

The Political Force of Cereal: How Dependent are North Koreans on the State?

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This paper uses yearly crop and food assessments of North Korea provided by the United Nations Food and Agriculture Organization and the World Food Program to evaluate how dependent North Koreans are on the government for the provision of food, and to what extent private sources prevail. Based on a numerical analysis of harvests and caloric consumption, as well as a geographical analysis of food distribution, this paper advances an argument that sources other than the government are responsible for food supply in North Korea. Although the government remains an important source of food through the Public Distribution System, its crippled capacity to provide resources for survival is likely to have an impact on the strength of bonds between citizens and the state, and ultimately on the political legitimacy of the North Korean regime among the public.

Dictatorial regimes depend on firm oppression and control for their survival. However, the carrots are often as crucial as the sticks. North Korea is no exception. In the North Korean social model, the regime derives much of its legitimacy from providing its people with their everyday needs.¹ Heonik Kwon and Byung-ho Chung call this the “moral economy” of North Korea. In this social model, the Leader takes on the responsibility of providing for the people, who in return owe him their hard work and boundless loyalty.²

^{*} I am grateful to Jerome Sauvage for valuable comments and suggestions. All mistakes and errors are my own.

¹ For more on the politically motivated organization of the North Korean economy, specifically on workplace allotment, see the Korean Institute for National Unification, *White Paper on Human Rights in North Korea* (Seoul, South Korea, 2008); for an in-depth discussion on the North Korean system for social stratification, see Robert Collins, *Marked for Life: Songbun. North Korea's Social Classification* (Washington, DC: Committee for Human Rights in North Korea, 2012), Kum-son Lee, “Bukhan Chominui Kâcho, Idong: Siltae Mit Byonhwachonmang [The Residence and Migration of North Korean Citizens: Current Situation and Changes],” *Research paper 07-19* (Seoul, South Korea: Korean Institute for National Unification, 2007); for a discussion about North Korean totalitarianism, see Benjamin Katzeff Silberstein, “North Korea: Fading Totalitarianism in the ‘Hermit Kingdom,’” *North Korean Review* 6 (2010): 40-54.

² Byung-ho Chung and Heonik Kwon, *North Korea: Beyond Charismatic Politics* (New York: Rowman and Littlefield Publishers, 2012), 151-173.

In the 1990s, however, the North Korean economy collapsed. Given the moral aspect involved in economic management, the collapse led to two separate crises: one of food and resources, and one of politics. The North Korean economy rests on a social contract between the state leadership and the people.³ With the collapse of the economy, the state reneged on its part of the contract. The public distribution system for the allocation of food and resources (PDS) broke down in the early 1990s, and, at times, ceased to function altogether.⁴

Since the early 1990s, the North Korean economy has been characterized by a constant game of tug-of-war. On one side are markets, which exist in both official and unofficial forms. Markets arose spontaneously in the early 1990s as a response to the state's inability to provide food and other necessities. On the other side is the PDS, which still operates, but with crippled capacity. The state has tried several times to restore the PDS to its previous position as the main provider of food for the North Korean people. One of the strongest examples occurred in 2005, during which the state implemented a series of reforms aimed at adjusting the official price level to meet market prices. Later in 2009, the state implemented a currency reform aimed at wiping out the savings of middle class citizens engaged in market trading.⁵ Neither of these attempts managed to restore the PDS to its previous position as the sole provider for the people. Today, the PDS continues to play a role in food provision, but its capacity is severely constrained by the extent to which the government can mobilize food inputs. The government's capacity to provide food depends on how much domestic production, imports, and aid resources are available. For many North Koreans, particularly those who live in the countryside, private plots, kitchen gardens, and hillside slopes have become important alternate sources of food.⁶

However, it remains unclear who currently has the upper hand in this tug-

³ Byung-ho Chung and Heonik Kwon, *North Korea: Beyond Charismatic Politics* (New York: Rowman and Littlefield Publishers, 2012), 151-173.

⁴ *Ibid*; Stephan Haggard and Marcus Noland, *Famine in North Korea: Markets, Aid and Reform* (New York: Columbia University Press, 2007), Chapter 3.

⁵ Stephan Haggard and Marcus Noland, "The Winter of Their Discontent: Pyongyang Attacks the Market," Policy Brief PB10-1, Peterson Institute for International Economics, January 2010.

⁶ Stephan Haggard and Marcus Noland, *Witness to Transformation: Refugee Insights into North Korea* (Washington, DC: Peterson Institute for International Economics, 2011), 45-77; United Nations, *Special Report: FAO/WFP Crop and Food Security Assessment Mission to the Democratic People's Republic of Korea*, Rome, Italy, 2011; United Nations, *Special Report: FAO/WFP Crop and Food Security Assessment Mission to the Democratic People's Republic of Korea*, Rome, Italy, 2012; United Nations, *Special Report: FAO/WFP Crop and Food Security Assessment Mission to the Democratic People's Republic of Korea*, Rome, Italy, 2013.

of-war between the state, the market system, and other private sources. According to some studies, North Koreans depend on sources other than the state and the PDS for the vast majority of their food consumption requirements. Meanwhile, analysts such as Andrei Lankov estimate that 85 percent of all food is still produced by the state.⁷

These are the figures that I attempt to outline in this paper. In this study, I use the yearly crop and food security assessments by the UN Food and Agriculture Organization, as well as the World Food Programme (WFP), to explore how dependent North Koreans truly are on the state. The assessments are compiled by these UN agencies through survey interviews conducted in North Korea. Although these studies depict the sources of food available to the North Korean public, they do not specifically indicate the gap between the PDS and private sources. The main purpose of this paper is to attempt to provide an estimate of the difference between the amount of food North Koreans receive from the state and the amount of food they require.

