USDA United States Department of Agriculture
Foreign Agricultural Service

GAIN Global Agricultural Information Network

Voluntary Report – Voluntary - Public Distribution **Date:** May 23, 2022

Report Number: KS2022-0014

Report Name: Korea's Low Carbon Green Growth Policy and Transition to Low Protein Feed

Country: Korea - Republic of

Post: Seoul

Report Category: Grain and Feed, Climate Change/Global Warming/Food Security

Prepared By: Sangyong Oh

Approved By: Tymothy Mcguire

Report Highlights:

The Republic of Korea (ROK) has joined international commitments to reach carbon neutrality by 2050 and passed a Carbon Neutrality Act in 2021 to promote green growth. Although the agricultural industry will be relatively less impacted than some other sectors (including energy), agricultural producers will need to make some adjustments. Starting in July 1, 2022, the Korean livestock feed industry will transition to a 'low protein feed formula' to comply with new government carbon reduction requirements. As a result, consumption of protein ingredients in compound feed production will decline. Soybean meal will likely see the largest impact from the new formula, with up to a 70,000 metric ton reduction in swine and poultry feed.

I. Carbon Neutrality Act: New Korean Policy for Low Carbon, Green Growth

The Republic of Korea pledged internationally on October 28, 2020 to achieve carbon neutrality by 2050. Under this new initiative, the government worked with the National Assembly to enact the 'Framework Act on Carbon Neutrality and Green Growth for Addressing Climate Change Risks' (hereinafter referred to as Carbon Neutrality Act) on September 24, 2021, and the 'Enforcement Decree of the Carbon Neutrality Act' on March 25, 2022. As a result, Korea became the 14th country to legislate a commitment to become carbon neutral by 2050. Despite some skepticism over a perceived lack of substantive actions, the Carbon Neutrality Act includes a range of government programs and investments over the next 30 years.

The Enforcement Decree of the Carbon Neutrality Act targets an interim 40 percent reduction in greenhouse gas emissions in Korea by 2030 (NDC, Nationally Determined Contribution) on the way to full carbon-neutrality by 2050. The greenhouse gas emission reduction targets are based off 2018 emission levels as a reference year (Table 1).

Korean greenhouse gas emissions totaled 727.6 million metric tons (MMT) in 2018 (carbon dioxide CO^2 equivalent basis, CO2e). To reach the 2030 NDC goal, Korea needs to reduce emissions by 4.17 percent each year until 2030, which is a more ambitious annual reduction goal than many other economies (e.g., U.K. 2.81 percent; the United States 2.81 percent; EU 1.98 percent; Japan 3.56 percent). Korea's NDC goal is particularly ambitious because Korea currently relies the most on coal and petroleum, but the least on renewable resources for national energy supply among the leading economies in the world (Chart 1).

Reducing methane gas emissions is one of the targets that the ROK government incorporated in the 2030 NDC goal. Korea signed the Glasgow Climate Pact in November 2021 during the 26th United Nations Climate Change Conference (COP26) and agreed to reduce methane gas emissions by 30 percent (or by 8.3 MMT to 19.7 MMT, CO2e) by 2030. According to ROKG data, agriculture was the leading source for methane gas emissions in 2018, generating 12.2 MMT, which was 43.6 percent of all methane gas emissions in the nation (Table 2).

Korea inaugurated newly elected President Yoon Suk-yeol on May 10, 2022. President Yoon is from the conservative People's Power Party (PPP), in contrast to the former President Moon Jae-in's Democratic Party, so some changes in climate change policy are likely. President Yoon discussed rolling back some of Korea's carbon reduction efforts in favor of economic interests during his campaign, but it remains to be seen what actions his administration will take in this area.

Table 1

Korea: Greenhouse Gas Emission Reduction Plan (NDC 2030)

Million Metric Tons (CO^2 equivalent basis)

Sector	Emission in 2018	NDC 2030 (Percent)	Emission in 2030
Power Supply	269.6	44.4%	149.9
Industry	260.5	14.5%	222.6
Construction	52.1	32.8%	35.0
Transportation	98.1	37.8%	61.0
Agriculture	24.7	27.1%	18.0
Waste Management	17.1	46.8%	9.1
Hydrogen	0	N/A	7.6
Others	5.6	30.4%	3.9
Total	727.6	40%	436.6

