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## **Report Name:** Grain and Feed Annual

**Country:** Indonesia

**Post:** Jakarta

**Report Category:** Grain and Feed

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### **Report Highlights:**

High commodity prices in the international market during the last term of 2022 are expected to impede the growth of 2022/23 Indonesian wheat imports and curb the use of wheat in feed formulation. The removal of most COVID-19 restrictions is expected to lead to improved consumer spending. Therefore, consumption of wheat and corn for Food, Seed and Industrial in 2022/23 and 2023/24 are forecast to increase. Forecasts of an early and longer dry season in 2023 will provide for better corn production while posing threats to paddy production which requires more water than corn.

Glossary:

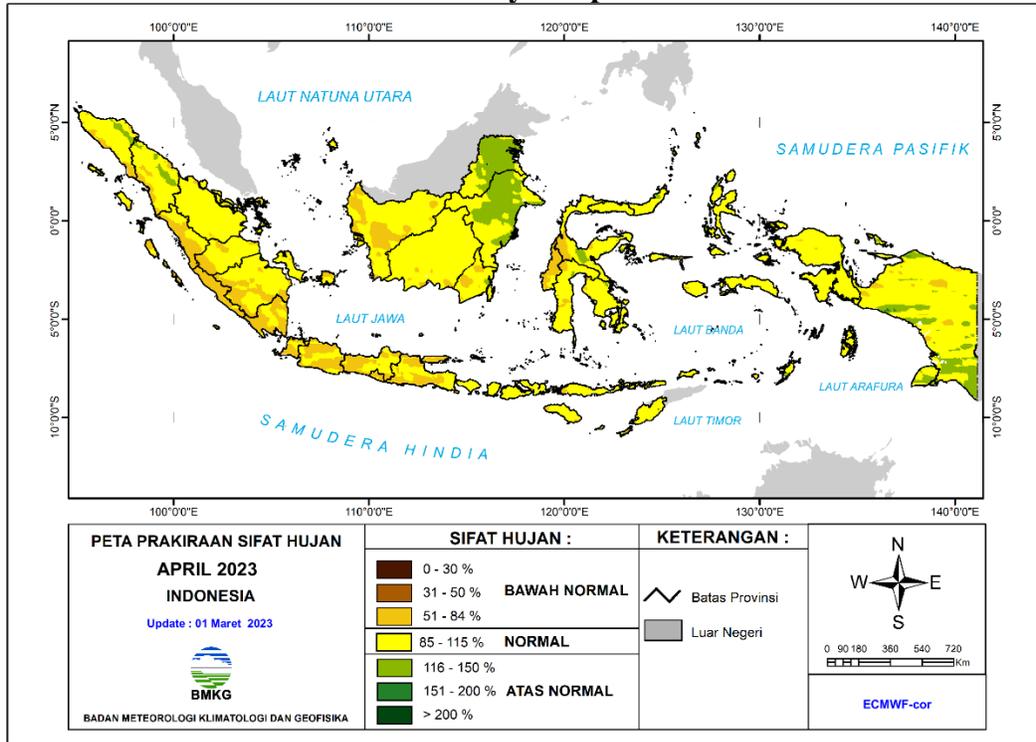
APTINDO	: Indonesian Flour Millers Association
BAPANAS	: National Food Agency
BMKG	: Indonesian Meteorology, Climatology, and Geophysics Agency
BI	: Bank of Indonesia
BPS	: Indonesian Statistics Agency
BULOG	: Indonesian National Logistics Agency
CMEA	: Coordinating Ministry for Economic Affairs
DDGS	: Distillers Dried Grains
GOI	: Government of Indonesia
GPMT	: Indonesian Feed Millers Association
HPP	: Government Purchasing Price
MOA	: Ministry of Agriculture
MOF	: Ministry of Finance
MOT	: Ministry of Trade
MPW	: Ministry of Public Works
NTP	: Farmers' Term of Trade
PKH	: Hope Family Program
P3JI	: Indonesian Corn Wet Millers Association
Rp.	: Indonesian Rupiah
SME	: Small and Medium Enterprises
SPHP	: Stabilization of Rice Supply and Prices
USSEC	: United States Soybean Export Council
WHO	: World Health Organization

SECTION I. SITUATION AND OUTLOOK

In March 2023, the Indonesian Meteorology, Climatology, and Geophysics Agency (*BMKG, Badan Meteorologi, Klimatologi, dan Geofisika*) projected that the 2023 dry season would arrive earlier than in the previous year. In addition, the dry season is predicted to be drier than usual. The peak of the 2023 dry season is predicted to occur in August 2023.

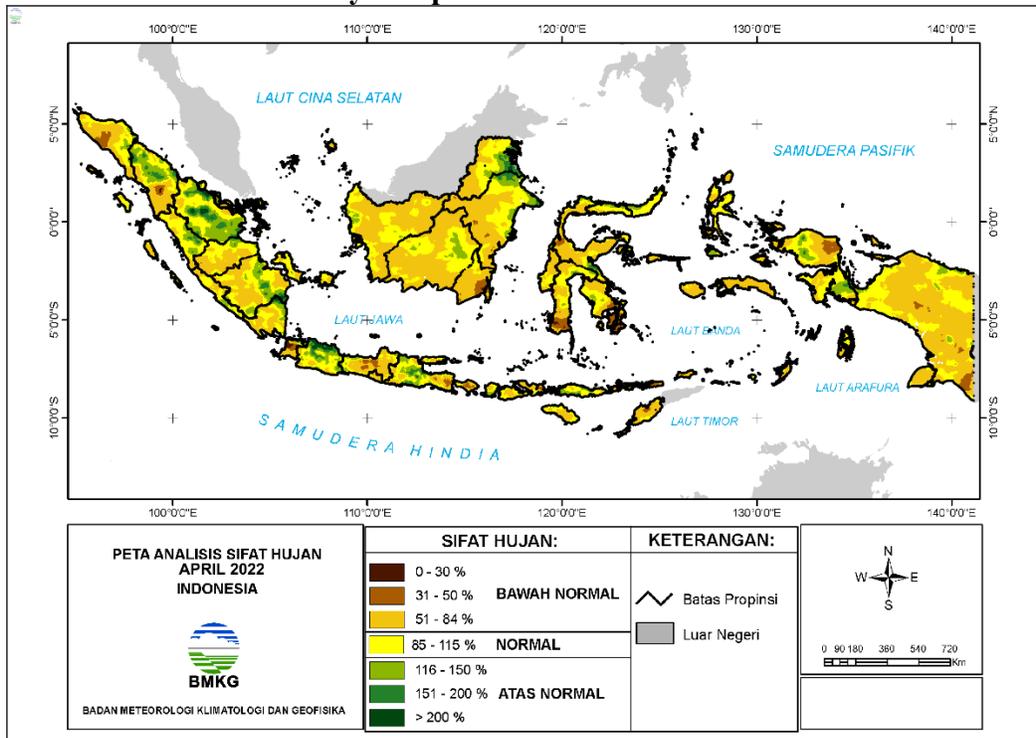
Approximately 41 percent of Indonesian area will experience an early-onset dry season, 29 percent will begin dry season on time, and 14 percent will experience a late dry season. Regarding atmospheric-ocean dynamics, BMKG stated that until the end of February 2023 ENSO conditions will be in line with a weak La Nina. La Nina patterns switched to a neutral phase in March 2023 which is expected to last until the end of the first half of 2023. Meanwhile, during the second half there will be a 50-60 percent chance that the neutral conditions will switch to an El Nino weather pattern. BMKG has warned ministries, agencies, regional governments, related institutions, and communities to prepare for the possible negative impact of the coming dry season, especially in areas expected to experience dryer-than-usual weather. According to BMKG, the Indian Ocean Dipole (IOD) mode is currently neutral, and this condition will last until the end of 2023. As paddy cultivation requires more water availability, the predicted dryer and earlier dry season will provide more opportunities for farmers, especially those in lowland areas, to switch to growing corn over paddy.

