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Prepared By:

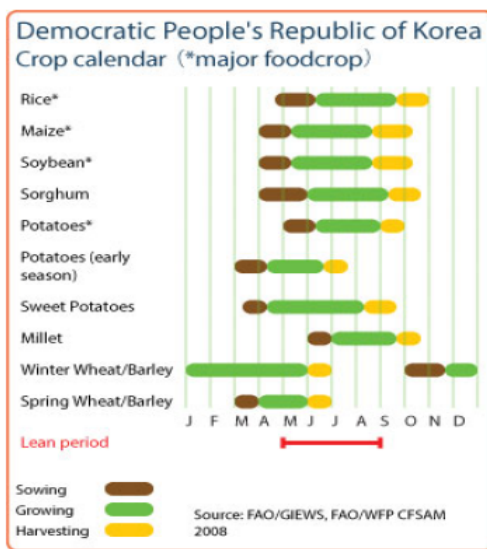
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Report Highlights:

In MY 2018/19, total production of grain and other crops (grain-equivalent basis for potatoes) dropped 12 percent from the previous marketing year to an estimated 4.9 million metric tons (equivalent to 4.17 million metric tons in milled basis for rice, and cereal equivalent basis for soybeans). The production decrease was driven by prolonged dry spells, abnormally high temperatures, floods, and limited supplies of agricultural inputs. Rice production declined to 2.38 million metric tons on a paddy basis (1.4 MMT, milled), down 12 percent from the previous year. Meanwhile, corn production declined to 1.9 million metric tons, down 15 percent due to lower acreage in tandem with lower yields than the previous year. Target consumption of grains and other crops on a grain equivalent basis for MY 2018/19 is estimated at 5.76 million metric tons. Imports and food aid for MY 2018/19 are forecast around 400,000 metric tons, coming almost exclusively from China.

PRODUCTION

On May 2019 the World Food Program (WFP) released data covering staple food production in the Democratic People's Republic of Korea (DPRK) for marketing year (MY) 2018/19 (November/October). This data was based on official fall harvest estimates for calendar year 2018 and early 2019 season crop production estimates by the DPRK Ministry of Agriculture (MoA), but 2018 crop production estimates of hillside/sloping lands and kitchen gardens (grown in upland areas) was excluded. DPRK food production is generally managed by the government on state-owned property. However, food production on sloping land and household gardens is managed by individual citizens looking to supplement their incomes and nutrition.



In MY 2018/19, total production of grain and other crops (grain-equivalent basis for potatoes) reached an estimated 4.9 million metric tons (equivalent to 4.17 million metric tons in milled basis for rice, and cereal equivalent basis for soybeans), down 12 percent from the previous marketing year. Production was impacted by low rainfall, abnormally high temperatures, and flooding, exacerbated by limited supplies of agricultural inputs (see Table 1).

Rainfall from mid-April through June 2018 (the planting period of the main cereal crops) was generally favorable or slightly above average throughout most of the country, benefiting planting activities and early development of the main season crops. However, prolonged dry spells and abnormally high temperatures (up to 40 degrees Celsius) were reported from mid-July to mid-August. In the main cropping area drought and the heatwave affected the main season paddy, corn and soybean crops during the critical pollination stages, particularly in the province of South and North Hwanghae, South and North Hamgyong and South Pyongan and southern parts of North Pyongan. Accordingly, total main crop planting area declined by three percent from the previous year, five percent lower than the five-year average.

From late August to early September, above-average rains restored soil moisture and had a positive impact on vegetation conditions, but heavy rains (up to 75 mm above the long-term average) triggered flash floods in parts of the main crop producing areas of North and South Hwanghae provinces, causing damage to crops just before harvest. Overall, the performance of the 2018 rainy season was unfavorable, leading to a significant reduction in yields compared to 2017.

The 2018/19 summer harvest crop planted in November 2018, and precipitation was below average over most of the cropping areas of the country. Snowfall was exceptionally low in terms of both the number of snow events and quantity of snowfall. The very limited snow coverage and early winter season increased exposure of wheat and barley to freezing temperatures, with a resulting loss of germinated crops by winterkill. The negative impact of low snowfall during winter months continued into March-April by reducing soil moisture that normally comes from snow melting, with negative consequences on already weak crops. The initial estimate of summer crop production is 307,000 MT, 24 percent lower than the previous year (see Table 1).

In 2014, the DPRK initiated a reforestation program that resulted in a gradual decline in production from sloping lands, and since 2017 the area planted with crops on sloping lands is estimated to be negligible. Crop production outside of government management used to include approximately 220,000 MT of corn produced from sloping land (terraced upland) and 75,000 MT from household gardens (50,000 tons of potatoes, cereal equivalent and 25,000 MT of corn) prior to MY 2016/17.

Household gardens serve as a critical food and/or cash source where households can plant, consume and/or sell vegetables and fruits, and raise livestock such as poultry, rabbits, pigs, or goats. The most common vegetables are cabbage (90 percent), spinach (60 -70 percent) and radish (50-60 percent) according to the survey conducted by WFP in November 2018 and April 2019. Having a kitchen garden seems to be positively associated with increased food consumption.

