

WP 03-5

Famine and Reform in North Korea

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- July 2003 -

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**FAMINE AND REFORM
IN NORTH KOREA**

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I would like to thank for helpful comments on an earlier draft Nick Eberstadt, Gordon Flake, Aidan Foster-Carter, Ruediger Frank, Mark Manyin, Bill Newcombe, Scott Snyder, and participants at the conference, “Famine: Interdisciplinary Perspectives from the Past and the Present,” Fondation des Treilles, without implicating them in the final result. Scott Holladay provided research assistance.

The Democratic People's Republic of Korea (DPRK) or North Korea has been experiencing an ongoing food crisis for more than a decade. A famine in the late 1990s resulted in the deaths of perhaps 600,000 to 1 million people out of a pre-famine population of roughly 22 million.¹ Since then, a combination of humanitarian food aid and development assistance has ameliorated the situation somewhat, but according to the World Food Programme (WFP) and other observers, as of this writing the country is once again on the precipice of another famine.

By standard statistical measures, North Korea is the world's most militarized society, and domestic propaganda incessantly proclaims the virtues of "military-first" politics.² If comparable statistical measures were available for politicization, North Korea might rank first on this criterion too. Internally, all aspects of society are suffused with politics, and externally, politics thoroughly permeates not only the country's diplomatic relationships but also its economic relations.

Given the regime's extreme preference for guns over butter, the North Korean economy does not produce enough output to sustain the population biologically, and population maintenance is increasingly aid-dependent. Yet the October 2002 revelation of a nuclear weapons program based on highly enriched uranium (in addition to a plutonium-based program acknowledged a decade earlier), undertaken in contravention of several international agreements, and North Korea's subsequent withdrawal from the Nuclear Nonproliferation Treaty have put continued international assistance in doubt.

The situation is further complicated by internal economic policy changes initiated in mid-2002. These reforms included marketization of the economy, a large increase in the overall price level, the promotion of special economic zones, and a diplomatic opening to Japan intended to secure the provision of billions of dollars in postcolonial claims. These initiatives could be expected to impact the availability of food on both the supply and demand sides.

On the supply side, it is hoped that the increase in the relative price of grains will spur additional supply. Yet North Korean agriculture is highly input-intensive (i.e., it makes extensive use of chemical fertilizers and insecticides, electrically powered irrigation, etc.), and the ultimate

¹ The issue of excess deaths is analyzed in more detail below. Noland (2000) summarizes contemporaneous estimates of excess deaths that ranged from 220,000 to 3.5 million. On the difficulty of assessing North Korea's population statistics, see Eberstadt and Banister (1992) and Eberstadt (2001).

² During its war with Ethiopia, the percentage of Eritrea's population under arms and military expenditures as a share of GDP actually exceeded the comparable figures for North Korea, but with the cessation of hostilities in the Horn of Africa, North Korea has reasserted its historic primacy on these measures. See www.kcna.co.jp for a whiff of North Korean domestic discourse.

impact of the reforms on agricultural yields could be strongly influenced by what happens in the industrial sector.

On the demand side, the government appears to be trying to ensure survival rations through the public distribution system (PDS), the rationing system through which most people historically obtained food, with food purchased in the market supplementing the PDS rations for those who can afford it. The increase in agricultural procurement prices was presumably undertaken to increase the amount of food entering the PDS. However, while PDS prices have remained largely unchanged since 1 July 2002, market prices have increased significantly, and it is unclear if the policy is having its intended effect. This is to say that whatever its motivation, it is unclear if the North Korean policy has been successful in practice. Given the growing inequality in the distribution of income and wealth within North Korea, which could be expected to accentuate differences in access to food and the already highly stressed nature of the North Korean society, it would not be surprising to observe future increases in mortality rates.

BACKGROUND ON NORTH KOREA

Prior to the partition of the Korean peninsula at the end of the Second World War, most Korean industries were located in the North; the South was the breadbasket. In 1950, North Korea invaded South Korea. The see-saw character of the war, which saw armies of both sides traversing twice nearly the entire length of the peninsula, destroyed most of the physical capital stock. There was considerable population movement as well, mostly from the North to the South. It is impossible to ascertain with any degree of certainty the capacities of the two countries at the end of the hostilities in 1952.

Under Soviet tutelage, the North set about establishing a thoroughly orthodox centrally planned economy, remarkable only in the degree to which markets were suppressed. Households obtained food and other items through a rationing system that provided for some differentiation on the basis of age and occupation.

In 1955, founding leader Kim Il-sung proclaimed *juche*, or self reliance, the national ideology, and under his leadership North Korea developed as the world's most autarkic economy, never joining the Council of Mutual Economic Assistance (COMECON), and going so far as to time its central plans to frustrate linkage with those of fraternally allied socialist states.

In the period immediately following the end of the Second World War and the expulsion of Japanese colonialists, the Korean peninsula was partitioned into zones of Soviet and American military occupation in the north and south, respectively. In the Soviet-occupied zone, land belonging to Korean landlords and Japanese colonialists was seized and redistributed to the

peasantry during 1945–46. This land reform was accompanied by a dramatic fall in agricultural output, and urban food shortages developed. The new socialist administration prohibited private trade in food and launched compulsory grain seizures in the rural areas during the winter of 1945–46.

Following the Korean War, agriculture was collectivized, quantitative planning in production was introduced, state marketing and distribution of grain was established, and private production and trade were prohibited. Two types of farms were established legally: cooperatives and state farms, with the latter considered ideologically more advanced. The country experienced food shortages in 1954–55 as these changes were undertaken. Beginning in 1959, motivated by military security concerns, food security was pursued through self-sufficiency, not only at the national level but also at the provincial and even the *county* levels (Lee 2000; Lee 2003).

Collectivization was accompanied by an increase in irrigation and the use of industrial inputs such as tractors. During the 1960s the country pursued the “four modernizations” of “mechanization, electrification, irrigation, and chemicalization,” eventually establishing perhaps the world’s most input-intensive agricultural system with use of chemical fertilizers and pesticides, exceeding even Japan’s. Much of the Soviet-built irrigation system was electrically powered. The authorities altered planting patterns, specifically replacing traditional food crops such as tubers, millet, and potatoes with maize. Yields were increased, but they were susceptible to a fall in inputs.

In response to food shortages in 1970–73, the degree of centralization of agricultural planning was intensified, and local authorities were increasingly marginalized. Food production was subject to the same input-output standardization as any other economic activity, and instructions were specified down to the level of fertilizer usage by individual cooperative farm households. In 1973, a Cultural Revolution–type movement was created, and young communists were dispatched to initiate ideological, cultural, and technical education of farm households. New rural educational institutions were established, and existing rural officials and staff were reassigned and required to enroll in these *juche* curriculum programs. This social engineering eroded knowledge of, respect for, and influence of traditional farming techniques; rural life was thoroughly regimented by the state, and any sort of individual initiative stifled (Lee 2003).

This social engineering reached its apogee (or nadir depending on one’s perspective) with the “nature re-making program” launched in 1976 to literally bulldoze “in a sweeping manner” the North Korean countryside into fields of “regular shapes like a checkerboard” with the intent of severing the connection between former landowners and the land by changing its physical

contours “beyond recognition” (Kim 2000). This effort was reportedly intensified in 1998 and remains a component of North Korean agricultural policy (Foster-Carter 2001).

ORIGINS OF THE PRESENT CRISIS

The present crisis has its origins in a multifaceted set of developments in the late-1980s, though the precise causal relationships are unclear. Despite its *juche*-inspired declarations of self-reliance, North Korea has been dependent on outside assistance throughout its entire history, with first the Soviet Union, and later China, playing the role of chief benefactor or patron. The North Koreans have compensated for this dependency by ferociously denouncing it,³ portraying aid as tribute paid to the ideologically pure North Korean state (Eberstadt 1999),⁴ and trying to play patrons off against each other. Eventually, frustrated by North Korean unwillingness to repay accumulated debts, the Soviets withdrew support, and according to US Central Intelligence Agency figures, the net flow of resources turned negative in 1987.

That same year the North Koreans initiated a number of at times conflicting policies in the agricultural sector, including the expansion of state farms, tolerance of private garden plots, expansion of grain-sown areas, transformation of crop composition in favor of high-yield items, maximization of industrial inputs subject to availability, and the intensification of double-cropping and dense planting. Continuous cropping led to soil depletion, and the overuse of chemical fertilizers contributed to acidification of the soil and eventually a reduction in yields. As yields declined, hillsides were denuded to bring more and more marginal land into production. This contributed to soil erosion, river silting, and ultimately, catastrophic flooding. Isolation from the outside world reduced genetic diversity of the North Korean seed stock, making plants more vulnerable to disease.

These effects were compounded by the tremendous trade shocks that hit the economy starting in 1990 as the Soviet Union disintegrated and the Eastern bloc collapsed. The Soviets had supplied North Korea with most of its coal and refined oil and one-third of its steel. Trade with the Soviet Union accounted for more than half of North Korean two-way trade. The fall in

³ For example, in 2000, the day after South Korea began shipping \$100 million of assistance to the DPRK, and while the UN agencies were urging international donors to commit to new aid to avert catastrophe, the *Rodong Sinmun*, the official newspaper of the North Korean government, ran a commentary which read in part, “The imperialists’ aid is a tool of aggression... a dangerous toxin which brings about poverty, famine, and death, not prosperity.” (In the case of potentially bovine spongiform encephalopathy [BSE]-tainted beef donated to North Korea by Switzerland and Germany in 2001, it may well have indeed been a dangerous toxin.)

⁴ In a somewhat different context, Gordon Flake (2003, 39) describes a similar set of attitudes toward a different set of patrons: “DPRK officials were successfully able to come across not as the beggar, but instead as the recipient of entreaties from the outside world. In contrast, the would-be donors, the NGOs, became the supplicants, asking the DPRK for the ‘privilege’ of helping the North Korean people.”

imports from Russia in 1991 was equivalent to 40 percent of all imports, and by 1993 imports from Russia were only 10 percent of their 1987–90 average (Eberstadt, Rubin, and Tretyakova 1995). North Korea proved incapable of reorienting its commercial relations in the face of this massive trade shock. The North Korean industrial economy imploded, and deprived of industrial inputs, agricultural output plummeted.

FOOD AVAILABILITY

Like everything else North Korean, there is some controversy as to the precise timing and magnitude of these changes. (Former US Vice President Walter Mondale once observed that anyone who claimed to be an expert on North Korea was either a liar or a fool. My corollary would be to not trust any datum on North Korea that comes with a decimal point attached.) Data on North Korean grain production, derived from four sources, are shown in figure 1. All show a decline in production in the 1990s compared to a decade earlier, though the FAO series weirdly spikes in the early 1990s.⁵ There is a consensus that in recent years, North Korean grain production has been less than 4 million metric tons.

Data on imports and aid are shown in figure 2.⁶ In the period immediately following the collapse of the Soviet Union, China stepped into the breach, offsetting some of the fall in trade with the Soviet Union and emerging as North Korea's primary supplier of imported food, most of it reportedly on concessional terms (figure 3).⁷ But in 1994 and 1995, a disillusioned China reduced its exports to North Korea. (The North Koreans calling the Chinese "traitors to the socialist cause" probably did not help matters.) If there was a single proximate trigger to the North Korean famine, this was it.

By 1994, North Korean radio broadcasts had admitted the existence of hunger. In May 1995, South Korean President Kim Young-sam made a public offer of unconditional food assistance to the North. Later that month the North Korean government admitted that the country was experiencing a food shortage and asked the Japanese government for help. (Internally, assistance from Japan could be justified as reparations- aid from rival South Korea would be

⁵ See Smith (1998) on the difficulties of estimating North Korean supply of, and demand for, grains, and a withering critique of the FAO's methodology for estimating these magnitudes.

