

# RICE INDUSTRY

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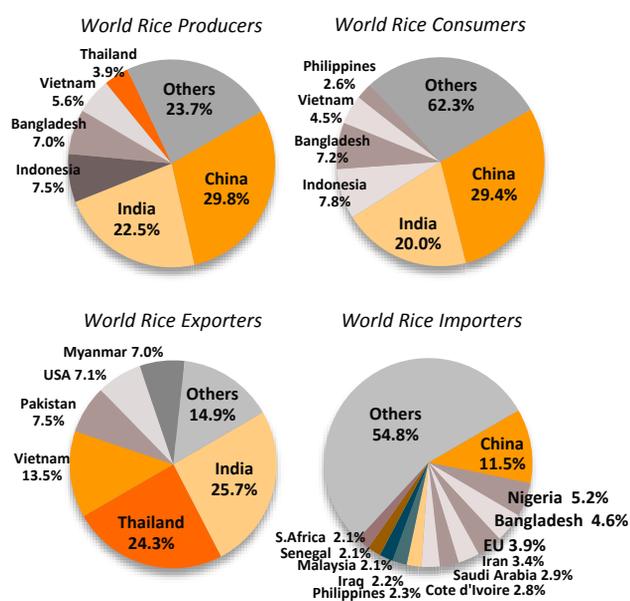
- It is forecast that for the period 2018 to 2020, Thailand's annual rice yields will stay relatively stable at the respectable level of 30-33 million tonnes of paddy rice, which translates to an output of some 20-22 million tonnes of milled rice per year. The average farm gate rice prices will also remain fairly steady.
- The expectation is that demand for rice from both the domestic and the export markets will stay high. Domestic demand will grow steadily on rising consumption of pre-packaged rice, while opportunities exist for strengthening exports to markets in Africa and the Middle East. Exporters should thus see increasing turnover and profits should continue at a solid level.

## Overview

Thailand has long been a globally important producer and exporter of rice and in 2017, Thailand ranked 6th in the world in terms of the total yield of milled rice. Last year, Thai output represented 3.9% of global yields, with Thailand coming behind China, India, Indonesia, Bangladesh and Vietnam, countries that produced 29.8%, 22.5%, 7.5%, 7.0% and 5.6% of the world's rice, respectively. In terms of exports, however, Thailand sat in 2nd place, accounting for 24.3% of global exports, only slightly behind India, which had a 25.7% market share. Thailand's other competitors in export markets include Vietnam, Pakistan, Myanmar and the United States (Figure 1). This discrepancy between total yields and exports originates in the fact that rice is mainly planted to provide national food security (i.e. to provide a food source for domestic consumption) so the level of international trade in rice is determined by the degree of surplus production and/or the portion removed from domestic consumption. Thus, only some 10% of rice produced worldwide reaches global markets (Figure 2), although the exact amount traded on world exchanges will fluctuate according to yields and demand in producing and exporting nations.

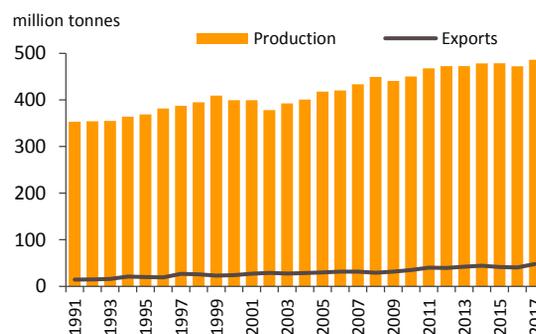
For Thailand, in addition to being the national staple, rice is therefore a major cash crop and export earner (second only to rubber). Given its role as a vital economic crop, rice naturally has a central place in the provincial economy. In terms of land under cultivation, rice is Thailand's most planted crop, taking 45% of all Thai farmland, and a total of 17.5 million Thais, or almost 1 in 5 of the population, are involved in rice production (source: Thailand Development Research Institute (TDRI)). The overarching importance of rice has naturally led governments of all types to pay special attention to rice farmers and their needs, and a wide range of policies to help rice farmers have been tried out over the years. These have included 1) price-based policies, such as the rice price guarantee scheme, the rice pledging scheme; and 2) other similar policies, together with other forms of help, including financial assistance with production costs for rice farmers and schemes to help with the costs of harvesting and improving rice quality. However, the recent government policies aimed at developing the rice sector is that they have emphasized increasing yield quantities without raising the quality of the product or breeding new varieties of rice and so they have failed to increase the efficiency and capacity of the sector to the extent that might be expected.

