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A CASE STUDY ON DISASTER INSURANCE IN KENYA

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A B S T R A C T

This study aims to provide a comprehensive outlook on the active disaster insurance scene in the East African country, Kenya. It begins with a geographic and economic analysis of the country followed by its historical challenges with natural disasters, namely droughts. The study is both qualitative and quantitative in nature and mostly deals with secondary sources of data. Establishing the current status of the country, the discussion brings into light the three insurance programs that have gained prominence there in the last decade: Kenyan Livestock Insurance Program (KLIP), Area Yield Index Insurance (AYII), and Kilimo Salama or Safe Agriculture. These programs use state of the art remote sensing technology to determine the availability of pasture, crop yields, etc. through standardized vegetation indices. Once the indices reach a predetermined minimum threshold, they trigger the payout mechanisms of the respective programs, economically uplifting the vulnerable communities involved and avoiding potential disaster. The programs are partially subsidized by the government which allows ease of adoption for local communities and helps stabilize the economy by keeping the agriculture and livestock sectors in balance. The study also acknowledges the limitations faced by the programs in order to provide a more realistic depiction and aims to encourage the piloting of similar programs in other developing nations like Bangladesh.

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INTRODUCTION

Kenya is one of the major countries in the African continent that has been seeing rapid economic growth in the recent decades. The East-African country has seen much media coverage due to its index-based livestock insurance program, KLIP. In this study, we will be taking a closer look at the disaster insurance programs that are currently available in Kenya through the collection of secondary data sources. Hopefully, we can gather a complete overview of the industry there by the end of this study.

Geographic and Economic Overview of Kenya

Kenya is the world's 51st largest and 27th most populous country. Economically, it is ranked just below Nigeria and South Africa in the sub-Saharan Africa region. Of the total 580,367 sq km of available land, 48.1% (279,157 sq km) of it is used for agriculture, while only 1,030 sq km of that land is irrigated, making the country's agricultural production significantly dependent on rainfall and extremely susceptible to droughts. (Central Intelligence Agency, 2021) Figure 1 clearly depicts the aridity of the Kenyan landscape. It shows how the Kenyan population living in the north/north-eastern parts of the country can be highly vulnerable to the effects of drought. There have reportedly been many serious droughts in Kenya in the last few decades, each affecting millions of people.

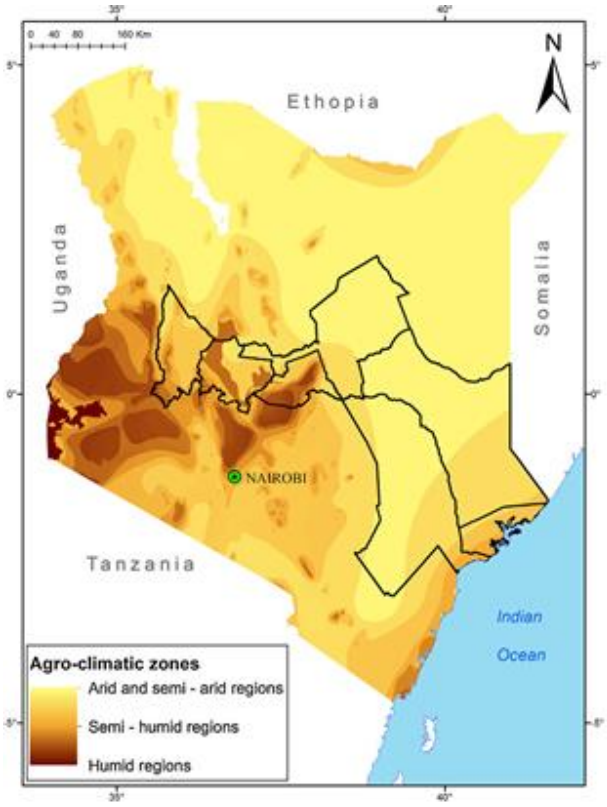

Figure 1. Agro-climatic zones of Kenya (Mosomtai G, 2016)

The Kenyan economy is relatively poor in the world stage with a GDP of USD 95.52 billion, 5.1% inflation rate, 40% unemployment rate and 36.1% of the population living below the poverty line. (Central Intelligence Agency, 2021) That being said, the Kenyan GDP has been on a steady upward trajectory in the recent decades as we can see from Figure 2. The country has recently joined the ranks of lower-middle income countries resulting from its GDP exceeding a standardized World Bank threshold. The country is also viewed by many to be the economic, financial and transport hub of East Africa. However, the Kenyan economy is heavily dependent on its agriculture industry, contributing 25% directly and 27% indirectly to its GDP, over 65% to exports, 75% to employment and supporting over 80% of all rural population.