Source: Korean Government Office of Prime Minister

Table 2

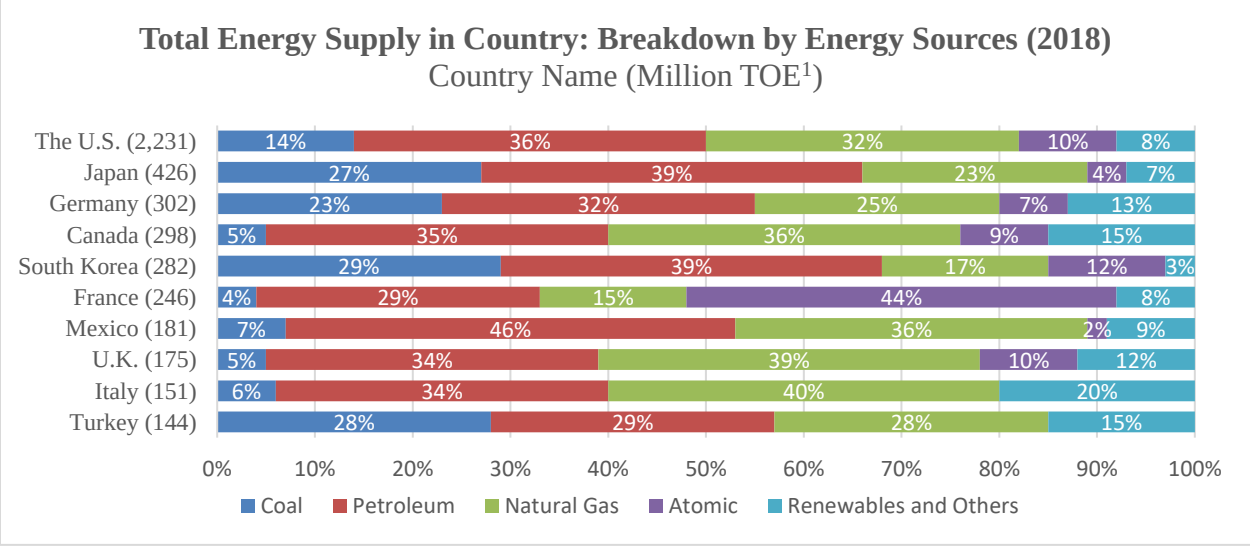
Korea: Methane Gas Emission Reduction Plan (NDC 2030)

Million Metric Tons (CO^2 equivalent basis)

Sector	Emission in 2018	NDC 2030 (Percent)	Emission in 2030
Agriculture	12.2	20.9%	9.7
Waste Management	8.6	46.5%	4.6
Energy	6.3	28.6%	4.5
Industry	0.6	-16.7%	0.7
Others	0.3	0%	0.3
Total	28.0	30%	19.7

Source: Korean Government Office of Prime Minister

Chart 1



Source: International Energy Agency (IEA) 'World Energy Statistics and Balances'

/1 TOE: Ton of Oil Equivalent

II. Carbon Neutrality in Agriculture

The agricultural sector accounted for 3.4 percent (or 24.7 MMT, CO2e) of Korean greenhouse gas emissions in 2018. Cultivation of rice and other crops generated 55 percent of greenhouse gas emissions in the sector, while the livestock industry was responsible for the remaining 45 percent of emissions (Table 3). The government's 2030 NDC goal for the sector is 6.7 MMT, a 27.1 percent reduction (Table 4).

Part of the 2030 NDC goal for the agricultural sector is reducing methane gas emissions (20.9 percent or 2.5 MMT, CO2e). Crop cultivation (mostly rice) and enteric fermentation (by livestock animals) were the leading generators, accounting for 51.6 percent and 36.9 percent of methane gas emissions in the sector, respectively in 2018 (Table 4).

The 2030 NDC goal for agriculture (27.1 percent reduction) is relatively lower than other sectors. For example, the power supply sector emission reduction target is 44.4 percent. The transportation sector and the construction sector target reducing emissions by 37.8 percent and 32.8 percent, respectively. Nonetheless, Korean farmers and ranchers will have to adopt significant changes in their practices and operations to reach the reduction goal.

Table 3

Korea: Greenhouse Gas Emissions in Agriculture (2018)
Million Metric Tons (CO^2 equivalent basis)

Category	Emission	Share in Total
Crop Cultivation (mostly rice)	13.7 MMT	55.6%
- Cultivation	7.3 MMT	29.6%
- Soil Management	6.4 MMT	25.9%
Livestock Industry	11.0 MMT	44.4%
- Sewage Disposal	5.8 MMT	23.3%
- Enteric Fermentation	5.2 MMT	21.1%
Total	24.7 MMT	100%

Source: Korea Ministry of Agriculture, Food and Rural Affairs (MAFRA) Press Releases

Table 4

Korea: Methane Gas Emissions in Agriculture (2018)
Million Metric Tons (CO^2 equivalent basis)

Category	Emission	Share in Total
Crop Cultivation (mostly rice)	6.3 MMT	51.6%
Livestock Industry	5.9 MMT	48.4%
- Sewage Disposal	1.4 MMT	11.5%
- Enteric Fermentation	4.5 MMT	36.9%
Burning of Crop Waste	0.01 MMT	0.1%
Total	12.2 MMT	100%

Source: Korea Ministry of Agriculture, Food and Rural Affairs (MAFRA) Press Releases

The Korea Ministry of Agriculture, Food, and Rural Affairs (MAFRA) recently announced key initiatives to drive greenhouse gas (including methane) emission reduction in the sector. These MAFRA initiatives are mostly focused on the rice and livestock industries, the two major sources for agriculture sector greenhouse gas emissions (Table 5).

