Food Security in Nepal

Improving Food and Nutrition Security

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Abstract

This paper assesses the lack of food security and the high level of poverty within Nepal. It will look at what factors influence these poor living conditions through research and data analysis. Data will illustrate the levels of improper nutrition and poverty compared to food production and supply throughout Nepal. Additionally, data will present information on Nepal's main commodities. With this information, solutions focusing on the issue of food security and poverty will be constructed. Furthermore, crops with the potential to provide economic and nutritional benefits to Nepal's communities will be identified and assessed. Ultimately, this paper looks for potential strategies for improving the poor conditions within the rural communities of Nepal.

Introduction

In the world today, it has become clear that improper nutrition and food security have posed negative consequences globally. Many people across the world do not possess the dietary means to fulfill healthy and active lifestyles. About 800 million people worldwide, one in every nine humans, do not have enough food to live a healthy life (Peace Corps, 2017). To further this alarming statistic, one in every four children on the planet experience stunted growth due to a lack of proper nutrition in their diets (Peace Corps, 2017). Poor health and stunted growth are only the minor consequences that occur from this nutrition dilemma. Of children who die before the age of five, nearly 45 percent of those deaths occur due to improper nutrition (Peace Corps, 2017).

When trying to understand why improper nutrition has become a global issue, it is important to recognize the complexity of the situation. This is not a task that can be completed with one action that feeds the whole world, as the issue varies greatly within every community that experiences food insecurity. Even within certain communities, the reason for improper nutrition may vary from family to family. In order to make an effective difference in the global issue of improper nutrition, it is essential to address

individual communities and assess the needs they require to obtain food security and proper nutritional education.

This study will address the issue of food security and improper nutrition within the rural communities of Nepal, primarily looking at the southwest districts where a majority of the rural population is held. Nepal is a country in which a majority of the population is located within rural areas. In Nepal, nearly 25 percent of the population lives in poverty, living on less than 50 U.S cents per day (World Food Program, 2020). About two-thirds of Nepal's population relies on agriculture as their source of income (Hendery, 2019). Natural disasters are a frequent issue in this country as well, consistently affecting food systems and security. Due to a lack of infrastructure and extreme geographical elements, inexpensive food is hard to come by for rural communities in Nepal. An understanding of the systems within these communities will be developed to put forth potential strategies for reducing the impact of food insecurity and improper nutrition in Nepal. This paper will address strategies that aim to gain economic stability within communities, educate farmers on business strategy, implement sustainable farming strategies, and educate community members on proper nutrition. Using strategic information provided by the U.S. government program *Feed the Future* in congruence with Nepalese farming and community systems, this paper will bring forth potential food plans and solutions for Nepal.

Research Questions

- Why is food insecurity and improper nutrition an issue in Nepal?

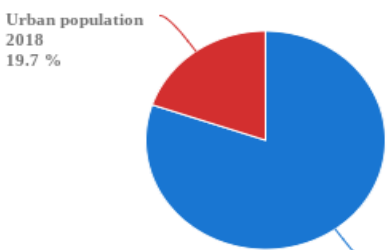
- How are climate and natural effects impacting the agriculture of Nepal?
- What aspects of agriculture present the best economic and nutritional potential to the rural communities of Nepal?
- What actions should be taken to reduce poverty and improper nutrition?

Literature Review

For the context of this research, it is important to understand the meaning of food security. According to the 1996 World Food Summit, food security is "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." (WFS, 1996). Within Nepal, this is certainly not the case, as many rural community members struggle to afford nutritious foods for sustaining a healthy lifestyle. The struggle for food security in Nepal has resulted in many food programs, including *Feed the Future, Peace Corps, U.S Aid,* and *World Food Program,* to point their attention to marginalized communities.

Vulnerabilities

Nepal is one of the world's poorest countries, with an average yearly income of about 700 dollars. Of this population, nearly a quarter of people live in poverty with yearly incomes below 200 dollars (World Food Program, 2020). This level of poverty is tied to the population demographics of Nepal, as over 80 percent of the population lives in rural communities (Food and Agriculture



Organization of the United Nations, 2020). The complex mountain geography of Nepal, in congruence with poor infrastructure, makes it very challenging for the nation to provide well-functioning markets and proper food transportation for its vast rural population. *Figure 1. Pie Chart of Nepal Population Demographics*

The poverty that spawns from this dilemma takes a heavy toll on the health and nutrition of the Nepali population. Within children below the age of five, about 36 percent of them experience stunted growth due to malnutrition and 27 percent are underweight. Additionally, 53 percent of these children under five are anemic (World Food Program, 2020). Furthermore, among pregnant women, nearly half of them experience anemia due to a lack of vitamins and minerals in their diet (World Food Program, 2020). Poor nutritional health within the rural communities affects the whole nation of Nepal in severe ways. Of Nepal's GDP, 34 percent of it is accounted for by agricultural production, while agriculture provides income to 68 percent of Nepal's population (U.S. Aid, 2021). As rural communities experience the negative health effects from poor nutrition, their productivity in agriculture decreases as cognitive functioning is negatively impacted. As health decreases, more money is allocated to health costs within rural communities (World Food Program, 2020). This decreases the number of resources put into agricultural production while also furthering the poverty of these communities. Ultimately, this creates a cycle in which poverty and poor health are increased over time.

Another issue faced by Nepal is its vulnerability to climate change and natural disasters. Nepal is an extremely biodiverse region with 118 different ecosystem types (Hendery, 2019). Each of these ecosystems are affected by climate changes in different

ways and understanding how to adapt is a complicated process. As the global temperatures continue to rise, it appears that the temperature is increasing at an even faster rate within the Himalayas of Nepal. Regions of Nepal that are typically cooler are now experiencing warm temperatures, resulting in the spread of invasive species throughout rural communities (Hendery, 2019). With this spread of invasive species, many agricultural lands experience a loss of soil availability for farming. This will ultimately put farmers with limited resources at risk of losing their livelihoods.