This degree of dependency on the PDS is a crucial question for the future of the North Korean political system. If North Korean citizens are no longer dependent on the state for their welfare, the state has not only failed to live up to a core tenet of the ideological foundation for a communist society, but also lost an indispensable tool for totalitarian control.⁸ The government's inability to provide for its people during economic crises has tarnished its ideological image and diminished its political legitimacy. The degree to which the public remains dependent on the state will hopefully elucidate the extent to which the state still maintains legitimacy.

Public dependence on the state has major implications for the direction of the North Korean state and the internal policy decisions it makes. The regime's most important economic reforms, most notably those of 2002, have historically come as responses to the growth of markets.⁹ If we examine historical precedents

⁷ Haggard and Noland, *Witness to Transformation*, 52; Peter Ward, "A Primer on North Korea's Economy: an Interview with Andrei Lankov," *Sino-NK*, October 11, 2013, accessed November 30, 2013, <http://sino-nk.com/2013/10/11/a-primer-on-north-koreas-economy-an-interview-with-andrei-lankov>.

⁸ According to Andrei Lankov, the quality of food rations corresponds with one's place of residence, which, in turn is heavily correlated with one's political status. See Andrei Lankov, *The Real North Korea* (Oxford: Oxford University Press, 2013), 35; Collins "Marked for Life," and Lee "A Life Dedicated to Solving the Food Problems in North Korea."

⁹ Haggard and Noland "The Winter of Their Discontent," chapter 7; Gwan-hee Yoon, "Why Don't North Koreans Fight Back?" *DailyNK*, December 29, 2009, accessed December 16, 2013, <http://www.dailynk.com/english/read.php?cataId=nk02900&num=5755>.

set in other nations with similar mechanisms for food distribution, we find that when these markets become increasingly prevalent and necessary for providing food, the regime is more likely to implement reforms that accommodate the marketization. According to Andrei Lankov, reforms like these would make North Korea a more “normal” regime.¹⁰ Indeed, one could imagine a scenario in which reforms eventually go so far as to increase North Korean dependency on international trade. This, in turn, could make it so the repercussions and opportunity costs of the nuclear program and other points of conflicts in the international arena would incentivize North Korea to ratchet down its militarism and soften its aggressive diplomatic tone.¹¹ Up until now, the markets have been the main arena in which occasional instances of defiance against authority have taken place.

Yet, there is reason to doubt the validity of optimistic projections like these. Predictions about the future of North Korea are made quite often, yet many of these predictions turn out to be unfounded. Indeed, developments inside North Korea may not fit any of the models used for other countries, and the logic of decisions made by the government may be beyond our comprehension. Nevertheless, the ongoing battle between markets and the state will continue to be critical in shaping the direction of the country. The goal of this study is to further our understanding of the current state of the battle between markets and the state.

Literature Review

Issues surrounding food, power, and political control in North Korea are by no means unexplored. Flake and Snyder study the issue in terms of foreign aid and non-governmental organization (NGO) engagement in North Korea during the aftermath of the famine.¹² They discuss the dilemma that NGOs faced when attempting to adhere to their own standards of ethics while working in a society where access to food was—and to a large extent still is—determined by political status, rather than actual need. Lintner similarly revisits a debate on food aid that raged in the late 1990s and early 2000s.¹³

¹⁰ Andrei Lankov, “The Natural Death of North Korean Stalinism,” *Asia Policy* (January 2006): 95-121.

¹¹ Stephan Haggard and Marcus Noland, “Engaging North Korea: The Role of Economic Statecraft,” *Policy Studies* 59 (2011): 1-96.

¹² Scott Snyder, “The NGO Experience in North Korea,” in *Paved With Good Intentions: The NGO Experience in North Korea*, ed. Gordon L. Flake and Scott Snyder (California: Praeger, 2003).

raged in the late 1990s and early 2000s.¹³ In this debate, institutions like the WFP were accused of “becoming a part of the system of oppression” because they channeled food through the official state system.¹⁴ Hazel Smith uses her vast personal experience working with international development agencies in Pyongyang to explain how social structures were altered drastically as a result of the famine. Smith shows how market mechanisms changed the rules and incentives for people involved in agriculture in North Korea. Smith also discusses in detail the methods the WFP uses to create a system for gathering data in North Korea.¹⁵ Her account clearly demonstrates the lengths that UN agencies go to in an attempt to overcome the obstacles of collecting information about food distribution in North Korea.¹⁶

It is no secret that scholars researching the country seldom rely on official data published by the North Korean government. Whenever it is cited, the contents must be qualified because they are often either incomplete or inaccurate. Nicholas Eberstadt has discussed this issue at length.¹⁷ According to Eberstadt, official North Korean data is often fraught with numerous methodological inconsistencies. Reports published before 2000 show especially unclear data. Some deficiencies even indicated outright manipulations.¹⁸ Though the quality of data coming out of North Korea has significantly improved over the years, there is still good reason to critically approach both reports released by the government and any information gathered within the country. Since the regime still severely restricts the freedom of movement of foreign visitors inside the country, any study relying on data gathered inside North Korea needs to address these constraints. Thus, I begin with a discussion on the accumulation of source material.

