Unequal Flows: A Case Study of WELLET AND SON FARM in the Context of Global Climate Finance Disparities

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ABSTRACT

There exists a big gap between developed and underdeveloped countries when we look at the level of food security. The primary cause of this expanded gap is the unequal allocation of resources by climate finance to tackle the changes the world is facing, and food security, especially in sub-Saharan regions, is mostly affected. Now, the question is, can the drastic effect on food security be reduced if climate finance allocates its resources equitably? To answer this question, this paper will first highlight the interconnection between food insecurity, climate change, and climate finance. The second part will explore the various shortcomings of climate finance over the years, particularly in the agricultural sector. The third part will illustrate with a case study how Climate finance favors mostly large-scale farming initiatives compared to the smaller ones. Then lastly, a conclusion.

INTRODUCTION

Is the world mad at us for the way we treat it? Should the sudden climate change the world faces be a surprise, given the amount of greenhouse gases emitted daily? Humans cut trees, overexploit natural resources, and damage the environment, forgetting that it is the same earth that feeds and nourishes them. Food insecurity is real, plaguing several homes, societies, regions, countries, and even continents. Africa according to the Food and Agriculture organization (FAO) is the continent with the highest level of food insecurity as of 2023, and looking at the list of factors contributing to this, climate change and poor agricultural systems are at the top, and all this has led to long seasons of famine, infant malnourishment and the death of many. In contrast, the continents Europe and the United States, though equally affected by this climate change, have succeeded in devising means to provide available, stable, sustainable, and accessible food for their populations. Let's consider Finland, a country in northern Europe. As of now (FAO 2024), it is the country with the highest Global Food Security Index (GFSI). This is primarily due to their strong agricultural sectors, which permit Finland to produce most of its food, including cereals and dairy, even though it is still a victim of global climate change. We can go on and on about how different countries are plagued by food insecurity, but the truth is, Climate finance has failed to allocate proper resources to alleviate food security in developing

countries, especially those in sub-Saharan Africa. This paper will explore the limitations of climate finance on climate-related investments and sustainable business practices, which impact global equity through the lenses of resource distribution and food security.

Climate finance has the potential to build agricultural resilience and food security in the face of climate change, especially through agricultural investment initiatives for both large and smallholder farms in all communities, but the issue at hand is that the smallholder farms found mostly in developing countries are often left behind. This disparity raises urgent questions about the effectiveness and inclusiveness of climate finance frameworks, especially in addressing food security and resilience at the grassroots level. This leads us to our problem: How can climate finance better support smallholder agricultural resilience and food security despite climate change?

LITERATURE REVIEW

Both the developing and developed nations are plagued by this crisis, but they experience it at different levels. According to the Food and Agriculture Organization, *nearly 282 million people in Africa (20% of the population) are undernourished, with an additional 57 million facing hunger since the start of the COVID-19 pandemic. In addition, approximately 868 million people experienced moderate or severe food insecurity, and over one-third of them (342 million) were severely food insecure.* (Organisation, n.d.). The issue is an alarming one, but then, what is wrong? What is the root cause of this acute hunger plaguing the world, especially Africa? What are we doing wrong? Before getting into this, it is necessary to get an overview of the topic's key concepts straight and explain the link between them. This paper revolves around three major concepts: Food insecurity, climate change, and climate finance.

Climate change is not an uncommon event, as everyone is affected by it. Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. According to the UN, "*since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas."* (United Nations, n.d.)The changes in the Earth's climate system are associated with changes in temperature and precipitation due to continued emissions of greenhouse gases. Changes in the Earth's climate system ((Josef & Tubiello, 2007). There are equally long-term effects of this climate change, like the effects on the food and agricultural sector, which we will focus on in this paper.

The various changes in temperature and precipitation have also led to changes in land suitability and crop yields. Droughts, floods, rising sea levels, and other climate-related extreme events are becoming more frequent, making matters worse since land is affected. They have more than doubled in frequency over the last 25 years, as researchers noted in the 2018 edition of The State of Food Security. ((Josef & Tubiello, 2007).