**Chart 1. Forecast of Rainfall Intensity in April 2023**



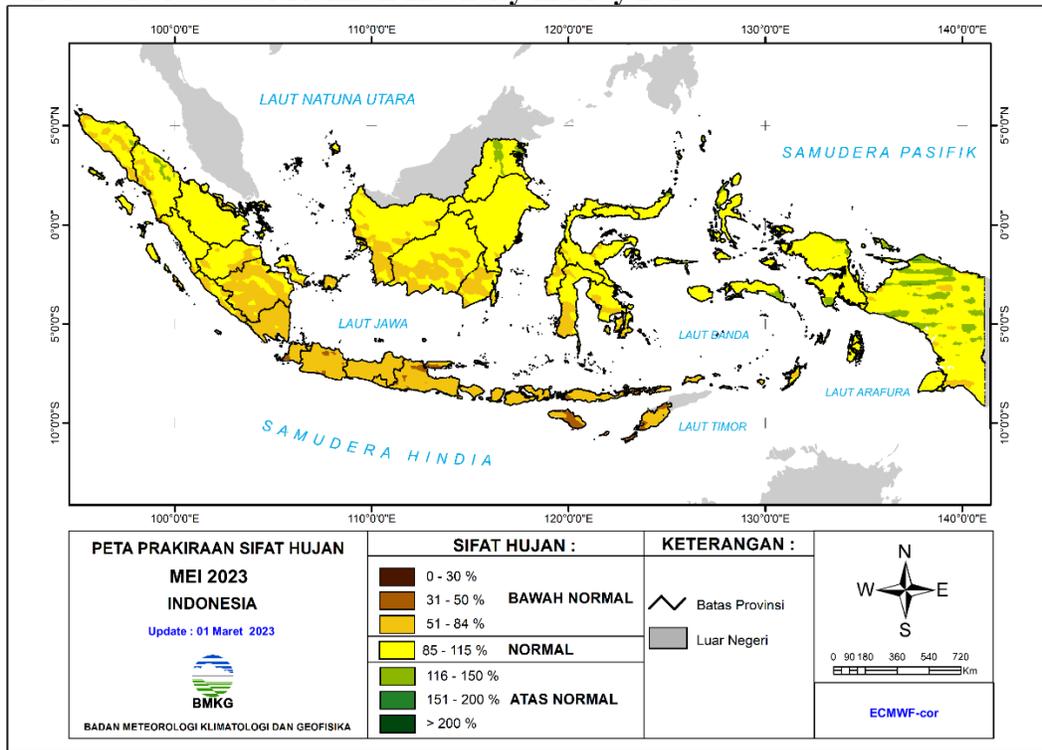
Source: Indonesian Meteorology, Climatology, and Geophysics Agency (BMKG)

**Chart 2. Rainfall Intensity in April 2022**



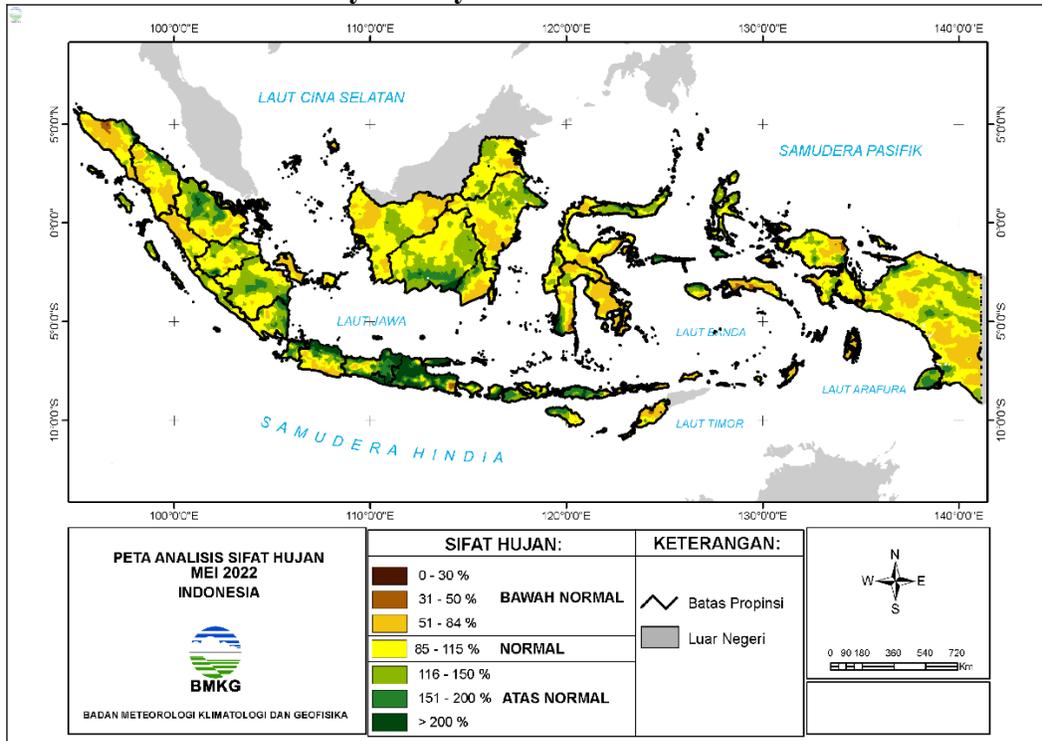
Source: Indonesian Meteorology, Climatology, and Geophysics Agency (BMKG)

**Chart 3. Forecast of Rainfall Intensity in May 2023**



Source: Indonesian Meteorology, Climatology, and Geophysics Agency (BMKG)

**Chart 4. Rainfall Intensity in May 2022**



Source: Indonesian Meteorology, Climatology, and Geophysics Agency (BMKG)

According to the Indonesian Ministry of Public Works (MPW), approximately 60 percent of Indonesian harvested rice area is irrigated, while the remaining 40 percent is rain fed. Currently, major reservoirs in Java reported normal levels of water elevation. The water volume is expected to be able to supply water for paddy fields close to the reservoirs.

**Table 1. Water Elevation at West Java Water Reservoirs, March 20, 2023**

No.	Reservoir	Reservoir Volume (Million m <sup>3</sup> )	Elevation and Volume				Condition
			Target		Observed		
			Elevation (m)	Volume (Million m <sup>3</sup> )	Elevation (m)	Volume (Million m <sup>3</sup> )	
1	Jatiluhur	1325.40	95.10	447.62	100.85	n/a	Normal
2	Cirata	668.12	210.61	201.23	217.49	n/a	Normal
3	Saguling	530.75	633.08	159.48	639.76	n/a	Normal

Source: Indonesian Min. of Public Works, (March 20, 2023), processed by FAS/Jakarta.

COVID-19 conditions have continued to improve in Indonesia. Mandatory mask wearing has been lifted in virtually all public areas except on trains. On March 13, 2023, the World Health Organization (WHO) reported 964 confirmed cases of COVID-19 in Indonesia, a significant decline from 9,629 positive cases on March 14, 2022. As of January 16, 2023, Indonesia has administered a total of 444,303,130 vaccine doses. In line with declining cases of COVID-19, the Indonesian economy is projected to continue to recover despite the continuing Ukraine-Russia war and increased interest rates. BPS reported that Indonesia's economy in the fourth quarter of 2022 grew by 5.31 percent compared to 5.02 percent in the fourth quarter of 2021. The Government of Indonesia (GOI) projected that the Indonesian economy will grow by 5.3 percent with an inflation rate of 3.6 percent in 2023. The Indonesian Statistics Agency (*BPS, Badan Pusat Statistik*) reported that the agricultural sector grew by 2.25 percent throughout 2022 on strong consumer demand for staple commodities and a growing food processing sector.

## **SUMMARY**

### **Wheat**

Wheat imports for 2022/23 are estimated to decrease to 10.7 million metric tons (MMT) from 11.23 MMT imported in 2021/22, reflecting higher international wheat prices during the first semester of 2022/23 which hindered imports. In line with population growth and a recovering economy, wheat imports in 2023/24 are forecast to rebound to 11.0 MMT. Wheat consumption by feed mills is estimated to remain at 1.7 MMT in 2022/23 and 2023/24.

### **Corn**

Opportunities to grow more corn during the second and third crop cycle, incentives from high corn prices, and the increased use of high-yield varieties are estimated to increase corn harvested area and production in 2022/23 to 3.95 million hectares and 12.9 MMT, respectively. Increased wet mill capacities and new ethanol plants are estimated to increase 2022/23 corn imports to 1.2 MMT compared to 1.165 MMT imported in previous 2021/22. Minimal increases in feed production are estimated to maintain corn consumption by feed mills at 9.6 MMT in 2022/23.

### **Rice**

Post estimates paddy harvested area in 2022/23 to decline to 11.5 million hectares as farmers in low land areas will likely switch to growing corn during the predicted longer dry season. Assuming the weak La Nina effects will subside, harvested areas are forecast to resume to 11.6 MMT in 2023/24. The GOI is considering another batch of rice imports to replenish currently low levels of government rice reserves in BULOG storage. Therefore, Post estimates that with the highly anticipated imports of rice by BULOG, imports of rice will reach a total of 750,000 MT. In line with predicted production increases, imports in 2023/24 are forecast to be lower at 500,000 MT, driven by private sector imports.

