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Rice Rebounds - Grain and Feed Annual 2019

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Approved By:

Mark Wallace

Prepared By:

Ayodya Galappattige

Report Highlights:

Post expects rice production in Sri Lanka to increase to 3 million metric tons in the marketing year (MY) 2019/20 under average weather conditions. The year 2018/19 production rebounded after several seasons of drought-affected production and Post expects production to reach 2.9 million metric tons of rice. Imports for 2019/20 should drop since local production is sufficient for domestic consumption. Paddy stocks, which had been low in recent years, are likely to increase after significant production improvements but only a marginal increase in consumption.

Author Defined:

COMMODITIES:

RICE

Rice is a staple food in Sri Lanka's diet and lifestyle. Close to one quarter of the population is directly or indirectly involved in agriculture, and about 40 percent of the arable land is under paddy cultivation (Image 1: Annex). Production of paddy is favored in agricultural policy: the government gives support through provision of land, free irrigation water, fertilizer subsidies, and price supports.

Typically, there are two cropping seasons: the major season (*Maha*) and the minor season (*Yala*).

Production:

Sri Lanka headed for a healthy rice crop

Sri Lanka is expected to get a healthy paddy harvest in MY 2018/19¹. Post estimates the milled production to be 2.9 million metric tons in the MY 2018/19, up from 2.2 million metric tons in MY 2017/18. Paddy production in MY 2018/ 19 is 4.3 million metric tons. Both seasons had a total harvested area of 1 million ha. Assuming normal weather conditions and average yields, for MY 2019/20 1.1 million hectares are expected to produce an estimated 4.6 million metric tons of paddy, or 3 million metric tons of milled rice.

Production policies and trends

Sri Lankan rice production incorporates a comprehensive irrigation system which sources heavily from rain-fed reservoirs. Paddy is cultivated under large and small-scale irrigation systems, and under completely rain fed conditions. Typically, *Maha* crop (major crop) benefits from annual monsoon rains, enabling larger plantings. The *Yala* crop (minor cop), conversely, tends to have lower water availability, resulting in lower plantings and lower overall production. The *Maha* crop is typically harvested in March/April and provides about 60 to 65 percent of Sri Lanka's annual rice production. The *Yala* crop is typically harvested in August/ September and provides 35 to 40 percent of Sri Lanka's annual rice production.

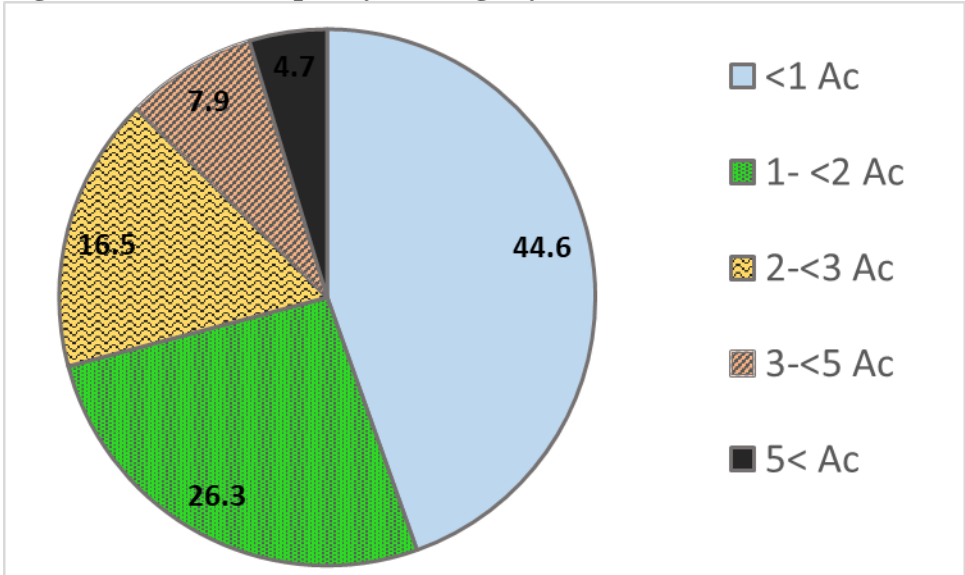
Consecutive national governments have given prominence to paddy over other field crops in agricultural policies. Rice production policies include a producer price floor but it is not effective as a production incentive. Nevertheless, farmers favor planting rice, since it requires less attention. Paddy receives a generous package of subsidies and ultimately is more remunerative.

¹ A marketing year (MY) is a 12-month period that corresponds to the onset of the bulk of the harvest of a commodity. A trade year (TY) is designated by USDA as a 12-month period of time used to aggregate world imports of commodities on a common year basis, regardless of the local marketing year period. MY for rice is October to September and TY for rice is January to December in USDA Grain and Feed Analysis for Sri Lanka.

The development of irrigation systems has enabled farmers to resettle in dryer zones with dry but richer soils. The Accelerated Mahaweli Development Program initiated in the late 1970s is the largest irrigation program in the country. It is a multi-purpose development scheme designed for generation of hydroelectricity, irrigation, and water for domestic consumption. Irrigation water from major systems and renovation of old tanks helped expand land under paddy cultivation. Land settlers received high-land and low-land parcels for paddy cultivation on leasehold titles. Legislation does not allow other crops to be cultivated on paddy lands. Some paddy lands are allowed for alternative crops, depending on irrigation water availability. Water is provided at no cost, through an extensive network of irrigation canals.

