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Liberia, Malnutrition

### **Liberia: Solving Malnutrition at its Roots**

On the surface, Liberia is home to lush rainforests, vast rice fields, and elegant beaches. Beneath the surface, however, is a war-torn country slowly recovering from a devastating 14-year civil war—one that ravaged the economy, displaced thousands, destroyed infrastructure, and sent many into poverty. Just as communities started to fully recover, an Ebola outbreak in 2014 brought the country to its knees again. Now, much of the Liberian population is affected by widespread poverty and malnutrition. Roughly 51 percent of the population lives in poverty, and chronic malnutrition, or stunting, affects nearly a third of children under the age of five (“Liberia Country Strategic Plan”; “Combating Malnutrition”). The Liberian people, especially in rural areas, have insufficient supplies of staple foods or are unable to afford a sustainable amount of nutritious food. In addition, a shattered education and healthcare system further worsens the problem. However, through projects that support nutritious diets, locally grown school meals, more resilient agriculture, and snail farming, the Liberian people can look to a future in which malnutrition is no longer the country’s most pressing problem.

Any discussion of potential policies to reduce malnutrition in Liberia requires an understanding of how the problem emerged in the first place—an intertwined set of political, socioeconomic, and public health crises from which the country has yet to fully recover. First is Liberia’s 14-year civil war, the effects of which hang over the lives of the Liberian people to this day. In 1989, Charles Taylor led an uprising against the government, and after several years of on-and-off fighting and perpetual chaos, Taylor took power in 1997. In these years alone, fighting claimed more than 200,000 Liberian lives within a nation of 2.1 million, making it one of the bloodiest civil conflicts in Africa’s post-independence era (Momodu). Fighting resumed in 2000, and in 2003, Taylor officially resigned, marking the end of a deadly civil war (“Liberia – Timeline”). In addition to the many deaths, the war and the subsequent years of unrest ravaged the economy and damaged or destroyed much of the country’s housing, which in turn displaced hundreds of thousands of Liberians and created poor living conditions (“Liberia”). To make matters worse, many Liberian children were forced to fight in the war. Although fighting subsided many years ago, these children have had little opportunity to adjust to a normal life and are instead weighed down by crime and poverty (Spicer).

The war’s devastation of the economy, coupled with the Ebola epidemic a decade later, has played a large role in Liberia’s high poverty rates. As civil war tore the economy apart, Liberians became poorer—household incomes decreased and agricultural production dropped (“Hunger Relief”). In fact, the unemployment rate in Liberia was estimated at some 80 percent in 2005, two years after the civil war ended. The economy was also characterized by high domestic and foreign debt, and a significantly low growth rate (“No More War”). When the Ebola crisis struck Liberia in 2014, it hit rural communities especially hard. Markets closed, job opportunities disappeared, and food prices rose, leaving an economic burden on many rural households (“Emergency Food Security Assessment”). Almost 51 percent of all Liberians—and more than 70 percent of the rural population—live in poverty (“Liberia”).

In addition to impoverishment, many rural Liberians lack access to the infrastructure and services necessary to provide safe drinking water, even though Liberia is one of the world’s wettest countries. Most people in rural areas also lack suitable toilets. This shortfall of proper sanitation facilities can cause

disease and death. Without access to proper sanitation and safe water, rural families must face the risk of physically and economically crippling disease, or even death (“Water”).

Food insecurity is also a major concern in Liberia, a problem exacerbated by the Ebola crisis, which depleted food stocks and disrupted agricultural production. In certain rural areas, more than 30 percent of households had moderate to severe food insecurity in 2015. Physical access to markets is difficult in such areas, and lowered economic activity has not returned to pre-Ebola levels (“Emergency Food Security Assessment”). Severely food insecure populations in rural areas also have insufficient supplies of staples like rice and livestock, leading to limited food consumption. A food security study showed that 16 percent of Liberian households were forced to reduce the quantity of daily meals after the Ebola crisis, while 22 percent of severely food insecure households had done so (“Food Security”).

