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Keeping A Bio Diverse Peru

Peru is known as a developing country in South America with a population of 32,551,815 people (Worldometers, 2019). The country of Peru, better known as the “Republic of Peru” is located in western South America and is bordered by the countries of Brazil, Columbia, Chile, Ecuador and Bolivia as well as the Pacific Ocean. There is a lot more to Peru than just beautiful sightseeing locations such as Machu Picchu and Lima. In the cities of Peru, individuals and families financially benefit from the resources and opportunities available in higher populated areas. In the rural areas of Peru, it is a different story. There are many families living in poverty with little access to basic needs like healthcare, education for girls, food, and jobs. To put it on a wider spectrum about 3 million Peruvians lack access to safe water and 5 million lack access to improved sanitation (Food Security Portal, 2017). Peru’s challenges are as diverse as its terrain. Peru faces several barriers in their agricultural sector. Some of them involved government policies on the lines of exports as well as regulations that impact the production of commodities. An example is the goal of the government to increase cotton production. This helps with the push for an increase in the textiles industry, but doesn’t directly address the concerns of food insecurity. (Peru - Agriculture). One particular area where I feel a small practice can be added to make a big impact is in farming, specifically sustainable agriculture. Sustainable agriculture aims to meet society’s current food needs while strategically planning for future food needs. I have a goal to help Peruvians improve their biodiversity, which will in turn increase their crop production and will maximize the nutrients each fruit or vegetable delivers to the Peruvian dinner table. More nutritious higher yields of the nation’s top producing crop, potatoes, will mean healthier Peruvians and increased exports.

It is concerning that about 6.9 million Peruvians live in poverty today, or that 35% of the population live below the poverty line (Food Security Portal, 2017). Peru has a very diverse climate so there are plenty of resources in certain areas, but in others there are not. In the highlands of Peru, the typical diet that people consume include potatoes, beans, soups, and rice. On the coast of Peru, the typical diet would include lots of seafood, plantains, and other tropical fruits. In rural areas of Peru a typical family size is known to be about 4 per household, and most of these families face limited access to basic needs for survival because there is an extreme income inequality and the weather has a big impact on whether or not a family is able to get access to basic needs (Food Security Portal, 2017). A lot of times you will see children working for their families because that is how they can become financially stable, along with the parents working two to three jobs a day. Lack of employment contributes to financial hardships that prevent the basic needs of survival from being met. The children in the rural areas of Peru also don’t have access to healthcare services like other children may around the world. Vaccinations are one of the items that are restricted due to the lack of health care services in the country (Food Security Portal, 2017). Considering all the highs and the lows within Peru there is one main occupation that stands out: agriculture. Agriculture and farming in rural areas of Peru are very important because this is what people are depending on in order

for them to get by. Knowing about the climate in Peru it is easy to say that some years of farming demand

more than others because the climate is so diverse, by creating and maintaining biodiversity in these areas a crop such as the potato, or any other crops, will not only have increased yields for local consumption or export, but they will contain a higher quality of vitamins and minerals which will improve the health of those who consume the foods.

Financial stability and physical health is greatly impacted by the region of Peru in which one resides. The regions with higher amounts of tourism have better local economies. Fourteen out of the 25 regions in Peru are very vulnerable to child chronic undernutrition due to insufficient access to different foods, the poor consumption patterns, inadequate childcare, poor nutrition practices, and the variety of low education levels (Humanium, 2019), are contributing factors to the cycle of food insecurity in Peru. Insuring biodiversity is one way to combat food insecurities.

Peru's farming land consists of only 4.14 million hectares, or 10.4 million acres, throughout the entire country compared to Iowa which has 26,256,347 acres devoted to cropland. The main cash crops that the farmers in Peru produce are asparagus, corn, rice, coffee, and potatoes. (Peru Information, 2014)

The solution that I am promoting includes creating and/or maintaining a biodiverse Peru. Biodiversity is the variety of all life on earth in many different forms and interactions. Many scientists say that biodiversity is a very complex subject, because it is. It is composed of many levels starting from genes and eventually working its way up to reach the entire ecosystem. It involves anything and everything when it comes to life on earth and how those things work together to create the best conditions for life. It is important to maintain a balance between all living things. If one piece of the puzzle suddenly isn't supported and goes missing, then the life cycle is off balance and quality of life suffers.

Some of the common living things you would see in Peru include; a wide variety of birds approximately 1,800 different species such as the toucan, macaw, parakeet, stork, humboldt penguin, hummingbird, flamingo and the national bird Andean Cock-of-the Rock. The many species of birds in Peru have played a major role in the country's economic success, because the concentration of the guano deposits that are exported throughout the world are used as fertilizer. (Chimu Adventures 2016) Peru also has 500 species of mammals. Some of commons mammals include the puma, jaguar, spectacled bear, pink river dolphins, giant otters, giant anteaters, collared peccaries, tapirs, armadillos, deer, several species of monkey, llama, capybaras, and alpaca. Peru also has over 300 different species of reptiles and amphibians and over 100 of them are considered endemic. This means their habitat is located on the eastern side of Europe also known as the Amazon rainforest. Some of the reptiles and amphibians include anacondas, black and white caimans, turtles, boa constrictors, and the poison dart frog. This type of creature is native to the Amazon rainforest area. It's also one of the most poisonous species on the earth. As you can see, there are many species in the country of peru. So, keeping a balance of plant life is important, as well. Like mentioned above, if you have one piece of the puzzle missing, the life cycle is off balance and the quality of life suffers. Many of the plants in certain areas of Peru are nearing extinction, solely because people

aren't taking good care of the environment. Leaders in Peru have already started taking the necessary steps needed to keep these natural attractions alive. Some of the common plants you'd see in Peru include the Amazon Lily, Machu Picchu Bamboo, Peruvian Sundew, Peruvian Wild Tomato, Abra Malaga Mountain

Fern, Peruvian Bonset Flower, Peruvian Onion, Cajamarca Dogbane, Tayuya, and the Totora. Many of these plants are suffering due to deforestation and it's critical because several of them are used for medical purposes.