Paddy production is mostly the work of smallholder farmers in Sri Lanka. About 70 percent of the paddy holdings of the country are less than 2 acres (0.8 Ha) and 95 percent of the paddy holdings are less than 5 acres (2 Ha) (Figure1). Paddy farmers with less than 2 Ha receive a 90 percent fertilizer subsidy. Farmers can purchase fertilizer at a price as low as Rs.500 per 50 kg (about 3 USD) bag.

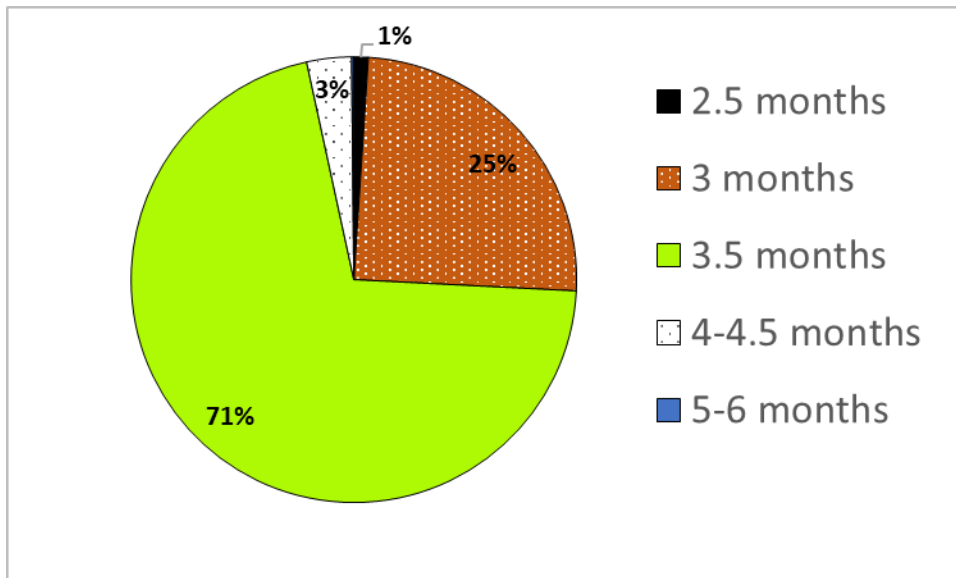
Figure 1: Number of paddy holdings by size



Source: Economic Census 2013/14, Agricultural Activities, General Report, Department of Census and Statistics of Sri Lanka, 2018

About 99 percent of the farmers are cultivating new-improved varieties. Due to the prolonged dry weather conditions, farmers are advised to cultivate shorter duration varieties, which affects the production figures. About 70 percent of the rice cultivated is of the three and half month varieties. Only 4 percent of the paddy produced uses longer duration varieties (Figure 2). Water availability and, irrigation schedules affect farmers choice of planting varieties.

Figure 2: Annual extent of paddy cultivated by age group of new improved varieties – 2017



Source: Rice Varietal Distribution in Sri Lanka, 2018, Rice Research and Development Institute, Department of Agriculture, Sri Lanka

The most popular variety, with some 60% share, is the long grain rice (*nadu*); 22 percent of production is short grain rice (*samba*). Although white pericarp varieties are the most popular, the red pericarp varieties and traditional rice varieties are becoming popular.

The Department of Agriculture of Sri Lanka (DOA) forecasts a net production of 2.9 million metric tons of paddy for MY 2018/19 *Maha* crop, after deducting for crop damages, wastage, and seed paddy requirements. Nevertheless, Post forecasts a slightly higher production in the MY 2018/19 *Maha* crop based on the DOA estimates, industry information, weather, and other factors that prompt farmers to make cropping decisions.²

Post forecasts a higher overall output for MY 2018/19 owing to the bumper harvest in the *Maha* season, which followed several years of drought-affected production. With the favorable weather conditions, the average yield is expected to be high at 4.3 metric tons per ha for MY 2018/19.

Table 1: Commodity: Rice, Milled - Production, Supply and Demand (PSD)

| Rice, Milled | 2017/2018 | 2018/2019 | 2019/2020 |
|--------------|-----------|-----------|-----------|
|--------------|-----------|-----------|-----------|

