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Economic Role of Maize in Thailand

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INTRODUCTION

Maize is an important agricultural product in Thailand which is being used for both food and feed industries (Poramacom, 2013). In the 2016-2017 crop year, the forecasted production of maize was 4.06 million tons from the forecasted planted area of 1.04 million hectares. The production increased in 2016-2017 compared with the 2015-2016 crop year, although the planted area decreased. This is because sufficient amount of water was obtained for two cropping seasons. The main reasons for the decrease in maize plantation area are the late arrival of rains, and the change of cultivated areas from maize to cassava and sugarcane. The trends of planted areas, harvested area, production and yield are shown in Table 1 (OAE, 2017).

Table 1. Planted areas, Harvested area, Production and Yield (2007-2016) in Thailand

Year	Planted area (Million Hectares)	Harvested area (Million Hectares)	Productions (Million Tons)	Yield (Tons per ha)
2007	1.02	0.99	3.89	4.33
2008	1.07	1.04	4.25	4.49
2009	1.14	1.10	4.62	4.60
2010	1.20	1.16	4.86	4.61
2011	1.18	1.15	4.97	4.77
2012	1.20	1.14	4.95	4.77
2013	1.19	1.15	4.88	4.66
2014	1.16	1.13	4.73	4.61
2015	1.06	1.00	4.03	4.42
2016	1.04	0.99	4.06	4.51

Source: Office of Agricultural Economics, 2017

Demand for food industry

Among the exports of vegetable products worth US\$ 629 million, maize is the major vegetable export valued at US\$ 222 million which accounted for 35% of total vegetable exports in 2014 (Table 2) (Thailand Board of Investment, 2015). Sweet corn is one of the economically important crops. It is exported as canned sweet corn in the international

markets. Thailand was one of the major canned sweet corn exporters which ranked first position in 2013. The major export markets for canned sweet corn are Philippines, Taiwan, Japan and South Korea. The Middle East is the new export market for Thailand's canned sweet corn (Sachakamol and Ngarmasard, 2015).

Table 2. Export of canned and fresh sweet corn (2011-2014)

Export Items	2011		2012		2013		2014	
	Metric Ton	Million US\$						
Sweet corn, canned	184,178	187	172,188	183	167,012	176	199,995	204
Sweet corn, fresh	13,204	16	12,147	15	12,223	15	15,650	18

Source: National Food Institute

Demand for feed industry

The domestic demand for maize increased from 5.72 million tons in 2015 to 5.85 million tons in 2016. This is because the livestock industry developed and consequently, the demand for maize increased for animal feed (OAE, 2017). Maize is the major input for the poultry industry (Poramacom, 2013). Due to the increasing production of poultry and swine, feed demand increased 5% in 2016. The feed demand for both productions accounted for about 90% of total feed demand. Among them, feed demand for poultry production accounted for 55% of which 38% is for boiler production and 17% is for layer production. The boiler production increased because of an increased demand for chicken meat in the export markets which accounted for 3-4% in 2016. According to Thai Feed Millers Association, the feed demand by each sector is shown in Figure 1 (Prasertsri, 2017).

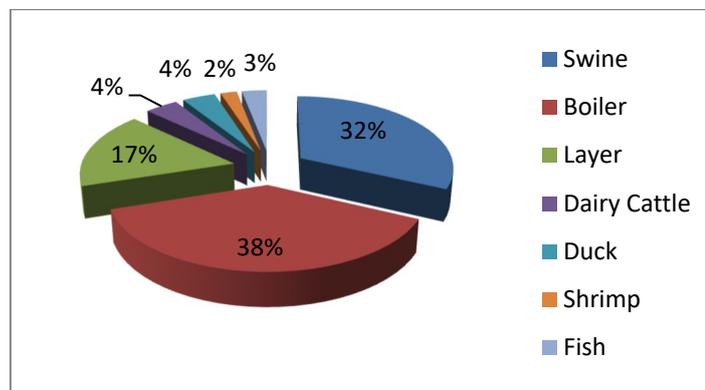


Fig. 1. 2017 Estimated Feed Demand by Sector

Although the expected amount of feed demand accounted for 8 million metric tons for poultry and swine production, the domestic corn production accounted for 4-5 million metric

tons. Due to the insufficient feed in the domestic market, the Thai feed industry greatly depends on the imported feed ingredients which accounted for 50-60% of total feed production (Prasertsri, 2017).

Maize seed industry

Maize is important in food and feed industry and is also important in most advanced seed industries. Thailand ranks 24th among the largest seed exporters in the world and is the third largest seed exporter in Asia following Japan and China. There are many kinds of seeds in Thailand's seed industry. Among them, maize occupies a large part of total exports and imports in terms of value. There is a cooperation of public and private sectors in research, development and marketing. For the development of the maize seed industry, researches have been conducted by private companies after a few decades of denationalization. Thailand has the potential to be a center for seed production in Asia due to its favorable agro-climatic condition, technically skilled persons, and wide diversity of germplasm, good infrastructure, government support, and foreign investments including governments and international agencies and companies (Napasintuwong, 2015).

In the mid-1950s, the government promoted the cultivation of corn as an alternative crop to rice for the diversification of agricultural production. It also supported the cultivated land for maize production, distribution of improved maize seeds, making an agreement to buy maize grain at a predetermined price. After that, the maize seed industry quickly developed within a few decades. In the mid-1980s, maize was considered the top major field crop in the country after rice which is the most important crop in terms of economic value. At present, the livestock industry was well established for exports. Accordingly, maize plays an important role as animal feed (Napasintuwong, 2015).

