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North Korea, Sustainable Agriculture

### **Save 25 million people from hunger**

In the Far East, there was a country that was one united nation. The imperialists colonized the land, and the country's people suffered under them for 35 years. After 35 years of suffering, the people of the country finally enjoyed the joy of liberation, but the country split in half due to differences in political ideology. About 70 years later, in 2021, the country built to the south of the demilitarized border has become an economic powerhouse with an annual GDP per capita of about 31130.68 USD, while the country built to the north of that border has become the world's poorest country with a GDP per capita of roughly \$1094.29 (Kosis). What could have caused this tragedy?

The story is a modern history of Korea. The Korean Peninsula is located in Northeast Asia, bordered by China to the west, Russia to the north, and Japan to the east. Korea was originally a united independent country, but it underwent Japanese colonial rule for 35 years beginning in 1910. After the Japanese Empire surrendered to the Allies and World War II ended, Korea was finally liberated. However, the Korean Peninsula was divided in half with a central boundary line called the 38th Parallel. The troops of the Soviet Union occupied the northern side of the Parallel, while the troops of the US occupied the southern side. Korean independence activists were also divided into left and right wings so they opposed each other. Eventually, as the Republic of Korea was established south of the 38th Parallel and the Democratic People's Republic of Korea was established in the north, the Korean Peninsula remained divided in half. Since then, South Korea has become a developed country with a good economy and a stable political base, but North Korea has become one of the world's poorest countries, still groaning under a dictatorship.

About twenty-five million people are living in North Korea. North Koreans generally get married at the age of 27-30 and typically have multiple children. The most prestigious careers are the high-class members of the party, military, diplomatic corps, and academia. Middle-class people usually work in unofficial markets called Jangmadang, and the low-class generally are peasants. Peasants ordinarily grow the crops such as rice, but the crops they grow belong to the government. Therefore, the peasants only earn partial profits from the crops they grow. Although their society is male-dominated, women bring in 70% of the household income through the unofficial market economy (Tertitskiy). North Korea adopted socialism, and since socialism has a rationing system, markets originally could not exist. However, after the great famine in the 1990s, the distribution system in North Korea collapsed, so many people formed an illegal market among themselves to supply goods. These illegal markets are called Jangmadang. They were initially banned and suppressed by the government, but soon the government tacitly tolerated them due to the limitations of the rationing system, and now there are quite a few Jangmadangs in North Korea. In the book "Unveiling the North Korean Economy" by the Korean economist Byung-Yeon Kim, Kim reports that the average workers in North Korea's informal economy earn 80 times more than at an official job (Jeppesen). According to Statista, about 62.64% of North Koreans were living in urban areas in 2021.

The North Korean government initially adopted socialism, which is the system that makes all properties belong to the country and distribute it to the people equally. Therefore, the North Korean government originally strictly rationed food. Of course, the number of rations was determined by political power and was unfair, but they at least were distributed. However, the collapse of the Soviet Union stopped the aid

that had been feeding North Korea; North Korea could not avoid food shortages, and the distribution system stopped. However, their poor economic situation and the political trait of caring more about the sustainability of the dictatorship rather than the people's lives made the distribution system they promised to the people not work (Blakemore). Vienna University of Economics and Business says that according to Jesus Crespo Cuaresma, a professor of Macroeconomics, 60% of the North Korean population was suffering extreme poverty in 2018. They also added that the GDP per capita of North Korea is estimated to be around 790 US dollars, which is an income level that would be among the lowest in the world. From the 1950s to the 1970s, the North Korean economic growth graph showed an exponential curve like other developing countries. However, North Korea's massive economic missteps in the 1980s and the downfall of the Soviet Union brought about an economic crisis and the great famine called the Arduous March in the mid-1990s, setting the North Korean economy back to what it was 30 years ago. According to tradingeconomics.com, the data from World Bank shows that North Korea's GDP was about sixteen billion dollars in the late 1980s, but it went down to five billion dollars, which is the level of the early-1970s, in the mid-1990s, when the Arduous March occurred. Their GDP did not recover to that of the 1980s until the early 2010s, and in 2019, 20 years after the Arduous March, the GDP is still at eighteen billion dollars.