Specifically, I would like to see animals and plant life protected, so that Peru can continue to stay biodiverse and create environments that many living organisms can thrive in, not only that I would like Peru to be able to share the diverse climate with future generations. There are millions of acres of land in Peru that are considered paper protected such as regions in the Andes mountains and Coastal deserts. Even though Peru has already started planning ways to physically keep these areas protected they are continuing to face challenges. (World Wildlife Fund 2020) It is easy to say what needs to be done, but it is a lot harder to follow through with specific plans when there are individuals that constantly disobey the rules and continue with urban expansion that potentially destroy the ecosystems that are trying to be preserved. Peru needs the mission of biodiversity to stay a priority along with funds for the longevity for their biodiverse status to remain. This can happen through proper legislation and education so future generations can understand and benefit as a whole. The benefit in this scenario would be nutrition. When you have several ecosystems working together the food produced is more nutritious, which increases health because there is a bigger variety of minerals and vitamins coming from each source. (Biodiversity and Nutrition 2020) Biodiversity is very crucial to nutrition because it not only affects the human body, but it affects the world food production, too. Biodiversity does a great job of ensuring sustainable productivity of soils. It provides the several needed genetic resources for not only crops, but livestock and marine species harvested as food. The connection between these two topics goes more in depth than people realize, for example, the ecosystem, the food production as an ecosystem service, the species in the ecosystem and the genetic diversity within species. The nutrition composition between certain foods (different varieties, cultivators, and breeds) can differ in so many ways, which can affect the micronutrient availability in a person's diet. Having a healthy local diet is something that is also important, for example, when a person buys natural raw honey from a local beekeeper. Many people believe it helps with seasonal allergies...and that's because it does. The natural raw honey stabilizes cell membranes that release histamine, this is what commonly triggers an allergic reaction. The raw honey also contains bee pollen and another substance called bee propolis. This is what boosts the immune system and builds immunity to the allergens. This is how biodiversity and nutrition play a major role when it comes to the human body and agriculture as a whole. In comparison, Peruvians would be able to take locally grown produce, such as, potatoes, asparagus, rice, and coffee and build up their immune system.

Working with the Biodiversity Finance Initiative (BIOFIN) would be one way education and proper legislation could be put into action and maintained. Finance mechanisms such as these are able to ensure important ecosystem services, preserve biodiversity, and manage specific resources needed in order to save the natural ecosystems that are slowly being destroyed. Organizations like BIOFIN are very aware of

the impact biodiversity has on a society because it contributes to human well-being and a more healthy environment. As of right now there is a major funding gap for a project such as this to succeed. 381 Million USD is what it takes to reach this goal. Currently, the government is trying to recreate their federal budget in order to achieve the desired results. Some options for solutions include public investments, grant competitions, public works tax deductions, Biodiversity and Business Initiative, Green Protocol for the Peruvian Financial System, payment for Ecosystem Services Mechanisms, environmental compensation, and investment funds through Forest Plantation. (Peru Biofin 2017) All in all, the main idea is to spread the word. In order to save the natural ecosystem around them, Peruvians must come together to realize the bigger picture.

Like mentioned before, the leaders of Peru want their country to remain one of the top ten most diverse countries in the world. They want to see their homeland protected. The leaders want future generations to get the chance to enjoy what their ancestors spent hundreds of years preserving. Yes, this topic is very broad and there are many different directions you can go but, if you want change you have to start somewhere. Educating Peruvians and providing factual evidence about the benefits of biodiversity is where we should start. Like said before, partnering with organizations that already have a general idea about the process and challenge would be the path to take. The idea is to persuade individuals to want to keep their biodiverse status. You can do so by using visuals and passionately speaking about the importance of biodiversity in the world of agriculture and the importance of nutrition in comparison to the human body. If all goes well, Peruvians would be able to preserve their biodiverse terrain and produce higher quality of foods. These higher quality foods ensure better nutrition as well as health in the long run. Many leaders of Peru along with organizations have already come together and have visualized what life would be like if they didn't have a biodiverse climate and they aren't pleased with the results. They are doing everything in their power to ensure the protection of their natural ecosystems, all that is left is for citizens of Peru to be on the same page.

Another benefit of a biodiverse climate and food production is trade. Since Peru is a developing country in South America, and oftentimes land space is an issue the idea of having multiple ecosystems in one terrain is very crucial. Not many countries have the opportunity to produce high quality foods because there is nothing else in the ecosystem to make it stand out. Even though China, India, the United States, and Brazil produce a majority of the world's food supply, Peru can easily bring something different to the table by preserving its natural terrain and offering higher quality of foods for many years to come.

“The greatest threat to our planet is the belief that someone else will save it.”-Robert Swan I hope that Peruvians recognize their responsibility in protecting the diverse climate and maintain knowledge as to why it is important to do so. Even though there is a struggle with individuals not being on the same page it is important that humans come together to save the lives of many. “Many hands make light work” as they. By working together Peruvians will be able to make a difference. There are several different organizations and operations throughout the country of Peru that need funds in order to function properly. These funds will allow Peru to protect wildlife and ecosystems that their ancestors have preserved for them over a long period of time. Leaders all across the country are willing to take a step and make a difference that allows everyone to enjoy the beautiful world around them. Biodiversity is something very

special, continuing to be aware, and learning about the world we live in will help preserve the natural environments. not only in Peru, but across the globe.

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