In MY 2017/18, total production of grain and other crops (grain-equivalent basis for potatoes) was revised down to 5.5 million metric tons (4.7 million metric tons in milled basis for rice, and cereal equivalent basis for soybeans), down four percent from the initial estimate of 5.74 million metric tons (5.0 million metric tons in milled basis for rice, and cereal equivalent basis for soybeans) due to excluding production of cereal and cereal equivalent from sloping land and household gardens.

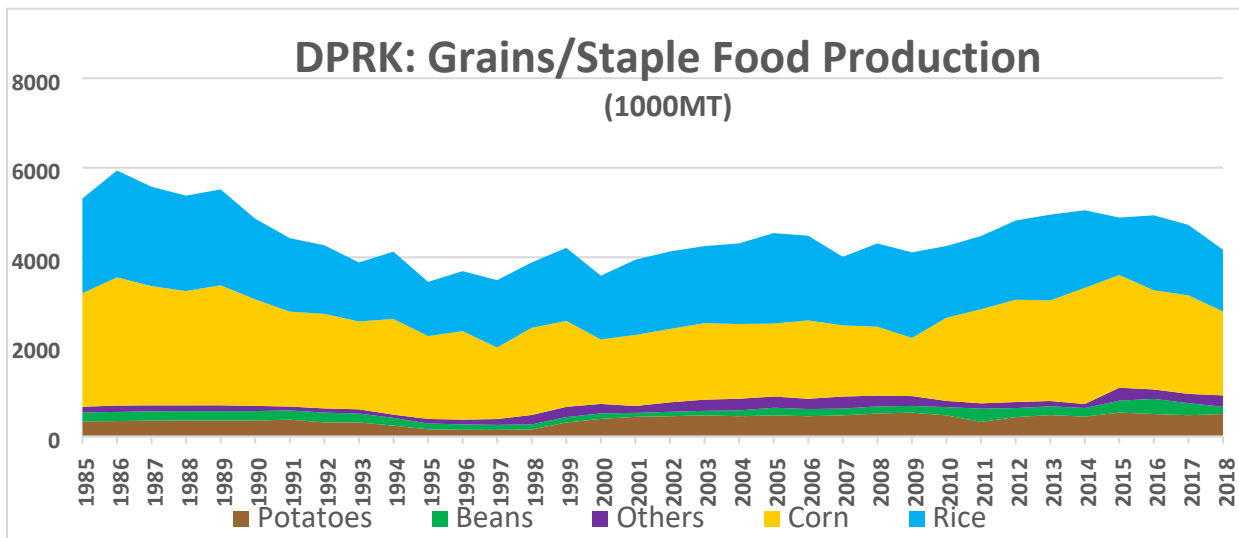


Table 1

DPRK: Food Crops Production (1,000 Hectare, 1,000 Metric Tons)						
Marketing Year	MY 2016/2017 (November/October)		MY 2017/2018 (November/October)		MY 2018/2019 ^{c/} (November/October)	
Commodity	Area	Production	Area	Production	Area	Production
Rice, Paddy	469	2,536	475	2,383	471	2,088
Rice, Milled	469	1,674	475	1,573	471	1,378
Corn	545	2,195	510	2,200	508	1,876
Others (sorghum, millet and buckwheat)	72	156	65	151	64	197
Potatoes ^{a/}	40	222	30	148	45	249
Soybeans	175	282	150	223	107	135
Soybeans, grain equivalent	175	338	150	268	107	162
Fall Harvest Sub Total	1,301	5,444	1,230	5,105	1,195	4,545
Wheat and Barley	45	55	50	83	na	57
Potatoes ^{a/}	127	277	130	321	na	250
Summer Harvest Sub Total	172	332	180	404	na	307
National Total	1,473	5,723	1,410	5,509	na	4,852
Sloping Land ^{c/}	50	20	0	0	0	0
Household Gardens ^{d/}	na	na	na	na	na	na
Grand Total	1,523	5,743	1,410	5,509	na	4,852

Grand Total ^{f/}	1,523	4,937	1,410	4,744	na	4,169
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Source: WFP/FAO

a/ On a 4:1 cereal equivalent basis

b/ Projection to harvest in summer 2018

c/ Corn grown in the upland areas; the government initiated a reforestation program that resulted in a gradual decline in production since 2014

d/ Composed of 50,000 MT of potatoes and 25,000 MT of corn

e/ FAS/Seoul estimates based on National Coordination Committee (NCC), DPRK Ministry of Foreign Affairs; compiled by Bir Mandal, FAO

f/ milled rice and grain equivalent basis for soybeans

Table 2

DPRK: Comparison between Projection and Production of Summer Harvest Crops (1,000 Metric Ton, November/October)						
Marketing Year	MY 2016/17		MY 2017/18		MY 2018/19	
Commodity	Projection	Production	Projection	Production	Projection	Production
Wheat and Barley	60	55	71	83	57	na
Potatoes	250	277	325	321	250	na
Total	310	332	396	404	307	na
Production result (%)	107		102		na	

Source: WFP/FAO

Projections are made during the fall season before planting. Production numbers are made available after harvesting in the spring.

