

Sung-Wook Nam

**Contemporary Food Shortage of North Korea  
and Reform of Collective Farm**



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## Preface

I have been to Pyongyang eleven times, most recently from July 28 to 31, 2003, July 5 to 10, 2004, and October 25 to 28, 2005. During these visits, the crucial question of when North Korea's food crisis would be resolved brought the state of the North's rice paddies, dry fields and the growth of crops to my attention. For this, my North Korean guide often disciplined me during my stay in Pyongyang. When I went to a cooperative farm in Gubin-ri, Gangdong-gu, Pyongyang, I was able to see small private paddies, private garden plots, and terraced fields. With a limited amount of arable land, the North was forced to farm maize on mountainous areas at a 30-40 degree inclination. The claim that these woodlands should not be farmed for they are not suitable for cropping may lack understanding of North Korea's reality.

In 2004, the total grain yield of the North was only 4,235,000 tons, 897,000 tons short of the minimum requirement of 5,100,000 tons. It has become worse still; the nuclear crisis on the Korean peninsula moved the issue of international food aid to the North down on the global agenda in 2004. Donor fatigue is setting in the international community after eight years of food aid to North Korea since 1995. The international community has become tired of providing aid, as fundamental measures to address the North's food shortage have not been formulated while the duration of aid programs was extended longer than expected. Had it not been for 400,000 tons of food from Seoul and 200,000 tons of food from Beijing, the North's food shortage would have resulted in a massive famine. Though the support from the South and China may have reduced the famine, it could not correct the structural problems in the North. Now that the food shortage in the North has become a repeated and structural problem, the focus of study should be placed on acquiring accurate information about grain production and coming up with effective measures based on the facts.

The reasons for the sluggish agricultural production in North Korea can be explained by agricultural factors and non-agricultural factors. The latter involves the general economy, so that economic growth will be enough to remove non-agricultural obstacles to agricultural growth. A revived economy would lead to an increase in imports, production of crude oil and commodities, and it would lead to a sufficient supply of fertilizer, farm machinery and agricultural chemicals. Agrarian policies alone cannot settle the problems. Meanwhile, to resolve agricultural problems, Pyongyang should revamp its agricultural system, and improve farming methods by reducing maize planting and instead encouraging potato farming and double cropping. Yields would go up if the North more flexibly implements Juche (self-reliance) Farming Methods, gives

farmers back the choice of what crops to plant, and revises the cropping system. The revamp of the agricultural system is associated with the reform of the cooperatives farms as the major production units. That is why it is important to discuss on how to change the cooperatives operation and system in order to produce a better outcome.

Gordon White, an expert on China's Reform, pointed out in his book, *Riding the Tiger*, that there is no reform of the socialist system without agrarian reform. However, in reality, how likely is Pyongyang to affect a complete and fundamental reform of the current cooperative agricultural system? Judging by the current political and social developments in the North, the answer is unlikely. Such a reform could amount to a shock that would ripple through the economy and collapse the system. As was the case with the Soviet Union, Vietnam, China and Eastern Europe, the socialist regimes regard cooperative farming as their basic production system. That means it is nearly impossible to bring about complete changes to the collectives unless the North shifts from the socialist farming system to the privatization of farmlands and the family-based farming system.

There have been changes in the operation and organization of the collectives, of course, which were of reformist significance. For one thing, with the 1996 sub-team based operation system, collective farming became more of a contract system in terms of distribution as farmers were paid for their labor on the basis of the amount and quality of their output. Some people claim that such a change has ushered in a reform toward the market economy, for there are farmers' markets, which are a sort of free market for farmers. It is difficult to draw general conclusions about the 1996 reform though, because it was not countrywide, but carried out in only some regions. At least a three-year experimental stage in effect all over the country is required to tell whether the reform was a success or a failure. Without this, it is simply unreasonable to make a premature judgment about it, particularly in the social science field.