Sources: Can the WFP and FAO Assessments be Trusted?

The UN Food and Agriculture Organization (FAO) and the WFP conduct

¹³ Bertil Lintner, *Great Leader, Dear Leader: Demystifying North Korea under the Kim Clan* (Chiang Mai: Silkworm Books, 2004).

¹⁴ *Ibid.*, 51.

¹⁵ Hazel Smith, *Hungry for Peace: International Security, Humanitarian Assistance, and Social Change in North Korea* (Washington, D.C.: United States Institute of Peace, 2005), 77-101.

¹⁶ *Ibid.*, 14-17.

¹⁷ Nicholas Eberstadt, *The North Korean Economy: Between Crisis and Catastrophe* (New Brunswick and London: Transaction Publishers, 2009), 17-61.

¹⁸ *Ibid.*, 17-61.

what is arguably the most comprehensive study on food security in North Korea currently available to an international audience. Beginning in 1995, these organizations have made broad assessments of the North Korean food situation and foreign assistance needs through mission trips to the country. The mission teams visit North Korea at the invitation of the government. The purpose of these visits is to assess the crop harvest of the previous year and project the harvest for the following year. They also calculate how much North Korea needs to receive in imports and foreign aid.¹⁹ This paper will focus on the most current available report, published on 28 November 2013, which takes into account the 2013 food situation and crop harvest and makes projections for the following year.²⁰ In order to place the current situation within a broader context, the reports from 2011 and 2012 will also occasionally be referenced. The assessment teams conduct their studies in close cooperation with the North Korean government. As such, they must work under the same restrictions to movement that all foreign visitors in the country face. This is important to bear in mind given that North Korea has previously been suspected of systematically manipulating the estimations of its need for aid in order to increase donations.²¹ For most cases, the UN uses figures provided by statistical authorities in each country when presenting its own data. Though much has improved over the years, North Korea's statisticians fail to sufficiently generate the information that the UN agencies require in order to assess the need for food assistance. Therefore, in the case of North Korea, the UN deems it necessary to do their own on-site assessments.²²

The UN agencies still do not have access to all of North Korea, and are still unable to move freely around the country. Notwithstanding this constraint, conditions for the crop and food assessments are reported to have significantly improved over time. In recent years, the teams have been able to conduct studies through their own Korean-speaking staff. In 2012 and 2013, they were able to observe the prices of basic goods at some markets in the country. The mission teams typically conduct the studies by interviewing individual households with a structured questionnaire, and the type of household to be visited is chosen at the specific

¹⁹ UN, Special report, (2013).

²⁰ UN, Special Report, (2013).

²¹ Stephan Haggard and Marcus Noland, "The Logic and Illogic of Food Aid," *38North*, April 13, 2011, accessed November 30, 2013, <http://38north.org/2011/04/foodaid>.

²² For example, see Carl Bialik, "Statistical Diplomacy in North Korea," *Wall Street Journal*, January 18, 2013, accessed October 12, 2014, <http://blogs.wsj.com/numbers/statistical-diplomacy-in-north-korea-1205>.

request of the assessment teams.²³ The number of households studied ranges between seventy-seven and ninety-five for the years from 2011 to 2013. In addition to households, the teams also visit hospitals, nurseries, and schools to estimate the food need. They make harvest assessments through visits and by performing soil tests at collective farms.²⁴

However, there are still reasons for concern about the validity of the studies, particularly with regards to the scope of the sample. The UN emphasizes that the sample of households studied is not selected in a statistically randomized manner. The sample size is also too small to be representative, and thus should only be seen as indicative. Furthermore, though the reports do not state this outright, the individuals interviewed still seem to be selected by the North Korean government.²⁵ This could potentially give the government some ability to steer the results in a direction favorable for its purposes.

In addition, geographical bias may impact some of the assessments. For example, in the 2013 report, Onsong County was the only county visited that directly borders China.²⁶ Yet, the border region is where most cross-border trade to and from the markets takes place. Therefore, the overall importance of the markets may have been underestimated.

Bearing in mind these warnings about the lack of reliable data when it comes to North Korea, this paper now turns to an analysis of the UN's 2013 crop and harvest assessment. The analysis is divided into different categories of figures that can tell us something about how dependent the North Korean public is on the state.

Analysis: How Dependent are North Koreans on the State?

Harvests, Imports, Supply, and Demand

It is important to first consider the conditions under which the capacity of

²³ In the overview of the PDS, two types of households are studied: collective farm households, which are not dependent on the PDS, and urban households, who are supposed to receive food from the PDS; UN, *Special Report* (2013).

²⁴ UN, *Special Report* (2011, 2012, 2013).

²⁵ Ibid.