⁶ These figures should be taken with huge grains of salt. In all probability the import figures do not include food obtained through barter transactions on the Chinese border as well as food provided by Chinese provincial governments. Both became important in the late 1990s as the famine intensified and the North Korean control system began to fray. Nor do the aid figures include aid from China that reportedly reached 500,000 metric tons in 1996. See Noland (2000) for more details.

⁷ For unknown reasons, the figures on Chinese grain shipments to North Korea reported by the South Korean Ministry of Unification and the UN's International Food Aid Information System (INTERFAIS) diverge significantly after 1998.

harder to rationalize.) In June, the North Korean government in Pyongyang reached agreements with the Japanese and South Korean governments on the procurement of emergency food aid, and in July, the Pyongyang government announced to its public that it was receiving external assistance, though it failed to mention the South Korean role.

Catastrophic floods in July and August 1995 added to North Korea's suffering. The government announced that 5.4 million people had been displaced, 330,000 hectares of agricultural land had been destroyed, and 1.9 million tons of grain had been lost. The government put the total cost of the flood damages at \$15 billion. While the flooding was considerable, the consensus of outside observers was that the government's claims were exaggerated.⁸ For example, a UN survey concluded that the flooding displaced 500,000 people, not the 5.4 million the government initially claimed. Nevertheless, the floods played an important public relations role inasmuch as they facilitated the North Korean government's portrayal of the famine as a product of natural disaster (the government unit charged with obtaining international assistance was renamed the Flood Damage Rehabilitation Committee, or FDRC), a guise that a number of foreign relief agencies found advantageous.⁹

The floods of 1995 were followed by more, though less severe, floods in July 1996, and renewed appeals for help. As the international aid campaign took off, rising aid inflows effectively crowded out food imports on commercial terms, in effect acting as balance of payments support (figure 3).¹⁰ As shown in table 1, the primary suppliers of food assistance have been the United States, followed by South Korea, Japan, and the European Union.¹¹ The provision of aid would be highly politicized, reflecting the interests of the main donors. North Korea would emerge as the largest Asian recipient of US aid, receiving more than \$1 billion in

⁸ See also Smith (1998).

⁹ A notable exception in this regard was the Asia regional director of the WFP, John Powell, who correctly observed, "The major problem facing the DPRK in food supply and food production is structural. It is not natural disasters" (Seoul, Reuters, 2 December 2001).

¹⁰ A careful analysis of trade "mirror statistics" indicates that while commercial imports of bulk grains dropped considerably during the 1990s, North Korea continued to import small quantities of "bread or biscuits," "cakes or pastries," and even "diet infant cereal preparation" presumably to be consumed by the political elite and their offspring (Eberstadt 1998).

¹¹ The UN figures include small amounts on nonfood assistance. The annual figures from the UN system and those from Manyin and Jun (2003) for the United States, derived from USAID and the US Department of Agriculture numbers, differ for a number of reasons. The United States uses a fiscal year, whereas beginning in 1998, the UN system uses a calendar year; the United States dates the contribution when it is disbursed, while the WFP dates it when it is pledged; there may also be differences due to currency conversions, c.i.f./f.o.b. charges, and possibly aid pledged but ultimately not disbursed. It is also unclear how the UN handled its changeover from a April to March fiscal year to calendar year accounting in 1998.

The South Korean Ministry of Unification figures include both public and private food and non-food assistance. They do not include payments made prior to the 2000 North-South summit or other official meetings, however, and as a consequence the figures in table 1 understate the true magnitude of South Korean assistance.

food and energy assistance between 1995 and 2002. The provision of this assistance often has been used to induce North Korean participation in diplomatic negotiations.¹²

The possible diversion of aid to military uses has been an ever-present issue since relief efforts first began in the mid-1990s. In February 2001, the UN special rapporteur for food rights, Jean Zeigler, wrote that “it gradually became clear that most of the international food aid was being diverted by the army, the secret services, and the Government” (United Nations 2001, 11). The enraged incumbent WFP executive director, Catherine Bertini, responded that Zeigler’s statement was “unsubstantiated, not referenced, and not based on first-hand observations” and demanded that it be struck from the report (Agence France-Presse, 7 June 2001). In one sense, this whole argument is a red herring: food aid is fungible (though imperfectly so), and as the WFP’s John Powell testified with admirable frankness before the US Congress, “The army takes what it wants from the national harvest upfront, in full. And it takes it in the form that Koreans prefer: Korean rice” (Powell 2002). Another WFP official, with first-hand experience, on the condition of anonymity, described the bargain under which the DPRK military offloads aid from China and thus preserves the WFP’s claim that its food does not go directly to the military. If the provision of international assistance contributed to the ongoing North Korean military buildup, it is through the channel of implicit balance of payments support, rather than through diversion per se.¹³

Although flooding contributed to the food crisis in North Korea, agriculture, like the rest of the economy, has been in secular decline since the beginning of the decade. On the basis of their econometric analysis of North Korean agricultural production, Heather Smith and Yiping Huang (2003) conclude that “the dominant triggering factor in the crisis was the sharp loss of supplies of agricultural inputs following the disruption of the trade with the socialist bloc from the late 1980s.... The contribution of climatic factors to the agricultural crisis, as stressed by North Korea’s policy-makers was at most a secondary cause.” This conclusion is reinforced by the computable general equilibrium model-based simulation of Marcus Noland, Sherman Robinson, and Tao Wang (2001), who find that restoration of flood-affected land and capital would have but a minor impact on the availability of food (figure 4). Taking at face value the

¹² Noland (2000, table 5.2) provides nine examples of “food for talks.” A recent example would be the February 2003 US government announcement, in the run-up to diplomatic talks over the North Korean nuclear weapons program, that it would provide 40,000 metric tons of grain to North Korea despite the fact that the North Koreans had not fulfilled the June 2002 aid transparency and monitoring conditions that had been reaffirmed the previous month, January 2003, by USAID Administrator Andrew S. Natsios.

¹³ That said, it has been frequently alleged that the North Korean authorities have diverted aid intended for humanitarian uses for other purposes. In one such example, a Thai senate committee concluded that rice sold to North Korea on concessional terms had been diverted to West Africa instead (*Joongang Ilbo*, 22 May 2002).

WFP's estimates of human needs, even without flooding, North Korea would have entered the mid-1990s with a substantial, apparent food deficit.¹⁴ As shown in table 2, the most recent FAO/WFP food balance assessment suggests that while the provision of aid has mitigated suffering, the fundamental situation has changed little in the intervening years.

DISTRIBUTION OF MISERY

As a consequence of the extraordinary isolation of North Korea and the secretiveness of its political regime, there is considerable uncertainty about the timing of the famine and its social and geographical incidence, and disagreement as to whether it was essentially an absolute food-availability-decline famine or whether it reflected entitlement failure? since most food, at least initially, was distributed through a politically determined rationing system, entitlement failure was manifested by an inability to affect political decision making, not an inability to command resources in a market.

Even today, outside observers do not have access to counties accounting for roughly 15 percent of the population, prenotification is required for site visits, and official relief agencies are not permitted to use Korean-speaking personnel and are unable to monitor aid shipments continuously from port of entry to final distribution (figure 5).¹⁵ Since 1997, USAID, WFP, and other official agencies have threatened to make continued assistance conditional on improved monitoring but have infrequently terminated assistance due to North Korean noncooperation. When aid has been cut off (as in the case of the cessation of Japanese assistance in 2002), it has been for diplomatic, not programmatic, reasons. The point is simply that more than a decade into this emergency, we still have remarkably little systematic information about conditions inside North Korea, and some of what we do have appears to be of dubious quality (see box 1).

¹⁴ See Smith (1998) for a devastating critique of the WFP's methodology for estimating demand.

¹⁵ See Manyin and Jun (2003) and Snyder (2003b) for details.

Box 1 What do we know and how do we know it?

An understanding of North Korea is severely constrained by state secrecy and lack of access. Even in the few cases in which professionals have been allowed significant access, their activities have yielded results of questionable validity. Take, for example, a EU/UNICEF/WFP nutritional survey that found that 16 percent of surveyed children were wasted (i.e., suffered from severe malnutrition based on a measurement of weight-for-height), 62 percent were stunted (i.e., suffered from acute malnutrition based on height-for-age), and 61 percent were underweight (based on weight-for-age) (WFP 1998). This implies that the incidence of wasting among children in North Korea was more than double that in Angola, a country in the midst of a 30-year civil war, and more than 50 percent worse than in Sierra Leone, a country that had collapsed into virtual anarchy.

A 2002 survey conducted by the North Korean Central Bureau of Statistics (CBS) in collaboration with UNICEF and the WFP, implied extraordinary improvements in nutritional status—underweight percentage falling from 61 to 21 percent; stunting from 62 to 42 percent; and wasting from 16 to 9 percent. Indeed, the proportion of low birth weights in the North Korean survey (6.7 percent) is actually lower than that for the United States (7.6 percent).

There are at least two possible explanations for this stunning set of numbers. The North Koreans, UNICEF, and the WFP ascribe these gains to food aid (CBS 2002, WFP 2003a). Another, admittedly speculative, explanation is mismeasurement. The first survey obtained extremely high stunting and underweight percentages, both in an absolute sense and relative to the much lower wasting percentage. Both of these measures involve age. In traditional Korean society, age is measured from conception, not birth. Given North Korean practices, it can be assumed that the UNICEF/WFP enumerators who conducted the first survey could not speak Korean and may well have misinterpreted the responses to questions about the children's ages, and systematically overestimated the ages of the children in their sample, hence the shocking figures on the age-related measures. The second survey was conducted by the North Koreans who presumably got the ages right, hence the disproportionate improvement in the age-related measures.

Even accepting this explanation, other results of the second survey remain puzzling. While the wasting figure puts North Korea in a league with Sierra Leone, the low birth weight number is better than that achieved by the United States. The mystery deepened when in response to a query, the WFP provided materials showing results for the years between 1997 and 2002—though there is no record of any surveys being conducted in 1999 or 2001. Subsequent correspondence has not clarified this conundrum.

In any event, the surveys may not be representative—the North Korean authorities excluded Chaggang and Kangwon provinces from the surveys—two provinces that still remain largely beyond WFP access.

In 1987, as Soviet aid was terminated, daily grain rations distributed through the PDS—which officially had been 600 to 700 grams for most urban dwellers and 700 to 800 grams for high officials, military personnel, and heavy laborers—were cut by 10 percent (table 3). In 1991, as economic difficulties worsened, the government launched a “let's eat two meals a day”

campaign, and the following year rations were cut another 10 percent.¹⁶ By 1993, there were rumors that that PDS rations were delayed or temporarily suspended in certain northern areas and there were persistent (though unconfirmable) reports of food riots. In 1994 the North Korean government responded by implementing what some observers would describe as “triage”—ending PDS shipments to four provinces (North and South Hamgyong, Yanggang, and Kangwon), and prohibiting internal shipments to these regions. PDS daily rations were cut to 400 to 450 grams, and refugees, admittedly disproportionately from the most heavily affected northern provinces, reported that rations had fallen to 150 grams. By 1997, the daily ration would fall to 128 grams before rising in subsequent years (figure 6).

At the same time, the government launched a campaign of coercive seizures of rural grain and reduced the annual retained farm allotment from 167 to 107 kilograms per person. Given the government’s history of confiscating grain, rural households responded by hoarding, intensifying cultivation of illegal private plots, and relatively neglecting production on the officially recognized farms and cooperatives. The effect was to constrict the supply of food available to the PDS.¹⁷

As the North Korean economic crisis deepened, fuel shortages and deterioration of the transportation infrastructure contributed to a fragmentation of markets. This process reinforced the rupturing of the social compact, and increasingly desperate local officials adopted entrepreneurial coping mechanisms. While the state tolerated certain coping mechanisms (such as barter trade managed by local officials), at the same time it intensified human rights abuses, including the establishment of special camps and prisons for those found illegally foraging for food. These forces, together with pre-existing social differentiation, meant that by the mid-1990s, according to eyewitness accounts, conditions varied enormously across geographic regions and social groups, with perceived political loyalty to the state affecting access to humanitarian relief (Noland 2000; Natsios 2001). See box 2.

