of Thailand under the IMT-GT at national and cooperative-areas levels, and the strategic goals to seek maximum advantages for the industrial goods of Thailand in the future, especially when entering to the ASEAN Economic Community in 2015.

This research aims to study in 3 areas which are 1) to study, analyze and compare the potential of economic development and industry of Thailand and the other 2 countries; to identify the competitive industries/products and the potential cooperative products; 2) to develop a strategy on industrial cooperation development among Indonesia, Malaysia and Thailand under the IMT-GT; and provide an approach/guideline on competitive and cooperative products development, and a guideline on industrial cooperation development in the sub-region and national levels; 3) to create an in-depth database on Malaysia and Indonesia’s economic and industrial structures to be used for government’s policy decision making and private sector’s consideration on investment.
1. Research Framework

The framework of the research is to identify the target industries for studying and analyzing according to the research’s objectives which can be listed as follows:

1.1 Select overall target industries
1.2 Select target industries in specific areas (potential industries in Southern Thailand)
1.3 In-depth interviews
1.4 Organize the Brainstorming seminars in Southern Thailand and collect in-depth information in Indonesia and Malaysia.
1.5 Develop the Indonesia-Malaysia-Thailand cooperation strategy under the IMT-GT
1.6 Organize seminars and training to share and distribute knowledge of the study

2. Research methodology

2.1 Selection of the target industries as a whole

Step 1: Primary screening

The screening process to select the target industries will consider the values of imports and exports between Thailand and Malaysia, and Thailand and Indonesia which 15 industries that hold the highest imports and exports values will be selected. Information of imports and exports values used for the screening is from the Customs Department (Information and Communication Technology Center), Ministry of Finance.

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
Step 2: Imports/Exports considerations

The imports and exports between Thailand and Malaysia, and Thailand and Indonesia of the 15 selected industries are brought to analyze by using the following criterias:

1) Exports

1.1) Analyzing of exports values is to analyze a growth rate and a market share of Thailand’s industrial goods that are exported to Malaysia and Indonesia. The Growth rate is an index in measuring the potential of the industries and products in terms of trade direction (increase/decrease) while the capability in maintaining the market share of the industries and products is another analyzing criterion. These analyses are calculated by using the values of Thailand’s exports to Malaysia and Indonesia.

1.2) Revealed Comparative Advantage (RCA) is a tool used in analyzing the comparative advantage of Thailand’s exports with the trade partners or in studying the potential of the industries in the IMT-GT countries

2) Imports

2.1) Analyzing of imports values is to analyze the growth rate and the market share of the industrial goods imported from Indonesia and Malaysia in Thailand. The Growth rate is an index in measuring the import dependency of Thailand on industrial goods from Indonesia and Malaysia while the ability in reducing the market share of such imported industrial goods is another analyzing criterion. These analyses are calculated by using Thailand’s imports values from Malaysia and Indonesia.
2.2) Dependency index is an adapted RCA index to use as a tool in analyzing a dependency level of imports from the trade partners or in studying the dependency level of the industrial goods among the IMT-GT countries.

2.2 Selection of the target industries in specific areas
The primary target industries are a representative of Thailand's industries as a whole, in order to ensure the comprehensive study at local and national levels, therefore, these primary target industry should be brought to analyze by using area based industrial concentration ratio Index.

- Area Based Industrial Concentration Ratio Index is an applied concept from the industrial concentration ratio theory. It brings the investment values of each industry in 14 southern provinces of Thailand into calculation for the area based industrial concentration ratio index to be used in selecting the target industry under the IMT-GT.

2.3 Final selection of the target industries
The results of the selection of the target industries as a whole and the selection of the target industries in specific areas are brought into the final consideration to identify the industry that has the opportunity to develop industrial cooperation between Thailand and the other IMT-GT countries (Indonesia and Malaysia).

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The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
Executive Summary
Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
2.4 Development of the Indonesia-Malaysia-Thailand cooperation strategy under the IMT-GT

The development of the Indonesia-Malaysia-Thailand cooperation strategy under the IMT-GT is formulated by using information from the study and analysis above.

3. The outcome of the study on target industries and industrial cooperation strategy under IMT-GT

As a result of the selection of target industries, there are 4 target industries to be selected which are:

1) Rubber and its products
2) Rubber wood and its products
3) Palm oil
4) Canned seafood and seafood processing

The development strategies on the cooperation of Indonesia, Malaysia and Thailand under the IMT-GT are as follows:

3.1 Partnership Cooperation on Development of Rubber and Rubber Products under IMT-GT

Rubber industry is an important industry to the economic system of Indonesia, Malaysia and Thailand not only from its exports values, but also inducing more employments in the country. In 2010, the rubber plantation areas of the three countries were more than 60 percent of the world’s total rubber plantation areas, Indonesia was the largest plantation areas (21.6 million rais), Thailand was the second from Indonesia (18.3 million rais) and Malaysia was the third (6.4 million rais).
Although, the plantation areas of Thailand were less than Indonesia’s but Thailand was the world’s largest natural rubber producer that mainly focused on rubber production and exports of latex and roasted rubber sheets. Indonesia was the world’s second natural rubber producer from Thailand, but was the world’s largest blocked rubber producer. Malaysia emphasized on blocked rubber production (more than 80 percent of natural rubber yields) and Malaysia held the third blocked rubber exporter of the world. Surprisingly, although these three countries were the world’s largest natural rubber producers but it found that the use of raw materials (natural rubber) in rubber production industrial was in opposite direction, especially when compared with exports numbers to China, Japan, the U.S. and Germany – the world’s highest rubber consumption countries that have capabilities to produce high-value rubber products such as the tyre production industry (70 percent of blocked rubber and roasted rubber sheets produced in the world). Therefore, the largest rubber consumption countries have influenced the world rubber price which this is risky to rubber producing countries when there are rubber price fluctuations and denies from the world market.