Healthcare systems in Liberia are short of qualified doctors, staff, and services—remnants of the devastating civil war. Only 51 of 293 public health facilities remained functional after the war. Doctors, nurses, and health staff fled the country, leaving just 30 physicians to assist a population of 3 million. Even today, outside the capital city of Monrovia, healthcare services are incredibly sparse. Costs for medical treatment are expensive, and families in rural areas must travel long distances to receive essential medical care. Humanitarian agencies are able to help in the short run by bringing health services to rural communities, but revitalizing the proper healthcare standards to sustain even the poorest populations is nonetheless of pressing importance (“Essential Health Services”).

As many Liberians struggle to obtain the most basic of necessities, access to a satisfactory education in Liberia remains difficult, again due to the still-apparent consequences of the civil war and Ebola outbreak. During the civil war, teachers left their jobs, and both students and teachers alike fled the country. Both the civil war and the Ebola crisis shuttered many schools nationwide. The civil war physically destroyed nearly 60 percent of school buildings, including water and sanitation facilities that are vital to keeping children in school. As a result of these two closures, thousands of children had to halt their educations, a change that is often permanent for students, even after schools reopen (“Education”).

While Liberia has greatly improved its education sector in the years since, it still faces many wide-reaching challenges. First, 46 percent of children do not complete primary education. Roughly 15 to 20 percent of six- to 14-year-olds do not attend school altogether, one of the highest rates in the world. Furthermore, many of the children enrolled in primary and secondary school are overage, which increases the chances of student dropouts (“Education”). School attendance is so scarce in Liberia because, for poor families, school does not provide a short-term solution to their daily difficulties. Education is an investment for the future, and sending children to school makes little sense to families for whom providing for themselves day-to-day is a very real concern (“School Lunch Scheme”). As a result, these undereducated children are unable to find good economic opportunities, the lack of which ultimately leaves both themselves and their families in poverty.

All of these extremely pressing challenges—tremendous poverty, inadequate health infrastructure, widespread unemployment, and insufficient education—all contribute to the problem of malnutrition. Malnutrition is an all-too-prevalent issue in Liberia that continues to obstruct human development, hinders economic growth, and reinforces the many problems that cause it. According to the World Bank, 37 percent of the Liberian population is undernourished, roughly 14 percent are underweight, and 13 percent of children are Vitamin A deficient (“Undernourishment,” “Underweight”). What is more, 50 percent of children under five and 40 percent of women are anemic—a debilitating and potentially fatal blood disease that heavily impacts daily lives. Chronic malnutrition, or stunting, is perhaps the most

concerning type due to its potential long-term effects. Nearly a third of children in Liberia under the age of five are affected by chronic malnutrition. Caused when children do not receive enough nutritious food, stunting can have negative impacts on a child's organ development, brain function, and immune system. In turn, these health effects can lead to poor performance at school, even more health risks, and fewer economic opportunities in the future ("Combating Malnutrition").

Poverty and malnutrition are directly correlated—in fact, poverty is the leading cause of malnutrition in Liberia. Although poverty alone does not cause malnutrition, it significantly affects the availability of nutrient-rich food for the poorest communities ("Causes of Malnutrition"). As discussed above, poverty is partly a consequence of Liberia's two major crises—years of a devastating war and a severe Ebola outbreak that wreaked havoc across Liberian society. Quite simply, many Liberians do not have the money to provide themselves healthy amounts of food. Indeed, a 2015 emergency food-security assessment conducted within the framework of the Food Security Cluster showed how important money is to sustain a healthy diet. It determined that 41 percent of households "did not have food or money to buy food the week before the survey," food expenditures occupy some 65 percent of total household spending for a quarter of the Liberian population, and that 18 percent of families have adopted emergency coping strategies like begging to secure the majority of their food necessities ("Emergency Food Security Assessment"). Without adequate financial resources or a cheaper alternative to the essential nutrients, achieving a sufficient amount of food consumption is nearly impossible. The most food insecure counties were the poorer, rural ones, and by no coincidence.

