

**BENEFITS AND THREATS OF HEMP LEGALIZATION
FOR THE AGRICULTURAL SECTOR IN THAILAND**



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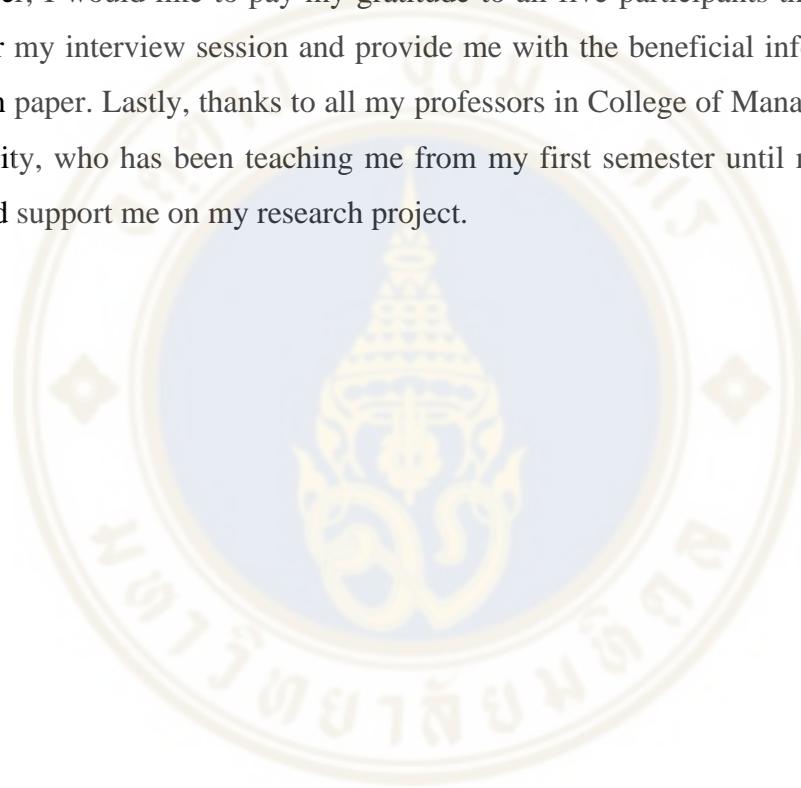
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ABSTRACT

The study aims to provide knowledge and understanding of hemp products and the legal status of hemp in Thailand. Also, the readers can learn more about how the legalization of hemp can have positive and negative impacts on the agricultural sector in Thailand. Since there are many debates about the benefits and threats of hemp legalization, this study can help readers to understand more about this issue. Moreover, five experts were interviewed for this study, who are knowledgeable about the hemp plant and its uses, to share their thoughts and expectation about hemp legalization in Thailand. Lastly, this study has developed recommendations about how the Thai government can manage and control hemp activities in order to create the most benefit for Thai farmers.

KEY WORDS: Hemp Legalization/ Agricultural Sector/ Benefits of Hemp/ Threats of Hemp/ Thailand

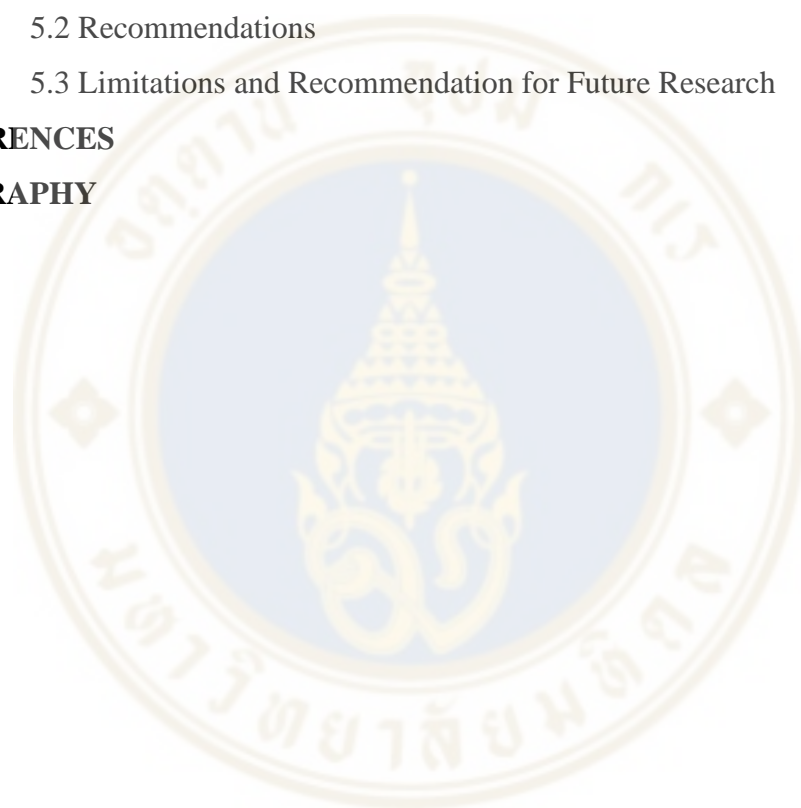
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CHAPTER I

INTRODUCTION

1.1 Problem Statement

Nowadays, there are tremendous debates going on in about the legalization of marijuana and hemp in Thailand. According to Dr. Sarita Pinmanee, researcher and hemp project manager for the Highland Research and Development Institute (HRDI), the main problem of an unclear legal status of cannabis and hemp in Thailand is that the authorities still have many misconceptions on the differences between these two plants (Stuart, 2017). In fact, marijuana and hemp are the same species of plant. While marijuana contains high level of THC, or the psychoactive element, hemp contains less than 0.3 percent THC. Though in 2018 Thailand's Ministry of Public Health has already permitted the growing of hemp for industrial and medical purposes, any private company must wait until 2021 in order to apply for a license to grow commercial business purposes. This research will study the potential benefits and threats from legalization of hemp for the agricultural sector in Thailand.