Figure 1: World Rice Market (2015/16)



Source: U.S. Department of Agriculture (USDA)

Figure 2: World Rice Production and Exports



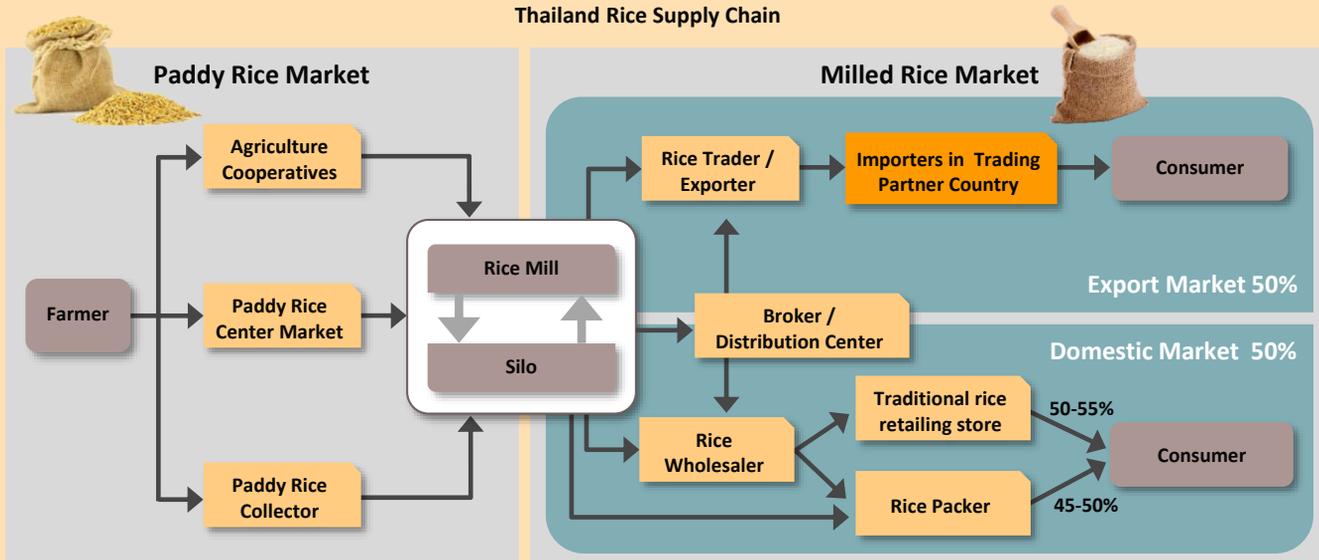
Source: U.S. Department of Agriculture (USDA)

## The Thai rice supply chain

The Thai rice supply chain has the following structure:

- The upstream segment consists of rice farmers.** Many of these are small-scale farmers and in fact over four million Thai households are involved in rice cultivation. The output of the upstream segment is paddy rice, also called unmilled rice, and because most rice farmers lack storage facilities, this is usually sold on immediately, although doing so puts growers at a disadvantage when negotiating with distributors. Rice farmers have two main channels through which to sell their rice: they may sell directly to a local mill or they may sell on to or via middlemen such as agricultural cooperatives, paddy rice center market or paddy rice collectors, who will then distribute paddy rice to rice mills at a later date. (Most rice growers do not transport rice directly to mills themselves because of the high costs involved.)
- The intermediate segment comprises rice mills,** which use unprocessed rice as an input to produce finished, milled rice. Typically, 1 kilo of paddy rice produces 0.6-0.7 kilos of milled rice, although the exact proportion will depend on the strain of rice and the time of harvest (source: Ministry of Agriculture and Cooperatives). Currently, Thai domestic milling capacity is significantly higher than demand; at more than 100 million tonnes per year, it is in fact more than three times domestic rice output (source: TDRI). Large rice mills, defined as those with a processing capacity of over 20 tonnes paddy rice/day, that have invested in new technology to improve milling techniques and the quality of the rice which they produce and that have their own silos for the storage of rice often benefit for being within the same commercial network as exporters. Alternatively, they may be contracted by major exporters to mill or to process rice bound for export markets and so these operators will have a better market position and will likely be less affected by the national over-supply of milling capacity than will small rice mills (i.e. those with a capacity of less than 20 tonnes paddy rice/day).
  - The major rice mills include the following players :** Asia Golden Rice, Capital Cereals, CP Intertrade, Sangfah Agri Product, Capital Rice, Ponglarp, Riceland International, Thai Fah (2511), CP Food Store, Thai Capital Crops, Tong Hua Bua Yai (1994), Ake Rice Mill, Thai Granlux International Rice, Chia Meng Marketing and Vudhichai Produce (source: Department of Business Development, Ministry of Commerce).

Thailand Rice Supply Chain



Source : Trademap, Ministry of Commerce (MOC) and compiled by Krungsri Research

- The downstream segment is composed of trading companies** that buy rice from mills for distribution to domestic or export markets. Sales may be made through rice brokers (locally called “Yong”), which act as middlemen between rice mills and exporters or domestic distributors. Traditional rice retailing store and manufacturers/distributors of pre-packed rice form the final link in the domestic supply chain, while as regards exports, importers buy produce for distribution to their customers at a later date. Currently, similar quantities of Thai rice are consumed on the domestic and export markets.
  - The major players in the pre-packed rice segment are:** CP Intertrade (Royal Umbrella brand), Chia Meng Marketing (Hong Thong brand), Patum Rice Mill and Granary (Mah Boonkrong brand), Asia Inter Rice (Benjarong and Suphannahong brands), Sandee Rice (Sandee brand), Thai Ha (Kaset brand), Chaimongkol Rungrueng Agriculture (Bua Thip brand), Singha Corporation (Pun Dee brand), Chaithip (Phanom Rung brand) and Soonthornthanyasup (Kaijae brand) (source: The Thai Rice Packers Association and the Department of Internal Trade, Ministry of Commerce).
  - The ten biggest exporters of Thai rice in 2017 in the main export categories were as follows.** (i) Exporters of white rice: Capital Cereals, Ponglarp, Thai Granlux International Rice, Asia Golden Rice, Thanasan Rice, Thai Fah (2511), Sangfah Agri Product, Thai Capital Crops, Capital Rice and Ake Rice Mill. (ii) Exporters of jasmine rice: CP Intertrade, Utahi Produce, Bangsue Chia Meng Rice Mill, Thanasan Rice, Capital Rice, Siam Grains, Universal Rice, Herba Bangkok, Asia Golden Rice and Vudhichai Produce. (iii) Exporters of parboiled rice: Asia Golden Rice, Capital Rice, Riceland International, Sangfah Agri Product, CP Intertrade, Thanasan Rice, Sawatpaiboon Rice Mill, Premium Rice Export, Thai Granlux International Rice and Golden Granary (source: Ministry of Commerce).