North Korean climate and fields are not ideal for agriculture, but they were able to control the food crisis with aid from the Soviet Union and other communist bloc countries. The communist allies provided food and fuel to North Korea at low prices, and North Korea could keep their agricultural production with the aid. But as mentioned above, after the Soviet Union collapsed, the food and fossil fuel aid to North Korea stopped, so fertilizer production stopped, and agricultural yields plummeted. Moreover, extensive flooding in North Korea in 1995-1996 destroyed 15% of the already scarce arable land. The North Korean government requested food assistance from the international community and received aid, but the food was mostly redistributed to the North Korean elite and the military rather than starving people. People who ran out of food started to eat poor-quality food (eg, wild plants) to survive (Blakemore).

The UN World Food Programme cites a lack of arable land and the lack of access to modern farming equipment and fertilizers as the biggest challenges in North Korea's widespread food and nutrition problems. For now, the most effective way to solve the food shortage problem in North Korea is to build a project that introduces the local farmers to new and improved sustainable agriculture methods. The improved access of North Korean local farmers to sustainable agriculture methods will significantly increase the amount of food production from agriculture. Introducing intercropping and agroforestry will help North Korean farmers to avoid soil erosion. The methods of crop rotation will help them to use less fertilizer, while no-till agriculture will reduce soil erosion and prevent the reduction of nutrients in the soil due to erosion. As such, sustainable agriculture methods can ultimately improve soil quality and increase food production.

However, there are lots of challenges to proceeding with this project. The first hurdle is whether or not the North Korean government approves the project. North Korea advocates the political belief of "Juche ideology." This is often called a "self-reliance ideology" in English. North Korea's first leader, Kim Il Sung, emphasized this "Juche", saying that a great North Korea could be self-sufficient, self-sufficient in everything. It is uncertain whether these projects will be approved, as the North Korean government still prefers to be self-sufficient in isolation from foreign countries. And this is why I think the project needs to be progressed by large global organizations such as the UN; it will be hard for civic organizations to send the members of the project to North Korea since the North Korean government does not outsiders to visit. But, if a huge global organization like the UN asks the North Korean government for cooperation with this kind of project to solve the food shortages in North Korea, the North Korean government will accept

it, in my opinion, because food aid is so urgent for them. According to Voice of America, Manpreet Singh, the chairman of the Indian Chamber of International Business, the North Korean government asked them for rice aid on August 30, 2022. This shows that North Korea is also aware of the seriousness of the food crisis, so they might not reject the project from international organizations.

The second problem is whether there will be support from the North Korean people. For this project to proceed, the public sentiment of the local people is important. We need to introduce the farmers to how to farm in sustainable methods, so we need to help these farmers actively participate in this project without holding hostility towards us. So when we are processing this project, it is important for us to win the hearts of the local people and convince them that the project members are supporting them. This can include direct basic food aid for the people. Also, we can use the North Korean government's ideology. As North Korea is educating its people with the Juche ideology that values self-reliance as its national ideology, we can emphasize to the farmers and people that by informing them of advanced agricultural methods, we are helping them become self-reliant, succeed in farming, and overcome food shortages on their own.

The third challenge we will face is funding. The cost of sending project members and equipment to North Korea, and lodging them will undoubtedly require a large expenditure. Because the project members should physically be in North Korea to inform the farmers about the agricultural methods, we need to provide food to eat and space to stay for the members. Buying and transporting equipment will also require a large payment; the equipment may also include seeds, fertilizers, etc. This part is unavoidable, but the United Nations will have to pay for the project. They could get funding from member countries.

The last challenge is that many countries may not be able to help with this project because of their countries' sanctions against North Korea. The same goes for America. However, the reason for international sanctions against North Korea, including the United Nations, is North Korea's nuclear development. So this project needs to be taken into consideration by the international community as it will solve the food shortage of the North Korean people first rather than focusing on North Korean development of nuclear weapons. Since this project is not financial aid to North Korea, it will not be directly related to nuclear development and arms buildup. This project is all about saving North Korean people from starvation; there is no purpose other than that.

People in North Korea are starving. North Korea's lack of infrastructure, isolationism and natural disasters led to a famine in North Korea, and the aftermath of that famine continues to this day. Simple food aid was all taken away by the North Korean elite. To stop the food shortages, North Korea's farming system itself must be developed. By introducing sustainable agriculture methods to North Korean farmers, we can increase food production in North Korea. The methods such as no-till agriculture might improve soil conditions and reduce soil erosion in North Korea. The UN should proceed with a project to introduce sustainable agriculture methods to North Korean farmers for the starving North Korean people.

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