Agriculture industry plays a significant role in Thailand's economy. Agricultural production makes up around 9 percent of Thailand's GDP (Singhapreecha, 2014). Agriculture is one important sector that helps drive Thailand's economy, since Thailand can be considered as the labor-abundant country, the cheap labor cost, the climate of the country that is suitable to grow various crops, and other factors of production. Agricultural production is not only for Thai domestic consumption, but also a major source of foreign currency from exporting these productions. Thai's export used to account up to 70 percent of Thailand's GDP. However, in 2013-2015, export performance in Thailand has declined a lot due to the structural problem of Thailand's economy and from the development and improvement of the agricultural production in our neighboring countries, which became more competitive to Thailand's agricultural products (Fernquest, 2015). Therefore, for farmers to grow hemp, this can generate more

income to the country, as many foreign countries considers hemp as a new cash crop for agricultural industry.

1.2 Research Objectives

The objective of this research is to make readers to gain more awareness and understanding and learn more about how legalization of hemp in Thailand can have positive impacts on Thailand's economy. Since many people are in doubt about hemp whether legalizing can do more benefits or harms to our country in the future, both the pros and the cons of legalization for the agricultural sector will be discussed in this research paper.

1.3 Research Questions

What are the potential benefits and threats of hemp legalization for agricultural sector in Thailand?

1.4 Research Scope

This research will only focus on the benefits and threats of hemp legalization in the agricultural sector in Thailand. Other sectors will be excluded. Hemp will be mainly discussed in two categories, which are hemp that is extracted for CBD products for health benefits and hemp as an alternative source for fibers.

1.5 Expected Benefits

This paper will give explanation on how legalizing hemp can benefit and harm agricultural sector in Thailand. Firstly, having new cash crop to cultivate will create more jobs for Thai farmers and will make their living quality better since farmers can make more money than other crops. Secondly, it can create an opportunity for business to do export in the future as our cost of production will be lower than other

foreign countries. Furthermore, government can also collect taxes from selling hemp-derived products as well. According to the research, the Colorado Department of Revenue able to collect taxes from retail marijuana sales with the total of \$573 million in 2017 (Lynch, 2018). Thus, if Thai government can collect taxed from hemp products in the future, they can spend more money on developing the country's infrastructure and quality of living for Thai people.



CHAPTER II

LITERATURE REVIEW

2.1 What is Hemp and Its Benefits?

“If all fossil fuels and their derivatives, as well as trees for paper and construction were banned in order to save the planet, reverse the Greenhouse Effect and stop deforestation, then there is only one known annually renewable natural resource that is capable of providing the overall majority of the world’s paper and textiles; meeting all of the world’s transportation, industrial and home energy needs; simultaneously reducing pollution, rebuilding the soil, and cleaning the atmosphere all at the same time. That substance is the same one that did it all before, Cannabis Hemp...” (Herer, 1995).

First, there are two main compounds in cannabis plants, which are cannabidiol (CBD) and tetrahydrocannabinol (THC). Unlike CBD, THC contains psychoactive component, which makes the users become high or create a sense of euphoria. However, the medical benefits of hemp and cannabis are quite similar. The main difference between these two plants is hemp contains less than 0.3 percent of THC and higher concentration of CBD. Meaning that hemp’s uniqueness is it does not contain enough psychoactive component that will affect your brain and make users high after consuming any CBD-contained products (Holland, 2019).

Hemp has various therapeutic benefits and there are many uses of hemp as well. There are many studies about CBD oil from hemp on its health benefits as a natural and alternative remedies for patients. For example, the most well-known use of hemp oil is for inflammation, which can be used as a natural pain relief. Moreover, hemp oil can help with skin disorders such as acne or skin inflammation skin and relieve muscle tension (Johnson, 2019). According to Dr. Peter Grinspoon (2018), there is scientific evidence of using CBD medication on people who have epilepsy syndrome can reduce the number of seizures on patients effectively and in some cases, it can stop seizures.

Furthermore, CBD is commonly used for reducing stress and anxiety and can help people with insomnia as well.

Apart from its therapeutic and health benefits, hemp can be used for many products such as foods, beverages, building materials, clothing, textiles, cosmetics, nutraceutical, and even bio-fuel (Cassandra, 2019). Hemp fiber can be used for clothing and it is more durable and cost efficient than cotton clothes since growing cotton uses more water and involves pesticides to grow, so growing hemp is quite cheap in using less resources and a better alternative for clothing industry (10 Economic Benefits of Hemp Farming, 2018). With this one amazing plant, it is interesting that there are variety uses and benefits especially for health industry and as an alternative source of many products.

2.2 What is the Legal Status of Hemp in Thailand?

After the legalization of hemp-derived and cannabis-derived products in the last few years by many developed countries such as the United States and Canada, Thailand now has become determined to follow and the government is considering changes of the laws and regulations on this matter. According to the Office of the Narcotics Control Board (ONCB), the definition of hemp is a *Cannabis sativa L* plant which contains no more than 0.5 percent of THC by weight in its flowers and stems, and no more than 0.3 percent of THC by weight in its seeds. “According to the regulation, only hemp extracts that contain a ratio of cannabidiol (CBD) to tetrahydrocannabinol (THC) not exceeding 0.01% to 0.2% by weight can be used in drugs and herbal products. The regulation also prohibits the use of dried hemp bark, stems, fibers, and seeds in traditional medicine, food and cosmetics preparations.” Moreover, during the first five years starting from Aug 2019, permit of hemp cultivation, extraction, manufacture, and distribution can only be authorized to local licensed producers who work under government sectors. Products from CBD and THC can only be classified as a drug and herbal product only. Mr. Tares Krassanairawiwong, secretary-general of the Food and Drug Administration (FDA), said that the FDA is amending its regulations to allow companies to grow hemp as a cash crop, before adding

that the agency is also working towards issuing new rules on foods and cosmetics that contain CBD (WIPATAYOTIN, 2019).

However, ONCB secretary-general Niyom Termsrisuk strictly warned that the general public are still not permitted to grow or have possession of marijuana and hemp plants, even though the plant was conditionally removed from the controlled substances list. "Marijuana and hemp are still Class 5 narcotics, and their cultivation, import, export, sale, possession and/or consumption without permits are illegal," he said. Class 5 narcotic is considerable up to 15 years in prison or fined up to 1.5 million baht. Thus, the 99 percent purity of CBD extraction does not become categorized as a narcotic substance, but only if it is produced in Thailand. Importation of any CBD or THC products would be considered illegal for at least the next five years until it would be lifted and legally importable. Also, private sector businesses are still not allowed to be involved in this business until further changes in the law (Poonsuwan, 2019). To sum up, right now the only licensed producers are government sectors and universities, and the distributors can only be hospitals licensed by the government.

