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 Rwanda, Factor #11: Malnutrition

Recommendations to Improve Food Insecurity and Malnutrition in Rwanda

Introduction

In 1994, a small country in Sub-Saharan Africa experienced genocide while the rest of the world sat idle. As representatives from the United Nations debated whether the killing could be considered genocide or not, over a million people died (“Government of Rwanda: About the Government of Rwanda”). Before the genocide began, Rwanda had two dominant ethnic groups: the Tutsis and Hutus (Alluri 13). In the early 20th century, after Belgium colonized Rwanda, the Belgian government instituted the Tutsi minority to govern the country. Then, in 1959, a Hutu uprising against the government triggered a social revolution. After years of growing resentment towards their Tutsi counterparts, the Hutus began to attack them. While the Hutu Revolution officially ended in 1962 with the recognition of an independent Rwandan state and the conclusion of the Tutsi reign, lingering ethnic divides caused Hutu hostility towards the Tutsis to turn violent in the outbreak of genocide in 1994. The genocide magnified Rwandans’ food security and malnutrition problems that had existed since the Belgian colonizers’ disruption of pre-colonial food distribution systems (Vibeke Bjornlund et al.).

Even now, many years after the end of the Genocide Against the Tutsi (also known as the Rwandan Genocide) in 1994, Rwanda is still trying to recover from such traumatic events (Alluri 15). Though genocide set the country back politically and economically, the Rwandan government has taken significant initiatives in the last few decades to stabilize the country and stimulate its economy. Specifically, the Rwandan government has taken steps to follow the UN’s Sustainable Development Goals (SDGs), making progress towards the second goal called “Zero Hunger” (“Sustainable Development Report 2022”). The “Zero Hunger” goal focuses on ending hunger, achieving food security, improving nutrition, and promoting sustainable nutrition (“Goal 2 | Department of Economic and Social Affairs”). However, the country still faces challenges in meeting the nutrition target of Goal 2: Zero Hunger.

As citizens of a land-locked country with a large population of 13,864,077, many Rwandans have difficulty maintaining a stable, nutritious food supply throughout the year (“Rwanda Population (2023) - Worldometer”). About 72 percent of the country’s workforce is employed within the agricultural industry, with 89 percent of rural households using small-scale farming. Because of limited land availability combined with poor land quality, almost 40 percent of Rwanda’s population lives below the poverty line, making poverty the leading cause of food insecurity (Jean De Dieu and Vital). Limited food availability, especially nutritious food, combined with limited purchasing ability caused by poverty, results in malnutrition. According to the Oxford Language Dictionary, malnutrition is defined as a “lack of proper nutrition, caused by not having enough to eat, not eating enough of the right things, or being unable to use the food that one does eat.” Malnutrition, especially chronic malnutrition or stunting, appears to be the most significant food insecurity issue in Rwanda.

Family: Structures, Environments, Education, and Health Care Access

In Kinyarwanda, the most common language spoken in Rwanda, the word *Inzu* means family, home, or household. The genocide greatly reduced Rwanda’s male population, as soldiers killed more men than women. Consequently, an imbalance in gender numbers exists, and a significant number of households are run by a single parent-- typically a mother. While polygamy is legal in Rwanda, most husbands have only one wife (“Rwandans - Introduction, Location, Language, Folklore, Religion, Major Holidays, Rites

of Passage”). With gay marriage illegal in Rwanda, most *Inzus* consist of a father, a mother, and multiple children (“LGBT Rights in Rwanda | Equaldex”).

In Rwanda, family life, and life in general, varies greatly based on wealth and living environment. Wealthy families have access to running water, electricity, and indoor plumbing regardless of where they live, and often have the means to provide their families with healthcare and secondary education (“Rwandans - Introduction, Location, Language, Folklore, Religion, Major Holidays, Rites of Passage”). However, for the more economically disadvantaged, two typical types of family structures exist in Rwanda based on location: (1) the rural, agricultural family, and (2) the urban family. While most lower-income urban families have access to running water and electricity in their homes, many rural families do not (“Rwanda - Energy”). In recent years, various rural Rwandan communities have pooled their resources by investing in shared phones and running water stations (Reid). A typical agricultural family sometimes lives by subsistence farming, which means growing just enough food to live on, and usually occupies a small plot of land. Since the number of children in a family often correlates with how food secure that family is, larger families –usually farming families who rely on their children for labor–struggle more with food insecurity than their urban counterparts (Jean De Dieu and Vital).