## **WHEAT**

### **Production**

Indonesia does not produce wheat domestically and is fully reliant on wheat imports to fulfill demand for wheat flour-based food and as an ingredient for poultry, aquaculture, and livestock feed.

### **Trade**

During the pre-deregulation era from 1970 to 1998, when wheat imports were carried out by a single state-owned procurement company, BULOG, only five flour mills operated in Indonesia. Currently, thirty flour mills are operational across the archipelago, including 24 mills on Java Island, six mills on Sumatera, and two mills in South Sulawesi. Despite high international wheat prices and global geopolitical challenges, the expansion of existing mills continues. Two new mills located in Sumatera and West Java started operations in 2022. Therefore, installed capacity in 2022/23 is estimated to increase to 14 MMT compared to 13.1 MMT in 2021/22. However, running capacity remains at an average of 60-70 percent, a decline from 80 percent in 2018/19. As more mills open and expand capacity, competition in the market is expected to further increase price sensitivities, which is a major factor in determining the source of imports.

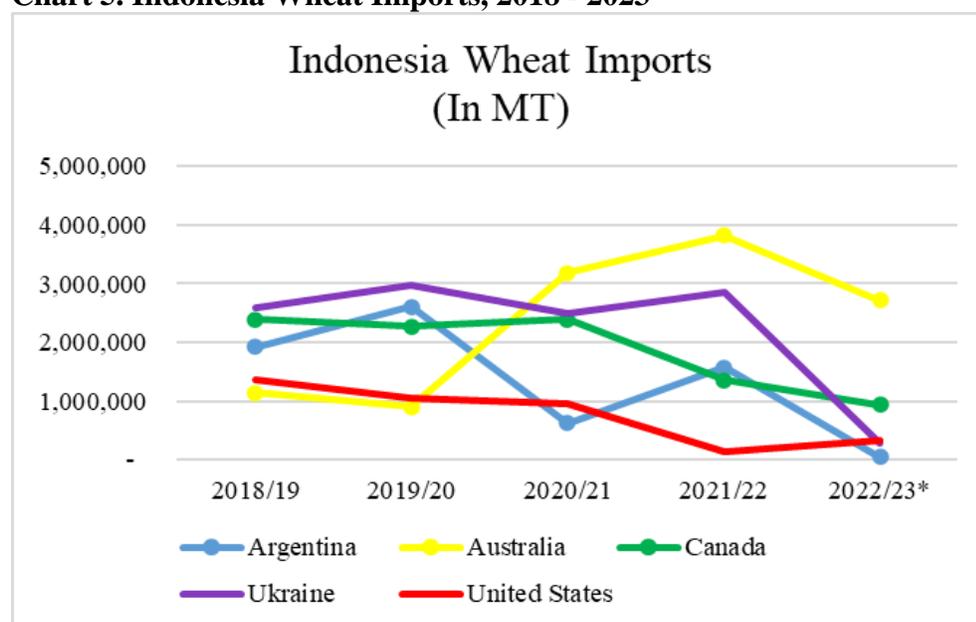
Restrictions on corn imports continues to drive feed mills to use wheat. The GOI continues to restrict imports of corn for feed mills, authorizing only state-owned BULOG to import corn for feed use. Imports of corn for feed use are authorized when prices are high due to domestic supply shortages. BULOG may only distribute the imported corn to small-holder farmers. Regardless of the annual production volume, combination of the seasonality of domestic corn supplies, limited drying and storage facilities, high corn production costs, as well as increasing demand from feed mills have become the factors for high corn prices, even during the main harvest period. Therefore, to meet energy demand in feed, feed mills include wheat as one of the ingredients in feed formulation. However, due to soaring international prices of wheat and other sources of protein for feed, as well as the increased availability of domestic corn, feed mills started purchasing more corn from the domestic market in 2021/22, and this consumption level has been maintained since.

In 2021/22 Indonesia imported a total of 11.229 MMT of wheat equivalent. Australia was the largest wheat supplier to Indonesia, with 34.2 percent market share, followed by Ukraine (25.5 percent), and Argentina (14.1 percent). The United States accounted for just 1.24 percent market share due to U.S. wheat's premium prices over other suppliers.

The ongoing Russian invasion of Ukraine has impeded imports of wheat from Ukraine. Feed mills that always opted to source cheaper wheat from Ukraine for feed production had to switch to Indian wheat. With Australia's record wheat production in 2022/23, close proximity to Indonesia, and lower freight costs, Indonesian flour mills are highly likely to switch from Ukraine to Australia as the main supplier of wheat. Indonesia's wheat imports from Australia during the first six months of 2022/23 have increased by 20 percent compared to the same period of 2021/22. Australia now leads the market with 49.6 percent market share. Canada, India, and

the United States follow with 17.0 percent, 12.1 percent, and 6.0 percent market share respectively.

**Chart 5. Indonesia Wheat Imports, 2018 - 2023**



Note: \*) for the period of July 2022 to January 2023  
 Source: Trade Data Monitor, March 2023

Despite the recovering economy, high international wheat prices hindered the growth of Indonesian wheat imports in 2022/23, which is estimated to decline by 4.7 percent to 10.7 MMT compared to 11.229 MMT imported in 2021/22. Imports of wheat in 2023/24 are forecast to rebound to 11.0 MMT as optimism from an improving Indonesian economy post COVID-19, as well as population growth, will drive up more demand for wheat-based foods.

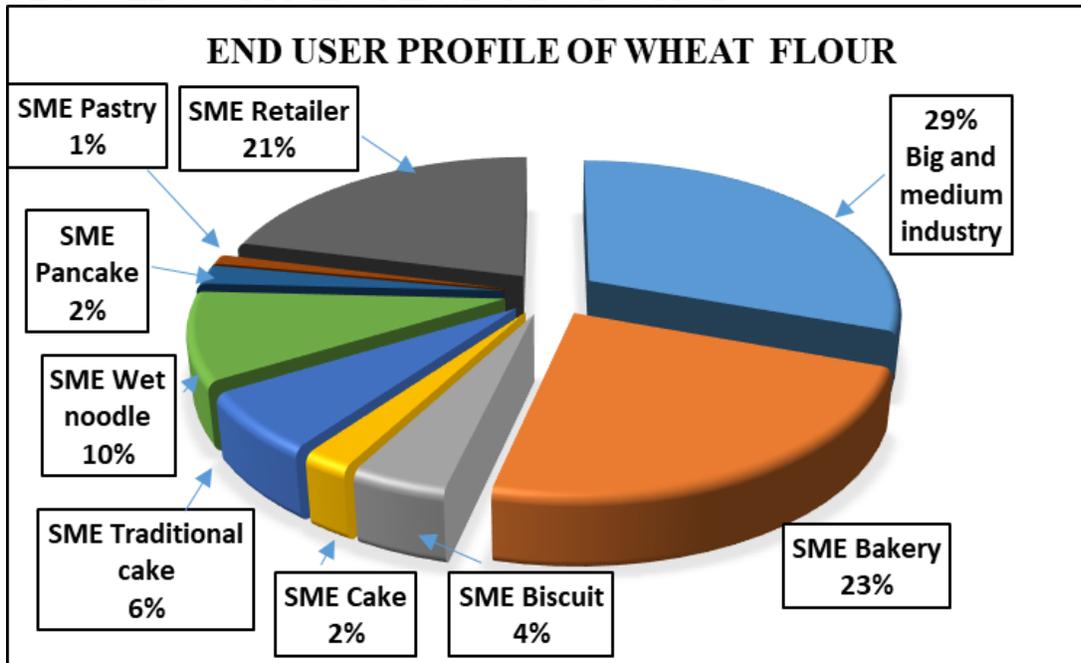
Domestic flour continues to dominate the local market with a 99.9 percent market share. In line with higher domestic production, wheat flour imports in 2022/23 is estimated to decline by 3.1 percent to 67,310 MT of wheat equivalent compared to 69,475 MT of wheat equivalent imported in 2021/22. During the first half of 2022/23, Indonesia imports of wheat flour reached a total of 27,066 MT of wheat equivalent. Turkey dominates the market with 34.9 percent market share followed by India and Vietnam with 24.7 percent and 15.7 percent market share respectively.

### Consumption

Indonesia's trends towards urbanization and a growing middle class continue, and high prices of domestically produced rice, outside of the main harvest time, will drive up the consumption of wheat-based foods. In addition, an improving economy, social media exposure, better health awareness, and online marketplaces offer space for an increasingly diverse diet and expansion of breads, pizza, and pasta outlets. Visits to malls, restaurant, and tourist destination areas are increasing. BPS reported that starred hotel occupancy rate in January 2023 increased to 44.86 percent compared to the same period of January 2022 of 42.43 percent. However, high international wheat prices during the first half of 2022/23 combined with volatile exchange rates

resulted in increased wheat flour production costs. Flour mills transferred these production cost increases to the retail prices of wheat flour. The price of one popular brand of flour, Segi Tiga Biru, has increased by 20.9 percent from IDR 11.000/kg (\$713/MT) on March 23, 2022 to IDR 13,300/kg (\$863/MT).