Table 3

DPRK: Grain/Staple Food Production in Cereal Equivalent (1,000 MT, milled, November/October)							
Marketing Year)	Grand Total	Soybeans ^{5/}	Potatoes ^{1/}	Grains			
				Total	Rice ^{2/}	Corn ^{3/}	Others ^{4/}
2010/11	4,251	185	469	3,597	1,601	1,858	138
2011/12	4,475	294	324	3,857	1,635	2,102	120
2012/13	4,821	202	430	4,189	1,769	2,285	135
2013/14	4,952	196	475	4,281	1,915	2,247	119
2014/15	5,050	192	441	4,417	1,733	2,594	90
2015/16	4,887	266	532	4,089	1,284	2,516	289

2016/17	4,937	338	499	4,100	1,674	2,215	211
2017/18 (A)	4,722	268	473	3,981	1,573	2,200	208
2018/19 (B)	4,169	162	499	3,508	1,378	1,876	254
Change (B-A)	-553	-106	+26	-473	-195	-324	+46

Source: WFP/FAO

1/ Potatoes are measured on a 4:1 cereal equivalent basis

2/ milled basis with 66 percent milling rate of paddy

3/ includes corn production from sloping land and household gardens

4/ Other grains such as wheat, barley, sorghum and millet

5/ cereal equivalent using a factor of 1.2

Inputs

Irrigation: The persistent country-wide drier-than-normal conditions in the 2018/19 cropping season resulted in low levels of water in irrigation reservoirs. Official data indicates that water availability in irrigation reservoirs during the 2018 main season was well below the five-year average. Most farmers reported that they also faced difficulties in pumping water to irrigate fields due to lack of fuel and erratic supply of electricity.

Fertilizer: While the supply of nitrogenous fertilizer was generally adequate, significant shortages of phosphate and potash have been reported. This is consistent with official data from government sources, which indicate that the 2018 national supply of phosphate at 4,174 MT and potash at 2,915 MT were 70 percent and 50 percent below the five-year averages, respectively. To reduce the fertilizer shortfall, some farmers resorted to producing self-made fertilizer, which normally includes (a composted) mix of crop residuals, used straw, and manure.

Table 4

DPRK: Fertilizer Supply Status for 2008-2018 (Metric Tons)					
Year	Domestic Production	Import/ Assistance	Carried- Over Stocks	Application	Ending Stocks
2008	274,640	181,157	1,400	456,297	900
2009	181,266	266,817	900	445,983	3,000

2010	198,066	299,250	3,000	498,816	1,500
2011	199,357	548,108	1,500	745,965	3,000
2012	243,041	483,586	3,000	726,627	3,000
2013	na	na	na	707,199	na
2014	na	na	na	749,670	na
2015	na	na	na	622,606	na
2016	na	na	na	850,012	na
2017	na	na	na	612,136	na
2018	na	na	na	631,175	na

Source: North Korean Ministry of Agriculture, WFP/FAO Report

Table 5

DPRK: Fertilizer Imports from China for 2008-2018 (Metric Tons)					
Year	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Total
2008	7,098	14,390	6,442	3,703	31,633
2009	27,553	31,420	46,534	480	105,987
2010	40,677	58,911	183,444	4,271	287,303
2011	25,467	164,979	164,317	324	355,087
2012	6,531	207,343	38,278	638	252,790
2013	28,725	110,436	46,408	21,765	207,334
2014	69,085	40,446	6,007	26,510	142,048
2015	16,684	30,978	22,235	1,084	70,981
2016	148,654	3,600	5,219	789	158,262
2017	64,218	58,104	19,529	824	142,675
2018	30,965	137,645	63,934	29,475	262,019

Source: Korea International Trade Association (KITA), Trade Data Monitor, LLC (TDM)

Rice Production

Rice production declined to 2.38 million metric tons on a paddy basis (1.4 MMT, milled), down 12 percent from the previous year. Yields of both main and early season crops were particularly low in the 2018/19 cropping season. Key producing provinces, namely North and South Hwanghae, North and South Pyongan, and South and North Hamgyong (collectively known as the country's "Cereal Bowl") registered strong yield reductions compared with the five-year average. The main driver for the lower yields was the prolonged dry period from mid-July to mid-August in the main growing areas of the country, which damaged crops during the critical pollination stage. The effects of the dry weather conditions were compounded by reduced irrigation water supplies caused by shortage of electricity and fuel. In addition, shortages of agricultural inputs, including fertilizers and crop protection materials, also affected crop productivity.

The average yield of paddy in 2018 is set at 4.4 MT/hectare (Table 6), about 12 percent lower than the 2017 level of 5 MT/hectare (Table 7). All provinces registered severe paddy yield reductions, while crops in Ryangang and North Hamgyong provinces were less affected by the dry weather conditions and official estimates show an increase in yields compared with 2017.

