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GAIN Report

Global Agricultural Information Network

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North Korea Grains Situation in MY 2016 - MY 2017

Report Categories:

Agricultural Situation

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Report Highlights:

Total production of grain and other crops on a grain equivalent basis is estimated at 5.75 million metric tons (5.0 MMT, milled basis for rice and grain equivalent for soybeans) in marketing year (MY) 2017/18, down 4.7 percent from the previous marketing year. In MY 2017/18, rice production is projected at 2.38 million metric tons on a paddy basis (1.6 MMT, milled), down six percent from the previous year. Meanwhile, corn production in MY 2017/18 is estimated to be unchanged from the previous year, at 2.4 million metric tons. Target consumption of grains and other crops on a grain equivalent basis for MY 2017/18 is forecast at 5.6 million metric tons. Finally, imports and food aid for MY 2016/17 were forecast around 200,000 metric tons, coming almost exclusively from China.

General Information:

PRODUCTION

On July 20, 2017 the World Food Program (WFP) released data covering staple food production in the Democratic People's Republic of Korea (DPRK) for marketing year (MY) 2016/17 (November/October). This data was based on official fall harvest estimates for calendar year 2016 and 2017 early season crop production estimates by the DPRK Ministry of Agriculture (MoA) and 2016 crop production estimates of hillside/sloping lands and kitchen gardens (grown in upland areas) by the WFP and the Food and Agriculture Organization of the United Nations (FAO). DPRK food production is generally managed by the government on state-owned property. However, food production in the sloping land and household gardens is managed by individual citizens looking to supplement their incomes.

In MY 2016/17, total production of grain and other crops on a grain-equivalent basis for potatoes reached an estimated 6.03 million metric tons (5.23 million metric tons in milled basis for rice, and cereal equivalent basis for soybeans), up 9.6 percent from the previous marketing year. Rainfall from mid-April through June 2016, the planting period of the main cereal crops season, was average or slightly above average throughout most of the country. However, these rains were not enough to supply irrigation water for expanding rice planting area, remaining at a level similar to 2015. Therefore, total rice planting area was close to the level of 2015, when the DPRK was hit by severe drought. Continued unfavorable weather development from July through August in 2016 had a negative impact on yields on the main season crops such as corn, potatoes and other cereals (see Table 1).

FAO estimates that MY 2016/17 crop production outside of government management remained unchanged from the previous marketing year at 203,000 metric tons of corn from sloping lands (terraced upland) and 75,000 metric tons from household gardens (50,000 tons of potatoes (cereal equivalent) and 25,000 MT of corn).

In MY 2017/18, total production of grain and other crops on a grain-equivalent basis for potatoes is estimated at 5.75 million metric tons (5.0 million metric tons in milled basis for rice, and cereal equivalent basis for soybeans), down 4.7 percent from the previous marketing year. A severe dry spell from April to June constrained planting activities of the MY 2017/18 main season crops. Rains resumed in late July 2017 over most cropping areas, significantly improving growing conditions for corn, but were too late to reverse the damage already inflicted by the spring dry weather to the planting of the rice and corn crops (Table 2).

FAS/Seoul estimates that MY 2017/18 crop production on hillsides and in individual household gardens remains unchanged from the previous year.

Table 1

DPRK: Food Crops Production (1,000 Hectare, 1,000 Metric Tons)			
Marketing Year	MY 2015/2016 (November/October)	MY 2016/2017 (November/October)	MY 2017/2018 ^{c/} (November/October)

Commodity	Area	Production	Area	Production	Area	Production
Rice, Paddy	465	1,946	469	2,536	475	2,383
Rice, Milled	465	1,284	469	1,674	475	1,573
Corn	560	2,288	545	2,195	510	2,200
Others (wheat and other grains)	45	156	72	156	na	163
Potatoes ^{a/}	32	168	55	274	58	175
Soybeans	159	222	175	282	150	223
Soybeans, grain equivalent	159	266	175	338	150	268
Fall Harvest Sub Total	1,261	4,780	1,316	5,444	na	5,144
Wheat and Barley	64	133	40	60	na	na
Potatoes ^{a/}	100	314	100	250	na	na
Summer Harvest Sub Total	164	448	140	310	na	328^{b/}
National Total	1,425	5,226	1,456	5,754	na	5,472
Sloping Land ^{c/}	550	203	550	203	550	200
Household Gardens ^{d/}	25	75	25	75	25	75
Grand Total	2,000	5,504	2,031	6,032	na	5,747
Grand Total ^{f/}	2,000	4,887	2,031	5,225	na	4,982