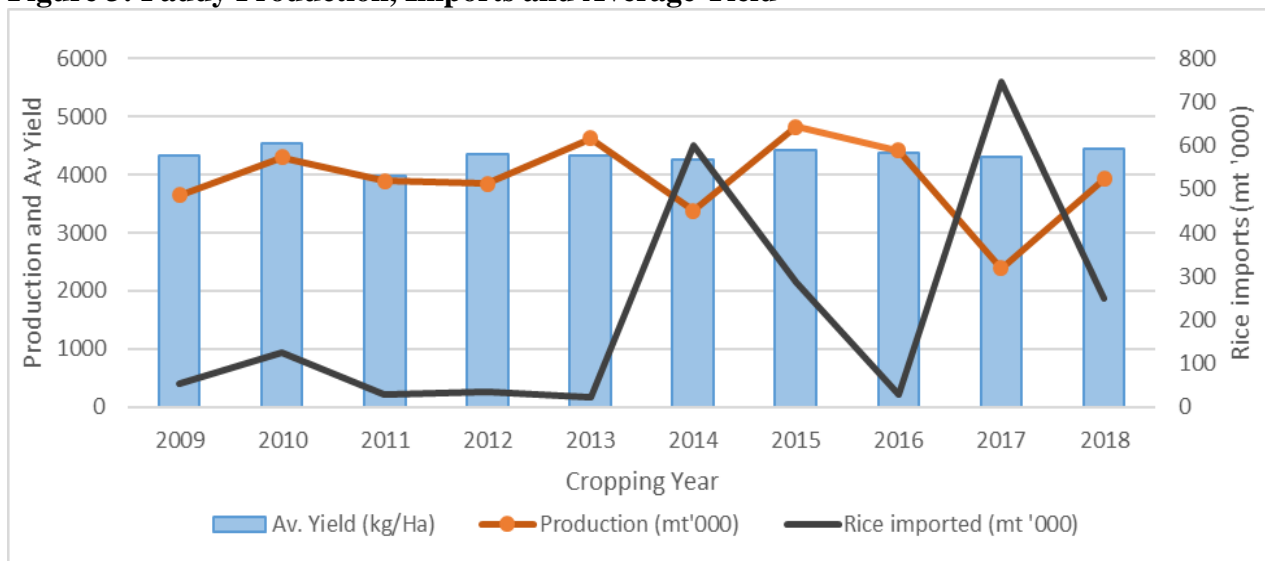
² Department of Agriculture carries out the Crop Forecast for each season. The Crop Cutting Survey is carried out by the Department of Census and Statistics of Sri Lanka. 2018/19 *Maha* crop cutting survey results are not yet released.

| Market Begin Year | Oct 2017 | | Oct 2018 | | Oct 2019 | | |
|--------------------------|---------------|----------|---------------|----------|---------------|----------|-----------|
| Sri Lanka | USDA Official | New Post | USDA Official | New Post | USDA Official | New Post | (Units) |
| Area Harvested | 769 | 769 | 1100 | 1000 | 1000 | 1100 | (1000 HA) |
| Beginning Stocks | 432 | 432 | 316 | 316 | 421 | 421 | (1000 MT) |
| Milled Production | 2248 | 2248 | 2960 | 2897 | 2890 | 3094 | (1000 MT) |
| Rough Production | 3306 | 3306 | 4353 | 4260 | 4250 | 4550 | (1000 MT) |
| Milling Rate (.9999) | 6800 | 6800 | 6800 | 6800 | 6800 | 6800 | (1000 MT) |
| MY Imports | 491 | 491 | 50 | 40 | 50 | 50 | (1000 MT) |
| TY Imports | 249 | 249 | 50 | 35 | 50 | 50 | (1000 MT) |
| TY Imp. from U.S. | 0 | 0 | 0 | 0 | 0 | 0 | (1000 MT) |
| Total Supply | 3171 | 3171 | 3326 | 3253 | 3361 | 3565 | (1000 MT) |
| MY Exports | 5 | 5 | 5 | 5 | 5 | 5 | (1000 MT) |
| TY Exports | 5 | 5 | 5 | 5 | 5 | 5 | (1000 MT) |
| Consumption and Residual | 2850 | 2850 | 2900 | 2860 | 2950 | 3000 | (1000 MT) |
| Ending Stocks | 316 | 316 | 421 | 388 | 406 | 527 | (1000 MT) |
| Total Distribution | 3171 | 3171 | 3326 | 3253 | 3361 | 3532 | (1000 MT) |
| Yield (Rough) | 4.2991 | 4.2991 | 3.9573 | 4.26 | 4.25 | 4.1364 | (MT/HA) |

Source: USDA official estimates and Post estimates

Adverse weather in the recent past dramatically fluctuated the paddy production levels in Sri Lanka; this should stabilize with comparatively better weather conditions. Naturally, imports have varied inversely with paddy production. Average yield, however, has been stable around 4.1 – 4.2 metric tons per hectare (Figure 3).

Figure 3: Paddy Production, Imports and Average Yield



Source: Based on Central Bank of Sri Lanka, Annual Report, 2018

Several factors have contributed to the increased production in MY 2018/19 *Maha* crop. Despite sporadic rains at the onset of the *Maha* season, the subsequent rains and weather during the rest of the season were favorable for paddy. Farmers who had moved into alternative field crops (due to lack of water in recent seasons) also shifted back to rice cultivation.