Each country has a different guideline for the rubber industry and rubber products development. Indonesia aims to increase natural rubber amounts from 2.7 million tons per year (2012) to 3.5 million tons per year by the year 2016, and also identified Sumatra island to be a center of rubber production and processing (Sumatra produces 60 percent of total rubber yield of Indonesia). In addition, Indonesia allows foreign investors to invest in rubber plantations and rubber processing business, i.e. automobile manufacturing factory. Malaysia aims to be the leader on the entire rubber industry and prepares to be a rubber center of the world by the year 2020 under the title “Global Center of Excellence for Rubber” to enhance the downstream
industry for rubber gloves, tyres, glue and other rubber products. Malaysia mainly aims to increase the market share of rubber gloves in particular from 50 percent to 65 percent of the world market by the year 2020. However, Malaysia still has to depend on raw materials (more than 90 percent is latex) from other countries such as Thailand and Indonesia to use for dipping products production, rubber gloves in particular which is an only one famous rubber products of Malaysia. At present, Thai rubber industry has been developed by increasing of the processing process and exports of downstream rubber products in order to add value to natural rubber. However, the use of natural rubber in the downstream rubber products production is lower than 20 percent of the total natural rubber products. It shows that the entire rubber industry of Thailand mainly produces and exports only the processed upstream or mid-stream rubber products, therefore, it leads to unclear direction to increase values of Thai rubber products. According to information above, it can be assumed that cooperation under IMT-GT will increase the utmost benefit to rubber industry and products development.

Target “ASEAN Rubber Center”

Strategic Partnership Cooperation

As Indonesia, Malaysia and Thailand are the major rubber producers in the world, and the goal of the IMT-GT is to enhance the competitiveness of the three countries. In connection to this, the cooperative strategies on production, processing and export of rubber products illustrating below are recommended.

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
1. Driving forward on the Rubber City Project to support the Rubber Industrial Development of IMT-GT

In July 2011, Malaysia proposed the Rubber City project in Malaysia and 2 years later in 2013, Malaysia and Thailand have agreed to cooperate on the Rubber City project in order to enhance rubber trade and the linkages between two countries. Malaysia has identified Kota Putra in the state of Kedah as the rubber city that Tradewinds Plantation Bhd (TPB)\(^1\) is responsible for the project. While the rubber city in Thailand is in the decision making process between Ban Prakob checkpoint, Na Thawee district in Songkhla province (prosperity of Ministry of Natural Resources and Environment) and Southern Industrial Estate, Chalung, Had Yai district in Songkla (prosperity of Industrial Estate Authority of Thailand). Therefore, Thailand should clearly identify the rubber city and push forward the rubber city project to be more concrete.

\(^1\) Tradewinds Plantation Berhad's operations (TPB) is one of the largest in Malaysia. The Group has a landbank of 151,850 hectares, of which 87,515 hectares or 54.5% are located in Sarawak, another 11,302 hectares or 8.0% are in Sabah, while the remaining 53,039 hectares or 37.5% are in Peninsular Malaysia.
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
Malaysia and Thailand are high potential countries in producing and exporting rubber, both dry rubber (tire industry) and latex (rubber gloves, condoms, IV tube and catheter). Malaysia, in particular, focuses on production and exports of latex produced products due to Malaysia is the largest latex exporter. In 2012, Malaysia’s and Thailand’s export values of latex were at 100.06 billion baht (51.4% of the market share) and 30.6 billion baht (17.5% of market share) respectively. Export values of condom of Thailand were 4.16 billion baht (24.2% of the market share) while Malaysia's were 3.39 billion baht (19.7% of the market share). Therefore, the creation of Thailand-Malaysia Joint Venture in producing the rubber gloves and condoms in the rubber city areas will increase the market shares of both countries in the world market.
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.

Figure 6: World’s rubber glove and condom export values in 2012

*Global Rubber Glove Export Values in 2012: 2,060 Billion Baht

**Global Condom Export Values in 2012: 17 Billion Baht
2. **Set up and Promote the Rubber Database Development and Information System of IMT-GT**

   One problem that IMT-GT members countries always face with is data collecting system such as rubber information between government and private sectors are not compatible (production cost, production amount, consumption amount), rubber data are diversely kept by various agencies, difficult to retrieve and affecting to entrepreneurs. Hence, the IMT-GT Rubber Intelligence Center should be established to develop the information system (rubber news and situations), link rubber industry information from upstream to downstream, and outreach rubber information and situations of the IMT-GT and the world market to the farmers in the IMT-GT, so the farmers can use such information to plan their rubber production to meet the needs of the market. In addition, the government sector can also use information provided to develop the rubber promoting and developing strategy in reflecting the real situation.