An additional climate risk impacting Nepal is the negative effect of earthquakes. Nepal is situated in one of the most seismically active regions of the world, making it extremely vulnerable to earthquakes. In 2015, about 25 percent of Nepal's GDP production was eliminated as a result of earthquakes (World Food Program, 2020). It has been found that climate change has increased the risk of earthquakes throughout the Himalayan region. Through the monsoon season, heavier rains are falling on this region and increasing the stress load on the Earth's crust. Following this monsoon season is the winter dry season when the weight of the Earth's crust decreases, resulting in seismic activity throughout the Himalayas (Buis, 2019). It is important that the agricultural systems of Nepal are prepared for these seismic events and have strategies ready for when they occur.

Solutions

For many years a political struggle existed within Nepal, leading to the neglect of the food insecurity crisis amongst its citizens. Fortunately, in 2015 Nepal formed a new constitution and identified as a federal democratic republic. This created the first stable government system Nepal had seen in over 25 years (World Food Program, 2020).

With stable government systems in play, Nepal started focusing its attention on the food crisis throughout its communities and initiated progress towards more sustainable systems. In 2018, Nepal initiated the *Right to Food Act,* qualifying food as an essential right of every citizen. Through this act, Nepal sought to improve the production, conservation, and distribution of food by using technological means to the full extent, furthering the understanding of nutrition, therefore increasing the efficiency of food production (Amnesty International, 2019). Although this plan holds a lot of potential for reducing malnutrition and hunger within Nepal, not much change has occurred. Nepal lacks the financial and technological resources for fully pursuing these goals at an efficient level. Fortunately, many other nations and global programs have offered their assistance in the pursuit of reducing food insecurity.

Action is being taken through many means in order to decrease the vulnerability of the Nepalese. One of the main elements of vulnerability to address is the poverty present throughout rural Nepal. A focus on improving these communities' education and health systems is expected to assist the Nepalese economically (Lovendal, 2004). By providing education and incentivizing students to stay in the schooling system, higher-paying and more diverse employment opportunities become available. Another vulnerable area to be improved upon is the equity of women and lower caste systems. It is important that gender-focused policy reforms are carried out to support the education and health of women in rural communities. Additionally, policy and social reforms need to be implemented to remove the discrimination towards poor communities and provide equal opportunities to all citizens of Nepal (Lovendal, 2004). Through this reform, the

people within Nepal are more likely to assist each other in creating healthy communities.

Many programs have started to impact Nepal's communities in the effort to reduce the impact of food insecurity. Strategies involve a focus on nutrition-sensitive agriculture by improving the soil conditions for gardens and agricultural fields, increasing the growth of diverse and nutritional produce, and promoting new patterns of cooking and eating that prioritize nutritional balance (Peace Corps, 2017). A myriad of projects are taking place to help rural Nepalese improve the sustainability of their agriculture. Training is being implemented for smallholder farmers in the production of fruit and nut trees which help them create small and diversified orchards with various nutritional elements (Peace Corps, 2020). More training is being done with farmers on low-volume and high-value crops, generating more income with less resources like water and land (Peace Corps, 2020). This allows for more space and money to be used to produce crops for consumption within the community. Another valuable strategy beyond the immediate farming landscape is the education of community members. One-on-one teaching with women and other household decision-makers is being done to provide recipes that integrate all the essential nutrients required for a healthy life (Peace Corps, 2020). Additionally, one-on-one teaching is done with the lead farmers of rural communities to educate them on basic agricultural business skills and practices (Peace Corps, 2020). This allows for leading farmers to generate more income for the community as a whole, helping to reduce poverty and increase the potential of their agricultural practices.

Methodology

In order to address the needs of these rural Nepalese communities, this paper will analyze two collections of quantitative data. The first set of data is provided by the *Food and Agriculture Organization of the United Nations* on hunger and food insecurity, food availability and production, food access, and malnutrition over the past two decades. The data presents the number of undernourished people over time, the average protein supply available per day over time, the average dietary energy available over time, the average value of food production over time, the percentage of children with malnutrition over time, and the prevalence of women with anemia over time. In addition, data from the *Global Nutrition Report* displays the percentage of Nepal's population living below the poverty line. Through data analysis, relationships are found that lead to a better understanding of food security and poor nutrition. In these relationships, the dominating issues preventing food security will reveal. Comparing the data of food production and availability with negative health effects over time,

correlations appear. A post-positivist perspective is used in this data analysis as the relationships may result from other conditional factors. Many relationships will be deducted based on prior research around the data subjects.

The second set of data provides statistical information from the government of Nepal's Planning and Development Cooperation Coordination Division. This information focuses on Nepalese agriculture and looks at each one of its natural commodities in detail. This data set provides the amount of land each type of produce requires, the number of units produced of each commodity, the amount of weight produced of each commodity, and the import value of each commodity. The data provides this information for a large majority of the crops produced within Nepal. This data will be compared with the percentage of intakes of key foods by the people of Nepal, provided by the *Global Nutrition Report.* Through this data, a discussion upon favorable crops for assisting the economy will be carried out. Assessing the crops that require minimal space for growth or low weight, while also providing a large import value, will allow for the assessment of the most favorable crops. The analysis of this data will take a post-positivist stance as there may be more to certain crops that make them favorable beyond the physical data they display.

