

Gianna Aldrett
St. John XXIII College Preparatory
Katy, Texas, United States
Nepal, Malnutrition

Malnutrition in Nepal

Home to Mount Everest, the tallest mountain in the world, Nepal is a country full of wonders. Its diverse culture and beautiful landscapes captivate many people to come visit the “roof of the world”. As enchanting as it seems, Nepal is also among the poorest countries in the world. In Nepal, the literacy rate for women is one the lowest in the world; poverty affects around 25% of the population and about 30% of the population is food insecure (USAID, 2017). Malnutrition contributes towards the problem causing stunting and wasting in younger children, which are forms of improper growth caused by an inadequate intake of nutritious food (Shimizu, 2021). Despite its agricultural potential, more than 50% of Nepal’s households suffer from food insecurity, and COVID has made this problem even worse (Nepali, 2020). This essay frames the problem of malnutrition and suggests potential solutions to address this issue.

Nepal is unique because of its climate and geography. It contains some of the highest mountain peaks in the world and multiple climate zones run through it. Due to its location in a high-risk earthquake zone, Nepal is vulnerable to natural disasters, with more than 80% of the population often threatened by storms, landslides, floods, or earthquakes (Proud, 2021). Because of inequality in wealth and education, when these natural disasters occur, Nepal is less able to react to the aftermath causing more instability and food insecurity (USAID, 2017).

Nepal’s government has suffered instability, having gone through many changes in the past 50 years. It was ruled by a king until 1990 when the government transitioned into a constitutional monarchy. Nepal then experienced a civil war which led to the founding of a democracy. Since then, the government has been working to establish stable government structures and institutions (Global Hunger Index, 2020). The recent stability has enabled them to start laying the foundation for a better infrastructure, helping to improve food security.

A typical family consists of four people who live in a dwelling constructed with a dirt floor, bricks made out of mud, and a tin roof (UNPD, 2016). Their meals are primarily vegetarian, eating what they grow or what is being grown in the community. When they eat meat, which is a rarity, it comes from goats and sheep. A regular Nepali meal consists of lentil soup, boiled rice, and curried vegetables which is a good source of nutrients (*Nepalese Food Culture* 2011). The average daily dietary energy consumption of a typical Nepali is approximately 2,331 kcal, which is not up to par with any developed country (UNPD, 2016). In addition, the food supply chain in Nepal is unreliable, and there is not a consistent way to take the little food that is produced from the farms to the towns. Much of the food supply happens through local trade among small populations. Nepal’s geography and lack of infrastructure makes it difficult to transport food long distances, and limits regions to consuming locally grown produce within each province (*Nepal - Agriculture* 2010).

The overall challenge is to decrease malnutrition rates through improved access to nutritious foods in rural mountainous areas while directing efforts into crops that increase the caloric content available to families. As it has been shown through history, improving the food security of a country inevitably leads to better economic conditions, education, and the overall quality of life. It is not a coincidence that during

wars, one of the most effective strategies is to disrupt the food supply of the enemy (Brown, 2019). If the food security of Nepal was improved, it would lessen the negative impacts that it has on the country's economy and people. One way to improve overall food security is to start at a small level using available community structures to implement programs.

One of the specific impacts that malnutrition has on the population is the rate of stunting and wasting in the rural areas of Nepal, which can lead to an increased childhood mortality rate. Undernourished children tend to fall behind in education and do not live a totally normal life. These conditions result from the lack of a proper healthy diet as well as the accessibility to food. Nepali people rely on agriculture as their main food source, with about 80% of the country employed in agriculture. While Nepal has increased production of rice and cereal crops, they have fallen behind the average in South Asia. The modernization of farming has increased and been introduced mainly to Terai, the most agriculturally productive region of Nepal, which has prevented other smaller farmers in other regions from receiving many benefits. Most farmers barely survive, and do not export any food, resulting in food deficit areas (*Nepal - Agriculture* 2010). Since roughly 75% of the country is covered by mountains, the remote mountain regions often suffer the most, unable to attain agricultural products. Often farmers lack the means to export their crops, which also contributes to the growing problem of malnutrition.

People are unable to access food and have to rely on locally sourced foods, which may lack certain essential minerals or vitamins. Many malnourished are Vitamin A deficient, which is essential for organ function and vision (Office of Dietary Supplements, 2019). A lack of iron also causes the malnourished to suffer from anemia which causes fatigue and weakness. Malnourishment is often exacerbated by inadequate infant and young child feeding practices that take place. Mothers are not taught the right amount and way to nurse and when to supplement (USAID, 2017).