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

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 2014/15		MY 2015/16		MY 2016/17	
Commodity	Projection	Production	Projection	Production	Projection	Production
Wheat and Barley	60	36	66	133	60	60
Potatoes	241	233	297	314	250	250
Total	301	269	363	448	310	310
Accomplishment (%)	89		123		100	

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 (A)	4,887	266	532	4,089	1,284	2,516	289
2016/17 (B)	5,225	338	574	4,313	1,674	2,423	216
2017/18 (C) ^{6/}	4,982	268	425	4,289	1,573	2,425	291
Change (B-A)	+338	+72	+42	+291	+390	-93	-73
Change (C-B)	-243	-70	na	na	-101	+2	na

Source: WFP/FAO

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

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

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

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

Inputs

Irrigation: Reduced precipitation and unusually high temperatures from the winter months to June in MY 2016/17 resulted in a low level of water supplies for irrigation. According to the Ministry of Agriculture, water availability in irrigation reservoirs during the 2016 main season was close to the previous year's low level, remaining at 40 percent below normal average levels. However, favorable weather conditions at the start of the winter cropping season in MY 2017/18 are in keeping with near-average precipitation since October 2017 across the nation, which facilitated planting activities and development for the summer harvested crops. Assuming normal weather conditions for the remainder of the cropping season, current prospects for the 2017/18 summer harvested crops are generally favorable.

Fertilizer: During 2016, the total supply of nitrogenous fertilizer, phosphate and potash was reported to have increased considerably over the previous year's low level to 850,000 tons (Table 4). The total supply of fertilizer in 2017 is expected to be similar to the level of the previous year in consideration of the imports of fertilizer from China (Table 5).

Table 4

DPRK: Fertilizer Supply Status for 2008-2016 (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

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

Table 5

DPRK: Fertilizer Imports from China for 2008-2017 (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

Source: Korea International Trade Association (KITA), Global Trade Atlas (GTA)

Rice Production

The irrigated paddy field area was reported at 468,677 hectares in MY 2016/17, with just a modest increase over the sharply-reduced levels in MY 2015/16, and still well below the 563,000 hectares in MY 2012/13, mainly due to limited availability of irrigation water during the planting season. Some paddy fields were diverted to alternative crops that require less water, such as sorghum, millet and soybeans. The area planted with soybeans in MY 2016/17 was estimated to have increased by 11 percent to 175,000 hectares, showing a strong increase for the third consecutive year. Unfavorable weather developments from July through August in 2016 had a negative impact on yields on the main season crops such as corn, potatoes and other grains, but rice crop production rebounded to the level of average yield thanks to irrigation of the paddy fields.

A severe dry spell from April to June constrained rice planting activities in MY 2017/18; rice planted area was just up 1.3 percent from the previous year. Rains resumed in late July 2017 over most cropping areas, improving growing conditions for corn, but were too late to reverse the damages already inflicted by the spring dry weather to the rice planting area. Rice production in MY 2017/18 was estimated at 2.38 million metric tons on a paddy basis (equivalent to 1.57 million metric tons on milled basis), down six percent from the previous year.