2.3 Benefits and Threats of Hemp Legalization for Agricultural Sector

From the past to present, Thailand's growth depends highly on the agriculture sector as one of the main drivers of Thai economy. However, in recent years, due to a decline in selling price of major crops such as rice, sugar cane and rubber, Thailand agriculture sector is struggling to grow. Thai government gives the most priority on rice because Thailand has around 4 million of rice farming households (Thailand aims to export 10m tons of Thai rice in 2019, 2019). In the past, Thai rice used to be the main export crop, but due to an oversupply of rice from our competitors such as India and Vietnam, has caused the rice price to fall and become a problem for Thai's farmer business to remain competitive (FERNQUEST, 2016). Therefore, the most important benefit from hemp legalization for Thai agricultural sector is to create more jobs for farmers, by providing them with a new cash crop as an alternative crop to

grow along with their major crops, which may help them to make a better living in the current economy.

After the United States legalized hemp farming, Colorado have already harvested 100,000 acres of hemp plant in order to serve an increasing demand of CBD-based products such as medicines, skin care, and supplementary food. In 2017, some farms in United States reported their revenue from growing hemp up to \$90,000 per an acre, while growing alfalfa generates around \$600 of revenue per an acre (Moore, 2018). In addition, the strong growth of hemp industry, not only makes money and jobs for farmers but also adds thousands of new jobs from farming, manufacturing, research and development, and distributing process. Opening hemp industry in Thailand can be expected to have a similar effect to economy from creating a new demand for workers in both high-skilled jobs to labor-type jobs. Ms. Gomez, the managing director of Group, the market research company, who is conducting a market research on CBD products Brightfield sales said, "I have never seen an industry grow this quickly, and I've never seen an industry with so much headwind (Orvedahl, 2019)." CBD-contained products come with wide varieties of consumer products as well from water, coffee, pet treats, face cream, vapor, medicines, and much more. According to the research, the cannabis legal market could generate \$12-\$18 billion in economic activities and 60,000 to 100,000 jobs from numerous sectors of the country (Gottlieb, 2016).

Furthermore, Thailand's economy relies heavily on export consisting of 37.7 percent of the country gross domestic product. In 2018, Thailand's GDP is \$529 billion, while total export has accounted value of \$249.8 billion (Thailand - Market Overview, 2019). Agricultural products are one the main export products of Thailand. By having rights to cultivate and harvesting this new cash crop can increase more money inflow of the country since Thailand has lower cost in production comparing to foreign countries. According to Dr Arthit Ouraitat, a former cabinet minister and now rector of Rangsit University, he said that Thailand's climate is suitable and supportive to grow both marijuana and hemp. Today, the Thai government already allows farmers to grow hemp in the northern provinces of Thailand including Chiang Mai, Chiang Rai, Phetchaboon, Mae Hong Son, Nan, and Tak province with the help from Hmong people, highland community in Northern Thailand, who is the specialist in growing hemp in the

past since they have been growing hemp for their traditional clothing long time ago before hemp was prohibited in 1930 (PARPART, 2018).

Another benefit of hemp cultivation in Thailand can be more cost effective due to the lower cost of production such as labor cost, knowledge on cultivation, and cost of infrastructure. According to Dr. Nopporn Cheanklin, head of Government Pharmaceutical Organization, mentioned that Thailand's low production cost will create a competitive advantage compared to United States, Canada, and European countries. Canada can grow the crop for 96 cents to \$1.53 on production cost per gram, while Thailand's forecasted the production cost would be around only 5 cents per gram. Thailand has low labor cost of \$10 per day comparing to \$10 per hour in North America countries (Retka, 2018). In addition, Thai farmers can grow hemp outdoor throughout the year without spending huge expenditure on constructing a greenhouse. Since Thailand has a tropical climate and it is suitable for growing hemp, unlike United States that must grow the crop in greenhouse to be able to control the weather, the amount of sunlight, and air ventilation. Therefore, with the low cost in production can create competitive advantage to our country when exports are made legal in the future time. Due to the great potential of this cash crop, local Thai farmers have a great opportunity to learn and prepare themselves to do what they do best and to be able to compete in the world's hemp market. According to Brightfield Group company research, stated that the legal market of hemp CBD could grow up to \$20 billion by the year 2022 (Carpenter, 2018).

Though right now only government sector allows to cultivate hemp, in the future when private sectors such as large company or entrepreneurs can join this market the production is expected to increase because of the potential of this crop. Local farmers may select to grow hemp more than any existing crops due to the higher demand from private sector market. As an example, Florida-based Green Roads company is a private business specializing in hemp-derived CBD products. Their product distribution channel is by using online platform, 6,000 stores, and 2,000 doctors' offices. The company can generate revenue of \$45 million in 2018 and gain market share for 6 percent (Weisul, 2018). According to new data from the US Department of Agriculture (USDA), US farmers use more land to grow hemp in the past year, from 27,424 acres

in August 2018 to 128,320 acres in 2019 as they saw an opportunity to gain more money from this rapidly expanding industry (Avins & Kopf, 2019).

However, when more and more countries open for hemp cultivation in the future, the selling price of hemp may drop due to the oversupply in the market. In 2019, only in 45 days the price of hemp is dropped by 30% due to the changes in demand and supply of hemp (Gordon, 2019). As mentioned before, there are new entrepreneurs entering into the market and the existing firms scale up their production. From this factor, it leads to drop in the average price of CBD which extracted from hemp. Also, the hemp price fluctuations have an impact on farmers and manufacturers because of the high investment on hemp extraction machines for processing raw hemp plant into CBD oil, which is the main value creation of hemp industry.

Another important factor that Thai government should pay more attention on is how to educate Thai people mostly in the rural are on the use of hemp in order to prevent the threat of misconduct, overuse, and exclude minors in purchasing any hemp-derived products. Furthermore, hemp cultivation should be strictly controlled in the right way to avoid low quality production and illegal producers who do not comply with the law. In United States, the regulation for hemp products is considered like alcohol, as any purchaser must be over 21-year-old (Gottlieb, 2016). Moreover, hemp and marijuana are difficult to distinguish so this might provide a way to illegally grown marijuana for recreation purpose instead of hemp medical purposes. According to Prime Minister Prayut Chan-o-cha, the Thai government rejects the use of marijuana for recreation purposes, still considering it as an illegal drug, but only to focus for its medical uses (LAOHONG, 2018).

