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## **Indigenous Injustice of Malnutrition and Health**

According to the World Health Organization (WHO), "Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients." Malnutrition is a factor every country suffers from. Many families do not have access or funds for nutritious foods. Healthy food is usually more costly than food that is insufficient in one's diet. Fresh fruit and vegetables, legumes, meat, and milk aren't accessible to larger families that cannot afford the healthier food diet. On the other hand, foods that are affordable and accessible are high in fat, sugar, and salt. The cheaper, more affordable options are easily accessible in all countries no matter if they are rich or poor. The WHO has estimated 41 million children under the age of 5 years are overweight or obese. In other circumstances where there is no availability of food at all, children and pregnant mothers starve or suffer from stunted growth and anemia.

The average household size in mainstream Costa Rica is 3.2 people per household. In the mainstream population, rice, beans, and potatoes are an important staple to a typical diet. The commonly consumed meats are pork and beef, but an occasional meal of chicken or fish can also be expected, as those options are available along the Caribbean coast. According to Costa Rica Information, "The most common breakfast of choice for Ticos is Gallo Pinto, the national dish of fried rice, black beans, onions, red pepper, and cilantro. This is usually served with eggs either sunny side up or scrambled, bread with butter or natilla which is similar to sour cream, a cup of coffee and/or a cup of fresh juice. Other common breakfasts are toast with jam, pancakes, omelettes, or simply cereal. Lunches and dinners in Costa Rica are very similar and quite well balanced meals. The most common is called a casado. A casado includes some type of meat such as beef, chicken, pork, fish, or other seafood, a side salad, rice, black beans, and fried plantains served with some natural fruit drink. These casados range in price from \$2 to \$5 on average and are the most economical way to get balanced nutrition. Usually lunch is followed by a coffee break in the afternoon with bread." Most Costa Ricans eat at home or make food to take to school or work from home. If people eat out on the run, they usually eat at typical little sodas (restaurants that cater to tourists) that serve very balanced and very reasonably priced meals.

According to The World Fact Book, "Although it still maintains a large agricultural sector, Costa Rica has expanded its economy to include strong technology and tourism industries." Around 1,015 sq km of the land is irrigated while around 37% of the land is relating to agricultural use. The largest city, San Jose is the country's capital also home to 1/5th of the Costa Rican population. The estimated population for July of 2021 is said to be around 5,151,140 people. The official language is Spanish, while many of the residents do speak English fluently. Costa Rica's poverty rate is lower than most compared to other Latin American Countries, though there are still many people suffering within the "model country". There are many groups and cultures within Costa Rica differing from minority to majority groups. Although the poverty rate in Costa Rica is low, it still exists. Many minority groups face issues due to malnutrition because they aren't supplied with the same benefits the government provides to the majority of the Costa Rican Population. Children grow up with an insufficient diet because one isn't accessible, yet the rest of the country's population has no shortage or suffrage of a healthy available diet. Seventy-three percent of indigenous people live on these reserves located in mountainous regions (U.S. Department of State 2005],

Documentation of the cropping systems and specific diets in these regions is virtually nonexistent in the literature so it is hard to identify what a typical diet is for indigenous people.

According to A. Herforth, Central American country Costa Rica is known as a 'Model Country' because of its high income and literacy rates, in addition, they have the lowest infant and mother mortality rates. Only a known 2% of the country's vast population is living below the international poverty line. Health services are free of charge to all citizens, provided by the Costa Rican government. Around 97% of the Costa Rican population have access to water and about 92% have access to functional sewage systems. According to the 2020 Costa Rica census, indigenous people make up about 2.4% of the population. Around 2018 the population was near 1.7%, so the population within the reservations is rapidly rising. With about 24 reserves located in mountainous regions, said by the government to be "rich in forests, rivers, and animals and good for agriculture, hunting, and fishing." A percentage of the indigenous people live on the reserves representing 8 indigenous groups. These reservations of the indigenous people are part of 3% of the island's "lack of potable water". "Indigenous people have the poorest health indicators in the country. Indigenous areas have higher birth rates, as well as higher infant, child, and general mortality rates. In a 1999 study of the Turrialba canton, the indigenous made up 4 percent of the population but bore the burden of 29 percent of infant deaths [PAHO 2002b], The same study found that only 27 percent of indigenous pregnant women had prenatal care, compared with 82 percent for Costa Rica as a whole."