¹⁶ There have been persistent rumors that data compiled on defecting North Korean soldiers record a decrease in average size, implying that the onset of the food crisis was sometime in the 1980s. The Korean Peoples Army reportedly has lowered its minimum height requirement for male conscripts from 150cm to 125cm.

¹⁷ See Noland (2000), Natsios (2001), and Kim (2003) for further details.

Box 2 Terms of engagement

According to one close observer with a long personal history of dealing with DPRK authorities, “the interaction between the FDRC and international humanitarian aid organizations was adversarial from its inception” (Snyder 2003a, 6). And the unwillingness of some, especially those motivated by religious ideals, to walk away encouraged some DPRK officials to “hold their own populace hostage to their demands and conditions” (Flake 2003, 38). A detailed appraisal of the experience of European NGOs in North Korea by Michael Schloms (2003) would appear to bear out these essential judgments.

In 1998, while the WFP was proclaiming conditionality, *Médicins Sans Frontières* (Doctors Without Borders) (MSF), at the time the largest relief agency operating in North Korea, discontinued its operations there on the grounds that the North Koreans denied it access to sick and malnourished children and channeled relief supplies to the children of the politically well-connected. MSF has remained particularly vocal in its denunciations of North Korean practices since, arguing that there is “no humanitarian space whatsoever” for work in the DPRK. In 1999 World Concern, a US-based NGO, halted shipments of relief supplies to North Korea after food destined for an orphanage and hospital disappeared. Oxfam pulled its five-member team out in December 1999 citing interference by North Korean authorities. They were followed in March 2000 by the French NGO *Action Contre la Faim* (Action Against Hunger) (ACF), whose president Roger Godino, citing similar interference by the North Korean authorities, claimed that “the massive UN aid effort, principally run by the World Food Programme and the United Nations Children’s Fund (UNICEF) with significant US funds, is essentially a political and diplomatic operation. The United Nations is providing food aid, but not humanitarian aid” (Agence France-Presse, Paris, 7 March 2000). Less than one month later, the American NGO CARE pulled out; its president, Peter D. Bell, stated that “despite a nearly four-year dialogue with the North Korean government regarding the importance of access, transparency, and accountability, the operational environment in North Korea has not progressed to the point where CARE feels it is possible to implement effective rehabilitation programs” (CARE 2000).

Other NGOs, such as Caritas International and German Agro Action, which have remained engaged with North Korea, believe that improvements in access and monitoring justify continued involvement. Representative of the views of this opposing tendency are those expressed by a staff member of Children’s Aid Direct (CAD): “The minimum conditions for humanitarian involvement in the DPRK is an evolving situation. We accept that to date these conditions have not fully been met, but we see a slow but continuing move toward meeting these conditions. Our levels of access, a fundamental issue, have increased during the time that we have worked in the DPRK, as has the level of cooperation that we have received from the FDRC” (quoted in Smith 2002, 11). (CAD withdrew from North Korea due to financial difficulties in 2002.) Snyder (2003a, 12) concludes that “although changes and gradual accommodations have been achieved by NGOs on the ground as they develop closer relationships and understanding with their counterparts, considerable internal bureaucratic resistance and suspicion of outside efforts remain, which greatly hamper the effectiveness of humanitarian work inside Korea.”

Given the secrecy of the North Korean regime, it is unsurprising that contemporaneous estimates of the excess death toll vary enormously, ranging from 220,000 to 3.5 million (Noland

2000). Among the more well known is a statement made by a North Korean official in May 1999, which could be interpreted as indicating that 220,000 people, or roughly 1 percent of the pre-crisis population, had died as a result of the famine. (This figure was confirmed by another official in 2001.) Robinson et al. (1999), on the basis of 771 refugee interviews conducted in 1998 and 1999, reconstructed mortality rates for a single heavily affected province and concluded that between 1995 and 1997 nearly 12 percent of that province's population had died. The Buddhist Sharing Movement, a nongovernmental organization, extrapolating to the entire country from a similar analysis of refugee interviews and observations on the ground, produced estimates of famine-related deaths on the order of 2.8 million to 3.5 million.

In 2003, USAID Administrator Andrew S. Natsios testified that “2.5 million people, or 10 percent of the population” had died in the famine (Natsios 2003). This is almost surely an exaggeration. If the precrisis population of North Korea was approximately 22 million, and one assumes that there were no excess deaths among the privileged populations of the armed forces (about 1 million) or the capital city Pyongyang (around 3 million) this leaves a total nonprivileged or “exposed” population of around 18 million. The work of Robinson et al. implies an excess mortality rate of roughly 12 percent for North Hamgyong province. Applying the 12 percent figure to the “exposed” population of 18 million yields a figure of just over 2 million, which would have to be considered an upper bound estimate. Put another way, if one accepts the Robinson et al. estimate of 245,000 excess deaths for North Hamkyong province out of a precrisis population of approximately 2 million, the Natsios statement implies that there must have been roughly 2.25 million deaths among the remaining 16 million “exposed” population, implying an excess mortality rate of 14 percent—or 15 percent higher for the country as a whole than what Robinson et al. calculated for what was, by consensus, the worst affected province.

Taking 1994 as the base, two demographers, Daniel Goodkind and Lorraine West (2001), using official DPRK statistics on crude death rates together with an age-specific death rate model, estimated excess deaths of 236,900 between 1995 and 2000. Using the same model with the much higher mortality rates implied by the Robinson et al. interviews generated an estimate of 2,648,939 excess deaths over the same period—a figure more than 10 times the estimate derived from the official statistics.

Goodkind and West then used data from the 1997 and 1998 WFP nutritional surveys, and calibrating from China's experience in the Great Leap Forward, obtained estimates of excess deaths of 605,458 and 1,042,021, respectively, their preferred estimates.

On the basis of a close analysis of official statistics, Suk Lee (2003) argues that there was a significant increase in mortality rates in 1994, which implies that the famine was well under

way before the flooding of June 1995. Again, using a sex- and age-specific model of death rates, Lee estimates that between 1 January 1994, and 31 August 1999, North Korea experienced 668,000 excess deaths. Lee ignores population loss due to refugee flows into China, and as a consequence, his analysis may misattribute these as famine-related deaths. At the same time, if he is right that the famine really started in 1994, then Goodkind and West have underestimated its impact by taking the already elevated crude death rates in 1994 as their base. Both Goodkind and West, and Lee assume that fertility rates remained unchanged and hence do not consider births forgone.

In summary, the timing and impact of the famine are still not well understood. The most recent and sophisticated attempts to measure excess deaths put them in a range of roughly 600,000 to 1 million, or approximately 3 to 5 percent of the precrisis population.

As the PDS failed and the famine intensified, food was increasingly allocated through informal markets, and as such, the situation more closely resembled past famines in market economies described by Amartya Sen (1981), Martin Ravallion (1987), and others.¹⁸ Access to food appears to be determined by a combination of geographic location (food surplus or deficit region), occupation (urban or rural), access to foreign exchange (either through official employment or nonofficial economic activities, or through remittances, principally through relatives in Japan and increasingly, China). This is to say that access to food varies positively with physical proximity to its cultivation and access to foreign exchange.

In these circumstances control of aid potentially conveys astronomical rents, a situation abetted by the inability of official relief agencies to continuously monitor the distribution of supplies. Suspicions that aid flows have been diverted for private use have been reinforced by consistent testimonies from refugees that they had not received aid before fleeing the country and by eyewitness reports of grain in bags with international relief agency markings being sold in the farmers' markets.¹⁹ Given the North Korean state's long history of illicit commercial activity (drug trafficking, smuggling, counterfeiting, etc.) and the system fraying that has occurred over the past decade, it is entirely plausible that private individuals and groups have managed substantially to capture these rents. The implicit marketization of the economy in the absence of any real institutions has led to an increasingly gangsterish form of apparatchik capitalism and growing social differentiation. Indeed, some have argued that international aid agencies should

¹⁸ The North Korean authorities subsequently regularized these farmers' markets, constructing physical facilities, establishing regulations, providing policing and other services.

¹⁹ These reports are not conclusive—it is plausible that the bags have simply been recycled. At the same time, the North Korean authorities go to great lengths to deny foreigners access to these markets. See Manyin and Jun (2003) for a more extensive discussion of aid diversion issues.

circumvent the government distribution channels entirely, inasmuch as providing aid through the government simply strengthens the power of the totalitarian North Korean state relative to nascent nonstate actors. As Scott Snyder observes, “The amount of food distributed through the PDS is no longer an accurate indicator of imminent distress within the North Korean system, yet it has remained the WFP’s primary indicator of distress and the primary vehicle through which the WFP distributes food inside the country. In this respect, the WFP is an ally of the government in its efforts to reestablish control over the means of production” (Snyder 2003b, 119). Or, in the words of Fiona Terry, an MSF researcher, “by channeling [aid] through the regime responsible for the suffering, it has become part of the system of oppression” (Terry 2001).

As the crisis continued, a variety of foreign governmental and private organizations, concerned about political sustainability and donor fatigue, attempted to reorient their programs from the provision of food aid to agricultural development assistance, encountering mixed success.²⁰

Disenchantment with North Korean behavior together with emerging food crises elsewhere caused the WFP in 2002 to miss its assistance target and cut back the number of North Koreans in principle it is assisting, from 6.4 million (almost a third of the population) to 3.5 million.²¹ On current trends it is unlikely to achieve its goals in 2003 either.

POLICY CHANGES

In July 2002, the government of North Korea announced changes in economic policy that could be regarded as having four components: microeconomic policy changes, macroeconomic policy changes, special economic zones, and aid seeking.²² These initiatives followed moves begun in 1998 to encourage administrative decentralization (Oh 2003).

Microeconomic Policy Changes

With respect to food, the government has implemented a policy of increasing both the procurement prices of grains (to increase the volume of food entering the PDS) along with a

²⁰ See IFAD (2000) for an analysis of three such agricultural development projects.

²¹ USAID Administrator Andrew S. Natsios, for example, explained that “there are needs in other areas of the world. If I have a choice to make, it’s going to provide the food aid where we can assure that it’s going to those at risk” (Doug Struck, *Washington Post*, 5 December 2002).

²² This discussion is based on a variety of sources, including press reports, diplomatic reports, and private conversations with diplomats and NGO workers based in North Korea. As in all things North Korean, there is a certain amount of uncertainty about what is actually happening. To illustrate, first-hand accounts from different regions of the country differ importantly in certain aspects. That is to say that there is more than one reality in North Korea, and one should keep this in mind. For more details on the 2002 policy changes see Lee (2002), Chung (2003), Frank (2003), Newcombe (2003), and Oh (2003).

dramatic increase in PDS prices to consumers, with the retail prices of grains rising from 40,000 to 60,000 percent in the space of six months (table 4). The increase in the procurement price for grain was motivated in part, to counter the supply response of the farmers, who, in the face of derisory procurement prices, were diverting acreage away from grain to tobacco, and using grain to produce liquor for sale. Comparisons to US wholesale and retail prices (taken as a proxy for world prices) suggest that there is still considerable distortion in the relative price structure.

