Peru: Combating malnutrition through improvements in healthcare and farming techniques

Introduction
Located in western South America by the southern Pacific Ocean, Peru boasts a diverse community of cultures and historic sites. Diving past the nation’s beautiful landscapes and fascinating history, however, Peru presents an enormous challenge to its population: chronic malnutrition. Because Peru is not as developed as countries like the United States, it has long depended on exporting raw materials to more prosperous countries in the Northern Hemisphere. Peru also thrives as a fishing country and a large producer of bismuth, silver, and copper. By 2014, Peru became an upper middle income country with a per capita GNI of US $6,360, but due to its high income inequality and poverty rates, many of the country’s children were and are still left malnourished (“Peru,” Encyclopedia Britannica). Malnutrition contributes to boosting anemia rates and is worsened by recurring natural disasters and social divisions within the country. As malnutrition continues to pervade the growing Peruvian society, it is necessary for the government, local communities, or international organizations to step up to fight this intimidating problem. This paper will present the current situation of urban and rural areas in Peru, analyzing the factors and causes of malnutrition, as well as offering further recommendations to lower malnutrition rates.

Typical Family in Peru
The typical family size in Peru is 5.1 persons. However, urban families may have a slightly higher number while rural families have fewer children, with an average family size of 4.9 persons. Peru has a smaller family size in rural regions compared to urban communities due to a large migration of rural families to cities and coastal farms. Majority of households consider the father as the leader, but the extent of the father’s power differs slightly for each region. In Hispanic Peruvian communities, the patriarch of the family is the father, but recently, more women take on bigger roles by finding higher paying jobs. Hispanic mestizo families, people of European and Amerindian descent who mostly speak Spanish, have fathers playing dominant roles. These fathers take control over the family’s wealth, discipline, and reputation. Women in these families have more domestic roles such as taking care of children and making orders to servants in the home. In lower class homes living in urban areas, it is most common for men to commute long distances in buses for work while women keep themselves busy with maintaining food supply and finding temporary jobs (Hudson).

The diet in Peru is diverse in each region, but the four most traditional staples include corn, potatoes, tubers, and legumes. Potatoes originated from Peru, so many varieties of potatoes such as sweet potato are found in this country, with several being native to the Andes region. With large fishing grounds and successful fishing industries, coastal regions in Peru adopt raw fish and seafood in their cuisine. A popular example is ceviche, a South American dish made with chunks of raw fish marinated in lemon or lime juice. In the Andes region, the typical diet depends mainly on corn, potatoes, and tubers. Meat from this region primarily consists of indigenous animals like alpacas and guinea pigs, but people in this area also rely on imported livestock such as sheep, cattle, and swine (“Peruvian Cuisine”). Cuy, a common dish in the Andes region, is a deep-fried guinea pig and is often considered a staple meat for people inhabiting in the area (“Typical Peruvian Food”). Finally, in the Amazon region of Peru, the cuisine is often made up of ingredients found in the Amazonian rainforest. Among the dishes from the Amazon region is paiche, one of the world’s largest freshwater fish. There are varieties of fruits in Peru’s jungles as
well, including camu camu, mango, and pineapple (“Peruvian Cuisine”). Because Peru is comprised of various regions with distinct geographies, it is not surprising that the diet depends on each location. Due to a rise in their youth population, Peru faces challenges with its education system, and the state spends a large proportion of its resources and wealth on schooling. Currently, education is free and mandatory for all children of ages 6 to 15 (“Peru,” Encyclopedia Britannica). However, outside urban communities, compulsory education is harder to enforce, which accounts for the 4% of children between ages 6 and 11 who don’t receive proper schooling (“Situation of Children in Peru”). Not only that, but it is more expensive for rural populations to afford schooling because they tend to live farther from schools, leading to high transportation costs. (Patrinos 392). Considering these factors, children in rural regions have significantly lower literacy and numeracy rates in contrast to those in urban areas, up to almost five times and four times lower respectively in 2012 (“Peru Annual Report 2013”). Although Peru has made crucial advancements in its education system, the quality of the schooling is still regarded as inadequate. With numerous students, poor facilities, and mediocre teachers, it is difficult for young students to find proper education in public school; therefore, many middle and upper class families in urban areas send their children to private schools. Insufficient education also impacts the grades that the Peruvian students enroll into, with 23% of Peruvian children between ages 6 and 11 going into lower grades compared to their ages. These statistics are higher for children living in extreme poverty, and percentages of students enrolling into lower grades are as high as 42% (“Situation of Children in Peru”).