In 2017, a total of 68 million rai of farmland was given over to rice cultivation, most of which was in the lower north, the central region, and the northeast. Thai rice cultivation relies largely on rainfed condition and so the principal annual growing season coincides with the rainy season and runs from July to September, with the harvest occurring at the end of the year. Consisting of a mix of standard white rice, jasmine rice and glutinous (or sticky) rice, this crop comprises over 80% of the annual rice yield in Thailand and is called 'in-season' rice. This contrasts with 'off-season' rice, the remaining 20% of annual yields. This crop relies on artificial irrigation and is grown mainly in the north and central regions<sup>1/</sup>.

In a typical year, average annual yields of Thai paddy rice run to 30-32 million tonnes, or 20-21 million tonnes of milled rice. This is consumed by domestic and export markets in roughly equal quantities. Of the rice that is consumed domestically, about 30-40% is used as inputs into other sectors, including the manufacture of animal feed, rice flour, rice-based snacks, biomass-based electricity and ethanol. The remaining 60-70% is consumed directly, although this rice will be distributed in one of two ways. (i) Rice may be sold loose in traditional rice stores. These stores remain the main distribution channel up-country and account for 50-55% of the domestic sales of rice to consumers. (ii) 45-50% of rice is distributed pre-packed in bags. In the past, the Thai market for rice for consumption as a foodstuff was predictable and grew at a steady pace but consumer preference for pre-packed rice has gradually risen as consumption patterns have shifted with increasing urbanization. In response to this, an increasing number of players have entered the market<sup>2/</sup>, especially mills and exporters, which have turned to the domestic market and tried to expand their presence there as a way of reducing exposure to risks arising from uncertainty over fluctuating export income. Players in the modern trade sector, including Ek-Chai Distribution System (Tesco brand) and Siam Macro (Aro brand), have also entered the pre-packed rice segment. These operators have been able to steadily expand their market share by the advantages that they naturally have in distribution and pricing strategies (no fees for getting access to shelf space in a modern retail outlet and low advertising cost for pre-packed rice under house brands, unlike other players).

As regards exports of Thai rice, as stated above, the quantity of rice consumed domestically is close to that sent for export. Thai rice is recognized globally for its high quality and as such it is in demand in a large number of countries; Thailand's most important export markets are China, the United States, the ASEAN region, Africa and the Middle East. The main export categories are white rice, jasmine rice and parboiled rice. The structure of the export market is described below.

- **White rice is a cheap variety of rice and is the most widely traded on global markets**, accounting for 55-60% of all rice on world exchanges. White rice is graded and the price of each grade depends on the proportion of broken rice which it contains; cheaper varieties of white rice have a higher proportion of broken grains<sup>3/</sup>.

- **Around 40-45% of Thai rice exports are of white rice.** This translates to some 4.5-5.0 million tonnes of white rice exported from Thailand annually. The main export markets are in Asia and Africa, though different countries prefer different grades. For example, the Japanese market typically buys 100% white rice, while ASEAN and African customers prefer the next grade down, which is 5-10% white rice.

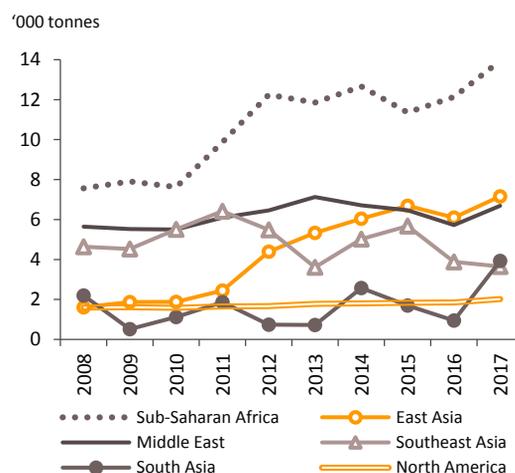
- However, **exports of white rice are seeing fairly high levels of competition** as India, Vietnam, Cambodia and Myanmar are all able to offer products at a price that is lower than that of Thai products. Markets have thus come to demand goods at this price-point, despite the inferiority of this rice to Thai exports. In

1/ The main irrigated areas in Thailand (accounting for 80-90% of all the country's irrigated areas) receive water from the Bhumibol and Sirikit dams, which are located in the catchment area of the Chao Phraya River.

2/ At present, over 150 companies are registered with the Thai Rice Packers Association. There is also a significant number of small provincial operators packing rice that have not registered with the association because many of these are rice farmers bagging their own rice for distribution themselves.