The maintenance of the PDS as a mechanism for distributing food is presumably an attempt to maintain the social contract that everyone will be guaranteed a minimum survival ration while narrowing the disequilibrium between the market and plan prices. Residents are still issued monthly ration cards; if they do not have sufficient funds to purchase the monthly allotment it is automatically carried over to the next month. Wealthy households are not allowed to purchase quantities in excess of the monthly allotment through the PDS. The system is organized to prevent arbitrage in ration coupons between rich and poor households.²³

Some have questioned the extent to which this is a real policy change and how much this is simply a ratification of system fraying that had already occurred—there is considerable evidence that most food, for example, was already being distributed through markets, not the PDS. But this may indeed be precisely the motivation behind the increases in producer prices – with little supply entering the PDS, people increasingly obtained their food from nonstate sources, and by bringing more supply into state-controlled channels, the government can try to reduce the extent to which food is allocated purely on the basis of purchasing power. At the same time, the state may also be motivated by broader antimarket ideological considerations as discussed below. Yet another motivation may be to reduce the fiscal strain imposed by the implicit subsidy provided to urban consumers.

However, the North Koreans have not announced any mechanism for periodically adjusting prices, so in all likelihood, disequilibria, possibly severe, will develop over time. In fact, the WFP (2003b) reports that since the July 2002 price changes, prices for grain in the farmers markets have risen “significantly” while the PDS prices have remained largely unchanged. Anecdotal accounts suggest that as a consequence, despite the increase in procurement prices, the policy has not been successful in coaxing back into the PDS system domestic supply (as distinct from international aid). Indeed, some anecdotal reports indicate that the PDS is not operating in all areas of the country.

²³ Oh (2003) claims that the rationing coupons have been abolished, and in theory, wealthy households can by unlimited supplies through the PDS.

In the industrial sector, there was some indication that the government was attempting to adopt a dual-price strategy similar to what the Chinese have implemented in the industrial sphere.²⁴ In essence, the Chinese instructed their state-owned enterprises to continue to fulfill the plan, but once planned production obligations were fulfilled, the enterprises were free to hire factors and produce products for sale on the open market (Lau, Qian, Roland 2000). In other words, the plan was essentially frozen in time, and marginal growth occurred according to market dictates.

North Korean enterprises have been instructed that they are responsible for covering their own costs—that is, no more state subsidies. Managers have been authorized to make limited purchases of intermediate inputs and to make autonomous investments out of retained earnings. They are also permitted to engage in international trade. Yet it is unclear to what extent managers have been given the power to hire, fire, and promote workers, or to what extent remuneration will be determined by the market. Moreover, there has been no mention of the military's privileged position within the economy, and domestic propaganda continues to emphasize a “military-first” political path.

The state has administratively raised wage levels, with certain favored groups such as military personnel, party officials, scientists, and coal miners receiving supernormal increases. (For example, it has been reported that the wage increases for military personnel and miners have been on the order of 1,500 percent, and that for agricultural workers may be on the order of 900 percent, but the increases for office workers and less essential employees are less.) This alteration of real wages across occupational groups could be interpreted as an attempt to enhance the role of material incentives in labor allocation.

The state continues to maintain an administered price structure, though by fiat, the state prices are being brought in line with prices observed in the markets. This is problematic (as it has proven in other transitional economies): the state has told the enterprises that they must cover costs, yet it continues to administer prices, and in the absence of any formal bankruptcy or other “exit” mechanism, there is no prescribed method for enterprises that cannot cover costs to cease

²⁴ Oh (2003) disputes this notion, arguing that the aim of the policy changes was “to shift the country’s economic control mechanism from one based on material balances in a traditional socialist mandatory planning system to one managed through a monetary mechanism.... The situation is quite different from that in China at the beginning of its reform process, where reform-minded leaders boldly argued that economic reform measures were imperatives, not policy options” (p. 72). Newcombe (2003) also emphasizes the shift from quantitative planning to a monetized economy and reports a statement by one official that could also be interpreted as suggesting a more limited aim of the policy changes: “This objective (or reform) will only be achieved by removing the last ‘vestiges’ of the *Soviet system* from the DPRK economy” (p. 59, emphasis added by Newcombe). Frank (2003) also quotes a similar denunciation of “Soviet-type” practices. These statements could be interpreted as manifestations of a North Korean attempt to justify ideologically a uniquely North Korean “third way” policy package.

operations, nor, in the absence of a social safety net, how workers from closed enterprises would survive. What is likely to occur is the maintenance of operations by these enterprises supported by implicit subsidies, either through national or local government budgets or through recourse to a reconstructed banking system. Indeed, the North Koreans have sent officials to China to study the Chinese banking system, which, although it may well have virtues, is also the primary mechanism through which money-losing state-owned firms are kept alive.

The consensus among most outside observers is that, at this writing, marketization has not delivered as hoped. The behavior of enterprise managers appears to be similar to that observed prior to the policy changes. The jury is still out on the impact on the agricultural system, since the impact of changed incentives would not be readily apparent until the 2003 spring planting decisions.

Macroeconomic Policy Changes

At the same time the government announced the marketization initiatives, it also announced tremendous administered increases in wages and prices. To get a grasp on the magnitude of these price changes, consider this: when China raised the price of grains at the start of its reforms in November 1979, the increase was on the order of 25 percent. In comparison, North Korea has raised the prices of corn and rice by more than 40,000 percent. In the absence of huge supply responses, the result will be an enormous jump in the price level and possibly even hyperinflation.²⁵

Moreover, when China began its reforms in 1979, more than 70 percent of the population was in the agricultural sector (table 5). (The same held true for Vietnam when it began reforming in the following decade.) In contrast, North Korea has perhaps half that share employed in agriculture. This has two profound implications: first, the population share, which is directly benefiting from the increase in producer prices for agricultural goods, is roughly half as big as in China and Vietnam. This means that reform in North Korea is less likely to be Pareto-improving than the cases of China or Vietnam. Instead, reform in North Korea is more likely to create losers and with them the possibility of unrest. Second, the relatively smaller size of the agricultural sector suggests that the absolute magnitude of the positive supply response will not be as great in the North Korean case as compared with China or Vietnam either. Again, this increases the likelihood that reform will create losers and unrest.

In the short run, an initial jump in the price level is usually accompanied by an increase in economic activity, as households and enterprises mistake increases in the overall price level for

²⁵ See Frank (2003) and Oh (2003) for recitations of other, nonagricultural price increases.

changes in relative prices. This is likely to be particularly acute in North Korea, where households and enterprises can be expected to be relatively naïve about market economics and where significant alterations in the structure of relative prices will be coincident with the rapid increase in the price level. So in the short run, there may be an increase in economic activity.

In the longer run, however, once households and enterprises begin to distinguish more clearly between changes in relative and absolute prices, it will become apparent that some parts of the population have experienced real increases in income and wealth, while others have experienced real deteriorations. Access to foreign currency may act as insurance against inflation, and in fact, the black market value of the North Korean won has dropped steadily since the reforms were announced, with one recent report putting it at approximately 1,200 won to the dollar in April 2003.²⁶

Indeed, the authorities treatment of the external sector has been confused. After announcing the dramatic price increases, the government maintained that it would not devalue the currency, though this would have caused a massive real appreciation that would have destroyed whatever international price competitiveness the North Korean economy has. After about two weeks, the government in August 2002 announced a devaluation of the currency from 2.1 won to 150 won to the dollar, approaching the contemporaneous black market rate of around 200 won to the dollar. Tariffs on consumer products such as textiles, soap, and shoes have doubled from 20 percent to 40 percent (Oh 2003).

The simple comparison of the purchasing power exchange rate implied by the procurement and PDS prices for rice and corn generate an enormous range of estimates encompassing the official rate of 150 won to the dollar (table 4). One implication is that if US prices are taken as a proxy for world prices, then state prices in the DPRK still embody considerable relative price distortion. As exchange indicators, these estimates should be taken with large grains of salt however? quality differences in rice and corn consumed in the US and DPRK may so large as to swamp any true signal emerging from the price comparisons.

In any event, the government apparently continues to insist that foreign-invested enterprises pay wages in hard currencies (at wage rates that exceed those of China and Vietnam). For a labor-abundant economy, this curious policy would seem to be the very definition of a contractionary devaluation, blunting the competitiveness-boosting impact of the devaluation by aborting the adjustment of relative labor costs while raising the domestic resource costs of imported intermediate inputs.

²⁶ James Kyngé and Andrew Ward, "Back to the table: why Kim Jong-il's failing economy may be the key to halting his nuclear program," *Financial Times*, 23 April 2003.

Those with access to foreign exchange, such as senior party officials, will be relatively insulated from the effects of inflation. Agricultural workers may benefit from “automatic” pay increases as the price of grain rises, but salaried workers without access to foreign exchange will fall behind. In other words, the process of marketization and inflation will contribute to the exacerbation of existing social differences in North Korea. The implications for “losers” could be quite severe. According to a WFP survey, most urban households are food insecure, spending more than 80 percent of their incomes on food.

Make no mistake about it: North Korea has moved from the realm of elite to the realm of mass politics. Unlike the diplomatic initiatives of the past several years, these developments will affect the entire population, not just a few elites. And while there is a consensus that marketization is a necessary component of economic revitalization, the inflationary part of the package would appear to be both unnecessary and destructive. (If one wanted to increase the relative wages of coal miners by 40 percent, one could simply give them a 40 percent raise—one does not need to increase the overall price level by a factor of 10, and the nominal wages of coal miners by a factor of 14 to effect the same real wage increase.)

So why do it? There are at least three possible explanations. The first, alluded to above, is the most benign: by creating inflation, the government hopes to provide a short-run kick-start to the economy, the long-run implications be damned. (From the standpoint of North Korean policymakers, Keynes’ aphorism, “in the long run we are all dead” may apply with a rather short time horizon.) Given the extremely low levels of capacity utilization in the North Korean economy, this argument has a certain surface plausibility. Yet the problems of the North Korean economy run far, far deeper than underutilized resources. In large part, the economy is geared to produce goods (televisions and radios without tuners, to cite one example, or Scud missiles, to give another) for which there is only limited demand. Unless there is a significant reorientation in the composition of output, it is unlikely that inflation alone will generate a sizeable supply response. Even agriculture is problematic in this regard: North Korean agriculture is highly dependent on industrial inputs (chemical fertilizers and agricultural chemicals, for example), and agriculture could be disrupted if the farmers find themselves getting squeezed on the input side.

A second possibility is that the inflation policy is intentional and is a product of Kim Jong-il’s reputed antipathy toward private economic activity beyond state control. One effect of inflation is to reduce the value of existing won holdings. (For example, if the price level increases by a factor of 10, the real value of existing won holdings is literally decimated.) Historically, state-administered inflations and their cousins, currency reforms, have been used by socialist governments to wipe out currency “overhangs” (excess monetary stock claims on goods in

circulation), more specifically to target black marketers and others engaged in economic activity outside state strictures, who hold large stocks of the domestic currency. (In a currency reform, residents are literally required to turn in their existing holdings—subject to a ceiling, of course—for newly issued notes.) In July, it was announced that the blue won (“foreigner’s won”) foreign exchange certificates would be replaced by the normal brown (“people’s”) won, though it is unclear if these are convertible into foreign currency. The other shoe dropped in December 2002 when the authorities announced that the circulation of US dollars was prohibited and that all residents, foreign and domestic alike, would have to turn in their dollars to be exchanged for euros, which the central bank did not have. In the case of North Korea, the episode that is now unfolding will be the fourth such in the country’s five-decade history.