CHAPTER III

METHODOLOGY

3.1 Data Collection Method

The research method uses in this paper is the qualitative approach method. In order to collect qualitative data, I will focus on using the open-ended and probing questions to understand each participant's thoughts on hemp legalization in Thailand. The collected data will be a descriptive data purely from the interview to understand the participants' perspective but will not be able to measure in any statistical aspect. Moreover, the interview will be one-on-one with a semi-formal structure by starting with open-ended questions and probing questions may be used when needed to gain further knowledge or understanding. The reason for choosing qualitative research is to get a better understanding and know the participants' perspective on the benefits and threats of hemp legalization in Thailand. This interview will not only be to understand about today's hemp legal status issue, but also in the future when private sectors can legally enter this industry. By using qualitative research, it can make readers to gain further comprehension of an entrepreneur as well as how they can get involved in this industry in the future when it's legalizing for private sectors. Some interviews will take place in public places such as in a coffee shop and some will be over the phone due to the long distance. Also, every interview session will be recorded and deleted after transcribed into this paper.

3.2 Research Participants

All participants' names will be confidential; only their field of work and position will be shown. The participants will be referred to as P1, P2, P3, and so on without any specific ordering. The number of participants is five people and all of them are fully knowledgeable about hemp legalization in Thailand. All participants will have an

agricultural background including farmers, state enterprises, and business owners. Each participant will be asked in the same sequence of questions that are prepared and some may face with more question from the interviewer in order to develop a better understanding. The interview session will not be more than 10-20 minutes. The participants will face with an in-depth interview in order to get a better insight on hemp issue mainly on agricultural industry in Thailand. No video record will be made; however, every conversation is recorded by the interviewer with permission and will be deleted after analyzing the data for this research paper.

3.3 Research Questions

1. What is your work position and your work background?
2. How did you come to work in the hemp industry and since when?
3. Do you think hemp can be Thailand new cash crops? Why?
4. What do you think are the benefits of hemp legalization in Thailand?
5. What do you think are the threats of hemp legalization in Thailand?
6. Does hemp legalization benefits more to farmers or private sectors?
7. What do you think you will gain after hemp legalization?
8. Do you have a plan to grow hemp if it is legalized? Why?
9. Which part in the hemp industry will you be involved in the future?
Why? (Cultivation? Manufacturing? Pharmaceutical? Export?)
10. What do you consider remain to be the biggest challenges in this industry? (Owen, 2012)

3.4 Data Analysis

The data is analyzing by closely examining and understanding of the interviewer on how each participants' perspectives and thoughts about the hemp industry in Thailand. Also, by looking at the pattern of how each participant are giving the information including its benefits and threats that might result from the hemp legalization from today's perspective and their future thoughts for this industry. As

many countries believe that hemp and cannabis are the new cash crop in this century, though the sample group is not huge, an in-depth interview can develop more understanding to the readers on how related individual's thought about the hemp issue. Moreover, some information from participants can able to compare with other countries as well such as the biggest challenges in hemp industry. By comparing information with other countries, the differences in perception of people in each country may be variable.



CHAPTER IV

RESEARCH FINDINGS

4.1 Data Collection

4.1.1 Participant One

The first participant, he is a business owner of an automobile company and he has many work experiences in the business field. This participant used to work in the hemp business in Africa about two years ago, but right now he stopped due to his personal reasons. The business in Africa focused on every step of hemp from seed to CBD oil. Starting from cultivation part, processing, extraction, and production of the end products. Furthermore, he works with Thai government in order to push regulation of hemp cultivation and legalize CBD product from hemp.

The reason he is interested in hemp business is because he believes that hemp can become a new cash crop for every country in the world especially for Thais farmers. Also, he believes that turning hemp plant into CBD-infused products can provide many medical benefits to the users. For example, he mentioned that nowadays people use painkiller a lot and we all know that it is made by chemical compounds, but if CBD can also help reducing pain so it would be better as an alternative painkiller because it is made from natural ingredients.

Moreover, he said that Thailand is an agricultural country and is suitable for growing hemp due to the climate, knowledge, and labor cost. So, with these advantages he believes that hemp legalization in Thailand can boost up the economy and allow us to compete with America and European countries due to the lower production cost of hemp products. Hemp legalization can make a better living for Thais farmers and will benefit to SMEs in the future because he said that there are wide varieties of products that can be made from CBD, which comes from hemp including medicine, dietary supplement, food, drink, cosmetic, and much more. For the disadvantage of hemp

legalization, he could not see any huge threats because in hemp there is no psychoactive compound and it is not considered as an addictive drug, so it won't do harm for the end users.

He has high confidence in hemp since every part of a hemp plant has benefit such as hemp seed can be another source for protein like chia seeds and a great source for vitamins and minerals as well. He stated that both farmers and private businesses can make more money for both parties, but he wants government to give precedence to farmers more so that Thai farmers can have a better living and income as nowadays farmers are struggling due to the lower price of crops they are selling. He said government should protect this plant for farmers to cultivate, and the private sector should only play a part of extraction technology or research and development so that it can still create a mutual benefit for both parties. He would like to have hemp business after it legalized by place importance to manufacturing and exporting part, as he saw that CBD market is quite huge in America and in many European countries.

4.1.2 Participant Two

The second participant, she graduated as a pharmacist from Chulalongkorn university and MBA from Thammasat university. Right now, she owns a drugstore in Bangkok and her primary focus is on providing advice to patients about traditional medication and engage patients in choosing an alternative medication method as well. She believes that using chemicals in traditional medicines is not the right solution for patients as it solves only its symptoms not its root causes, therefore, she started to study more about herbal medicines. She mentioned that there are many patients in Thailand coping with chronic disease such as diabetes and heart disease causes from their lifestyle and from her experience an alternative medication can help these patients in a healthier way.

She started to learn about hemp and cannabis few years ago since she heard about its benefits and trends in other developed countries. Moreover, she started to read research from doctors in America and found out that CBD oil from hemp can become one of an alternative medicine for patients. She has full understanding about CBD and know what it can used for. For example, she studied a lot about using CBD for epilepsy

since she encountered to many epilepsy patients and she said it is quite amazing that CBD can be a new way to cure epilepsy and inflammation in patients.