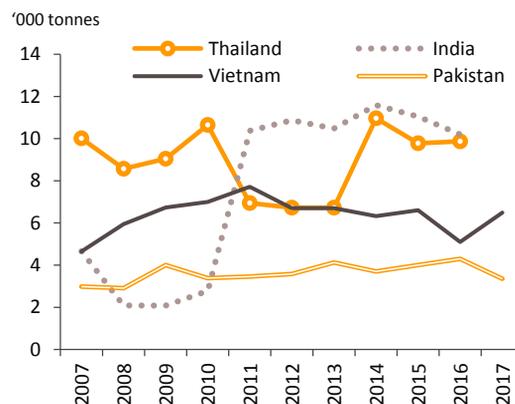
3/ In line with the 1997 Ministry of Commerce guidelines on Thai rice quality, sample grades are as follows: (i) 100% white rice is the highest quality rice and contains only a very small proportion of broken rice such as 100% white rice grade A contains not more than 4% broken rice; (ii) 5% white rice is 5-7% broken rice; and (iii) 25% white rice is 25-28% broken rice.

Figure 3: Regional Rice Imports (All Types)



Source: U.S. Department of Agriculture (USDA)

Figure 4: Rice Export Competition (All Types)



Source: U.S. Department of Agriculture (USDA)

addition, the market is currently also showing a greater preference for soft white rice but only 10% of Thai exports of white rice are of this type. As such, Thailand is losing ground to competitors, especially to Vietnam and Cambodia, which have developed new varieties of softer white rice over the past two to three years. Vietnam, for example, has developed its long grain 5141 and Nang Hua varieties, while Cambodia has worked with China to jointly develop their own new varieties.

- **Jasmine rice is a high-quality, high-price product** but by volume, annual exports come to only 12-14% of the rice traded on global markets.

- **Exports of jasmine rice account for 13-18% of the volume of Thai rice exports.** In terms of weight, this is around 1.3-1.6 million tonnes of jasmine rice sent abroad annually. The most important export markets are the United States, which takes 30% of Thai exports of jasmine rice, China and Hong Kong.

- **Thailand is the world's biggest exporter of jasmine rice but it is facing rising levels of competition from countries that are developing varieties of rice which have similar qualities.** Examples of these include Indian basmati rice, a number of different types of American rice, including the Arborio, Black Japonica, Della, Dellrose, Delmont, Jasmati Texmati, and Jazzman varieties, Cambodian jasmine and Phka Rumdoul fragrant rice, and the Vietnamese KDM (Khao Dok Mali) and ST21 varieties. In addition, over the last two years, the market for jasmine and fragrant rices has come under pressure from soft white rice, a much cheaper alternative that is gaining ground in the Chinese and Hong Kong markets.

- **Exports of parboiled rice<sup>4/</sup> contribute a roughly 14-18% share of all world exports of rice.** The major export markets are Africa (which consumes 85% of all parboiled rice globally) and the Middle East.

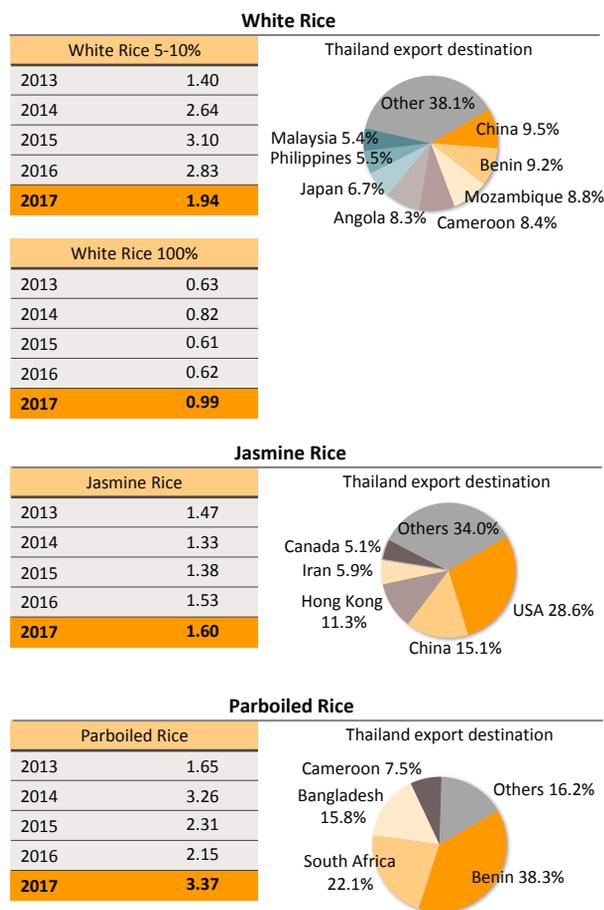
- **Around 22-27% of exports of Thai rice are of parboiled rice,** although as a result of fluctuations in the annual Thai rice harvest and changes in the policies of both the Thai government and the governments of trade partners, there has been a degree of variation in the exact volume of exports.

- **Thailand is the world's second biggest exporter of parboiled rice, and only India exports more<sup>5/</sup>.** However, India enjoys lower production costs and is able to sell at more attractive prices, so Thai parboiled rice faces competition from Indian products.