In yet another wheeze to extract resources from the population, in March 2003 the government announced the issuance of “People’s Life Bonds,” which despite their name would seem to more closely resemble lottery tickets than bonds as conventionally understood. These instruments have a 10-year maturity, with principal repaid in annual installments beginning in year five (there does not appear to be any provision for interest payments and no money for such payments has been budgeted). For the first two years of the program, there would be semiannual drawings (annually thereafter) with winners to receive their principal plus prizes. No information has been provided on the expected odds or prize values other than that the drawings are to be based on an “open and objective” principle. The government’s announcement states, without irony, that “the bonds are backed by the full faith and credit of the DPRK government.” Committees have been established in every province, city, county, institute, factory, village, and town to promote the scheme—citizens purchasing these “bonds” will be performing a “patriotic deed.”²⁷ Both the characteristics of the instrument and the mass campaign to sell it suggest that politics, not personal finance, will be its main selling point.²⁸

The hypothesis has the strength of linking what appears to be a gratuitous economic policy to politics—Kim Jong-il, who ascended to power after the death of his father, Kim Il-sung, in 1994 and rules as general secretary of the Korean Workers’ Party and chairman of the Central Military Commission, not only rewards favored constituencies by providing them with real

²⁷ The discussion in Chung (2003) suggests that purchases of the bonds may be compulsory. According to another account, while purchases are not mandatory, the authorities use purchases as “a barometer of the buyers’ loyalty and support for the party and the state” (Itar-Tass, 23 May 2003, KOTRA translation).

²⁸ Frank (2003) argues that the issuance of these instruments is a response to the large expansion in expenditures associated with the increased procurement price for grains, and indeed, North Korean government expenditures appeared to increase by double-digits in 2003. However, the rise in outlays associated with the increase in the procurement price for grain ought to be offset by a similar increase in revenues from the expanded PDS sales.

income increases and by going the inflation/currency reform route, he also punishes his enemies. This line of reasoning is not purely speculative: it has been reported that one of the motivations behind unifying prices in the PDS and farmers' markets has been to reduce the need of consumers to visit farmers' markets and to "assist in the prevention of illegal sales activities," which took place when the price in the farmers' market was much higher than the state price (*CanKor*, 9 August 2002; WFP 2003c). A number of unconfirmed reports indicate that the government has placed a price ceiling on staple goods in the farmers' markets as an anti-inflationary device.²⁹

The problem with this explanation is that having gone through this experience several times in the past? including as recently as the mid-1990s (Michell 1998)? North Korean traders are not gullible: they quickly get out of won in favor of dollars, yen, and yuan. Indeed, even North Koreans working on cooperative farms reportedly prefer trinkets as a store of value to the local currency. As a consequence, these blows, aimed at traders, may fall more squarely on the North Korean masses, especially those in regions and occupations in which opportunities to obtain foreign currencies are limited.

As an economist, I am trained to assume rationality, and it is only with reluctance that I propose arguments that presume ignorance. But my personal experience in China suggests one more possible explanation for the North Korean policy. Demand and supply are not quantities or points—they are schedules indicating quantities as a function of prices. Market-determined prices are thus a signal of scarcity value reflecting underlying demand and supply. Conversations with Chinese officials in the early to mid-1980s, during the first stage of the marketizing reforms, however, revealed that fundamental misunderstanding of the nature of markets was widespread, especially among older officials who had spent many years in a planned economy.

The North Koreans have indicated that they are trying to unify (or at least reduce the differences between) state prices and those observed in the farmers' markets. In a press report, one unnamed official laid out the logic of the price reform: the administered price of rice would be raised to the farmers' market price, but since no one could afford rice at the market price, everyone's nominal wages would be increased commensurately. What this official did not seem to grasp was that the amount of won in circulation was instantly increased by a factor of 10 due to

²⁹ Some observers have seized on a March 2003 North Korean statement that henceforth "farmers' markets" would simply be referred to as "markets" interpreting this as an implicit broadening of the policy changes. Frank (2003) contains an intriguing exegesis on the North Korean statement in which he cites North Korean interpretations of the writings of Kim Il-sung to the effect that "farmers' markets" existed in feudal times and that "markets" will come about during the socialist transition to communism when the "all consumer goods are sufficiently produced and supplied by the state and when cooperative ownership is turned into all-people ownership" – that is the North Korean statement could be interpreted as indicating progress toward socialism – not away from it.

the wage increase, unless there was an immediate supply response; then the government had effectively caused a 900 percent jump in the price level. And, in fact, the North Koreans have been slow to adjust state prices in the face of the inflation that predictably materialized in the market.

Again, political considerations increase the plausibility of this argument. North Korea's decline over the past decade has apparently been accompanied by a withering of the Korean Worker's Party and decline in the bureaucracy's capacity to formulate policy. By all reports, the economic policy changes undertaken in North Korea are devised by a small number of senior officials. Moreover, North Korea has a political system in which the political space of discussion and dissent is highly constricted, and the penalties for being on the wrong side of a political dispute can be quite severe. So while the logic of too many won chasing too few goods would seem elementary to those of us raised in market economies, under the circumstances that exist in North Korea, the possibility that economic decisions are made by people who do not grasp the implications of their actions (or are afraid to voice their reservations and instead engage in preference falsification if they do) should not be dismissed too hastily.

Special Economic Zones

The third component of the North Korean economic policy change is the formation of various sorts of special economic zones. The first such zone was established in the Rajin-Sonbong region in the extreme northeast of the country in 1991. It has proved to be a failure for a variety of reasons including its geographic isolation, poor infrastructure, onerous rules, and interference in enterprise management by party officials. The one major investment has been the establishment of a combination hotel/casino/bank. Given the obvious scope for illicit activity associated with such a horizontally integrated endeavor, the result has been less Hong Kong than Macau North.

The 1998 agreement between North Korea and Hyundai that established the Mt. Kumgang tourist venture also provided for the establishment of an industrial park to be managed and operated by Hyundai. While the tourism project was obviously the centerpiece of the agreement, from the standpoint of revitalizing the North Korean economy, the establishment of the industrial park, which would permit South Korean small- and medium-sized enterprises (SMEs) to invest in the North with Hyundai's implicit protection, was actually more important. In the long run, South Korean SMEs will be a natural source of investment and transfer of appropriate technology to the North. However, in the absence of physical or legal infrastructure, they are unlikely to invest. The Hyundai-sponsored park would in effect address both issues. (The *chaebols*, because of their size and political connections, would not be so reliant on formal

rules—they could always go to the South Korean government if they encountered trouble in the North.) The subsequent signing of four economic cooperation agreements between the North and South on issues such as taxation and foreign exchange transactions could be regarded as providing the legal infrastructure for economic activity by the politically noninfluential SMEs.

The North Korean government and the South Korean firm then negotiated for 18 months over the location of the zone, with the North Koreans wanting it in Sinuiju, a city of some symbolic political importance in the northwest of the country on the Chinese border, and Hyundai wanting to locate the park in the Haeju district, more easily accessible to South Korea. In the end, it was agreed that the park would be located in Kaesong—a decision that was hailed at the time as reflecting an increased emphasis on economic rationality in North Korea.

The industrial park at Kaesong has not fulfilled its promise, however: Hyundai's dissolution forced the South Korean parastatal KOLAND to take over the project, and the North Koreans inexplicably failed to open the necessary transportation links to South Korea on their side of the demilitarized zone (DMZ). Hence the September 2002 initiation of activity on the northern side of the DMZ could be an important step in the take-off of the Kaesong industrial park.

In September 2002, the North Korean government announced the establishment of a special administrative region (SAR) at Sinuiju. In certain respects the location of the new zone was not surprising: the North Koreans had been talking about doing something in the Sinuiju area since 1998. Yet in other respects the announcement was extraordinary. The North Koreans announced that the zone would exist completely outside North Korea's usual legal structures, that it would have its own flag and issue its own passports, and that land could be leased for 50 years. To top it off, the SAR would not be run by a North Korean, but instead by a Chinese-born entrepreneur with Dutch citizenship named Yang Bin, who was promptly arrested by the Chinese authorities.³⁰ See box 3.

³⁰ Press reports subsequently touted first Park Tae-joon, former South Korean general, head of POSCO, and prime minister, and later Eric Hotung, a Hong Kong philanthropist, as Yang's successor.

Box 3 Adventures in Fantasyland

At the time of his appointment as administrator of the Sinuiju SAR, Yang Bin was under investigation for tax evasion in China. He had reportedly fled to North Korea—though he does not speak Korean—during two previous investigations. (Among his various business interests, Yang operated a Dutch-style village in Shenyang complete with a windmill and imitations of Amsterdam buildings. Kim Jong-il, who knows a thing or two about fantasylands, visited it himself.) At the time of Yang's appointment, trading in shares of his firm, Euro-Asia Agriculture Holdings, had been suspended on the Hong Kong stock exchange after crashing on the suspicion of fraud. When asked about Yang's appointment, China's Foreign Ministry spokesperson declined to endorse it. To paraphrase Senator Lloyd Bentsen's memorable line from the 1988 US vice presidential debate, "Mr. Yang, you are no Tung Chee Hwa."

In yet another example of physical and social engineering on a grand scale, plans were announced, in Yang's words, to "flatten" Sinuiju, move its 500,000 current residents out, and substitute them with 200,000 hand-picked replacements. Euro-Asia would build and operate 100,000 greenhouses. A governing council of 15 would be established, which would include eight foreigners. The SAR would be surrounded by a giant wall, and while foreigners could enter visa-free, North Koreans would be required to get permission to enter the SAR. Someone forgot to tell the border guards about this, though—South Korean journalists were denied entry the next day because according to the North Koreans, they are not foreigners, and foreign journalists were denied entry as well, because, well, they are foreigners.

Assuming that the Yang Bin fiasco was mere growing pains, the question arises as to how important the Sinuiju SAR may prove to be. It should promote economic integration between North Korea and China, though one should keep in mind that China is a big place and that the most economically dynamic parts are in the southern coastal areas far from North Korea. But the North Korean economy is so far down that even integration with a comparative backwater like Dandong could be a boost.

More important is whether the SAR will generate any spillovers. In conventional terms this will depend on whether any lessons from the Sinuiju SAR experiment are generalized to the rest of the economy.³¹ More subtly, the SAR might have a positive impact if internally it is regarded as giving Kim Jong-il's unimpeachable imprimatur to the reform process. Bureaucrats and factory managers who have been reluctant to get ahead of the leadership may take this as a sign that change is safe. Conversely, by taking the SAR completely outside of the normal North

³¹ One possible ray of hope in recent events is the removal of the less than 50 percent foreign ownership ceiling in joint ventures.

Korean governing structures, Kim Jong-il can in effect end-run the party and the bureaucracy, and manage the zone directly out of his office.

Ultimately, the planned industrial park at Kaesong, oriented toward South Korea, may have a bigger impact on the economy than either the Rajin-Sonbong or Sinuiju zones.

Aid Seeking

The fourth component of the economic plan consisted of passing the hat. In September 2002, during the first-ever meeting between the heads of government of Japan and North Korea, Chairman Kim managed to extract from Prime Minister Koizumi a commitment to provide a large financial transfer to North Korea as part of the diplomatic normalization process to settle postcolonial claims, despite the shaky state of Japanese public finances.³² Each of the leaders then expressed regrets for their countries' respective historical sins and agreed to pursue diplomatic normalization. However, Kim's bald admission that North Korean agents had indeed kidnapped 12 Japanese citizens and that most of the abductees were dead set off a political firestorm in Japan. This revelation, together with the April 2003 admission that North Korea possesses nuclear weapons in contravention to multiple international agreements, has effectively killed the diplomatic rapprochement and with it the prospects of a large capital infusion from Japan, as well as already dim prospects of admission to international financial institutions such as the World Bank and Asian Development Bank.

In connection with these developments, rumors circulated that the North Koreans intended to establish yet another special economic zone on the east coast, to be oriented toward Japan. Discounting the failed zone at Rajin-Sonbong, this would give the North Koreans three special economic enclaves, one oriented toward South Korea, one toward China, and one toward Japan, diversifying their portfolios, so to speak. Again, given the centrality of politics to North Korean thinking, they may well envision playing the three off against each other. In the long run, however, it is integration with South Korea that will be critical to the development of the North Korean economy.