Nepal has been working to develop programs to fight food insecurity and malnutrition. They have made a difference, decreasing their rate of child stunting from 57.1% in 2001 to 36% in 2016, but their numbers still are significantly high (USAID, 2017). Education and the provision of educational resources dedicated to families in rural areas are important to slowly and consistently address the problem of malnutrition. A two pronged approach to attack malnutrition in mountainous rural areas could include a program of kitchen gardens and women's education in nursing and nutritional practises which would address the need to have a variety of healthy food choices and ensure that young children and nursing mothers get the proper nutrition.

Providing kitchen garden kits to Nepal households in mountainous areas such as Gorkha, Rasuwa, or Sindhul would be an option to supplement the food supply with nutrient rich vegetables and starches. A kit would contain seeds such as bitter cucumber, tomatoes, groundnuts, cow peas, and multiple sweet potatoes, all crops that can be grown in Nepal (Gautam, 2006). Bitter cucumbers are a good source of fiber, provide antioxidants, and vitamins A, B,C (Link, 2019). Tomatoes are a good source of vitamin C, potassium, folate, and vitamin K (Bjarnadottir, 2019). Groundnuts contain a lot of protein, dietary fibre, and healthy fats. They are also rich in calcium, potassium, phosphorus and vitamin B (Binu, 2020). Cow peas contain a lot of fiber and protein and also a good source of important micronutrients (Link, 2020). Sweet potatoes are a great source of fiber, vitamins, and minerals (Julson, 2019). The kits would need instructions in both a written format, in Nepali, and pictorially represented due to the fact that 55% of household heads are illiterate (Alexander, 2020). The kits would also contain a garden map overview-where to plant each crop, how to plant each crop, how much water and natural fertilizer is needed, and

finally how to harvest. The instructions could also suggest 2 to 3 easy methods to cook the vegetables or how to incorporate them into local traditional meals.

A community based approach could be used to distribute kits by utilizing the local rural school systems. The kits would be distributed to families with students above and at age seven, or to the adults of the household who can pick up the kitchen garden kit from school. It would be important to provide the teacher with an overview of what the kits contain, instructions on how to plant and grow the plants. The kits could be used as part of the school curriculum, so it would be good to have a special teacher's edition with educational materials to highlight biology and ecology lessons. The teacher would be critical in encouraging the children to help their household plant the seeds and care for the garden. By also offering meetings for the adults, teachers could ensure that the parents understand how to care for the garden and have opportunities to ask questions. However, some of the parents may not attend meetings due to economic constraints and in that case, appropriate local incentives could be used to encourage attendance. One obstacle to overcome includes how to distribute the packets to the rural schools; one possible solution would be to connect with local community leaders to help distribute the packets to the schools. It would also be good to assess the needs of families for farming implements in order to properly sow the seeds. While there will be obstacles to overcome, the advantages outweigh them because having a home garden will provide more nutrition to Nepalese families. It will take dedication to grow the vegetables, but in the long run, the garden would help to alleviate Vitamin A deficiencies because the sweet potatoes and bitter cucumbers are high in Vitamin A and help overall with nutrition. Home gardens are also safer and fresher for home consumption (Gautam, 2006).

A second solution towards educating and providing resources to fight malnutrition is to provide education for pregnant and nursing mothers. There is a strong link between inadequate maternal and child nutrition in Nepal as a result of improper breastfeeding. Breastfeeding is the healthiest opportunity for a baby, protecting them from infections and building up their immunity, just as it is for a mother, reducing her risk of heart disease, certain cancers, diabetes and depression. Unfortunately many families are unaware of this information and do not have the opportunities to learn about them (*1,000 Days*, 2019). Educational resources would be used to educate expectant mothers on the importance of proper nursing methods. Because of language barriers, the program would come in the form of a pamphlet or perhaps a book with a written and pictorial format. Content could include proper nursing methods, as well as the benefits of nursing the correct way. It would also show the right nutrition needed for the mother and baby and when to supplement nursing with solid food. The information would provide nursing mothers and pregnant women with resources on how to take care of their children and allow them to fully benefit from the nutrition they receive through nursing. Distribution of educational resources could be achieved through the established networks in the local Nepalese communities, such as schools or community groups. In particular, a focus should be made to target networks of women where there is a forum to discuss women's issues and women offer other women mentoring and peer support.

Nepal has worked hard to establish programs like this in order to improve the health conditions of nursing mothers and children. They have been successful, bringing down the number of maternal deaths by 75% since 1990 and reduced child mortality by 66% over the past few years (USAID, 2017). The program has the potential to eliminate the lack of nutrition in nursing infants and promote proper nursing. The advantages of the program outweigh the disadvantages because programs like these have been implemented with success before.

