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Ethiopia, Sustainable Agriculture

## **Environmental Resiliency as a Gateway Towards Food Security**

From the celebration of the First World Food Conference in 1974 to the conception of the Sustainable Development Goals in 2015, the right to food security and nutrition has been internationally acknowledged multiple times (United Nations Department of Economic and Social Affairs, 2018). Over the last few decades, numerous countries have developed and institutionalized national laws, constitutional amendments, policies, strategies, and programs all intended to fulfill the rights of all to food. However, malnutrition and food insecurity are still realities for 815 million people around the world, especially in developing countries (United Nations, 2018). By impeding progress in other areas, such as healthcare, education, and economic growth, this further exacerbates the inequalities between nations. One prime example of this is Ethiopia, in which 8.5 million people are currently facing severe hunger. (Oxfam International, 2018)

As in all food security strategies, understanding the dynamics of the typical Ethiopian citizen is key to solving its crisis. Households in the nation are usually headed by males, a feature shared by most African countries. According to the Ethiopia Rural Socioeconomic Survey, the average household has 5.1 members, with urban households being smaller than urban ones. Single-person households aren't the norm and are over three times as common in urban areas than in rural areas. On average, the Ethiopian population is young, something commonly expected in groups with high fertility levels. People aged 0-14 make up 47.7% of the population while those aged 15-64 make up 48.8%. Those aged 65 and above make up only 3.6% of all Ethiopians. In most households, it is common for parents to either have only primary level education or none at all. Educational attainment for mothers is drastically lower compared to that of fathers with approximately 76.4% of them having no education. (Ethiopia Central Statistical Agency; World Bank Group, 2013) Ethiopia is a mostly rural nation with an urban population of only 17.3%, a figure that is well below the 37% average in Sub-Saharan Africa. However, this is due to it being in the early stages in a major demographic transition. According to the Ethiopian Central Statistics Agency, this population is projected to nearly triple from 15.2 million in 2012 to 42.3 million in 2037. Due to great progresses that have been carried out throughout the years, infant and maternal mortality have declined sharply. However, the birth rate, currently the 14th highest in the world hasn't dropped accordingly, leaving to rapid population growth, putting more pressure on the nation's land resources and further complicating food shortages. (Central Intelligence Agency, 2018)

The country's environmental status is quite possibly the biggest contributor to its famine. Ethiopia is currently afflicted by both El Niño and anthropogenic climate change, resulting in the

country's harshest drought in over 50 years. (Laing, 2016) Overgrazing, deforestation, and other poor agricultural practices have led to the mass degradation of Ethiopian territory, with approximately 71.5% of the country's total land area falling under UNEP's definition of desertification. The Ethiopian highlands, which cover 44% of Ethiopia's land, 70% of its livestock, and 93% of its cultivate land, are the most harshly affected by the phenomenon. According to the Food and Agriculture Organization of the United Nations (FAO), 27 million hectares of the territory are degraded, with 14 million being considered seriously degraded and 2 million being no longer capable of sustaining vegetation. (Hawando, 1997) The effect of these unsustainable environmental conditions is strengthened by the fact that Ethiopia is massively dependent on agriculture. Approximately 85% of Ethiopian families depend on it for their livelihood and it remains the main contributor to the nation's GDP and external trade (Food and Agriculture Organization of the United Nations, 2018). This leads Ethiopia into a vicious cycle where its socioeconomic growth is gravely hindered by deficient agriculture, preventing it from effectively addressing its environmental situation.

When viewing situations like Ethiopia's, it's easy to assume that everyone is being affected equally. That is never the case. The nation's most vulnerable population when it comes to food insecurity is its children. These undernourished children are at a much higher risk of conditions such as anemia, diarrhea, and respiratory infections, not only giving them an increased risk of death but also putting a greater strain on health systems and families, both of which are already fragile in developing countries. According to the UN Economic Commission for Africa (ECA) and the World Food Programme (WFP), 28% of all child mortality in Ethiopia is directly associated to undernutrition. The survivors of this plight end up with severely stunted development, further harming the struggling African nation (Economic Commission for Africa; World Food Programme, 2012). In numerous occasions, appropriate nutrition in early childhood has proved to be crucial in terms of ensuring adequate organ function, neurological and psychological maturation, and efficient immunological responses, leading it to be a pillar for socioeconomic progress. The cost of hunger in Ethiopia is quite clear when it comes to education with 16% of its primary school repetitions being associated with stunting and with stunted children receiving approximately 1.1 years less in school education. Additionally, 67% of its current adult population suffered from childhood stunting. Taking all of this into consideration, the yearly costs linked to child undernutrition in Ethiopia have been estimated to be 16.5% of the nation's GDP. (Economic Commission for Africa; World Food Programme, 2012)

The Ethiopian government has made great efforts to integrate the Sustainable Development Agenda into their national development agenda. Its main objectives are all-inclusive rapid economic and infrastructural growth in order to achieve sustainable development and eradicate poverty. Agriculture is one of the key five development sectors that receive 70% of the total government expenditure budget, alongside healthcare, education, water and sanitation, and road construction (Federal Democratic Republic of Ethiopia, 2017). The nation has a strategy for agricultural progress called the Ethiopian Rural Development Policy and Strategy, focused on

improving its human resources and efficiently using its land. The African nation adopted a Climate-Change-Resilient Green-Agricultural Development economy initiative in order to achieve increased productivity (Federal Democratic Republic of Ethiopia , 2017). According to the Ethiopian government, it will continue focusing on developing strategies to expand agriculture, strengthen small-holder farmers and pastoralists, and engaging the private sector.

