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Madagascar, Malnutrition

From Rodent to Redeemer: How Guinea Pigs Pose Solution to a Hunger Crisis

The guinea pig to many is simply insignificant, and often a nuisance of a creature. However, in the country of Madagascar, more than 75% of the population lives in poverty and experiences crippling food insecurity (Madagascar: Hunger Relief in Africa.). The guinea pig offers an alternative to malnutrition (1.3 Million in Southern Madagascar Face Famine-Like Conditions: UN). The application of this seemingly unorthodox agricultural anomaly has the potential to provide the Malagasy people with a desperately needed resource. Education of residents of this practice will ensure a long-term solution to the hunger crisis present.

More than 26.92 million people today call Madagascar home (Madagascar). Of those people, approximately 62.14% live rurally whereas only about 38.1% reside in urban areas (Madagascar). This subtropical island is governed via a semi-Presidential system where both a Prime Minister and President have authority (Madagascar). Due in part to the diverse geographical features of this region, only 5.2% of available arable land is cultivated (Madagascar). The majority of products produced come from small family farms that consist of about 1.3 hectares of land; this is the equivalent of roughly two football fields (Madagascar). It is from these families that the prime exports of vanilla, rice, coffee, bananas, and sugar are produced (Madagascar).

The average Malagasy family consists of approximately five people (Overview). These families live within mud homes with bamboo supports and steeply angled roofs as an adaptation to high levels of precipitation that occur all year long (Madagascar). Families are usually financially supported by the male figure due to gender equality that plagues the region (Madagascar). The average salary is 1,310,000 Malagasy ariary (Madagascar). This may seem like a large number, however, this is equivalent to just 350 U.S. dollars per year (Madagascar). Much of this money covers food expenses. Common meals include rice, beans, bananas, as well as peanuts, and meat (Madagascar). Those who are more financially stable purchase sustenance in markets or barter with neighbors for resources. Others are forced to hunt and forage to eat due to poverty and resource scarcity (Why People Turn to Lemurs and Other Endangered Animals for Dinner in Madagascar). As a result, endangered species such as lemurs and tenrecs are being hunted out of desperation (Why People Turn to Lemurs and Other Endangered Animals for Dinner in Madagascar). High levels of poverty and high rates of rural living also prevent many children, especially girls, from attending school. These barriers make seeking healthcare and education a challenge despite both being free of cost. Additional obstacles that families face include a severe lack of clean water, electricity, and usable infrastructure throughout remote regions of the country (Madagascar: World Food Programme.). Persistent drought combined with severe natural disasters such as cyclones and floods

contributes to the cycle of poverty that Malagasy people face (Madagascar). This results in extreme food insecurity and limits the time and energy expended to searching for and acting upon solutions.

The plague of starvation sickening the nation of Madagascar is increasing in severity. This country already stands as the fourth worst nation in the world regarding rates of childhood malnutrition (Overview). The U.N. states that 47% of Madagascar children under five suffer from a lack of nutrients (Overview). This issue will only become more chronic. As climate change becomes increasingly drastic, access to produce becomes more limited, already poor resource management becomes worse, and food insecurity continually prevents the introduction or implementation of viable solutions (*Vulnerability, Risk Reduction, and Adaptation to Climate ...*).

The World Food Programme, a section of the United Nations, has already begun humanitarian efforts in Madagascar. They have made progress; before the COVID-19 pandemic, the nation was on an upward economic growth trajectory (Overview). Measures the U.N. has taken include a 500,000 dollar program instituted under The United Nations Food and Agriculture Organization (UN Agencies Warn of Deteriorating Food Security in Southern Madagascar | Africa Renewal). This institution focused on providing resources such as beans, rice, and fertilizer to families (UN Agencies Warn of Deteriorating Food Security in Southern Madagascar | Africa Renewal). Despite aid programs such as this, Madagascar remains dependent on unsustainable and unproductive agricultural methods. Beef and pork provide Malagasy with their main source of protein and iron (“Madagascar: World Food Programme.”). Unfortunately, these animals require significant amounts of space, eroding land, and produce 14.5% of all greenhouse gases (*Vulnerability, Risk Reduction, and Adaptation to Climate ...*). Despite the Malagasy government actually encouraging the consumption and importation of cattle, they have been largely unsuccessful due to the cultural importance of the creatures (Agriculture, Forestry, and Fishing). Many of these animals are used for religious sacrifice which presents an additional way in which an alternative food source is needed (Agriculture, Forestry, and Fishing.).

Nearly 8,000 miles away from Madagascar is the country of Peru (Distance from Madagascar to Peru). Peru contains 90 different microclimates, making it one of the most diverse climatic countries in the world (Weather in Lima: A Mystery Unravelled). Despite these geological juxtapositions within the country that impact other agriculture, guinea pigs are successfully produced throughout the nation. The business of guinea pig farming has boomed in recent years due to its success in providing a way for everyday people to escape poverty (Chambers). The versatility of this practice makes it suitable for use in other climatically diverse places such as Madagascar. Madagascar and Peru fall within the same latitudinal range meaning that they experience relatively similar temperatures and weather, allowing Madagascar to also be suitable for guinea pig farms.