Food security, according to the Food and Agriculture Organization, is described as a situation that exists when all people, at all times, have physical, social, and economic

access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. It is a multifaceted concept which comprises of four main pillars; Availability which relates to the overall ability of the agricultural system to meet food demand, Stability which is the risk of individuals temporarily or permanently losing their access to food, potentially due to factors like climate variability or income shocks, Access covers individuals' ability to acquire adequate and appropriate food through resources or entitlements, such as purchasing power or traditional rights, and Utilization encompasses food safety and quality, including health and sanitary conditions, ensuring individuals can effectively use the food they consume for nutrition. Compromising any of these pillars is a threat to food security as a whole.

According to the National Academy of Sciences, most existing research often focuses only on food availability (production), while other crucial aspects like stability, utilization, and access to food are less frequently quantified. (Josef & Tubiello, 2007). As such, the Global Food Security Index (GFSI) was created in 2012 as a composite indicator that measures food security across 113 countries by capturing and assessing the four main pillars of food security. A quick comparison between the GFSI in developed and developing countries for the year 2022 shows that developed countries have higher GFSI scores.

Rank (113 countries)		Overall score	Affordability	Availability	Quality and Safety	Sustainability and Adaptation
1st	Finland	83.7	91.9	70.5	88.4	82.6
2nd	Ireland	81.7	92.6	70.5	86.1	75.1
3rd	Norway	80.5	87.2	60.4	86.8	87.4
4th	France	80.2	91.3	69.0	87.7	70.3
5th	Netherlands	80.1	92.7	70.7	84.7	69.2
6th	Japan	79.5	89.8	81.2	77.4	66.1
=7th	Sweden	79.1	91.9	68.3	85.0	68.3
=7th	Canada	79.1	88.3	75.7	89.5	60.1
9th	United Kingdom	78.8	91.5	71.6	77.6	71.1
10th	Portugal	78.7	90.0	77.0	79.8	64.5

Figure 1: GFSI scores for developed countries in 2022

Rank (113 countries)		Overall score	Affordability	Availability	Quality and Safety	Sustainability and Adaptation
93rd	Uganda	47.7	48.3	41.0	45.1	57.0
94th	Mozambique	47.3	42.6	49.4	41.8	56.5
95th	Côte d'Ivoire	46.5	54.2	42.1	44.1	43.2
96th	Cameroon	46.4	50.4	31.9	56.5	47.0
97th	Niger	46.3	42.8	41.7	47.0	55.5
98th	Togo	46.2	45.7	51.0	42.3	45.4
99th	Guinea	45.1	37.0	49.0	39.8	56.9
100th	Ethiopia	44.5	32.9	44.7	59.3	44.9
101st	Angola	43.7	35.5	43.5	43.9	54.6
102nd	Zambia	43.5	26.8	46.7	54.2	51.6
103rd	Chad	43.2	50.1	40.0	44.7	35.9
104th	Congo (Dem. Rep.)	43.0	46.9	40.6	43.5	40.1

Figure 2: GFSI scores for developing countries for the year 2022

From the figures above, the disparity is quite clear. Fifty percent of the developing countries ranked last are countries in Africa. Not only is there almost no food available, but the citizens of such countries can neither afford food, consume quality food, nor have a stable source of food. Of course, this data is from 3 years ago. Has something changed? Unfortunately, No. The 2024 Global Hunger Index (GHI) score for Africa, South of the Sahara is 26.2, which falls into the "serious" category (GHI 20.0–34.9) on the GHI Severity of Hunger Scale. (Miriam, Marilena, & al, 2024). We all know the root cause of this hunger: it is Food Insecurity.

Climate finance is what reconciles the effects of climate change on food security. From a general perspective, climate finance refers to money from public or private sources that is used to help countries and organizations mitigate (reduce) or adapt to the effects of climate change. It embodies several initiatives and efforts from companies, individuals, and organizations. Now, let us look at a more concise perspective of climate finance. According to Chase et al., this is all financial resources aimed at supporting developing countries in their transition to low-emission and climate-resilient development (Chase, Kimberly, & al, 2019). This perspective highlights the role of climate finance as a tool to catalyze the development of developing countries despite the drastic climate change.