In addition to these major categories of rice exports, Thailand also exports 1.0-1.5 million tonnes per year of broken rice<sup>6/</sup> for use in the production of rice flour and animal feed (China and Africa are the most important consumers of this). Glutinous rice and brown rice are also bought by overseas buyers, but these types of rice are mainly consumed on the domestic market so exports of these combined come to only 0.3 million tonnes/year.

Given the above outline of the situation with regards to yields and world trade, it is clear that **competition is multiplying on global rice exchanges and this is having an effect on the Thai rice sector because it is dependent on a relatively high level of exports.** In addition, players in the rice sector have seen significant fluctuations in rice yields and prices, caused by a number of factors. (i) In importing countries, many governments have encouraged a domestic expansion in the total area of rice cultivated in order to be better able to meet demand. (ii) Increasing variability in climatic conditions is having an impact on the global rice harvest. (iii) Thai government's policies on rice price that has hindered Thai products competitiveness in the world markets.

**Figure 5: Thai Rice Exports**



Source : Ministry of Commerce (MOC)

4/ Parboiled rice is prepared by soaking paddy rice until it has a moisture level of 30-40%. It is then steamed or boiled until cooked, before being dried and then milled to remove the husk.

5/ India has long been the world's most important exporter of parboiled rice. This is with the exception of the period 2008-2010, when the Indian government put a halt to exports in order to build up domestic stocks, and during those two years, Thailand briefly became the world's biggest exporter of parboiled rice.

6/ Broken rice is rice that is damaged during processing.

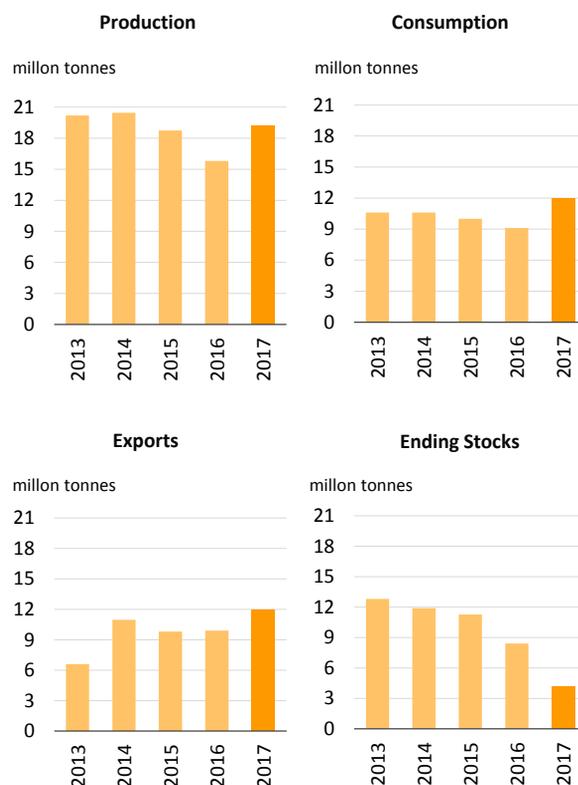
## ▲ Situation

**Consumption of rice in Thailand is relatively stable from one year to the next**, running at an average of around 10 million tonnes/year (source: USDA) but in 2017, the market was boosted by short-term factors, when operators in the pre-packed rice segment sold on rice that had been auctioned off from government stocks. The domestic market was also helped by the government auctioning off large quantities of low-quality rice which was not suitable for human consumption (it was used in animal feed and for biomass energy production). As a consequence of this, total domestic consumption rose to 12.0 million tonnes for the year.

**Exports of rice from Thailand have fluctuated somewhat in the recent past** and the historical situation for exports is summarized below.

- 2012 and 2013 were the years of the rice pledging scheme that accept every grain of rice, under which the government bought paddy rice at a price that was above that prevailing on global markets. Unfortunately, the scheme resulted in significant market distortions**, caused by the government assuming a position as the principal buyer of paddy rice and then enjoying a monopoly position as seller of milled rice. This unusual situation arose because the rice pledging scheme set a price that was higher than the world price, and so growers naturally entered the scheme en masse, selling their produce to the government instead of to rice mills or to middlemen, as would normally happen. Indeed, analysis shows that during the 2011-2012 and 2012-2013 growing seasons, a respective total of 21.7 and 22.5 million tonnes of paddy rice were bought by the government, which compares starkly with the considerably lower total of 9.8 million tonnes bought under the earlier pledging scheme in 2008-2009. **This high level of government intervention had the effect of restricting the ability of private-sector players to operate as normal, and rice traders were particularly hard hit by the sharp fall in private-sector trade** that occurred under the scheme, to the point that some were forced out of business. At the same time, **rice mills had to adjust their business model and contract with the government** for milling and processing rice and then to store the resulting stock of milled rice in silos. Some operators then invested in expanding their storage capabilities to take advantage of the dramatic expansion in government rice stocks, which rose to historic levels. **Exporters likewise faced problems, which for them took the form of costs that rose to the point that rice exported from Thailand was no longer competitive on world markets<sup>7/</sup>, while at times it became impossible for them to source rice at all for export.** Instead of relying on the Thai market for supplies, **exporters were forced instead to turn to buying greater quantities of rice in neighboring countries** but despite this, exports in 2012-2013 fell to just 6.6-6.7 million tonnes, compared to 10.7 million tonnes in 2011. In terms of value, exports in 2012 and 2013 came to USD 4,628 mn and USD 4,420 mn, respectively.