²⁶ Ibid.

the PDS is determined. The PDS only operates and delivers when the state manages to procure food. The system has existed since the earlier days of North Korea, but temporarily broke down in certain years during the 1990s due to a lack of food going into the system.²⁷ The operational capacity of the PDS also varies depending on the time of year. Inputs may be available at one point in the year but absent in another.

A good starting point for analyzing how much North Koreans depend on the state for food provisions is to look at official overall figures of harvests and food imports, and to compare these with estimated food needs. While this method of analysis is too simplistic to provide a full picture, it does provide an indicative measure.

According to the 2013 UN assessment, overall crop production in 2013 and 2014 is estimated to have increased by 5 percent from 2012 to reach a total of 5.03 million tons in cereal equivalent.²⁸ This means that in order to reach the basic supply requirement as determined by the UN agencies, North Korea only faces a food gap of 40,000 tons when the scheduled government imports of food are taken into account. Imports have remained fairly constant over the past two years, but more than doubled in 2011.²⁹

This overall harvest figure does include production in home and kitchen gardens belonging to government institutions, such as hospitals and factories. Whether or not to consider the latter as part of government-controlled production poses a tricky question. While these institutions are government-controlled, production is meant only for the staff and workers of the individual institutions, which are not part of the centrally planned distribution system. Since the food produced in these gardens does not reach the PDS, I count this type of production as separate from the state-distributed harvest. By this reckoning, the total production from non-private sources ends up at around 4.22 million tons. Furthermore, based on the estimated sizes of their respective plots, production in private home gardens is around twice as high as that of government-owned gardens.³⁰ One could also argue that production on sloping land should be discounted since these lands make up a

²⁷ Haggard and Noland, *Famine in North Korea*, 58–62.

²⁸ UN, *Special Report* (2013), 4.

²⁹ UN, *Special Report* (2012), 7; UN, *Special Report* (2013), 8; UN, *Special Report* (2011), 4.

³⁰ UN, *Special Report* (2012), 14.

significant part of North Korea's mountainous terrain, which, according to the UN, is cultivated by "individuals," who are presumably outside of state control. However, this cultivation has been increasingly formalized, and much of it probably occurs within the official government economy.³² Therefore, this paper does not discount this production in the overall estimate of PDS-supplied harvest crops. However, it should be mentioned that this sort of production is estimated to generate around 220,000 tons of food according to UN estimates of the productivity of the soil and the total area of cultivated sloping lands.

Given these specifications, my calculation is made by dividing the remaining crop production figure, roughly 4.22 million tons, by North Korea's total population of approximately 24.1 million. This leaves around 159 kilograms of food per person produced in the country overall. Again, there are several problems with this type of measure. For instance, we do not know specifically how the government-controlled domestic food supply is allocated. For example, the *songun* policy, or "military-first policy," states that the military should be given priorities in all resource allocation. Historically, the army has most likely been provided with disproportionately large distributions when compared to the general population. Food distribution has also varied heavily between provinces that are generally considered less politically and socially favored and those that have higher standing (most notably favored is the capital city of Pyongyang), particularly during the famine.³³ Despite these caveats, the figure of 159 kilograms per person can be seen as indicative of a rough per-capita production figure.

The calculation of the gap between official food production and consumption can be made by subtracting this figure from the annual per capita consumption of basic food commodities, all of which are products grown in the country, calculated by the UN mission to be 174 kilograms per person. This leaves a gap of 15 kilograms, or 8.6 percent, between what the state puts out and what the public consumes. Given the very unequal distribution of food in North Korea, the share of the consumption of food not provided by the state is probably much higher for most of the general public.

³² UN, *Special Report* (2013), 23.

³³ Haggard and Noland, *Famine in North Korea*, 69–69.

Consumption Projections through Caloric Counts

Another way to sketch out a rough image of the gap between what the state produces and what people consume is to look at the difference in caloric measure between officially estimated consumption and daily human need. North Korean caloric consumption is probably lower than the WFP estimate of what an average person needs to consume to “live a normal, healthy life” of 2,100 kcal per day.³⁴ However, North Korea is not currently experiencing any major food crisis or widespread starvation. Therefore, the difference between this benchmark and estimated actual consumption could give an indication of how much food comes from sources other than the PDS.

According to a 2013 estimate, a typical person consumes 350 grams of grains per day. This translates into an average per-capita caloric consumption of 1,640 kcal per day.³⁵ The figure is slightly lower for PDS-dependent households, where the average person is estimated to consume 310 grams per day. This places the caloric consumption of an average person in a PDS-dependent household at 1,250 calories per day. For such households, this leaves a gap of 30 percent between state-provided consumption and required consumption. Even though farming households have an estimated consumption of 400 grams per day, this also falls short of what the WFP uses as a daily-recommended intake.

This leaves us with the following situation: either the PDS-dependent population has a caloric consumption of 30 percent below what is required for a “normal” life according to WFP-standards, or part of the gap is filled by food from other sources. The assessment team believes the latter, and assumes that this gap is filled by “limited quantities of available fish, poultry, meat, sweet potatoes, vegetables, fruits, and other wild foods.”³⁶

Having established that there is probably a significant gap between calories received from the state and calories actually consumed, this begs the question: what is the source for the supplementary food? The UN assesses that 38 percent of PDS-dependent households have access to kitchen gardens, which produce

³⁴ World Food Program, “What is Hunger,” <http://www.wfp.org/hunger/what-is>.