Table 6

DPRK: 2018 Paddy Rice Crop Production			
Province	Planted Area (HA)	Yield (Paddy, Kg/HA)	Production (MT, Paddy)
Pyongyang	11,561	5,700	65,900
South Pyongan	69,490	4,900	340,500
North Pyongan	102,256	4,300	439,700
Chagang	6,271	4,800	30,100
South Hwanghae	133,190	4,200	559,400
North Hwanghae	30,295	4,400	133,300
Kangwon	16,200	4,000	64,800
South Hamgyong	53,568	4,400	235,700
North Hamgyong	27,048	4,200	113,600
Ryangyang	1,382	3,400	4,700
Nampo	21,277	4,700	100,000
Total	471,000	4,432	2,087,600

Source: Ministry of Agriculture (MoA, DPRK)

Table 7

DPRK: 2017 Paddy Rice Crop Production			
Province	Planted Area (HA)	Yield (Paddy, Kg/HA)	Production (MT, Paddy)
Pyongyang	11,681	6,506	76,001
South Pyongan	69,623	4,977	346,529
North Pyongan	103,652	5,087	527,302
Chagang	6,305	4,905	30,929
South Hwanghae	130,182	5,262	684,971
North Hwanghae	32,803	4,910	161,079
Kangwon	16,964	4,161	70,583
South Hamgyong	55,871	4,948	276,437
North Hamgyong	25,491	4,026	102,616
Ryangyang	1,399	2,798	3,914
Nampo	21,187	4,858	102,916
Total	475,158	5,016	2,383,277

Source: Ministry of Agriculture (MoA, DPRK)

Corn Production

In 2018 corn production declined to 1.9 million metric tons, down 15 percent due to lower acreage in tandem with lower yields than the previous year. The area planted with corn in MY 2018/19 decreased slightly to 508,000 hectares from the previous year's level of 510,233 hectares (Table 8 & 9). The average corn yield in 2018 was estimated at 3.7 MT/hectare, showing a decline of 14 percent compared with the previous year's level. Prolonged dry spells and abnormally high temperatures (up to 40 degrees Celsius) were reported from mid-July to mid-August in the main cropping area. Drought and the heatwave affected the corn crop during the critical pollination stages, particularly in the province of South and North Hwanghae, South and North Hamgyong and South Pyongan and southern parts of North Pyongan. Furthermore, cooperative farms reported that maize growth and grain development were affected by a significant shortage of potassium fertilizer.

Table 8

DPRK: 2018 Corn Production			
Province	Planted Area (HA)	Yield (Kg/HA)	Production (MT)
Pyongyang	3,837	4,900	18,800
South Pyongan	55,564	3,900	216,700
North Pyongan	83,756	4,500	376,900
Chagang	33,902	4,100	139,000
South Hwanghae	99,241	2,900	287,800
North Hwanghae	71,821	2,800	201,100
Kangwon	32,488	4,300	139,700
South Hamgyong	49,191	4,700	231,200
North Hamgyong	61,576	3,300	203,200
Ryangyang	10,174	2,300	23,400
Nampo	8,705	4,400	38,300
Total	508,000	3,693	1,876,200

Source: Ministry of Agriculture (MoA, DPRK)

Table 9

DPRK: 2017 Corn Production			
Province	Planted Area (HA)	Yield (Kg/HA)	Production (MT)
Pyongyang	3,733	4,671	17,436
South Pyongan	55,515	4,329	240,319
North Pyongan	81,425	4,402	358,421
Chagang	31,892	3,915	124,847
South Hwanghae	102,744	4,347	446,673
North Hwanghae	76,351	4,262	325,431
Kangwon	33,073	4,041	133,639
South Hamgyong	46,926	5,163	242,295

North Hamgyong	58,848	4,160	244,822
Ryangyang	9,957	2,133	21,238
Nampo	9,759	4,574	44,634
Total	510,223	4,311	2,199,755

Source: Ministry of Agriculture (MoA, DPRK)

Soybean Production

Soybean yields in MY 2018/19 are set at 1.3 MT/hectare, about 15 percent below the previous year's (above-average) level. The output of soybeans is officially estimated at 135,000 MT, the lowest level since 2010, reflecting a decrease both in area harvested and yields.

Table 10

DPRK: 2018 Soybean Production			
Province	Planted Area (HA)	Yield (Kg/HA)	Production (MT)
Pyongyang	1,071	1,400	1,500
South Pyongan	13,692	1,300	17,800
North Pyongan	16,214	1,400	22,700
Chagang	8,214	1,400	11,500
South Hwanghae	19,250	800	15,400
North Hwanghae	9,688	1,600	15,500
Kangwon	8,231	1,300	10,700
South Hamgyong	11,933	1,500	17,900
North Hamgyong	11,333	1,200	13,600
Ryangyang	6,125	800	4,900
Nampo	2,533	1,500	3,800
Total	107,000	1,264	135,300

Source: Ministry of Agriculture (MoA, DPRK)

Table 11

DPRK: 2017 Soybean Production			
Province	Planted Area (HA)	Yield (Kg/HA)	Production (MT)
Pyongyang	1,529	1,700	2,600
South Pyongan	17,400	1,500	26,100
North Pyongan	22,438	1,600	35,900
Chagang	9,111	1,800	16,400
South Hwanghae	25,769	1,300	33,500
North Hwanghae	13,100	2,000	26,200
Kangwon	13,077	1,300	17,000

South Hamgyong	18,471	1,700	31,400
North Hamgyong	16,071	1,400	22,500
Ryangyang	8,000	700	5,600
Nampo	3,647	1,700	6,200
Total	150,000	1,489	223,300

Source: Ministry of Agriculture (MoA, DPRK)

Other Crop Production

In contrast to the production area and yield declines for major grains and soybeans, other crops which are more resistant to dry weather, such as sorghum, millet, buckwheat, and potatoes showed some improvement. The average yields of other cereals, including sorghum, millet, and buckwheat, is officially estimated to have increased by 13 percent compared with the previous year's level and were also well above average. The yield of main season potatoes is officially estimated at 5.6 MT/hectare, 14 percent above the 2017 level of 4.9 MT/hectare.