**Chart 6. End User Profile of Indonesian Wheat Flour**



Source: APTINDO, March 2023

Two-thirds of Indonesian flour users are considered Small and Medium Enterprises (SME), characterized as traditionally managed, family-owned, and community-oriented businesses. These include small scale wet noodle makers, street food vendors, low-end bread and bakery businesses, and traditional Indonesian cake makers. During the COVID-19 pandemic, when wheat prices skyrocketed, SME businesses with limited capital struggled to survive. Bakeries selling IDR 2,000 bread had to increase their prices. Some of the SMEs had to close down. However, the other third of the flour-using industry, which are large and modern, including several publicly-listed companies, with advanced production facilities and professional management are growing as demand increases. These producers include instant noodle manufacturers, high-end bakeries, and cookie and biscuit manufacturers. Growth will come as more western or Korean and Japanese food trends are introduced to Indonesia, such as Japanese cheesecake and Korean cheese bread. High rice prices will drive up instant noodle consumption. The World Instant Noodle Association reported on May 13, 2022, that Indonesian instant noodle consumption in 2022 increased to 13.27 billion packs from 12.64 billion packs consumed in 2020. The Indonesian National Food Agency reported on Mar 23, 2023, that prices of medium quality rice, which is mostly consumed by the Indonesian population, have increased by 8.8 percent to IDR 11,810/kg (\$766/MT) in March 2023 from IDR 10,850/kg (\$704/MT) in March 2022.

The growth of wheat flour consumption in 2022/23 is also expected to come from large industries which have a more stable market with longer shelf lives, the ability to sell products at modern markets, and strong global demand. APTINDO reported that exports of wheat-based products reached a total of \$1.24 billion in 2022, an increase of 19.5 percent from \$1.04 billion in 2021, with sweet biscuits, instant noodle, pastries, and pasta seeing the largest increase in demand. During the period of July 2022 to January 2023, wheat products were exported to Malaysia (21.7 percent), the Philippines (9.4 percent), Cambodia (8.2 percent), and Australia (7.6 percent).

Based on the abovementioned factors, Post estimates that decreased demand from SMEs will be offset by demand from new trend bakeries and large manufacturers which will lead to an increase of total food consumption by 2.3 percent to 9.0 MMT in 2022/23 and 9.1 MMT in 2023/24, in line with population growth and an improving economy.

Despite higher international wheat prices and domestic corn production, wheat for feed consumption is expected to remain steady at 1.7 MMT in 2022/23 and 2023/24. The price spread whereby feed mills begin incorporating more wheat over local corn is approximately IDR 400-500/kg (\$25.9 – 32.4/MT). With significantly reduced Ukrainian wheat supplies to Indonesia, feed mills are switching to using more Indian wheat. Wheat makes up about 17 percent of layer feed formulation and 11 percent of aquaculture feed formulation. In 2022 aquaculture feed production reached a total of 1.7 MMT and GPMT has forecast zero growth of aquaculture feed for 2023. Despite the relative advantage of local corn prices, feed mills will continue to include wheat as a key ingredient in feed rations, including poultry feed, especially during the off-harvest corn season when prices for local corn tend to surge.

## **Stocks**

Due to lower imports and higher food consumption, 2022/23 ending stocks are expected to decrease to 1.278 MMT of wheat equivalent compared to 1.658 MMT of wheat equivalent in 2021/22. Reflecting higher food consumption and slightly higher exports, 2023/24 ending stocks are forecast to further decline to 1.093 MMT of wheat equivalent.

## **CORN**

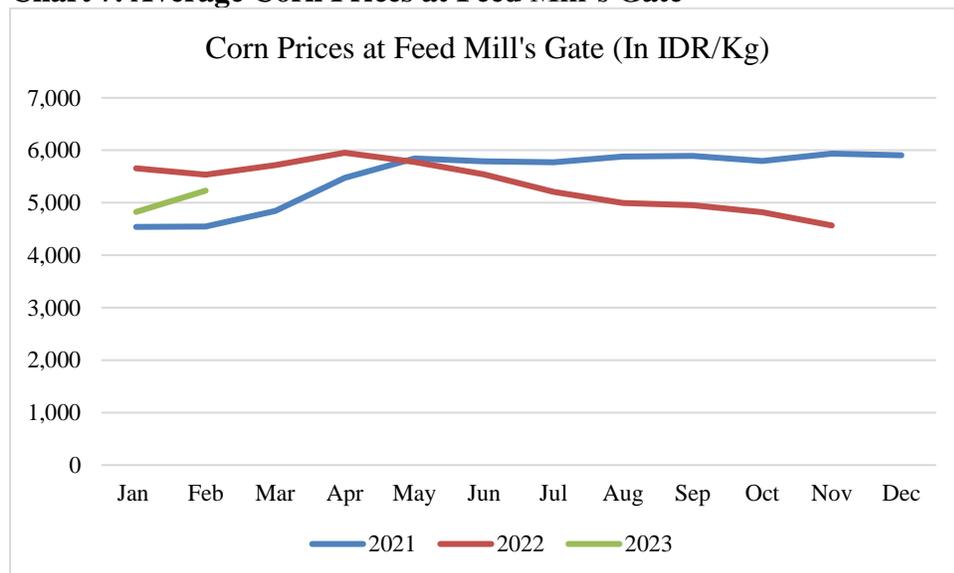
### **Production**

Corn is a secondary crop after paddy for Indonesian farmers. Indonesia's main corn producing areas are Java, which accounts for 40 percent of national corn production, followed by Sulawesi (24 percent), Sumatera (24 percent), and Nusa Tenggara (10 percent). Indonesia normally experiences dry season from April to October and rainy season from October to April.

Depending on the relative distance to water reservoirs, rivers, and other sources of water, some areas may have two or three planting periods per year. Areas closer to sources of water will have an opportunity to have three plantings annually. Across much of Indonesia the first corn season normally takes place from October to February (49 percent); the second from March to June (37 percent); and the third from July to September (14 percent). At the same time of the onset of rainy season 2022/23, most farmers started the first planting season on time from October to November 2022. The predicted early onset of the dry season and the possibility of El Nino during the last term of 2023 will reduce water availability for farmers in low land areas whose fields are not close to water reservoirs. Therefore, farmers in this area will likely switch to growing more corn over paddy.

Other than adequate water, high corn prices continue to be the main driver for farmers to grow more corn over other secondary crops such as soybeans, mung beans, and peanuts during the second and third crop cycles of 2022/23. Field observations showed that farmers on upland, rainfed areas have already started to grow their second cycle of corn in order to take advantage of higher prices around July 2023 in between the first and second main harvests.

**Chart 7. Average Corn Prices at Feed Mill's Gate**



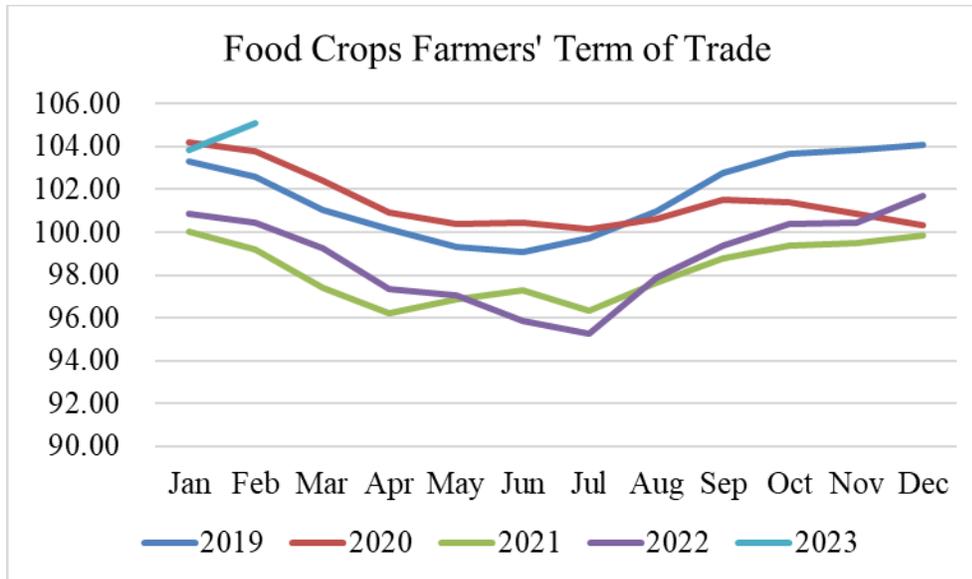
Source: Ministry of Agriculture, March 2023

To incentivize farmers to grow corn and increase national corn production, the Ministry of Agriculture (MOA) provides farmers with subsidized corn seed. However, the total allocation of subsidized seed continues to decline every year. The decreasing availability of subsidized seed is

counterintuitively leading to an increase in overall corn production as farmers are increasingly choosing seeds with higher yields from the commercial market as the less-productive, subsidized seed became more scarce.