³² Japanese officials did not deny formulas reported in the press that would put the total value of a multiyear package in the form of grants, subsidized loans, and trade credits at approximately \$10 billion. Taking inflation, changes in the value of the yen, differences in population size, and other factors into account, this sum would be in the ballpark of the transfer that Japan made to South Korea in 1965 when the two countries normalized relations. Given the puny size of the North Korean economy, this is a gigantic sum.

CONCLUSIONS

North Korea is into its second decade of food crisis. It experienced a famine in the 1990s that killed perhaps 3 to 5 percent of the prefamine population. Yet remarkably little has changed since then; grain production has not recovered, and inexpertly enacted policy changes, a deteriorating diplomatic environment, donor fatigue, and an utterly ruthless government have brought the country once again to the precipice of famine.

It did not have to be this way. Morocco, for example, a country of similar size and in certain respects with economic characteristics similar to those of the DPRK, suffered a similar fall in domestic output in the late 1990s, but a combination of increased exports and increased foreign borrowing allowed it to cover its food deficit through imports. Make no mistake: times were hard, but Morocco did not experience famine.

Unlike other communist countries that have experienced famine, the case of North Korea represents less the introduction of misguided policies than the cumulative effect of two generations of economic mismanagement and social engineering. As a consequence, the policies are so imbedded in the social and political fabric of the country that they may well prove more difficult to reverse than has been the case elsewhere. The country could improve food availability by freeing up resources currently devoted to the military, but as long as the country pursues “military-first” politics, this is unlikely.

Aid is not a viable long-term solution to the North Korean food crisis—the food gap is too large, and the political sustainability of aid too precarious. And while incentive reforms could contribute to productivity increases in agriculture, given the economic fundamentals of the DPRK—a high ratio of population to arable land, relatively high northerly latitude, and short growing season—it is doubtful whether a food security strategy based on domestic agricultural revitalization is advisable either.³³ Only trade-opening strategies in the industrial sector and systemic reforms are likely to meet human needs and obviate the need for concessional assistance (figure 4).

The ultimate resolution to North Korea’s food problem requires the revitalization of its industrial economy. Although actions to increase the productivity of domestic agriculture would certainly be helpful, the underlying fundamentals are so inauspicious that a permanent solution must lie in an expansion of industrial exports that would allow North Korea to import bulk grains

³³ Some aid agencies have attempted to emphasize increasing agricultural efficiency as a means of alleviating the North Korean crisis. The North Koreans have played to this tendency, for example in 2000 announcing through the WFP that with good weather and \$250 million in additional assistance it would be self-sufficient within two years’ time. For the most sophisticated rendition of an “agriculture-centric” strategy, see McCarthy (2001a).

on a commercial basis. To achieve food security, North Korea should open up externally; export manufactures, mining products, and some niche agricultural, forest, and fisheries products; and import bulk grains—as its neighbors South Korea, China, and Japan do.

Such a prospective development, in turn, is hampered by both domestic and external impediments. To understand the meaning of what has occurred over the past year, one has to make some kind of assessment of the motivations behind North Korea's policy changes. One argument put forward by some North Korea-watchers is that Kim Jong-il has long understood that the North Korean system is irretrievably broken but that it has taken a long time for him to consolidate power and implement these far-reaching changes. This is hard to believe. Kim Jong-il was reputedly running the country on a day-to-day basis for 10 years before his father's death. This means that at the time the policy changes were announced last year, he had in effect been running the country for 18 years and was the uncontested supreme leader for the last eight. In a political system as hierarchical as North Korea's, it is difficult to accept that it took him this long to consolidate his position.

Indeed, the opposite interpretation would seem more plausible? namely that Kim Jong-il has reluctantly concluded that the old methods are inadequate to revive the economy and out of political necessity is embracing marketization, inflation, and the former colonial master in a desperate bid to revitalize – though not fundamentally change – a moribund system. If this interpretation is correct, then we should expect hesitancy in the implementation of reforms and a strong reliance on the international social safety net supplied by the rest of the world. In this respect, the outcome of the diplomatic maneuvering over the North Korean nuclear weapons program is of critical importance.

It is not at all clear that the current leadership is willing to countenance the erosion of state control that would accompany the degree of marketization necessary to revitalize the economy. Even if a serious reform program were attempted, it is by no means preordained that such a program would be successful. The three robust predictors of success in reforming centrally planned economies are the degree of macroeconomic stability at the time that reform is initiated, the legacy of a functional presocialist commercial legal system, and the size of the agricultural sector (Åslund, Boone, and Johnson 1996). North Korea is already experiencing significant macroeconomic instability and in terms of the sectoral composition of output and employment, the North Korean economy more closely resembles Romania and parts of the former Soviet Union than it does the agriculture-led Asian reformers, China and Vietnam. Finally, the divided nature of the Korean peninsula and dynastic aspects of the North Korean regime present real ideological and political problems for would-be reformers in the North? namely how to

reinterpret the *juche* ideology of the virtually deified founding leader Kim Il-sung as market-oriented globalization (especially when most of the increased economic interdependence would be with rival South Korea and former colonial master Japan) and indeed, how to preserve the whole *raison d'être* of the regime as it begins to look increasingly like a third-rate South Korea.

Even if the North were able to successfully navigate these shoals domestically, it is hard to see the initiative coming to fruition as long as the country remains, in essence, a pariah state, brandishing its nuclear weapons and missiles, subject to continual diplomatic sanctions by the United States, Japan, and other powers. Capital is a coward, and foreigners will not invest in such an environment. There will be no permanent solution to the North Korean food crisis until there is a resolution of its profound diplomatic problems, and indeed, the diplomatic disputes have already substantially impeded the humanitarian aid program and its ameliorative impact. If a reduction of external tensions could be achieved, however, it would not only pave the way for expanded commerce but also could potentially yield a sizeable peace dividend that would facilitate increased food imports.

Even this would not be easy, however. North Korea is not a member of the International Monetary Fund or any of the multilateral development banks, and, to date, contact with these organizations has been minimal, limited to a couple of informational missions of brief duration. As multiple observers have emphasized, the DPRK's institutional capacity for managing development projects is woeful. In all likelihood, a prolonged period of technical assistance and capacity building would be needed before substantial lending could occur (Leipziger 1998; McCarthy 2001b and 2002; Babson 2001). Once lending was under way, the initial focus would have to be on rehabilitating North Korea's badly deteriorated infrastructure as a necessary precursor to expanded private investment? for example, by improving transportation links between mining areas and ports. The upside, of course, is that the degree of isolation and distortion embodied in the North Korean economy is so profound that with policy reform, investment and technology transfer, and expanded ties to the outside world (or even its immediate neighbors), the potential efficiency gains are enormous (Noland, Robinson, and Wang 2000).

If this process is broadly successful, over the remainder of Kim Jong-il's life it may generate enough systemic change in North Korea that after his passing the two countries can move forward with the kind of protracted, consensual process of economic, social, and political integration that both North and South Korea claim to want.

And what if the diplomatic tumblers do not fall into place? The leadership of the DPRK regards "survival" as the first in a lexicographic set of preferences, and the regime has a history of confounding predictions of its demise. Moreover, for the last decade it has been enabled by

neighbors who, for their own reasons, prefer its continued existence to its disappearance. The amount of external assistance necessary to keep it on “survival rations” is not large (Michell 1998). In economic terms, the DPRK is a relatively small Chinese province—and until recently one could confidently predict that neither China nor South Korea would stand by idly while its neighbor imploded. But the latest iteration of the nuclear confrontation has begun to test the limits of Chinese support for its neighbor. Ironically, it is rival South Korea—which for economically self-interested reasons fears the North’s collapse—that has emerged as its most reliable benefactor.

Considerable research suggests that in the absence of a firm ideological commitment to reform, the provision of aid impedes policy change by enabling governments to avoid difficult and painful policy choices. There is little evidence that North Korea is seriously committed to reform, and as a consequence, it is reasonable to suppose that the availability of outside assistance will encourage the perpetuation of a strategy of muddling through. The problem is that such a strategy in all likelihood implies the continuation of the food crisis.

However, the initiatives undertaken in the last several months are qualitatively different from the diplomatic initiatives that the North Koreans undertook over the last several years. Unlike diplomatic normalizations, marketization and inflation affect everyone in the country, and alter economic, political, and social relations on the ground, and the stakes are far, far higher. While the upside potential may be great, failure could mean the end of the regime. A reform that failed could lead to splits within the ruling elite. The instinct for self-preservation could generate a palace coup, similar to what occurred in Romania, though the centrality of Kim Jong-il to the regime seems so great as to foreclose this possibility. Alternatively, a failed reform could unleash an uncontrollable mass mobilization that could mean the end of the regime and possibly something much closer to collapse and absorption, as occurred in Germany, than what either government publicly contemplates. There are many more possible outcomes as well. The point is simply that reform may contain the seeds of the regime’s destruction and paradoxically signal the beginning of the end.

So what is to be done? The outside world has an ethical obligation to feed hungry North Koreans. It has no obligation to do so in ways that strengthen a totalitarian regime that is itself the source of the problem. Specifically, if the world community is serious about addressing the humanitarian crisis in North Korea, it should be willing to fund a multilateral initiative to create temporary refugee feeding and resettlement camps in China, modeled on the response to the Vietnamese “boat people” crisis two decades ago. Governments like those of the United States and European Union, which censure North Korea on human rights grounds (United Nations

2003), should be willing to put their money (and their refugee resettlement policies) where their mouths are.³⁴ China has an understandable wariness of a flood of Korean refugees, and those who criticize China for its treatment of North Korean refugees should be willing to go beyond mere criticism and formulate constructive solutions that would address both the underlying humanitarian disaster in the DPRK and China's understandable domestic political concerns.

When asked why he became a revolutionary, Argentine physician Ernesto "Che" Guevara reputedly responded with the following story. One day while working in a clinic in Mexico, a campesino was brought to the clinic with a broken leg. While Che applied a splint, the man explained that he had been walking down the road, stumbled on a pothole, and fell. The following day, another peasant was brought to the clinic with a broken leg. While Che applied the splint, the patient explained that he had been walking down the road, fallen into a hole, and broken his leg. The next day yet another peasant was brought into the clinic with a broken leg. Che turned to the nurse: "You apply the splint," he said. "I am going to fill the hole."

³⁴ Regrettably, Japan and South Korea (the latter of which abstained from the UN human rights vote on North Korea) have the worst refugee resettlement records among OECD member countries.

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Table 1 Food aid to North Korea, by donor, 1995-2003 (millions of US dollars)

	1995	1996	1997	1998	1999	2000	2001	2002	2003 (through April 27)
Australia									
Through UN	0.5	0.4	4.8	1.3	2.3	6.7	2.9	3.4	1.8
Total	5.5	2.0	4.8	2.5	2.3	6.7	2.9	3.4	1.8
Canada									
Through UN	.	.	3.3	3.5	3.4	1.7	1.7	2.5	1.8
Total	.	.	3.3	3.5	3.4	1.7	1.7	2.7	2.1
South Korea									
Through UN	0.2	3.5	25.3	10.9	.	0.5	15.8	16.2	19.2
Total	.	3.4	25.5	27.8	38.5	0.5	68.5	82.0	19.2
Korean Govt. Figure ^a	232.3	4.6	47.2	31.9	46.9	113.8	135.4		
United States									
Through UN	0.2	7.2	45.4	171.9	160.7	29.2	102.7	63.5	31.1
Total	.	9.1	57.4	173.1	160.7	29.2	102.7	63.5	31.1
US Govt. Figure ^b	0.2	8.3	52.4	72.9	222.1	74.3	102.8	82.4	.
EU^c									
Through UN	4.0	2.6	49.7	16.3	15.2	4.8	12.4	12.4	21.4
Total	.	11.9	68.0	53.3	17.5	14.3	17.9	29.4	22.0
Japan									
Through UN	0.1	6.0	27.0	.	.	95.7	104.9	.	.
Total	.	6.0	27.0	.	.	95.7	104.9	.	.
Private/NGO									
Through UN	.	.	.	.	.	2.4	1.0	16.3	1.1
Total	.	.	.	.	.	2.4	68.8	76.8	2.9
Total									
Through UN	.	34.4	158.4	215.9	189.9	153.1	248.0	120.7	78.7
Total	272.4	50.3	292.5	335.1	235.9	153.7	375.2	261.4	82.1

a. See text for explanation.

b. See text for explanation.

c. EU includes the donations from the European Commission and member countries.

