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Palau, Factor: Overfishing

Palau: Overfishing in an Ocean Loving Country

A country whose morals are completely involved with their ocean life; the whole country is known for their beautiful reefs, islands, tourism, and extreme variety in marine life species. Palau is a country that a part of the Caroline Islands, and is about 946 miles from the coast of the Philippines. Inside the 12 islands is a volcanic island called Babeldaob. There are lagoons, with the most common one being Palau's Southern Lagoon. There are over 700 species of coral according to the National Oceanic and Atmospheric Administration. Palau has one of the most diverse shallow water living marine life in the world.

Although their reefs and marine life are fairly healthy as of now, in recent years from recurring events, their marine life and reefs have been struggling. Along with the reefs, the ocean life has been struggling due to the overfishing that the country is doing to feed the citizens and from outsiders illegally fishing in its territory. This country almost completely depends on fishing for its nutrition. Also, fishing is one of the largest jobs in Palau. All of these factors counted, Palau is in need of a solution to help save their ocean, reef, and marine life permanently.

With a population of just under 22,000 citizens, with 88% urbanized and 12% rural, the people live between the 7 main islands and many smaller islands. President Thomas Esang Remengesau, Jr, has definitely changed Palau for the better. After being elected into office 4 different times, he has passed a ban on all commercial fishing; the Palauans enjoy the president's leadership from setting laws that prohibit the amount of fishing to stabilize the economy. "President Remengesau is now leading the historic effort of implementing the Palau National Marine Sanctuary. This protected, no-take sanctuary, established October 28, 2015 and covering 80% of Palau's territorial waters with the remaining 20% reserved for domestic fishing, provides even greater protection for Palau's environment while further enhancing Palau's tourism revenues. The world's sixth largest, fully protected marine area, the Palau National Marine Sanctuary is Palau's defining contribution to preserving the world's ocean resources," says, palaugov.pw.

One issue that is apparent, is the amount of land cultivated. Indexmundi.com states that 22% of the 177.2 square miles is permanently cultivated; 10.8% is arable, 4.3% is permanent pasture, but 87.6% is forest. Due to the warm, tropical climate and the winter weather of an average of 82 degrees Fahrenheit, Palauans are only able to grow certain foods. The foods that are grown are deep root foods, such as tapioca, taro, yams, banana, sweet potatoes, and more. The largest worries of the Palauan farmers are typhoons and a storm season that lasts typically from April to December.

An average Palauan family consists of parents, their children, and occasionally the grandparents. The

houses they live in are similar to a lodge; they are made out of hardwoods and canvas. In the main city of Koror, the capitol, the typical family diet consists of lots of fish that are locally caught, as well as imported vegetables, fruits, rice, and other food staples.

In a typical day, the father of the Palauan family works outside of the home. Some of these occupations may include builders, fisherman, farmers, government employees, or any sort of management job. The mother typically stays home and tends to the housework around the “lodge” and possibly taking care of the grandparents while the children go to school. Palauan children attend elementary and secondary schools. After graduating, the young adults may attend the Palau Community College, or other colleges in the Caroline Islands.

Healthcare is taken with a more natural approach. The Palauan culture is very intuitive on using herbal medicine. They believe that herbalism is the best medication. But for larger cases or more intensive medical scenarios, they transport the people to either the United States or the Philippines. With how developed Palau is, the typical modernized family has access to the normal necessities of electricity, clean water, roads, and local markets.

As stated before, a large problem in Palau is overfishing. As a country that values its ocean life so highly, it doesn't seem like it would be a worry, but it has always been a problem. In recent years, they have taken a lead on attempting to improve on the issue of overfishing, like I said earlier, President Thomas Esang Remengesau, Jr banned fishing 200 miles from any coast. The overfishing in Palau is costing the ocean tremendously. The fisherman that are contributing to the problem are not taking into account reproduction, the ecosystem, and the culture of the islands.

By using fishing as one of the only ways of income, Palauans are pushing the fishing stocks into the ground. Dr. Steven Lindfield from the Coral Reef Research Foundation stated that, “In Palau, like many other Pacific Islands, there is concern and consensus that fish stocks are declining, especially at the current time with booming tourism markets and increased demand for fresh seafood. A recent scientific paper by Prince et al. (2015) showed that the coral reef fish populations in the northern reefs of Palau, indeed have been heavily fished with most of the twelve species assessed having spawning potential ratios (SPRs) <20%. This level of spawning potential will result in a continued decline in fishery stocks if left unmanaged.” According to www.cia.gov, “The economy is dominated by tourism, fishing, and subsistence agriculture.”

Palauan children are battling a fight is obesity and malnutrition due to the lack of nutrient rich vegetables and fruits that the country has no room for, and citizens are stuck eating imported rice and other food that has little to no nutritional benefit. In 2016, knoema.com said that over half of the male population in Palau are obese and the female population is 58% overweight. According to www.cnn.com, “The

epidemic (obesity) began through the tropical region turning its back on traditional diets of fresh fish and vegetables and replacing them with highly processed and energy-dense food such as white rice, flour, canned foods, processed meats and soft drinks imported from other countries. One of the root causes of the change is the price tag. "All over the world, poor quality and highly energy-dense food is the cheapest," says Shaw. As demand for healthier alternatives remain low, their market is small."