She agrees that hemp can become one of cash crop for Thai farmers because in order to be considered as a cash crop, the crop must have a high demand in the world market. Therefore, as CBD is widely used in many countries in the world, legalization of hemp in Thailand for CBD extraction can surely generate more income and improve their living for Thai farmer in the long term. She mentioned that CBD can boost many industries in Thailand as well including food industry, cosmetic industry, and medicine industry. Since Thailand is already well known for Thai traditional medicines from herbs and plants and those herbs can become main ingredient in many products. For instance, turmeric is quite famous for promoting circulation and immune activity and it can be found in many forms of products like turmeric powder, turmeric facial cream, and many more. Not only CBD can be gained from hemp but also hemp can become another useful source for fiber in textile industry and construction industry.

The benefits from hemp can generate more income to farmers and consequently farmers can have more money for their children's education. She viewed farmers as a foundation of our country and if their life is better it will result in a better performance of our country as well. Thus, hemp legalization can cause a positive chain reaction improving Thai farmers' quality of life. The biggest threat for her is if there is no good management in growing and controlling this crop. She believes that if farmers see an opportunity of this crop, they will all flock to grow this plant instead of our normal crop due to the higher selling price. As an example, she mentioned of durian because when there is a very high demand of durian from China and high selling price of durian, many people tend to be determined in growing durian until the supply of durian is too much and then the price will drop in the future. Furthermore, if more farmers switch from traditional crop to hemp it can lead to a lack of many necessary crops and result in the high price instead. Therefore, she said government should play an important role in controlling this issue, otherwise hemp price can drop just like the rubber price in Thailand and causes same swings in price like many other crops in Thailand.

Talking about which part of hemp industry she would like to be involved, she would like to be a CBD specialist by providing information and knowledge for patients who would like to gain medical benefits from CBD or other substances

extracted from hemp. She thinks it would be good if CBD products can only be sold by doctor or pharmacist so that patients can truly receive the correct information and reliable source of products. Also, she would consider herself as the end user since she wants to use CBD for reducing stress from work personally. In addition, she owns a business of muscle pain relief cream targeted to the people who has office syndrome, which she believes this syndrome keeps increasing nowadays in the office workers group. So, CBD can also add more value and benefit to her business as it can also help reducing pain and stress.

Lastly, she thinks that the biggest challenge depends on the government because the government should provide a clear instruction and knowledge about hemp legalization in order to avoid the low-quality production and misuse of the crop. She stated that every process from cultivation to finished product production requires people with knowledge to be involved in order to create a high-quality product to be able to compete in the world market. It is the challenge for Thai government to organize and create the best use from this crop.

4.1.3 Participant Three

The third participant, he is a Myanmar businessman owning a trading company located in Myanmar importing automobile parts from Thailand to Myanmar and exporting to Miami, Bahamas, Italy, Australia, Philippines, and Indonesia. His family used to own a farm growing rice and vegetables in Myanmar. He is very interested in hemp business because he believes that hemp is not a drug and it has many benefits for health from the end user perspective. He started to learn more about this plant and about the regulation in his country so that he can find a way to do hemp business in the future.

He also believes that hemp can be a new cash crop to agricultural countries like both Thailand and Myanmar, however there are still not enough knowledge and technology for farmers to generate much income from this crop. The main value from this plant is from the extraction and development process not from the cultivation part because he said that hemp itself does not have much value, but it is the knowledge and technology they use in extraction process and R&D team that will turn hemp into a valuable and high price product.

Hemp legalization either in Thailand and Myanmar should allow benefit and generate more income for farmer not only for private business sector. He also referred to other country like America that they already legalized CBD from hemp and marijuana in some states, which means that they see the potential of this plant and how it can create more money to their country such as from sales tax. Another benefit from hemp can be the fiber since it can be used to produce a wide variety of products such as clothing, automotive parts, bulletproof vests, and much more. Hemp has advantages not only for the medical aspect but also an alternative source of fiber which can be used in many industries as well. The threat that he saw is about the leader of each country needs to have a good plan and management toward the hemp industry first so that they can position hemp business strategy to align with the plan they made and avoid chaos or mismanagement later.

For hemp industry, he would like to be involved in the manufacturing process, however, he wants to learn everything from cultivation to extraction process so that he will be able to share and transfer his knowledge to the farmer in Myanmar. What he's interested in is about the extraction process because extraction is the process that changes this plant into different form of substance such as CBD oil and CBD isolate. "The value can happen from the extraction process, not the plant they grow." he said. Moreover, for medical uses, he views that the CBD medication should be in the right place and by the right people, which is doctor should be the one who distributes this medication at the hospital in order to control the right usage and prevent any negative side effects.

The biggest challenge would be about Thai government that they should provide clear instruction on who can cultivate or who can manufacture this plant strictly in order to avoid illegal cultivation and extraction that may lead to a poor-quality product. Licenses in doing hemp business should be emphasized otherwise every household may grow in their own backyard and sell the product illegally, which can lead to the lower income to Thai farmers and less tax to the government from illegal transactions.

4.1.4 Participant Four

The fourth participant, he owns an organic farm in Chiang Rai and develops his own land into a farm land for the purpose of self-sufficiently living, growing organic crops, and planting trees toward sustainable environment. He believes that legalization of hemp for medical purposes has many advantages to our country because hemp is suitable for growing in Thailand's climate and Thai farmers have a fundamental knowledge in farming various crops so it would be easy for farmers to learn and study about this plant. CBD from hemp can become an alternative medication method and create a new opportunity in living for both farmers and small businesses in Thailand.

He does not see hemp as a new cash crop for Thailand, but he sees hemp as an alternative crop for farmers instead because most of the economical crops usually end up with the decrease in price. The reason is because it is a widely grown and easy to grow crop, which normally leads to oversupply in the long run like sugarcane, rubber, cassava that many farmers choose to grow. Therefore, Thai government has to subsidize the price in order for farmer to be able to sell those crops otherwise they won't generate money for their living and this issue has been going on for many years already. There should be a prevention plan or better management for hemp crop in order to avoid the same issue. He also stated that Thai people won't do much research and study deeply about this plant, but when Thailand announced the legalization of hemp people will all rush to grow this plant without knowing what to do after cultivation and what form they should extract in order to match with the demand of the hemp market. Thus, he viewed hemp as an alternative crop that needs to be examined and studied closely before planting this crop and the government should have good management strategy before making this crop fully legalized for both farmers and private sectors. Without a proper management and clear instruction from Thai government, legalization of hemp can create more threat than benefit to our country.