In Peru, access to quality healthcare is limited. In 2012, 37.4% of Peruvian citizens did not have a health insurance, while 34% of Peruvians were afflicted with chronic illnesses. Getting treatment for these illnesses is hard as well; only 52.2% of those suffering from chronic illnesses were able to seek help through pharmacies or Ministry of Health clinics (Goldberg). In hopes to enhance the health of its citizens, the Peruvian government started working to improve hospitals and healthcare centers over the years. To respond to increasing demands from the growing population, the current president of Peru, President Humala, gave 2.6 billion dollars in 2015 to upgrade and equip the hospital facilities with advanced medical technology (“In Lima, U.S. Deputy Secretary of Commerce Bruce Andrews Discusses how U.S. Companies Can Help Grow Peru's Healthcare Sector”). Today, the government also allows Peruvian women equal access as men to healthcare, but married women are not allowed to make healthcare decisions without permission from their husbands (Peru Society and Culture Complete Report 22-23).

Life in a Typical Farm Area

Regarding agriculture and farming, Peru has a small plot of available agricultural land per capita. The Agrarian Reform Law passed in 1969 made a big impact on Peruvian farming communities, setting limits and control over the distribution of land (“Peru-Agriculture”). Through this reform, the Peruvian government gained power over most of Peru except for the rainforest near east of Andes. Instead of allocating the land to individual farmers, the government abolished large private estates, reorganizing them into cooperatives and smaller units. Because Peru has small portions of arable land though, only 10.4 million acres (3.2% of the total land) was under cultivation by 1998. Even after equal distribution of land, each farmer today receives less than 1.2 acres of land. In the Andes highlands, the land is rich in mineral resources but not very suitable for farming; about 4.5% of all the land is arable (Vera). Therefore, this area is densely populated, and the average size for privately owned farms is less than five hectares.

Families living in rural areas rely heavily on farming. Food security in this area depends on the family’s income and the amount of food offered in local markets (Barriento-Fuentes and Torrico-Albino 273). Subsistence farming is the most common in Peru, although there has recently been a decrease as family farms started coming out to the market for commercial purposes (Barriento-Fuentes and Torrico-Albino 269). Peruvian farmers grow a variety of crops depending on the geography and where the land is located. For example, farmers near coastal desert lowlands cultivate cotton, sugar, rice, soybeans, fruits, tobacco,
and flowers ("Peru-Agriculture"). The selva is known for its cocoa, fruits, nuts, tea, coffee, and tobacco. Near the Andes, important livestock is cattle, sheep, and camelids, and most farmers depend on these animals for financial security. Peru’s main food staples, potatoes and corn, are also grown throughout Peru, and the top commercial crops include rice, cotton, sugar, and barley.

Agricultural practices in Peru differ based on the farming location. In the Amazon, the indigenous people known as Matsés have lived in small villages, using a traditional slash-and-burn method for many years to provide nutrients for the soil. This method gives sufficient yield for two to three years, and afterwards, the Matsés people simply relocate to another area. Even though this way of farming was useful for a nomadic lifestyle, the Matsés people realized of their dire need for a new farming method to produce higher crop yields. Their agricultural practices were also detrimental to the environment because of deforestation and an increase in greenhouse gas emissions. To pave new paths in improving the agricultural practices of the Matsés people, the Acaté Amazon Conservation helped introduce a permaculture farm. Permaculture farms are more environment friendly because they “mimic the patterns and relationships found in nature,” and bring in a large supply of food, fiber, and shelter for the people. A banana basin is an example of a permaculture practice, in which the basins are placed close to the homes, collecting water, mulch, and nutrient without depleting all of the nutrients from the soil (Park).