Table 5

Korea: MAFRA Key Initiatives for 2030 NDC Goal

Area	Reduction	Key Initiatives
Rice and Crop Cultivation	2.5 MMT	Reduced use of mineral and nitrogen fertilizers
		Environment-friendly cultivation
		Use of biochar (processed from wood waste) to absorb carbon in the soil
		More efficient irrigation in rice paddies
		Development of new crop varieties
Livestock Industry	3.3 MMT	Transition to low-protein, low-methane animal feed
		Introduction of smart ranching technologies for higher productivity
		Slaughter of beef cattle at younger ages (to 24-28 months from current 30 months)
		Promoting less animal meat in consumer diet
		Increased use of animal sewage for methane gas production (energy use conversion increased to 15 percent in 2030 from 1.3 percent in 2018)
		Reduced use of animal sewage for liquified manure production (decreased to 67 percent in 2030 from 90 percent in 2018)
		Development of other industrial uses for animal sewage
Machinery and Energy	0.9 MMT	Increased use of renewable fuels (electricity and hydrogen) Replacement of old machinery with more energy efficient tools
Forestry	N/A	Development of new forests to absorb greenhouse gas
Total	6.7 MMT	

Source: Korean Government Office of Prime Minister, Ministry of Agriculture, Food, and Rural Affairs (MAFRA) Press Releases

III. Transition to Low Protein Feed in the Livestock Industry

On February 6, 2022, MAFRA announced the 'Livestock Industry Environment Improvement Plan', alerting the public and the industry of plans to introduce new tools and programs to promote transitioning to a more sustainable livestock industry. The new plan aims to help the livestock industry to reduce 30 percent of greenhouse gas emissions (or 3.3 MMT, CO2e) in line with the 2030 NDC plan. The planned emission reduction in the livestock industry will account for about 50 percent of overall greenhouse gas emission reduction targeted in the agricultural sector.

In the plan, MAFRA designated transitioning to low protein, low methane feed as a key implementation vehicle for reducing greenhouse gas emissions in the livestock industry. Low protein feed contains lower volumes of high protein ingredients (such as soybean meal) and leads to less generation of animal sewage and greenhouse gases (including ammonia and nitrogen). Low methane feed also contains additives that restrict growth of bacteria in animal intestines that are responsible for generating methane gas. According to preliminary MAFRA research, a one percent reduction in protein content in feed for pigs leads to a 1.8 percent decline in sewage excretion and a 10 percent decline in ammonia gas emissions.

To provide a regulatory foundation for the transition to lower protein feed, MAFRA revised the 'Standards and Specifications for Livestock Feed' (MAFRA Notice 2021-99, published in January 2022) with reduced ceilings on protein contents in compound feed products for pigs and newly introduced ceilings in products for cattle and poultry (Table 6). The revised protein content ceilings for swine feed are 1-3 percent points lower than the old ceilings. Local feed producers will revise their compound feed formula accordingly under the government timeline to market new products from July 1, 2022. All compound feed products produced in Korea after July 1 will comply with the new formula for reduced protein contents. However, MAFRA will allow feed producers to market existing products made using the old formula after July 1 with a transitional goal to have 30 percent of compound feed consumption in the industry replaced by the new lower protein formula by the end of 2022. Considering the need for long-term studies to evaluate the efficiency of the new lower protein formula, MAFRA will continue to work with feed producers for additional revisions in the formula in the future.

On the other hand, MAFRA has yet to announce technical standards for low methane feed as of this report. There are several feed additives developed or researched in the industry, including 3-NOP (3-Nitrooxypropanl), that restricts generation of methane gas in animal intestines. It will take some time for the additives to gain MAFRA approvals via laboratory and field tests for commercial use in livestock feed.

Table 6

Korea: Protein Content Ceiling in Compound Feed Products
(Revised for Implementation from July 1, 2022)

Species	Category	New Ceiling	Old Ceiling
Pigs	Piglet during breast feeding	20 %	23%
	Piglet on formula	18 %	20%
	Young pigs	16%	18-19%
	Pigs for meat production	14%	16-17%
	Sow for breeding	15%	16%
	Sow pregnant	13%	16%
	Sow feeding piglet	19%	20%
Cattle for Meat Production	Calf	24%	None
	Young cattle	18%	
	Cattle for breeding	16%	
	Cattle pregnant	15%	
	Cattle feeding calf	18%	
	Cattle for meat production, early stage	17%	
	Cattle for meat production, late stage	15%	
Dairy Cow	Calf	24%	None
	Dairy cow, pregnant	17%	
	Dairy cow in milk production	24%	
Chicken, Layers	Chicks, infant	21%	None
	Chicks, middle size	18%	
	Chicks, large size	16%	
	Layers, before laying	17%	
	Layers, laying early stage	19%	
	Layers, during laying	18%	
	Layers, laying final stage	17%	
	Layers for breeding	19%	
Chicken, Broilers	Chicks, infant	20%	None
	Chicks, middle size	17%	
	Broilers for breeding	16%	
	Broilers, early stage	23%	
	Broilers, middle stage	22%	
	Broilers, final stage	20%	
Ducks	Broilers, early stage	21%	None
	Broilers, final stage	19%	
	Layer chicks	22%	
	Layers for breeding	20%	