Under the current regime, there is little chance of a fundamental agrarian reform that would undermine the very basic system of the North's agriculture. For a sweeping reform, the Constitution, revised in 1998, would have to be amended again, but it is as difficult to amend it as it is to change the Charter of the Workers' Party. Radical action is necessary for that, just like Deng Xiaoping did for China's 1978 reform. However, agricultural reform along Chinese lines, which transformed the collective system into an individual one, seems unlikely to be soon executed in the North given recent developments. Far from ending the collectives, Pyongyang is setting up more state farms. In that regard, discussions should be focused on the partial changes in the operation and systems rather than sweeping reform entailing a collapse of the

cooperatives.

This book is based on my Ph.D. dissertation undertaken at the University of Missouri-Columbia, "Prospects of Grain Production, Consumption and Trade in North Korea: 1961-97." Dr. Don. Osburn, who directed my graduate study, established the framework for the research on North Korean agriculture, where there had been virtually no precedent related studies. Without his full support, this book would not exist. Dr. Malvin Blasé, a prominent American expert in agro-economy, guided me in making a comparative analysis of agriculture between North Korea and other countries. I put forth my best effort to draw a correct analysis by relying on related statistics and documents and consolidating the results employing agronomic, agro-economic, and econometric approaches, for the first time in the academic field. Dr. Nelson always encourages me to concentrate on North Korean study. My special thanks go to Ms Jeong naria who majored in the Department of English, graduate school of Ewha Women University. She strongly helped me to finish the writing of manuscript in time. She also tackled the arduous task of typing. Without her painstaking efforts, this book would not have been possible. I would like to express gratitude to Dr. Ken Armitage and Mark Vernooy visiting professors of Korea University who added fine artistic touches to the manuscript, the quality of which has been significantly improved because of their excellent editorial skills. I also thank for the technical support of research assistants, Whi-chan cho, In-hak choi, Min-ji nam who are graduate student s in Korea University.

Finally, I express my gratitude for the swift publications of the book to the publisher, German Press, Utz Verlag. I am especially indebted to Mr Franz Keim, assistant manager of the press for his enthusiasm and careful editing, while my wife, Kim Soon-wha and Sang-mi and Sang-woo, my daughter and son, have always made my live full and rich. All mistakes and errors, of course, are my responsibility.

Seoul, Korea  
March 2006

## **Introduction**

“Geography shapes destiny. Korea is the proverbial shrimp between two whales, a fingertip of land the size of Idaho that curls away from the Chinese mainland and toward nearby Japan. Invading armies have coursed back and forth across the peninsula, leaving their mark on the land and the gene pool.”<sup>1</sup>

Korea is a peninsula of approximately 85,000 square miles, roughly the size of New York and Pennsylvania combined, which juts down from the northeastern part of the vast mainland of Asia. It is well defined, with seas on the east, west, and south, and two rivers, and the Yalu (or Amnok) and the Tumen Rivers, providing a natural boundary with the landmass on the north. The total land area of Korean Peninsula, including its adjacent islands, is 220,847 square kilometers, of which 55 percent or 120,410 square kilometers, constitute the territory of North Korea. The combined territories of North Korea and South Korea are about the same size as the United Kingdom or the state of Minnesota. North Korea alone is about the size of the state of New York or Louisiana.

Geography has dealt Korea a particularly difficult role. Even though the size of the Korea peninsula is not small when compared with many European countries, the country is below the average scale of those of East Asia. Located in a strategic but dangerous neighborhood between the greater powers of China, Japan and Russia, Korea has suffered nine hundred invasions, great and small, in its two thousand years of recorded history. It has experienced five major periods of foreign occupation, by China, the Mongols, Japan, and after World War II, the United States and the Soviet Union.<sup>2</sup> In August 1945, following the conclusion of World War II, Soviet and U.S. troops entered and occupied the northern and southern parts of Korea, respectively, pursuant to Allied wartime agreements. The Allied occupation, while it liberated Korea from nearly four decades (1910-45) of Japanese colonial rule, marked the beginning of the partition of Korea and the birth of communist regime in the North. During the period of Japanese occupation, the Korean economy exhibited regional differences in its pattern of development. Mining and industry were mainly concentrated in the North, while the South remained the agrarian breadbasket. In June 1950, North Korea invaded South Korea. The Korean War (1950-53) that followed was the tragic consequence of that division.