3. **Jointly develop a central rubber market of IMT-GT to set Reference Price in the world market**

   At present, rubber prices are led by Tokyo market (TOCOM), Singapore market (SICOM) and Shanghai market (SHFE) as they are the world largest rubber buyers and consumers. Hence, establishing the central rubber market will increase a leading role as the world major manufacturers in identifying the world rubber’s price and setting up the rubber’s reference price in the world market.
Table 1: Strategy of Cooperation Development on Rubber and Rubber Products under IMT-GT

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
<th>Guideline</th>
<th>Responsible Agency</th>
<th>Supporting Agency</th>
<th>Duration</th>
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<tbody>
<tr>
<td>“ASEAN Rubber Center”</td>
<td>1.1 Driving forward on the Rubber City Project to support the Rubber Industrial Development of IMT-GT</td>
<td>1.1.1 Expedite a study of and clearly identify a suitable area for the development of Rubber City Project</td>
<td>- Ministry of Agriculture and Cooperatives</td>
<td>- Ministry of Industry&lt;br&gt;- Office of the National Economics and Social Development Board&lt;br&gt;- Ministry of Natural Resources and Environment&lt;br&gt;- Ministry of Interior&lt;br&gt;- The Federation of Thai Industries</td>
<td>Short Term (1-2 years)</td>
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Table 1: Strategy of Cooperation Development on Rubber and Rubber Products under IMT-GT (Continued)

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<td></td>
<td>1.1.2 Promote and support for a connectivity of rubber processing industry trade and investment (from upstream to downstream industries) in the Rubber City project through dialogues among IMT-GT countries.</td>
<td>- Ministry of Industry *The Board of Investment of Thailand</td>
<td>- Ministry of Agriculture and Cooperatives</td>
<td>Short Term (1-2 years)</td>
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<td>- Ministry of Commerce</td>
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<td>- Department of Industrial Works</td>
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<td>- Department of Industrial Promotion</td>
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<td>- Industrial Estate Authority of Thailand</td>
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<td>- Rubber Estate Organization</td>
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<td>- The Federation of Thai Industries</td>
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<td>- Rubber Industrial Group, The Federation of Thai Industries</td>
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<td>- The Thai Rubber Association</td>
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<td>- Thai Latex Association</td>
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*The Board of Investment of Thailand*
Table 1: Strategy of Cooperation Development on Rubber and Rubber Products under IMT-GT (Continued)

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<tbody>
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<td></td>
<td>1.1.3 Increase and develop skills and knowledge in rubber producing and processing technology and machines for labours</td>
<td>- Ministry of Labour *Department of Skill Development</td>
<td>- Thai Rubber Glove Manufacturers Association - The Federation of Rubber Farmers Association of Thailand</td>
<td>- Academic Institutes - The Federation of Thai Industries</td>
<td>Intermediate (3-5 years)</td>
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### Table 1: Strategy of Cooperation Development on Rubber and Rubber Products under IMT-GT (Continued)

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</table>
| “ASEAN Rubber Center”           | 1.2 Set up and Promote the Rubber Database Development and Information System of IMT-GT by establishing “IMT-GT Rubber Intelligence Center” | 1.2.1 Improve and develop IMT-GT rubber database to be correct, update and identical source by a cooperation of the government sector of Indonesia, Malaysia and Thailand.  
1.2.2 Support for knowledge exchange; academic, technology, and research and development, of IMG-GT, | - Ministry of Agriculture and Cooperatives  
* Rubber Research Institute of Thailand,  
Department Of Agriculture | - Office of Agricultural Economics  
- Office of Industrial Economics  
- Rubber Estate Organization  
- Office of the Rubber Replanting Aid Fund  
- Department of Industrial Works  
- Department of Customs | Intermediate (3-5 years) |
|                                 |                                                    | - Academic institutes  
- Ministry of Science and Technology                                                                  | - The Agricultural Research Development Agency (Public Organization)  
- Department of Agriculture  
- The Thailand Research Fund  
- National Metal and Materials Technology Center |                                                                      | Intermediate (3-5 years) |
## Table 1: Strategy of Cooperation Development on Rubber and Rubber Products under IMT-GT (Continued)

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<td></td>
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<td>and a cooperation with the existing international institutes for rubber research and development such as International Rubber Research and Development Board, CIRAD – A French research centre working with developing countries to tackle international agricultural and development issues, and other rubber research centers.</td>
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Table 1: Strategy of Cooperation Development on Rubber and Rubber Products under IMT-GT (Continued)

