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DRC: How Sustainable Farming Can End Malnutrition for Present and Future Generations in the World's Hungriest Country

According to a WFP.org (World Food Program) report in November of 2021, the Democratic Republic of the Congo is the world's hungriest country; they have the largest food security crisis on the planet. The country has the highest count of people who are considered extremely hungry. However, the problem isn't hunger alone. The most prevalent issue in the country's population that has led to the Democratic Republic of the Congo's food crisis is the issue of malnutrition. Malnutrition is defined as the condition that develops when the body is deprived of vitamins, minerals, and other nutrients it needs to maintain healthy tissues and organ function. Across the country, people have a very inconsistent supply of food for their families, and little to no access to food that is sufficiently nutritious and satisfying for their health. This entire country is suffering from malnourishment and hunger and so many people are starving and not getting the basic level of nutrients one needs. Organizations such as the UN, WFP, and many more provide medical aid, food shipments, and other relief supplies to these people. But if we are looking for a way to not just bring food and relief to them temporarily but to develop a plan to bring about widespread eradication of malnutrition for the future, we need to look closely at the causes of this hunger crisis. We will start by looking at the demographics, infrastructure, and history of the country. (Democratic Republic of the Congo - World Food Programme, 2022), (Democratic Republic of the Congo - World Food Program USA, 2022), (Malnutrition, 2022).

The Democratic Republic of the Congo has a population of 89.56 million. It is a presidential republic. This government was set up at the conclusion of the Second Congo War in 2003. But violence is still rampant, and this governing system exhibits minimal real control over these crises. The Second Congo War was triggered by the Rwanda refugee crisis in 1994 as people tried to escape the genocides and violence between the Hutus and Tutsis. As a result, millions of refugees spilled over into Democratic Republic of the Congo, and so did the warring groups, bringing violence with them. The government at the time could not control these various armed groups as they clashed with each other, killing and displacing millions, and the war broke out in 1998. Estimates for the death toll of the conflict greatly vary, but most likely at least 5 million Congolese and other people were killed. Although a peace treaty in 2002 ended the war officially and formed the current governing system, ongoing violence between multiple armed groups continues today, and there is little the government has the capacity to do about it. As a result, an estimated 5.2 million people are displaced in the country currently. (Democratic Republic Of Congo Census Population, 2022), (Misachi et al., 2022), (The Second Congo War: Its origins and initial stages, 2022), (The Sinister Second Congo War, 2022), (Grave consequences for children in eastern DRC after armed violence causes population displacement of two towns, 2022).

Because of the constant armed conflict and lack of government control, many people are displaced, so the already struggling economic infrastructure cannot provide consistent employment. Food prices, inflation, and unemployment are high, because the economy struggles with all these displaced people floating around and armed conflict as an ever-present threat. Plus, the years of conflict that have ravaged the country are why its agriculture is so poor and undeveloped. If not for all these factors contributing to

constant instability, the DRC would have potential to be a very wealthy country. It has an estimated \$24 trillion in untapped mineral resources and nearly 80 million hectares of arable land. But because of the great instability caused by neighboring countries and internal conflicts, the economy is extremely poor. Only about 8 million of the 80 million hectares of arable land are cultivated, about 10%. The average farm size is only 4 acres, as compared to 982 acres here in Nebraska. The potential food and nutritional output of agriculture in the country is vastly larger than what they actually produce. If their arable land were used to even a fraction of its potential, malnutrition and hunger would be far less severe. But because it is not, people struggle to feed their families. The average family in the country has 5.3 members, and their diet typically consists of maize, rice, cassava, and other grain crops. Food is sometimes bought, but most families must farm and pick their own food to provide. Farming is by far the most common job, and it is almost always subsistence farming. The average annual income is less than \$400 U.S. dollars, as the economy and government infrastructure are extremely poor. Because of this, few families have access to health care or education, as 3.5 million children of age are not in school, and healthcare is not guaranteed for citizens. Adding to the overall health crisis, only 52% of the population has access to a clean water source and 29% have access to quality sanitation facilities. Low wages, food lacking in nutrition and abundance due to inefficient farming, and armed conflict are the greatest challenges families face in feeding themselves. (Mining industry of the Democratic Republic of the Congo - Wikipedia, 2022), (In spite of the DRC's huge agricultural potential, many people lack vital nutrients, 2022), (Congo, Democratic Republic of The Economic sectors, Information about Economic sectors in Congo, Democratic Republic of The, 2022), (2022), (2022), (Congoese cuisine - Wikipedia, 2022), (Average Annual Income of the Democratic Republic of Congo - Synonym, 2022), (Alexander, Alexander and Congo, 2022), (Education - Democratic Republic of the Congo - U.S. Agency for International Development, 2022), (Water, sanitation and hygiene, 2022).

And these problems are anything but small-scale. 3.4 million children, and 49% of those under the age of 5 have chronic acute malnourishment, and an estimated 37 million total people are acutely malnourished. Trends have improved slightly in recent years but are still alarmingly high. Lack of proper agriculture and ongoing violence undermine people's livelihood and thus their income and food security. But it is not just the lack of enough food that is the problem, it is the lack of food that is sufficient in nutrients. These people do not have access to modern farming technology or know about agricultural practices to preserve their soil and produce nutritiously rich crops. Because of this, crop yields are scant and wanting in nutrients. Each family only grows one or two types of crops, so diets lack variety and nutrition and their farmland is not properly cared for. The drastic repercussions of this issue are clearly visible, as every age group suffers from the effects of a diet with so little nutrition and variety due to their inefficient farming. This is especially true for children. About 7% of children under 5 are wasted due to malnutrition (low weight-for-age) and an alarming 42% under 5 are stunted (low height-for-age due to malnutrition). The effects of these malnutrition conditions are visible in victims' physical appearance, but they also have life-long effects on children's mental development. This epidemic of developmental deficiency is rampant among the future generation of this country. Multiple severe health crises and lack of access to clean water and sanitation also contribute to the issue of malnutrition. All these ongoing hardships in the DRC have resulted in a country with extreme poverty despite their potential economic opportunities. Only a small fraction of their arable land is cultivated, and food has little nutritional value and availability, which is why their hunger and malnutrition crisis is the biggest in the world. (Water, sanitation and hygiene, 2022), (Democratic Republic of the Congo - World Food Programme, 2022), (Democratic Republic of the Congo: Nutrition Profile, 2022), (Alexander, Alexander and DRC, 2022).