Almost all Rwandans complete primary education for about nine years (from ages seven to fifteen) and 50% of the population goes on to complete secondary education between the ages of fifteen to eighteen (“Rwanda - School Enrollment, Secondary (% Gross) - 2023 Data 2024 Forecast 1971-2021 Historical”). As with family size, education rates vary by kind of living environment (urban vs rural living), with the rural population on average achieving a lower level of education. Similarly, healthcare access differs according to where the family lives. Since more hospitals and healthcare facilities exist in urban areas, families in those areas can access medical services more easily.

Farming

Because the majority of Rwanda's population (72 percent) works in the agricultural industry, understanding farming in this country is vital (Jean De Dieu and Vital). Most farms in Rwanda are family-owned and small, measuring an average size of 0.72 hectares, or about 1.8 acres (Ngango and Hong). Additionally, Rwanda has a hilly terrain, and most farms are located on the sides of mountains (*Food Insecurity in Rwanda*). Rwanda also experiences unreliable weather conditions, like poor rainfall, droughts, and floods (Jean De Dieu and Vital). These challenges make planting and harvesting unpredictable. Farmers, like Hadija Munganyinka of Kayonza District, struggle to grow enough food for their families because of the inconsistent rain pattern (Grow). Some families raise animals in addition to crops, with cattle being the most common type of animal. Cattle are not often raised for meat, but instead as a source of milk and fertilizer. The most common crops that Rwandan farmers grow include coffee, pyrethrum, beans, cassava, and tea (“Agriculture – Visit Rwanda”). As such, the Rwandan diet uses those local foodstuffs to create mainly plant-based meals (“Customs and Cuisine of Rwanda - Together Women Rise”). Although a large portion of Rwandan farmers practice subsistence farming, some families don't manage to grow enough and enter the season before the harvest without enough food to finish the year. This challenging time is dubbed the “lean season” because many Rwandans do not have enough to eat and cannot buy food due to the country-wide shortage (*Food Insecurity in Rwanda*). Since many Rwandan families, like the family of Fiacre Ibambe, struggle to find nutritious food, and lack the resources and knowledge to attain nutritious food, these people suffer from malnutrition (Rural). Many Rwandans endure malnutrition because of limited access to food, and nutritious food especially.

Food Security Challenges and Malnutrition

As mentioned above, Rwandan farmers face many challenges. Farming on hills and mountains presents problems of soil erosion and low soil fertility (*Food Insecurity in Rwanda*). About 73 percent of the land

in Rwanda is cultivated (“Rwanda - Agricultural Land (% of Land Area) - 2023 Data 2024 Forecast 1961-2020 Historical”). The unreliable weather conditions, like poor rainfall, droughts, and floods, make planting and harvesting difficult to plan and execute, as well as hinder farming efficiency due to crop loss each season at the hands of nature. Small farm sizes, combined with limited access to efficient agricultural tools, make production difficult. The “lean season” also presents challenges to families trying to find food. The low supply of food drives prices up, which hurts less affluent families (*Food Insecurity in Rwanda*). Rwanda’s large population, which is predicted to continue growing at a fast rate, has limited food accessibility. With such a large population, the demand for food and land is high, but the supply of affordable and nutritious food remains limited. Consequently, some Rwandans struggle to have enough to eat, one of the causes of malnutrition, as defined by the Oxford Language Dictionary.

Alternatively, other Rwandan families develop malnutrition by not eating enough nutritious food, or as Oxford Language Dictionary described in its definition of malnutrition, “not eating enough of the right things.” Financially stressed families buy low-quality, cheap food, which leads to malnutrition among many individuals—especially young mothers and their children. Young mothers and their children have a disproportionately high chance of becoming food insecure and experiencing malnutrition due to the societal restrictions Rwandan culture places on women. Most Rwandan women who live in rural areas do not have a paid job and instead work on their family farms growing crops, which are typically owned by a husband. When a woman becomes pregnant and does not have the support of a partner, she is much less likely to have a job or source of income as she does not have access to land (most often owned by men) and will not be hired by others (“Rwandans - Introduction, Location, Language, Folklore, Religion, Major Holidays, Rites of Passage”). Together, these factors contribute to many single mothers and their children facing malnutrition due to poverty and the resulting inability to buy more expensive, nutritious food. Some malnourished Rwandan children come to hospitals with “kwashiorkor,” a form of stunting with painful swelling resulting from protein deprivation. Youth like Masezeno, a twelve-year-old Rwandan girl who contracted kwashiorkor, face severe and lasting consequences, like struggling to learn and work (Rayner). Chronic malnutrition causes stunting, which refers to the hindrance of individuals’ long-term growth and development. Roughly 49 percent of Rwandan children ages 18 to 23 months are stunted (“Nutrition”). Because citizens suffering from stunting are not able to fully contribute to their community, stunting not only affects individuals and families, but also produces societal problems. Though Rwandans face many challenges, poverty appears to be the leading cause of food insecurity with malnutrition as the most significant factor.