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<tbody>
<tr>
<td>1.3</td>
<td>Jointly develop a central rubber market of IMT-GT to set Reference Price in the world market</td>
<td>1.3.1 Develop IMT-GT Rubber Central Market to be a place for the forward contract which will actually deliver.</td>
<td>- Department Of Agriculture * Rubber Central Market</td>
<td>- The Agricultural Futures Exchange of Thailand - The Thai Rubber Association - Department of Trade Negotiations</td>
<td>Long Term (6-10 years)</td>
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<td>1.3.2</td>
<td>Support for and develop of a connectivity of the rubber central market of Indonesia, Malaysia and Thailand to be the world’s rubber market.</td>
<td>1.3.2 Support for and develop of a connectivity of the rubber central market of Indonesia, Malaysia and Thailand to be the world’s rubber market.</td>
<td>- Department Of Agriculture * Rubber Central Market</td>
<td>- Department of Trade Negotiations - The Agricultural Futures Exchange of Thailand - The Federation of Thai Industries - The Thai Rubber Association - Thai Latex Association - Thai Rubber Glove Manufacturers Association</td>
<td>Long Term (6-10 years)</td>
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Source: The Center for International Trade Studies, University of Thai Chamber of Commerce
3.2 Partnership development for rubber timber industry and products under IMT-GT

Growing of rubber trees aims to gain rubber latex as a raw material to be used in a production of rubber products related to human daily life, such as; rubber gloves, rubber bands, condom, automobile tyre and shoes, etc. Rubber trees are generally cut after 25-30 years and re-grow rubber trees because latex production declines as trees age, and they are no longer economically viable. Rubber timbers will be used for various wood products production, e.g. furniture, kitchen wares, construction materials (piles, wood floorings and wood mouldings), wood buckets, wood boxes (fruit and fish wood boxes) and source of heat (charcoal, firewood, and electricity generator), etc. As a result of the eco-friendly concerns raised globally to eliminate deforestation including a banning of importing of natural wood products in many countries, thus, rubber wood products are a good option in prevention of the deforestation as the rubber tree is a human growing plant.

Rubber timber industry and rubber wood products are important industries that generate jobs and incomes for the three IMT-GT countries. Thailand has the highest industrial values from the production and exports of midstream goods, for instance; sawn rubberwood (formulated and dried rubberwood), fibreboard, and particleboard. The sawn rubberwood, in particular, is a major products that generate the highest income for rubberwood industry and products of Thailand. Mainly, the sawn rubberwood is produced for exports (65.2% of total production), moreover, 97.48% of exports of total sawn rubberwood is shipped to China. The major rubberwood products of Thailand are furniture and kitchenware (65% of rubberwood products), meanwhile,
the major trading partners are international markets which are Japan, the U.K. and the U.S. However, rubberwood products are not very famous in Thailand due to Thailand is in a tropical area, customers prefer furniture that is produced by hard woods that endure to high humidity like Teak and Siamese Sal. Nonetheless, the rubberwood furniture market in Thailand is getting more expansion because there are a lot of research and development of formulating and drying process of rubberwood to increase a quality of rubberwood as much as natural woods. Moreover, there is a development of product design in producing more beautiful, modern and multifunctional products.

In Malaysia, rubberwood industry and products mainly focus on downstream products, especially, furniture industry and housewares are major exporting products of Malaysia (Top 20 exports products). Malaysian entrepreneurs have been supported by the government on investment cost, technology, skills training, sustainable management of raw materials as well as amendments of regulations to facilitate the development of industry. Malaysia is also trying to achieve the plan of generating 16,000,000,000 Malaysian Ringgit (approximately 160,000,000,000 baht) by the year 2020. However, a result of limitation of rubber plantation policy of Malaysian government in reservation of lands for other economic plants such as oil palm will cause a direct effect to the rubber timber industry in terms of raw materials in the near future. While Indonesian rubber timber industry and products also focus on furniture production as same as Malaysia, but it is different from Malaysia in the way that Indonesia rubber timber industry will produce products only to order and there is no branding. Nonetheless, Indonesia is more advantage than Thailand and Malaysia in low labor wage.
Although, the timber industry and timber products generate high incomes to Indonesia, Malaysia and Thailand, but when they come to the global market, there will be high challenges in the world market in terms of taste of customers that change over time, high competition for market share holders, e.g. China, Canada, Italy and Germany, etc. Therefore, cooperation in investment, production and trading including research and development of the advantages and elimination of the weakness through IMT-GT dialogues will increase the utmost benefits to the IMT-GT countries.

Target “Rubber Timber Processing and Design Center of ASEAN”

Strategy

To develop the cooperation in rubber wood industry and products within the sub-region (Indonesia, Malaysia and Thailand) to be more efficient and to build mutual benefits, the 3 strategies on the cooperation of rubber woods and rubber-wood products industry are recommended to push for a long-term development as follows:

1. **Expansion of manufacturing base and investment on rubber timber industry and production to increase competitiveness.**

   Thailand has an availability of raw materials and product design while Malaysia is a high potential country that develops its domestic furniture industry, as being supported by the joint venture between her government and private sectors. However, Malaysia has reduced rubber growing areas by replacing palm oil which may affect to the furniture industry of Malaysia. But, Thailand has good quality rubber timber both processed and synthetic timbers (plywood and veneer, particle board and fiberboard), which can be supplied for the furniture manufacturers continuously.
Indonesia has the largest rubber plantation in the world where there are more than 400,000 tons of rubber timbers cut each year (representing 2% of the total plantation area). However, Indonesia rubber woods have high flaws and Indonesian entrepreneurs have lower skills in timber processing (sawing) than Thai’s, therefore, it causes much loss during a production process. Thus, it is recommended to support Thai investors to invest in the rubber timber production industry in Indonesia as they will benefit by amount of labors, low wages and adequate raw materials.