(Kenyan Ministry of Agriculture, Livestock and Fisheries, 2017) Despite having such an overwhelming dependency on it, the agricultural sector is often the most unstable industry in Kenya due to most of the farms and livestock being rainfed and the growing uncertainty of weather characteristics as a result of climate change.

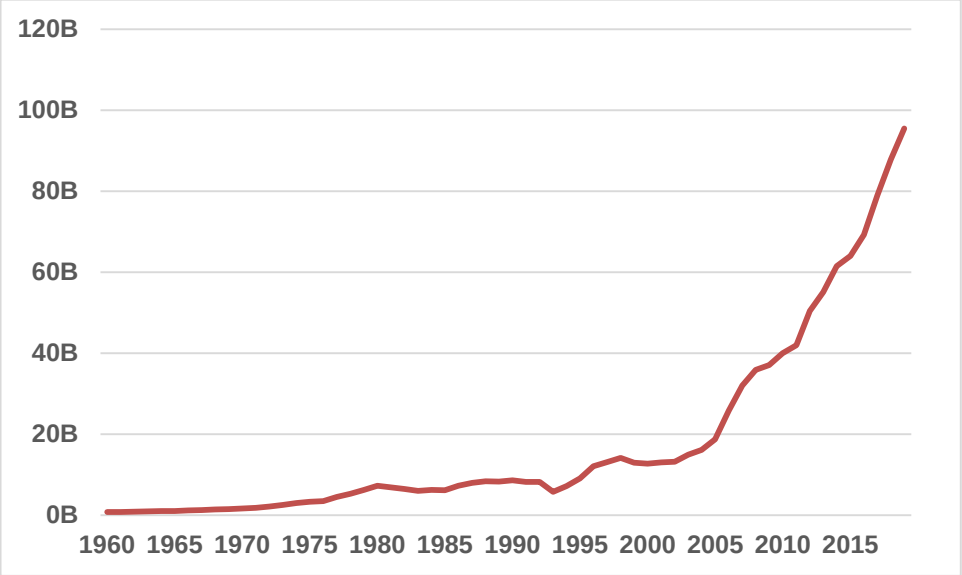

Figure 2. Gross Domestic Product, Kenya (1960 - 2019) (The World Bank, 2021)

Drought History and Projections in Kenya

When a certain area observes sustained periods of water availability as below normal, the conditions are defined as a drought. Drought is one of the major natural disaster threats in Kenya. Despite falling directly on the line of the equator, an overwhelming 80% of Kenyan territory is covered by arid or semi-arid lands (ASAL) where annual rainfall ranges from 200 to 500 mm. Due to long exposure to the harsh nature of these lands, the communities residing here are familiar with seasonal droughts. Kenya has recorded shortages of food due to the lack of rainfall and drought in 1928, 1933-34, 1937, 1939, 1942-44, 1947, 1951, 1952-55, 1957-58, 1984-85, and 1999-2000. (United Nations Development Program) However, the growing variability of global weather due to climate change has completely flipped the scenario in recent decades. In the years 1997, 2000, 2004 and 2005, Kenya has witnessed catastrophic droughts threatening the livelihoods and food security of up to 4 million people. (New Standpoints, 2006) This trend continues in recent years as well with droughts threatening millions of people, children and livestock in 2008, 2010 – 11 and late 2016 – 2017. (Global Facility for Disaster Reduction and Recovery, 2019). These present conditions are expected to get worse with global temperatures rising. Currently, 16% of Kenya's GDP is threatened by a drought which is expected to triple to 42% in the next 50 to 100 years. Also, 13% of the current populations are affected by droughts which are expected to reach 34%. (UNISDR and CIMA, 2018).

Effects of Drought on Agriculture

Kenya's landmass observes 97.8% of dry land and only 2.2% of water bodies. Only 16% of that area observes normal to high range of rainfall up to 1,000 mm. Most of the agricultural production in Kenya happens in these zones. The remaining 84% ASAL areas are primarily used for livestock and wildlife. 80% of the entire livestock sub-sector depends on these areas. (Kenyan Ministry of Agriculture, Livestock and Fisheries, 2017) As a result, the livestock sub-sector is hit the hardest during droughts. During 2008 – 2011, Kenya observed 4 consecutive years of drought which amounted to a total of 12.1 billion USD in damages. When categorized into different sub-sectors, it's evident that the livestock sustained the majority of the damages, followed by crops as we can see from Figure 3. On top of that, the current estimate of 16% of livestock being affected is expected to jump to 36% in the next 50 to 100 years. Droughts have also been linked with soil degradation which leads to reduced yields and decreased agricultural productivity in the long run. It has been reported that due to droughts, Kenya's famine cycles have shortened from 20 years (1964-1984), to 12 years (1984-1996), to two years

(2004-2006) and now, to yearly cycles (2007/2008/2009). (Kenyan Ministry of Agriculture, Livestock and Fisheries, 2017) We see an even clearer depiction of the relationship between droughts and agricultural production from Figure 4 and Figure 5 which depict production shocks and estimated losses to crops over a three-decade period.