Data and Results

Data Set 1

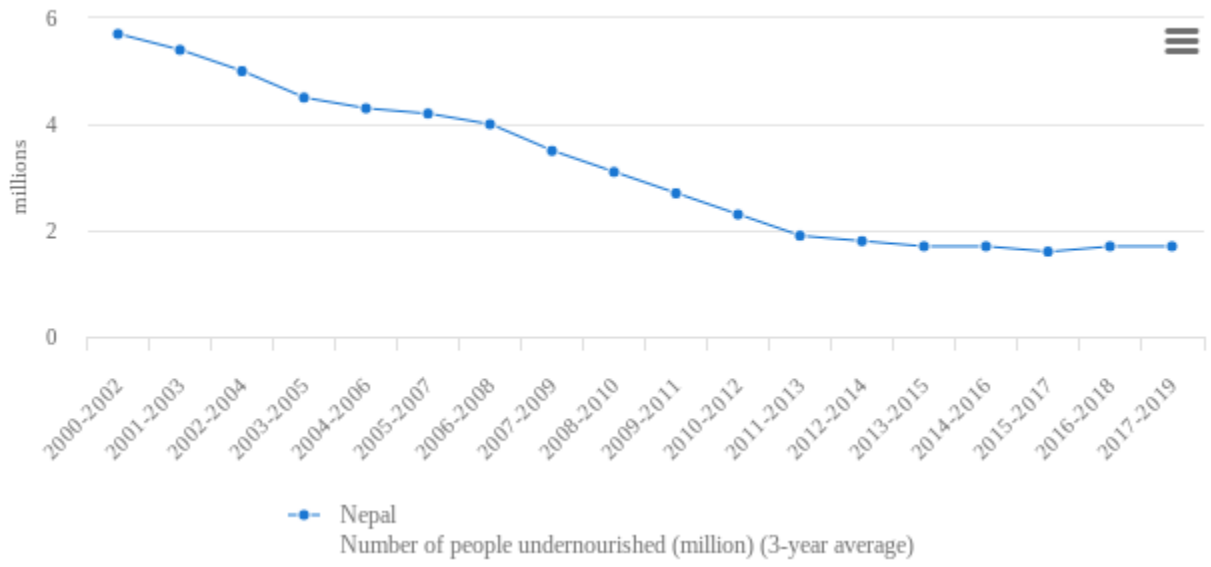


Figure 2. The number of people (in millions) that are undernourished in Nepal over time