³⁵ UN, *Special Report* (2013), 25-27.

³⁶ *Ibid.*, 25.

8 percent of their cereal supply and 98 percent of their vegetables.³⁷ Interestingly, in the 2012 assessment, PDS-dependent households and 30 percent of cooperative farmers were estimated to be growing 12 percent of their own food. This is a significantly higher figure than in 2013.³⁸ However, the majority of this year's sample, 62 percent, does not have access to kitchen gardens. Within this population, 16 percent reported that gifts and exchange provided 16 percent of total cereal supply and 52 percent of vegetable supply.³⁹ Moreover, PDS-dependent households reported receiving 24 kilograms of cereals through social support networks like relatives and friends on cooperative farms. Over 90 percent report that they rely on such a support network over the lean season months between May and early August.⁴⁰

It is difficult to draw precise and clear conclusions from these figures. While many North Koreans most certainly consume well below the recommended 2,100 calories per day, not a single respondent reports having had no food of any kind during the 30 days before taking the survey.⁴¹ Less than 40 percent of respondents report eating fewer meals, and only a little over 40 percent report eating smaller meals during this period.

Again, posing the question on how this food gap is filled, one natural source to assume would be the markets. Households interviewed claim to only have visited the markets two or three times per month. However, this is probably an underestimate, particularly given the emphasis that the UN places on the markets' role in food supply in this year's report. There are several potential reasons for this underestimate. One could attribute some of it to sample skew, where households receiving food assistance are disproportionately overrepresented. This was probably the case for the 2012 study.⁴² Another reason could be the still somewhat murky legal status of the market system. While a significant portion of the general market system that sprung up as a response to the famine has been legalized and operates openly with the consent of the authorities, the sale or exchange of grains is still prohibited.⁴³

³⁷ UN, *Special Report* (2013), 35.

³⁸ UN, *Special Report* (2012), 26.

³⁹ UN, *Special Report* (2013), 35.

⁴⁰ *Ibid.*

⁴¹ *Ibid.*, 34.

⁴² Marcus Noland, "The Latest FAO/WFP Crop and Food Security Assessment," *Witness to Transformation Blog*, November 15, 2012, accessed November 30, 2013, www.piiie.com/blogs/nk/?p=8099.

⁴³ Philip H. Park, "Economic Reform and Institutional Change in the DPRK," in *The Dynamics of Change in North Korea: An Institutional Perspective*, ed. Philip H. Park (Seoul: Kyungnam University Press, 2009); UN, *Special Report* (2013).

Indeed, the report describes how households being interviewed were “uncomfortable describing exchanges of cereal and other agricultural commodities as gifts or barter.”⁴⁴ Even though markets may in general operate openly, exchanges of goods such as cereal are still illegal. This has probably caused the market’s role in filling this 30 percent caloric gap to be underestimated. While markets do not fill the entire gap, UN assessments suggest that a significant share probably is. However, UN’s assumption, which implies the gap is covered by foraging for meat, vegetables, and other foods that can be found in the wild, is questionable. These foods are not easy to acquire in North Korea, particularly since the opportunity cost of foraging and other activities is probably higher than for market trading.⁴⁵ The market is a much more likely source for at least a partial coverage of this nutrition gap. These quantitative findings are summarized in the table below:

Table 1. Summary of Numerical Figures

Statistic	Figure
Non-private cereal production total for 2013	4.22 million tons
Non-private cereal production per capita for 2013	159 kg
Cereal consumption per capita for 2013	174 kg
Gap between state supply and consumption	15 kg (8.6%)
Caloric consumption, PDS-dependent households, per day	1,250 kcal
Necessary amount of calories per day , WFP-benchmark	2,100 kcal
Gap between state supply and caloric benchmark	850 kcal (30%)

Source: Author’s calculations based on UN, *Special Report* (2013)

Delivery Patterns of the PDS

As previously noted, the PDS operates when inputs exist, and ceases to operate when inputs are lacking or absent. So far, this paper has looked at supply from a yearly and overall point of view. However, seasonal variation also provides an interesting point for analysis. The UN agencies study how consumption patterns vary

⁴⁴ UN, *Special Report* (2013), 10.

⁴⁵ Randall Ireson, “The New Crop Assessment Report: What it says about North Korean Farming,” *38North*, December 18, 2013, accessed August 15, 2014, <http://38north.org/2013/12/rireson121813>.

across seasons. When they use this method of analysis, they reach their strongest conclusions about the importance of markets and other unofficial channels.

The summer months make up the so-called “lean season,” or the time when access to food is particularly difficult. Households reported that their food situation improved in late August. Meanwhile, PDS deliveries continue to decline from 320 grams in the second half of August to a low-point of 310 grams for September. PDS-distribution does not catch up until October, when it increases to 390 grams per day.⁴⁶ As the UN assessment concludes, this is a strong indication that mechanisms other than government-controlled ones provide an especially critical base for food procurement during these months.

Which are these supplementary mechanisms? As noted earlier, social support networks such as relatives on cooperative farms matter immensely for a significant part of the population, as do markets. There is probably significant regional variation here. PDS dependents with close proximity to the Chinese border, where supply could be increased through legal or illegal imports, are probably more dependent on markets to supplement their consumption during periods when distribution is lower. Meanwhile, people closer to North Korea’s southern agricultural regions may be more dependent on relatives and other forms of unofficial social support networks.