The output of main season potatoes is estimated to have nearly doubled from the previous year's reduced level and was well above the five-year average. For early season crops unfavorable weather conditions from October to April, mainly lack of snow and exposure of newly germinated crops to freezing temperatures, along with reported shortages of irrigation water and other agricultural inputs, had a negative impact. Therefore, the official production estimate for the 2018/19 early season output was lowered (consisting of wheat and barley and potato crops) by 24 percent from the previous year. Consequently, the production of wheat and barley is estimated at 57,000 MT and potato production is estimated at 250,000 MT (Table 1), 32 and 22 percent below the 2017/18 above-average level, respectively.

2019 Crop Perspectives:

The Rural Development Administration (RDA) of the ROK released the analytical perspectives of the 2019 DPRK crop forecast based on weather, disease outbreaks, and agricultural input information they collected in the DPRK in tandem with domestic and overseas organizations who have analyzed DPRK crop status using remote sensing. Based on the crop status for 2019, RDA projects a two percent increase from the previous year, up 90,000 MT.

**DPRK: 2019 Crop Production Forecast
(1000ha, 1,000MT)**

Items	Total	Rice, milled	Corn	Potatoes	Wheat and Barley	Soybeans	Others
Area	1,869	571	711	343	85	131	28
Yield (Kg/ha)	na	3,920	2,140	1,670	1,760	1,070	710
2019 Production(A)	4,640	2,240	1,520	570	150	140	20
2018 Production(B)	4,550	2,200	1500	540	150	140	20
(A)-(B)	90	40	20	30	0	0	0
Change (%)	2	1.8	1.3	5.6	0	0	0

Source: Rural Development Administration of ROK

CONSUMPTION

For MY 2018/19 (Nov/Oct), FAS/Seoul estimates that total DPRK target utilization of grain and other crops on a grain-equivalent basis was 5.76 million tons, about four percent higher than the previous year, based on data from the FAO/WFP GIEWS' Special Alert Report released in May 2019.

Converting total domestic crop production into grain equivalent yields approximately 4.2 million metric tons, which consists of 1.4 million metric tons of milled rice, 1.9 million metric tons of corn, 0.9 million tons of other crops such as potatoes (cereal equivalent), soybeans (cereal equivalent) and other grains (wheat, barley, millet etc.).

Therefore, the estimated gap between production and utilization is 1.6 million metric tons. Assuming that the DPRK imports 400,000 metric tons during this marketing year, the unmet deficit of food grains is forecast at 1.2 million metric tons (see Table 13 & 15). This shortage is greater than it has been in recent marketing years. Despite this significant shortage, food prices in the DPRK have reportedly remained stable even while a more market-oriented economic system appears to be taking hold in the country. The stability of prices along with the difficulty of estimating true trade across the DPRK-China border leads FAS/Seoul to conclude that the grains shortage reported here is being tempered by the movement of food and money throughout the country.

The FAO/WFP JOINT RAPID FOOD SECURITY ASSESSMENT released in May 2019 containing the national food crop supply/demand balance for marketing year 2018/19 (November/October) is

summarized in Table 10. It considers rice separately (in milled terms), maize, wheat, barley, other minor cereals, plus soybeans and potatoes (in cereal equivalent). In drawing up the national food crop balance, the following assumptions were made:

- Total food production (in milled terms and cereal equivalent) is estimated at about 4.2 million MT, including a forecast of 307,000 MT of early crops (wheat, barley and potatoes) which should have been harvested by mid-June 2019.
- Food use is estimated at 4.5 million MT, using the UN-projected 2019 mid-year population of 25.7 million people and a per capita average consumption of about 175 kg of cereals, potatoes and soybeans. The adopted consumption rate corresponds to an average daily intake of about 480 grams per capita and is consistent with the apparent per capita national consumption of the previous five years based on data from cereal balance sheets maintained by FAO's Global Information and Early Warning System on Food and Agriculture (GIEWS). The individual items are adjusted to match with the estimated availability during the current marketing year and to maintain a zero balance of non-traded commodities such as other cereals and potatoes. Per-capita consumption is comprised of 63 kg rice (milled), 82 kg of maize, 8.5 kg of wheat/barley, 6 kg of other cereals, plus 10.5 kg of potatoes and 5.4 kg of soybeans (both in cereal equivalent).
- No changes in the food stock levels are foreseen during the 2018/19 marketing year (November/October).
- Feed use is officially forecast at 157,000 MT.
- Seed requirements for the 2019/20 seasons are estimated at about 214,000 MT on the basis of the recommended seed rates used in the country allowing planting of about 1.4 million hectares as in 2018/19. The following seed rates have been used: 97.5 kg/ha for paddy, 51 kg/ha for maize, 200 kg/ha for wheat, barley and other cereals, 500 kg/ha for potatoes and 60 kg/ha for soybeans.
- Post-harvest losses, from harvesting to processing and during storage, are estimated at 871,000 MT, with rates ranging from 20-22 percent for cereals, 30 percent for potatoes and 10 percent for soybeans. Losses for cereals are expected to be higher than usual as shortages of fuel and electricity as well as spare parts for machines did not allow farmers to transport and process crops(threshing) in a timely manner. Storage losses for potatoes are likely to increase as ventilation is severely constrained by the erratic supply of electricity.
- The total cereal import requirements in the 2018/19 marketing year (November/October) are estimated at 1.59 million MT. With commercial imports officially planned at 200,000 MT and food assistance (already received or pledged) set at about 21,200 MT, the uncovered deficit for the full marketing year is estimated at an elevated level of about 1.36 million MT.

Table 13

DPRK: Food Balance Sheet (November/October, 1,000 MT)				
Marketing Year	MY2015/16	MY2016/17	MY2017/18	MY2018/19
Production, Total (A)	4,887	4,937	4,722	4,170
Rice ^{1/}	1,284	1,674	1,573	1,378
Corn ^{2/}	2,516	2,215	2,200	1,876
Wheat/Barley	133	55	71	57
Other Grains	156	156	137	195
Potatoes ^{3/}	532	433	473	499
Soybeans ^{4/}	266	338	268	162
Target Utilization, Total (B)	5,495	5,609	5,524	5,755
-Food	4,383	4,426	4,427	4,513
-Feed	120	130	130	157
-Seed	238	253	130	214
-Loss	754	800	737	871
Balance (A-B)	-608	-672	-802	-1,585
Import	300^{5/}	200^{5/}	150^{5/}	421^{6/}
Shortage	-308	-472	-652	-1,164

Source: FAS/Seoul based on WFP/FAO GIEWS

1/ Milled basis with 66 percent of paddy to rice milling rate

2/ includes corn production from sloping land and household gardens till MY 2016/17

3/ Potatoes are measured on a 4:1 cereal equivalent basis

4/ cereal equivalent using a factor of 1.2

5/ estimated commercial imports including food aid

6/ FAS Seoul estimate based on commercial imports including food aid

Table 14

DPRK: Food Balance Sheet for MY 2018/19 (November/October, 1,000 MT)							
Commodity	Rice ^{1/}	Corn	Wheat/ Barley	Others	Potatoes ^{2/}	Soybean s ^{3/}	Total
Total Supply (A)	1,378	1,876	57	198	499	162	4,170
Fall Harvest	1,378	1,876	-	198	249	162	3,863
Summer Harvest	-	-	57	-	250	-	307
Slope Farm (Upland)	-	0	-	-	-	-	0
Garden Farm (Upland)	-	na	-	-	na	-	na
Total Use (B)	1,942	2,710	244	198	499	162	5,755
Food	1,621	2,110	219	156	269	139	4,513

Feed	-	137	-	-	20	-	157
Seed	46	51	13	13	85	6	214
Loss	276	413	12	30	125	16	871
Stock	0	0	0	0	0	0	0
Deficiency (A-B)	564	834	187	0	0	0	1,585
Imports ^{4/}	-	-	-	-	-	-	400
Food Assistance ^{5/}							21
Net Deficiency	-	-	-	-	-	-	1,164

Source: FAS/Seoul based on WFP/FAO GIEWS

1/ Applicable paddy to rice milling rate at 66 percent

2/ Cereal equivalent at 25 percent

3/ Cereal equivalent at 120 percent

4/ FAS/Seoul Estimate

5/ Received or pledged

TRADE

Imports & Humanitarian Aid

In 2019 (Jan-Oct), the DPRK is projected to have imported 374,000 metric tons of food grains and grain products via commercial imports and food aid. Commercial imports totaled 353,000 metric tons, consisting mainly of wheat flour, corn, rice, and soybeans from China and Russia. This number is significantly higher than the previous year due to greater imports of grains and wheat flour from China since 2018. Food aid was primarily given as multilateral food assistance from WFP/FAO (see Table 15) and totaled 21,000 metric tons based on contribution data. Total cereal import requirements are estimated at an above-average level because the total gap between supply and demand in MY 2018/19 was wider than the previous year.

In 2018, total reported food grain imports including food aid were around 273,000 metric tons, which included 21,000 metric tons of food aid conducted by the WFP. This number was 30 percent higher than the previous year due to greater imports of grains and wheat flour from China (Tables 15 & 16).

The sluggish trend in both food aid and commercial imports may have been caused inadvertently by tightening UN sanctions policies. While commercial food trade and humanitarian aid are not restricted by current sanctions, humanitarian agencies have reported that banks are reluctant to make money

transfers to North Korea, and shipments of humanitarian goods are sometimes blocked. The perception that these types of difficulties are inevitable has also prevented would-be donors from contributing.