Another threat can occur when people without enough education can overuse the medication from hemp and view hemp as a miracle medication. He believed that hemp and CBD from hemp are another herb that has benefits for our health but consuming everything too much won't do good. For instance, just like if we eat vitamins or medicines more than our body needs it, so it can cause negative effect to our body. So, medicines or supplementary medicines should be used and consumed it at the right

amount in order to receive its benefit to our body. People should not be allowed to use hemp products as personal use on their own, but prescribed by specialist, doctor, or pharmacist would be better. Since everything we consume must come from a reliable production source to prevent any low-quality product in the market.

He considered hemp legalization will benefit to both farmers and the private sector, but in long term it will favor private business more as advancement in technology mostly comes from businesses not farmers due to the high cost of technological adoption. Farmers can get paid from selling raw material to businesses, but businesses are the one who turns the raw material into a product that has higher value. In another way, if business can grow their own crop by law, then farmers would not get much benefit from this. He believes that private sectors have more money to invest than farmers, so to produce an organic crop it will require green house or organic fertilizer which he thinks farmers would not have enough money to invest in these essential materials for organic plantation. However, some business may focus less on cultivation and place importance to the technology in extraction machine or development of the end products instead, so in this case farmers can still able to make money in this industry. As he owns an organic farm and from his experience, cultivation knowledge and technology are an important factor in growing hemp because a better understanding and growing condition will lead to the higher CBD substance from hemp.

When hemp is legalized for the private sector, he would like to be involved in cultivation process but in the premium and organic market. Since he believes that there are many people who seek for premium products and they are willing to pay an extra price to receive what they believe is the best for themselves. He would not consider hemp as his main crop, but as an alternative crop that he would like to learn more about. Growing hemp definitely will generate more income for himself because it is still a popular plant, but as time goes by the price may drop. Still, it is an interesting plant for him to grow and able to generate extra income for him.

The biggest challenge for him would be all about knowledge and clear regulation from the government. In his opinion, in order to grow any plant including hemp, growers should be fully acknowledged about the plant first so that they produce and gain the highest yield and can create the most benefit from it such as knowledge on how to grow hemp to be able to extract and receive the highest CBD. With knowledge

in producing the highest yield from the plant, it can lower costs and generate more income for the business as well.

4.1.5 Participant Five

The fifth participant, he owns a farmland in Phi chit (northern province in Thailand) growing vegetables and fruits and raising livestock. He and his family are growing rice and other crops for their entire life. He is a leader of farmer community enterprise in Phi chit province. He has a strong belief that agriculture has sustained himself and his family since he was young, and it becomes his lifestyle until today. Different farm provides different quality of food products, but he emphasizes on non-toxic and non-pesticide crops since he would like Thai people to consume high quality products. He has in-depth knowledge on planting crops because he likes to study about health trends and understand about Thai herbs that can be uses as an alternative treatment for different type of patients.

He mentioned that Thailand should legalize hemp plantation and hemp extraction for CBD substance long time ago because the longer we wait the longer for Thai farmers to gain advantages from this plant. In the past, his grandparents and many of local farmers used to grow hemp used for cooking, so he is quite familiar with this plant since he was young. Moreover, he said hemp extracts for CBD-based products would not create any harms to anyone since it has no recreational purpose and psychoactive effect like cannabis. Therefore, Thai government should first legalize hemp because it is easier to control. He said hemp can transform into many different types of product such as CBD oil for a better sleep or hemp seed for a source of protein. Raising hemp has cheaper cultivation cost and easier to cultivate than other common crops like corn and soy bean. According to his study about hemp, he concludes that hemp can be sold at the higher price than other economic crops as well.

He believes that hemp can become cash crop for Thailand because the demand is huge, and its benefit is quite well known in the older generation. In addition, nowadays people tend to concern more about their health and many alternative medications has raised so even younger generation tends to open up more to herbal medication and natural remedies. Therefore, legalizing hemp can make farmers have a better living by generating more income, working less, maintaining good health,

spending less on medication, able to support education for their children, and much more.

Another advantage will be when farmer change to plant the new crop, the supply of current crop will be less leading to a better price and reduce the oversupply of current crops in the market. When hemp is fully legalized or when private businesses come into this industry, it will result in more development of the new product in the market. He viewed farmers as the one who will produce raw material for businesses and businesses are the one who will do more research and development in order to create products and more added value for this plant. He understands that growing hemp could clean the contaminated soils and there are a lot of benefit from hemp, but no threats can be seen from his point of view.

He would like to be involved in the hemp industry on what he thinks he does best, which is the cultivation process. He wants to work on hemp breeding and seed production as well as receives intellectual property protection for his own special genetic seeds. The knowledge of farming that he has for more than 40 years should provide him with a competitive advantage among others. And if he can gain enough capital, he would like to have his own small extraction machine in order to learn more and distribute to the patients who can gain benefit from using the hemp CBD oil.

Lastly, hemp legalization will do benefit to the whole country not just agricultural sector or private business sector. As most of the population in Thailand is farmers considering this group as a root of a tree, so if farmers can gain more income from growing crop it will support the root to make a tree stronger and provide higher yield. He expects for both farmers and private businesses to work together growing high quality hemp and turning into a valuable product. It should create a mutual benefit for both parties so that it can lead to a better living for the whole country not just only one or two sectors.

4.2 Data Analysis

According from the data collection, every participant sees a positive opportunity for this crop as it can provide many benefits, extensive products offering, and it can be used as an alternative source for many current materials. Most importantly, every participant agrees that hemp legalization in Thailand will offer benefits to Thai farmers, and indirectly to the country as farming is the biggest industry among Thai population due to our country's climate that is suitable for growing crops like hemp. Unlike European countries, those countries have a very cold weather during the winter, so they must build a greenhouse to prevent the cold temperature, which is not a suitable temperature for growing hemp. A greenhouse creates a controllable atmosphere for the hemp, but it comes at an extensive cost as a tradeoff. As for those interviewees whose background is in the agricultural sector, they have high confidence in themselves about knowledge and experience on cultivation variety of crops. With these reasons, it will allow Thai people with a lower production cost to be able to compete in hemp industry with other foreign countries.