Presently, we do not know the exact proportions of the supplementary sources. Still, an indicative degree of reliance on sources other than the state can be calculated for the months when PDS-deliveries are low but households still report an improving situation. According to government figures, excluding the “lean months” of June and July, the average PDS-delivery during 2013 was a ration of 400 grams per day.⁴⁷ With deliveries as low as 310 grams, around 22.5 percent of the North Korean public’s food consumption during these months is derived from other sources than the PDS.

Stunting Rates and Delivery Patterns

The incidence of stunted growth among children in a country is a common measure of access to nutrition. According to the World Health Organization

⁴⁶ UN, Special Report (2013), 29.

⁴⁷ Ibid., 29.

(WHO), the rate of stunted growth among children within a specific geographical area reveals much about the local socio-economic conditions and about access to food for pregnant mothers and young children.⁴⁸

Stunting rates in North Korea increased dramatically during the famine of the 1990s. While these numbers are still high they are beginning to decline. In 2004, it was reported that less than 40 percent of children's growth was considered stunted. This is in contrast to 65 percent of children in 1998.⁴⁹ These rates vary dramatically between regions, with a current overall prevalence of 27 percent. In addition to a map describing the regional incidences of stunting, the 2013 assessment also contains a map with information provided by the North Korean government that describes patterns for food flows into and within North Korea.⁵⁰

This provides an interesting opportunity for a non-quantitative comparison. Logically, if the official food supply matches consumption, provinces that receive relatively little food from the government should have high rates of stunting, and *vice versa*. However, the maps available from the UN reports indicate that mechanisms other than the PDS are strong enough to have created structural differences in stunting. North Hamgyong province, one of the first provinces where food deliveries ceased preceding the famine of the 1990s, provides an illustrative example.⁵¹

On the map where the balance account for food is shown, provinces range from having a "surplus" to a "major deficit" of food. Much of North Hamyong is shown as having a "major deficit." In other words, according to North Korean data, the official system does not allocate nearly enough food to the province. Figure 1 shows two provinces, North and South Hamgyong, that both have vast areas classified as "major food deficit":

⁴⁸ Monika Blössner and Mercedes de Onis, *WHO Global Database on Child Growth and Malnutrition* (Geneva: World Health Organization, 1997).

⁴⁹ Haggard and Noland (2007), 196.

⁵⁰ As is evident from the map in UN, *Special Report* (2013), 37.

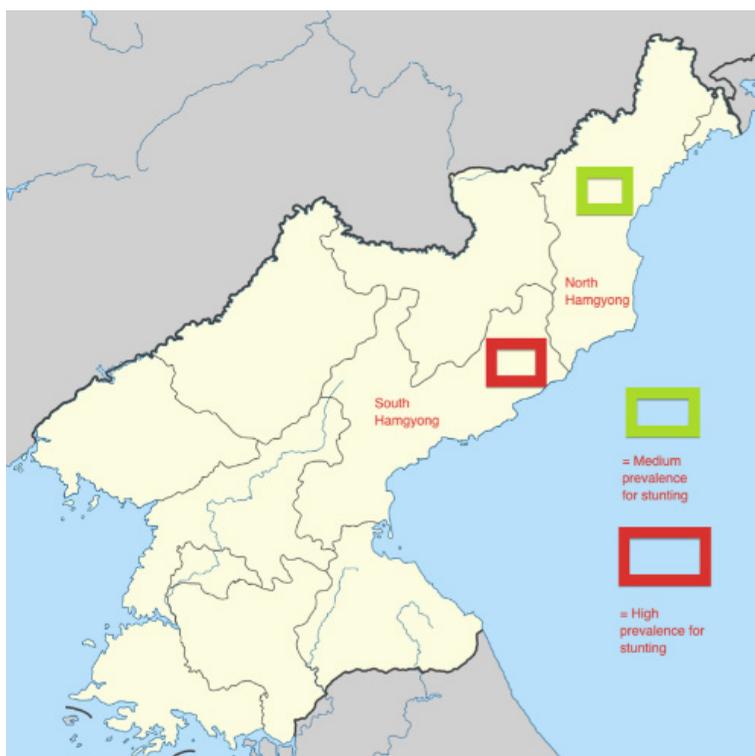
⁵¹ *UN Special Report* (2013), 31.

Figure 1. Food Deficits in North and South Hamgyong Provinces



Source: Created by Author using Wikipedia Commons image provided by “NordNordwest”; UN, *Special Report* (2013), 31.

However, stunting rates in North Hamyong are classified as “medium prevalent.” Meanwhile, stunting rates in South Hamgyong Province, which has a comparable food deficit, shows “high prevalence.” Figure 2 shows illustrates these differences:

Figure 2. Stunting Rates in North and South Hamgyong Provinces

Source: Created by Author using Wikipedia Commons image provided by “NordNordwest”; UN, *Special Report* (2013), 37.