Despite these constraints, in recent years the DPRK has increased marketization of agricultural products and developed a distribution industry. These changes have resulted in a more competitive market with relatively stable prices. A range of products can now move relatively unimpeded from the border region to other areas throughout the country. These market forces, combined with high demand for food coming from China that may not be reflected in official trade numbers, suggest that the food deficit in the DPRK may not be as significant as the numbers here imply.

Table 15

DPRK: Estimated Grain ^{1/} Imports by Origin											
(Unit: 1,000 Metric Tons, Calendar Year)											
Commercial Imports								Food Aid			
Year	China	Russia	USA	Ukraine	Australia	Brazil	Sub Total	Others ^{2/}	Korea		Grand Total
									Gov	Private	
2009	204	2	0	0	0	15	221	31	0	0	252
2010	314	0	7	0	0	0	321	37	0	0	358
2011	376	60	0	0	21	0	457	408	0	0	865
2012	282	1	0	0	0	0	283	400	0	0	683
2013	298	0	0	12	0	27	337	102	0	0	439
2014	161	46	0	28	0	0	235	65	0	0	300
2015	48	8	0	44	0	0	100	28	0	0	128
2016	53	9	0	35	0	0	97	27	0	0	124
2017	169	8	0	9	0	0	186	24	0	0	210
2018	239	12	0	1	0	0	252	21	0	0	273
2019 ^{3/}	337 ^{4/}	16	0	0	0	0	353	21 ^{5/}	0	0	374

Source: Trade Data Monitor, LLC (TDM); Data based on export data from supplying countries; WFP/FAO; KOTRA

1/ includes wheat flour and pulses.

2/ 'Others' includes grains supplied through international organizations such as WFP on marketing year (November/October) basis.

3/ January – September

4/ January-October

5/ January-October, WFP estimate based on the contribution data

Table 16

DPRK: Food Grain and Oilseed Imports from China (Calendar year, Metric Ton)						
Commodity	2014	2015	2016	2017	2018	2019 ^{2/}
Wheat	0	0	0	0	0	0
Rye	0	0	0	0	0	0
Barley	1	0	0	0	1,979	0
Oats	0	0	0	0	0	0
Corn	15,658	9,891	3,125	50,878	4,344	13,623
Rice	63,884	17,138	41,879	36,408	43,539	144,783
Sorghum	24	0	0	0	0	0
Others ^{1/}	720	120	0	0	0	292
Subtotal, Grains	80,287	27,149	45,004	87,286	49,862	158,698
Wheat Flour	78,967	14,437	6,958	81,654	187,802	177,178
Soybeans	2,019	6,015	614	91	1,409	642
Grand Total	161,273	47,601	52,575	169,031	239,073	337,122

Source: Trade Data Monitor, LLC (TDM); China Customs or KITA;

1/ buckwheat, millets etc.

2/ January-October

Appendix

Table 17

DPRK: Grain/Staple Food Production							
(1,000 MT)							
Crop Year	Grand Total	Beans ^{1/ 5/}	Potatoes ^{1/}	Grains			
				Total	Rice ^{2/}	Corn ^{3/}	Others ^{4/}
1985	5,311	535		4,776	2,113	2,536	127
1986	5,939	545		5,394	2,387	2,864	143
1987	5,575	560		4,015	2,219	2,663	133
1988	5,376	565		4,811	2,129	2,554	128
1989	5,516	565		4,951	2,142	2,680	129
1990	4,861	565		4,296	1,800	2,380	116
1991	4,427	207	373	3,847	1,641	2,120	86
1992	4,268	218	312	3,738	1,531	2,112	95
1993	3,884	197	312	3,375	1,317	1,963	95
1994	4,125	173	240	3,712	1,502	2,138	72
1995	3,451	129	158	3,164	1,211	1,851	102
1996	3,690	121	147	3,420	1,340	1,976	106
1997	3,489	112	145	3,232	1,503	1,599	130
1998	3,886	113	154	3,619	1,461	1,947	211
1999	4,220	120	310	3,780	1,630	1,920	230
2000	3,590	123	390	3,090	1,425	1,440	212
2001	3,946	88	437	3,421	1,680	1,588	153
2002	4,130	100	450	3,580	1,730	1,640	210

2003	4,250	100	470	3,680	1,720	1,710	250
2004	4,310	130	450	3,730	1,800	1,670	260
2005	4,540	170	470	3,900	2,020	1,630	250
2006	4,480	160	450	3,870	1,890	1,750	230
2007	4,010	150	470	3,390	1,530	1,590	270
2008	4,310	160	510	3,640	1,860	1,540	240
2009	4,110	150	530	3,430	1,910	1,300	220
2010	4,251	185	469	3,597	1,601	1,858	138
2011	4,475	294	324	3,857	1,635	2,102	120
2012	4,821	202	430	4,189	1,769	2,285	135
2013	4,952	196	475	4,281	1,915	2,247	119
2014	5,050	192	441	4,433	1,733	2,594	90
2015	4,887	266	532	4,089	1,284	2,516	289
2016	4,937	338	499	4,100	1,674	2,215	211
2017	4,722	268	473	3,981	1,573	2,200	208
2018	4,169	162	499	3,508	1,378	1,876	254

Source: USDA prior to CY 1990; Ministry of Unification, Rural Development Administration since from CY 1990 to 2009; WFP/FAO since CY 2010

1/ USDA data for CY 1985-1990 is for “millet” but is believed to include potatoes and beans. Potatoes are measured on a 4:1 grain equivalent basis.