There exist several resources for climate finance, particularly aimed at aiding developing countries to address climate change and food insecurity. They include

- The Green Climate Fund (GCF): The Green Climate Fund is a fund for climate finance that was established within the framework of the United Nations Framework Convention on Climate Change. Considered the world's largest fund of its kind, GCF's objective is to assist developing countries with climate change adaptation and mitigation activities.

- The bilateral contribution of developed countries. These contributions, channeled directly from one developed country to another, are an important part of the broader landscape of climate finance. For example, the United States is identified as a provider of climate-sensitive development finance to developing countries. In 2017, the U.S. provided "just over $2 billion" for this purpose, with "approximately $300 million (15 percent) to the food security sector." (Chase, Kimberly, & al, 2019)

- There also exist institutions that are present to control the finances directed towards climate change initiatives in developing countries, like the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee. (Chase, Kimberly, & al, 2019)

- Despite all these resources available, why is it that the allocation of climate finance is not evenly distributed across all countries? Conventions such as the Paris Agreement (2015) and the Kyoto Protocol (1997) went ahead to officially outline the number of parties with legal obligations to provide climate finance for developing countries. Shouldn't things have changed by now? Where have these resources failed to help ensure the availability, affordability, quality, and utility of food in developing countries?

The first shortcoming of climate finance here is insufficient funding levels. According to Climate Finance 2022, despite commitments, developed countries have repeatedly failed to meet the collective goal of mobilizing US$ $100 billion in climate finance annually

(Galvao, 2018)This goal has rarely been met, and what is currently provided is insufficient to address severe food insecurity cases like those in Africa.

Another issue is the lack of precision during the establishment of agreements and conventions. There is always a loophole that opens doors for discrepancies. There is equally no concise definition attributed to what counts as climate finance. This absence of a consensual definition leads to differences between reported finance figures (e.g., by OECD) and estimates by other organizations (e.g., Oxfam), making it difficult to ascertain the actual value and quality of finance flows intended for climate action. (Climfin 2022).

The biggest area of weakness is unequal flows of climate finance in the agricultural sector (Food availability). The reason is that climate finance underlooks adaptive strategies to fight food insecurity and insists on focusing on mitigative strategies. When it comes to ensuring food security, adaptive strategies are preferable as they work to sustain for longer periods. More to this, the adaptive strategies are usually costlier, especially in developing nations. As it is, only a small fraction of climate finance is attributed to the agricultural food system. According to Global Hunger 2024, an even smaller portion reaches smallholder farmers, who are even more vulnerable to the effects of climate change. (Miriam, Marilena, & al, 2024)

There exist many other shortcomings, but for the sake of this paper, we will focus on the weaknesses of climate finance in the Agri-food sector in developing countries. The next part will be a case study on a small fish farm in Yaoundé, Cameroon, which specializes in the production of fish to meet the demand for quality and naturally grown fish. This will help lay further emphasis on the unequal flow of climate finance between developing and developed countries and between large and smallholder farms.

CASE STUDY: WELLET AND SON FISH FARM

The WELET&SON fish farm is a fish farm located in the central region of Cameroon, in the vicinity of Nkolbisson. Operational since 2018, Welet and Son has grown steadily and is operating primarily as a fish farm to produce freshwater fish like Catfish, tilapia, viper fish, kanga, among others. It equally specializes in the transformation of fish into ready-made food through the process of smoking, grilling, or steaming. It is important to state that the inspiration behind this project is deeply rooted in the passion for farming and a primary desire to improve the quality of fish consumed by Cameroonians. It is an extremely sustainable initiative that is financed solely by one Cameroonian, who noticed the constant shortage in the supply of fish.