In the 2023 State Budget, the GOI is aiming to increase farmers terms of trade (*NTP, Nilai Tukar Petani*) to 105-107. BPS has reported NTP in general tended to increase throughout 2021 to February 2023. In February 2023 NTP reached 105.09 or increased 1.27 percent from January 2023. NTP as an indicator of farmers’ purchasing power as noted in Chart 8 below.

**Chart 8. Farmers’ Terms of Trade**



Source: BPS, March 2023.

NTP is the comparison of the price index received by farmers to the price index paid by farmers. The NTP is used as an indicator to assess the purchasing power of farmers in rural areas. The NTP also shows the terms of trade of agricultural products with goods and services consumed as well as for production costs. With higher purchasing power, hybrid corn seed producers reported more sales on higher quality seeds. Following two years of wet dry seasons, an early and prolonged dry season will optimize the quality and quantity of corn seed production. Other than the four major multinational seed companies long existing in the country, more local companies are joining the corn seed industry. Combined with farmers’ interest to grow more corn, the seed industry reported hybrid seed sales in 2023 reached a total of 65,000 to 70,000 MT compared to sales in 60,000 MT in 2021. Industry estimates that corn prices will remain high in 2023 and will continue to motivate farmers to grow more corn in 2022/23. Hybrid corn area accounts for 75 percent of the total corn area.

The lack of fertilizers is the only major hindrance to corn production. The Ministry of Finance (MOF) reported that in 2023 a total budget of IDR 24 trillion is allocated for subsidized fertilizer. The amount is a decline compared to total budget allocated for subsidized fertilizer of IDR 25.28 trillion in 2022. A long, bureaucratic process to submit requests for subsidized fertilizers has led to delayed deliveries of fertilizers to farms. Less subsidized fertilizer will force farmers to meet the demand from more expensive non-subsidized fertilizers. The Ministry of

Trade (MOT) reported that in February 2023, the price disparity between subsidized and the non-subsidized urea reached 491 percent, while for NPK the disparity reached 752 percent. Farmers have reported less application of fertilizers due to the lack of available subsidized fertilizers and untimely deliveries, which will lead to a decline in yield. The GOI distributes subsidized fertilizers only to small-holder farmers of paddy, corn, soybean, chilies, shallot, garlic, coffee, sugarcane, and cocoa who own a maximum of two hectares.

**Table 2. Allocation and Maximum Retail Prices of Subsidized Fertilizers.**

Type of Fertilizers	2021		2022		2023	
	Volume (MT)	Price (IDR/Kg.)	Volume (MT or Liter)	Price (IDR/Kg. or IDR/Liter)	Volume (MT or Liter)	Price (IDR/Kg. or IDR/Liter)
Urea	4,166,669	2,250	4,232,704	2,250		2,250
SP 36	640,812	2,400	541,201	2,400		-
ZA	784,144	1,700	823,475	1,700		
NPK	2,662,000	2,300	2,470,445	2,300		2,300
Specific NPK	17,000	3,300	11,469	3,300		3,300
Granulated organic	770,850	800	1,038,763	800		
Liquid organic	1,500,000	20,000	1,870,380	20,000		

Source: Ministry of Agriculture Decree No. 734/2022

Based on the abovementioned factors, 2022/23 corn harvested area is estimated to increase to 3.95 million hectares while corn yield is estimated to increase to 3.26 MT per hectare. Considering the high prices of corn will continue to incentivize farmers to opt for growing corn over other secondary crops, 2023/24 harvested area is forecast to further increase to 4.0 million hectares. In line with increase harvested area, 2023/24 corn production is forecast to increase to 13.1 MMT. No significant pest and disease problems were reported during 2021/22 crop year.

### Consumption

Currently, Indonesia's feed mill sector consists of 110 feed mills under 44 companies located in 10 provinces, with 81 mills located on Java island. In 2023, total installed capacity reached approximately 29.7 MMT, remaining on par with installed capacity in 2022. Feed mills are running at 70-75 percent of total installed capacity.

**Table 3. Indonesian Feed Mills Number of Plants and Installed Capacity, in Thousand Metric Tons/Year (Including Aquaculture)**

Area	Number of Plants		Production	
	2020	2022	2020	2022
North and West Sumatera	13	13	3,307	3,301
Southern Sumatera and Lampung	6	6	1,076	1,612
West Java and Jakarta	40	40	8,798	8,906
Central Java	13	13	4,103	4,103
East Java	28	28	7,456	7,514
Kalimantan	3	3	660	660
Sulawesi	7	7	1,176	1,188
Total	110	110	27,149	27,212

Source: Indonesian Feed Producers Association (*GPMT, Gabungan Perusahaan Makanan Ternak*), November 2022

The poultry industry consumes approximately 90 percent of domestic animal feed supplies with aquaculture accounting for 6 percent and cattle and swine the remaining 4 percent. The MOA forecasts that the population of broilers in 2020–2024 will grow 8.49% per year. BPS reported that in 2022, broiler and layer populations were recorded 3.2 billion heads and 378 million heads. In 2023, the poultry industry association forecast that the poultry population will increase by 5 percent. To meet this demand in 2022, feed mills produced a total of 18.2 MMT of poultry complete feed, while poultry farmers produced a total of 1.26 MMT of home mixed feed. In 2023, feed mills are expected to produce a total of 18.7 MMT of poultry complete feed, while poultry farmers are estimated to produce a total of 1.4 MMT of home mixed feed. For aquaculture, a total of 1.7 MMT of feed was produced in 2022. In 2022, it is estimated that aqua feed production will be stable at 1.7 MMT. An improving economy is expected to increase consumption of poultry meat to 11.63 kg per capita per year in 2022 compared to 11.17 kg per capita in 2021.

Soaring international prices of corn and wheat have encouraged feed mills to use local corn as the primary energy source in feed. Corn usage in feed formulation in 2023 is expected to increase to 50–60 percent. The gap will still be filled with wheat purchased from local mills and other local feed ingredients.

**Table 4. Average Composition of Feed Formulation (In percent) in 2023.**

Animal Species	Corn	Soybean Meal	Rice Bran	Wheat Pollard	Animal By Products	CGM	Palm Kernel Meal	Palm Oil	DDGS
Broiler	35-45	23-25	15	0	5	10	2	5	0
Layer	50	20	10	0	5	3	3	2	4
Poultry Breeder	50-55	20-22	13	5	0	1-2		2-3	1
Swine	40-42	15	18	15	5-6	0	8	1-2	0
Aquaculture	0	30-40	13-14	20	5-6	3	2	2	7
Dairy Cattle	0	0	23-25	15	0	0	10	0	5

Source: APPI, processed by U.S. Grains Council

Corn milling capacity is continuing to grow. Installed capacity of the industry is estimated to increase to 4,500 MT per day in 2022/23, compared to 4,000 MT per day in 2021/22. The industry consists of four major players and remains the main importer of corn due to food safety requirement for corn in the wet milling process. In addition, two new ethanol plants are starting operation in 2023. Using corn as the raw material, total installed capacity for both plants is

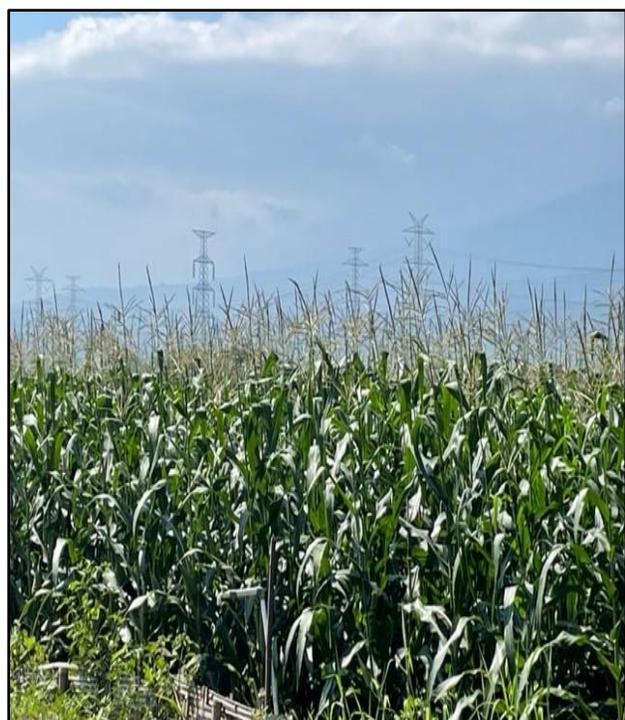


Picture: Corn being sundried and packed in a torn plastic bag

approximately 300,000 MT. Both the wet milling and ethanol industry require corn with an aflatoxin content of less than 20 parts per billion (ppb) to produce food ingredients fit for human consumption which local corn cannot provide. Rudimentary harvesting technology means

domestically grown corn is manually harvested with an average manual content of 35 percent. Most farmers dry their corn under the sun, and often improperly store it at the farmer level, frequently causing their corn to reach aflatoxin levels far above 20 ppb. As a result, corn wet mills cannot purchase local corn as their raw materials. Wet millers also prefer imported dent corn over locally produced flint corn due to its higher starch content.