Severe drought conditions, which have prevailed for several consecutive seasons, have depressed the rice industry as a whole. Water for irrigation was limited enough that farmers were forced to plant vegetables and other field crops, which demand less water (for these crops, farmers often can fulfill the need for water by using agro-wells or tube wells). Pest attacks further diminished production: The main rice-producing areas were heavily affected by the Brown Plant Hopper (BPH) attack. Nevertheless, after the long drought ended, the favorable weather in the *Maha* 2018/19 induced farmers to plant more paddy once again. On top of the favorable weather, the new irrigation programs of the GOSL (especially the Moragahakanda- Kalu Ganga irrigation development scheme) also contributed to the cultivation progress in the main paddy-producing dry zone area. The new irrigation project not only ensured the availability of irrigation water throughout the cultivation period, it also increased the irrigable land. The dry conditions of the later stages of the *Maha* season did not affect the crop significantly at the critical

grain filling stage. The reservoirs carried adequate water to continue essential cultivation practices until the end of the season.

Continuing dry weather is likely to affect the minor season (*Yala*) harvest of MY 2018/19. The cultivation was prolonged due to lack of rains. The drought condition and the low water levels of the reservoirs will affect the *Yala* cultivation. Particularly, lack of water during tillering and flowering is likely to reduce yields. Pest attacks remain a threat, with BPH being the biggest threat. Incidence of a strain of Fall Army Worm (FAW) on paddy is reported in certain parts of the country. Farmers have been informed and the DOA is seeking appropriate control measures. It is likely that the *Yala* production of MY 2018/19 will not be very high. The relatively low output forecast for *Yala* will in part nullify the effect of *Maha* bumper harvest on overall production. Nevertheless, the overall forecast for MY 2018/19 production is significantly higher compared to previous years.

Assuming average weather conditions, MY 2019/20 rice production is estimated to reach 3 million metric tons. Inter-monsoonal rains and northeast monsoonal rains are expected to provide sufficient water for cultivation of 2019/20 *Maha* crop and for the irrigation systems for the next cropping seasons. Nevertheless, the weather uncertainty remains a high risk factor. The alternative dry and wet weather conditions adversely affect the yields.

Sri Lanka’s advances in rice research should boost production. Since drought is the major factor-affecting paddy production, a new drought-tolerant variety is in the pipeline for release late this year. The new variety is claimed to provide good yields under alternate wet and dry conditions and is best suitable for rain-fed cultivation.

Consumption:

Stable consumption

Rice consumption is increasing marginally on annual population growth of 1.1 percent. The government of Sri Lanka (GOSL) and health authorities actively encourage rice consumption over wheat consumption. Together with the residual, the total consumption hovers around 2.8 million metric tons annually, reflecting marginally increasing consumption and normal residual/ loss levels.

With a total population of 21 million, Sri Lanka’s per capita annual rice consumption is approximately 107 kg per person. Across the country, varietal preferences include both long grain and short grain rice, raw or boiled form, in white or red pericarp. Long grain raw rice (non-parboiled) is the most consumed type. On average, households consume 16 kilograms of long grain raw rice per month (white or red) and 13 kilograms of parboiled long grain (Table 2).

Table 2: Average household and per capita consumption of rice

| Type of rice | Monthly average quantity per household (kg/ months) | Monthly average value per household (Rs/ months) | Per capita rice consumption (kg/ year) |
|------------------------------|--|---|---|
| White raw (long grain white) | 7.98 | 455.63 | 24.56 |

| | | | |
|-------------------------------------|-------|--------|-------|
| pericarp) | | | |
| Red raw (long grain white pericarp) | 8.35 | 459.07 | 25.70 |
| Samba (short grain) | 5.31 | 388.29 | 16.35 |
| Nadu (long grain parboiled) | 12.79 | 794.10 | 39.36 |
| Other rice | 0.50 | 38.83 | 1.56 |

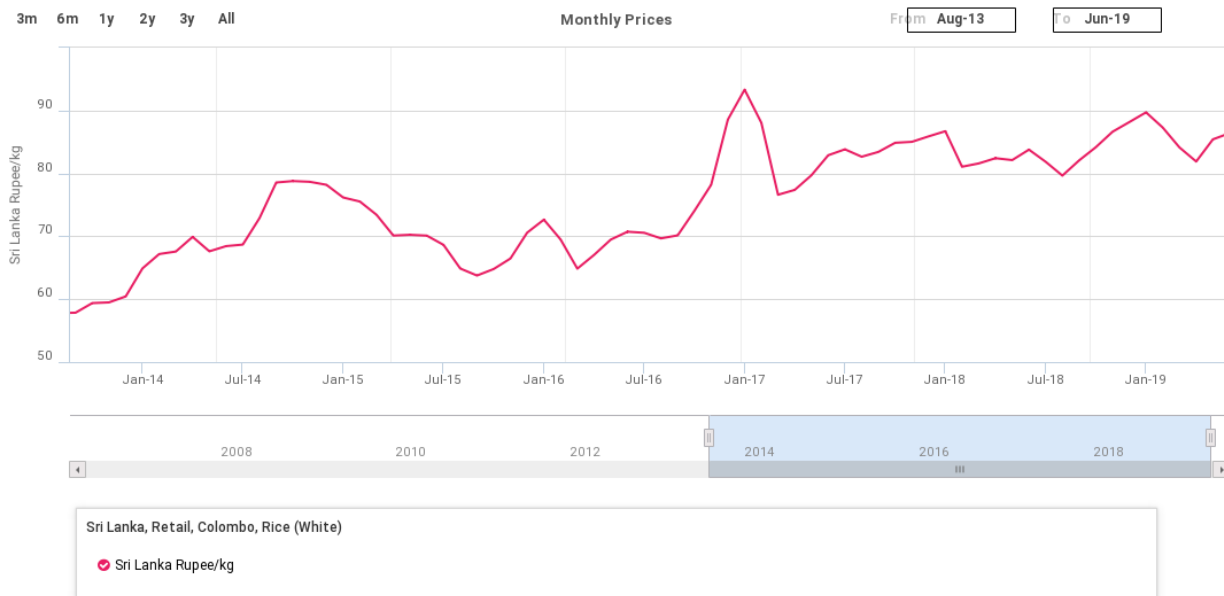
Source: Report prepared for the National Thematic Research Program on Food Security of National Science Foundation of Sri Lanka, Institute of Policy Studies of Sri Lanka 2017; Analysis based on Household Income and Expenditure Survey of Department of Census and Statistics of Sri Lanka 2012/13