Every interviewee, except P4, said hemp can also be considered as a new cash crop for Thailand because CBD from hemp has a huge demand in the world market. However, a new generation farmer that has a business background like P4, he sees hemp as another alternative crop for farmers, which they can choose whether to grow or not because he thinks without good management for this plant it can lead to oversupply and a lower price like other economical crops such as sugar cane or rubber. Moreover, every participant understands that hemp provides various medical benefits, which can be used instead of many chemical medications that can create negative effects on the user's health.

Every participant sees the biggest challenge and threat for hemp legalization is about the management and regulations from the government. They believe that the Thai government plays an importance role in aligning and managing every industry to work properly in the hemp industry. Proper licenses should be obtained first for both farmers and business sectors to be able to cultivate, manufacture, or process hemp related products. Also, proper regulations and licenses, combined with effective enforcement, can reduce illegal activities related to hemp.

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

To conclude, hemp has several uses and benefits, including medical benefits and alternative sources for different materials such as fiber for textile industry and building material for construction. In the United States, the hemp market is huge and was valued USD 4.41 billion in 2018 and expected to grow up to USD 14.67 billion in 2026 due to the increasing demand of by-products of hemp plants and plant parts (Global Industrial Hemp Market is Expected to Reach USD 14.67 Billion By 2026, 2019). The main drivers that allow hemp to become an industrial plant are the demand in application industries such as food and beverages, textile industry, and construction materials, the increase in changes of regulation of different countries that allow hemp cultivation, and the potential of technology and product development that contains hemp or CBD from hemp. However, before the end-products can be developed it starts from farmers since they are the one who will grow and harvest this plant for further usage. Especially in Thailand, which is an agricultural country, after legalizing hemp farmers will play an important role in cultivation. Thai farmers should use their expertise in producing high quality yield and allow Thai hemp to make a new presence in the world market, as in these last few years no companies can enter this industry due to the laws and regulations from Thai government.

Furthermore, four participants from interview sessions see a positive opportunity in hemp to become a new cash crop in Thailand due to the high demand for hemp in the world market. Also, Thailand is suitable for growing various crops including hemp because of the country's climate and Thailand can have lower production costs because of the cheaper labor costs comparing to foreign countries like the United States or European countries. With these factors, it can provide Thai farmers with a competitive advantage and opportunity for exporting hemp as a raw material to

other countries. Therefore, hemp legalization may first benefit Thai farmer to generate more income and have a better life, since recently the Thai government allows state enterprise and farmers to be involved in this plant, but not the private sector.

5.2 Recommendations

As a recommendation, the Thai government should wait the first few years of hemp legalization before they allow the private sector to play a part in the hemp industry to provide advantages for Thai farmers. By allowing farmers to be the first-tier in hemp cultivation will help Thai farmers to gain more knowledge and experience on hemp in order to create competitive advantages for themselves to be able to leverage with investors or private businesses in the future. Starting from today until the private sector is allowed in 2021, Thai farmers should be able to make money from hemp cultivation, pay off debt, and able to develop their farming system, and even invest in a better machines or equipment for farming. Moreover, government must control and prevent illegal farming to avoid price cutting and other illegal activities that might occur. However, the Thai government can subsidize farmers by allocating lands for hemp cultivation so that farmers can have more land to grow hemp and gain knowledge on hemp cultivation process. Further, CBD oil that is allowed to be sold in hospitals can come from Thai farmers, rather than by importing raw materials from our neighbor countries.

In the future when hemp is legalized for all parties, Thai farmers can already be an expert in hemp growing with enough land to grow hemp to serve the demand of Thailand and other countries. For investors or private businesses, if the plant raw material is already enough, they can focus more on research and development, marketing, technology in extraction, distribution channels, or developing various new product types. Therefore, businesses can emphasize more on development and differentiation in order to stand out among competitors, while farmers can focus more on an efficient way of growing hemp to generate good quality and higher yields. So, these two parties will not compete with each other but instead work together, which will make Thai farmers able to live better as a result.

Therefore, with a good control and management from the government, many sectors in the country can receive benefits from hemp. Restricting hemp cultivation for Thai farmers can create a strong foundation of Thailand since agriculture plays a significant part in Thailand and employs most of the population. If farmers can generate more money for their living, purchasing activities will increase, businesses will have a better performance, and government will gain sales tax in order to improve the infrastructure of the country.

5.3 Limitations and Recommendation for Future Research

The main limitation of this research study is that its results are based on only five people who share and provide their thoughts and opinions about hemp legalization in Thailand. Five participants are considered only a small group of people and can result in insufficient or biased information. It involves people who have agricultural and business background, but there are other industries and sectors who can gain benefits or threats from hemp legalization as well. And if there is more time for this research, quantitative methods such as survey can help support this research by learning more about the end-user perspectives and opinions on hemp products. Moreover, hemp legalization regulations have just launched in 2019, which this issue needs to be observed in the long term in order to see whether it will deliver advantage or disadvantage to the country. Lastly, since hemp legalization is still a current issue in Thailand, laws and regulations may be further changed in the future depending on the direction and strategy of the Thai government.

I would recommend people who are interested in this topic to gather more information after hemp is legalized for few years and then to see its effects on other industries such as the pharmaceutical or tourism industry. Also, at that time there will be more evidence to assess whether hemp can be a new cash crop for Thailand like most of the interview participants expect it to be.