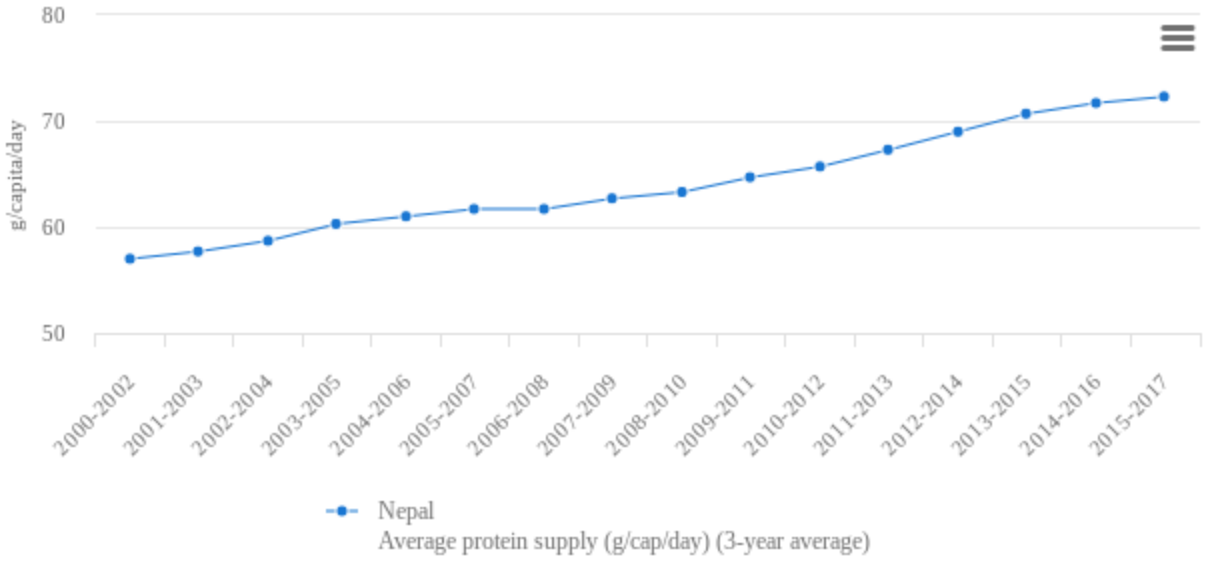


Figure 3. The average supply of protein in grams per person in Nepal per day

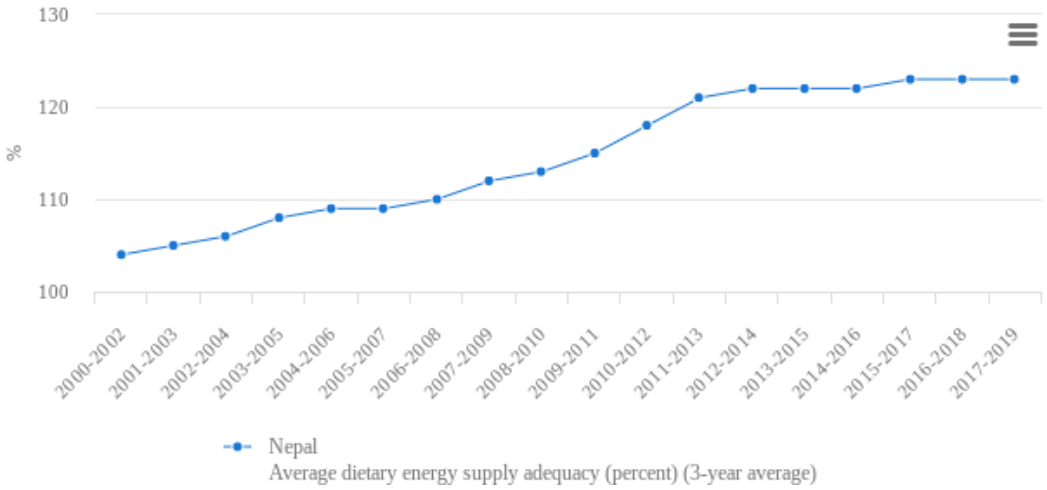


Figure 4. The average amount of dietary energy supply over time

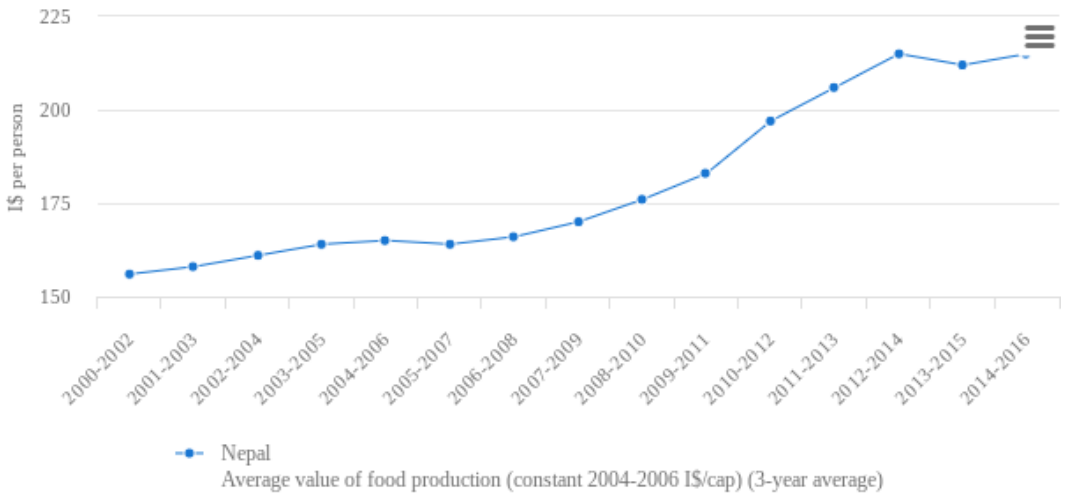


Figure 5. The value of food production over time

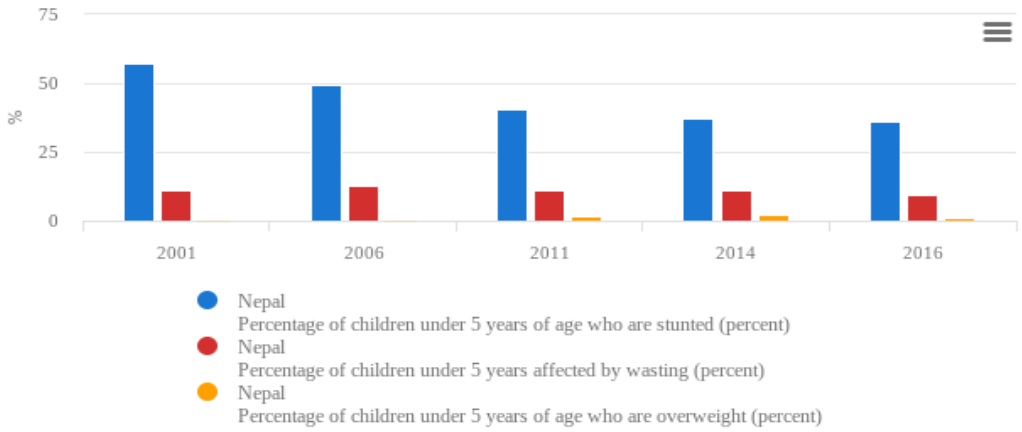


Figure 6. The percentage of children under five experiencing malnutrition over time

