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Panama, Sustainability

Panama: Putting an End to Slash and Burn

All countries are faced with challenges regarding food security and stability. The issues of food security affect every aspect of life for people in those communities. Food security challenges income, equal opportunities, and education. By having a diverse group of people come together to brainstorm solutions, the world can minimize the effects of food insecurity. One way of combating world hunger is sustainability. Sustainability addresses the amount of resources we use now and works to replenish them for the future generations. Sustainability also balances the environment's well being and societies' economic growth. The country Panama, found in Central America, is already a leader in sustainability. Panama is one of the three carbon negative countries in the whole world. (Mission Panama). This means Panama emits less than 0 carbon dioxide and carbon dioxide equivalent greenhouse gasses. There is still more work to be done.

Panama's population consists of approximately 4.5 million people. 68% of the population being urban and the other 32% of the population being rural. (Worldometer). Panama has a democracy where people vote to elect their president. Within Panama 582,000 hectares of land are permanently cultivated. The average farm size in Panama is 7.17 hectares. (Country Studies). These hectares of land are used to produce exports like rice, maize, beans, bananas, pineapples, oranges, onions, and potatoes. These crops are all exported to other countries because Panama is the crossroad between the two Americas and because of the Panama canal. The geography of Panama accounts for why certain crops are cultivated. Panama has a tropical climate which is hot and humid. The rainy season in Panama occurs from May to January and the dry season is from January to May.

A typical family in Panama looks different depending on if they live in an urban or rural area. In urban areas families often have two or three children. Rural families tend to have four or five children. Urban families often have grandparents living in the house as well. The grandparents assist with childcare and chores around the house while the parents are out working. Most homes in Panama are made from brick. The roofs of the average Panamanian house are made from zinc. Air conditioning is not commonly found in Panama and houses are built to increase air circulation. The typical family meal consists of meat, rice, and beans. The meat is often fish because Panama is a big fishing hub since it is so close to the ocean. Plantains are also a meal staple because they are a common crop that grows in Panama. Families in Panama get food from stores or outdoor market vendors and frying food is common, depending on what the meal is.

Common jobs in Panama include banking, construction work, foreign government agencies, hospitality, non-profit, sales, sciences, and technology. The average yearly salary is 25,319 USD. (Timedoctor). Because of Panama's location, it has become an outsourcing hotspot and has a fast-growing economy. In Panama, public universities are free, but many Panamanians opt for private schools because it is believed that they offer a better education. The public hospitals in Panama are funded by the Social Security System and the Ministry of Health, making them almost free and very affordable. Many Panamanians do not like public healthcare because there are long waiting periods and public healthcare does not give the quality care that you can get at a private hospital. Those who can afford private healthcare try to get it. Rural areas do not have as much access to healthcare and also lack education opportunities to be able to get higher paying jobs in the future.

In Panama the water is safe to drink in most areas because the Panama Canal Company has such a high standard for hygiene. Areas like Bocas Del Toro and other developing islands do not have reliably safe water. 96.7% of Panama had access to electricity in 2020. (Tradingeconomics). Road conditions can vary with roads being well maintained, badly paved, or completely unpaved. Road lanes are often narrow and it is common to see potholes on roads outside the main cities. In Panama there is a large poverty gap and a high poverty rate. There is an extreme wealth disparity in rural and urban areas. Lack of money and lack of support for rural areas can cause a lack of availability of nutritious food and other resources. Local markets are very common to see as well as street vendors selling a large range of goods.

Panama already has several existing organizations trying to combat sustainability problems, but sustainability continues to be an issue. This issue will continue to worsen unless something is done to combat it. Climate change, deforestation, water pollution, and poor farming techniques cause Panama to struggle with sustainability. Both rural and urban populations struggle with getting healthy and nutritious food because of the lack of sustainability. It also causes a large poverty gap because people have to pay more to get certain foods because they are not always available. Minorities often live in rural areas of Panama, especially indigenous groups, and they do not have sustainable options available to them. In rural areas slash and burn is used to prepare the land to be farmed. When using slash and burn, the land is cut and burned to prepare for being farmed. Slash and burn has been a technique passed down through generations. The problem with slash and burn is it ruins the land long term. Over time the soil is ruined and it becomes harder to yield crops. Slash and burn also ruins ecosystems and kills animals and plants in the burning zone. Not to mention it also releases carbon gasses into the atmosphere contributing to global warming, and forces animals to flee their habitat and find a place to live elsewhere making certain areas overpopulated. Deforestation plays a large role in lack of sustainability as well. The runoff that naturally trees would have stopped with their roots has begun to go into the farming land and harm the soil making it extremely difficult to plant crops. Environmental sustainability allows natural resources like air, clean water, and wildlife to stay abundant.

Most of these issues can be addressed by finding a way to sustainably farm and guarantee a food supply for the current generation as well as future generations. A benefit to sustainable farming is it also helps the environment. One way to make farming more sustainable is by using different equipment. A machine called a no till planter is used in places around the world. This no till planter does not plow or break up the soil. It works by making a very thin cut through the soil. This cut is thick enough to fit a seed at the right depth. Normally, no till planters are quite large, so a smaller version would have to be made specifically for the smaller farms of Panama. Large no till planters are also expensive, so by making smaller versions it would be more cost effective. Along with farmers using these no till planters they would have to be taught how to use the machines safely and effectively. The government could provide farming lessons to improve farming practices. Also, because of Panama's climate, plants are able to grow year round. Planting different crops will help improve soil quality and generate more yearly income. With more crops, runoff would not be as big of a problem because they can hold the soil more effectively. To create these specialized no till planters that are smaller and able to plant different types of seeds, a public private partnership would be needed. The public would be represented by government agriculture and conservation agencies. The private sector would be represented by businesses who sell agricultural products grown sustainably. The project would be funded by loans and grants. Once the no till planters are in use, crop production rates will increase and it should pay for itself. The crops will also be exported to areas willing to pay more money for sustainable crops. Community members, the government, and organizations all play a role in this project. Farmers in the communities would use the no till planter to better ensure good soil for planting and for future planting. The government would make diplomatic decisions regarding where the crops are exported to, laws to ensure that people get a fair share of the crops, and make infrastructure to accommodate newer sustainability operations. Organizations would supply the loans and grants, and classes to teach about how to sustainably farm. Foreign trade policies, market profit policies, environmental policies, financial assistance policies would all need to be put in

place by the government so that the project would succeed. The process of slash and burn has been a generational process so people might be against changing it at first. Teaching farmers alternative methods of farming can be a challenge. This problem could be combated by having test areas to model that growing sustainably can be beneficial. Sustainability practices may also come with higher price of the food so people would have to adjust their mindset on if sustainability is worth the higher price. Sustainability is not only about the earth, soil, and water quality, it is also about ensuring that those resources are used responsibly. As well as generating sustainable income for the farmers. This would help lower the poverty gap in Panama between urban and rural areas, meaning rural families would be able to have more equal opportunities. Sustainability practices are also an investment in the future of Panama's food supply.

Overall, solving the sustainability issue could improve many different aspects of life for people in Panama. With sustainability practices put in place, Panama could truly flourish. Getting rid of slash and burn is a large step in addressing the sustainability issue. Better quality of life benefits everyone. Incorporating the new knowledge being learned about what hurts and harms the environment and making changes in farming practices is key to bettering the planet. Eliminating slash and burn and implementing no till planters are just the beginning of improving the planet. These small steps forward are crucial. Sustainability not only protects the current people who live on the planet, but also all those that will follow. The future generations deserve to live in comfort, not struggling to find resources. With sustainability they can.

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