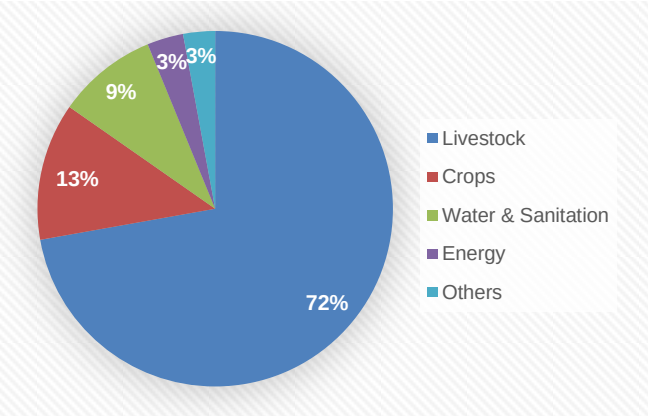

Figure 3. Drought Damage Distribution (Government of the Republic of Kenya, 2013)

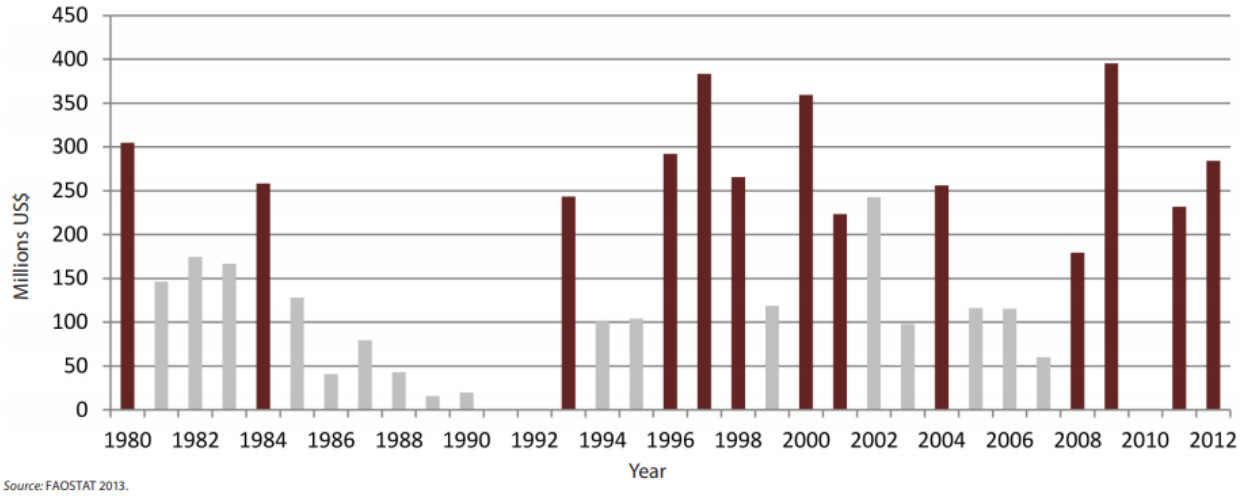

Figure 4. Estimated Losses to Aggregate Crop Production from Risk Events, 1980 – 2012 (USD Millions) (World Bank Group, 2015)

Disaster Insurance Programs in Kenya

Kenya Livestock Insurance Program (KLIP)

KLIP was first launched in October 2015 in the Wajir and Turkana counties of Kenya by its Ministry of Agriculture, Livestock, and Fisheries in association with the International Livestock Research Institute (ILRI) and the World Bank. Prior to this, there hadn't been any financial programs available in the region that addressed natural disasters. The program was based on the index-based livestock insurance model developed by the ILRI in 2009, which has now garnered international recognition. The objective of the program is to provide financial indemnity to vulnerable pastoralists that depend entirely on livestock. The program was launched in a Public Private Partnership deal with the active participation of the government of Kenya. In its initial stage the insurance program was fully subsidized by the government and did not require any premium payment by the beneficiaries. Being an index-based program, it also saves operational costs by not having to employ field agents to monitor the conditions of the claim. We have already discussed the devastating effects droughts can have on Kenya's livestock sub-sector. This insurance program allows marginalized pastoralists to keep their livestock alive during drought periods by providing them with enough subsidies to purchase fodder for their livestock. (World Bank Group, 2017).