Red rice is gaining on white rice in popularity. Red rice grain and the bran are becoming recognized for their better nutritional qualities, since they are rich in vitamin B, minerals, protein, fat and fiber. Red rice also has a low Glycemic index which is preferred in a country that is concerned about the prevalence of non-communicable diseases. (Image 2: Annex)

Interest in traditional rice varieties such as *Suwadel*, *Pachchaperumal*, *Kalu Heenati* and *Madathawalu*, is rising in recognition of their nutritional qualities, but low supply and high retail prices have suppressed demand. A small portion of Sri Lanka’s rice consumption consists of imported Basmati rice, but again high prices limit Basmati to a narrow market.

Retail prices of rice have increased over the years, but do show seasonal variations. The 2018 and 2019 prices are high. Prices generally spike around January, which is the lean period before the *Maha* crop harvest (Figure 4).

Figure 4: Retail price of rice (white), Colombo market, August 2014 – June 2019



Source: GIEWS, Food Price, Food and Agriculture Organization

The maximum retail price (MRP) of rice is established by the state-run Consumer Affairs Authority. As revised on May 31, the MRP of White Samba (short grain) was 85 rupees per kilogram; White Nadu and Red Nadu (long grain), 80 rupees and 74 rupees per kilogram, respectively. Basmati price depends on the market rate. Private traders do not always conform to the maximum price set by the government.

Trade:

Stagnant rice exports and plunging imports

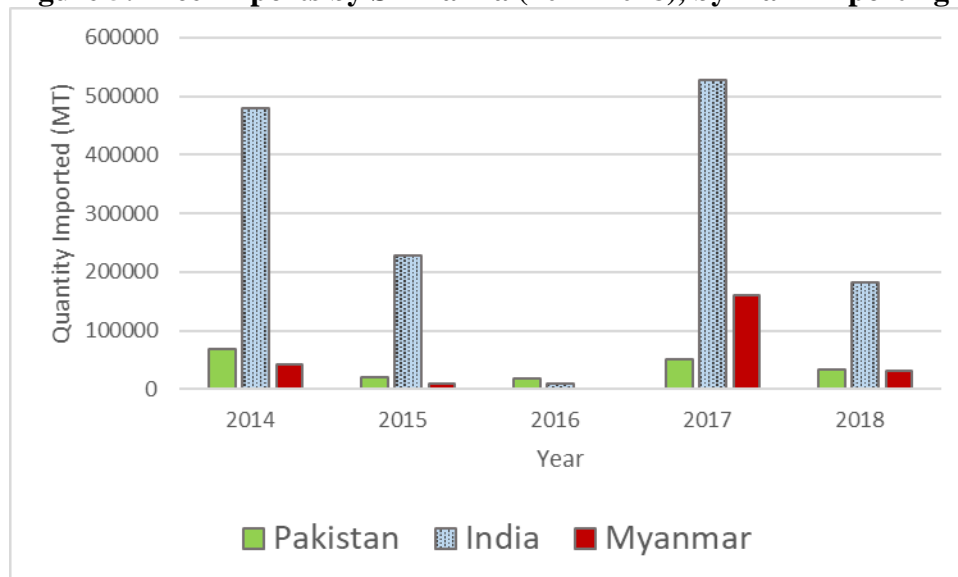
Rice exports of Sri Lanka remains around 5,000 metric tons. Exports are unlikely to change in MY 2019/ 20.

Sri Lankan rice exports are limited by several factors, including lack of grades and standards and low demand for indigenous Sri Lankan rice varieties. There are, however, significant exports to the United Arab Emirates, Canada and United Kingdom. Sri Lankan expatriates constitute the majority of the export market.

Post expects MY 2018/ 19 imports to remain low at 40,000 metric tons, given high local production, compared to 491,000 metric tons in previous year. A bumper harvest in the *Maha crop*, and the upcoming harvest of the *Yala crop* are sufficient to fulfil domestic consumption, which has led to greater controls over imports. Imports in the first half of the MY 2018/19 have significantly slowed compared to previous years.

MY 2019/20 is expected to remain low at around 50,000 metric tons, given the forecast production of 3 million metric tons, which would meet domestic demand. The main origins of imports are India, Pakistan and Myanmar (Figure 5).