Several approaches have been taken in terms of resolving Ethiopia's food crisis, such the provision humanitarian aid and development programs. While humanitarian aid is a fantastic tool when it comes to rapidly responding to crises with appropriate relief, it fails to acknowledge long-term goals. Meanwhile, development programs are unable to take root if they do not address short-term concerns. Because of this, the ideal approach for Ethiopia would be the linking relief, rehabilitation and development(LRRD) aid model. LRRD was conceived in the 1990s, becoming an important perspective on the international agenda. Its basic idea is to reinforce aid by linking short-term and long-term measures, ensuring the return to sustainable livelihoods and erasing the "grey area" they would leave behind if used individually (Hinds, 2015). Considering the origins of the famine, a proper solution clearly requires a Comprehensive Sustainable Development Framework. In the short-term, it should provide immediate relief to fulfill basic human needs, allowing further advancements. In the long-term it should address boosting community production and resilience as well guaranteeing responsible natural resource management.

One crucial aspect is the discontinuation of land deterioration through the rotation of harvesting periods, the implementation of grazing regulations, and the adoption of educational programs on sound farming practices. This will be focused on preventing future desertification of Ethiopian arable land, focusing on the highlands. Climate change and its effects over Ethiopia's worsening weather conditions are central to the framework. Because of this, further cooperation must be carried out regarding climate change adaptation and mitigation, limited to but not including: the development of climatological observation networks and data platforms and the strengthening of ongoing activities on a subnational level, including those in cooperation with the private sector, civil society, and NGO's present in Ethiopia such as Oxfam International, FAO, and WFP. One of the main objectives of this is to prepare Ethiopia in terms of developing periodical climatological preparedness programs with human-centered forecasting and early detection systems. The other is to promote the resilience of old as well as upcoming critical infrastructure, safeguarding their safety, efficiency, and accessibility. (Food and Agriculture Organization of the United Nations, 2012)

One main effort towards making Ethiopian agriculture more sustainable is fomenting climate change adaptation by and for Ethiopian farmers. A households' choice of conservation technologies works as a two-stage process: acknowledging the problem and, in turn, adopting the necessary control practices. According to studies on the subject, those who didn't adapt often cited a lack of information on adaptation methods as well as financial strain as their major limitations regarding adaptation. (Deressa, Hassan, Alemu, Yesuf, & Ringler, 2008) When poverty is widespread and the applicable support policies are lacking, the population is unable to

secure sustainable land use. Analyzing these findings leads us to several policy options that could be taken into consideration for the country, including investing in crop yield-increasing technologies, facilitating credit availability, raising awareness for appropriate adaptation methods through environmental education, and researching crop and livestock varieties that prove to be better suited for drier weather conditions. (Deressa, Hassan, Alemu, Yesuf, & Ringler, 2008)

Finally, supporting nutrition during childhood is crucial in terms of ensuring Ethiopia's recovery. Measures must be taken to strengthen the standardization and institutionalization of comprehensive nutrition programs and policies. This would focus on those that foment exclusive breastfeeding up to six months where possible, continuous breastfeeding up to at least two years of age, micronutrient supplementation, and community-centered acute undernutrition management, in accordance with international recommendations. (United Nations International Children's Emergency Fund, 2018) It's also important to note that nutrition awareness still remains limited across the entirety of the population. The clear impact of nutritional deficiencies in Ethiopian children makes it clear that increasing awareness on the importance of nutrition especially during important development periods, such as the first 1000 days of a child's life, is needed. Additionally, Ethiopia must review their existing national development frameworks to ensure that reducing stunting is considered an indicator and a stepping stone when it comes to social and economic progress. The prevalence of child undernutrition shouldn't be considered a sectoral issue but a multifaceted factor that should be taken into consideration when it comes to interventions on subjects such as health and education. (Economic Commission for Africa; World Food Programme, 2012)

With us plunging into the era of globalization, the integration of the international community in national development has never been more important. Taking into the consideration Ethiopia's socioeconomic status, foreign aid will play a central role in terms of sustaining concrete growth. The support of the relevant organizations is necessary to carry out the different spheres of the framework. Due to the intersection of climate change, desertification, and food security in this nation, the help of United Nations Environmental Programme(UNEP) could quite possibly be one of the most helpful when it comes to a sustainable Ethiopia. Specifically, its environmental knowledge dissemination platform, Environment Live, could allow for further studying of ecologically friendly practices (United Nations Environmental Programme, 2018). Another organization that could provide assistance is FAO. With its expertise in food security, FAO's involvement in areas such as policy analysis, information management, resilience building, and investment support could prove key to this approach. (Food and Agriculture Organization of the United Nations, 2015) . Besides from support from the previously mentioned organizations, cooperation from other nations could also play a vital role in sustainably taking Ethiopia from poverty to progress. One of the strongest ways in which these could help Ethiopian restructuring is by supporting capacity-building to implement national development strategies. This would be especially helpful when it comes to scientific and technological cooperation, something that could support other crucial aspects such as climate change adaptation.

The food crisis in Ethiopia is currently depriving 8.5 million people of their fundamental human

rights. There is no denying that it is a multifaceted phenomenon deeply rooted in extremely complex issues including extensive desertification, rapid population growth, climate change, child stunting, and improper natural resource management. This has led the African nation into vicious cycle of poverty and malnutrition. However, with the use of a comprehensive LRRD program addressing sustainable short-term and long-term objectives, Ethiopia's current situation can be stabilized.

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