

Brooke Kelty

Pennsylvania School for Excellence in the Agricultural Sciences

Central Columbia High School, Bloomsburg, PA

Paraguay, Factor 10: Dietary Diseases

Brooke Kelty, Pennsylvania School for Excellence in Agricultural Sciences,
Central Columbia High School, Bloomsburg, PA
Paraguay, Factor 10: Dietary Diseases

Paraguay: Dietary Diseases

Paraguay is a South American country located in the central portion of the continent and is sometimes referred to as the “Corazon de America” or Heart of America (ThoughtCo.). The country is land-locked by Argentina, Bolivia, and Brazil. With an area of 157,047 square miles, Paraguay is almost as large as the state of California and has a population of 6.704 million people. “Paraguay’s topography consists of grassy plains and low wooded hills east of its main river, the Rio Paraguay, while the west region of the river consists of low marshy plains. Farther away from the river, the landscape is dominated by dry forests, scrub, and jungles in some locations (ThoughtCo).” The climate of Paraguay is subtropical to temperate, depending on location within the country. The eastern area contains significant rainfall, while in the far west it is semiarid or dry with little rain. Within Paraguay, malnutrition plays a significant role in food insecurity and the country’s death rate related to dietary diseases. Malnutrition accounts for about 2% of deaths overall. Poverty is also a significant factor with respect to food insecurity. Over 30% of citizens in Paraguay are listed as below poverty lines and of those citizens about 25% are estimated to be undernourished (Sewidan, 2015). Sustainable solutions could be implemented that would allow citizens to gain access to healthy nutritious foods, provide them with the funds to afford these foods, and decrease dietary diseases and their resulting fatality rates.

The household structure for a family in Paraguay is like a nuclear family. Family units consist of spouses and their unmarried offspring. Most families consist of a couple and their pre-adult children or a single mother and her children, but this also depends on social class and individual circumstances (country studies.us). In most families, the father is the head of the household, however paternal contact with the children is limited. The mother runs the home, maintains contact with extended kin, and manages the finances. Single parent households are often headed by mothers and are poorer than nuclear families because they receive low class jobs. Cuisine in Paraguay is often beef-based dishes and freshwater river fish, which are popular. Diets also include soups and corn, which are all used in many other dishes. The academic year in Paraguay begins in February and is completed in December. Paraguay has a total number 1,339,000 students enrolled in primary and secondary education (54% of these individuals are enrolled in primary education). Two percent of youth have no formal education and seven percent have attained incomplete primary education (epdc). In Paraguay, healthcare is scarcely available. The healthcare system is severely understaffed with only 11.1 doctors per 10,000 citizens. If a citizen becomes sick or is injured in some way, the “emergency care facility in government hospitals is not reliable”. For quality care, citizens must go to private hospitals, which are more expensive (Expat Financial).

In terms of farming, family farms are the most representative sector in rural areas. Family farms account for 84% of citizens living in the country. The main crops grown on family farms in Paraguay are maize, locro and pichinga varieties, and kidney beans. In addition to these family farmed crops, Paraguay also grows sesame, sugar cane, stevia, yucca, different vegetables, bananas, pineapples and other fruits. The climate in Paraguay is not conducive to typical European crops, like potatoes and corn. Paraguay produces eggs and raises pigs, but they are also one of the top ten beef exporters in the world (International Finance Corporation). This sector is essential in the fight against poverty because it is the main supplier of food and jobs, keeping in mind that Latin America provides 27 to 67% of the food eaten according to several studies. In Paraguay, 35% of households own less than five hectares, which is not enough to guarantee production of traditional crops such as maize, cassava and kidney beans to satisfy food and economic needs. For example, five hectares is 12.35 acres of farmland, an average farm size in Pennsylvania is 139 acres or 56.25 hectares. Family farms also struggle since only 40% of plots less than 20 hectares have title deeds (Museo Ecología Humana).