Figure 5: Rice Imports by Sri Lanka (2014-2018), by main importing countries



Source: Based on Global Trade Atlas data, USDA

Given Sri Lanka's push for self-sufficiency in rice production, rice is a heavily-controlled market. The current base import duty is 30 percent, or 55 rupees per kg, whichever is higher. This cost constitutes approximately 70 percent of the maximum retail price of local rice. In addition, a 7.5 percent Port and Airport Levy (PAL), a 2 percent Nation Building Tax (NBT), and a 15 percent Value Added Tax (VAT) are also charged. These policies, along with fertilizer subsidies, water subsidies, a minimum support price, and limited planting options have expanded Sri Lanka rice production to enable self-sufficiency over the years. Demand for imported rice is thus limited to small quantities of specialty rice, such as Basmati rice from India and Pakistan, which is not locally grown. Pakistan has received a tariff rate quota of 6,000 metric tons of Basmati rice per each calendar year on duty-free basis.

Stocks:

Paddy stocks to rise

Paddy stocks increased initially after the end of the internal conflict in 2009, but growth in consumption absorbed much of those reserves. Stocks declined after poor harvests in 2012/13 and were down to 316,000 metric tons by MY 2017/18. However, the year ending stocks for MY 2018/19 are expected to rise to 388,000 metric tons with increasing production. Another healthy year of production in 2019/20 will further increase the year ending stocks to 527,000 metric tons, given marginal increases in consumption and limited export options.

GOSL provides no official statistics on Sri Lanka's rice or paddy stocks. GOSL held no stocks in the past few seasons due to the low production. The state-run Paddy Marketing Board purchases paddy on a government set floor price, which is based on the harvest as forecast at or, near harvest time. In the MY 2018/19 *Maha* crop, long grain paddy (*Nadu*) was purchased at 38 rupees a kilogram, and short grain paddy (*Samba*) was purchased at 41 rupees a kilogram. In MY 2018/19 GOSL is expecting to stock 50,000 metric tons of paddy. GOSL has 210 warehouses with a capacity of 250,000 metric tons.

The majority of rice stocks are held by the private sector; namely millers, paddy collectors or farmers. Private sector paddy milling in Sri Lanka comprises a few large millers, a middle layer of medium-scale millers, and thousands of small-scale millers. The large-scale millers are equipped with state of the art storage facilities and milling plants which are integrated operations, that include loading, cleaning, sorting, and packaging for distribution. Paddy aging is a common practice for improving the quality of rice. Only the large-scale millers are able to hold sufficient stocks for aging, due to the high working-capital requirement. Millers prefer to hold stocks for natural aging for a complete season, depending on the paddy availability and stock holding capacity.

Millers have access to bank loans mainly through the state-run banks, for working capital. The loans are based on the capacity of the millers, and are pledge loans for medium and small-scale millers. Small-scale millers lament the rules for loan applications favor large-scale millers.

Recent droughts affected the milling industry as a whole. Given the drop in paddy production, and subsequent low milling volumes, as much as 50-60 percent of medium and small-scale millers closed their businesses. Some recent policies granted grace period and loan interest forgiveness for some millers. In addition, to provide incentives for farmers to produce more paddy, GOSL provided financing for the millers to purchase paddy at favorable guaranteed prices.

WHEAT

Production:

Sri Lanka is not a wheat producer but a consumer. Two wheat-milling companies are operating in Sri Lanka, which import the country’s entire wheat need. The larger of the two companies has a milling capacity of 3,600 tons per day (which operates only 70 percent of its capacity) and accounts for a significant majority of Sri Lanka’s milling activity. The milling level is well in excess of Sri Lanka’s local demand, implying that a large portion of Sri Lankan wheat imports are re-exported as flour, throughout the Asia-Pacific region, spanning from India to Korea.

Figure 6: Retail price of Wheat flour, Colombo market, August 2014 – June 2019



Source: GIEWS, Food Price, Food and Agriculture Organization

Consumption:

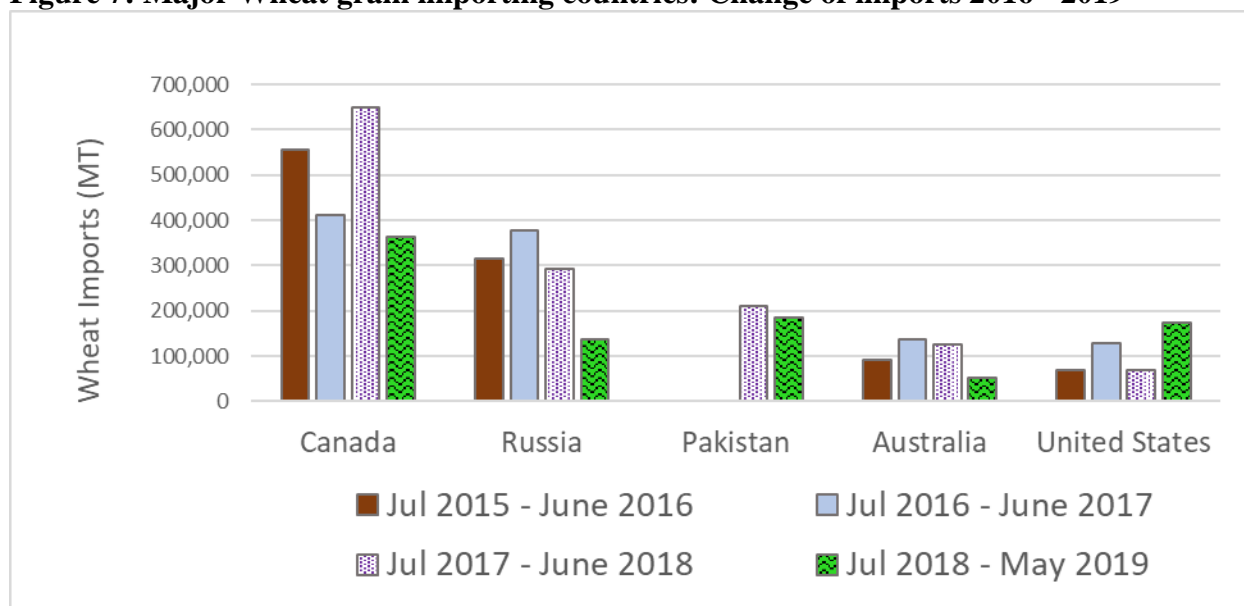
Sri Lankan agricultural policy continues to focus on self-sufficiency in rice, which results in a strong emphasis on domestic rice production over wheat imports. Given government supports for rice, wheat

consumption is increasing only marginally, but declines will be limited due to inelastic demand from bakeries and institutional buyers (noodle manufacturers, biscuit manufacturers, food service industries, etc.). Wheat is not used as a feed grain in Sri Lanka (See figure 6 regard to rise of wheat flour retail price).

Trade:

MY 2018/ 19³ imports are close to 930,000 metric tons, slightly lower than MY 2017/18, which was 964,000 metric tons. Firmer international prices, a saturated domestic market, and limited export destinations of wheat flour held imports in check. Post expects the imports to increase slightly up to 960,000 metric tons in MY 19/20, on increase in global production and expected better prices.

Figure 7: Major Wheat grain importing countries: Change of imports 2016 - 2019



Source: Based on Global Trade Atlas data, USDA

Wheat imports are currently charged a duty at the rate of Rs.3 per kilogram. A 7.5 percent Port and Airport Development Levy and a 2 percent nation building tax are also charged. Major suppliers by volume are Canada, Russia, Pakistan, Australia and the United States. With increasing global supply, millers are likely to import more for re-export, if they are successful in establishing markets (Figure 7).

Since the domestic market is saturated, millers seek more export markets. Exports were 85,000 metric tons in MY 2018/ 19 and expected be around 80,000 metric tons in MY 2019/20. The main export destinations have been Thailand, Maldives, Malaysia and Singapore in MY 2019. Other export destinations are UAE, Philippines, India, Cambodia, Hong Kong and South Korea.

Stocks:

³ MY and the TY for Wheat is July to June in USDA Grain and Feed Analysis for Sri Lanka.

MY 2017/18 ending stocks are estimated to be at 215,000 metric tons. Increased exports and consumption will draw down stocks to 200,000 metric tons in MY 2018/19, but by MY 2019/ 20 more imports, stagnant exports, and flat consumption may push stocks back up to 220,000 metric tons until more export markets are developed. The largest milling facility has the capacity to hold 350,000 metric tons and is currently at just 70 percent of its capacity.