If, as the evidence shows, malnutrition is the product of poverty, there are two paths to reducing malnutrition: 1) mitigating the constraints and hardships the fundamental lack of resources places on impoverished people, and 2) working to reduce the occurrence of poverty itself. One potential policy that travels both paths is to focus on maximizing the nutritional benefits of food that is easily attainable. Positive deviance, an approach used in combating malnutrition worldwide, can be applied to Liberia using insight on community diets and inspiration from what has worked in the past. Positive deviance is based on the fact that some children in poor households are better nourished than other children in poor households, despite having similar resources. In 1990, Jerry Sternin traveled to Vietnam to create a program that would combat child malnutrition. He believed that the application of positive deviance could produce quick and sustainable results. He surveyed roughly 2,000 children under age three in four villages, and found that 64 percent of the children were malnourished, but that there were well-nourished children in very poor families. Sternin found that family members of these healthy children simply added greens of sweet potato plants, small shrimps, and crabs to their meals. Interestingly, everyone could access these foods, but many believed they were not suitable for children. During the next two years, Sternin and his team worked with community leaders to teach other people in the community to find crabs, shrimp, and sweet potato greens. At the end of two years, malnutrition decreased by 85 percent in the communities. Ultimately, the positive deviance intervention helped more than 2.2 million people over the next few years, including helping roughly 50,000 children improve their nutritional status (Sternin et al. 1-5).

This very same approach can be implemented in Liberia as well. By identifying positive deviants in Liberian communities affected by malnutrition, impoverished people can improve outcomes without increasing monetary resources. The first step would be to consult with local Liberian officials, community leaders, and the people themselves to identify dietary behaviors that are overlooked by others. Once these behaviors are discovered and codified, non-profit organizations, perhaps in collaboration with local governments, should embark on a comprehensive campaign—village by village, if necessary—to increase the salience and the use of these dietary techniques in communities.

Another potential policy that travels both paths to combat malnutrition is to increase food availability and quality in schools. In 2016, the World Food Programme launched a model known as the Home-Grown School Feeding model. Its goal is to improve children's meals in school, increase access to education, and directly support Liberian farmers. While meal programs typically just provide meals (from whatever source) to students, the Home-Grown School Feeding model uses funds from the World Food Program and the Liberian government to source school meals from small-scale farmers in the community. In this way, children get consistent access to nutritious foods from school, while local farmers have another reliable client for their produce. This creates steadier incomes, higher productivity, and employment opportunities for farmers ("School Meals"). For students, the availability of reliable school meals is also an incredibly powerful tool to encourage children to enroll, attend, and stay in school.

Normally, families on the brink of subsistence keep their children out of school because the investment into education does not benefit themselves in a short-term situation. When nutritious home-grown school meals are ensured at school, these families instead make sure their child never misses a single day ("School Lunch Scheme"). Further, school meals are a pathway to improved retention, learning, and overall academic performance ("Education for Girls"). For instance, Fatou Botoe, a student at the Vellela Public School in Liberia, used to have difficulty concentrating in class without money to buy lunch. Her hunger consumed her mind and body, and she would consider leaving school. Once her school began serving hot meals following the Home-Grown School Feeding model, she no longer felt like skipping lessons and instead was able to focus clearly in class—all the while obtaining a nutritious meal (Monibah). The importance of this program stems from its multi-beneficial effects. Simply providing a reliable meal for school children addresses malnutrition and its underlying causes. Furthermore, as more children enroll and stay in school, students are better prepared for their future.

Unfortunately, after reaching over 20,000 students in 62 schools by the end of 2018, the Home-Grown School Feeding program ran into financial constraints and had to scale down (Monibah). In order to reignite this program, and further expand its benefits to Liberia's 1.5 million schoolchildren, the government, along with private and non-profit organizations, should direct significantly more funds to the Home-Grown School Feeding program. To be sure, attaining sufficient and sustainable funds is a major barrier that would make it difficult for the government to do this. However, similar programs across the world stand as proof that achieving such funding is possible. In 2012, the Peruvian government initiated a school feeding program called Qali Warma. In 2019, more than four million children benefited from the program's meals (Diaz). Its ongoing success to this day can be credited to its partnerships with the private sector, the wider community, and educators. Community members continue to believe in the program, while the private sector supports its development with funding (Tembon et al.). The same can be applied to the Home-Grown School Feeding program: partnering with the private sector would financially support and further improve the program. At the same time, as the program continues to provide for the community, it will build support among community members who see its benefits. In turn, they can drive the government to enact change by voting or push to expand existing programs. The Home-Grown School Feeding program's unique mix of helping sustain farmers and students, and ensuring students are better prepared to succeed in the future, provides enormous benefits that can help Liberia in both the present and the future.