Table 6

DPRK: 2016 Paddy Rice Crop Production			
Province	Planted Area (HA)	Yield (Paddy, Kg/HA)	Production (MT, Paddy)
Pyongyang	11,515	7,272	83,742
South Pyongan	64,167	6,427	412,391
North Pyongan	100,555	5,645	567,644
Chagang	6,039	4,732	28,575
South Hwanghae	133,039	5,646	751,126
North Hwanghae	34,307	4,867	166,987
Kangwon	17,397	4,312	75,011
South Hamgyong	54,916	4,656	255,693
North Hamgyong	24,932	3,099	77,270
Ryangyang	1,377	3,182	4,381
Nampo	20,433	5,560	113,599
Total	468,677	5,412	2,536,419

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: National Coordination Committee (NCC), DPRK Ministry of Foreign Affairs; compiled by Bir Mandal, FAO

Corn Production

The area planted with corn in MY 2016/17 decreased slightly to 544,500 hectares from the previous year's level of 560,000 hectares (Table 1). Unfavorable weather from July through August in 2016 reduced corn crop yields. Corn production declined to 2.2 million metric tons, down four percent due to lower acreage in tandem with lower yields than the previous year.

A severe dry spell from April to June also constrained planting activities of the MY 2017/18 corn crop, with corn area declining six percent from the previous year to 510,223 hectares. Rains resumed in late

July 2017 over most cropping areas, significantly improving growing conditions for corn, raising yields to offset the corn acreage reduction caused by the dry spring weather during corn planting (Table 9). Corn production is unchanged from the previous year, at 2.2 million metric tons.

Table 8

DPRK: 2016 Corn Production			
Province	Planted Area (HA)	Yield (Paddy, Kg/HA)	Production (MT, Paddy)
Pyongyang	4,435	5,493	24,361
South Pyongan	63,430	4,158	263,716
North Pyongan	84,587	4,398	371,976
Chagang	35,213	3,495	123,055
South Hwanghae	105,187	4,645	488,627
North Hwanghae	82,762	4,021	332,784
Kangwon	32,905	3,823	125,811
South Hamgyong	52,163	4,224	220,347
North Hamgyong	61,904	2,657	164,507
Ryangyang	10,639	2,142	22,791
Nampo	11,247	5,092	57,529
Total	544,472	4,032	2,195,244

Source: Ministry of Agriculture (MoA, DPRK)

Table 9

DPRK: 2017 Corn Production			
Province	Planted Area (HA)	Yield (Paddy, Kg/HA)	Production (MT, Paddy)
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: National Coordination Committee (NCC), DPRK Ministry of Foreign Affairs; compiled by Bir Mandal, FAO

Consumption

For MY 2016/17 (Nov/Oct), FAS/Seoul estimated that total DPRK target utilization of grain and other crops on a grain-equivalent basis was 5.6 million tons, about two percent higher than the previous year, based on FAO/WFP GIEWS' Special Alert Report released on July 20, 2017. This report forecast an

annual per capita consumption of 175 KG of basic food commodities, which included cereals, potatoes and soybeans. Per capita average consumption used was 149.9 KG of cereals, which consisted of 59 KG of milled rice, 79.6 KG of corn, 6.5 KG of wheat and barley and 4.77 KG of other grains, as well as 13.3 KG of potatoes and 12.3 KG of soybeans in cereal equivalent. The estimated per capita consumption of 175 KG represents about 1,640 kcal per person daily.

For MY 2017/18 (Nov/Oct), FAS/Seoul forecasts that total DPRK target utilization of grain and other crops on a grain-equivalent basis is 5.6 million tons based on the general trend of consumption in the DPRK. Converting total domestic crop production into grain equivalent yields approximately 5.0 million metric tons, which consists of 1.6 million metric tons of milled rice, 2.4 million metric tons of corn, 1.0 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 618,000 metric tons. Assuming that the DPRK imports 300,000 metric tons during this marketing year, the unmet deficit of food grains is forecast at 318,000 metric tons (see Table 10). 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 as 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 may be being tempered by movement of foods and money throughout the country.