Source: MAFRA Notice 2021-99, ‘Standards and Specifications for Livestock Feed - Revised’

Korean Livestock Industry

South Korea maintains a sizable livestock industry which produced 67 percent of all livestock meat supply in the market in 2021 (Table 7), with the balance coming from imports. Although facing elevated competition from imported products due to higher production costs, the domestic livestock industry will likely see steady growth in animal inventories in the coming year based on recovery of swine and poultry numbers from recent epidemics (High Pathogenic Avian Influenza and African Swine Fever) and increased consumer demand for premium meat (Chart 2). More details on the Korean livestock industry are available from the GAIN Report: Korea Livestock and Products Update and GAIN Report: Korea Poultry and Products Annual.

Table 7

Korea: Supply of Livestock Meat and Products (CY 2021)
(Metric Tons, Growth rate from the previous year)

	Domestic	Growth	Imports	Growth	Total	Growth
Beef	264,000	6.1%	453,000	7.9%	716,000	7.2%
Pork	989,000	-0.2%	333,000	7.2%	1,322,000	1.5%
Chicken	629,000	-2.1%	124,000	-10.5%	763,000	-3.5%
Milk (Fluid)	2,035,000	-2.6%	2,467,000	1.4%	4,502,000	0.7%
Egg (Fresh)	650,100	-10.0%	35,800	991.0%	685,900	-5.5%

Source: Korea Rural Economic Institute (KREI)

The Korean livestock industry generated 5.2 MMT of sewage in 2020. The amount of sewage generated by the industry has grown continuously in recent years (at a 2.3 percent compound annual growth rate during 2017-2020) in line with increases in animal inventories.

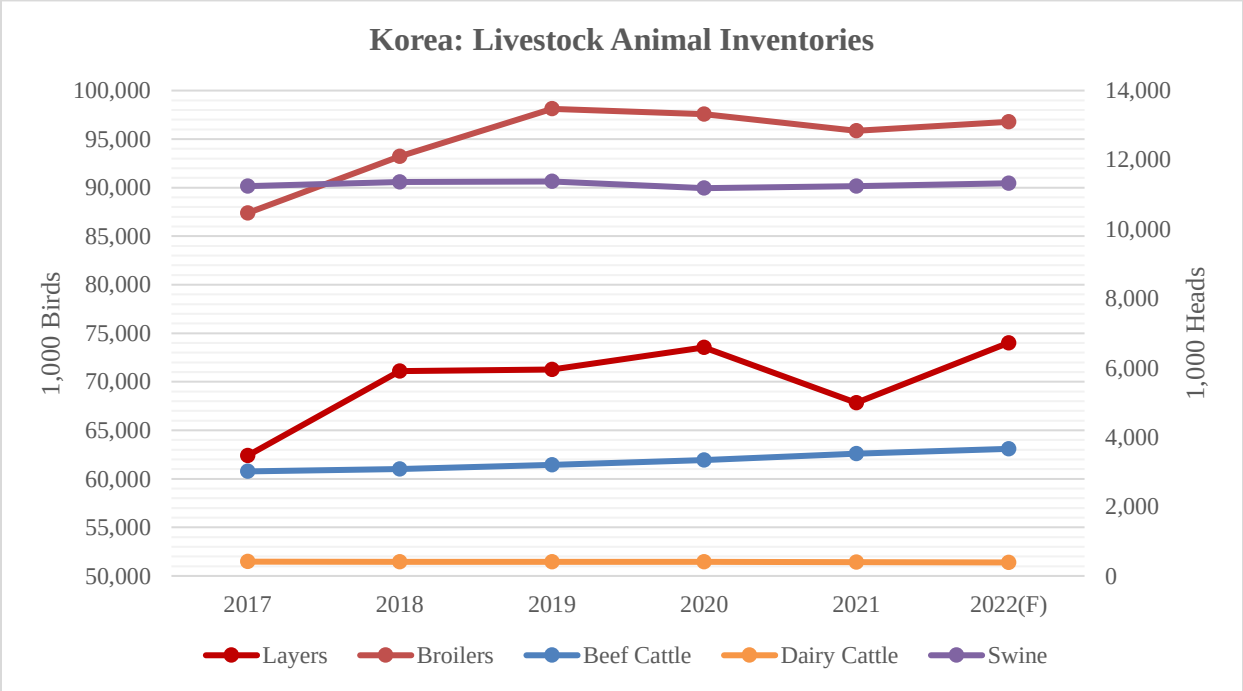
Compound Feed Production in Korea

In marketing year (MY) 2020/21 (October through September), the Korean feed industry produced 21 million metric tons (MMT) of compound feed products for the local livestock industry (Table 8, 9). Due to anticipated growth in animal inventories, compound feed production is forecast to grow steadily in the coming year.