Ninety percent of agricultural functions are exemplified by small family farms. These small farms. These small farms provide low crop yields, land access that is government-controlled, minimal capital, and lack of technology and innovation (UNOPS, 2023). Families are left with antiquated farming methods and techniques and little financial support and resources and aged laborers with no replacements. In addition, significant agrarian reform is needed to give the impoverished farming families control of their lands. This results in fertile soils that go unplanted. The impoverished of Paraguay rely the most on farming survival, yet they are the ones who can least afford to cultivate the land. These families work sunup to sundown to produce food for sale as a means of income. Due to limited resources and financial burdens, much of the land is left uncultivated. Fields that remain uncultivated further affect conservation efforts as they lead to erosion, fertility loss, and the loss of biodiversity (UNOPS, 2023). The Paraguay government is aware of these problems and have recently committed to prioritizing the modernization of farming to support farmers across the country. UNOps is an organization that is working with the Paraguay government to help impoverished farmers to utilize uncultivated, fertile farmland, provide modern tools and machines, resources, and new technologies to aid in efficient cultivation and to increase crop yields (UNOPS, 2023). More support and resources like those provided by UNOps need to be initiated and funded for the farmers in Paraguay. In addition, policies are needed to free-up lands for small family farms and to give farmers an outlet to sell their crops. Increased crop yields mean increased family nutrition and income leading to a way out of sickness and poverty in Paraguay.

Food Insecurity is posing a large issue in Paraguay, so much so that “ten percent of Paraguay’s seven million people face hunger and malnutrition despite a decade of impressive economic growth and the fact that it produces food for almost nine times its population (United Nations).” Only six percent of agricultural land is available for domestic food production while 94% is used for export crops. Due to this, an estimated 300,000 small holders lack access to land. Many complaints on this barrier are towards “lack of government support, in relegation to land access, seeds, much needed capital, and access to markets to commercialize their crops” (United Nations). Paraguay’s “agricultural development model has resulted in the highest rate of deforestation in the world exacerbating existing environmental issues caused by transgenic crops and the extensive use of agro chemicals”. Despite all of this, Paraguay has not yet seen a significant drop in malnutrition. Rates of obesity have increased significantly and now affect over 50% of the population putting them at risk for a variety of obesity related diseases. This is occurring because the prices of nutrient based foods are too high and citizens are purchasing what they can afford, calorie dense foods with little to no nutrients. For example, a calorie dense diet that meets only an adult’s basic nutrition needs costs approximately \$0.95 (US dollars) per day. In comparison, a healthy diet that is diverse and contains an adequate calorie count and ample nutrients costs about \$3.89 (US dollars) per day (United Nations). Low income families choose the energy dense diet because it is significantly cheaper, but this type of diet does not meet the recommended nutritional standards.

In Paraguay, another major concern with Food Insecurity is Dietary Diseases. Dietary Diseases include obesity, heart disease and stroke, diabetes, cancer, kidney disease and many others. Many of these diseases, if not properly managed, can lower the quality of life and decrease the life expectancy of the citizens with these diseases. “The prevalence of overweight children under five years of age is 12.4% and Paraguay has made no progress with decreasing this statistic.” This means 12.4% of children, or one out of every eight, are not receiving the nutrition they need, which in turn is causing obesity. “The country has seen no progress towards achieving the target for obesity, with an estimated 26.3% of adult women and 19.7% of adult men living with obesity. At the same time, diabetes is estimated to affect 9.6% of adult women and 9.2% of adult men (Global Nutrition Report).” These Dietary Diseases are occurring because the cost of nutritious foods continues to increase to insanely high prices. Due to this, families in Paraguay purchase the foods they can afford, which tend to be high-calorie foods, or non-nutritious foods which only serve to exacerbate dietary diseases. With Paraguay being one of the largest export countries, 94% of land is for export growth and only 6% of land is for domestic use. Hence, we know healthy and nutritious

foods are available, but the poorer, lower-class families and single parent households are simply not able to afford these foods.