**Figure 6: Thai Rice Production, Consumption, Exports and Ending Stocks (milled rice)**



Source: U.S. Department of Agriculture (USDA), Ministry of Commerce (MOC)

<sup>7/</sup> In the case of non-glutinous rice, the Thai government set a purchase price for paddy rice of THB 15,000/tonne, or USD 484/tonne. This was higher than the cost of paddy rice in the other major exporting countries at that point in time. For example, the price in the United States was USD 352/tonne, in India it was USD 230/tonne, and in Vietnam it was USD 225/tonne (source: Commission on Agriculture and Cooperatives, National Legislative Assembly).

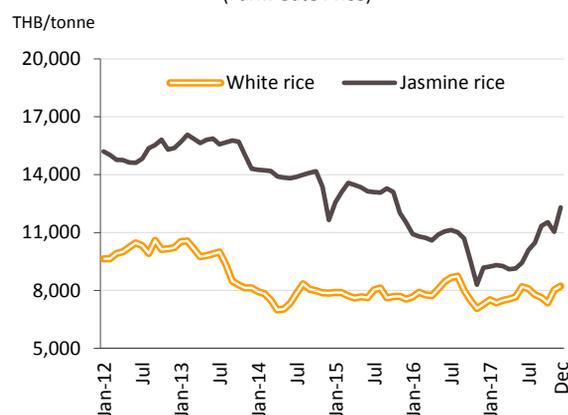
- **Between 2014 and 2017, following the termination of the every grain of rice pledging scheme**, the volume of rice held in government stocks was exceptionally high and at the start of 2014, stocks hit 18 million tonnes, a new record. Of this, 12.2 million tonnes was rice suitable for general consumption<sup>8/</sup> (compared with stocks of milled rice which normally total 4-6 million tonnes/year), with the remainder being low-quality rice unfit for human consumption (this is typically used as an input for further processing by related industries). With such a large overhang of rice, **the government needed to run down this stock rapidly**, which it did partly by negotiating government-to-government (G-to-G) deals, under which Thai rice was sent to a large number of countries including China, Indonesia, the Philippines, Iraq and Iran. The government also steadily auctioned off its rice stock to bidders from the private sector, although the bid prices were significantly lower than the purchase prices paid by the government. **In addition to these measures, the return of more normal conditions to the rice sector also helped business conditions for rice traders to swing back to positive territory and operators' income recovered on a higher volume of trade.** Meanwhile, rice mills and exporters were able to source rice in the new growing season at a price that had fallen back in line with market prices (Figure 7) and so the export price of Thai rice was able to return to a level that was more competitive. The main losers in this period were silo operators, who were saddled with a large oversupply of storage capacity once the government had run down its stock and because of this, incomes for silo owners declined steadily. Yields of rice in Thailand were also subject to large swings over this period as a consequence of climatic variations. The result of this on exports is described below.

- **2014: Exports rose as domestic yields improved and the government began to sell off stocks at the end of the year.** The weather was also generally favorable for agriculture and high prices in 2013 had incentivized farmers to plan for expanded rice planting. Given this, in 2014 yields of paddy rice grew to 36.8 million tonnes, a figure that was boosted by the sale of around 1 million tonnes of rice in government stocks. Exports thus grew to 10.9 million tonnes (up 65.9% YoY) with a value of USD 5,439 mn (up 23.7% YoY). The average price of all exports of rice fell to USD 495.8/tonne, with the price of white rice falling particularly sharply, sliding to levels which were close to those of competitors' products; the difference between the price of exported Thai rice and Thailand's competitors fell to USD 40-50/tonne, compared with a difference of USD 150-200/tonne in 2013) (Figure 8).

- **2015 and 2016: Over these two years, the release of government stocks helped to maintain earlier levels of exports against declining yields caused by a severe drought brought about by a particularly strong El Niño.** In addition to cutting yields directly, the drought also led to a precipitous decline in the volume of water stored in the nation's dams and this fall in the amount of water that was available for irrigation caused the off-season crop to be largely abandoned.

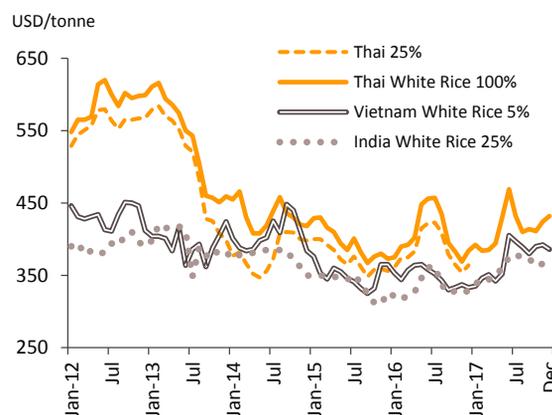
Figure 7: Thai Rice Prices

(Farm Gate Price)



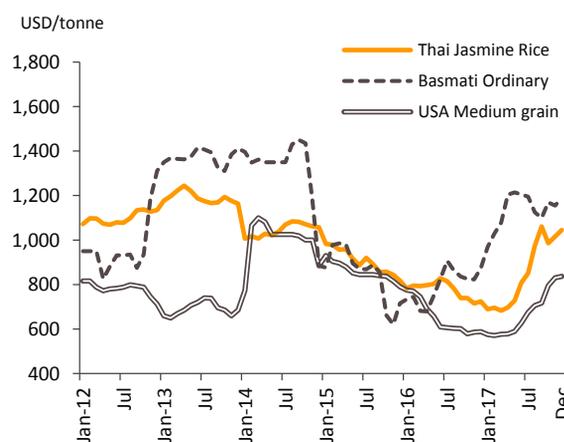
Source: Office of Agricultural Economics (OAE)