The market seems to be a plausible explanatory factor here. North Hamgyong borders China, which makes it an easier destination than most provinces for both legal and illegal imports. This follows an old pattern in North Korea, where provinces that are closer to China tend to fare better than many that are closer to the privileged capital city of Pyongyang.⁵² Based on assessments of earlier years, Hazel Smith makes a similar observation, which confirms that the structural irregularity of North Hamgyong is not a one-time phenomenon for this year.⁵³ Though this does not tell us much about how dependent the individual North Korean citizen is on the state, it does show that other supply mechanisms besides the PDS are significant enough to affect the prevalence of stunted growth among North Korean children.

⁵² Haggard and Noland, *Famine in North Korea*, 199.

⁵³ Hazel Smith, “North Korea: Market Opportunity, Poverty and the Provinces,” *New Political Economy* 14 (2009): 231-256.

The table below summarizes these findings:

Table 2. Summary of Non-Quantitative Findings

Evidence (1)	Evidence (2)	Discrepancy between (1) and (2)
Households reported food situation improving in late August	PDS-deliveries do not increase until October	Households report food situation improving before DPS-deliveries pick up
Official food deficit in North Hamgyong and South Hamgyong , among other provinces	Stunting rates are lower in North Hamgyong than in Southern Hamgyong and other provinces	Stunting rates are lower in North Hamgyong than in other provinces with comparable food situations

Source: Author's inferences from UN, *Special Report* (2013).

Discussion: Where is Food in North Korea Coming From?

Thus far, it has been taken for granted that much of the food that the state does not supply should logically come from the markets. This assumption needs to be qualified. First, it is worth repeating that the UN reports cited in this paper clearly highlight the role of the markets, even though these have not been studied in detail by the assessment teams. There is, however, a wide range of literature dealing with these markets that provides evidence of their increasing role in the North Korean economy. Most available scholarship concludes that the market system has been the primary mechanism for survival and sustenance when the state's capacity has dwindled.⁵⁴ With regards to how market trade occurs and how the products sold on the markets are produced, a number of anecdotal sources describe varying degrees of entrepreneurial activity taking place in North Korea. Private citizens can grow food or manufacture goods with whatever means available and sell what they can on the markets.⁵⁵ It is here that the aforementioned kitchen gardens almost certainly play a key role. It is also clear that China is playing a large role in North Korea's food provision. China acts both as an official exporter food to North Korea

⁵⁴ Park, *The Dynamics of Change in North Korea*; Smith, *Hungry for Peace*; Haggard and Noland, *Famine in North Korea*; Haggard and Noland (2011).

⁵⁵ See Barbara Demick, *Nothing to Envy: Ordinary Lives in North Korea* (New York: Spiegel and Grau, 2010).

and as the focal point for unofficial trade going across the border to North Korea's northern regions. While figures for official trade with China are widely available, it is virtually impossible to calculate the scale and value of unofficial cross-border trade to North Korean markets.⁵⁶ Cross-border trade by actors other than the state still holds a murky legal status. Any official, legal food imports from China that are channeled through the official system for food provision have most likely been included in the total figures in the UN reports on what the public receives through the PDS. Though it is unclear whether imports from China are already included in the UN figures on total production of cereal per capita, such imports would almost certainly not have impacted information on caloric consumption or on patterns of food distribution in North Korea. This data shows the quantities and distribution pattern of the PDS as a whole. Therefore, it can be reasonably assumed that any official imports from China that go to the general public have already been included in these figures.

Conclusion

How dependent are North Koreans on the state? To attempt to answer this question, I first summarize the latest UN study of the North Korean food situation. Table 3 provides a brief summary of the core results:

Table 3. Summary of Results

Evidence (1)	Evidence (2)	Gap
159 kg per capita in non-private cereal production	174 kg per capita in cereal consumption	15 kg (8.6%) low-range estimate
1,250 kcal distributed through PDS	2,100 kcal as benchmark consumption for normal, healthy life	850 kcal (30%)
Household food situation improving in late August	PDS-deliveries increasing in October	Food situation improving before PDS-deliveries
Food deficits in both North and South Hamgyong provinces	Stunting rates lower in North Hamgyong than South Hamgyong	Stunting rates lower in North Hamgyong than in other comparable provinces

⁵⁶“N. Korea’s grain imports from China halve in H1,” *Yonhap News*, July 7, 2014, <http://english.yonhap-news.co.kr/northkorea/2014/07/30/89/0401000000AEN20140730005300315F.html>.

Examining these results reveals the following:

- 1) There is a gap of 8.6 percent between state distribution and public consumption, as measured in kilograms of food. However, given the unequal distribution of food in North Korea, this is likely to be a conservative estimate.
- 2) Based on the estimated daily human need of 2,100 calories and as measured through caloric consumption, there is a 30 percent gap in food consumption for PDS-dependent households. This gap is likely to be filled to an extent, but probably not completely. Here, the market is likely playing a key role, but private food cultivation and welfare networks are also crucial.
- 3) The PDS is not only compromised by the lack of inputs, but also heavily constrained by the dilapidated infrastructure of the country. Significantly late deliveries occur regularly. During these times, market mechanisms probably provide crucial replacement.
- 4) The fact that North Koreans in the survey report that their food situation is improving after the lean season much earlier than when the PDS-deliveries increase can be seen as evidence of the prominence of market forces.
- 5) The rate of stunted growth in North Hamgyong is significantly lower than in neighboring provinces, even though state deliveries of food show equally great deficits. This suggests that the market system, at least in this province, may have become a fundamental and well-integrated part of the food economy. The strong role of the market system seems to have had a fundamental and lasting impact on the physical health of the province's inhabitants. This process is very likely driven by the province's close proximity to China.
- 6) Several findings underscore the importance of the market system: the general observations of the assessment mission, the impact that markets seem to have on dietary diversity in the country, and the fact that markets are so widespread that the average North Korean is estimated to live less than 5 kilometers from one. Moreover, such scattered findings indicate that the PDS has not been able to be revived, despite government attempts.