Sources: UN-OCHA Financial Tracking System; Korean Unification Bulletin (January 2002); Manyin and Jun (2003).

Table 2 DPR Korea: Cereal balance sheet for 2002-03
(thousands of metric tons)

Domestic availability	3,837
Stock drawdown	0
Domestic production	3,837
- <i>Main season production</i>	3,451
- <i>Winter/Spring production</i>	386
TOTAL UTILIZATION	4,921
<hr/>	
Food use	3,893
Feed use	178
Seed requirements	160
Other uses and post harvest losses	691
IMPORT REQUIREMENT	1,084
<hr/>	
Commercial import capacity	100
Concessional imports	300
Uncovered deficit	684
- <i>of which emergency food aid pledged/anticipated</i>	126

Source: FAO database.

Table 3 Rice and corn per capita daily rations

Occupation and age group	Per capita daily ration (grams)	Ratio of rice to corn	
		Pyongyang area	Other areas
High-ranking government officials	700	10:0	10:0
Regular laborers	600	6:4	3:7
Heavy-labor workers	800	6:4	3:7
Office workers	600	7:3	3:7
Special security	800	6:4	3:7
Military	700	6:4	3:7
College students	600	6:4	3:7
Secondary school students	500	6:4	3:7
Primary school students	400	6:4	3:7
Preschool students	300	6:4	3:7
Children under 3 years	100-200	6:4	3:7
Aged and disabled	300	6:4	3:7

Source: Kim, Lee, and Summer (1998).

Table 4 North Korean prices and implicit exchange rates

Product	Price (won/kg)					Price (dollars/kg)		Implicit won/dollar exchange rate	
	Before January 2002	January - June 2002	After July 2002		Retail	Wholesale	Retail	Wholesale	
Rice	0.08	0.98 (0.88)	44	(40)	\$1.01	\$0.86	43.6	46.5	
Wheat	0.06	0.71	28						
Barley	0.06	0.71	26						
Corn	0.04	0.60 (0.49)	24	(20)	\$0.10	\$0.07	240.0	285.7	

Note: Procurement prices in parenthesis.

Sources: For DPRK prices, WFP (2003b); for US rice prices BLS Web site, *Wall Street Journal*; for US corn prices USDA ERS Web site.

Table 5 Distribution of labor force

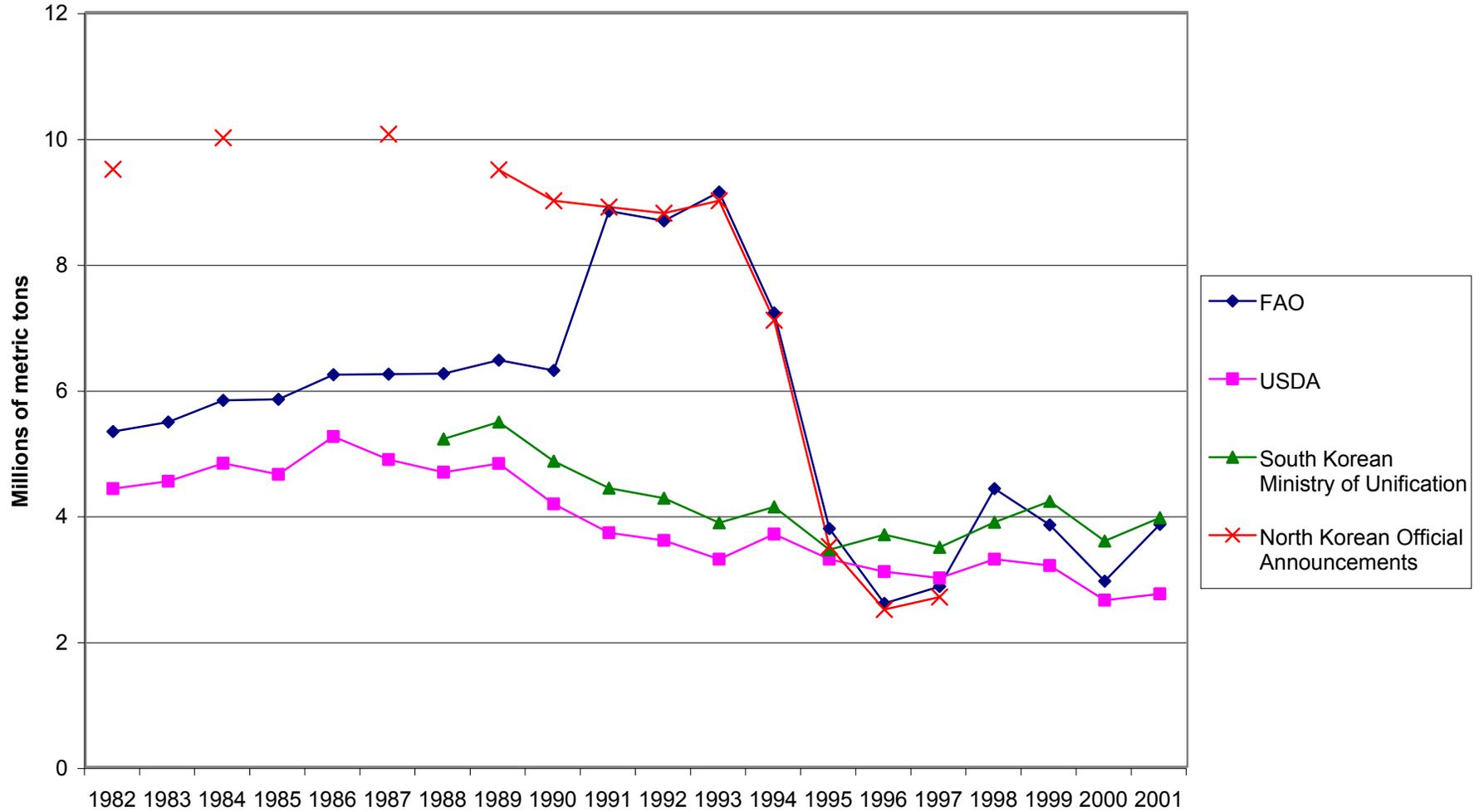
Country	Year	Sector		
		Agriculture	Industry	Service
Czech Republic	1989	11 ^a	39	50
Slovakia	1989	15 ^a	34	51
Poland	1989	7 ^a	37	56
Hungary	1990	15 ^a	36	49
Soviet Union	1987	19 ^a	38 ^b	43
Ukraine	1990	20	40	40
Belarus	1990	20	42	38
Romania	1990	28 ^a	38	34
Bulgaria	1989	19 ^a	47	34
North Korea	1993	33	37	30
China	1978	71	15	14
Vietnam	1989	71	12	17

a. Agriculture and forestry.

b. Industry and construction.

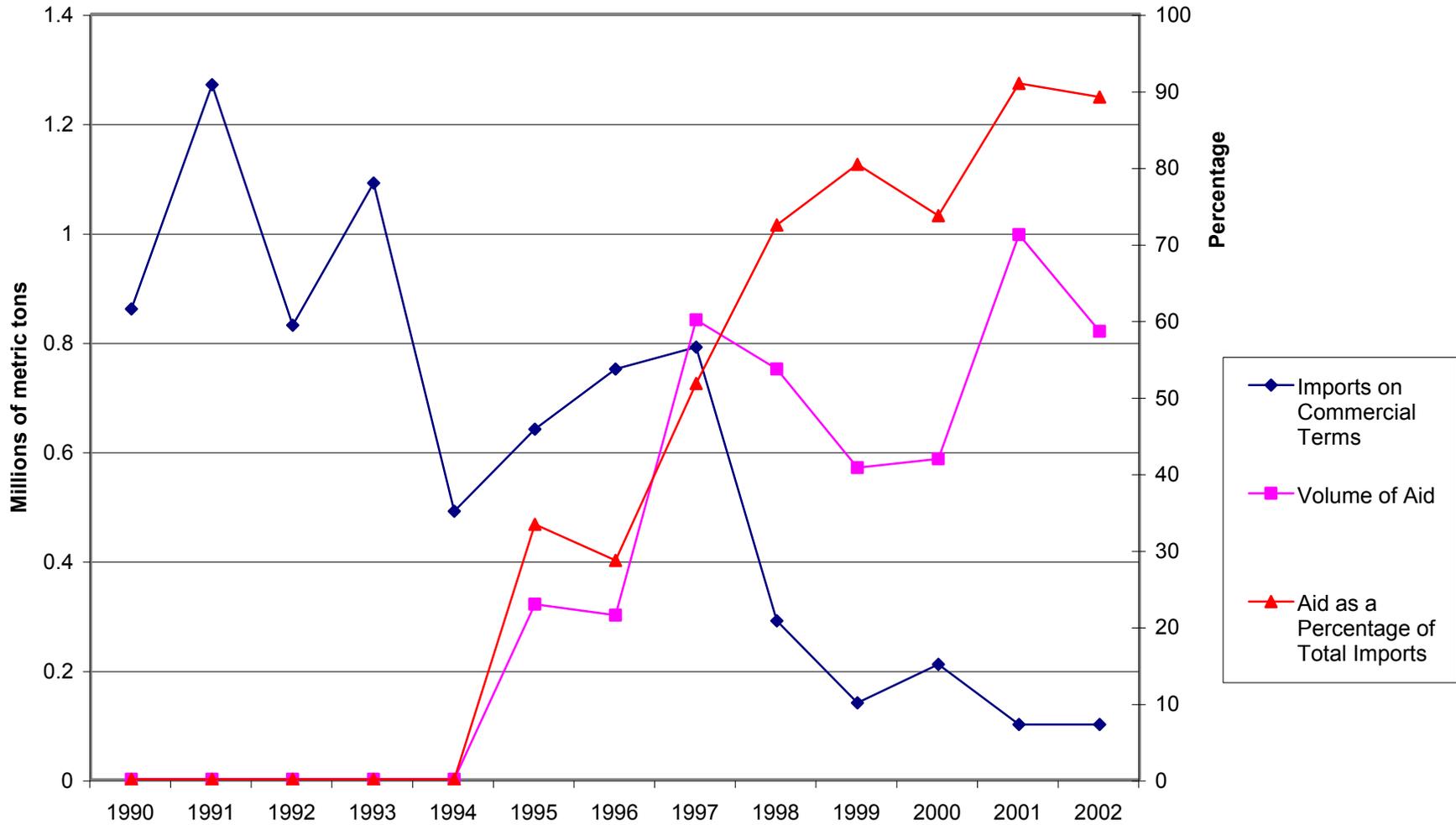
Source: Noland (2000, table 3.7).