Major Barriers Facing Typical Family
Peruvian families endure many challenges, and a major barrier to enhancing agricultural productivity and access to adequate nutrition is natural disasters. Every year, Peru faces earthquakes, floods, droughts, and earthquakes that not only devastate many families but also hinder agricultural production. These natural disasters also creates health problems and illness as foods lose its nutrition. The El Niño warms the Pacific Ocean every three to seven years, which further triggers natural disasters because the change in the local climate may lead to torrential rain, droughts, or floods. From 1982-1983 and 1997-1998, natural disasters created a drop in the Peruvian economy by 3 to 5 percent. This is because increased droughts and floods lower the food production in farms, resulting in higher prices for food. Peru is also susceptible to cold waves that last for several months. When these waves strike, they impose a dangerous risk to people, livestock, and crops. Hundreds of people die from respiratory diseases, tens and thousands of livestock are killed, and many crops are ruined ("Peru,” World Food Programme).

In addition to natural disasters, many Peruvian people suffer from earning decent wages. Wages declined greatly between the years 1980 and 1990, contributing to a dramatic increase in poverty for Peruvian workers. In fact, the manufacturing wage dropped almost two-thirds ("Peru,” Encyclopedia Britannica). Even though the most common jobs in Peru are from the agriculture, fishing, mining, and manufacturing sector, this drop in wages along with a population increase in the late 20th century, caused a decline in agricultural workers. Meanwhile, the mining and manufacturing sectors remained secure and the services sector expanded. Wages eventually did rise by the 1990s, but they were still lower compared to wages before the 1980s. Even today, poverty levels are high due to low wages, and many workers have multiple jobs to maintain and secure their family; sadly, 8% of the total population live off of less than $2 a day ("Peru’s Water Crisis”) Furthermore, a large percentage of Peruvian workers are not legally employed by the government. These workers mainly work in the streets as street vendors or taxi drivers in urban areas. Others work in small workshops, and some women may find income by making tourist trinkets in their homes (”Peru,” Encyclopedia Britannica). These workers have limited income and lack financial stability.

Not only is wages a pressing issue in Peru, but gaps in the Peruvian social classes also pose additional problems. A crucial factor that builds up Peru’s social pyramid is the language that one speaks. Even though Peru is known for its large indigenous population, the indigenous language is often ignored. The native people of Peru are known as the Amerindians, making up 45% of the entire population (Benson 43). Over the years though, more indigenous language speakers have been replaced by monolingual and bilingual Spanish speakers. As a result, between the years 1970 and 1981, the population of indigenous
language speakers dropped from 47 to 24% (Patrinos 391). Even today, many indigenous people dismiss their own language in hopes to ascend the social ladder. On top of the list in the Peruvian social class reigns the Spanish-speaking European descendants and the mestizos (Benson 43). This group of people are then divided into the wealthy, upper class and the middle class. While the upper class focuses on politics and business, the middle class has more white-collar jobs, ranging from clerks to entrepreneurs. Further down in this social pyramid primarily consists of the indigenous population. While Peru’s native people make up just less than half of the nation’s overall population, they face an unequal wealth distribution. The top 20% of the affluent upper class takes advantage of over half of the country’s wealth; in contrast, the bottom 60% only enjoys a little over a quarter (“Poverty and Inequality”). Because most of the indigenous people live in a rural locations, their wages not only depend highly on subsistence farming and labor work, but they are also significantly less compared to those who live in urban areas.

Unfortunately, the social divisions in Peru contribute to poverty. According to the World Food Programme, over seven million people, composing of 22.7% of the country’s population, experience poverty, and more than one million people (4.3%) live in extreme poverty (“Peru,” World Food Programme). Extreme poverty is found mostly in rural communities, and out of all age groups, children and adolescents are most impacted by poverty. In 2002, 60% of children between ages 0 to 5 and 58% of children between ages 6 to 11 lived in poverty (“Situation of Children in Peru”). Overall, poverty rates are still high today, with a rural poverty rate of 54% and 78% of the indigenous children suffering poverty back in 2013 (Ariana).

