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Nauru, Sustainable Agriculture

The Rise, the Fall, and the Comeback of Nauru

What was once one of the most financially prosperous countries in the world is now a deserted island whose people are desperately begging for aid. With a story that spans from rags to riches, and not particularly in that order, Nauru's story is far from a fairytale. It can certainly be said that Nauru has had a unique and unprecedented history.

Nauru is a small island country off the coast of Australia. With a population of a mere 13,000, Nauru feels more like a small town than a country (World Population Review). Nauru is not a tropical island abundant with native fruits and plant life as one might imagine. Instead, it is a land with infertile soil, droughts, and few agricultural commodities. Nauru is one of the least visited countries in the world and has virtually no appeal to outsiders (World Population Review). However, in 1975, Nauru had the second highest per capita gross domestic product in the world (Dauvergne). This raises questions and eyebrows. How can this be possible? The answer is simple: Phosphate.

Phosphate is a non-renewable resource that was found to be abundant on Nauru. Once this discovery was made in the early 1900s, the mining quickly ensued (Cho). Over the next 80 years, Nauruans were practically swimming in wealth. "In 1968, more than 35 million metric tons of phosphate had left its shores — enough phosphate to fill dump trucks parked end to end from New York City to Los Angeles, and back again"(Dauvergne). It is extremely rare for a country of such small size and population to have a surplus of any resource, but for that resource to be a rarity and a highly sought out ingredient in fertilizers all around the world, Nauru had essentially hit the jackpot.

In the 1970s, Nauru's economic state was rapidly improving (Dauvergne). Nauru earned about 3.6 billion dollars from 1968 to 2002, and about 1.8 billion dollars of that income was pure profit (Dauvergne). Nauru's leaders attempted to be proactive, knowing that eventually the phosphate would run out. They invested in hotels, companies, and properties across the world. Seemingly all was well, and Nauru felt like one of the faraway paradises from a Jimmy Buffet song.

However, in the 1990s the phosphate rush had died out, the money stopped pouring in, and it seemed that all Nauru was left with was the tall excavated pillars from the mining that looked like jagged knives raised from the ground (Hallett). When Nauru began to need funds, they were devastated to find that their investments proved to be unsuccessful, and the country began to fall apart economically. Nauru had such few natural commodities to begin with. After the final shipment of phosphate left the shores of Nauru, wild pigs, coconuts, and a few small fisheries are all that remained. Today, there is no variety or stability in food production on the island at all. Even if Nauru wanted to attempt to grow new commodities, now a bigger problem exists. The mining has ruined nearly 80% of the land mass on Nauru (Dauvergne).

Due to the lack of agricultural independence, Nauru imports around a whopping 90% of its country's food (Nauru Imports and Exports). However, Nauru is not importing healthy foods like lean meats and vegetables. Because Nauru is no longer financially flourishing, most of the food they are importing comes in a can. With a diet of mainly instant noodles and soda, this next statistic will come as no surprise. Over 40% of Nauru's population suffers from type 2 diabetes (Hallett). The country's obesity rate is 39.7% higher than the global average (Hallett). The people of Nauru want to be healthier; however, they lack the land resources and funds in order to do so. These people feel trapped and hopeless, with many voicing the opinion that they are all better off to abandon their homeland and try to immigrate to another country (Takahashi).

The problem has been identified; there is no sustainable agriculture in Nauru. In order for this to be solved, a goal must be formed: By the year 2050, Nauru will be importing only 50% of its food, and the country's obesity rate will fall to 20% over the global average. These goals will not be easily achieved, but these improvements are completely necessary to ensure the survival of the nation and the health of its people. It must also be noted that these goals do have a deadline. Nauru is in a place of desperation, and the time of action is now.

To achieve such ambitions, Nauru must begin to produce a new variety of products. In order for this development to occur, the unfertile land must be addressed. In America, the benefits of hydroponics have been studied, applied, and proven valuable. Hydroponics is the process of growing plants in nutrient rich solutions rather than in nutrient rich soil. Public buildings and other shelters on the island can be converted into greenhouses that can be home to small scale hydroponic systems. Nauru could use their unfiltered salt water to cool these greenhouses to promote efficiency (Heggie). These hydroponic greenhouses could be used to grow crops in a completely soil free operation. This could be a possible answer for Nauru due to their poor soil content. If Nauru can implement the use of hydroponic greenhouses, its people will have access to fresh vegetables year round.