What can be done about this? As good as the work that international relief effort organizations are doing is, they are only delivering temporary supplies of food and medicine. They are not setting up ways for the

country to eventually provide for itself in the future, in the way of providing its citizens with a constant supply of nutritious food affordably and ending the malnutrition crisis ravaging the population. Is there a way to not just provide food and supplies for the suffering people of this country, but to help them start something that could turn the economy around for the future? Could they provide a constant supply of sufficiently nutritious food for themselves and bring widespread eradication of malnutrition without full reliance on foreign aid? Could the world's hungriest country, and eventually all countries struggling with food insecurity and malnutrition, become nutritionally self-sufficient? The answer is yes, and the place to start in tackling this is agriculture.

As stated earlier, only about 10% of the DRC's arable land is currently cultivated. Along with that, the average farm size is very small, only 4 acres. Yields are small and low in nutritional value. If more of their potential farming land area were used, food production would, obviously, greatly increase and bolster the economy, making food less scarce and less pricy. Food would and should be far more readily available to hungry and undernourished families, but the country currently only uses a fraction of its agricultural capacity. To help solve the issue of unused potential farmland, more funds should be allocated to the cause of establishing efficient farms using this arable land that has gone unused due to all the internal conflicts in the country. Right now, nearly all the relief funds go towards paying for shipping food in and bringing doctors and medical aid. However, if we want to set the country up for the economy to be self-sufficient in the future and the possibility of it no longer relying on foreign aid someday to fight food insecurity, we should not just bring them food, but mainly help them set up the foundation for a future where the country can provide sufficiently for itself. Unlike the idea of only bringing supplies, the idea of helping them use much more of their farming potential to provide food has an end in sight, however far in the future. This is the start to helping a country that is struggling so mightily with health and food toward a future where a daily supply of nutritious food is not a rarity, but something everyone can enjoy. If sufficient relief funding to the DRC by the UN and other organizations were used for the project of cultivating and efficiently farming this vast, untapped arable area of the country, it would be a great start to setting up the economy of this starving country to have an adequate and sustainable supply of food for itself in the future. (Alexander, Alexander and DRC, 2022), (In spite of the DRC's huge agricultural potential, many people lack vital nutrients, 2022), (Congo, Democratic Republic of The Economic sectors, Information about Economic sectors in Congo, Democratic Republic of The, 2022).

The primary issue is that of malnutrition, which, while also caused by lack of food, is primarily caused in this case by lack of nutritious food. The root of this issue is found in the way that food is produced. Because of all the internal conflicts and history of the country stated previously, the government and infrastructure are extremely poor and lack the money and techniques to sustainably farm the small area of its arable land that is cultivated. Yields are inefficient and lacking in nutrients. To solve this problem, the country's farmers should receive proper education in modern practices of sustainable agriculture and provided with sufficient funds and equipment to implement these efficient methods for larger, healthier, and more efficient yields for the area farmed. Large, government owned farms using this modern equipment and more efficient techniques should be set up so the country can someday provide nutritious food for itself. These include polyculture (simultaneous cultivation of several crops for variety and to preserve the health of farmland) and crop rotation, new biodynamic methods (increasing soil fertility through advanced environmentally symbiotic composting and use of mineral-nutrient solutions), iodine seed and soil enrichment (fortifying plants with iodine-rich salts to increase their absorption of nutrients from soil), and other modern techniques to eliminate soil-nutrient deficiency and increase output and nutrient content of crops. If farmers were educated in these techniques to rotate crops for healthier farmland and nutritious crops, plus other practices and technologies to increase efficiency, they could get much more food and necessary nutrition from every acre of farmland. This would constitute a big step on

the path to developing the country and making nutritious food available sustainably via healthy and efficient agriculture. Again, it would take a lot of funding to educate people on nutritious and efficient farming methods and provide them with the equipment, and to establish these farms. But it would help to make large-scale farming output increases and help solve malnutrition for this generation and set up future generations to have food and nutrition security. These could come from part of the funds used for general relief supplies, because while that brings them food, implementing sustainable agriculture on a country-wide scale could be the first step towards them being able to supply it well enough for themselves. This is possible considering how much arable land they have, and it would be a major step on the way to ending malnutrition throughout the country for this generation and future ones. (Alexander, Alexander and DRC, 2022), (Eyes, 2022), (Flores, Flores and Flores, 2022), (<http://www.bestview.ch>), 2022).

In conclusion, the DRC is struggling so badly with hunger because its economy cannot efficiently and sustainably provide either an adequate supply of food or nutritious food. We can keep bringing in food and relief supplies, but unless we try to create a way for them to start to provide sufficiently for themselves, large-scale change in this hunger crisis is impossible. We need to help cultivate their vast farmland and sustainably farm it to create nutrition security for future generations. Consider the analogy of “you give a man a fish, you feed him for a day, you teach a man to fish, you feed him for life.” As much as giving them fish, in this case, will help as the change takes place, we should give them fishing rods as well.

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