The division of Korean peninsula brought serious difficulties to both governments, North and South, in restoring their devastated economies since the placement of

industry was already set up on the assumption of a united peninsula. While the main forms of business in the northern part were heavy industries like power plants, and the chemical and steel industries, the rural economy was important in the southern part. The Japanese had developed considerable heavy industry, particularly in the metal and chemical industries, hydroelectric power, and mining in the northern half of Korea, where they introduced modern mining methods. The southern half of the country produced most of rice and the majority of textiles.

The northern half of the Korean peninsula is mountainous, but the southern part is comparatively flat and even except on the Eastern side. In many respects the situation is the opposite of the German case. The former East Germany of communist bloc was largely rural: while capitalist West Germany of was an industrial region. Some 80 percent of North Korea's land area is composed of mountains and uplands, with all of the peninsula's mountains with elevations of 2,000 meters or more located in the North. For the most part, the plains are small. The most extensive are the Pyongyang and Chaeryong plains, each covering about 500 square kilometers. Because the mountains on the east drop abruptly to the sea, the plains are even smaller than on the west coast.

The sudden withdrawal of the Japanese and the subsequent partition of the country created economic chaos. Severance of the complementary "agricultural" south from the "industrial" north and from Japan meant that North Korea's traditional markets for raw materials and semi-finished goods, as well as its sources of food and manufactured goods, were cut off. The Japanese left behind an agrarian structure, which included the land tenure system, landholdings that were predominately small in size, a pre-modern style of farm operation, old patterns of land utilization, and uneven distribution of farm income. The situation needed much reform. Farms were fragmented and small, and land ownership was extremely unequal. Toward the end of the Japanese occupation, about 50 percent of all farm households in Korea, were headed by tenant farmers. Severed from Japan and South Korea, North Korea was faced with the task of developing its economy, reoriented toward the communist bloc countries, having adopted a planned economic system. During the Japanese period there had been a gradual and persistent shift in the nature of land ownership and farm management that turned independent owner farmers into tenants and farm laborers. In response, following a typical communist pattern, North Korea went through two cycles of change in agriculture – land reform (March 1946) and collectivization (1954-58) – affecting the organization and management of agricultural production and the structure of land ownership and utilization. The land reform received a full welcome in North Korea, where tenant farmers had hitherto been compelled to give away 50-80% of their produce as rent, and 58.2% of the farmland had

been in the possession of landlords who accounted for only 4% of all farmers.

Through this land reform, farmers became landowners in name but the reality was that they were given only the right to cultivate the land. They were also given the obligation to achieve a certain standard of production as in the case of China today. However, this system, at least in the early days, was effective enough to provide farmers with work incentives, and as a result, the country was able to increase agricultural production. In 1949, the production of grain was 1.898 million metric tons. In 1947, the production recorded 2.069 million metric tons. In 1948 and 1949, the regime surprisingly produced 2.668 and 2.654 million metric tons of grain respectively. The rate of increase was 29% for 1948 compared to the previous year. The recorded production of grain encouraged Kim Il Sung, the leader of North Korea, to make war on South Korea in June 1950. He believed that, without the intervention of U.S., the North would win a Korean War with its sufficient grain and strong military power. However, Kim's war plans misfired. Within three months of the outbreak of hostilities, U.S. troops led by General Douglas MacArthur, fighting under the UN banner, had repulsed the North Korean invaders and were pushing them toward the Chinese border before falling back under a Chinese counterattack.

The opening of the war in 1950 brought about a major disruption in North Korean agriculture, as in every other sector of the economy. The socio-political and economic fabric of North Korean agriculture was broken down almost completely. After the land reform was implemented in 1946, the peasants retained and developed "capitalistic thought". While ideological and political considerations to extinguish this capitalist mindset were compelling North Korean leaders to re-examine the regime's agrarian policies, economic conditions in North Korea after the war seem to have led them to take immediate action. Grain output decreased during the war. In addition, there was an acute labor shortage. Starting in 1954, the drive for collectivization intensified and individual farmers began to be rapidly absorbed by the collectives. By August 1958, private farming as a type of agricultural organization and as a way of life had totally disappeared from North Korea. Since then, agricultural production has been carried on by two types of farms; collective and state farms.<sup>3</sup> However, each family was permitted to farm a small garden plot (initially up to 260 square meters, later reduced to 100 square meters). During the early years of the 5-year plan, nationalization of all remaining industries and collectivization of all farms was completed.