Through progress and innovative ideas, Nepal has lowered their malnutrition rates at an impressive rate. Nepal came together as a country to realize their goals and engender plans to help and positively impact future citizens. Small targeted programs like providing kitchen garden kits or maternal nursing education will not only impact the people targeted in the area, but will inspire others to participate and create their own programs to strengthen local communities. To become a stronger and more developed country, Nepal needs to advocate for help towards overcoming their problems. By advocating their plan and actually carrying it out, Nepal can create solutions to strengthen and develop their country.

Works Cited

- Alexander, L. (2020, April 11). 7 facts about illiteracy in Nepal. Retrieved February 11, 2021, from <https://borgenproject.org/illiteracy-in-nepal/>
- Binu, S. (2020, September 29). Groundnuts/Peanuts: Nutrition, health benefits For heart, diabetes and weight loss. Retrieved February 11, 2021, from <https://www.netmeds.com/health-library/post/groundnuts-peanuts-nutrition-health-benefits-for-heart-diabetes-and-weight-loss#:~:text=Groundnuts%20are%20immensely%20rich%20in,and%20regulates%20blood%20glucose%20levels.>
- Bjarnadottir, A. (2019, March 25). Tomatoes 101: Nutrition Facts and Health Benefits. Retrieved February 11, 2021, from <https://www.healthline.com/nutrition/foods/tomatoes#plant-compounds>
- Brown, T. (2019, December 20). Hunger and war. Retrieved August 07, 2021, from <https://www.nationalgeographic.org/article/hunger-and-war/>
- Building Health. (2019, April 03). Retrieved August 07, 2021, from <https://thousanddays.org/why-1000-days/building-health/>
- Gautam, R, BR Sthapit and PK Shrestha (eds.) 2006. Home Gardens in Nepal: Proceeding of a workshop on "Enhancing the contribution of home garden to on-farm management of plant genetic resources and to improve the livelihoods of Nepalese farmers: Lessons learned and policy implications", 6-7 August 2004, Pokhara, Nepal. LI-BIRD, Bioversity International and SDC.
- Global Hunger Index. (2020). Nepal A Closer Look at Hunger and Undernutrition (pp. 1-5, Rep.). Concern Worldwide.
- Julson, E. (2019, January 9). 6 Surprising Health Benefits of Sweet Potatoes. Retrieved February 11, 2021, from https://www.healthline.com/nutrition/sweet-potato-benefits#TOC_TITLE_HDR_2
- Link, R. (2019, February 20). 6 Benefits of Bitter Melon (Bitter Gourd) and Its Extract. Retrieved February 11, 2021, from https://www.healthline.com/nutrition/bitter-melon#TOC_TITLE_HDR_2
- Link, R. (2020, January 20). Black-Eyed Peas (Cowpeas): Nutrition Facts and Benefits. Retrieved February 11, 2021, from <https://www.healthline.com/nutrition/black-eyed-peas-nutrition>
- Nepal - Agriculture*. (2010). Retrieved from <https://www.nationsencyclopedia.com/economies/Asia-and-the-Pacific/Nepal-AGRICULTURE.html>.
- Nepalese Food Culture. (2011, October 3). Retrieved February 11, 2021, from <https://www.himalayanfootsteps.com/nepalese-food-culture/>
- Nepali, S., Simkhada, P. & Davies, I.G. Association between wasting and food insecurity among children under five years: findings from Nepal demographic health survey 2016. *BMC Public Health* 20, 1027 (2020). <https://doi.org/10.1186/s12889-020-09146-x>

Office of Dietary Supplements. (2019, July 11). Vitamin A. Retrieved February 11, 2021, from <https://ods.od.nih.gov/factsheets/VitaminA-Consumer/#:~:text=Vitamin%20A%20is%20important%20for,different%20types%20of%20vitamin%20A.>

Proud, R. R. (2021, January 29). Nepal. Retrieved from <https://www.britannica.com/place/Nepal>

Shimizu, Y. (2021). *Malnutrition*. Retrieved August 07, 2021, from https://www.who.int/health-topics/malnutrition#tab=tab_1.

UNPD. (2016). *Annual Household Survey 2015/2016* [PDF]. GOVERNMENT OF NEPAL NATIONAL PLANNING COMMISSION SECRETARIAT CENTRAL BUREAU OF STATISTICS.

USAID. (2017). *Nepal: Nutrition Profile* [PDF]. USAID.