According to the availability of raw materials and product design of Thailand, the high potentials of Malaysia in domestic wood furniture development and marketing, as well as the low wage and a readiness in raw materials of Indonesia, if these three countries cooperate together to expand the production base and investment on the complete rubber timber industry and production, it will strengthen on production and increase competitiveness in the world market.

2. Increasing of market opportunities for rubber timber industry and products in domestic and international markets

Indonesia, Malaysia and Thailand should co-organize the exhibition to show the products (processed rubber woods and products) in abroad to expand a market and attract foreign investors - especially from the Middle East, East Europe and Central Europe where having high purchasing power, to invest in rubber timber processing and products industry in IMT-GT. Although, the markets of America and Europe are tempting markets for exports, but exporting to those countries have to
follow each country's law. Forest Law Enforcement, Governance and Trade (FLEGT)\(^2\) of EU aims to reduce illegal logging by strengthening sustainable and legal forest management, improving governance and promoting trade in legally produced timber, even though this forest law is legislated within EU but partner countries that want to export timber products to Europe also have to abide by the law. While U.S Lacey Act\(^3\) is a United States law that bans trafficking in illegal wildlife and plants, the Act was amended to include plants and plant products such as timber and paper. This landmark legislation is the world's first ban on trade in illegally sourced wood products which successfully enforces since 2011. Therefore, IMT-GT should adjust to follow the

\(^2\) EU FLEGT stands for European Union Forest Law Enforcement, Governance and Trade. EU FLEGT Action Plan aims to reduce illegal logging by strengthening sustainable and legal forest management, improving governance and promoting trade in legally produced timber.

\(^3\) Lacey Act or Lacey Act Amendments of 1981 is one of sub act addressing in the Farm Bill (Title 8 – Forestry) which has entered into force since 1990. AN ACT is to provide for the control of illegally taken fish, wildlife and plants which are under the protection of the Federal Government or of any State or political subdivision thereof, or any other entity subject to the jurisdiction of the United States, and of Convention on International Trade in Endangered Species (CITES). The Lacey Act Amendments of 2008, the law expanded its protection to a broader range in 3 major areas which are 1) illegal to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce, any plant with limited exceptions to be taken or traded in violation of domestic or international laws, 2) Requires importers to declare the country of origin of harvest and species name of all plants contained in their products (a provision that is currently being phased in). The U.S. has received the statement of declaration since 15 December 2008 onwards, and 3) Establishes penalties for violations of the law, including forfeiture of goods and vessels, fines, and jail time related to case of violation and value of goods.
laws of the U.S. and EU to be able to expand the markets of processed rubber timber and products.

3. **Establishment of a Center for the Development of the Rubber Timber Production and Rubber Products Design**

Wood products industry, especially the furniture industry, is a high competitive industry, keeps changing styles and is imitated easily. Therefore, the Center for the development of the rubber wood production and design should be established under the IMT-GT. It aims to urge the use of upper stream products to downstream products, to build a capacity and strengthen a design and production of three countries in order to be able to produce products that meet the needs of customers which change over time.

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## Executive Summary

**Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)**

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.

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### Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
<th>Guideline</th>
<th>Responsible Agency</th>
<th>Supporting Agency</th>
<th>Duration</th>
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</thead>
</table>
| “Rubber Timber Processing and Design Center of ASEAN” | 1. Expansion of manufacturing base and investment on rubber timber industry and production to increase competitiveness | 1.1 Negotiation and Cooperation in providing privileges on investment for IMT-GT entrepreneurs who have a will to invest on rubber timber industry and products as well as other supporting industries, such as wood stains, chemicals, glues, textiles, leathers, machines and related instruments; and proving cheap interest loans or | - Ministry of Commerce  
* Department of Trade Negotiations | - The Board of Investment of Thailand  
- Department of Industrial Works  
- Industrial Estate Authority of Thailand  
- The Federation of Thai Industries  
- Department of Customs | Short Term (1-2 years) |
Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project (continued)

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
<th>Guideline</th>
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<th>Duration</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>gracing period to entrepreneurs who aim to set up a furniture producing factory in order to expand the manufacturing base and investment on rubber timber industry and production under the IMT-GT</td>
<td>- Ministry of Natural Resources and Environment * Royal Forest Department</td>
<td>- Department of Trade Negotiations - The Federation of Thai Industries - The Thai Parawood Association - Thai Furniture Industries Association</td>
<td>Intermediate (3-5 years)</td>
</tr>
<tr>
<td>1.2</td>
<td>Update and revise the regulations of each country that are a barrier in expanding production and investment</td>
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Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project (continued)

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<th>Duration</th>
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<td></td>
<td></td>
<td>in the timber industry and products such as revised Forest Act of Thailand B.E 2548 by reducing regulations and austerities to SMEs that aim to set up a rubber timber processing and furniture producing factory, in order to reduce the costs of investment and to increase competitiveness.</td>
<td>- Ministry of Industry * Department of Industrial Works</td>
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</tbody>
</table>
Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project (continued)