Current and Proposed Solutions

Rwanda’s government has made efforts to decrease malnutrition and food insecurity among its population and to work towards the UN’s SDG 2, Zero Hunger. In alignment with Vision 2020, the Rwandan government’s plan to reach a national middle-income-status country by 2020, the government created separate initiatives specifically designed to decrease malnutrition among the Rwandan population (Michael). In 2010, Rwanda’s Ministry of Health executed the National Multi-Sectoral Strategy to Eliminate Malnutrition (NSEM), which attacked malnutrition by having local healthcare professionals recognize malnutrition and treat it (*Rwanda: Nutrition Profile*). For instance, the Rwandan government has implemented a school-milk program that provides students from nursery to primary level with three glasses of milk per day (*RWANDA FY 2011-2015 Multi-Year Strategy*). This helps to reduce protein deficiencies in students and prevents students from developing kwashiorkor, like Masezeno. In addition, various governmental programs raise awareness and educate Rwandans about nutritious food choices. International organizations, like the World Food Programme, provide immediate relief to Rwandans by offering food and money, as well as free education about nutrition. Programs, like the One Acre Fund, work to deliver the tools needed to increase crop yields and decrease poverty (“One Acre Fund”).

In order to continue to decrease malnutrition and work towards the Zero Hunger goal, Rwanda needs to implement additional practices and strategies. As mentioned before, the main cause of malnutrition is poverty. Therefore, to decrease malnutrition, Rwanda should focus on decreasing poverty. To start, the government could stabilize food prices and distribution throughout the year by buying food from small farms and then setting a nationwide price for each foodstuff and selling it back to local markets at a set amount throughout the year. This would decrease the stress from the lean season and make nutritious food more affordable for citizens, which would decrease the two factors of malnutrition that poverty causes: lack of food and an unbalanced diet.

In addition, Rwandans need a stable internal source of food. As their main crops - tea and coffee - are non-edible and often exported, more farms should focus on trying to grow other nutrient-dense edible crops, like corn, beans, or squash (“Agriculture – Visit Rwanda”). To encourage farmers to grow more nutrient-dense crops, the Rwandan government should pledge to buy this food, which would allow them to follow the proposed solution above of buying and redistributing food from Rwandans. With this change, there would be a resulting decrease in coffee and tea exports, but progress in increasing an internal supply of edible crops for the population. The increase in the food supply would help Rwandans, who are facing malnutrition from lack of food, to achieve better nutrition.

Also, the Rwandan government should focus on its other valuable resources, like its precious minerals and metals (tin ores, niobium, tantalum, vanadium, and zirconium ore) that the country exports (“Rwanda Exports - May 2023 Data - 1998-2022 Historical - June Forecast - Chart - News”). Instead of exporting these materials, Rwanda should vertically integrate with them. These precious metals and minerals are mainly used to make electronics, an increasingly profitable industry. If Rwanda manufactured the entire electronic product, instead of selling the materials, it could dominate the industry and set its own prices by becoming its own employer, so to speak. To manufacture finished goods like electronics, Rwanda needs to develop its industrial economy. In order to build an industrial economy, the workforce needs to diversify further and gain more industrial workers. The government should invest in agricultural tools, possibly with help from programs like the One Acre Fund, and distribute them to small farmers to increase their production efficiency, which would decrease the number of farmers needed to create the same crop yield. This could free more potential workers to move into an industrial setting. To pay for agricultural tools, the government could allow the public to invest in government bonds to support the developing electronic industry. The sale of bonds would initially pay for the agricultural tools and repay investors after the industry develops, like the way people buy war bonds at the beginning of a war and are paid back after. The new industrial jobs and designated customer, the government, could provide a stable income for Rwandans. Having a more stable income would allow Rwandans to purchase nutritious food and decrease causes of malnutrition, like a lack of food and an unbalanced diet.

On an individual level, Rwandan farmers should implement agricultural practices that make the best use of their hilly and mountainous land, like terrace farming. The Incas used this type of farming to grow crops on the sides of mountains, and many Rwandans could use this practice in the same way. Rwandan farmers should also make the best use of space and land as possible. Therefore, they should grow crops that are naturally compatible, like corn, beans, and squash, which can naturally replenish the soil and provide diverse nutritional benefits. Irrigational techniques, like drip irrigation, can use the gravity of mountains to provide water to plants without an energy input (Bhatnagar and Srivastava). With improved farming efficiency, Rwandans would produce more food and simultaneously combat a cause of malnutrition: lack of food.