Along with poverty, lack of sanitation is an obstacle in improving food markets and proper nutrition. In Peru, most cities lack adequate sewerage, street lighting, and paving. With a total population of 31 million, approximately 8 million Peruvians don’t have access to improved sanitation (“Peru’s Water Crisis”). Locations of homes also create barriers for families to gain advantages over these services. Compared to rural areas, there is also a higher sanitation coverage in urban regions. 81% of urban residents have access to sanitation facilities versus 38% of rural residents (“Peru,” Water for People).

Malnutrition: Effects, Present Status, Trends, Other Major Issues
Sadly, high poverty rates in Peru trigger one of the biggest threats in Peru: malnutrition. In Peru, many families do not have enough money to afford proper health care or to purchase nutritious foods. Consequently, the national malnutrition rate for children under five was 18% in 2011. However, in the Andean region known as Huancavelica, the malnutrition rate was even higher, affecting 43% of the native children under five (Paez). Even though poverty is one of the biggest causes of malnutrition, malnutrition can also keep families stuck in poverty. Malnutrition impacts the household’s income because it often reduces a child’s cognitive development, which later impacts his or her productivity in adulthood. A decline in cognitive development also contributes to a decrease in the child’s education, and as a result, it may to limit income potential for when the child gets a job in the future (Kontio). Parents with undernourished children also struggle to pay for the expenses of adequate healthcare to treat their kids. Considering that almost a quarter of the population is in poverty, malnutrition clearly brings bigger hardships for those who already struggle to maintain financial security.

Furthermore, anemia, linked with iron deficiency, is one of the major health problems in Peru that results from malnutrition. With the growing population, anemia puts an economic burden on the country with increased healthcare spending. To reduce this strain, the Peruvian government currently takes steps to reduce anemia in children under the age of 5. By partnering with the World Food Programme and the United Nations Children’s Fund UNICEF since 2010, the Peruvian government improves the diets of children with anemia through increased consumption of micronutrients. These efforts are beneficial for the Peruvian state, leading to declines in both anemia and malnutrition rates. In 2000, the anemia prevalence rate was 49.6%, but by 2010, the rate dropped to 37.7%. Likewise, the malnutrition rate dropped from 31.0% from 2000 to 23.3% in 2010 (Alcázar).
Currently, several social assistance programs in Peru are also installed to improve the health of malnourished Peruvians. One of the leading programs is the Vasco de Leche Program (Glass of Milk), in which the Peruvian government gives economic support to households with young children. In 2001, the program reached out to over 44% of these families with a budget of $97 million. This program targets lower income families (assisting the poorest 40% three times as much as the richest 20%) or those with malnourished children by supplying milk since it is of great nutritional value (“Malnutrition in Peru”). Therefore, this is a progressing solution to not only close in the gaps of social divisions within Peru but to also decrease malnutrition rates.

Water scarcity and climate volatility further worsens malnutrition. Peru is known for its glaciers; in fact, 71% of the world’s tropical glaciers are found in Peru. These glaciers are essential for Peru’s water supply because they release clean drinking water into rivers, which can then be distributed to families or used for agriculture. However, due to increased temperatures, Peru has major problems with melting glaciers. First, the melting glaciers causes floods, putting an environmental risk for farmers who need to grow crops for financial security. Floods from melting glaciers can also deplete the water supply. Now, 3.3 million of Peru’s 8.9 million rural population have no access to drinking water (“Peru Climate Change: Impact on Glacial Melt and Access to Water”). Inadequate water supply can cause risks for malnutrition because lack of access to clean drinking water often leads to diarrhea. Diarrhea is directly linked to acute malnutrition, and for children who are already malnourished, this may become a more threatening problem (“Underlying Causes of Malnutrition”).

Considering the effects of malnutrition on poverty and increased illnesses such as anemia, decreasing malnutrition rates would be beneficial for both the Peruvian families and the government. By finding methods to provide nourished diets and advanced treatments for children, fewer families would be fighting to stay above the poverty line, and the government would not have to spend much of its expenses and budget on improving or adjusting healthcare systems.