For example, only 60 square feet of space is needed for housing 30-50 guinea pigs whereas this space is only adequate for one cow (Farm). Habitats can be constructed with almost any material or design which further makes this solution a great choice for areas scarce of resources such as clean water and sanitary technology (Farm). Considering that guinea pig's natural diet is grass and a wide variety of other plants such as banana peels, they have a relatively simple diet to manage (Farm). Food scraps and vegetation

that are inedible for humans can be given to these creatures as a way to decrease food waste (Farm). Not only are guinea pigs simple to raise and consume, but they also are nutritionally rich. Guinea pig meat contains 20% more protein than chicken, beef, lamb, or pork, consists of just 8% fat, and is packed full of omega 3 fatty acids and vitamin B (Rosse). The benefits of this livestock do not end at consumption, the manure and waste produced by the creatures is an excellent and abundant fertilizer that can be used to increase crop yield which will further nourish the Malagasy (Tilley). Additionally, guinea pigs produce far less methane and carbon than livestock such as chicken, beef, or pork (Bland). More sustainable agricultural methods will reduce poverty rates because they will allow improved allocation of resources as well as contribute to the global effort aimed at lessening the effects of climate change.

The introduction of domestic guinea pigs to Madagascar and the education of citizens on how to manage and maintain guinea pig farms is a plausible solution to the food insecurity of this region. The implementation of this program would be conducted by the United Nations World Food Programme, as this establishment already has projects and resources in Madagascar. Two and a half million dollars has already been acquired by the World Food Programme via private donors and the U.N. to fund solutions to the Malagasy hunger crisis (Madagascar: World Food Programme). Since the WFP is funded by the government and private donors, it is critical to involve and bring awareness to global community members and organizations that champion ethical dilemmas (Madagascar: World Food Programme). Policies that allow travel concerning the pandemic and importation of livestock are critical for this effort to be effective. Without these policies, it would be nearly impossible to establish a successful program infrastructure or to acquire data and resources.

Respecting local culture and working around issues such as gender inequality will also be of the highest importance to consider when implementing this proposal. Approximately half of the population practices ancestral veneration, forms of animism, or Zanahary while the rest uphold syncretic forms of Christianity or Islam (Sawe). The observation of “fady” which is “the Malagasy term for socio-cultural and spiritual taboo or beliefs' 'impacts the nations' relationship with their environment to a great extent (In Madagascar, Cultural Taboos Can Protect or Harm the Environment.). While these traditions are responsible for the preservation of many forests and regions considered sacred, they also have encouraged the decimation of already endangered animal populations (In Madagascar, Cultural Taboos Can Protect or Harm the Environment.). Radiated tortoises are hunted for good luck and aye-ayes, and the Madagascar owl is all hunted due to the impression that they are vessels for evil spirits(In Madagascar, Cultural Taboos Can Protect or Harm the Environment.). Regardless of the deep relationship the Malagasy have with nature, there are conflicts with guinea pig consumption (In Madagascar, Cultural Taboos Can Protect or Harm the Environment.). Additional cultural barriers to this program include national sexism. Women are unable to own land in some regions or agricultural assets (Gender Equity in Madagascar). These barriers may threaten the extent to which this practice impacts residence because only about half of the population at most is able to participate or benefit. (Gender Equity in Madagascar). Solutions to this expansive hurdle include working alongside local governments and funding educational and awareness expenditures aimed at providing women with greater access and opportunities to all that the nation

Not only would the success of this proposition result in a decrease in the malnutrition rate, but it also serves to make pragmatic structural change within Madagascar. The nourishment of children and the financial gain of families means that more children would be able to achieve an education. Improved academics has proven in many areas of the world to be a monumental stride towards gender equality. Apart from the social benefits of this program, utilizing guinea pigs as a food source as a substitute for traditional livestock will decrease the production of greenhouse gases, decrease land erosion, and allow for the conservation and management of native resources. Furthermore, the fear of biodiversity declining in this region is fueled by the use of endangered animals as food sources (Why People Turn to Lemurs and Other Endangered Animals for Dinner in Madagascar.). The introduction of guinea pig farms to Madagascar will positively alter the social structure and environment of this country, all while solving the chronic issue of insecurity that citizens experience. This struggle has caused millions of families to witness their loved ones starve and be limited by hunger and nutrient deficiency.

Contemporary problems require contemporary solutions. It may be hard to believe that glorified rodents are capable of helping almost 27 million people overcome starvation and nutrient deprivation, but this is only possible with the support and awareness of the global community. With this support, this proposition is entirely viable. The provision of not only a resource but an institution with the potential to be a prolonged solution to Malagasy food insecurity will transform this society into a blueprint for others. Guinea pigs just maybe guardian angels of a greener and hunger-free future.

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