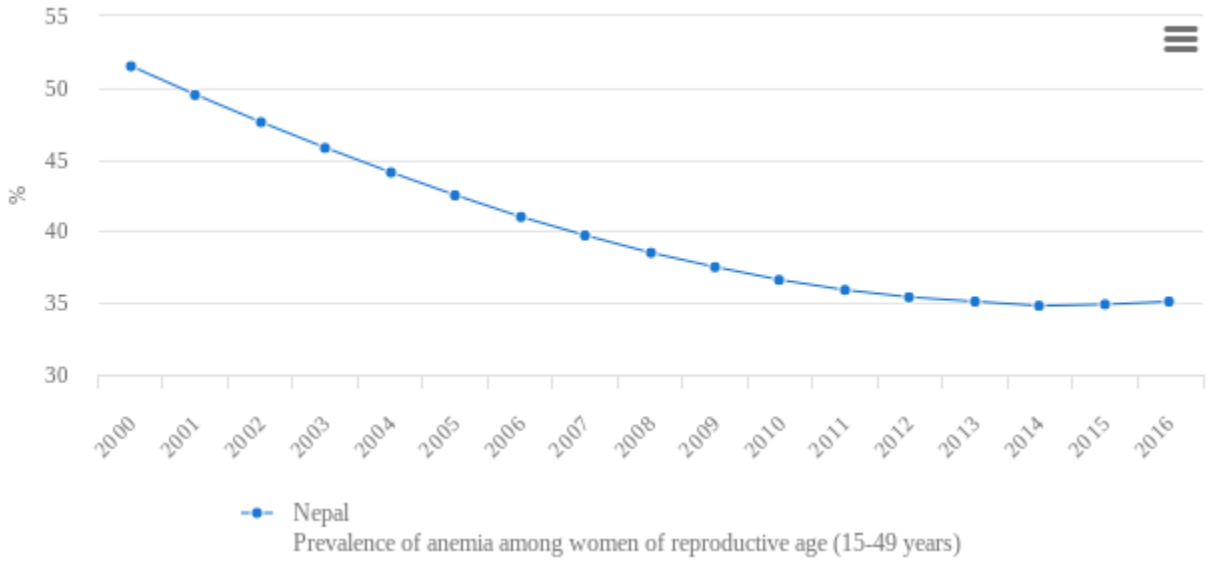


Figure 7. The percentage of women between 15 and 49 years of age experiencing anemia over time

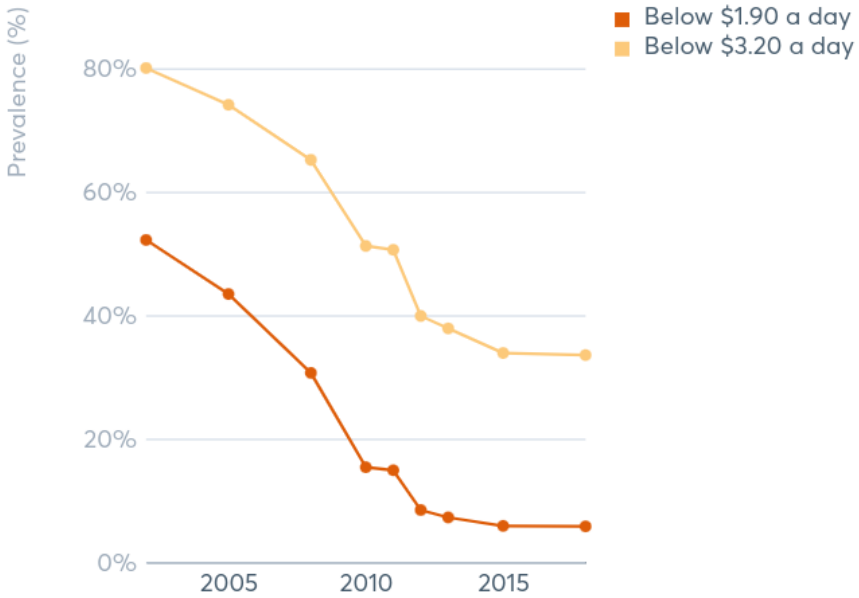


Figure 8. The percentage of Nepal's population living below the poverty line

Data Set 1 Results

Looking within these figures individually, it can be seen that impressive progress has been made throughout all of them. It is illustrated that the negative health consequences of poor nutrition such as undernourishment, malnutrition in children, and anemia in women, have been significantly reduced over the past couple of decades. Following the trend of decrease, the percentage of people living in poverty throughout Nepal has reduced immensely. It is also clearly illustrated that the amount of protein and dietary energy available to the average person in Nepal has greatly increased over the past two decades. Additionally, the value of food production itself has seen positive growth over time. Although impressive progress has been made over the past two decades, it appears that the percentage of the population that is undernourished, the percentage of malnourished children, the percentage of women with anemia, and the percentage of the population below the poverty line have stopped changing. The

progress being made in these categories appears to have halted around the year 2012. It is important to consider why these percentages and numbers have remained stagnant since 2012, as they still illustrate unhealthy levels of improper nutrition and economic instability. Up until 2012, there was a congruence between the decreasing and increasing statistics. As the supply and value of food increased, the negative effects of improper nutrition and the poverty levels appeared to be decreasing simultaneously. In 2012, the positive sloping variables of supply and value of food continued to rise; the average amount of dietary energy over time and the value of food production over time actually increased their rate of change in the year 2012. Further analysis of the relationship in this data set will be addressed in the discussion section of this paper.