The third potential policy action—improving agricultural techniques—seeks to improve farmers' livelihoods in the short run and increase the accessibility of food in the long run. In 2011, a refugee crisis, in which at least 120,000 Ivorians found refuge in Liberia, exhausted food supplies of local residents and worsened the food insecurity problem. In response, the Food and Agriculture Organization of the United Nations (FAO) provided the necessary farming inputs for both refugees and host communities. Applied in

the Nimba, Grand Gedeh, and Maryland Counties (three of Liberia's 15 counties), the program allowed farmers to produce crops at both a higher quantity and quality using the tools, seeds, fertilizer, and training provided by FAO. The intervention not only prevented a food crisis, but also made farming more efficient and successful, and livelihoods more resilient and market-oriented. Indeed, farmers were able to use increased profits for schooling, food, and housing. In total, 7,500 households in these counties benefited, and thriving market gardens were established ("Liberia and FAO"). Although this project served as an emergency solution, its success suggests it can be expanded upon and applied in different scenarios due to its long-term potential. Teaching farmers how to improve their yields will teach future generations to do so, too, and produce will consistently be cheaper and more available. This project can be expanded through two methods. First, FAO should recruit and prepare the farmers already trained in the new farming techniques to supervise other farmers, in collaboration with FAO officials. This can be done either on a voluntary basis, or by providing the instructor-farmers small subsidies as incentives. Second, the FAO should partner with nonprofits and farming-supplies companies to provide the materials necessary to farm successfully. In this way, FAO can implant more sustainable and efficient farming techniques for generations to come, a change that will ultimately make produce more available and affordable for the many Liberians who need it.

Finally, the FAO should work to promote a novel, but potentially important, agroforestry industry in Liberia: snail farming. This proposal targets the first path—working around the unaffordability of nutritional food for impoverished families in Liberia. In the same three counties of Nimba, Grand Gedeh, and Maryland, the FAO and the Liberian government began training families in small-scale snail production. About 100 farmers were trained in snail farming and the relevant business skills, in order to maximize its sustainability and productivity ("Liberia and FAO"). The natural abundance (but not agricultural abundance) of snails, seasonal rainfall, water, and vegetation in Liberia predisposes the snail-farming business to profitability and sustainability. The species *Achatina achatina*, or the giant tiger land snail, is particularly well-suited for Liberia's agriculture. Already widely distributed throughout West Africa, *A. achatina* prefers warm conditions of 77-86 F° and humidity of 80-95%. These conditions almost perfectly correspond with Liberia's tropical climate, which provides a favorable habitat for the snails (Cobbinah).

As it applies to agricultural production, small-scale snail farming entails a low production cost and non-intensive labor. It can easily be merged with other farm activities, providing another source of income for farmers. Most importantly, snails supply many essential nutrients ("Snail Farming"). A 3-ounce portion of snails contains 14 grams of protein in just 76 calories. Snails also provide zinc and iron—a deficiency in the latter is a leading cause of anemia ("Tremblay," "Anemia"). Although some Liberians raise goats, sheep, chickens, and ducks, livestock farming is small-scale and currently cannot meet local demand for meat ("Liberia"). About 80 percent of the population relies on fish as a protein source, yet coastal flooding and rising sea levels threaten the fishing industry ("Liberia Cultural Profile"). The protein and nutrient-rich snails are viable alternatives to meat and fish. Particularly in households with food insecurity, snails are a cheap and sustainable option that prevents nutritional deficiencies. In order to make snail-farming more prevalent in Liberia, FAO and the Liberian government needs to continue to train families in snail farming, so rural communities can become self-sufficient.

The Liberian government should also embark on a campaign that publicly endorses this project, so that regular snail consumption is a normalized and socially accepted practice. Many people do not, at first exposure, enjoy eating snails or believe snails are unhealthy for human consumption. Some people cannot eat snails or snail meat at all—namely, the 12% of Muslim Liberians ("Population and Housing Census"). Nevertheless, to ensure as many as are able to eat snails are willing to, education programs that involve

both the government and ordinary citizens will be crucial in implementing widespread snail agriculture. FAO should delegate one or two trainers to rural communities to teach local families the health benefits of eating snails. Practices that become commonplace now are quite likely to carry on to future generations. It is also important for the government to emphasize to farmers the industry's potential—the favorable conditions of Liberia and the nutritional benefits and potential demand of snails—to encourage the use of snail farming. Introducing snails to Liberian diets will take pressure off an overburdened fish and livestock industry and introduce a cheap, efficient, and sustainable food that has the potential to become a nutritious staple for many Liberian families.