The Korean feed industry relies heavily on imported ingredients for compound feed production. Imported ingredients accounted for 75 percent of compound feed production in MY 2020/2021, with locally grown or processed ingredients accounting for the remaining 25 percent.

Corn (45.3 percent inclusion rate in MY 2020/21), soybean meal (11.1 percent), wheat (6.5 percent), and distiller's dried grains with solubles (DDGS, 5.5 percent) are the leading ingredients used in compound feed production (Table 10). Most of these major feed ingredients are supplied by imports. For more details about the feed market in Korea, please refer to the GAIN Report: Korea Grain and Feed Annual and the GAIN Report: Korea Oilseeds and Products.

Chart 2



Source: Korea Statistics (KOSTAT) / 2022(F): Forecast by Korea Rural Economic Institute (KREI)
Unit: 1,000 birds (Layers, Broilers), 1,000 heads (Cattle, Swine)
Note: The Korean government changed the basis for estimating cattle inventory as of September 2017. The Korea Statistics Service switched from a sample survey-based cattle inventory estimate to the actual number of cattle registered under the traceability system. As it is mandatory to register cattle under the traceability system, this change will allow for more accurate inventory numbers. However, this change increased cattle inventory statistics by an average of 240,000 head (KS1810). Swine inventory numbers also followed the registration of the traceability system since 2017.

Table 8

Korea: Feed Ingredients Use for Compound Feed Production
(October/September, 1,000 MT)

Items	MY 2019/20	MY 2020/21	MY 2021/22[a/]	MY 2022/23[a/]
Sub-Total Grains and Grain Substitutes	13,481	13,364	13,600	13,750
- Wheat	1,209	1,351	2,000	1,350
- Corn	9,502	9,432	9,000	9,650
- Rice (brown)	113	1	0	0
- Other Grains and Grain Substitutes[b/]	2,657	2,581	2,600	2750
Others[c/]	7,523	7,439	7,500	7,550
Grand Total	21,004	20,803	21,100	21,300

Source: Korea Feed Association (KFA)
a/ FAS/Seoul forecast based on animal inventory outlook reports by the Korea Rural Economic Institute (KREI).
b/ includes Tapioca, brans and gluten feed.
c/ includes vegetable protein meal, animal protein, minerals/additives, tallow, DDGs, and molasses.

Table 9

Korea: Compound Feed Production by Species Use
(October/September, 1,000 MT)

Species	MY 2019/20	MY 2020/21	MY 2021/22[a/]	MY 2022/23[a/]
Chicken	6,281	5,975	6,100	6,200
Swine	6,947	6,890	6,900	6,950
Cattle	6,186	6,505	6,700	6,700
Others[b/]	1,538	1,396	1,400	1,450
Total	20,952	20,765	21,100	21,300

Source: Ministry of Agriculture, Food, and Rural Affairs (MAFRA)
a/ FAS/Seoul forecast based on animal inventory outlook reports by the Korea Rural Economic Institute (KREI).
b/ Includes ducks, rabbits, horses, sheep, deer, quail, etc.

Table 10

Korea: Feed Ingredients Use

(1,000 MT, October/September)

Ingredient	MY 2018/19		MY 2019/20		MY 2020/21	
	TOTAL	%	TOTAL	%	TOTAL	%
GRAINS						
Corn	8,557	41.8	9,502	45.2	9,432	45.3
Sorghum	22	0.1	0	0	0	0.0
Wheat	1,168	5.7	1,209	5.8	1,351	6.5
Barley	18	0.1	21	0.1	30	0.1
Rye	0	0	0	0	0	0.0
Oats	4	0	4	0	4	0.0
Broken Grain	99	0.5	107	0.5	107	0.5
Tapioca	101	0.5	99	0.5	81	0.4
Lupin Seed	130	0.6	86	0.4	132	0.6
Rice	568	2.8	113	0.5	2	0.0
Others	218	1.1	225	1.1	201	1.0
Sub Total	10,885	53.2	11,366	54.1	11,341	54.5
GRAIN BY-PRODUCTS						
Wheat Bran	494	2.4	513	2.4	545	2.6
Rice Bran	215	1.1	199	0.9	189	0.9
Barley Bran	1	0	0	0	0	0.0
Corn Bran	5	0	13	0.1	23	0.1
Gluten Feed	1,141	5.6	1,136	5.4	969	4.7
Others	235	1.1	254	1.2	298	1.4
Sub Total	2,091	10.2	2,115	10.1	2,024	9.7
ANIMAL PROTEIN						
Fish Meal	11	0.1	10	0	10	0.0
Meat & Bone Meal	24	0.1	27	0.1	24	0.1
Others	171	0.8	184	0.9	180	0.9
Sub Total	206	1	221	1.1	214	1.0
VEGETABLE PROTEIN						
Soybean Meal	2,316	11.3	2,465	11.7	2,310	11.1
Rapeseed Meal	393	1.9	338	1.6	401	1.9
Sesame Seed Meal	38	0.2	41	0.2	44	0.2
Perilla Seed Meal	2	0	1	0	2	0.0
Corn Gluten Meal	76	0.4	68	0.3	72	0.3
DDGS[1/]	1,086	5.3	1,085	5.2	1,056	5.1
Cottonseed Meal	0	0	0	0	0	0.0
Palm Kernel Meal	815	4	876	4.2	912	4.4
Copra Meal	258	1.3	135	0.6	133	0.6
Others	278	1.4	263	1.3	282	1.4
Sub Total	5,262	25.7	5,272	25.1	5,211	25.1
ADDITIVES/MINERALS						
Calcium Phosphate	66	0.3	70	0.3	71	0.3