In Thailand, the modern vegetable seed market is considered to be in its initial stage compared with other crops. Nevertheless, maize at present has the largest share among exported and imported seeds in terms of value. Of the total seed export values, about 35% was from maize seed exports. If sweet corn seeds were added in the exported value, it will account for 42% of the total maize seed exports. It is a known fact that in Thailand, only maize and sweet corn are exported. The other seeds exported are vegetables and flowers. Although there are small amounts of production and export of fruit seeds, it is not successful in the export market. Besides, Thailand exports maize seeds and import maize seeds especially during off-peak season because of the insufficient production in the domestic market. The exports of maize seeds have been increasing steadily in terms of export quantity and value although there is a variation of maize seed imports. The exports and imports of sweet corn seeds are greatly smaller than those of maize seeds in terms of quantity and value. Though, the unit value of sweet corn seeds is higher than that of maize seeds, especially for imported sweet corn seeds. This is because Thailand imports high-quality hybrids of sweet corn seeds (Napasintuwong, 2015).

The major import markets of Thailand for maize seeds are Vietnam, India and Indonesia. Among those countries, Vietnam is the largest importer of maize seeds for Thailand, which accounted for 60% followed by India and Indonesia. Likewise, over 50% of maize seeds from Thailand were exported to Vietnam in 2012. The major export markets of Thailand's maize seeds are Pakistan, Sri Lanka, Indonesia and Cambodia. Many companies in the country develop maize varieties to be adaptable for countries which have similar agro-climatic conditions. Therefore, the production of seeds can be available in many places. Domestic market demand is smaller for sweet corn seeds compared with maize. Sweet corn seeds are mainly imported to New Zealand, which accounted for about 90% while the rest was to

Taiwan in 2012. The major export markets for sweet corn seeds are Malaysia, Indonesia, Vietnam, and Philippines (Napasintuwong, 2015).

Export

Maize exported from Thailand to the world accounted for 602,593 tons valued at 191.03 million US\$ in 2016. The value increased 121% in 2015-2016. There were 32 countries for the export of maize from Thailand in 2016. Among them, about 92% of maize was exported to the Philippines accounting for 551,711 tons worth of US\$130.67 million. The top five export markets in terms of export quantity in 2016 are listed in Table 3 (ITC, 2016).

Table 3. Export quantity and value of maize in 2016

Country	Exported Quantity (Tons)	Exported Value (Million USD)
Philippines	551,711	130.67
Vietnam	12,676	16.83
Hong Kong, China	7,626	2.89
Indonesia	7,139	2.74
Malaysia	5,063	5.89

Source: International Trade Center, 2016

In 2016, Thailand ranked 15th in the world in terms of export value for corn. Among 15 countries, the corn export in Thailand, Mexico, Russia, Canada and Bulgaria increased quickly since 2012, which is 109.9%, 104.9%, 49.8%, 12.7% and 10.3%, respectively (Workman, 2017). According to the United States Department of Agriculture (2017), the annual growth rate of corn exports of Thailand was the highest in 2013 (Fig. 2).

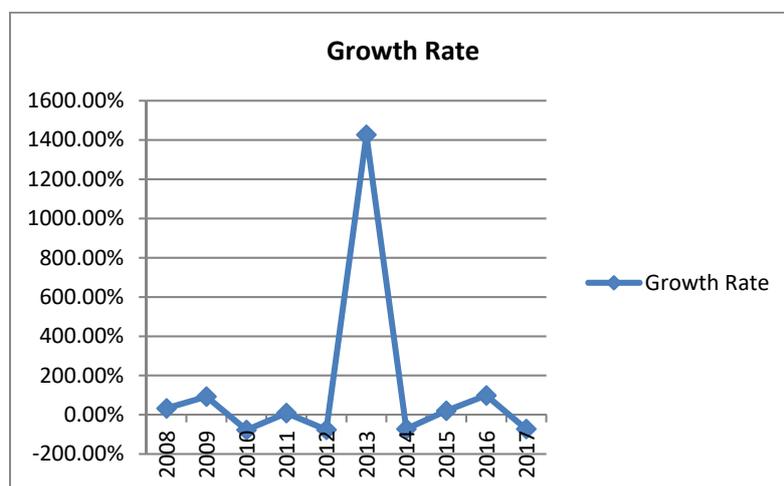


Fig. 2. Corn Export Annual Growth Rate of Thailand (2008-2017)

Policy

In 2015-2016, the government did not give any subsidy program for corn. The production of corn was not enough even in the domestic markets and consequently, the prices increased in the domestic markets. Therefore, in 2016-2017, the government imports corn from neighboring countries such as Laos, Cambodia and Myanmar free of tariffs and quota. In the

early times, the import period was only four months. Now, the import period will be extended up to seven months (Prasertsri, 2016). Also in 2017, the government still continues this import pattern. Moreover, the government implemented the farmer participation program to encourage rice farmers from irrigated areas to change to corn production during November 2016 - June 2017. Those farmers participating in that program accessed credit through the Bank for Agriculture and Agricultural Cooperative (BAAC) with a three percent interest rate subsidy. However, according to the report of the Department of Agricultural Extension, the acreage under corn production does not hit the target of 0.3 million hectares. Because of enough water supply, many farmers still produce rice instead of corn (Prasertsri, 2017).

CONCLUSION

Maize is an important agricultural crop in Thailand. It plays a major role in the food, feed and seed industries. As part of the food industry, sweet corn is exported in canned and fresh forms. In the livestock sector, the demand for animal feed has increased. As the domestic production does not meet the demand, maize is imported from Thailand's neighboring countries-Laos, Cambodia and Myanmar. For the seed industry of Thailand, maize has the highest export value.

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