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</tr>
</thead>
<tbody>
<tr>
<td>“Rubber Timber Processing and Design Center of ASEAN”</td>
<td>2. Increasing of market opportunities for rubber timber industry and products of Indonesia, Malaysia and Thailand</td>
<td>2.1 Continuously co-organize international exhibition to show rubber woods and products to build a marketing networks and to attract foreign investors</td>
<td>- Ministry of Commerce * Department of International Trade Promotion</td>
<td>- Department of Foreign Trade - Department of Industry Promotion - The Board of Investment of Thailand - The Federation of Thai Industries - The Thai Parawood Association - Thai Furniture Industries Association</td>
<td>Intermediate (3-5 years)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2 Promote and campaign for international acceptance of rubber timber as an eco-friendly and alternative wood that can be replaced natural timbers from forest.</td>
<td>- Ministry of Commerce * Department of International Trade Promotion</td>
<td>- Department of Foreign Trade - Royal Forest Department - The Board of Investment of Thailand - The Federation of Thai Industries - The Thai Parawood Association - Thai Furniture Industries Association</td>
<td>Intermediate (3-5 years)</td>
</tr>
</tbody>
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### Executive Summary

**Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)**

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**Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project (continued)**

<table>
<thead>
<tr>
<th>Vision</th>
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<th>Supporting Agency</th>
<th>Duration</th>
</tr>
</thead>
</table>
|        | 2.3 Update and adjust regulations of IMT-GT country in complying with EU FLEGT and U.S. Lacey Act to support trade and marketing expansion to the U.S. and Europe. | - Ministry of Natural Resources and Environment  
   * Royal Forest Department  
   - Ministry of Industry  
   * Department of Industrial Works | - Department of Trade Negotiations  
   - The Federation of Thai Industries  
   - The Thai Parawood Association  
   - Thai Furniture Industries Association | Intermediate (3-5 years) |
| "Rubber Timber Processing and Design Center of ASEAN" | 3. Establishment of a Center for the Development of IMT-GT Rubber Timber Production and | 3.1 Cooperation in developing a database of IMT-GT rubber timber and products to be information for entrepreneurs as well as launching a policy | - Ministry of Natural Resources and Environment  
   * Royal Forest Department | - Department of Industry Promotion  
   - Department of Industrial Works  
   - Office of Industrial Economics  
   - Department of Customs  
   - Department of Trade Negotiations | Intermediate (3-5 years) |

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- 35 -
Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project (continued)

<table>
<thead>
<tr>
<th>Vision</th>
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<th>Guideline</th>
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<th>Duration</th>
</tr>
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<tbody>
<tr>
<td>Rubber Products Design</td>
<td>that promotes and support the Roadmap for Rubber Timber Industry and Products Development Project of IMT-GT countries</td>
<td>3.2 Establishment of rubber timber and products design and development center to increase products variety and to enhance markets</td>
<td>- Department of Industry Promotion</td>
<td>- Department of Trade Negotiations - Industrial Designers Society of Thailand - National Science and Technology Development Agency</td>
<td>Long Term (6-10 years)</td>
</tr>
</tbody>
</table>

*The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.*
### Table 2: Roadmap for IMT-GT Rubber Timber Industry and Products Development Project (continued)

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<th>Duration</th>
</tr>
</thead>
</table>
|        | 3.3 Support for knowledge exchange programs and develop researches on rubber timber and rubber timber design courses in IMT-GT countries’ academic institutes to increase competitiveness | - Academic institutes | - Department of Industrial Promotion
- Department of Skill Development
- Industrial Designers Society of Thailand | Long Term (6-10 years) |
|        | 3.4 Development of measuring tools and set for standards to ensure universal quality goods | - Thai Industrial Standard Institute | - National Institute of Metrology
- Academic institutes | Long Term (6-10 years) |

Source: The Center for International Trade Studies, University of Thai Chamber of Commerce
3.3 Partnership Cooperation on Palm Oil Industry under IMT-GT

Palm oil industry is one of the potential industries of IMT-GT because Indonesia, Malaysia and Thailand are the world’s largest palm oil producers. Indonesia has the largest palm oil plantation area of the world while the second and the third are Malaysia and Thailand respectively. The areas of oil palm plantations of Indonesia and Malaysia are approximately 60 percent of the world’s total oil palm plantation areas, which it makes Indonesia and Malaysia become the world’s largest palm oil producers. In addition, the governments of both countries fully support for the whole process of palm oil industry from upstream to downstream industries. They manage the palm oil industry systematically by suitable controlling, managing and zoning of plantations as well as selection of seeds that are suitable for each planting area in order to gain high quality oil palm. The palm oil mills are located near the plantations to facilitate the harvest of palm oil and to enhance quality of palm oil from fresh oil palm - high Oil Extraction Rate (OER). As the result of this good management, it increases oil that can be further added values for downstream product production. Moreover, Malaysia has expertise in innovation of downstream products - for instance cosmetics and healthy foods, etc, which these products are high-value products. According to the study, it found the models and knowledge in palm oil industry gained from both countries will benefit to Thailand and to the IMT-GT palm oil industry cooperation if the three IMT-GT member countries cooperate together according to their capabilities.
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

Target “Joint Development for Production Chain of Palm Oil Industry”

This strategy aims to gain knowledge from Indonesia and Malaysia through IMT-GT framework because these two countries have more experience in palm oil and oil palm than Thailand as well as their palm oil industry has been developed before Thailand. In cooperation with, therefore, Indonesia and Malaysia in knowledge exchange would ease and solve the current problems of Thai palm oil industry and to further develop for its sustainability.