Data Set 2

COMMODITY DESCRIPTION	UNIT	QUANTITY	EXPORT VALUE (RS.'000)
Seeds of Cumin crushed or ground	KG	4560	1839
Fresh Ginger nither crushed nor ground	KG	13845543	318771
Other Ginger crushed or ground (sutho)	KG	698733	133318
Other Ginger crushed or ground	KG	374919	60206
Saffron	KG	20	93
Turmeric (Fresh)	KG	6	38
Turmeric (dust or Powder) .	KG	2695	637
Other turmeric .	KG	8	7
Spice mixtures	KG	54407	12910
Fenugreek(Methi) .	KG	14370	709
Other spices nes .	KG	1307577	100134
Maize seed	KG	1050	74
Rice in the husk (paddy or rough)	KG	10680	4310
Husked (brown) rice	KG	1218	165
Other grain sorghum (Junelo)	KG	80	2
Buckwheat .	KG	622447	12824
Millet seed	KG	38801	4601
Quinoa (Chenopodium quinoa)	KG	143000	3289
Other cereal, nes	KG	1240	131
Wheat or meslin flour except maida	KG	473260	32993
Other cereal flour, nes	KG	5000	255
Groats and meal of wheat .	KG	220250	10434
White and red cabbages, kohlrabi, kalee tc, fresh or chilled.	KG	6659460	57982
Cabbage lettuce, fresh or chilled	KG	15000	120
Chicory, fresh or chilled, (excl. witloof)	KG	200	6
Carrots and turnips, fresh or chilled	KG	400	48
Beetrootradishes and other similar edib le roots, fresh or chilled	KG	19500	162
Cucumbers and gherkins, fresh or chilled .	KG	680	64
Peas, fresh or chilled	KG	200	25
Beans, fresh or chilled	KG	1100	33
Leguminous vegetables, fresh or chilled, n es	KG	1700	178
Mushrooms of the genus agaricus, fresh or chilled	KG	810	8749
Fruits of genus capiscum or pimenta, fresh or chilled	KG	3345	626
Pumpkins, squash and gourds (Cucurbita spp)	KG	558	38
Other fresh or chilled vegetables	KG	1665864	18452
Potatoes, frozen	KG	354843	3047
Shelled or unshelled beans, frozen	KG	11339	651
Mushrooms of the genus Agaricus provisionally preserved	KG	2849	5929
Dried onions	KG	27000	16850
Dried mushrooms of the genus Agaricus	KG	232	25
Other dried mushrooms and truffles	KG	62520	7082
Dried Garlic not shelled or not split	KG	500	100
Dried peas, shelled whether or not skinned or split	KG	56150	3097
Dried gram, shelled whether or not skinned or split.	KG	135000	7553
Processed natural honey	KG	4293	1371
Processed natural honey	KG	24920	8155
Edible products of animal origin, nes	KG	543	476
Human hair and waste, unworked	KG	756	1256
Pigs', hogs', or boars' bristles or hair a nd waste there of	KG	789	196
Badger and other brush making hair	KG	3600	792
Ossein and bones treated with acid	KG	2741000	83263
Bones and horn-cores (excl. ossein)	KG	100	4
Tortoise-shell, whalebone and whalebone-ha ir, etc, unworked	KG	100000	2400
Bulbs, tubers, rhizomes in growth or in flower; chicory plants and roots	PCS	40627	2269
Trees, shrubs and bushes, grafted or not, of kind which bear edible fruit or nuts	PCS	245	15
Other live plants,nes	PCS	22300	152
Other- Fresh cut flowers & buds . .	PCS	8323	309

Figure 9. Commodities weight and export value in 2018/2019

CROP	2073/74 (2016/2017)		2074/75 (2017/18)		2075/76 (2018/19)	
	AREA	PRODUCTION	AREA	PRODUCTION	AREA	PRODUCTION
FRUITS (PRODUCTIVE AREA)	110,501	1,018,308	111,744	1,086,931	120,023	1,177,640
VEGETABLES	277,393	3,749,802	286,864	3,958,230	297,195	4,271,270
TEA	28522	24653	28,595	24,804	28,732	25,206
COFFEE	2,646	466	2,650	513	2,761	530
CHILI	10,077	49,718	10,500	52,500	10,692	67,167
LARGE CARDAMOM	17,002	6,521	17004	6,849	18273	7,954
GINGER	22,649	279,504	23,000	284,000	22,132	297,512
GARLIC	8,116	56,668	8,500	59,500	10,107	71,902
TURMERIC	6,777	65,999	7,300	71,500	10,160	98,904
SILK WORM	1,757	55	1,421	30	1,457	32
HONEY (NO. OF HIVES)	240,000	3,950	242,000	3,980	242,500	3,990
FISH		83,898		86,544		91,832
MUSHROOM FRESH		10,850		10,500		11,255

Figure 10. Area (in hectares) and production (in metric tons) of crops

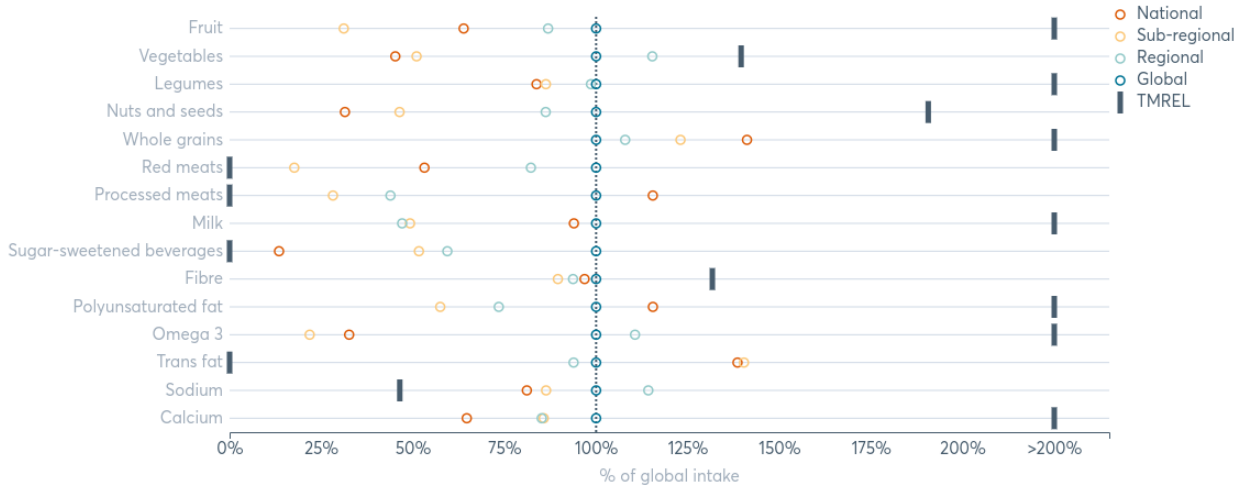


Figure 11. Dietary intake of key foods and nutrients compared with global averages

Data Set 2 Results

Within this data set, a more precise understanding of Nepal's agricultural commodities is established. Although *Figure 9* displays the export value of commodities with the amount of weight produced, it is more helpful for this study to compare those export values with the production area within *Figure 10*. Through this comparison, low-volume and high-value crops can be identified. Low-volume and high-value crops present a greater economic potential to the rural communities of Nepal. A crop that

appears highly opportunistic within this data is mushrooms. Mushrooms require very little space to grow an abundant patch and do not require fertile soil for growth. The data shows that the amount of space they do require is so minimal that it does not have comparable data to the other crops produced in Nepal. Furthermore, the ratio of weight to export value shown in the mushroom's data is far more favorable than a majority of other commodities. Additional crops that appear favorable within the data are ginger, garlic, and turmeric. These products require a minimal amount of land relative to the number of units they produce. Ginger alone generates more income for Nepal than the rest of the commodities shown in *Figure 9* combined. With its high export value and low requirement for space, ginger farming is certainly an element of Nepal's agriculture that should be protected and improved upon.

