

### **Nicaragua World Food Prize Paper**

Nicaragua is a country in Central America, that is home to a variety of geographical wonders and animals. Many volcanic territories and unique species of aquatic animals reside here. Situationally, the health and safety of the citizens in this country is threatened. It is threatened by vector-borne illnesses, such as the Zika Virus, among others. This issue can be resolved with mention to certain statistics of the country and how to use these to formulate a realistic solution. This paper covers how a health issue is handled, specifically one that is new and not fully understood.

The population of the Nicaragua is 6,319,689, which was sourced from United Nations Estimates (Nicaragua Population (LIVE) 2018). With this, the Urban Population of the country is 62.4 Percent urban (CIA World Factbook 2018), which is equivalent to 3,960,712 people. The rural population of the area is 40.89%. The government established in the Republic of Nicaragua is a presidential republic. The system is a civil law system, with similar function to our supreme court. (CIA World Factbook 2018)

Measured out, 42.2 percent of the land is used for agriculture in the country. With this 12.5 percent is arable land for crop use (CIA World Factbook 2018). The average farm size in Nicaragua is 5.99 hectares. This can be compared to a regulation rugby sports field, of one hectare in size. This means that the average size of a farm is around five to six rugby fields. (FAO 2013)

The climate of the country in the lower parts of the generally hilly terrain are tropical, while the higher areas are much cooler in comparison. The geographical terrain is filled with long coastal pastures that elevate to mountainous regions of the country, with volcanoes making up the area in those risen mountainous regions. (CIA World Factbook 2018)

The typical family size of Nicaragua is an average of 4.9 people that are in a single house (ESRI 2013). This is collated with the fact that this country has low average income. The dwelling in which they inhabit are made of flimsy and cheap materials, sometimes lacking roofs to these structures. Their diet is consistent with traditional Nicaraguan food, including plants native to the region. These plants include, rice, maize, legumes, and peppers of the location. These plants are used in part with such meats as ham and chicken, which are very common in Central America.

Budgeting traditional food items can be as easy as going to a local McDonalds; their selection is very similar to a traditional Nicaraguan restaurant. Most of the food in Nicaragua is low in cost and can be found anywhere in the country. Many meats and beverages are mixed in with coconut milk and/or fried peppers and mint. This is the tropical diet of many and is traditionally/culturally enjoyed in restaurants and market locations. (Hubbard 2018)

The general field of jobs in Nicaragua are based around agriculture. This is for the large economy based on farming and harvesting tropical plants, of the three main used, beans, cassava, and cotton are the most prominent of the country. The average wage for a Nicaraguan Republic citizen is an average 370 United States Dollars. (FAO 2013)

Families of Nicaragua have access to education but children are only obligated to go to school until they turn twelve. This alarming information can be tied to the fact that child labour in the Republic of

Nicaragua is still prominent. The healthcare of the country is remarkably cheaper than it is in America. It has high quality services for lower prices. One problem though is accessibility with rural regions; it is considerably low. (Lakhani 2015)

A large majority of the urban population has access to clean water in Nicaragua (around 99 Percent). The rural population has an unimproved access to clean water that is around 30% of the population. In terms of sanitation, the populations of each have an improved 70% Urban and 69% rural, leaving a meager 13% with unimproved access to sanitation facilities, which is noticeable but not substantial. (Paho 2012)

The barriers of many to obtain a decent salary, that can support an average family of 4.9 people is challenging due to the fact that the average salary of this country is low. Nutritious food can be found at affordable prices but needs to be verified to have been sanitized and made with purified water of the region. (Lustig 2019)

One topic concerns me over the medical safety in Nicaragua. There is a major concern over aid and spread of infectious diseases in the urban and rural populations. The degree of infectious diseases in Nicaragua is high. The common infectious diseases are of foodborne, waterborne, and vectorborne origins. Some of the most prominent diseases include the Zika; the ArcGis map given shows this, which is spread in its most common manner (through mosquitoes). (CDC 2017)