Figure 3: Wide angled view of farm and Logo (for more images and clips visit https://www.instagram.com/welet.son?igsh=YWg5YW1yam1rd2Q%3D&utm_source=qr)

It is a freshwater fish farm which is made up of 13 freshwater ponds, which are about 2m deep. The fish farm is a swamp which receives water naturally from the ground's waterbed. As such activities of the farm are easily affected by climate change especially precipitation and temperature levels. Why is the Welet and Son fish farm relevant to food security in Cameroon?

- A large part of the Cameroonian population depends on locally produced fish; as such, welet and son contribute to the national supply. As such, climate shocks

like droughts, floods can affect local food supply, especially since most local fish farms cannot adapt to extreme weather events.

- In the case where the farm is affected, it will cause a shortage in the supply of fish, which affects availability, then higher prices, which affect affordability, which causes hunger.

It is equally relevant to climate finance. Climate finance was formed for initiatives such as this by providing tools, technologies, and infrastructure that farms like Welet and Son Fish Farm cannot afford. Access to funds is also a struggle in Africa because of rules, barriers to information, or discrimination. This case study is proof that even though climate finance exists but smallholder farms don't benefit FROM IT.

Information was gathered for the case study through first-hand observations and one interview with the sole proprietor of Welet and his son. We will begin by looking into the different climate-related challenges faced by the farm.

The first thing the sole proprietor pointed out was the effect of heavy rains on pond preparation. Preparation of the ponds is the most crucial step in the fish farming process. This determines how well the fish will grow, their security, and even their ability to reproduce. Rains over the years have delayed farm preparation activity, causing delays in fish harvest and delivery to consumers. He says, and I quote, "*Pond preparation is preferable during dry seasons because transportation is cheaper since roads are not muddy or flooded. I made a mistake once to prepare the ponds during a rainy season in 2020, and I have regretted it ever since*."

Activities for pond preparation include;

- Clearing of grass and cleaning area (taking away all recyclables that could pollute ponds) surrounding ponds, since it is still relatively underdeveloped.
- Purchase of fish feed and other supplements;
- Purchase material for the building of the net cages and so on.

Another effect of climate change is from extreme dryness, which affects the farm by drying up the water beds of the ponds. Since the ponds produce water from soil infiltration, an extreme level of dryness will dry up the water bed. As such, the fresh water will not be enough to sustain fish vitality. No water equals no fish. He says, and I quote, "*It is almost impossible for me to prepare the ponds during the rainy season as transportation is difficult and more expensive due to the state of our roads!*"

Despite all these, Welet and his son have endured it all and are still producing fish locally in Cameroon. I equally asked to know if smallholder farms like the Welet and son receive any form of funding or support?

From what the sole proprietor explained, receiving funds and support is almost impossible given the level of discrimination and embezzlement in the country. Information concerning climate finance for sustainable initiatives is disclosed to only people of a certain class who equally produce fish but a larger scale. Even fish supplements like feed are in short supply because a minority of large-scale farmers take up all the feed for themselves due to their influence, and leave little to no feed for the majority of small-scale farmers. The discrimination between the large-scale farmers and the small-scale ones is prominent. So, for such farmers, climate finance is not a reliable option, which is why most of the initiatives by small-scale farmers are self-financed, which is most of the time restrictive.

The case of Wellet and Son illustrates how structural barriers in global climate finance leave critical food producers vulnerable. Without equitable access, adaptation in developing countries like Cameroon is fragmented, fragile, and insufficient. There is a practical disconnection between international climate finance resources and the realities faced by smallholder farmers. There is an urgent need for this shortcoming to be resolved to end the discrimination small smallholder farmers face in developing countries. Their voices equally need to be heard at the global level, which is why case studies such as these are important to open our eyes to areas of lack in Climate finance.

This paper showcases a preliminary exploration of the limitations of climate finance when it comes to supporting developing countries to alleviate food insecurity. Future sections

will include broader analysis and implications as to how climate finance can be made accessible to developing countries. Because remember, we aim to find out how climate finance can better support smallholder agricultural resilience and food security despite climate change?

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