In *Figure 11* the key foods missing from the average diet in Nepal are illustrated; it consists mainly of whole grains and is lacking the proper amounts of fruits and vegetables. Contrarily, fruits and vegetables take up a majority of Nepal's farmland leading to a question of why Nepal's population fails to consume them. High and unhealthy levels of processed meats and trans fats are also present within this data. This is likely due to processed meat and foods with trans fat being cheaper options than natural foods. This is an additional threat to be assessed in reducing the consequences of improper nutrition in Nepal.

Discussion

With the percentage of people in Nepal affected by negative health consequences no longer decreasing since 2012 and the amount of food supply and value of food percentages continuing to rise, the congruence between the figures becomes discrepant. It is important to consider where this discrepancy comes from as the levels of poor nutritional health and poverty in Nepal are still alarmingly high compared with the rest of the world. This could result from a few different potentialities: the caste system in Nepal may be taking advantage of rural farmers, rural farmers may be missing a proper understanding of business methods, and there may be a lack of understanding around preparing nutritious meals.

In Nepal, many rural farmers have a poor understanding of the business side of agriculture, making them vulnerable to exploitation. Although the value of food continues to rise in Nepal, this does not necessarily mean that the rural farmers are making more money as they pass their produce onto higher powers. Teaching entrepreneurial skills to these marginalized farmers will allow them to better understand what they are owed for their commodities. Through entrepreneurial teachings, farmers should understand organizational management, employ development services, and practice marketing strategies (Peace Corps, 2017). They should be educated on the importance of post-harvest management and record-keeping of their commodities. Through this management and record-keeping, a farmer will be able to create a value chain analysis and start to prioritize specific commodities (Peace Corps, 2017). With this knowledge, farmers are much less likely to be exploited by the caste system and their economic status will rise in congruence with the increasing value of food products.

It appears that although the food supply has been increasing, the levels of unhealthy people in Nepal remain high. The data shows that the amount of protein supply available has continued to increase, but the data also reveals the prevalence of processed meat within the diets of the Nepalese. This increased supply of protein may continue to cause health problems in Nepal as it is coming from an unnatural source. In the effort to create healthier diet plans for the people of Nepal, many steps need to be taken. Even though fruits and vegetables take up a majority of Nepal's farming land, this produce is primarily reserved for exports as they lack them within the average diet. Beyond agricultural fields, it is important to teach the value of nutritionally focused gardening within rural communities to ensure that there is enough fresh produce for their own consumption. With gardening strategies in play, it is necessary to ensure that proper storage methods are being used within rural communities (Peace Corps 2017). As nutritional food is grown and stored, it is then valuable to teach proper nutrition guidelines. This should focus on adding more nutritional foods into cultural recipes and explaining the varying nutritional needs of infants, children, pregnant women, ill people, and the elderly (Peace Corps, 2017). With a proper understanding of nutrition and how to implement it into diets, rural communities are more likely to reduce malnutrition.

In order to make the most effective change to the economy and food security in Nepal, the right types of produce must be acknowledged. Some crops provide very favorable economic benefits while others are essential to the nutrition of rural communities; the types of crop will vary from community to community depending on what grows best and the nutritional needs of individuals. Nutritionally, it is seen from the data that fruits, vegetables, and a proper protein source are the primary dietary

elements missing in the food consumption of Nepal. Economically, the data allows for identifying crops that produce high value and require little space for growth. Certain crops are capable of fulfilling both these economic and nutritional needs.

A product that presents a myriad of benefits to Nepal's rural communities are mushrooms. Mushrooms not only have the potential to increase economic and nutritional levels in Nepal, but they also provide medicinal and ecological benefits to rural communities. In Nepal, mushrooms thrive on the climate conditions and are capable of growing just about anywhere. Farming mushrooms is an extremely low investment as they are naturally growing throughout the landscape and require minimal care through their growth process. They do not require fertile soil and grow in places that no other crops can (Joshi, 2020). Mushrooms are also capable of growing throughout orchards and agricultural fields without negatively impacting the growth of other plants. In fact, mushroom growth is very beneficial to other plants as they decompose dead and decaying matter throughout landscapes, contributing to the soil's nutrient cycle and increasing its fertility (Joshi, 2020). With mushrooms growing throughout orchards and agricultural fields, the plants have more access to nutrients and will grow more efficiently. Another favorable aspect of mushrooms is their fast and frequent growth. They can grow throughout all seasons of the year in Nepal and are ready to harvest in under a month (Joshi, 2020). This gives rural communities a consistent and abundant commodity for both food and economic security. Nutritionally, mushrooms provide a wide variety of vitamins and minerals as well as a healthy source of protein (Joshi, 2020). By replacing processed meats with mushrooms, a much more nutritional source of protein can be implemented into the diets of rural Nepalese.

Mushrooms provide a large source of potassium, sodium, and phosphorus, which can improve the nutritional health of these diets (Joshi, 2020). There is no question that mushrooms have the potential to make great changes to the patterns of Nepal's economy and health. The development of the mushroom industry must be assisted. This can be done by providing a proper substrate (what mushrooms grow from), developing further knowledge of mushroom cultivation in farmers, and emphasizing their nutritional importance to communities.