The industry in 2022 produced a total of 300,000 MT, a decline of 6.52 percent from 320,000 MT in 2021. The industry also produced a total of 152,000 MT of glucose syrup, a decline of 60.8 percent compared to 250,000 MT of glucose syrup produced in 2021. The decline is mostly a result of high commodity prices in 2022. Approximately 80–90 percent of the corn starch is used as the main raw material for corn vermicelli production, while most of the balance is used as a whitener by the paper industry. Prospects for wet mill expansion remains bright as Indonesia still imports 55 percent of total demand for starch, providing ample opportunity for the local corn milling industry to grow.



Picture: corn grits as staple food for people in eastern part of Java and standing crop on Central Java in February 2023

Corn for food use is not only consumed as vermicelli but also as a staple food, especially in the Eastern part of Indonesia. However, with rice generally becoming more accessible, corn consumption as staple food continues to decline. The MOA has reported that for the period of 2020 to 2024, corn for food consumption is projected to decrease by 4.56 percent per year.

Based on the abovementioned factors, 2022/23 and 2023/24 corn consumption for feed is expected to increase to 9.6 MMT and 9.8 MMT respectively due to a recovering economy and a rebound of poultry meat and eggs consumption. Corn consumption for food in 2022/23 and

2023/24 is forecast to increase to 4.3 MMT and 4.4 MMT, respectively, due to wet mill expansion and increasing demand for corn starch increasing.

## **Trade**

To ensure that no corn for feed enters the country, GOI differentiate the HS Code for corn for feed and human consumption. Corn for feed falls under the HS Code of 1005.90.99 while for human consumption is categorized under the HS Code of 1005.90.91. Only BULOG is authorized to import corn for feed under the HS Code of 10059091. Indonesia's wet milling industry and the two new ethanol plants continue to import corn to meet food safety requirements and to gain higher starch content. Based on recent industry expansions, Post estimates 2022/23 corn imports will reach 1.2 MMT, further increasing to 1.4 MMT in 2023/24 as new facilities begin operations.

The MOA and MOT have understood the different specifications of corn required by wet mills that local corn cannot meet. Yet, starting in 2023, the GOI included corn as one of the commodities that will be required to undergo the "commodity balance" process as the basis for issuing import licenses. According to Presidential Regulation No. 32/2022: "The commodity balance is data and information that includes, among others the situation of consumption and production of certain commodities for the needs of the population and industrial needs within a certain period of time that is determined and applied nationally." The concept of the commodity balance is essentially a formula that incorporates data gathered from different stakeholders, including consumption and production data of certain commodities (beef, fish, rice, salt, and sugar for 2022) to meet consumer needs and industrial needs within a calendar year. The commodity balance for each commodity to which this policy applies is determined at an inter-ministerial meeting that takes place prior to the issuance of import permits. One outcome of the commodity balances is the determination of an import volume (by commodity) to be permitted by the GOI each year. The inter-ministerial meeting to determine the commodity balance for each commodity is organized by the Coordinating Ministry for Economic Affairs (CMEA) and is supposed to take place no later than the first week of December in order for import licenses to be issued in time for the upcoming year. The new scheme requires industry to submit import application in September. Nonetheless, since the commodity balance is a new import scheme, the process to evaluate the application has resulted in the delayed issuance of import licenses for several commodities, including corn.

For the period of October 2022 through January 2023, Indonesia imported a total of 340,197 MT of corn, a decrease of 1.7 percent compared to 346,246 MT during the same period in 2021/22. The decline is mainly due to the late issuance of import licenses from the Minister of Trade. The licenses are supposed to be issued in December 2022, but were not issued until mid-January 2023. In 2021/22, corn imports originated from Argentina (67.8 percent), Brazil (17.9 percent), and the United States (6.2 percent). For the period of October 2022 to January 2023, Indonesia imported from Argentina (73.3 percent) and Brazil (22.3 percent). According to industry contacts, wet mills prefer to source more corn from Southern America over corn from the United States due to fewer broken kernels, less brittleness, and less foreign material which provide more yield and less cost compared to using corn from the United States. Industry contacts also claim

they have faced inconsistencies between the stated specifications on the inspection result and the actual condition of the U.S. corn upon arrival.

Indonesia exports minimal volumes of corn. Exports for 2021/22 reached a total of 8,107 MT. Reflecting the production increase, 2022/23 corn exports are forecast to increase by 2,367 percent to 200,000 MT. In 2021/22 Indonesia exported corn to the Philippines (75.2 percent), Singapore (6.6 percent), Japan (4.9 percent) and Pakistan (4.0 percent).

### **Stocks**

Despite the estimated higher production and higher imports, 2022/23 ending stocks are estimated to remain on par at 1.402 MMT as in 2021/22. Along with further production increases and imports, 2023/24 ending stocks are forecast to marginally increase to 1.452 MMT.

### **Prices**

On October 5, 2022, the Indonesian National Food Agency (NFA) issued regulation number 5/2022 on References on Purchasing Prices at Producers' Level and Selling Prices at Consumers' Level for Corn, Egg, and Broiler Meat. The regulation stated that if prices at the producer level are below the purchasing reference prices, the head of the NFA can authorize BULOG or food related state-owned companies to purchase from the producers using the reference prices at the producer level. On the other hand, when prices are above the buying reference prices at the consumer level, the NFA can assign BULOG and food related state-owned companies to conduct market operation to stabilize the price.

**Table 5. Purchasing Reference Prices at Producer Level and Buying Reference Prices at Consumer Level per NFA Reg. number 5/2022.**

No.	Commodity	Purchasing Reference Prices (IDR/Kg)	Buying Reference Prices (IDR/Kg)
1.	Dry kernel corn*		
	- 15 percent moisture content	4,200	5,000
	- 20 percent moisture content	3,970	-
	- 25 percent moisture content	3,750	-
	- 30 percent moisture content	3,540	-
2.	a. Broiler egg		
	- Floor price	22,000	27,000
	- Ceiling price	24,000	
	b. DOC layer		
	- Floor price	-	9,000/head
	- Ceiling price	-	11,000/head
	c. Pullet		80,000/head
3.	a. Broiler meat **		
	- Floor price	21,000	36,750
	- Ceiling price	23,000	
	b. DOC broiler		
	- Floor price	-	5,500/head
	- Ceiling price	-	6,500/head

Source: NFA Regulation Number 5/2022, October 2022

Note: \* Consumer sales price of corn for corn users (e.g., animal feed in the animal feed industry and/or small-holder farmers)

\*\* Broiler meat is produced in the form of live birds and for consumers in carcass form

Currently, the first main harvest is ongoing. Prices at the farmer's level normally decline as the main harvest progresses. However, driven by higher input prices (seeds, fertilizers), higher demand from feed mills, and estimated lower supply from the field, the average prices of corn at farmers' level remains high. Prices of corn in March 2023 are around 6,120/kg (\$397/MT) compared to IDR 5,718/kg (\$371/MT) in March 2022. The price of feed ingredients constitutes 80-85 percent of compound feed production costs.

## RICE, MILLED

### **Production**

Approximately 50 to 55 percent of rice production is in Java, while Sumatera and Sulawesi contribute 20 and 12 percent, respectively. Approximately 85 percent of rice production comes from irrigated paddy fields. Typically, irrigated farms are planted to paddy during the first and second crop cycles (October – February and March – June) and followed by paddy or secondary crops such as corn, mung bean, soybean, peanut, or sweet potato during the third crop cycle (July – October). Predicted El Nino which started with the early onset of dry season combined with attractive prices of corn, has driven some farmers on the lowland semi irrigated to switch from growing paddy to corn. Most of the switches occurred in corn major producing areas of Southern part of Sumatera, Lampung, and East Java. Farmers on upland rain-fed area also opted to grow corn during the second and third crop cycles due to the same reason. The timely arrival of the 2022/23 rainy season has provided opportunity for farmers to start the first crop cycle on time, with most farmers planting paddy in October or November 2022. The first main harvest in 2022/23 is currently ongoing.