Only a few of these observations are quantitative, and according to these observations, the estimate of how much of food consumption is provided by the state ranges between 15-20 percent on the lower end of the spectrum and 91.4 percent on the higher end. Both ranges are probably exaggerated, and the truth probably lies somewhere in between. Given the variation of food distribution by the state, it is impossible to sketch out a single average figure for the entire population. Distribution varies with profession or region, between urban and rural populations, by season and, not least of all, by the general availability of inputs for the PDS. For example, distribution to households on cooperative farms is not only more abundant, but also functions in a completely different manner from distribution to urban households. Future crop and food security assessments will, hopefully, contain more detailed information on food sources in North Korea. A more detailed breakdown of data indicators would also be useful in determining the differences between population groups.

What is clear according to almost all indicators, however, is that the North Korean public is dependent on mechanisms other than the state for much of their food consumption. As such, the state will have to adapt to its diminished role in an economy where markets are beginning to play a more integral role. All attempts by the state to regain the initiative in the micro-economy have failed. Some attempts, like the 2009 currency reform, were so disastrous that the government deemed it necessary to publically express regret for its measures in order to retain political legitimacy.⁵⁷ The regime seems to have learned its lesson. WFP reports show that harvests have consistently increased since 2011. Still, the government has held off on launching large-scale attacks on the markets. Even though the state should be more confident in cracking down on the main private source for the provision of food, it has chosen not to because the state's own production has gone up. Either the government lacks the capacity for a full-scale crackdown or it is choosing not to pursue it. Regardless, the message remains the same; private sources for food are here to stay, and the regime will probably leave continue without interference for the time being.

⁵⁷ The execution of Pak Nam-gi, former finance and planning department chief for the Korean Worker's Party, was said to have been conducted by the regime because of Pak's responsibility for the 2009 currency reform, which hit hard the savings of the market-trading classes. See Sang-hun Choe, "N. Korea Is Said to Execute Finance Chief," *New York Times*, March 28, 2010, <http://www.nytimes.com/2010/03/19/world/asia/19korea.html>.

For a self-proclaimed communist society, the loss of control over the distribution of food is the loss of a powerful political weapon. It is also the loss of control over one of the most basic human needs—the ability to sustain oneself and to survive.⁵⁸ The very design of the North Korean “family state,” where the leader functions as a form of collective parent for the people, is contingent on the state being able to provide for the citizens, or, as the people are sometimes called, the state’s “children.”⁵⁹ The breakdown of the economy meant the “breakdown of the moral authority of the Worker’s Party in relation to the general population.”⁶⁰ As this paper has shown, the state and the Party have not been able to fully recover this moral authority.

In a similar theoretical perspective, the breakdown of total official control over the economy meant the loss of one of the very key traits of a totalitarian society (as described by Zbigniew Brzezinski and Carl J. Friedrich in their classic outline of the functioning of the totalitarian system).⁶¹ That does not mean to imply that North Korea is no longer a harshly governed society. However, the loss of control over essential parts of the economy does mean that the regime has at least partially lost its hold over a crucial sphere of society. Though the regime appears to be stable at present, this loss of economic authority may become a larger problem in the future. North Korea has yet to see large-scale protests like those of the Arab Spring, but these markets inside the country have been the primary arena for the various forms of protests that have occurred against government authority.⁶² As long as the markets stay—and it looks as though they will—the tension between regime control and the markets will also remain.

The North Korean regime is rather unpredictable, but a stark generational difference seems to be emerging. This shift will probably have a strong impact on the shape of North Korea over time. The young generation is growing up in a very different society from the one that molded the mindset of the previous generation. North Koreans today need to put their hopes in completely different institutions

⁵⁸ Hazel Smith (2009) claims that food distribution has generally been relatively equal in North Korea. While this may be true, according to sources such as KINU 2008, Collins 2012 and Lee 2007, quality of food is highly correlative with geographical place of residence, which is in turn a function of one’s political status.

⁵⁹ Chung and Kwon, *North Korea*, chapter 6.

⁶⁰ *Ibid.*, 163.

⁶¹ Zbigniew Brzezinski and Carl J. Friedrich, *Totalitarian Dictatorship and Autocracy* (Cambridge: Harvard University Press, 1956).

⁶² Yoon, “Why Don’t North Koreans Fight Back?”

than their parents did for the provision of something as basic as food, whether that be in the market, in the unofficial welfare support networks, or even in a single garden plot behind the house. The character of the North Korean state was shaken to its core during the 1990s, and to this day it still has not returned to normal. Without the capacity for a functional system of distribution like it once had, the North Korean government's monopoly over cereal has certainly lost much of its political force.

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