2/ Milled basis.

3/ Includes corn production from sloping land and household gardens since CY 2010

4/ Other grains such as wheat, barley, sorghum, millet and buckwheat

5/ Cereal equivalent using a factor of 1.2 since CY 2010

Table 18

DPRK: Rice Acreage, Yield and Production

(Milled)

Crop Year	Acreage (1,000 HA)	Yield (MT/HA)	Production (1,000 MT)
1991	614	2.81	1,641
1992	614	2.68	1,531
1992	614	2.32	1,317
1994	585	2.64	1,502
1995	585	2.07	1,211
1996	580	2.31	1,340
1997	576	2.61	1,503
1998	576	2.54	1,461
1999	580	2.81	1,630
2000	545	2.61	1,425
2001	572	2.94	1,680
2002	576	3.00	1,730
2003	582	2.96	1,720
2004	582	3.09	1,800
2005	584	3.46	2,020
2006	586	3.23	1,890
2007	587	2.60	1,530
2008	587	3.17	1,860
2009	587	3.26	1,910
2010	570	2.77	1,577

2011	571	2.81	1,610
2012	563	3.14	1,769
2013	547	3.55	1,915
2014	525	3.30	1,733
2015	465	2.76	1,284
2016	469	3.57	1,674
2017	475	3.31	1,573
2018	471	2.93	1,378

Source: Ministry of Unification (MOU), Rural Development Administration (RDA) from CY 1991 to 2009; WFO/FAO since CY 2010.

Table 19

DPRK: Corn Acreage, Yield and Production			
Crop Year	Acreage (1,000 HA)	Yield (MT/HA)	Production (1,000 MT)
1991	670	3.16	2,120
1992	660	3.20	2,112
1992	650	3.02	1,963
1994	650	3.29	2,138
1995	650	2.85	1,851
1996	600	3.29	1,976
1997	641	2.49	1,599
1998	629	3.10	1,947
1999	570	3.37	1,920
2000	543	2.65	1,440

2001	543	2.93	1,588
2002	527	3.11	1,639
2003	526	3.25	1,710
2004	526	3.17	1,670
2005	526	3.10	1,630
2006	526	3.33	1,750
2007	526	3.02	1,590
2008	526	2.89	1,540
2009	526	2.48	1,300
2010	503	3.35	1,683
2011	503	3.70	1,857
2012	531	3.80	2,040
2013	527	3.80	2,002
2014	532	4.42	2,349
2015	560	4.09	2,288
2016	545	4.03	2,195
2017	510	4.31	2,200
2018	508	3.69	1,876

Source: Ministry of Unification (MOU), Rural Development Administration (RDA) from CY 1991 to 2009; WFO/FAO since CY 2010, which doesn't include corn production from sloping land and household gardens.

Table 20

DPRK: Estimated Grain ^{1/} Imports by Origin	
(Unit: 1,000 Metric Ton)	
Commercial Imports	Food Aid

Cal. Year	China	Syria	Thailand	Canada	Japan	EU	Brazil	Sub Total	Others ¹	Korea		Grand Total
										Gov	Private	
1991	300	0	90	350	0	0	na	740	550	0	0	1,290
1992	620	0	20	80	0	0	na	720	110	0	0	830
1992	740	0	78	160	0	0	na	978	115	0	0	1,093
1994	305	0	52	0	0	0	na	357	133	0	0	490
1995	153	0	162	0	370	0	na	685	277	151	4	1,117
1996	547	140	30	0	132	115	na	964	301	0	0	1,265
1997	867	34	38	0	0	82	na	1,021	576	0	80	1,677
1998	288	104	0	0	59	20	na	471	579	0	77	1,127
1999	238	61	0	0	0	40	na	339	751	0	9	1,099
2000	283	0	284	0	106	22	na	695	512	0	0	1,207
2001	436	5	0	0	500	0	553	1,494	437	0	0	1,931
2002	219	0	200	0	0	0	52	471	586	358	0	1,415
2003	349	0	95	51	0	10	76	581	304	442	0	1,327
2004	90	0	184	0	0	3	138	415	304	105	0	824
2005	327	0	100	14	0	15	0	456	404	400	0	1,260
2006	79	0	2	0	0	0	111	192	19	90	0	301
2007	136	0	212	1	0	0	18	367	30	161	0	558
2008	119	0	14	0	20	0	0	153	129	0	0	282

Source: Korea Trade-Investment Promotion Agency (KOTRA), and Ministry of Unification (MOU).

1/ Excludes grain flours and pulses.

Note: 'Others' includes grains supplied through international organization such as WFP.

Attachments:

No Attachments.