In early March 2023, BPS forecast based on standing crops that 2022/23 first crop cycle paddy harvested area will increase to 2.13 percent to 4.51 million hectares compared to 4.41 million hectares in the first crop cycle 2020/21. BPS estimates that paddy production for 2022/23 first main harvest will increase to 23.94 MMT from 23.82 MMT produced in the period of January to



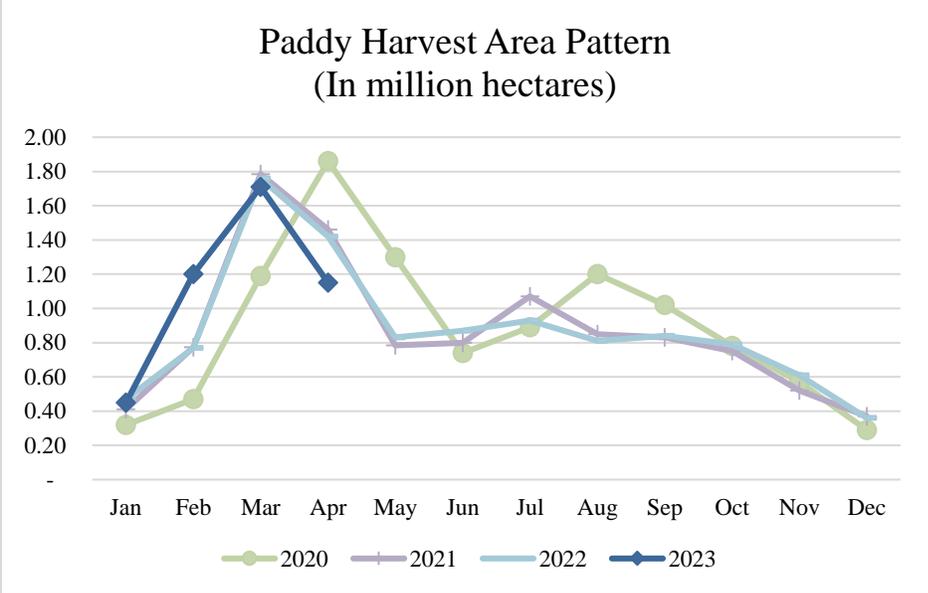
Picture: Standing crops of paddy in Central Java in February 2023

April 2023. Recent Post observations from the field showed that main harvest is currently ongoing in some areas in. Lower application rates of fertilizer due to the reduced availability of subsidized fertilizer and untimely arrival resulted to lower yield. Some farmers in major paddy growing areas in Central Java and East Java reported slightly declined yield of almost 3 percent compared to the same period of 2021/22. No significant incident of pest and diseases are reported.

Considering the aforementioned factors, Post estimates 2021/22 harvested area to decline to 11.55 million hectares, a decline of 0.7 percent from 11.6 million hectares in 2021/22. Due to higher harvested area during the first crop cycle of 2021/22, while assuming some farmers will again switch from growing paddy during the second and third crops cycles impeding area expansion, harvested area in 2023/24 is forecast to increase to 11.6 million hectares. However, due to reduced yields and harvested area, 2022/23 paddy production is

estimated to decline to 53.543 MMT, compared to 54.173 MMT in 2021/22. Assuming El Nino will be over and forecast higher harvested area, Post forecasts 2023/24 rice production to increase to 54.252 MMT.

**Chart 9. Paddy Harvest Pattern**



Source: BPS, March 2023

**Consumption**

The NFA instructed BULOG to conduct Stabilization of Food Supply and Prices (SPHP) of Rice, per NFA Decree number 02/2023 stipulated on January 4, 2023. The SPHP program is one of the government's efforts to ensure supply and the price of rice in society is stable. BULOG conducts sales at the warehouse door at a price of IDR 8,300/kg (\$538/MT). The distributors and retail stores then can take into account operational needs and margins so that the resale price reaches the final consumer at no more than the maximum retail price of IDR 9,450/kg (\$613/MT) for medium quality rice. As of Mar 24, 2023, BULOG has distributed a total of 543,472 MT of rice under SPHP.

Per capita rice consumption continues to decline by approximately 0.62 percent per year as middle and upper-middle income consumers continue diversifying their diets to include more western-style foods like bread and pasta and lower-middle income consumers continue to replace rice-based dishes with instant noodles due to ease of preparation and affordability. However, with rice prices being more stable than wheat flour prices, and in line with population growth, Post estimates 2022/23 and 2023/24 rice consumption to remain stable 35.2 MMT.

## Policy

For 2022, the GOI does not make any adjustment to HPP for paddy. Please see [ID2021-0014](#).

However, to ease BULOG's ability to procure paddy or rice from farmers for government rice reserves, on March 11, 2023, the Head of NFA issued Regulation No. 62/2023 Paddy Price Flexibility. The regulation gives BULOG flexibility on purchasing prices in case the average local market price at the producer's level is above the government purchasing price for a certain period.

**Table 6. Paddy and Rice Purchasing Price Flexibility**

No.	Commodity	Price (IDR/Kg)
1.	Wet paddy at farmer's level	5,000
	Wet paddy at rice mill's level	5,100
2.	Dry paddy at rice mill's level	6,200
3.	Dry paddy at BULOG's warehouse	6,300
4.	Rice at BULOG's warehouse	9,950

Source: NFA regulation number 62/2023

BPS reports prices of wet paddy at farmers level in February 2023 increased by 19.7 percent to IDR 5,711/kg (\$370/MT) compared to IDR 4,758/kg (\$309/MT) in February 2022. Wet paddy prices at mill's level in February 2023 increase by 18 percent to IDR 5,856/kg (\$380/MT) compared to IDR 4,962/kg (\$322/MT) in February 2022. The price increase is in line with lower yields and quality as well as a reflection of high production costs from the ongoing main harvest.

Despite continuous GOI assistance to pandemic affected families to prevent higher demand at commercial markets and as an effort to maintain stable prices for medium quality rice, rice prices at wholesale market in February 2023 reached IDR 11,990/kg (\$778/MT), an increase of 14.5 percent compared to IDR 10,471/kg (\$679/MT) recorded in February 2022.

On March 15, 2023, the head of the NFA also issued regulation on maximum retail prices of rice to maintain stable prices at consumer level. Nonetheless, as the prices of paddy are already high, prices of medium quality rice remain above the maximum retail price at IDR 11,900/kg (\$772/MT) on Java.

**Table 7. Maximum Retail Price**

No.	Type of Rice	Price (IDR/Kg)
1.	Medium Quality Rice - Zone I : Java, Lampung, South Sumatera, Bali, West Nusa Tenggara, Sulawesi - Zone II: Sumatera other than South Sumatera and Lampung, East Nusa Tenggara, Kalimantan - Maluku and Papua	- 10,900 - 11,500 - 11,800
2.	Premium Quality Rice - Zone I : Java, Lampung, South Sumatera, Bali, West Nusa Tenggara, Sulawesi - Zone II: Sumatera other than South Sumatera and Lampung, East Nusa Tenggara, Kalimantan - Maluku and Papua	- 13,900 - 14,400 - 14,800

Source: National Food Agency

## Trade

The GOI instructed BULOG to set its 2023 procurement target at 2.4 MMT, an increase of 150 percent from realized domestic procurement of approximately 960,000 MMT in 2022. Combined with the distribution and excluding imports, domestic procurement brings BULOG 2022 ending stock to approximately 400,000 MT, the lowest for the past five years. As of March 24, 2023, BULOG had procured a total of 48,513 MT of rice domestically, an increase of 146 percent from a total of 19,728 MT procured during the same period of 2021/2022. GOI requires BULOG to maintain a minimum year-end stock level of 1.5-2 MMT. Anticipating record low stocks, in December 2022, the MOT and NFA authorized BULOG to import a total of 500,000 MT of rice. BULOG can import rice that falls under HS Code 1006.30.09. As of the end of 2022, a total of 57,417 MT was imported of that 500,000 MT. The balance arrived before the main harvest time of local rice in February 2023. With the imported rice, BULOG started 2023 with a total of around 800,000 MT of carryover stocks.

For 2023, with less-than-ideal levels of beginning stocks held by BULOG, continued assignment for SPHP to BULOG, and high prices of paddy at farmer's level that will make BULOG find difficulties to achieve the domestic procurement target, the GOI already gave the signal to authorize BULOG to import another 500,000 MT. However, the timeline for importing remains unclear.