Vestiges of Liberia's conflict-filled history are still prominent today throughout the country and across Liberians' way of life. More than half of all Liberians live in poverty—a reality both a cause and consequence of inadequate healthcare, widespread unemployment, and inconsistent education. This plethora of challenges presents an already steep mountain to climb for Liberia's future leaders. Collectively, these subjects point towards an even more alarming one: how malnutrition is interfering with the country's human potential and all that effects. A third of children in Liberia are stunted, impairing their development and daily function. As a result, these children perform worse in school, are more susceptible to health risks, and are vulnerable to fewer economic opportunities in the future. Four policies that target the sources of malnutrition can be quickly and easily implemented to reduce its effect on citizens. By amplifying diets that already exist among impoverished communities, instilling nutritional practices based on positive deviance targets what works in communities. The Home-Grown School Feeding program feeds children, keeps them learning in school for the future, and helps local farmers. The FAO can institute a program that seeks to make produce cheaper and more widely available through sustainable agricultural techniques, while a new emphasis on snail farming creates a widespread source of income and cheap nutrition. In the end, these four efforts will chip away at—and likely greatly reduce—the malnutrition that has long plagued Liberia, and ensure that the people will be well-nourished and prosperous for many years to come.

## Works Cited

- Africa, WFP West. "Education for Girls under Threat as School Meals Dry up in Liberia." *Medium*, World Food Programme Insight, 10 Apr. 2018, [insight.wfp.org/education-for-girls-under-threat-as-school-meals-dry-up-in-liberia-cd1a7ee6a6c5](https://insight.wfp.org/education-for-girls-under-threat-as-school-meals-dry-up-in-liberia-cd1a7ee6a6c5).
- "Answering 'Why Is Liberia Poor?' Goes Beyond Foreign Aid." *BORGEN*, 15 Aug. 2017, [www.borgenmagazine.com/why-is-liberia-poor/](http://www.borgenmagazine.com/why-is-liberia-poor/).
- "Availability of Essential Health Services in Post-Conflict Liberia." *World Health Organization*, World Health Organization, 4 Mar. 2011, [www.who.int/bulletin/volumes/88/7/09-071068/en/](http://www.who.int/bulletin/volumes/88/7/09-071068/en/).
- "Basic Education." *UNICEF Liberia*, [www.unicef.org/liberia/basic-education](http://www.unicef.org/liberia/basic-education).
- Choo, Jerry Sternin and Robert. "The Power of Positive Deviancy." *Harvard Business Review*, 1 Aug. 2014, [hbr.org/2000/01/the-power-of-positive-deviancy](http://hbr.org/2000/01/the-power-of-positive-deviancy).
- Cobbinah, Joseph. Technical Centre for Agricultural and Rural Cooperation, 2008, pp. 14–22, *Snail Farming in West Africa*.
- "Combating Malnutrition." *UNICEF Liberia*, [www.unicef.org/liberia/combating-malnutrition#:~:text=Malnutrition%20%E2%80%93%20in%20all%20its%20forms,most%20worrying%20types%20is%20stunting.&text=Malnourished%20children%20have%20a%20higher,diarrhoea%2C%20pneumonia%2C%20and%20malaria](http://www.unicef.org/liberia/combating-malnutrition#:~:text=Malnutrition%20%E2%80%93%20in%20all%20its%20forms,most%20worrying%20types%20is%20stunting.&text=Malnourished%20children%20have%20a%20higher,diarrhoea%2C%20pneumonia%2C%20and%20malaria).
- Diaz, Renzo. "Qali Warma: No Stone Left Unturned for a Better Tomorrow." *Socialprotection.org*, 2020,

socialprotection.org/es/discover/blog/qali-warma-no-stone-left-unturned-better-tomorrow

.