Figure 8: World White Rice Price (F.O.B)



Source: Food and Agriculture Organization of the United Nations (FAO)

Figure 9: World Fragrant Rice Price (F.O.B)



Source: Food and Agriculture Organization of the United Nations (FAO)

<sup>8/</sup> This includes 2.2 million tonnes of rice that had passed the 'Premium Grade' standards and a further 10 million tonnes of rice that had failed to pass the standards but which it was still possible to process to make fit for human consumption. This consisted of 6.26 million tonnes of Grade A rice and 3.74 million tonnes of Grade B rice.

As a result, the aggregate yield of paddy rice for 2016 came to the relatively low figure of only 27.4 million tonnes. However, because this coincided with the distribution of some 8 million tonnes of government rice stocks in 2015 and 2016, exports remained at a high level and over these two years averaged 9.8-9.9 million tonnes per year. The value of exports came to USD 4,613 mn in 2015 and USD 4,409 mn in 2016, while the average price of exports fell to USD 470.8 and USD 444.9 per tonne in these years, respectively. This decline in prices was partly caused by exports being of lower quality rice (exports included rice from earlier harvests that had been sold from government stocks) and partly by increased competition on world markets.

- 2017: A combination of the continued release of government rice stocks and an increase in domestic yields helped exports to hit record highs in 2017.** A total of 3 million tonnes of rice fit for human consumption was sold from government stores, while the climate returned to more normal conditions as the amount of rainfall increased and thus total yields of paddy rice rose by 18.2% YoY to 32.4 million tonnes. This increase in supply caused domestic prices to slide but demand from export markets including the Philippines, Iraq, Iran, Bangladesh and Sri Lanka increased and export prices rose slightly. **These generally positive market conditions helped turnover for rice mills and exporters to strengthen** and for the year, exports of Thai rice came to 11.6 million tonnes, a rise of 18.7% YoY. These had a total value of USD 5,166.8 mn, an increase of 17.2% YoY. For each export category, the situation was as follows:

- White rice:** In 2017, exports totaled 4.8 million tonnes (+3.4% YoY), while export prices rose marginally; the price of 100% white rice averaged USD 415/tonne for the year, compared to USD 407/tonne in 2016 and given this, the value of exports rose by 7.8% YoY to USD 1,689.6 mn. Demand increased from India, Benin, Togo, Bangladesh and Malaysia.
- Jasmine rice:** Exports came to 1.6 million tonnes for the year, up 6.6% YoY, partly caused by strengthening demand in the United States and China. However, the value of exports rose at the lower rate of 2.9% YoY to USD 1,607.3 mn due to very low prices for exports of Thai jasmine rice in the first half of the year. In the final quarter of 2017, prices recovered, so the average export price for the year stood at USD 772.2/tonne, down from USD 785.0/tonne in 2016.
- Parboiled rice:** Exports to Africa grew substantially in 2017 and overall, exports of parboiled rice rose by 56.7% YoY to 3.37 million tonnes, bringing in USD 1,328.3 mn (+60.3% YoY). Exports were supported by expanding economies and improving consumer purchasing power in Africa, which rose on more buoyant oil prices. This helped to feed increased demand for rice, a change from the previous two years when rice had tended to be replaced by cassava, a crop which gives low-cost flour and can be cultivated easily across Africa.
- Other types of rice:** Both the quantity and value of other categories of rice exports rose in 2017. (i) Exports of broken rice rose by 17.4% YoY to 1.54 million tonnes. These exports had a value of USD 588.8 mn (+15.0% YoY). (ii) The volume of glutinous rice that was exported increased by 29.8% YoY to 0.21 million tonnes and brought in receipts of USD 131.3 mn, a rise of 11.8% YoY. (iii) Brown rice also saw improved exports, which rose to 0.07 million tonnes, up 21.7%YoY to give income of USD 55.6 mn (+1.6% YoY).

**Table 1: Thai Rice Exports**

	2013	2014	2015	2016	2017	% YoY
<b>White Rice</b>						
<i>million tonnes</i>	2.6	4.9	4.9	4.7	4.8	<b>+3.2</b>
<i>USD,mn</i>	1,319.0	1,952.6	1,851.5	1,689.6	1,821.3	<b>+7.8</b>
<b>Jasmine Rice</b>						
<i>million tonnes</i>	1.5	1.3	1.4	1.5	1.6	<b>+4.6</b>
<i>USD,mn</i>	1,704.7	1,398.0	1,329.1	1,206.3	1,241.3	<b>+2.9</b>
<b>Parboiled Rice</b>						
<i>million tonnes</i>	1.7	3.3	2.3	2.2	3.4	<b>+56.7</b>
<i>USD,mn</i>	868.9	1,427.7	893.6	828.6	1,328.3	<b>+60.3</b>
<b>Others</b>						
<i>million tonnes</i>	0.9	1.5	1.2	1.6	1.9	<b>+18.6</b>
<i>USD,mn</i>	527.9	660.5	538.7	683.9	775.9	<b>+13.5</b>
<b>Total</b>						
<i>million tonnes</i>	6.6	11.0	9.8	9.9	11.6	<b>+17.5</b>
<i>USD,mn</i>	4,420.4	5,438.7	4,612.9	4,408.4	5,166.8	<b>+17.2</b>