However, Thailand should expedite to solve the internal problems of palm oil industry before moving forward to cooperation with Indonesia and Malaysia under IMT-GT according the recommendations below:

1) Development of oil palm
   - Low quality seeds
   - Lack of knowledge of farmers in selection for good quality seeds
   - Low Oil Extraction Rate (OER) due to young palm harvest

2) Oil Palm Plantation Management
   In order to reduce problems of an inappropriate use of plantation, insufficient water, low price and long distance between plantation and extraction plants, Thailand should study from Indonesia and Malaysian on plantation management and expansion. In addition, such knowledge and lesson learned have to be delivered to farmers to build their capacity in management of oil palm plantation for utmost benefits of Thai palm oil industry.

3) Reformation of Oil Palm and Palm Oil Information and Knowledge Management

The Center for International Trade Studies, School of Economics, University of the Thai Chamber of Commerce.
3.1) Unsystematic and incompatible data of palm oil among Thai responsible agencies

3.2) Lack of main responsible agencies that have a mandate in palm oil industry management in particular aspect.

3.3) Thai farmers are lack of knowledge in planting and selection of good quality seeds due to limitation in access to information and promotion.

4) Core Agency to mandate the Rubber Industry

In Malaysia, the Official Portal of Malaysian Palm Oil Board (MPOB) is a core agency that is responsible for palm oil industry management from upstream to downstream industries, policy making, strategy identifying and product development.

Therefore, Thailand should establish a National Policy and Development of Institute for Oil Palm and Palm Oil operating as a public organization to supersede Thailand Palm Oil Board which gathers different groups of stakeholders, farmers; industrial sector; alternative energy sector and academic sectors.

Strategy

The palm oil strategy aims to enhance the cooperation in developing the palm oil industry among Indonesia, Malaysia and Thailand for further development of the whole production process of palm oil industry as details below:

1. Creation of the “IMT-GT Supply Chain of Palm Oil”

This strategy is to jointly develop the palm oil industry by sharing the expertise of each country as follows:

1.1 Indonesia and Malaysia provide raw materials and processing
Executive Summary

Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)

- Jointly produce the downstream industry products
- Mainly use raw materials from Indonesia and Malaysia
- Establish the factory in Malaysia

1.2 Thailand is responsible for packaging for IMT-GT palm oil production

Thailand is outstanding in packaging design as there are many researches and development of packaging, and also studies and resource persons in many institutes.

2. Thailand is a hub of IMT-GT palm oil products distribution

Thailand’s geography is suitable to be a center of goods distribution to ASEAN countries including China and India. China and India are the largest importer of palm oil, and Thailand is a member of GMS and BIMSTEC, which will be more convenient in distributing goods to ASEAN, China and India.

3. Establish the Bio-Diesel development center of the IMT-GT and the world’s bio-diesel producer

- Indonesia, Malaysia and Thailand are the world’s largest palm oil producers.
- The world’s trend of renewable energy requirement is increasing
- The National Science and Technology Development Agency (NSTDA) forecasts that “Oil will run out in the 37 years ahead”
- Indonesia has set the 2020 goals that 50% of palm oil production is for foods production and other 50% are for bio-diesel production.
Thailand has created the 15 - year Renewable Energy Development Plan (2008-2022) by targeting the use of palm oil as a main raw material.

If the IMT-GT countries agree to jointly produce bio-diesel to be an alternative energy, they will become the world's largest bio-diesel producers.
# Executive Summary

*Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)*

Table 3: Roadmap for Partnership Cooperation on Palm Oil Industry under IMT-GT

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
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<th>Responsible Agency</th>
<th>Supporting Agency</th>
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</thead>
<tbody>
<tr>
<td>“Joint Development for Production Chain of Palm Oil”</td>
<td>1. Creation of “IMT-GT Supply Chain of Palm Oil”</td>
<td>1.1 Identify an action plan and select products for joint production 1.2 Identify a scope of work of each country</td>
<td>Ministry of Agriculture and Cooperatives</td>
<td>- Oil Palm Research and Development Center in academic institutes - Thai Oil Palm and Palm Oil Association</td>
<td>Intermediate 3-5 years</td>
</tr>
<tr>
<td></td>
<td>2. IMT-GT Palm Oil Products Distribution Center</td>
<td>2.1 Thai Government sector identifies an appropriate area/location to establish the distribution center 2.2 Identify core agencies to be responsible for the distribution center</td>
<td>Ministry of Commerce</td>
<td>- Ministry of Agriculture and Cooperatives - Ministry of Transport</td>
<td>Intermediate 3-5 years</td>
</tr>
</tbody>
</table>
### Table 3: Roadmap for Partnership Cooperation on Palm Oil Industry under IMT-GT (continued)