My passionate interest in epidemiology is something that I take very seriously. The control of infectious diseases from person to person is vital to ensuring that the rates decrease due to actions taken, because a reliable and lasting solution is needed. Not only does the general population need attention towards this, but the animal life as well. The economy is based around agriculture and livestock, which could potentially affect income if a large group of livestock are infected. Contagious infections could be diminished in a series of ways. Reduction teams can combat an emerging epidemic, retrained medical workers can engage with the community to utilize known methods to reduce the impact of the disease for infected. Controlling their countries medical shipment until levels of infected are lowering due to different forms of treatment being supplied is another effective method, ensuring that nominal levels of materials are being supplied by neighboring or participating countries.

The present severity of infectious diseases in Nicaragua are notably high for the region. Hepatitis A and typhoid fever can be transferred through unclean food, and diseases such as malaria can be transmitted through mosquito bites, which are some of the most prominent examples of infectious diseases in the country. (CDC 2017) Diseases spread by mosquito bites are more commonly spread in rainy seasons, because for mosquitoes this is the proper time to breed, with much standing water being produced from the tropical weathers.

Trends in general for such impacting diseases as zika; (the ArcGis map given shows this) have seen a noticeable decrease due to local governments treating the infection or preventing it; the ArcGis map given shows this. The disease had peaked in 2016 and has seen gradual depletions of number infected in recent years. For other diseases mentioned, the trends are consistent and don't see any noticeable change. (IAMAT 2019)

Local governments have used methods like spraying houses perimeters to create an invisible barrier between the people and the potential mosquitoes. Removing standing water and using updated methods to treat the zika viruses (The ArcGis map given shows this) have decreased the number of infected in the past two years for Nicaragua. These methods are used by neighboring tropical countries and islands, working remarkably well for them. For any other disease mentioned methods are to be developed for treatment and decrease in number of infected.

As Zika diminishes in urban populations, rural population have a consistent depletion in infected numbers but still requires attention in order to fully eradicate the affliction. (CDC 2017) This could be improved by increasing sanitation and updated methods of spraying for mosquitoes consistently around houses. In terms of other infections like Malaria and Typhoid more needed attention should be brought by similar methods to diminish Zika (the ArcGis 0.3 map given shows this) through studying mosquitoes (*Aedes aegypti*), already infected individuals of the virus (malaria) and the sanitation of food and water for typhoid fever. (IAMAT 2019)

Children affected by the major, Dengue (Balmaseda, 2006) virus showed as they get older from five years to fifteen years, symptoms and immune systems responses started to occur due to the environment in which they live in remarkably increased as their blood levels were tested. For sexually transmitted infections, HIV saw an increase in female to male adults infected, from ages fifteen to forty-nine (2001-2009). Elderly people and common infectious diseases of the area haven't been indexed.

Marginalized populations throughout Nicaragua are heavily affected by afflictions such as Malaria. Rural regions, which support indigenous populations in the North and South Atlantic Autonomous Regions, are heavily affected by malaria. For the decreased infrastructure of these regions it is a serious challenge to give out Medicare and preventative solutions to this affliction. While this affected much of the rural regions, *Anopheles albimanus* affects all regions of the country. This is the countries main infectious disease (vector borne illness).

The environment is responsible for new diseases appearing and affecting the regions of Nicaragua. Such diseases as leishmaniasis are seen to be appearing as rural regions start to develop agricultural areas of jungle regions. Unplanned urbanization is also responsible (#6 2007).

Nicaragua is a country in Central America, that is home to a variety of geographical wonders and animals. Situationally, the health and safety of the citizens in this country is threatened. Explanations were offered as to how to control and diminish these issues, from different methods of spraying, to modified mosquito breeds, and the improvement of sanitation. This list is configured to fit what Nicaragua needs most to take control of health issues in the country.

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