FAO, 2017, *Liberia and FAO*.

FAO, *Improved Snail Farming in Liberia*.

“FRONTLINE/WORLD . Liberia - No More War . Facts.” *PBS*, Public Broadcasting Service, May 2005,

[www.pbs.org/frontlineworld/stories/liberia/facts.html#:~:text=Effects%20of%20War,-At%20least%20150%2C000&text=Years%20of%20civil%20war%20have,rate%20estimated%20at%2080%20percent](http://www.pbs.org/frontlineworld/stories/liberia/facts.html#:~:text=Effects%20of%20War,-At%20least%20150%2C000&text=Years%20of%20civil%20war%20have,rate%20estimated%20at%2080%20percent).

Jones, Abeodu Bowen, and Donald Rahl Petterson. “Liberia.” *Encyclopædia Britannica*, Encyclopædia Britannica, Inc., 24 Oct. 2019, [www.britannica.com/place/Liberia](http://www.britannica.com/place/Liberia).

“Liberia Country Strategic Plan (2019 - 2023).” *Liberia Country Strategic Plan (2019 - 2023) | World Food Programme*,

[www.wfp.org/operations/lr02-liberia-country-strategic-plan-2019-2023](http://www.wfp.org/operations/lr02-liberia-country-strategic-plan-2019-2023).

“Liberia Cultural Profile.” *World Relief Memphis*, 19 Feb. 2018,

[worldreliefmemphis.org/liberia-cultural-profile#:~:text=The%20overwhelming%20majority%20\(about%2097,own%20distinct%20languages%20and%20customs](http://worldreliefmemphis.org/liberia-cultural-profile#:~:text=The%20overwhelming%20majority%20(about%2097,own%20distinct%20languages%20and%20customs).

“Liberia Fast Facts.” *CNN*, Cable News Network, 8 Mar. 2020,

[www.cnn.com/2013/10/29/world/liberia-fast-facts/index.html](http://www.cnn.com/2013/10/29/world/liberia-fast-facts/index.html).

“Liberia Profile - Timeline.” *BBC News*, BBC, 22 Jan. 2018,

[www.bbc.com/news/world-africa-13732188](http://www.bbc.com/news/world-africa-13732188).

“Liberia.” *Liberia | World Food Programme*, [www.wfp.org/countries/liberia](http://www.wfp.org/countries/liberia).



“Liberia: Hunger Relief in Africa.” *Action Against Hunger*, 8 Nov. 2019,  
[www.actionagainsthunger.org/countries/africa/liberia](http://www.actionagainsthunger.org/countries/africa/liberia).

“Liberia's Post-War Development: Key Issues and U.S. Assistance.”  
*EveryCRSReport.com*, Congressional Research Service, 25 May 2010,  
[www.everycrsreport.com/reports/RL33185.html#\\_Toc262561103](http://www.everycrsreport.com/reports/RL33185.html#_Toc262561103).

“Liberia .” *Data*, [data.worldbank.org/country/liberia](http://data.worldbank.org/country/liberia).

LISGIS, 2009, pp. A 4–86, *2008 Population and Housing Census*.

Momodu, Samuel. “First Liberian Civil War (1989-1996) •.” •, 20 Jan. 2020,  
[www.blackpast.org/global-african-history/first-liberian-civil-war-1989-1996/](http://www.blackpast.org/global-african-history/first-liberian-civil-war-1989-1996/).

Momodu, Samuel. “Second Liberian Civil War (1999-2003) •.” •, 6 Sept. 2019,  
[www.blackpast.org/global-african-history/second-liberian-civil-war-1999-2003/](http://www.blackpast.org/global-african-history/second-liberian-civil-war-1999-2003/).

Monibah, John T. “Grow at Home, Eat at School to Change Lives.” *Medium*, World Food Programme Insight, 5 Sept. 2018,  
[insight.wfp.org/grow-at-home-eat-at-school-to-change-lives-86d9da3f05cf](https://insight.wfp.org/grow-at-home-eat-at-school-to-change-lives-86d9da3f05cf).

Moorhead, Joanna. “Food for Thought: the School Lunch Scheme Linking London and Liberia.” *The Guardian*, Guardian News and Media, 14 Jan. 2020,  
[www.theguardian.com/world/2020/jan/14/school-lunch-liberia-london](http://www.theguardian.com/world/2020/jan/14/school-lunch-liberia-london).