The private sector may also import rice, but only that which is considered specialty rice (i.e. rice for diabetics, glutinous rice, 100 percent broken rice, basmati rice). In 2022/23 rice imports are estimated at 750,000 MT, an increase of 15.4 percent from 650,000 MMT imported in 2021/22 mainly due to imports by BULOG and expected increased demand from mall restaurants and middle eastern restaurants, which are currently trending in the country. In line with forecast rice production increases, 2023/24 imports of rice are forecast to marginally decrease to 500,000 MT.

In 2021/22, Indonesia imported rice from India (26 percent), Singapore (18 percent), Malaysia (17 percent), and Thailand (13 percent).

## Stocks

In line with estimated lower production, 2022/23 ending stocks are estimated to decline by 16.0 percent to 2.360 MMT of milled rice equivalent. Other than stocks at BULOG, rice mills and households held a total of 1.56 MMT at the end of 2020/21. Ending stock is estimated to further declined to 2.11 MMT of milled rice equivalent in 2023/24 due to lower imports.

## SECTION II. PSD TABLES

**Table 8. PSD: WHEAT**

Wheat	2021/2022		2022/2023		2023/2024	
	Jul 2021		Jul 2022		Jul 2023	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Market Begin Year						
Indonesia						
Area Harvested	0	0	0	0	0	0
Beginning Stocks	1275	1275	1658	1658	0	1278
Production	0	0	0	0	0	0
MY Imports	11229	11229	11000	10700	0	11000
TY Imports	11229	11229	11000	10700	0	11000
TY Imp. from U.S.	0	0	0	0	0	0
Total Supply	12504	12504	12658	12358	0	12278
MY Exports	346	346	350	380	0	385
TY Exports	346	346	350	380	0	385
Feed and Residual	1700	1700	2000	1700	0	1700
FSI Consumption	8800	8800	8900	9000	0	9100
Total Consumption	10500	10500	10900	10700	0	10800
Ending Stocks	1658	1658	1408	1278	0	1093
Total Distribution	12504	12504	12558	12358	0	12278
Yield	0	0	0	0	0	0

(1000 HA) ,(1000 MT) ,(MT/HA)						

**Note:** Figures in the "New Post" columns are not USDA Official figures.

**Table 9. PSD: CORN**

Corn Market Begin Year	2021/2022		2022/2023		2023/2024	
	Oct 2021		Oct 2022		Oct 2023	
Indonesia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	3900	3900	3950	3950	0	4000
Beginning Stocks	1345	1345	1402	1402	0	1402
Production	12700	12700	12900	12900	0	13100
MY Imports	1165	1165	900	1200	0	1400
TY Imports	1165	1165	900	1200	0	1400
TY Imp. from U.S.	67	67	0	75	0	100
Total Supply	15210	15210	15202	15502	0	15902
MY Exports	8	8	200	200	0	250
TY Exports	8	8	200	200	0	250
Feed and Residual	9600	9600	9500	9600	0	9800
FSI Consumption	4200	4200	4300	4300	0	4400
Total Consumption	13800	13800	13800	13900	0	14200
Ending Stocks	1402	1402	1202	1402	0	1452
Total Distribution	15210	15210	15202	15502	0	15902
Yield	3.2564	3.2564	3.2658	3.2658	0	3.275
(1000 HA) ,(1000 MT) ,(MT/HA)						

**Note:** Figures in the "New Post" columns are not USDA Official figures

**Table 10. PSD: RICE, MILLED**

Rice, Milled	2021/2022		2022/2023		2023/2024	
Market Begin Year	Jan 2022		Jan 2023		Jan 202	
Indonesia	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
<b>Area Harvested</b>	11600	11600	11650	11550	0	11600
<b>Beginning Stocks</b>	3060	3060	2810	2810	0	2360
<b>Milled Production</b>	34400	34400	34600	34000	0	34450
<b>Rough Production</b>	54173	54173	54488	53543	0	54252
<b>Milling Rate (.9999)</b>	6350	6350	6350	6350	0	6350
<b>MY Imports</b>	650	650	750	750	0	500
<b>TY Imports</b>	650	650	750	750	0	500
<b>TY Imp. from U.S.</b>	0	0	0	0	0	0
<b>Total Supply</b>	38110	38110	38160	37560	0	37310
<b>MY Exports</b>	0	0	0	0	0	0
<b>TY Exports</b>	0	0	0	0	0	0
<b>Consumption and Residual</b>	35300	35300	35200	35200	0	35200
<b>Ending Stocks</b>	2810	2810	2960	2360	0	2110
<b>Total Distribution</b>	38110	38110	38160	37560	0	37310
<b>Yield (Rough)</b>	4.6701	4.6701	4.6771	4.6358	0	4.6769
(1000 HA) ,(1000 MT) ,(MT/HA)						

**Note:** Figures in the "New Post" columns are not USDA Official figures

**Table 11. Harmonized Tariff Nomenclature**

No.	HS Code	Description	Import Duty	
			New	Old
1.	1001	Wheat and Meslin		
		- Durum wheat		
2.	1001.11.00	-- Seed	0.0	0.0
3.	1001.19.00	-- Other	0.0	0.0
		- Other		
4.	1001.91.00	-- Seed	0.0	0.0
5.	1001.99	-- Other		
		---Fit for human consumption		
6.	1001.99.11	---- Meslin	5.0	5.0
7.	1001.99.12	---- Wheat grain without husk	0.0	0.0
8.	1001.99.19	---- Other	0.0	0.0
		--- Other		
9.	1001.99.91	----Meslin	5.0	5.0
10.	1001.99.99	---- Other	5.0	5.0
	1005	Maize		
11.	1005.10.00	- Seed	0.0	0.0
	1005.90	- Other		
12.	1005.90.10	-- Popcorn	5.0	5.0
13.	1005.90.90	--Other	5.0	5.0
	1006	Rice		
	1006.10	- Rice in the husk		
14.	1006.10.10	-- Suitable for sowing	IDR 450/kg	IDR 450/kg

	1006.10.90	-- Other		
	1006.20	- Husked (brown) rice		
15.	1006.20.10	-- Thai Hom Mali	IDR 450/kg	IDR 450/kg
16.	1006.20.90	-- Other	IDR 450/kg	IDR 450/kg
	1006.30	- Semi-milled or wholly milled rice, whether or not polished or glazed:		
17.	1006.30.30	--Glutinous rice	IDR 450/kg	IDR 450/kg
18.	1006.30.40	-- Thai Hom Mali	IDR 450/kg	IDR 450/kg
		-- Other		
19.	1006.30.91	--- Parboiled rice	IDR 450/kg	IDR 450/kg
20.	1006.30.99	--- Other	IDR 450/kg	IDR 450/kg
	1006.40	- Broken rice		
21.	1006.40.10	-- Of a kind used for animal feed	IDR 450/kg	IDR 450/kg
22.	1006.40.90	-- Other	IDR 450/kg	IDR 450/kg
	1101	Wheat or meslin flour		
		- Wheat flour		
23.	1101.00.11	-- Fortified	10.0	5.0
24.	1101.00.19	-- Other	5.0	5.0
25.	1101.00.20	- Meslin Flour	5.0	5.0
	1103	Cereal, groats, meal, and pellets		
		- Groats and meals		
26.	1103.11.00	-- Of wheat	5.0	5.0
27.	1103.13.00	-- Of maize	5.0	5.0

	2303	Residues of starch manufacture and similar residues, beet pulp, bagasse, and other waste of sugar manufacture, brewing or distilling dregs and waste, whether or not in the form of pellets.		
28.	2303.30.00	- Brewing or distilling dregs and waste	5.0	5.0

Source: Ministry of Finance

**Table 12. Exchange Rate**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	13,343	13,347	13,321	13,327	13,321	13,319	13,323	13,351	13,492	13,572	13,514	13,548
2018	13,413	13,707	13,756	13,877	13,951	14,404	14,413	14,711	14,929	15,227	14,339	14,481
2019	14,072	14,062	14,244	14,268	14,362	14,141	13,913	14,237	14,174	14,008	14,102	13,901
2020	13,662	14,234	16,367	15,157	14,733	14,302	14,653	14,554	14,918	14,690	14,187	14,105
2021	14,084	14,229	14,459	14,453	14,292	14,452	14,548	14,306	14,321	14,171	14,320	14,278
2022	14,392	14,369	14,306	14,480	14,592	14,848	14,990	14,853	15,232	15,596	15,668	15,619
2023	14,992	15,240	15,418									

Source: Bank of Indonesia

**Note:** Exchange rate is IDR 15,418/USD 1, as of March 16, 2023

**Attachments:**

No Attachments