REFERENCES

- 10 Economic Benefits of Hemp Farming*. (2018, June 26). Retrieved from Evo Hemp:
<https://evohemp.com/blogs/hempweek/10-economic-benefits-of-hemp-farming>
- Avins, J., & Kopf, D. (2019, Aug 13). *As demand for CBD explodes, US farmers are seeing dollar signs*. Retrieved from Quartz: <https://qz.com/1686276/how-much-hemp-is-grown-in-the-us/>
- Carpenter, D. (2018, Dec 20). *Legal Hemp In 2019 May Be A Boon For Stressed Out American Farmers*. Retrieved from Forbes:
<https://www.forbes.com/sites/davidcarpenter/2018/12/20/legal-hemp-in-2019-may-be-a-boon-for-stressed-out-american-farmers/#5875033e8f3b>
- Cassandra. (2019, Feb 14). *One Plant. Thousands Of Uses*. Retrieved from Fen Biotech: <https://fenbiotech.com/what-is-industrial-hemp/>
- Fernquest, J. (2015, Oct 15). *Thailand's export challenge*. Retrieved from Bangkok Post: <https://www.bangkokpost.com/learning/advanced/729868/thailand-export-challenge>
- FERNQUEST, J. (2016, Aug 4). *Thai rice faces global price war*. Retrieved from Bangkok Post:
<https://www.bangkokpost.com/learning/advanced/1052694/thai-rice-faces-global-price-war>
- Global Industrial Hemp Market is Expected to Reach USD 14.67 Billion By 2026*. (2019, July 8). Retrieved from GlobeNewswire:
<https://www.globenewswire.com/news-release/2019/07/08/1879566/0/en/Global-Industrial-Hemp-Market-is-Expected-to-Rreach-USD-14-67-Billion-By-2026.html>
- Gordon, M. (2019, May). *THE CBD ISOLATE CRASH OF Q2 2019*. Retrieved from Kush: <https://kush.com/blog/cbd-isolate-price-crash-2019/>

REFERENCES (cont.)

- Gottlieb, M. (2016). Cannabis and the Eastern Cherokee Nation: The Challenges, Barriers and Prospect. *The New Potential in Marijuana*, 26.
- Grinspoon, M. P. (2018, Aug 24). *Cannabidiol (CBD) — what we know and what we don't*. Retrieved from Harvard Health Publishing, Harvard Medical School: <https://www.health.harvard.edu/blog/cannabidiol-cbd-what-we-know-and-what-we-dont-2018082414476>
- Herer, J. (1995). *The Emperor Wears No Clothes*. California: Access Unlimited and BACH, Van.
- Holland, K. (2019, May 20). *CBD vs. THC: What's the Difference?* Retrieved from Healthline: <https://www.healthline.com/health/cbd-vs-thc>
- Johnson, J. (2019, Feb 14). *Hemp oil benefits list*. Retrieved from Medical News Today: <https://www.medicalnewstoday.com/articles/324450.php>
- LAOHONG, K.-O. (2018, Nov 1). *Regime vetoes recreational weed use*. Retrieved from Bangkok Post: <https://www.bangkokpost.com/thailand/general/1568058/regime-vetoes-recreational-weed-use>
- Lynch, M. (2018). Economic Impacts. *ASSESSMENT OF THE IMPACTS OF MARIJUANA LEGALIZATION IN SIOUX FALLS, SOUTH DAKOTA*, 18.
- Moore, C. (2018, Sep 11). *Struggling Farmers Are Switching to Hemp in Anticipation of Full Legalization*. Retrieved from Merry Jane: <https://merryjane.com/news/struggling-farmers-are-switching-to-hemp-in-anticipation-of-full-legalization>

REFERENCES (cont.)

- Orvedahl, R. (2019, May 5). *CBD: On a real market high*. Retrieved from CBS News: <https://www.cbsnews.com/news/cbd-on-a-real-market-high-swiftly-growing-demand-for-cannabidiol-products/>
- Owen, A. C. (2012). FOUNDATIONAL RESEARCH QUESTIONS. *INDUSTRIAL AND NUTRITIONAL HEMP IN MANITOBA: A CASE STUDY EXPLORING STAKEHOLDER STRATEGIES AND LEGITIMACY*, 178.
- PARPART, E. (2018, June 11). *High time for change*. Retrieved from Bangkok Post: <https://www.bangkokpost.com/life/social-and-lifestyle/1482789/high-time-for-change>
- Pollard, K. (2018, May 16). *IMTJ'S LATEST ESTIMATE ON LEADING DESTINATIONS BY MEDICAL TOURISM REVENUE*. Retrieved from International Medical Travel Journal: <https://www.imtj.com/articles/medical-tourism-numbers-game-time-for-a-recount/>
- Poonsuwan, W. (2019, Sep 27). *THAI LAW: PURE CANNABIS OIL IS NO LONGER CONSIDERED NARCOTIC*. Retrieved from Khaosod English: <http://www.khaosodenglish.com/news/crimecourtscalamity/2019/09/27/thai-law-pure-cannabis-oil-is-no-longer-considered-narcotic/>
- Retka, J. (2018, Dec 7). *NEW HIGHS*. Retrieved from Southeast Asia Globe: <https://southeastasiaglobe.com/how-weed-could-push-thailands-economy-to-new-highs/>
- Singhapreecha, C. (2014, May 9). *Economy and Agriculture in Thailand*. Retrieved from FFTC Agricultural Policy Articles: http://ap.ffc.agnet.org/ap_db.php?id=246

REFERENCES (cont.)

- Stuart, A. (2017, July 1). *An Unexpected Hemp Revolution in Thailand*. Retrieved from City Life Chiang Mai: <https://www.chiangmaicitylife.com/citylife-articles/an-unexpected-hemp-revolution-in-thailand/>
- Thailand - Market Overview*. (2019, Sep 8). Retrieved from Export Gov: <https://www.export.gov/article?id=Thailand-market-overview>
- Thailand aims to export 10m tons of Thai rice in 2019*. (2019, June 7). Retrieved from Thailand Business News: <https://www.thailand-business-news.com/markets/commodities/73071-thailand-aims-to-export-10m-tons-of-thai-rice-in-2019.html>
- Thailand's Healthcare & Life Sciences*. (n.d.). Retrieved from Discovery Global Markets: https://build.export.gov/build/groups/public/@eg_us_mn/documents/webcontent/eg_us_mn_080846.pdf
- Weisul, K. (2018, Dec 4). *The Next Gold Rush Is the \$22 Billion CBD Business--and This Florida Company Is Ready to Win*. Retrieved from Inc. This Morning: <https://www.inc.com/kimberly-weisul/best-industries-2019-green-roads.html>
- WIPATAYOTIN, A. (2019, Sep 2). *Hemp removed from list of controlled substances*. Retrieved from Bangkok Post: <https://www.bangkokpost.com/thailand/general/1740734/hemp-removed-from-list-of-controlled-substances>