Kim Il Sung, in a speech during a meeting of the Agricultural Worker's Union in Haeju on February 1, 1962, said "rice is socialism," and called upon the participants to redouble their struggle to "let all the people eat rice with meat soup."<sup>4</sup> Twenty years

later, in the 1980s, Kim Il Sung repeated the same remarks, though this time he said “rice is communism.” He emphasized that communist construction can be carried out successfully only when the people are given enough food.<sup>5</sup> The North Korean government, through its organ, Minju-Choson, on August 7, 1992, announced that the Central People’s Committee, North Korean’s top administrative organization which controls the cabinet, decided to settle all problems regarding food, clothing and quarters, and that the Worker’s Party’s fundamental policy was to improve the standards of living and set the goal designed to let all the people “eat rice with meat soup and live in title-roofed houses” in a few years. Kim Il Sung reiterated the “rice with meat soup” catch phrase several times in his New Year Messages delivered on New Years Days in the 1990s. These entire trends implied that food and commodity conditions in North Korea had been developing from bad to worse even in the 1990s.<sup>6</sup>

Previously, there was a rather cumbersome rationing system in North Korea that involved 9 levels, ranging from 900 grams per day of cereals for heavy industrial workers to 100 grams per day for children in kindergarten. Presently a three level system operates, with age being the determining factor. Seventy five percent of the daily calorie intake under the ration is expected from cereals, of which about two-thirds would be rice and one-third maize. Even this reduced level of food intake has not been sustained and the Government now accepts a reduced average daily intake requirement of 2,131 kilocalories and has revised the cereal composition of the rations to 60 percent rice and 40 percent maize. Based on this reduced level of calorie intake, it is estimated that a requirement of some 4.45 million metric tons grains in 2005, is needed to meet human consumption alone. The per capita yearly consumption of rice and maize would be 100 kg and 67 kg respectively, giving a total of 167 kg of cereals. The PDS, Public Distribution System, is the system through which the Government channels basic food rations at a fixed price to each member of non-farming households. The Government purchases food from cooperative farms, and redistributes food from surplus producing counties to deficit counties, with the aim of ensuring that individual rations are the same throughout the country. The regime’s long-term target for an individual ration through the PDS remains at 575 grams per person per day.

North Korea’s current food shortage is a structural problem caused by the shortcomings of the collective farm system, so unless it is resolved, the food situation will remain grim. There are two important factors that contribute to the bad harvests; stagnating agriculture, which is exasperated by the overall decline in the economic situation of the country. Only a small proportion, one fifth or 2 million hectares, of the country’s land area can be cultivated, which severely limits its capacity to feed a

growing population. The problem of limited land is further compounded by declining soil fertility due to the prevalence of monoculture and intensive farming, and climatic conditions that constrain cropping systems and rotations. Given these constraints, the only option open to the country in the past, to produce more food, has been heavily intensive agriculture, based on scientific and well coordinated methods and high inputs of chemicals, machinery and irrigation. The emphasis, in other words, has been on maximizing the quantity of crops produced per hectare, instead of expansion of areas planted.<sup>7</sup> Recently, North Korea tried cultivating double-crops and planting spring barley and spring wheat extensively to increase productivity. The initial agriculture reform will probably take place in specific regions. In other words, it will either partially apply the Chinese model of agricultural reform in remote areas of the mountains or be designated to specific regions in North Korea. It will, however, take time to reform the collective farms.

North Korea demanded in August 2004, that all relief agencies operating out of Pyongyang, including the World Food Program, end their relief programs by the end of the year, and shift their focus to support for long-term agricultural recovery projects. The World Food Program tried to persuade Pyongyang to allow it to continue its food distribution. According to the agency's latest report on the matter, issued on November 5, 2005, officials from Pyongyang met with the agency's North Korea country director, Richard Ragan, in Rome in October. The WFP said that in the meantime, it was preparing a contingency plan for ending its program by March 2006. According to the report, the agency's programs are sustaining about 2.9 million North Koreans. James Morris, executive director of the World Food Program, arrived in Pyongyang on December 14, 2005 to discuss the United nations agency's relief program in the country. Mr. Morris said his group would comply if the North persisted in its demand.