The indigenous groups settled near banana plantations where they lived alongside the non-indigenous settlers. The men of the indigenous colony started to work at the banana plantations now known as the Chiquita®, Dole® farms. Because of the Banana plantations sharing the same mountainous regions and sources of water as the ingenious settlers. The water was polluted with agrochemicals and pesticides. In addition because of the lack of latrines, malnutrition wasn't the only factor to worry about. Diseases began to spread among the reservations. According to A. Herforth, "In the more remote indigenous communities in the mountains, some people left their homes for days or weeks at a time to work in the lowlands. This practice defined gender roles, as men left their villages to work in the nearby banana plantations and women remained at home, responsible for growing or collecting medicinal and food plants." Indigenous reservations constitute much of the 3 percent of the country that lacks potable water. Typical crops grown in low lying areas are beyond the means of indigenous people due to the type of soil, rainfall and availability of improved seed. The legal barriers to credit in the reservations, as a center for Indian rights explains: "Indigenous peoples in Costa Rica cannot obtain agricultural credit because the lands belong to the community and there is no legal formula for providing guarantees on communal properties" (Schulting 2007) Which in turn means the indigenous people can not grow high yielding crops.

Since the number of indigenous people is so small they are often forgotten. In 1994 the group was given the right to vote. The eight different tribes (groups) have distinct different cultural and traditional ways of living that set them apart from the norm.. The indigenous reservations are located in the mountains; many of the government-provided benefits, like health care and agricultural benefits, do not reach them. A National Commission of Indigenous Affairs (CONAI) was created in Costa Rica, but according to the Costa Rican case study, this organization lacks the power and funding to enforce laws protecting indigenous people. Because of the small number of people making up the indigenous population and their differences from the majority of the countries culture "they face discrimination health services, employment, income, housing, education, and daily life" says the Costa Rican Case study of 2018. According to the Cornell University Library, "Policy options for increased food security and nutrition include encouraging the use of native and wild food crops, improving the productivity of indigenous crops, breeding mainstream crops to suit the soil and climate conditions of the reservations, increasing market opportunities, aiming interventions at women, restoring land productivity in the reservations, moving the reservations to better land, encouraging "agrotourism," or encouraging a shift in livelihood away from farming." With a new view on food security, the indigenous population can be looking at a future of a healthier lifestyle and fewer deaths caused by malnutrition. Not only can food security be justified but the indigenous reservations could also have the possibility of policies implementing "improved water supply". With changes in the region's infrastructure, sanitation, health, and food could be promised to all settlers in the region. There can be changes within the reservations malnutrition issues with recommendations towards the Costa Rican government's policy measures.

Particular native crops that are nutrient dense have been ignored as possible contributions. It has been found that these native and wild foods are healthy and could add significantly to the nutritional adequacy of a diet. Eating native and wild foods that grow easily and are widely available makes sense since high yielding crops are out of their reach. The importance of having a conversation to see what is already being used and eaten by local farmers makes sense. Extension workers must learn what foods are locally available and acceptable and not to underestimate their nutritional value offhand. Although the use of wild plants by Costa Rica's indigenous has not received much attention, several wild-gathered foods in Costa Rica are known to have high nutritional value. Pejibaye is a bright orange, beta-carotene-rich fruit that is wild-collected from a certain species of palm and has gained popularity throughout Costa Rica. The indigenous collect other plants, such as fiddleheads [young ferns] and many leafy shoots. Not only is it important to incorporate the knowledge of local foods, it is important to work with women who are the main farmers in the absence of men who are usually away working on the plantations. In the past most outreach by Extension was made to males which means they were not even reaching the group who could make the biggest impact. I suggest that women focus groups are going to be part of the solution in improving agriculture for indigenous people.

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