For the typical family living in Paraguay, affordability is a major factor when choosing what to eat for their next meal. For the average Paraguay citizen, dietary diseases can be dealt with, but for an “at risk” person like a young child or an elderly citizen these diseases can increase morbidity and mortality and lower quality of life. For these reasons, it is crucial that this issue is resolved. A plan of action to improve food insecurity in Paraguay would be to provide nutritious food at a lower cost for less fortunate families. To do this Paraguay could implement hunting and harvesting of wild animals as a high protein food alternative to beef and as a source of nutrition. In addition, pelts could be used for rugs and clothing. For instance, deer hunting is a way of life for the citizens of Argentina. In Paraguay, wild game is called bushmeat. Approximately 22 species of mammals are used as food with the most common species being nine-banded armadillo, capybara, paca, gray brocket deer, white lipped peccary, and collared peccary. Many of the edible bushmeat species are also used for medicinal reasons such as the nine-banded armadillo, capybara, and mountain lion. In addition, Paraguayan’s also have several bird species which could be considered a food source like the pigeons and muscovy ducks. Although, hunting of wild game could only be implemented within rural areas where hunting is permitted. These animals contain meat that is extremely lean, high in protein, packed with zinc, iron, and vitamin B. Consuming these meats instead of high-calorie food would offer a more nutritious diet and be a healthier option for lower class or less fortunate families to be able to avoid dietary diseases. To accomplish this solution, hunting of wild animals would have to be permitted and regulated. Paraguay has strict firearm licensing and registration requirements which are in place to help control gun violence in the country. These regulations need to be revised for hunting. Aside from guns, Paraguayan’s also participate in archery and trapping. For conservation purposes, population numbers of game animals would have to be established to know an estimate of how many animals are able to be harvested to control the population enough so as not to endanger the species. As of now, most forms of hunting and keeping of wild animals is prohibited in Paraguay. For this solution to be effective, hunting would have to be legalized. Considering Paraguay already has weapons and wild animals in their own country, this solution would not cost very much to implement in their everyday lives. An additional solution would be for Paraguay to grow lentils or other crops that are high in protein. These crops would be grown in rural areas, but then moved to stores and farm stands where citizens in urban areas would be able to purchase them. While meat can offer a great source of protein, it also has saturated fat, sodium, and omega 3-fats, which can be unhealthy in high consumption. Conversely, according to Harvard, almost 20 grams of protein, and 15 grams of fiber can be supplied by just one cup of cooked lentils. Citizens of Paraguay would be able to eat much less food, while feeling satiated due to the amount of protein and fiber gained.

In addition to harvesting animals for food in rural areas and growing food in urban areas, other solutions can be implemented. These other solutions could include providing jobs to citizens considered to be in poverty or at high risk for dietary diseases. This could be accomplished through a variety of community established businesses. For example, building small community farm stands where vegetables, fruits, grains and legumes are sold and where local civilians could earn money for working. Small shops could sell goods crafted by local community members from harvested animals like pelts and antlers. Once small shops are able to get started local citizens could work with organizations similar to Ten Thousand Villages to be able to sell their products on a higher scale. Ten Thousand Villages works with artisans in developing countries to create growth opportunities for income, this is done by transporting their products to markets in other countries, specifically the United States, through long-term, fair trading relationships. Organizations like these allow citizens to expand their businesses and product production without much cost to do so and increase their income more than first thought possible. These organizations then sell the artisan products and goods and the profit is returned to the artisan. Community centers could be opened which would hire local citizens and teach them about healthy eating and exercise and in turn they teach the community. This program could be solely based off of Agricornps

in that volunteers are educating citizens in Paraguay experiential agriculture education. Although Agricorps is mostly intended for school age kids and citizens, in developing countries, this program in community centers could be geared towards the parents and adults living in developing countries. Agricorps could expand their organization and develop a separate curriculum from the community centers and inform volunteers in the town and villages how to teach it. In addition, the center could host a community garden which would provide food as well as teach about gardening and provide a seed library. The centers could also educate the community about dietary diseases by holding weekly discussions and outreach programs. The community Centers could partner with local hospitals and or the CDC to be able to acquire lecturers on the topic of dietary diseases, hearing the information from a medical professional would force the citizens to take the topic more seriously and follow the suggestions more willingly. The outreach programs would provide lessons on growing nutritious foods and host a food pantry to supply citizens with essential foods. Outreach programs could also provide another source of jobs so people would be able to make an income and afford more nutritious food options. Solutions like these would be funded by the CDC, Unicef, an organization whose mission is to nourish children around the world, or even Agricorps, because they would be adding an additional program to their organization to make these solutions feasible.