Table 10

DPRK: Food Balance Sheet (November/October, 1,000 MT)				
Marketing Year	MY2014/15	MY2015/16	MY2016/17	MY2017/18 ^{6/}
Production, Total (A)	5,050	4,887	5,225	4,982
Rice ^{1/}	1,733	1,284	1,674	1,573
Corn ^{2/}	2,594	2,516	2,423	2,425
Wheat/Barley	36	133	60	na
Other Grains	54	156	156	na
Potatoes ^{3/}	441	532	574	na
Soybeans ^{4/}	192	266	338	268
Target Utilization, Total (B)	5,489	5,495	5,609	5,600
-Food	4,341	4,383	4,426	na
-Feed	120	120	130	na
-Seed	225	238	253	na
-Loss	803	754	800	na
Balance (A-B)	-439	-608	-384	-618
Import	410^{5/}	300^{5/}	200^{5/}	300^{5/}
Shortage	-29	-308	-184	-318

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

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

4/ cereal equivalent using a factor of 1.2

5/ Forecast commercial imports including food aid

6/ FAS/Seoul forecast based on National Coordination Committee (NCC), DPRK Ministry of Foreign Affairs; compiled by

Table 11

DPRK: Food Balance Sheet for MY 2016/17 (November/October, 1,000 MT)							
Commodity	Rice ^{1/}	Corn	Wheat/ Barley	Others	Potatoes ^{2/}	Soybeans ^{3/}	Total
Total Supply	1,674	2,423	60	156	574	338	5,225
Fall Harvest	1,674	2,195	-	156	274	338	4,637
Summer Harvest	-	-	60	-	250	-	310
Slope Farm (Upland)	-	203	-	-	-	-	203
Garden Farm (Upland)	-	25	-	-	50	-	75
Total Use	1,799	2,600	190	157	524	339	5,609
Food	1,488	2,008	164	120	336	310	4,426
Feed	-	110	-	-	20	-	130
Seed	51	74	16	11	89	12	253
Loss	260	408	10	26	79	17	800
Deficiency	125	177	130	1	+50	1	384
Imports ^{4/}	-	-	-	-	-	-	200
Net Deficiency	-	-	-	-	-	-	184

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/ Forecast

TRADE

Imports & Humanitarian Aid

In CY 2016, the DPRK imported 124,000 metric tons of food grains and grain products via commercial imports and food aid. Commercial imports totaled 97,000 metric tons, consisting mainly of wheat flour, corn, rice and soybeans from China and Ukraine. Food aid was primarily given as multilateral food assistance from WFP/FAO (see Table 12), and totaled 27,000 metric tons.

In CY 2017, total reported food grain imports including food aid are forecast around 200,000 metric tons. This number is significantly higher than the previous year due to greater imports of grains and wheat flour from China (Tables 12 & 13).

In CY 2018, total cereal import requirements are forecast at an above-average level because the total gap between supply and demand in MY 2017/18 was wider than the previous year.

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 commodities and developed a distribution industry. These changes have resulted in a more competitive market with relatively stable prices. Commodities are able to 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 great as the numbers here imply.

Table 12

DPRK: Estimated Grains ^{1/} Import by Origin (Unit: 1,000 Metric Tons)											
Cal. Year	Commercial Imports							Food Aid			
	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	na	0	0	na

Source: Global Trade Atlas (GTA); 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.

Table 13

DPRK: Food Grain and Oilseeds Import from China (Calendar year, Metric Ton)						
Commodity	2012	2013	2014	2015	2016	2017
Wheat	0	0	0	0	0	0
Rye	0	0	0	0	0	0

Barley	600	0	1	0	0	0
Oats	0	0	0	0	0	0
Corn	54,444	76,572	15,658	9,891	3,125	50,878
Rice	49,010	49,528	63,884	17,138	41,879	36,408
Sorghum	0	0	24	0	0	0
Others	637	960	720	120	0	0
Subtotal, Grains	104,691	127,060	80,287	27,149	45,004	87,286
Wheat Flour	157,704	155,886	78,967	14,437	6,958	81,654
Soybeans	19,236	15,311	2,019	6,015	614	91
Grand Total	281,631	298,257	161,273	47,601	52,575	169,031

Source: Global Trade Atlas, China Customs or KITA

Appendix

Table 14

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	5,225	338	574	4,313	1,674	2,423	216

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 15

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

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

Table 16

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

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 17

DPRK: Estimated Grain ^{1/} Imports by Origin (Unit: 1,000 Metric Ton)												
Commercial Imports										Food Aid		Grand Total
Cal. Year	China	Syria	Thailand	Canada	Japan	EU	Brazil	Sub Total	Others ¹	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	15	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.