Limestone	576	2.8	599	2.9	578	2.8
Salt	71	0.3	72	0.3	73	0.4
Others	323	1.6	330	1.6	333	1.6
Sub Total	1,036	5.1	1,071	5.1	1,054	5.1
OTHER INGREDIENTS						
Tallow	346	1.7	337	1.6	314	1.5
Molasses	368	1.8	332	1.6	347	1.7
Urea	3	0	2	0	4	0.0
Others	275	1.3	288	1.4	294	1.4
Sub Total	992	4.8	959	4.6	959	4.6
GRAND TOTAL	20,472	100	21,004	100	20,803	100.0

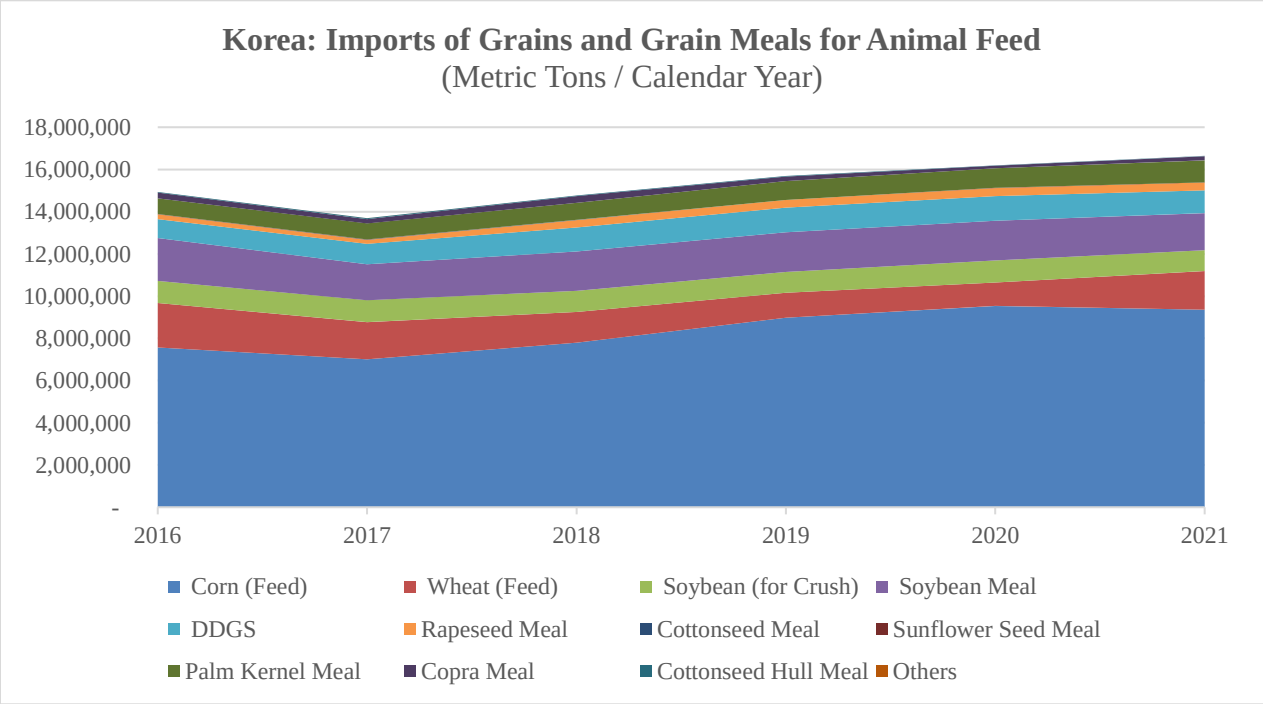
Source: Korea Feed Association (KFA)
1/ Distillers Dried Grains with Solubles

IV. Potential Impact to Feed Grain Trade

Korean Imports of Feed Grains and Meals

Korea imports about 17 million metric tons of grains and grain meals for livestock compound feed production each year (Chart 3). Imports continued grew steadily in recent years (at a 2.2 percent compound annual growth rate from 2016-2021) to support increased animal inventories. According to the Korea Feed Association, imported ingredients account for over 75 percent of compound feed production in Korea.