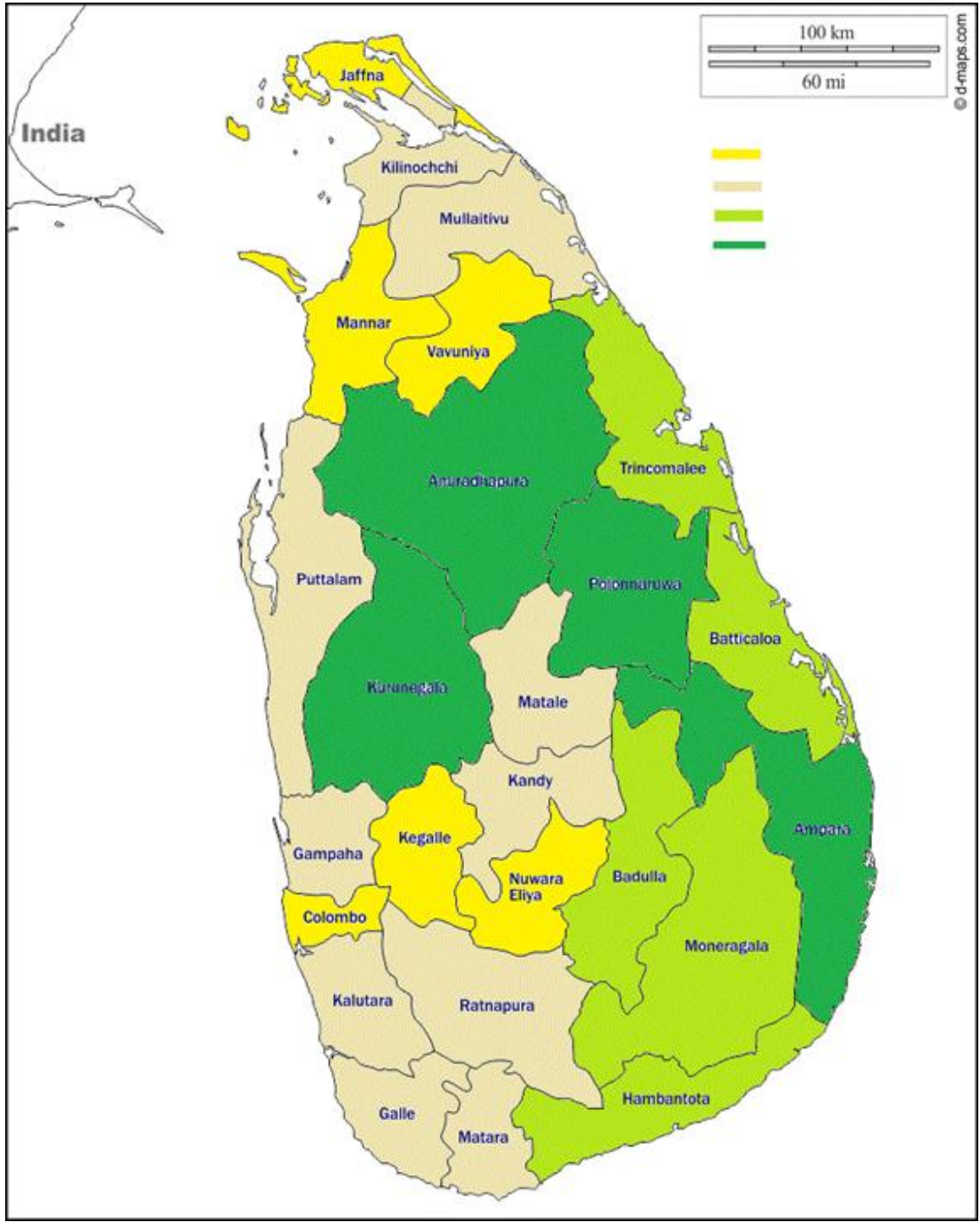
Table 3: Commodity: Wheat - Production, Supply and Demand (PSD)

| Wheat | 2017/2018 | | 2018/2019 | | 2019/2020 | | |
|--------------------|---------------|----------|---------------|----------|---------------|----------|-----------|
| Market Begin Year | Jul 2017 | | Jul 2018 | | Jul 2019 | | |
| Sri Lanka | USDA Official | New Post | USDA Official | New Post | USDA Official | New Post | (Units) |
| Area Harvested | 0 | 0 | 0 | 0 | 0 | 0 | (1000 HA) |
| Beginning Stocks | 162 | 162 | 215 | 215 | 75 | 75 | (1000 MT) |
| Production | 0 | 0 | 0 | 0 | 0 | 0 | (1000 MT) |
| MY Imports | 964 | 964 | 725 | 930 | 925 | 960 | (1000 MT) |
| TY Imports | 964 | 964 | 725 | 930 | 925 | 960 | (1000 MT) |
| TY Imp. from U.S. | 108 | 108 | 0 | 175 | 0 | 180 | (1000 MT) |
| Total Supply | 1126 | 1126 | 940 | 1145 | 1000 | 1035 | (1000 MT) |
| MY Exports | 71 | 71 | 85 | 85 | 80 | 80 | (1000 MT) |
| TY Exports | 71 | 71 | 85 | 85 | 80 | 80 | (1000 MT) |
| Feed and Residual | 0 | 0 | 0 | 0 | 0 | 0 | (1000 MT) |
| FSI Consumption | 840 | 840 | 780 | 860 | 820 | 860 | (1000 MT) |
| Total Consumption | 840 | 840 | 780 | 860 | 820 | 860 | (1000 MT) |
| Ending Stocks | 215 | 215 | 75 | 200 | 100 | 220 | (1000 MT) |
| Total Distribution | 1126 | 1126 | 940 | 1145 | 1000 | 1160 | (1000 MT) |

Source: USDA official estimates and Post estimates

Annex

Image 1: Distribution of Paddy Extent by District, 2014



Source: Based on Economic Census 2013/14, Agricultural Activities, General Report, Department of Census and Statistics of Sri Lanka, 2018

Image 2: Main types of rice consumed in Sri Lanka



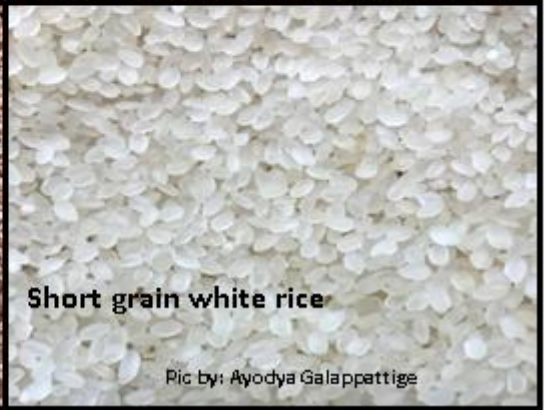
Long grain red rice



Long grain white rice



Short grain red rice



Short grain white rice

Pic by: Ayodya Galappettige