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Madagascar, Climate Change and Sustainable Agriculture

Introduction

Madagascar is a beautiful island country located on the southeastern coast of Africa. Its land is composed of high plateaus in the center with plains and rainforests on the sides of the island. Usually, Madagascar's climate is predictable with a hot rainy season in November through April and a cool dry season in May through October. However, day by day, the climate gets evermore unclear and intense to its residents. Disastrous cyclones in coastal areas destroy infrastructure in cities and flood the agricultural land. At the same time, harsh droughts affect the crops and soil in the southern parts of the country. As expected because of these conditions, farmers find it hard to have stable harvests and have difficulty caring for their animals which has led to many of the population facing rising food insecurity while being pushed further into poverty. To add, these drastic, contrasting events make it even more difficult to help the entire country as a whole, requiring different solutions for certain issues depending on the region.

Though, there are many ways that Madagascar can try to address these issues. As a one-size-fits-all solution, setting up national programs and efforts to encourage sustainable agricultural techniques could lead the way to reduce the effects of climate change. A specific solution that can help southern farmers from droughts are the adoption of drought resilient crops such as sorghum and pigeon peas. On the coasts, strengthening and improving infrastructure, specifically irrigation systems, can help farmers and citizens out of this crisis caused by the rough storms. Altogether, these solutions, along with general global efforts to reduce global warming, are essential to mitigate the long-term impacts, ensuring a more stable future for Madagascar.

Background

Regarding the demographics, Madagascar has a population of 31.7 million people with around 68 percent of the population living in rural areas, which is about 21.6 million people. The rest of the country lives in dense cities. Food insecurity is a big concern, affecting 1.5 million to 2 million people and 39.5 percent of the population is malnourished. Geographically, Madagascar is a little smaller than the US state of Texas, while it is a bit bigger than France, being about 587,040 square kilometers. Of that, roughly 408,000 square kilometers are used for agriculture, which is mostly grazing land. However, only about 5-6 percent (about 30,000 square kilometers) of that is actually suitable for growing crops such as rice, cassava, vanilla, and more. Politically, as of October 2025, Madagascar is under a military transitional government which could affect how to implement solutions to climate change.

Agriculture plays a big part in the economy with about 70% of the population employed working in the sector on a farm averaging to about 1.2 hectares (0.012 square kilometers) in size. These farmers rely on good harvests to produce food for themselves or make income. In Madagascar, most people make wages that are relatively low, only being about $140-$150 (650,000-700,000 Malagasy Ariary or MGA) per month and many people survive on just $1.90 a day. Families, especially in rural areas, depend on growing their own food in small-scale farming but markets are also available for them and those living in urban areas. Though, if climate change continues to worsen, it will continue to disrupt agriculture, food security, and the wellbeing of Madagascar.

Issue and Solutions

Madagascar, with most of its population living in or near poverty, is one of the most susceptible countries to the effects of climate change and global warming, both economically and socially. For example, in 2021, southern Madagascar was hit with a very intense drought, the worst in 40 years, that brought famine that is still being dealt with today. It has forced the residents living in the region to survive on locusts, fruits, and cactus leaves (which is used to feed cattle) for extended periods of time. Outside of food, these people are having trouble making money. Farmers need to sell their cattle, houses, and fields in order to get money for food. Some families need all hands to make income, which has led to kids being

taken out of school. In early February 2026, two cyclones hit the west side of the island, wrecking homes, flooding farmland, and killing dozens. As many as 350,000 people were hit and about 63 percent of that had already been living without many essential needs, furthering the pre-existing poverty. As for farmers, 174,100 hectares were destroyed, leaving those who depend on farming worried about famine. Though these are two specific events, these catastrophic disasters are very common and have made recent years very difficult for everyone in Madagascar. Fortunately, there are many solutions that can be done to help mitigate the effects from climate change.

One idea that could help benefit the entire country long-term are national regulations that could promote sustainable agriculture. Madagascar is one of the countries that have suffered from slash and burn agriculture, which is the practice of destroying precious forests and ecosystems by, as the name implies, cutting and burning it down. This is used because it is very cheap and easy to do but it also heavily contributes to carbon dioxide emission. By outlawing this, Madagascar will release a lot less greenhouse gases which will help slow down the effects of global warming. Though, because it is cheap, many farmers may still want to do it. To avoid this, I suggest using incentives such as giving emergency loans and additional technology and tools to farmers. As the law is slowly integrated as a normal part of the farming industry, non-damaging forms of agriculture will be practiced more, successfully promoting sustainability. At the moment, Madagascar's government is going through a transitional period after its removal of ex-president Andry Rajoelina, so this solution could probably not be implemented immediately.

To help with the droughts in southern Madagascar, drought resilient crops could be introduced into farms and the Malagasy diet. One crop that fits this description is sorghum, a starchy grain that can be used to make couscous and porridge. Many places grow this crop but the United States leads in production, so a surplus supply of sorghum seeds could be shipped in order to kickstart the mass growing of the crop. By promoting its cultivation across the country, particularly where it gets hot and dry often, sorghum could provide a reliable source of food that helps stabilize food supply while giving farmers a more dependable crop during times of low rainfall. In areas where cyclones hit, irrigation systems could

be improved to help with excess water and protect agricultural plots that are easily flooded. Additionally, drainage systems could be developed to collect and store runoff rainwater where it would reuse it for the farm or other purposes. Other countries that also have catastrophic weather events could collaborate with Madagascar to fund these projects. Together, both of these solutions would help strengthen Madagascar's ability to adapt to climate change while also improving food security nationwide.

Conclusion

In closing, Madagascar is a country that struggles with many things. Extreme droughts and storms brought in by the effects of global warming have done lots of damage to infrastructure, agriculture, and most importantly, people. Farmers lose their way of life and struggle to pay for food and other necessities while the rest of the population who rely on these farmers end up eating anything they can since crops can't be grown. These problems are all in conjunction with poverty, which has also taken its toll on the African island. Though, with a little push from maybe one local farmer or international aid, farmers in Madagascar can start to adopt methods of sustainable agriculture and ways to fight against climate change.

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