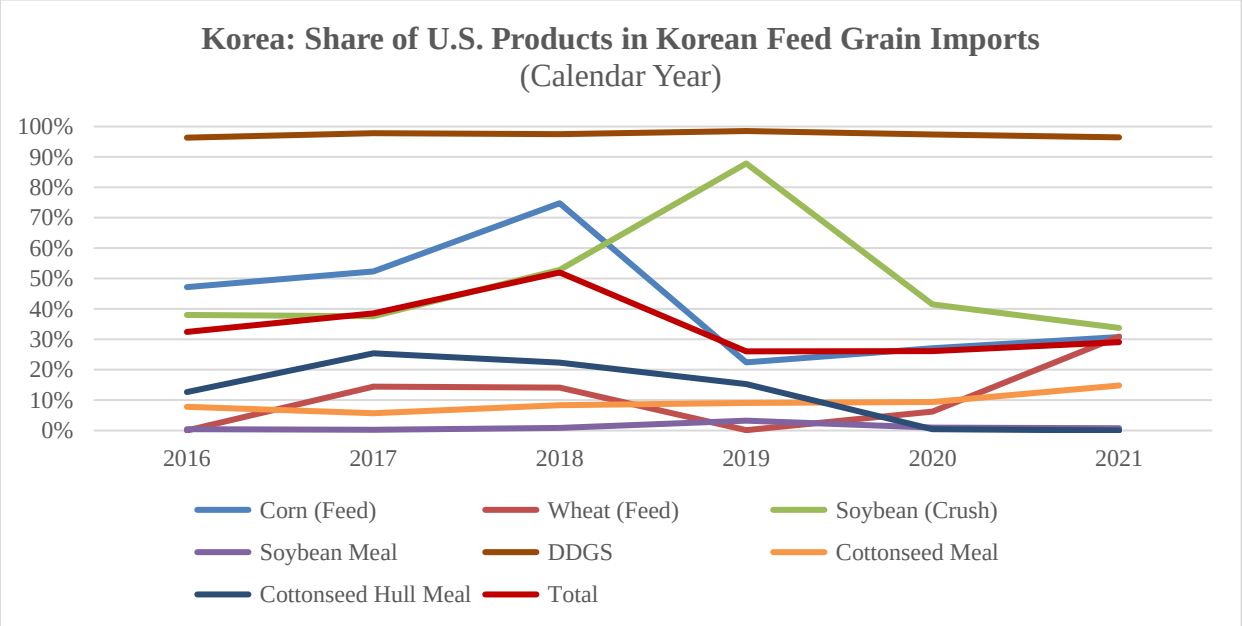
Chart 3



Source: Korea Customs Service (KCS)

The United States is a major supplier to Korea for many imported feed grains and meals. The market share for key U.S. products in 2021 was 31 percent for feed corn; 31 percent for feed wheat; 34 percent for crushing soybean (used in processing of oil and soybean meal in Korea); and 96 percent for DDGS (Chart 4).

Chart 4



Source: Korea Customs Service (KCS)

Potential Changes in Consumption of Protein Ingredients under Low Protein Feed Formula

The low protein livestock feed policy under the Carbon Neutrality Act will result in reduced consumption of protein-oriented feed grains and meals. The revised 'Standards and Specifications for Livestock Feed' (Table 6) lowered (for swine) or newly created (for poultry, cattle, and other animals) ceilings on protein contents in compound feed products. For swine feed, the protein ceilings were lowered by 2.3 percentage points on average. No analysis is available yet to track the reduction for other animal feeds due to lack of reference data.

There are 128 compound feed producers officially registered in Korea. These producers are required to revise their existing feed formula with reduced protein contents for any new products launched after July 1, 2022. Due to the wide diversity of feed formulas marketed for different animal categories, no data is available at the time of this report to assess actual changes in individual feed ingredient consumption in the industry caused by the transition to low protein feed. The first set of industry data will become available at the end of 2022, when the Korea Feed Association (KFA) publishes the 'Compound Feed Ingredient Consumption Statistics' report based on ingredient consumption data reported by individual feed producers after the transition to low protein products on July 1.

According to the Korea Feed Association (KFA), soybean meal, the leading protein ingredient in compound feed production (protein content 45-48 percent), will likely see the most decline in

consumption under the transition to a lower protein feed formula. Soybean meal is also one of the most expensive ingredients, so producers will likely see some cost savings in switching to lower-protein feed with less soybean meal input. According to the Korea Ministry of Agriculture, Food and Rural Affairs (MAFRA), lower protein formulas will be cheaper than old formulas by 3,000-4,000 won ($2.5-$3.3 USD) per metric ton due to reduced input of higher-cost protein ingredients. The reduced volume of key nutrients (essential amino acids) in feed caused by reduced inclusion of soybean meal will likely be filled by increased inclusion of other ingredients that contain complementary amino acids, particularly corn or wheat.