Figure 1 Estimates of North Korean grain production, 1982-2001



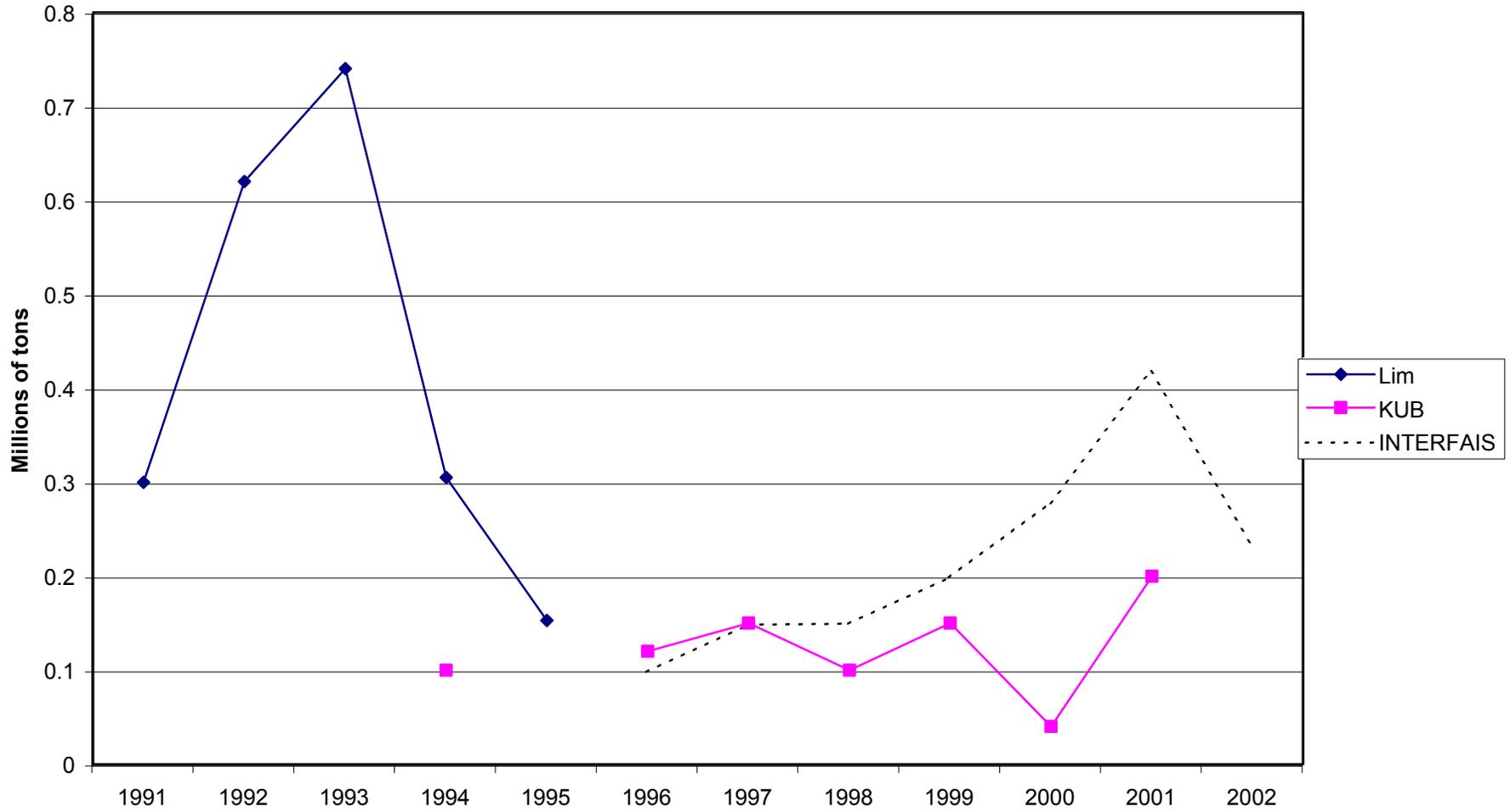
Sources : FAO Statistics Database; USDA and FAS Web site; Korean Ministry of Unification.

Figure 2 North Korean food imports and aid, 1990-2002



Source: National Unification Board, FAO Special Reports, various issues.

Figure 3 Food imports from China, 1991-2002



Sources: Lim (1997); Korean Unfication Bulletin (KUB), April 2002; INTERFAIS aid database.

Figure 4 Food availability

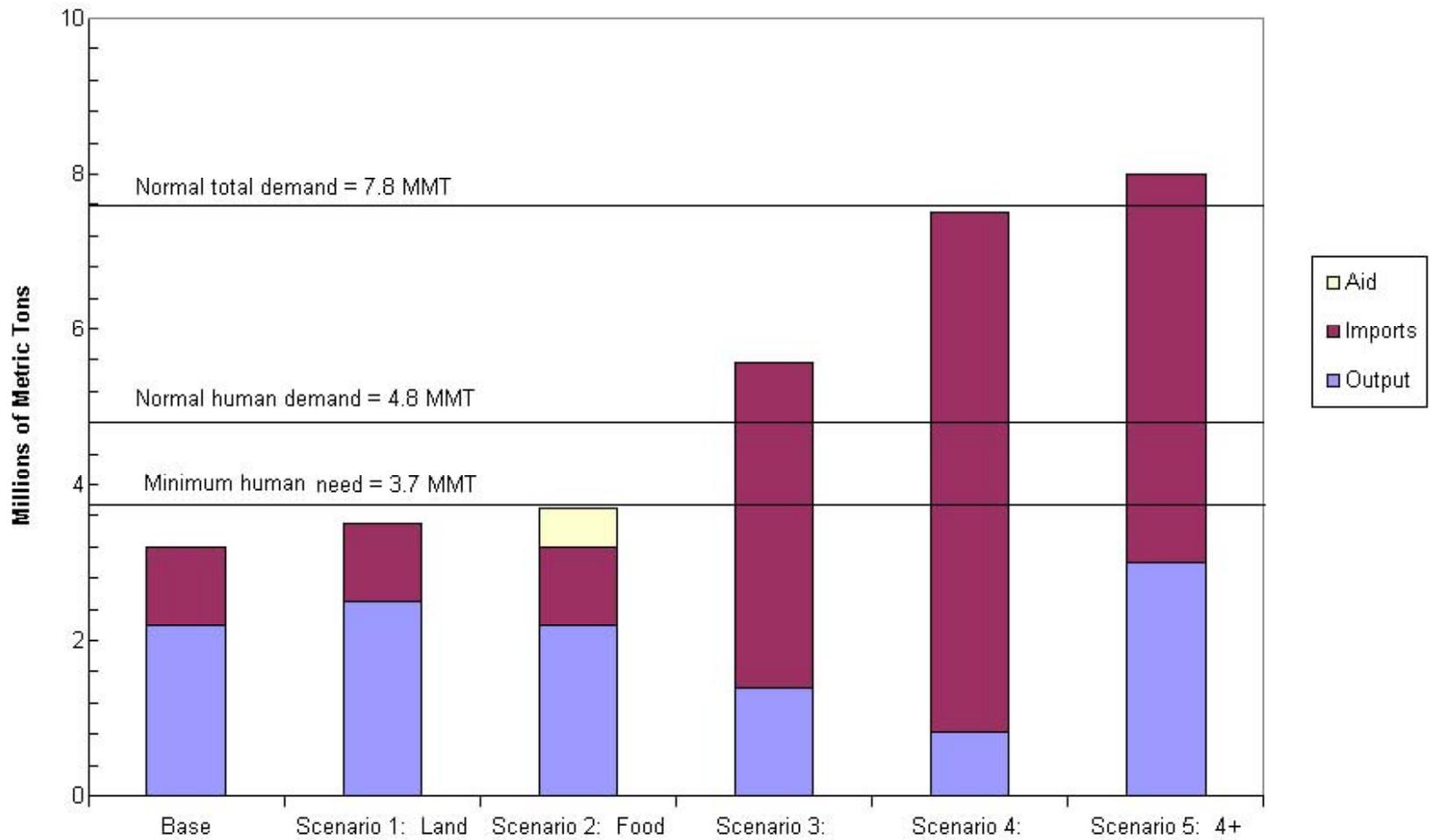
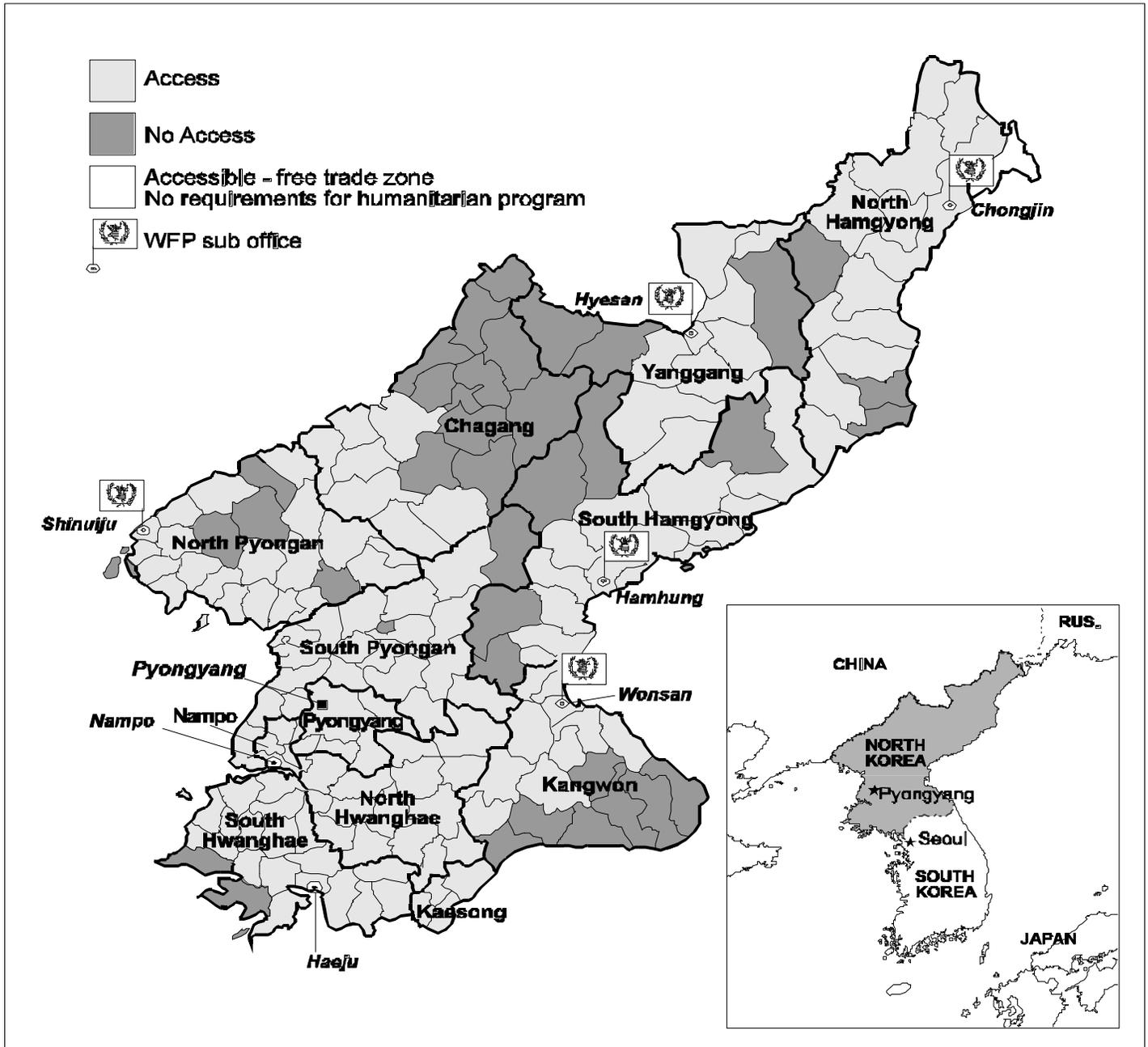


Figure 5 Map of the World Food Program's North Korea operations as of January 2003



Source: Manyin and Jun (2003).

Figure 6 Public distribution system and farmers' rations, 1998-2003



Note: Public Distribution System ration is measured in grams per person per day. Farmers' ration measured in kilograms per person per day.

Source: FAO/WFP DPR Korea Country Office