<table>
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<tr>
<th>Vision</th>
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<th>Responsible Agency</th>
<th>Supporting Agency</th>
<th>Duration</th>
</tr>
</thead>
</table>
| “Joint Development for Production Chain of Palm Oil Industry” | 3. Establishment of the Bio-Diesel development center of the IMT-GT and the world’s bio-diesel producer | 3.1 Joint research and development for bio-diesel production | Ministry of Energy | - Ministry of Industry  
- Ministry of Agriculture and Cooperatives  
- Oil Palm Research and Development Center in academic institutes | Intermediate 3-5 years |

Source: The Center for International Trade Studies, University of Thai Chamber of Commerce
3.4 Canned seafood and seafood processing strategy

Seafood processing industry is another potential industry under the IMT-GT as the geography of the three member countries are suitable for fishery serving for seafood processing industry. Especially, Indonesia is an island and coastal country; therefore, it is an important resource of the industry. Although, Thailand faces problems in shortage of raw materials and wage increasing, but Thailand has knowledge in production and processing of this industry due to a long operation for over 30 years. Therefore, Thailand is expertise and has high potential in producing high standard products that are accepted by global markets. Thus, cooperation between IMT-GT countries by combining the strength point of Indonesia and Malaysia in raw materials and labors, expertise in production and processing of Thailand as well as the world’s leader in Halal food of Malaysia will enhance and strengthen the cooperation in seafood processing industry under the IMT-GT for the utmost benefit for all.

Target “Seafood Processing Base of ASEAN”

The partnership cooperation on seafood processing industry aims to increase a joint production by following these strategies:

1. Production: Cooperation on raw materials and production line expansion

   The action plan may be to export raw materials or establish the primary processing plants in Indonesia and Malaysia, then transfer to Thailand for further processing. This cooperation will be a platform for raw materials and knowledge sharing.
2. **ASEAN Halal Single Mark**

   The halal mark of Malaysia is more accepted by the world market than Thai’s, but Thailand has more potential in producing standard halal foods. Therefore, cooperation between Malaysia and Thailand in this matter will not only help expanding the market to Muslim in Malaysia, but also to ASEAN and the world markets.

3. **Marketing: Cooperation on Seafood Processing Industry**

   Indonesia has an availability of labors and raw materials, Malaysia is also outstanding in raw materials and Malaysian halal mark is widely recognized, while Thailand has high potential in production. Therefore, if these three countries cooperate to completely produce the processing seafood products, this industry will be the regional processed seafood resource and also of the Muslim countries.
### Executive Summary

*Industrial Cooperation Development with Neighbouring Countries Project (Industrial Cooperation Development Strategy under the Indonesia-Malaysia-Thailand Growth Triangle: IMT-GT)*

#### Table 4: Roadmap for Partnership Cooperation on Seafood Processing Industry under IMT-GT

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
<th>Guideline</th>
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<th>Supporting Agency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Seafood Processing Base of ASEAN”</td>
<td>1. Cooperation on raw materials and production line expansion</td>
<td>1.1 Make an agreement on import of aquatic animals from Indonesia and Malaysia</td>
<td>- Department of Fishery</td>
<td>- Ministry of Agriculture and Cooperatives</td>
<td>Intermediate 3-5 years</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2 Study on Indonesia’s and Malaysia’s regulations for production expansion</td>
<td>- Ministry of Commerce</td>
<td>- Department of Fishery</td>
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<td></td>
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<td>1.3 Develop cooperation in seafood processing industry investment through dialogues between the government sector of Indonesia, Malaysia and Thailand</td>
<td>- Thai Frozen Foods Association (TFFA)</td>
<td>- The Board of Investment of Thailand</td>
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</table>
### Table 4: Roadmap for Partnership Cooperation on Seafood Processing Industry under IMT-GT (Continued)

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
<th>Guideline</th>
<th>Responsible Agency</th>
<th>Supporting Agency</th>
<th>Duration</th>
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</thead>
</table>
| “Seafood Processing Base of ASEAN” | 2. ASEAN Halal Single Mark | 2.1 Make an agreement with Malaysia on ASEAN Halal Single Mark promotion for mutual benefits. | - Ministry of Agriculture and Cooperatives  
- The Halal Standard Institute of Thailand | - Department of Fishery  
- Thai Frozen Foods Association (TFFA)  
- The Central Islamic Committee of Thailand (CICOT) | Intermediate 3-5 years |
| | | 2.2 Enhance capacity on Halal products development | | | |
| | 3. Joint cooperation for seafood processing base | 3.1 Make an agreement between Indonesia, Malaysia and Thailand on production process and responsibility | - Department of Fishery | - Thai Frozen Foods Association (TFFA)  
- The Board of Investment of Thailand  
- Ministry of Science and Technology | Intermediate 3-5 years |
### Table 4: Roadmap for Partnership Cooperation on Seafood Processing Industry under IMT-GT (Continued)

<table>
<thead>
<tr>
<th>Vision</th>
<th>Strategy</th>
<th>Guideline</th>
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<th>Duration</th>
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<tr>
<td></td>
<td>3.2 Research and develop new products to serve customer needs</td>
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</tbody>
</table>

Source: The Center for International Trade Studies, University of Thai Chamber of Commerce.