One reason Nauru's land is infertile is because of their water. Because Nauru is an island surrounded by salt water and struggles with improper waste management, obtaining fresh water for soil and irrigation is a challenge. A lagoon is located within the island, but it contains very brackish water (Dauvergne). Currently, there is an area in the Sahara desert where researchers are using solar energy to desalinate water, and in Israel, reverse osmosis has increased the use of desalinated water by almost 50% (Heggie). Reverse osmosis technologies do not have to be expensive and large scale in order to be beneficial. Filters can be placed in home water pumps, or at the water source of a pivot. If these types of technology can be implemented in Nauru, the salt water from the lagoon and the ocean around it can be used not only for irrigation and soil purposes, but also to provide the people of Nauru with more access to fresh drinking water. This will hopefully minimize their excessive intake of sugary drinks, and in turn, improve the overall health of Nauruans.

The majority of Nauru's natural forest was destroyed by the mining of phosphate, which is not a favorable circumstance for any agricultural life, but especially for agriculture that will be placed on an island in the middle of the sea. Nauru gets a lot of wind from the surrounding ocean, and now without trees to act as a natural barrier, no soil or plant is able to withstand this level of wind (Heggie). This means Nauru needs

to establish a tree line around the areas that will be cultivated. Because Nauru struggles with insufficient funding, this tree line could be established by the Arbor Day foundation, which is a non-profit organization dedicated to planting trees where they are needed most. Not only will these trees act as a barrier against the harsh winds, they will also help retain moisture from the unpredictable rainfalls and provide shade for the plants. Introducing trees to the island could potentially aid in the correction of several of Nauru's issues.

How will Nauru reclaim the 80% of their island that has been destroyed by mining? This is the most difficult challenge to solve. It will be extremely hard to create fertile soil in the middle of rigid barren phosphate barnacles. However, if this land is flattened out, it could possibly be home to livestock operations. Although livestock do graze, other methods of feed can be used and grass can be unnaturally laid in specific areas for grazing. If the people of Nauru can have a natural meat source in their diet, it will be a much healthier alternative than the sodium filled cans of artificial meat they import. Due to the reckless methods used in harvesting the phosphate in Nauru, it is difficult to determine the best course of action for these land owners to take in flattening these barnacles. It is wise to research and potentially mirror the methods that other phosphate mining areas have successfully implemented in their reclamation processes.

There are many retired phosphate mines in Florida, many of which were able to be fully restored. However, it is not feasible to use these same restoration practices because in America there are many regulations that must be followed and permits that must be acquired in order for mining to ensue. These precautions were not taken in Nauru, therefore the land is in a much different state. The only somewhat practical option is to bring in large drum roller machines and try to flatten small portions of the mined areas. These machines can be transported from nearby Australia. According to the Australian Government's Department of Foreign Affairs and Trade, Australia already provides Nauru with a small amount of foreign aid. Hopefully this job could be designated into that financial aid category to keep the price down for Naurans.

It is still necessary to address the struggle Nauruans have in choosing the right types of food that they import. This is not a sole consequence of their economic state, but can also be attributed to misunderstanding. The people of Nauru speak a language that is native to their homeland. Therefore, when they import foods from Australia and other countries, most of them cannot read the nutrition facts (Hallett). This issue should be resolved by the Nauruan government by attaching translated labels to the foods that they import so the citizens of Nauru can make informed purchasing decisions. If this is not possible, then classes should be provided to Nauruans to educate them in deciphering nutritional labels that may be written in other languages.

For Nauru to flourish, new crops must be introduced. Low maintenance crops such as Norman Borlaug's famous miracle wheat could be a beacon of hope for the island. If new farming techniques are to be a success for Nauru, then local farmers must be taught how to care for and harvest these new species. The farmers of Nauru also need to be educated on how to properly tend to their land and soil. In addition, citizens must be informed about proper trash, waste, and water management techniques. Because the island is so small, it will be a national effort in order for these innovative agricultural ventures to be

successful. The education of Nauruans is absolutely essential to the successful implementation of any solution.

All of these solutions will cost money. Where will these funds come from? Nauru is a member of the United Nations (World Population Review). Nauru should be able to receive aid from the UN at least in the area of desalination technologies which will segway into solving many of their other issues. There are still some funds from the phosphate boom that would be worth spending on projects such as these in order to improve the self-reliance of the nation. However, if these funds cannot cover all of the solutions listed, the priority investment should be the education of the people. If it is not possible for farmers on the island to have larger operations, then perhaps the people of Nauru could be educated in small subsistence farming techniques, such as home gardens. It is imperative that these citizens also receive instruction on how to better their environment and personal health. Nauru may not be able to flourish in the way it once did, but at the end of the day, small scale self-reliance is the ultimate objective.

Nauru is a misunderstood nation that has been critically judged for its rise and fall. However, to the people of Nauru, the island is their home. With the implementation of new technologies and the education of stakeholders, these goals are achievable. These changes will potentially turn Nauru into a self-sufficient and healthy nation. It is easy to judge the mismanagement of funds and blame Nauru for its own crisis. But for the betterment of our world and society, it is the duty of mankind to help our fellow brother, to help Nauru.

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