With the high cost of nutritious foods and the availability and affordability of high-calorie foods, food insecurity is a major concern in Paraguay. Many citizens are facing malnutrition and dietary diseases, but these issues could be corrected. The Center for Disease Control has implemented healthy diets to help solve this issue, but that solution has not been effective because citizens are not able to afford those nutritious food items. Hunting and harvesting of animals, as well as growing nutritious foods, providing jobs, innovative outreach programs, and generous supplement feeding programs would be successful initiatives in providing the citizens of Paraguay with healthier diets and lifestyles and a more efficient, sustainable, and affordable way of obtaining it. The cost of implementing these solutions would be minimal and offset the cost of disease if left as is. The Paraguay government would need to improve their game hunting licensing process as well as the penalties and regulating of illegal hunting activities. Licensing should be reasonably priced for affordability for low-income families. Fees and fines could help fund licensure process and regulation activities. In addition, the country requires a robust conservation program to ensure that wildlife populations are healthy and thriving and that wildlife populations are closely monitored to prevent species extinction. Funding for outreach programs and discussions could be aided and financially supported by the CDC and the Unicef. All of these solutions would allow citizens to gain access to healthy nutritious foods, provide them with the funds to afford these foods, and decrease dietary diseases and their resulting fatality rates.

References

- Beefing up Paraguay's meat industry.* (2019, July). International Finance Corporation. Retrieved February 11, 2023, from https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/paraguay+meat+industry
- Briney, A. (2021, August 17). *All about Paraguay.* ThoughtCo. Retrieved February 11, 2023, from <https://www.thoughtco.com/geography-of-paraguay-1435283>
- Decoud, C. E. (2022, April 11). *Food security in Paraguay: access barriers to a healthy diet.* Paraguay. Retrieved February 11, 2023, from <https://www.undp.org/es/paraguay/blog/food-security-paraguay-access-barriers-healthy-diet>
- Family farming in Paraguay and its relationship with nature.* (2022, August). Museo Virtual De Ecologia Humana. Retrieved February 11, 2023, from <https://museoecologiahumana.org/en/piezas/family-farming-in-paraguay-and-its-relationship-with-nature/>
- Groot, R. De. (2021, November). *Trends, drivers and determinants of young children's diets in Paraguay.* UNICEF for every child. Retrieved February 11, 2023, from <https://www.unicef.org/lac/media/29621/file/country-brief-diet-paraguay.pdf>
- Painter, J. E. (n.d.). *Paraguay.* Britannica. Retrieved February 11, 2023, from <https://www.britannica.com/place/Paraguay/Daily-life-and-social-customs>
- Paraguay.* (2018). Education Policy and Data Center. Retrieved February 11, 2023, from https://www.epdc.org/sites/default/files/documents/EPDC_NEP_2018_Paraguay.pdf
- Paraguay- family and kin.* (n.d.). Country Studies. Retrieved February 11, 2023, from <https://countrystudies.us/paraguay/28.htm>
- Paraguay healthcare system & medical insurance options for expats.* (n.d.). Expat Financial. Retrieved February 11, 2023, from <https://expatfinancial.com/healthcare-information-by-region/south-american-healthcare-system/paraguay-healthcare-system-medical-insurance-options-for-expats/>

Paraguay: The burden of malnutrition at a glance. (2023). Global Nutrition Report. Retrieved February 11, 2023, from <https://globalnutritionreport.org/resources/nutrition-profiles/latin-america-and-caribbean/south-america/paraguay/>

Poor nutrition. (2022, September 8). Centers for Disease Control and Prevention. Retrieved February 11, 2023, from <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/nutrition.htm>

Right to food. (2016, November 10). United Nations. Retrieved February 11, 2023, from <https://www.ohchr.org/en/press-releases/2016/11/paraguay-produces-food-60-million-people-yet-parts-its-own-population-face>

Sewidan, N. (2015, May 18). *Malnutrition in Paraguay.* The Borgen Project. Retrieved June 10, 2023, from <https://borgenproject.org/malnutrition-paraguay/#:~:text=According%20to%20the%20World%20Health%20Organization%2C%201.55%20percent,population%20is%20considered%20to%20be%20in%20extreme%20poverty.>

UNOPS. (2023). *To Grow, Eat and Sell: Modernizing agriculture in Paraguay.* UNOPS. Retrieved September 14, 2023, from <https://www.unops.org/impact>