I propose that cultivating the usable land is going to improve this country. By cultivating the 10.8% of arable land that is left in Palau, they would be able to make more room for farmlands, not only croplands, but also for livestock. Increasing the amount of land for farming would create jobs and boost the economy again.

Cultivating the usable land would help Palau in more ways that it would hurt it. Cultivating the arable land that is currently taken by forests is a dangerous idea, but Palau has so many thriving forests, it wouldn't make a big difference. The advantages of cultivation would be, the increased amount of sellable lumber, more jobs open to the nation, and the amount of cultivated land would increase significantly. The disadvantages of cultivating the arable land would be only a limited resource of usable land would remain, an increase of carbon dioxide, and possibly destroying land ecosystems. According to rainforests.mongabay.com, from 1990-2005, no jobs were taken or created in the foresting industry, also there are not any statistics on the value of wood in their forests. Cultivating farmland is a possible, but dangerous and risky way of improving the oceanic life in Palau. By removing the 10.8% of the arable land to make more land for crops, the Palauan culture would see benefits that would significantly outweigh the downfalls.

In further research, I have found an issue with the plan of cultivating arable land. The Food and Agricultural Organization of the United Nations says, "Palau's forested areas are owned by private landowners, communities and State Governments. Forestry management responsibility lies with the State Governments. Much of the land in Palau is privately owned, and many titles are disputed since proof of ownership is still often established on oral history. Palau is in the process of converting to a recorded title system of land ownership, and by statute, land ownership was supposed to be determined by December 31, 2000, 35 PNCA § 1302. However, particularly outside of more developed areas, land ownership disputes are still common, often involving lengthy litigation and appeals." In other words, obtaining the arable land that may possibly be privately owned and with no record of it being owned other than verbally stating so, it would be nearly impossible for the Palauan government to obtain this land to cultivate.

Another issue that makes this idea of cultivating land an even farther grasp, is animal endangerment. According to rainforests.mongabay.com, Palau is home to around 142 different animals living in its forests, 5.9% of which are endemic species to Palau, and .04% of their animals are endangered.

The proposal of cultivating land to increase the crops grown in Palau to help the economy, the health of citizens, and to aid in the prevention of overfishing is very far fetched. If this is a way the Palauan's believe that can help this country, it could be a large stepping stone. Realistically, the whole 10.8% of arable land cannot be obtained. Also, Palau has a reforestation rate of 5.3%. If the cultivation was gradual enough, plant and animal species would not be affected as intensely.

I believe another way to improve Palau may be to increase the amount of other foods eaten. By doing this, the marine life would have enough time to reproduce and the process of overfishing would slow down. It would also encourage the citizens to introduce new nutrition's to their diets.

The second proposal of aiding Palau, is to increase the imports of other foods. By increasing the budget for imports, the government could be the encouragement to serve the nation a healthier diet, and not depend so much on fishing. Although fish very good for the diet by providing good fats and omega-3's, you can receive other healthy fats from imported nuts, avocados, and many other fatty foods. The International Trade Center says, "Palau's main imports are oil, fish, machinery and equipment. Japan, the US, Singapore and Republic of Korea are main import partners. It is a member of the Pacific Island Countries Trade Agreement (PICTA)."

For the most effective way to stop the issue of overfishing, fishing seasons should be created. Creating certain seasons for certain fish would be extremely beneficial to the species that are struggling most, for example the 65% of tuna that are harvested from the waters of Palau at a continuous rate. There are already some conservation laws set in place, but by extending them and implementing them more harshly, it could really benefit not only the ocean, but also the Palauan people. The problem is due to lack of law enforcement. "Scarce law enforcement is a major problem in Palau. The maximum penalty for state violations are also generally quite limited, and resources for law enforcement are almost nonexistent. Only one of Palau's 16 states has a fulltime legal counsel, and most states do not have full-time enforcement officers..." says the Food and Agricultural Organization of the United Nations.

By creating the seasons for fishing, there would be an extension of the amount of weeks that the fish could repopulate. Even a small amount of time would let the population of fish go above and beyond the "safe amount" and could possibly stop the overfishing issue. There possibly could be months between seasons for different fish and by increasing the amount of tagged fish, it would help to ensure that every fish that is caught is accounted for. This would help with knowing what species of fish is struggling most.

Science and Conservation of Fish Aggregations says, "Several culturally and commercially important fishes aggregate to spawn in Palau at specific times and places and are, or were, targeted at such times and places. Some species are evidently more predictable than others in their times and places of spawning, and in most cases declines in catches have occurred over the last few decades. Many reasons were proposed for these declines and many of the fishers expressed concern that not enough was being

done to protect the reef fish fishery of Palau. Although current laws are considered to be good and probably adequate, a major problem was perceived to be in their enforcement. The message was clear that more action is needed to ensure long-term sustainable use of reef fish resources, especially those that aggregate to spawn.” If there was better implementation of the laws then it may help significantly.