“Prevalence of Undernourishment (% of Population) - Liberia.” *Data*,  
[data.worldbank.org/indicator/SN.ITK.DEFC.ZS?locations=LR](http://data.worldbank.org/indicator/SN.ITK.DEFC.ZS?locations=LR).

“Prevalence of Underweight, Weight for Age (% of Children under 5) - Liberia.” *Data*,  
[data.worldbank.org/indicator/SH.STA.MALN.ZS?locations=LR](http://data.worldbank.org/indicator/SH.STA.MALN.ZS?locations=LR).

“The Situation for Children in Liberia.” *UNICEF Liberia*,

[www.unicef.org/liberia/situation-children-liberia](http://www.unicef.org/liberia/situation-children-liberia).

Spicer, Chavez. “Causes of Poverty in Liberia.” *The Borgen Project*, Borgen Project

[https://Borgenproject.org/Wp-Content/Uploads/The\\_Borgen\\_Project\\_Logo\\_small.Jpg](https://Borgenproject.org/Wp-Content/Uploads/The_Borgen_Project_Logo_small.Jpg),

22 Aug. 2019, [borgenproject.org/causes-of-poverty-in-liberia/](http://borgenproject.org/causes-of-poverty-in-liberia/).

Sternin, Jerry. Positive Deviance Initiative, 2009, pp. 1–6, *Combating Malnutrition in the*

*Land of a Thousand Rice Fields*.

Tembon, Andy, et al. “School Feeding: A Tool for Social Inclusion.” *World Bank Blogs*,

2015, [blogs.worldbank.org/education/school-feeding-tool-social-inclusion](http://blogs.worldbank.org/education/school-feeding-tool-social-inclusion).

Tremblay, Sylvie. “Nutrition of Eating Snails.” *Healthy Eating | SF Gate*, 6 Dec. 2018,

[healthyeating.sfgate.com/nutrition-eating-snails-3556.html](http://healthyeating.sfgate.com/nutrition-eating-snails-3556.html).

“Underlying Causes of Malnutrition.” *Action Against Hunger*,

[actionagainsthunger.ca/what-is-acute-malnutrition/underlying-causes-of-malnutrition/](http://actionagainsthunger.ca/what-is-acute-malnutrition/underlying-causes-of-malnutrition/).

USAID, 2016, pp. 1–71, *FOOD SECURITY DESK REVIEW FOR LIBERIA, 2016–2020*.

“Water, Sanitation and Hygiene.” *UNICEF Liberia*,

[www.unicef.org/liberia/water-sanitation-and-hygiene#:~:text=Sanitation%20is%20very%20poor%2C%20with,Programme%202017%20\(JMP%202017\)](http://www.unicef.org/liberia/water-sanitation-and-hygiene#:~:text=Sanitation%20is%20very%20poor%2C%20with,Programme%202017%20(JMP%202017)).

“WFP and Government of Liberia to Launch Home-Grown School Feeding Pilot.” *WFP*

*and Government of Liberia to Launch Home-Grown School Feeding Pilot | World Food Programme*,

[www.wfp.org/news/wfp-and-government-liberia-launch-home-grown-school-feeding-pilot](http://www.wfp.org/news/wfp-and-government-liberia-launch-home-grown-school-feeding-pilot).

“WFP, Liberian Government Feed Schoolchildren with Home-Grown Food for School Meals.” *FrontPageAfrica*, 1 Nov. 2018, [frontpageafricaonline.com/amp/news/wfp-liberian-government-feed-schoolchildren-with-home-grown-food-for-school-meals/](http://frontpageafricaonline.com/amp/news/wfp-liberian-government-feed-schoolchildren-with-home-grown-food-for-school-meals/).

“The World Factbook: Liberia.” *Central Intelligence Agency*, Central Intelligence Agency, 1 Feb. 2018, [www.cia.gov/library/publications/the-world-factbook/geos/li.html](http://www.cia.gov/library/publications/the-world-factbook/geos/li.html).  
World Food Programme, 2015, pp. 1–2, *Liberia - Emergency Food Security Assessment*, June 2015.