**Recommendations**

To combat malnutrition, a recommendation is to ensure accessible healthcare facilities to Peruvian families of all social classes. The biggest problem right now is the social divisions within the Peruvian society that prevent families from getting quality treatments or checkups. Because many Peruvian children also suffer from anemia, families should enrich their diet with iron-rich foods such as brown rice, nuts, seeds, and tofu. In each Peruvian community, a community leader should be chosen to work with different families in need, especially those with children under the age of 3. This is a great local solution because it allows for families to interact with one another as a community to solve a nation-wide issue. Through this solution, the community leaders can interview each family and discuss the specific problems that the children encounters. After gathering all the data, the community leaders can create a chart with the nutrition facts of all the children. This chart will allow the community leaders and the families to see an overall trend of the Peruvian society, which may be helpful in developing a plan to improve the health of not only the children but also the adults as well. Some families may need to diversify their diets, and others might need more adequate healthcare.

Examining current efforts by the Peruvian government, it is clear that the government should receive assistance from other developed countries including the United States to advance their healthcare systems. It is advisable that the government work with families with lower wages to get regular checkups for free or at low cost because health should be the biggest concern. To spread awareness of malnutrition, the government can also work with schools. In schools, a nutrition education system may be beneficial for both students and parents because through proper teaching about the importance of consuming healthy foods, families might avert from their customs and find new ways to change their diet. The government can also designate a part of their budget on securing nutrition in school meals so that more children will be provided with healthy food even if they can’t afford it at home.
Moreover, recent efforts by The World Bank should be continued, in which the United States aids the Peruvian government with a $330 million policy loan. This policy loan covers birth services for Peruvian families along with a growth promotion program since a large percentage of Peruvian children suffers from stunted growth due to malnutrition (“Nutrition at a Glance”). For farming families who face malnutrition because of crop failure, they can receive help from other countries through education. Some of the biggest issues are poor agricultural practices and frequent natural disasters. To increase the yield and diversity of crops, the Peruvian farmers can receive assistance from other farmers around the world to learn more about soil enrichment methods such as crop rotation or use of fertilizers. Farmers from other countries can also teach Peruvian farmers how to adapt different methods of ploughing depending on the weather. This will greatly benefit families in the rural areas who endure malnutrition as a result of poor farming techniques and unexpected climate patterns.

To implement these recommendations, Peruvian families will have to cooperate with one another. For those seeking greater quality healthcare, the families should designate a specific hospital in each community for regular checkups. This will be more efficient because families with malnutrition issues will be grouped together, depending on what kind of problem they face at home. In this case, experienced Peruvian doctors or doctors from different countries and organizations such as UNICEF can work with more than one patient at a time if they have similar complications. Meanwhile, for farmers, they can also choose a specific area (a farm or a plot of land) to meet other farmers from different organizations such as the American Farm Bureau Foundation. These organizations can hold lessons once a week to ensure proper farming techniques for Peruvian farmers. At first, the farmers can work together in one plot of land as an experiment, but once they take more lessons, they will be able to implement these methods to their own farms.

Conclusion
Due to high poverty rates and sudden climatic changes, Peru struggles to feed its people with nutritious foods and lags behind in advanced health care systems. Weak agricultural practices as well as lack of sanitation further prevent Peruvian families from maintaining healthy diets. This has led to undernourished children, causing stunt in growth and slowing down cognitive development. These hardships, however, are not only impacting families. Malnutrition puts burden on the Peruvian government because most of the country’s budget goes towards developing the health care facilities. Today, the Peruvian government works with developed countries like the United States for aid because its economy is not strong enough to solve such a huge problem as malnutrition. Therefore, a large responsibility falls on Peruvian families, individuals, and local organizations to communicate with one another about malnutrition. Although malnutrition is highly prevalent in Peru, it is critical that people of all social classes are aware of this issue. By working as a community, the Peruvian citizens can learn more about those who are malnourished and help them by supplying nutritious foods. It is good to start locally because when the Peruvians unite, they can support one another in times of need. During tough situations though, it may also be advantageous for international organizations to jump in. They can start by teaching the Peruvians useful agricultural practices in order to increase crop yield, and for urban areas, they can send professional doctors. With these promising efforts, Peru will gradually step into a fruitful and progressive future.
Works Cited