Palau is United States territory, and if we were to increase the financial aid we are sending to there, all of these proposals would be able to be set in place. According to www.state.gov, “The United States and Palau signed a comprehensive review of the Compact in 2010, with a wide range of federal programs to continue for the next 15 years. By the end of 2011, the value of a trust fund set up under the Compact was approximately \$147 million... Palau is a sovereign nation and conducts its own foreign relations. The United States and Palau cooperate on a broad range of issues, including strengthening regional security, promoting sustainable development and addressing climate change, and protecting fisheries and the environment.”

Palau is really one of the best developing countries, which is a thanks to not only their leader, President Thomas Esang Remengesau, but also the rest of the Palauan nation. As modern and advanced as it is, not to mention their morals and how bad the citizens want this, the issue of overfishing will, hopefully, not be a problem in the future. With all of the laws being passed, the citizens fighting for what is right, and the actions that are happening, Palau is a role model for other countries like in Africa, Europe, South America, and possibly even more, to fix overfishing permanently.

Works Cited

Bacchi, Umberto. “INTERVIEW-With Backyard Flooded, Palau President Opens to China...”

Reuters, Thomson Reuters, 7 July 2017,

af.reuters.com/article/commodities07News/idAFL8N1JY10Z.

“Causes, Effects and Solutions of Overfishing.” Conserve Energy Future, 25 Dec. 2016,
www.conserve-energy-future.com/causes-effects-solutions-of-overfishing.php.

Ecott, Tim. “Rough Guide to Palau.” The Guardian, Guardian News and Media, 10 June 2009,
www.theguardian.com/world/2009/jun/10/palau-diving-tourism.

“Export Impact For Good.” ITC, www.intracen.org/country/palau/.

Foster, Sophie, and Donald Raymond Shuster. “Palau.” Encyclopædia Britannica, Encyclopædia Britannica, Inc., 20 Dec. 2017, www.britannica.com/place/Palau.

“History of Palau.” Wikipedia, Wikimedia Foundation, 28 Mar. 2018,
en.wikipedia.org/wiki/History_of_Palau.

Lubba, Chris. “Commercial Fishing Ban & New Sanctuary for Palau.” Palau Dive Adventures,
Palau Dive . Adventures, 23 Nov. 2015,
palaudiveadventures.com/commercial-fishing-ban-palau/.

Works Cited

“Palau, An Island Eden Overview .” PBS, Public Broadcasting Service,
www.pbs.org/edens/palau/p_sea_text.htm.

“Palau Country Profile.” BBC News, BBC, 8 Nov. 2017,
www.bbc.com/news/world-middle-east-15446659.

“Palau Forest Information and Data.” Mongabay.com,
rainforests.mongabay.com/deforestation/2000/Palau.htm.

“Palau Land Use.” Jamaica Age Structure - Demographics,
www.indexmundi.com/palau/land_use.html.

“Palau.” Mongabay.com, rainforests.mongabay.com/deforestation/archive/Palau.htm.

“Palau.” WeatherOnline, www.weatheronline.co.uk/reports/climate/Palau.htm.

Palmquist, Darci, et al. “A Breakthrough for Data-Poor Fisheries Starts in Palau.” Cool Green
Science, 17 . Mar. 2016,
blog.nature.org/science/2013/10/24/data-poor-resource-poor-fisheries-fish-stock-palau/.

Works Cited

Safina, Carl, and Elizabeth Brown . “Palau Plans to Ban Commercial Fishing, Create Enormous
Marine Reserve – National Geographic Blog.” National Geographic Blog, 2 July 2014,
blog.nationalgeographic.org/2014/07/02/palau-plans-to-ban-commercial-fishing-create-enormous-marine-reserve/.

Senthilingam, Meera. "How Paradise Islands Became the World's Fattest Place." CNN, Cable News Network, 1 May 2015, www.cnn.com/2015/05/01/health/pacific-islandobesity/index.html.

The Ocean Conference. "The Palau National Marine Sanctuary." United Nations, United Nations, oceanconference.un.org/commitments/?id=14321.

"United Nations and Climate Change." United Nations, United Nations, www.un.org/climatechange/blog/2014/02/facing-climate-impacts-and-overfishing-in-its-waters-palau-bans-commercial-fishing/.

US Department of Commerce, and National Oceanic and Atmospheric Administration. "NOAA CoRIS - Regional Portal - Republic of Palau." NOAA Coral Reef Information System (CoRIS) Home Page, 29 June 2009, www.coris.noaa.gov/portals/palau.html.

U.S. Department of Homeland Security. "Fact Sheet: Status of Citizens of the Republic of Palau ." Status of Citizens of the Republic of Palau , 3 Nov. 2015, pp. 1–4., www.uscis.gov/sites/default/files/USCIS/Verification/I-9%20Central/FactSheets/FactSheet-Status_of_Citizens_of_Palau.pdf.

Yodatai . "Palau Male Obesity Prevalence, 1960-2017." Knoema, knoema.com/atlas/Palau/Male-obesity-prevalence.