Similar to mushrooms, bee systems thrive throughout Nepal's climate conditions and are a low cost to maintain as a result. Through this climate, a wide variety of bee species are present, adding to the nutritional value of the honey they produce (Devkota, 2020). This diversity of bee species also adds additional flavors to the honey, making it a high-demand commodity around the world; this demand and the price of honey have been consistently increasing over time (Devkota, 2020). With a low initial cost and high production rate, honey serves as a consistent and dependable source of income and nutrition. Another beneficial aspect of beekeeping is the effect of pollination on other crops and the surrounding natural environment. Across the globe, insect pollination is responsible for 35 percent of agricultural yields, (Devkota, 2020). Each farm that produces honey is in turn improving the yields and health of all the other crops they produce. Nutritionally, honey presents a healthier alternative to sugar within Nepalese diets as it provides a variety of nutrients and antioxidants. In honey production, it would be valuable to provide proper resources for hive cultivation and educate marginalized farmers on effective beekeeping strategies. Honey ultimately presents Nepal's rural communities with the opportunity to improve the health of their farms, in turn raising the

economic potential of agriculture production. Furthermore, Nepal is presented with a stable food source and commodity for exportation.

Lacking within the average Nepalese diet is the prevalence of fruits and vegetables. Although fruits and vegetables take up a large majority of Nepal's agricultural land, there seems to be a lack of availability within rural communities. A strategy towards providing fruits and vegetables to rural communities would be to communicate their nutritional importance. With a desire for fruits and vegetables raised, communities can implement a community orchard focusing on diversified fruits and vegetables to provide a variety of nutritional benefits (Peace Corps, 2020). With a personal community supply of fruits and vegetables, Nepal may increase its food and nutritional security.

As discussed in the data section of this paper, ginger is a crop that presents promising economic potential to the rural communities of Nepal. The value of ginger is consistently rising worldwide, giving Nepal an edge as ginger is one of its primary exports. As ginger requires a small amount of space relative to its yield, ginger can be mass-produced throughout rural communities in Nepal. In order to help rural farmers capitalize on this cash crop, it is essential to provide proper resources for improving soil conditions and growth yield (Peace Corps, 2017). Through the mass cultivation of ginger, there is great potential to decrease the poverty levels in rural Nepal.

Conclusion

Nepal is certainly in a vulnerable position as it possesses high levels of poverty and food insecurity. Although this is the current state of Nepal, there is plenty of potential for increasing nutritional health and economic stability with the right actions. It is clear that the primary influence of food insecurity in Nepal is its poverty level. The risk of climate factors (climate change and earthquakes) and caste system discrimination have furthered poor nutrition. In order to make a difference in Nepal, additional support must be provided to develop strategies for improving the understanding of the agricultural economy and nutritional health. An essential strategy for improving these conditions is the further development of health and educational systems in Nepal. This ultimately leads to a greater sense of equity amongst the caste systems and provides marginalized communities with greater economic opportunities. To further economic potential, a focus should be placed on assisting farmers in producing low-volume and high-value crops, like mushrooms and ginger, to provide stable economic and nutritional sources. Decreasing the level of poverty within rural communities does not necessarily guarantee nutritional health. It is essential to ensure that communities produce nutritious food for their own consumption and store it properly. With this nutritional food, there is still a need to educate communities on the proper levels of nutrition consumption and implement these foods into recipes. With these actions effectively carried out, much improvement can be made to the lack of food security within Nepal's communities.

References

Amnesty International. “Right to Food in Nepal”. 2019. https://www.amnesty.org/download/Documents/ASA3101302019ENGLISH.pdf.

Buis, Alan. “Can Climate Affect Earthquakes”. NASA, Global Climate Change. 2019. https://climate.nasa.gov/news/2926/can-climate-affect-earthquakes-or-are-the-connections-shaky/.

Devkota, Kedar. “Beekeeping: Sustainable Livelihoods and Agriculture Production in Nepal”. 2020.

Food and Agriculture Organization of the United Nations. “Nepal”. 2020. http://www.fao.org/faostat/en/#country/149.https://www.intechopen.com/books/modern-beekeeping-bases-for-sustainable-production/beekeeping-sustainable-livelihoods-and-agriculture-production-in-nepal

Hendery, Sara. “IPM Program Prepares Farming Communities in Nepal for Impacts of a Changing Climate”. 2019. Integrated Pest Management Innovation Lab. https://www.agrilinks.org/post/ipm-program-prepares-farming-communities-nepal-impacts-changing-climate.

Joshi, Givind Raj. “Mushroom Farming in Nepal”. Agriculture Guide. 2020. https://guide2agriculture.com/mushroom-farming-in-nepal/.

Lovendal, Christian. “ Food Insecurity and Vulnerability in Nepal: Profile of Seven Vulnerable Groups. ESAF. 2004. http://www.fao.org/3/ae065e/ae065e00.pdf.

Peace Corps. “Agriculture Extension Volunteer”. 2020. https://www.peacecorps.gov/volunteer/volunteer-openings/agriculture-extension-volunteer-6749br/.

Peace Corps. “Food Security Strategy”. 2017. pclive.peacecorps.gov/pclive/index.php/pclive-resources/resource-library/1986-2017-food-security-strategy/file.

U.S. Aid. “Agriculture and Food Security”. Nepal. 2021.https://www.usaid.gov/nepal/agriculture-and-food-security.

WFS. 1996. World Food Summit Plan of Action. Rome. World Food Summit.

World Food Program. “Nepal”. 2020. https://www.wfp.org/countries/nepal.