After declaring the increase of agricultural production to be its top priority on its agenda of economic recovery for this year in the New Year's editorial of the state-run Rodong Shinmun newspaper, the North Korean government has been mobilizing its citizens increase food production. The country recorded a bumper harvest this year, thanks to good weather and fertilizer support from South Korea. The North expected cereal production to increase by 400,000 tons this year from the last year's harvest of 4.23 million metric tons, the most bountiful harvest since 1995, after which it was hit severely by floods and went into a decline that has persisted since then. Real production is estimated at 4.45 million metric tons. I believe that the bumper harvest cannot be the entire story behind Pyongyang's confidence in going it alone. Two bilateral donors, China and South Korea, have large food aid programs that are essentially unconditional

and outside the WFP's purview. The North's request to international relief agencies to leave the country is evidence that it has escaped the worst of the food crisis. I think that reshaping the emergency relief programs into long-term farming projects requires the North to implement much more complex changes.

The WFP did not make a final decision on whether to shut down its office in North Korea's capital city in 2006. The organization faces a choice between withdrawing and shifting the focus of its work in the North from food aid to longer-term agricultural development programs. Pyongyang has ordered all relief agencies to end their emergency programs in the North and either leave the country by the end of the year or start such longer-range programs. The organization's representatives met with North Korean officials on Dec 15-17, 2005 in Pyongyang. Assessing that meeting as a "positive" one, Mr. Ragan said the North wants help in increasing its own food production. They were particularly interested in obtaining new production facilities at 18 North Korean food production plants, improving their irrigation systems and learning advanced farming technology. Mr. Ragan called those demands "understandable," saying it was not unusual for a developing country to aspire to self-sufficiency in food production. But he added that the food supply in North Korea is still unstable and that international short-term aid would continue to be required. He said that if the North wanted to employ more high-technology farming techniques, it would have to make its food distribution system more transparent.

This book is about agriculture in general, and collective farms in particular, in North Korea. It is written for several purposes. Few books have been written on this subject, particularly in English. This is the first book that tries to analyze and discuss the collective farming system, which has uniquely survived in North Korea virtually alone in the world. This book is written, first of all, to introduce North Korea's agriculture and famine to readers who may possess little knowledge of the country. This book is also for those English readers who want to go beyond journalistic reports to learn about the collective farms of and starvation of North Korea at the level of social scientific analysis. There is not a single book available in English on North Korean agriculture and collective farms since the communist regime took over in 1945. Third, the book is also written for the special reader who, by the virtue of his or her profession, is interested in developing specialized knowledge of North Korea's agriculture, collective farms and food shortage. Such a reader may also be a specialist in international and comparative agriculture, or an agricultural policy maker or scholar whose knowledge of North Korean agriculture may contribute to the increase in grain production or the solution of habitual famine. Finally, the book is written for the more esoteric reason of studying and

analyzing what the North Korean regime has been doing since 1945 with its collective farms in the spirit of joint production and joint consumption. Although the book is intended to meet all the purposes above, the last purpose takes the primacy over the rest, since the major aim of North Korean agriculture has been to stick to the collective farm rather than increase grain production, at least for the last four decades.

This book presents an overview of North Korea's agriculture and food shortages. The systematic analysis of the overall economy is divided into 11 chapters: the current situation and policies of North Korean agriculture, implementation of agricultural policies and introduction of collective farms, 'Theses on the Socialist Agrarian Question in Our Country in 1964' and reform of the agricultural cooperatives, a macro-perspective of operational bodies of North Korean cooperatives and a micro-perspective of their operational policies, changes of the cooperatives' administration and agreements, the Juche farming and the cooperatives' operation, collectives and grain production function, the directions for the cooperatives' reform and the growing role of family farmers, a comparative analysis between North Korean cooperatives, Chinese people's communes, and the Soviet Kolkhozes, the future direction of North Korean collectives' reform and suggestions, the July First Economic Measures, and Agricultural Reform.