Source: Ministry of Commerce (MOC)

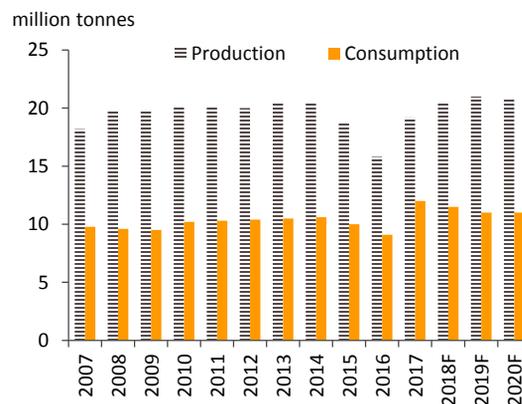
## Industry Outlook

The expectation for the three years of 2018 to 2020 is that annual yields of paddy rice in Thailand will be relatively stable at 30-33 million tonnes, or 20-22 million tonnes of milled rice. Yields will be supported by climatic conditions that are expected to be reasonably stable<sup>9/</sup> and so both rainfall during the main growing season and the amount of water stored in dams for the off-season crop should be sufficient to cover agricultural demand. Rice growers will therefore likely expand the area of rice under cultivation or increase off-season growing, even while officials try to reduce the area given over to rice and to replace this with alternative crops instead<sup>10/</sup>. **These conditions will generally help to keep the domestic price of rice fairly flat over the period** (Figure 10).

**Domestic consumption is forecast to remain high** and should amount to around 11.5 million tonnes of milled rice in 2018, with higher demand caused by rising demand from industry, following the release of 2 million tonnes of the remaining stock left over from the rice pledging scheme. (85% of this rice is not fit for human consumption.) After the government's rice stocks have been run out, demand should fall back to around 10-10.5 mn tonnes/year for 2019 and 2020.

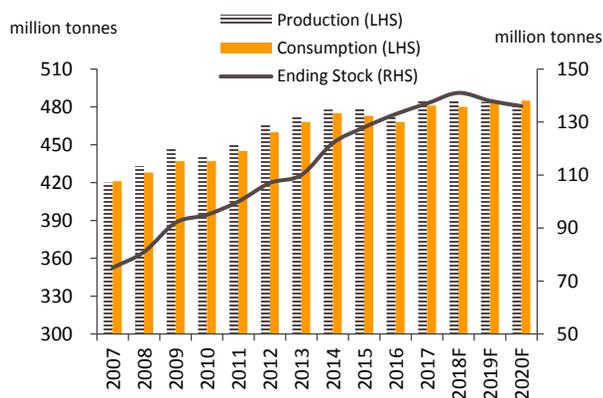
**Exports of Thai rice will likewise be relatively stable over the next three years and should average 9-10 million tonnes per year between 2018 and 2020. At the same time, the prices realized by exported rice may increase somewhat.** The situation for exports will be supported by a number of factors. (i) Demand will increase steadily as economies strengthen, although this will be especially the case for trade partners in Africa and the Middle East, which will benefit from a rise in oil prices<sup>11/</sup>. (ii) The quality of Thai exports should increase, following several years during which the government sold off the remaining older, lower-quality rice held in government stocks; the majority of the rice that is still in government storage facilities is below the standard for human consumption. (iii) Krungsri Research believes that global rice stocks will tend to decline in size in 2019-2020 although they will remain high (Figure 11) as historically elevated levels of rice could dampen prices and the result of this will be a fall in the area of rice cultivated in areas with high production costs, while at the same time, global demand for rice will steadily increase. (iv) Demand for jasmine and parboiled rice is forecast to grow as economies in importing countries expand and this will help the export prices of these two types of rice to remain at the high level of the previous year.

Figure 10: Thailand Rice Production and Consumption



Source: Office of Agricultural Economics (OAE)

Figure 11: Global Rice Production, Consumption and Ending Stock



Source: U.S. Department of Agriculture (USDA), Krungsri Research

9/ This is based on information from NOAA (the National Oceanic and Atmospheric Administration), which indicates that over the previous 60 years, strong El Niños and La Niñas occur on average every 12-15 years. The last strong El Niño was in 2015-2016 and the last strong La Niña was in 2010-2011.

10/ The cabinet has approved the allocation of THB 20 bn to the Ministry of Agriculture and Cooperatives to incentivize farmers to reduce the amount of rice grown in locations that are not suitable for rice cultivation and instead to replace rice with alternative crops, including corn grown as an animal feed (with a target of 2 million rai to be planted) and green manure crops, for which the target is 2,000 new sites. Loans of up to THB 10 mn are available for each participating location, repayable over 5 years (between December 2016 and December 2021) at 0.01% interest but as yet, enthusiasm for the scheme from farmers has been somewhat muted.

11/ Krungsri Research forecasts that the price of WTI will average USD 68-70/barrel between 2018 and 2020, compared to USD 53/barrel in 2017.

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