Also, using manure from cattle would provide an inexpensive and sustainable option for fertilizers. Rwandans could purchase shared cattle because as the farms are small, a few shared cows could provide enough manure to fertilize much of their land, or supplement the fertilizer they buy. The government could encourage this sustainable option by both providing funding for struggling communities to invest in cattle and reducing the cost of bovine feed and healthcare products, thereby improving farmers' profitability. More specifically, the One Cow Per Family Programme initiated by the Rwandan government provides cows for families. Other ones, like Heifer International, also supply cows to Rwandan families in need. A short-term option is to use synthetic fertilizers, which reduce the land and cost requirements of cows. The government began subsidizing synthetic fertilizers to farmers in 2007 under the Crop Intensification Program (CIP), which increases crop yields, and in turn, increases income (*REPUBLIC of RWANDA the Ministry of Agriculture and Animal Resources NATIONAL FERTILIZER POLICY*). However, synthetic fertilizers are not sustainable options for long-term use as they can decrease soil fertility. Therefore, Rwandans could combine long-term sustainable use of cows, with help from the government or aid programs, and short-term synthetic fertilizers to boost crop yields and income. The resulting higher yields and incomes would increase Rwandans' potential to grow or buy more food – hopefully nutritious food – and therefore decrease malnutrition.

Finally, one of the most effective ways to quickly enact change is to educate Rwandans about nutritious food choices and ways to grow and sustain nutritious food. Better nutritional knowledge could help people to make healthier choices and eat more balanced diets, which would decrease malnutrition. Specifically, parents and their young children should receive nutritional education since they are more at risk for malnutrition. As part of NSEM, various governmental programs raise awareness and educate Rwandans about nutritious food choices, but expanding this educational outreach is important. Many international education organizations, like the One Acre Fund, provide free, online education to farmers (“One Acre Fund”). With the prevalence of the internet, accessible electronic devices could provide food-insecure Rwandans online nutritional education that does not need to be attained by attending school or taking time away from work. To pay for supplying electronic devices, like computers or tablets, to struggling Rwandans, grant funding from organizations, like the Bill and Melinda Gates Foundation, could be one source of help.

Nutritional progress will require efforts from multiple groups: the government, farmers, and consumers. Though help from foreign aid agencies could provide short-term assistance, Rwanda needs domestic and sustainable solutions that will decrease malnutrition and rebuild its economy as well. Current strategies, like NSEM, are addressing Rwandan food insecurity, but the country still faces challenges, especially with malnutrition. Three combined initiatives could decrease poverty: (1) the Rwandan government stabilizes the food supply and promotes new industries, (2) Rwandan farmers implement new agricultural practices, and (3) food-insecure people obtain greater access to nutritional education. Poverty often leads to a lack of nutritious food, and limited food supply in general (two causes of malnutrition), so decreasing poverty would decrease malnutrition.

Conclusion

In the past few decades, Rwanda has made significant progress in decreasing food insecurity among its population and working towards the UN's SDG 2 of Zero Hunger. Over a million Rwandans have lifted themselves out of extreme poverty through programs, like Vision 2020 and the Ministry of Health's NSEM (World Bank Group). However, Rwanda's growing population, unpredictable climate, suboptimal terrain, and disabling poverty continue to present challenges to food security. Specifically, Rwandans struggle with malnutrition and stunting, especially among children. Therefore, to prompt continued

stabilization of the country, the government should explore strategies like subsidizing and redistributing food among its citizens, while supporting other industries and vertically integrating its resources to stimulate its economy. Individual farmers and family units should implement more efficient farming practices, raise more nutrient-dense crops that are specifically designed for Rwanda's environment, and consider investing in more cattle. In order to decrease poverty, educating more of the Rwandan population about nutrition is essential.

Before implementing any new practices, though, aid groups and the Rwandan government need to consult local populations to ask them what they believe are the best strategies and strongest needs of their community. Reducing malnutrition and food insecurity needs to be a collaborative process.

While the situation in Rwanda might seem discouraging, the country has made significantly positive steps toward economic prosperity since the genocide of 1994. Like the Rwandan proverb "every cackling hen was an egg first" suggests, every successful person started somewhere. Just like a successful person, a successful country does not prosper overnight. At this point, Rwanda may face serious challenges, but it continues to improve every day.

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