Chapter 1 reviews the current agricultural situation of North Korea, and the recent moves of the North's agricultural policies. In chapter 2, the following issues are included: agricultural developments and necessity of the collective farm system in North Korea, the effects of the land reform in 1946 and the development of collectivization, agricultural collectivization policies in North Korea, the general development of North Korean agricultural collectivization, case studies of local North Korean agricultural collectivization, cases of cooperative farms, and the study of collectivization issues. In chapter 3, the main topics are as following: an overview of the 'theses' and operation of the cooperatives, the background to the 'theses', the operational improvement of the cooperatives, and the establishment of the agricultural political system under agricultural collectivization. Chapter 4 deals with the issues of the overall development of North Korean cooperatives, property and the ownership of the cooperatives, the cooperative members' obligations and rights, overview of the cooperatives' organizations by function, the suppliers of farming materials for the cooperatives, the finance system for the cooperatives, and the distribution system of North Korea. Chapter 5 examines the following items: the passage of agricultural laws and changes in the cooperatives' administration, the establishment of more state farms,

more flexibility in administering the standard agreements on the agricultural cooperatives, changes in and the results of the cooperatives' production and distribution system, the reality of the work squad program of 1996, problems and prospects for the 1996 work squad program, and the new work squad program and the improvement of productivity.

In chapter 6, the main issues are as following: the significance of Juche (self-reliance) farming, the background to the adoption of Juche farming, convictions behind Juche farming, the contents of Juche farming and the operation of the cooperatives, and the problems and prospects of Juche farming. The regression model cannot be easily applied in the analysis of North Korean agriculture since the data for time series is not obtainable. Chapter 7 also analyses topics such as the causes of the North Korean food crisis and past studies of the North's food production, the grain production function for regression analysis, the regression models for grain production function and results, the collective farming system and the discussion of the independent variable estimation, and measures to increase food production based on the analysis of the grain production function. In chapter 8, the main topics are the possibility of cooperatives' reform, the limits and future improvements for the cooperative farm system, the problems of the cooperatives, and the roles of family farmers. Chapter 9 deals with reform of the Chinese rural people's communes and their operation system, the Soviet Kolhoze operation and attempts at their reform, the second stage reform, i.e. the transition to the market economy, and a comparison of the North Korean collective farms with those of China and the Soviets.

Chapter 10 examines topics such as the current conditions and the future direction of the reform of the agricultural collectives and suggestions, the general principles of the collectives' reform, the direction of the collectives' reform, the direction of the squad program's reform, the North's agricultural reform and cooperation with the South, and giving new breath to the collectives and the future inter-Korean cooperation in agriculture. Finally, chapter 11 analyses the various effects and implications of the July First Economic Measures on agricultural reform. This includes, for example, the issues of practical socialism and economic reform toward market economy, its practical economic advantages, the implications of price reform and the improvement of economic conditions, the achievements and ripple effects of the reform, the assessment of the reform and its limitations from the perspective of comparative socialism, the principle and purpose of the wage increase, the differentiation between occupations and work motivation, changes in the behavior of production and consumption caused by the wage and price increase and their social and economic implications.

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North Korea remains a state isolated from the international economic system. Consequently, it lacks access to, or credibility with, international investors and developmental finance, yet it has survived and indeed grown for much of the last decade. Part of its survival and economic growth can be attributed to Chinese support. However, NK Pro analysis indicates, North Korean state-owned enterprises (SOEs) have also been given a greater degree of autonomy in price-setting on the domestic market, product development, and are now legally allowed to obtain finance from private individuals. They are Bags of food in Pyongyang, North Korea. "Many families survive on a monotonous diet of rice and kimchi most of the year, eating very little protein," an official said. Credit...Dita Alangkara/Associated Press. The bad harvest left North Korea with a 1.36 million ton shortage of grain, forcing its government to reduce daily state rations to less than 11 ounces per person in January, compared with 380 grams a year earlier, the World Food Program and the Food and Agriculture Organization said in their joint assessment.