

Brianna Muchella-Prata
Century High School
Sykesville, MD

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Argentina: An Education Approach to treat malnutrition and Food waste

The Republic of Argentina is a country in the South America with an estimated population of 44,998,905 (www.worldmeters.info). About 89% of Argentina's population reside in urban areas. The remaining 11% of the population live in rural areas. Argentina is surrounded by the Andes Mountains, glacial lakes, and pampas grassland. Argentina has four seasons. It is hot and humid in the summer with a temperature range of 90 to 100F, and winter is cold and dry with temperatures ranging between 46 and 61F. This country is most famous for the tango dance and music. Argentina's capital is Buenos Aires, centered on the Plaza de Mayo with 19th century buildings like Casa Rosada and the balconied presidential palace. Argentina has a presidential representative, Mauricio Maci, democratic republic, head of both state and government executive power.

Argentina is one of the world's major exporters of soybeans and wheat, as well as meat. It is also one of the largest producers of wool and wine, but most of its wine is consumed domestically (www.britannica.com). Over the past few years, there have been dramatic changes in Argentine agriculture. Many small soybean producers have been forced out of business, and the sector is consolidating fast. This is due to government intervention in the beef and dairy markets, which kept prices low. Many small farmers turned increasingly to producing soybeans. High global soybean prices ensured that they could make a reasonable living compared to dairy and livestock farming. The average size of a farm increased from 1,040 acres to 1,329 acres (www.farmprogress.com). The main agricultural export is wheat. Argentina also exports soybeans, maize, barley, rice, flax seed, sugarcane, cotton, citrus fruits and grapes (www.Britannica.com). In the Argentine model of agriculture, most farmers hire contractors to do the planting, spraying and harvesting for soybean crops. This model has benefited smaller farmers since they don't need to invest in expensive machinery and enabled many to continue producing soybeans.

Argentina's typical family size is four people. In the city, people usually rent apartments. In the rural areas, homes are usually small and attached together. One fifth of Argentines occupy substandard housing, lacking indoor plumbing or having either dirt floors or temporary flooring (www.britannica.com). For the most part, people have access to clean water, toilets, electricity, telephones, roads and local markets. A typical family diet depends on the family. Traditional food of Argentina includes asado (bbq), milanesas (breaded beef/chicken), pizza, pasta, empanadas, and stews (www.food24.com). Argentines get their meat from local butcher markets and they grill it most of the time. Most Argentines now work in the service sector, schools, hospitals, industries and factories, farms, construction, food, tobacco and automotive industries. Shops and offices shut down for lunch and people may take a siesta (nap). Two to three hours later, businesses reopen and stay open until closing time, which can be as late as 9 p.m. The average minimum wages in Argentina \$300-\$1100 US dollars a month (www.salaryexplorer.com).

Healthcare is mostly free in Argentina, but a major barrier is the wait time to see a doctor or a specialist. People usually have to wait months before seeing a doctor. If they have an emergency or need to see a doctor, they are sent to the emergency room. The patient can go to a private clinic and see a doctor by paying out of pocket (<http://justlanded.com>). In Argentina, 37.4% have no insurance, 48.8% are covered by Obras Sociales, and 8.6% are covered by private insurance. The Argentine healthcare system are divided in three different sectors. The first sector is call public sector which supplies free clinical care for hospital inpatients and outpatient. A change is made to outpatient for medicines. This covers 50% of the population. The second is call mutual or social plans. This cover the cost of the medical care and medicines in varying population. This plan usually covers 45% of the population, although the percent has drop due to the increasing unemployment. Lastly, the third sector is called private sector. This is where patients meet the total cost of their medical care; this sector covers around 5 % of the population (<http://justlanded.com>).

Argentina is facing a difficult time and many people cannot afford to buy food. Prices are rising and their salaries are not enough. Part of this problem was created by a new government administration that removed subsidies on utility bills to provide cheap electricity, gas, and water. Unemployment is another major issue. Unemployment hovers around 9% (fao.org, 2019). Argentines have access to free education, but there are not enough public schools. Some parents have to pay for their children to go to private schools to have access to a better education. Argentina is seen remaining in recession in 2019, as interest rates, stubbornly-high inflation, and shrinking public investment hit domestic demand. The surging agricultural production and a weaker peso will benefit external intities, meanwhile budget restraints improve fiscal metrics. Political uncertainty ahead of October's election pose downside risks. The forecast analysts see the economy contracting 1.4% in 2019, which is .1 % points from last month's, before expanding 2.1% in 2020. Last year, it cost 35 pesos to buy one US dollar but today it cost nearly 45. The central bank raised interest rates from 27.25% to 30.25%. When the currency keeps dropping, it will raise again to 33.25%. Today with the currency still in freefall, rates were raising at 40%. (<https://news.sky.com/story/why-argentinas-economy-is-in-trouble-again-11358456>)

Many countries in the world struggle to produce enough food to feed their people. That is not a problem for Argentina. It can produce enough food to feed its population eight times over. Yet, as the country's economic crisis worsens, a growing number of its people are going hungry (www.ifrc.org). Malnutrition is a major problem for the poorest population who occupy the villas miserias (slums) and can only work low-paid jobs such as shining shoes or working as street vendors. Health Ministry statistics show that every year 25 children in 1,000- or nine times the national average- die of malnutrition related problems in the northern province of Tucuman. Eighty percent of children under the age of 14 living in and around the provincial capital are poor. Unfortunately, the economy does not seem to improve, and the problem is getting worse. There are not enough programs to help people meet basic needs. This affects the poorest population the most, including children, women and the elderly. Children without proper nutrition can result in both short and long-term, irreversible, negative health outcomes. I have come up with three solutions that will help with malnutrition, education, policy & governance, and spoilage & waste in Argentina. These three solutions have pros and cons but all

have more pros than cons. The first solution to this problem is food banks, the second solution is community gardens, and lastly hydroponic trailers.