Based on reduced protein ceilings in swine feed (which accounts for about a third of total livestock feed production in Korea), overall consumption of protein in compound feed production will likely decline by about one percentage point. FAS/Seoul estimates that a one percentage point reduction of protein content in feed formula under the lower protein feed policy would result in a 462,000 MT reduction of soybean meal consumption annually in the feed industry if the protein content reduction is solely met by soybean meal (Table 11, 12). However, the actual reduction in soybean meal consumption should be less than 462,000 MT, as the protein reduction requirements will also be met by reducing other ingredients, including rapeseed meal, palm kernel meal, and DDGS, depending on nutritional needs for different species as well as price competitiveness among alternative protein ingredients. Cattle feed, which accounts for about one third of total feed production in Korea, incorporates palm kernel meal and copra meal as key protein ingredients rather than soybean meal, so these ingredients are likely to see reductions in cattle feed's lower protein formula. According to a feed industry simulation, implementation of the revised 'Standards and Specifications for Livestock Feed' (Table 6) from July 1 is expected to reduce consumption of soybean meal in swine and poultry feed production by 2-3 percent (47,000-71,000 MT in annual volume). The feed industry consumed on average 2.3 million MT of soybean meal annually during 2019-2021, so the reduction of soybean meal consumption following implementation of the lower protein formula this year will likely be limited. However, the Korean government may require further reduction of protein content in livestock feed in the future depending on the results of follow-up research after the initial transition this year.

The transition to lower protein feed formulas will directly impact the amount of soybean meal that Korea imports. Korea imported about 1.8 million MT of soybean meal annually on average during 2019-2021. South America was the dominant supplier for soybean meal to Korea, with the United States taking a minor share (about 1 percent). On the other hand, supply of locally processed soybean meal by Korean soy-oil crushers (about 650,000 MT a year) is expected to remain unaffected by the low protein feed policy due to stable market demand for locally crushed soybean oil. The United States was the leading supplier for crushing soybeans to Korea in recent years with 52 percent import market share on average during 2017-2021.

The transition to lower protein feed formulas will also encourage the Korean livestock industry to pay more attention to the quality of protein feed ingredients, based on the amount of actual digestible amino acids, to balance the reduced protein content in feed while still delivering maximum nutritional value to the animal. Another new trade opportunity will be feed additives that supplement key nutrients that can be deficient in the lower protein formula.

Feed processors and traders are advised to monitor the implementation of the lower protein feed policy closely in coming months to properly address any challenges or opportunities from the transition.

Table 11

Korea: Protein Consumption in Compound Feed – Breakdown by Ingredients (1,000 MT, Percent)					
Feed Ingredients		Average Consumption (MY2018 -MY2020)			
		Inclusion Rate (Percent)	Consumption (1,000 MT)	Protein Content[1] (%)	Protein[2] (1,000 MT)
High Protein Ingredients	Corn	44.1	9,164	7-8%	733
	Wheat	6.0	1,243	7-13%	137
	Soybean Meal	11.4	2,364	45-47%	1,087
	Rapeseed Meal	1.8	377	35-37%	136
	DDGS	5.2	1,076	26-27%	285
	Other Vegetable Meals	6.9	1,432	15-20%	258
Other Ingredients		24.6	5,105	5-20%	893
Total		100	20,760	17.0%[3]	3,529

Source: Korea Feed Association (KFA) for feed ingredient consumption and inclusion rates
/1 General protein content ranges recognized in the industry / protein content for 'Other Ingredients' is FAS/Seoul assumption
/2 The amount of protein provided by the ingredient calculated from the medium level in protein content ranges
/3 Feed industry estimate for average protein content in all compound feed products marketed in Korea currently. Average protein content estimates are 15.9-16.9 percent for swine feed; 17.6-18.6 percent for poultry feed; and 15.4-16.4 percent for cattle feed

Table 12

FAS/Seoul Estimates: Reduction of Protein in Compound Feed under Transition to Low Protein Feed Formula (1,000 MT, Annual)			
Scenario	Protein Content	Reduction of Protein Consumption in Compound Feed	Reduction of Soybean Meal Equivalent Consumption
Old Formula	17.0%	N/A	N/A
Low Protein Formula 1	16.0%	208[a]	462[b]
Low Protein Formula 2	15.0%	415	923
Low Protein Formula 3	14.0%	623	1,385

/a If low protein formula contains one percent point less protein than old formula (decline from 17.0 percent down to 16.0 percent), overall protein consumption in compound feed production would decline by 208,000 MT a year.
/b If the reduction of protein consumption is solely met by soybean meal (45 percent protein content), annual compound feed production will consume 462,000 MT of soybean meal less a year. Actual reduction of soybean meal consumption should be smaller as the reduction of protein consumption will likely be also met by other ingredients such as DDGS, palm kernel meal. In addition, the existing formula for cattle feed incorporates little soybean meal.

Attachments:

No Attachments.