A proposed method to prevent malnutrition would be to create food banks in the poorest neighborhoods. Food banks would stock and supply food free or for minimal cost to people in need. Agribusinesses, restaurants and supermarkets purportedly waste 16 million ton of food each year (fao.org, 2017). Businesses who donate would receive a tax credit to encourage them to help others. This will help the community because this will not waste food, but instead it provides food for people in need. I will make sure that all workers wear gloves, hair nets and wash hands before touching the foods to prevent any diseases.

A proposed method to prevent food insecurity and malnutrition would be to create food banks in the poorest neighborhoods. Surprisingly, agribusinesses, restaurants and supermarkets purportedly waste 16 million tons of food each year (fao.org, 2017). Some of this food is spoiled, but a large part of this food could be used in food banks to feed people that are in a state of food insecurity. If food businesses donated food before it spoiled, it would feed even more people. I propose that businesses who donate would receive a tax credit on a sliding scale to encourage them to help others. The tax credit could be on a scale according to the quality of the food donated and the location of the donation. Businesses must follow proper food handling procedures. Since many food insecure people live in rural areas, businesses that made the effort to transport food to areas of greatest need would receive a larger tax credit. I would have members of the receiving communities manage the donated produce. Some of the excess could be canned or dried to preserve, and unused produce could be composted. This program would actually tie into my second plan of community gardens. Since the original writing of this paper, Argentina's government has instituted a new law that supports my first intentional effort, "Argentina's food waste law, which encourages food businesses to donate surplus produce to food banks while protecting them from prosecution, has entered into force."

Small garden plots and poultry could also be a sustainable way for families to make ends meet with their food supply. Community gardens would be created for those without access to backyard land. Community gardens is a piece of land where a community member can rent the land and plant their own food crops. People could rent a space at an affordable price and cultivate their own vegetables. Families would also have the opportunity to raise chickens to get eggs and meat. I would institute educational training programs for raising poultry and in techniques in food preservation, such as canning (preserve food in a can), so people could utilize the food they grow throughout the year. Composting food scrapes and chicken manure will add to the nutrient and soil quality. Finding land to cultivate at an affordable price may be problematic; possibly, I could incentivize that also. Other difficulties that may arise are people taking fruits and vegetables from other tenants, and people not willing to learn best management practices.

Hydroponic trailers/pods, similar to Freight Farm (<http://www.growtainers.com/>) or Growtrainers (<http://www.growtainers.com/>), are trailers that have hydroponics units set up inside. Hydroponics is the process of growing plants in a substrate and nutrient solution. This would be helpful for people living in the city to grow their own vegetables and have access to organically grown foods. It may also be possible to extend the growing season with this kind of system. Solar panels could be installed on the roofs of these trailers to provide energy for water pumps and heat when needed. This method could work the same way as the community garden having the same pros and cons. However, hydroponic production does afford the opportunity to help kids to learn about problem solving, plant growth requirements, and nutrient management, and indirectly about biology, chemistry, ecology and sustainability.

Many families in Argentina are facing crippling poverty. Food insecurity negatively affects people's ability to work, their health, their ability to learn, and further promotes instability in the government (<https://borgenproject.org/how-poverty-effects-society-children-and-violence/>). Providing food satisfies an immediate need, while teaching people sustainable agricultural practices gives them the ability to provide for themselves and shows them the power of working together as a group. Looking back through history, agriculture has shaped and reshaped our society. If Argentines learn these new ways of farming, it might be possible for people to get new business ideas and reshape their own space in their society. Once these techniques are learned, people can modify systems and take projects to a larger idea and become entrepreneurs. A community leader, most likely from a community nonprofit, should be in charge of the project, initially. The community should provide the labor to support these projects. It is important that everyone in need of meeting basic needs such as food in the community contribute to this project. Rules should be implemented such as keeping boundaries, not stealing, and keeping the place clean. In order to succeed, people will have to help each other and empower each other.

Malnutrition is a problem that affects a large part of society in Argentina. According to my research, food banks, community gardens, and hydroponic trailers have the potential to teach people to provide for themselves. Food banks can be done anywhere in the country to feed people that are in a state of food insecurity allowing businesses to donate food before it spoiled. On the other hand, community gardens allow people to cultivate their own vegetables and also raise chickens for meat and eggs. This is also an opportunity to provide education to children and adults. Hydroponic trailers are great for cities where there is not enough land. This will teach children and adults about how to grow plants without soil. This will also provide food for people. These solutions are a great way to help the Argentina with malnutrition without spending a lot of money. By helping people become more food secure, educating them in best management practices, and learning to work together, I believe all Argentina's people can become more independent and self-sustaining. This will help to create positive policy changes which will elevate the country and all its people.

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