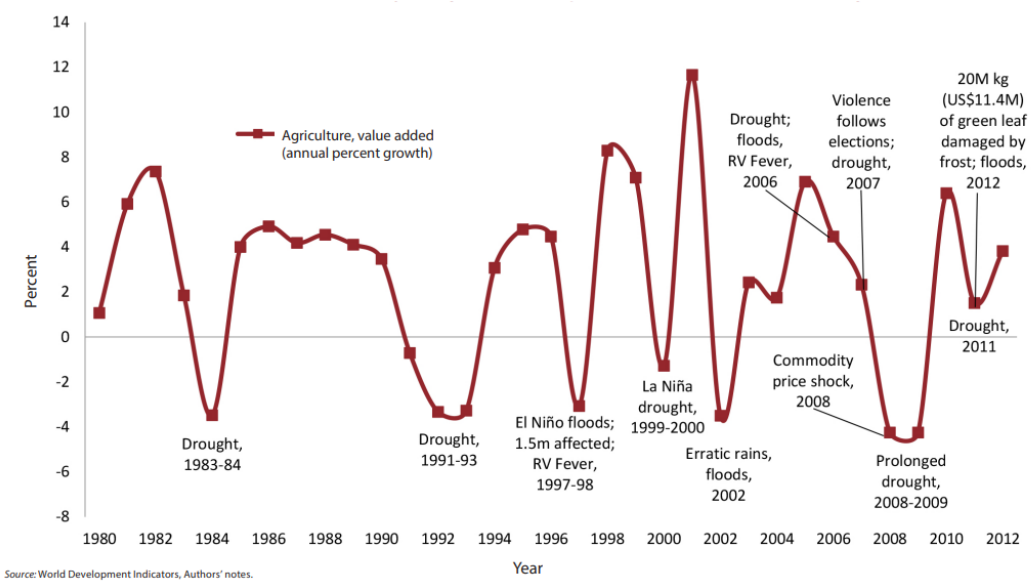

Figure 5. Historical Timeline of Major Agricultural Production Shocks in Kenya, 1980 – 2012 (World Bank Group, 2015)

Scope of the Program

In its infancy in 2015 – 2016, the government of Kenya purchased the livestock insurance program for around 5,012 pastoral households in the Wajir and Turkana counties. This allowed the insurance companies to setup proper infrastructure and distribution channels without having too much pressure on them. By late 2016, this number grew to 14,000, and by the end of 2018, the number of pastoralist households covered under the program reached 30,000, reaching even more counties with 5 million USD paid in premiums through government subsidies and 7.2 million USD having been paid to an estimated 100,000 beneficiaries. The Kenyan government had also planned on covering a minimum of 65,000 pastoralist households by the end of 2020. No recent reports have yet come out in regards to the completion of this goal. Neighbouring countries such as Ethiopia and other Sahel countries have also taken great interest in launching a similar program.

Payout Mechanism

KLIP has a predetermined coverage amount set prior to any claims being made against the program. Satellite data is used to constantly monitor pasture availability in the regions relevant to the beneficiaries. When this variable reaches a certain minimum threshold, it triggers the program and despite the program being bought by the government, any claim made by the beneficiaries is promptly met with the predetermined coverage amount by the insurance companies themselves instead of channeling it through the bureaucratic system. This swift response provides the pastoralists with ample time to purchase necessary fodder in order to keep their livestock alive. Reports have shown that by early 2018, the program had reached 32,000 pastoral households through payouts amounting to 7 million USD. (Global Partnership for Sustainable Development Data, 2019). In order to develop KLIP into a sustainable program, the Kenyan government deployed a second stage of the program where government subsidies would pay for 50% of the program up to a certain number of livestock and require beneficiaries to bear the remainder of the cost.

Requirements and Limitations

The Kenyan governments set out a certain number of requirements to ensure the marginalized pastoralists are given priority in the program. These are:

- The individual/household has to be engaged in pastoralism and own a minimum of 5 Tropical Livestock Units (TLU), which translates to about 5 cows or 10 goats.
- They cannot be active beneficiaries in other programs under the Kenya National Safety Net Program.
- They cannot own more than 20 TLU of livestock.
- They must have a formal money transfer system (bank account), or promise to register for one if considered as a beneficiary.
- The limitations of the program include –
- Only a maximum of 5 TLU of livestock are covered under the predetermined coverage amount.
- Despite proven its benefits, the program still hasn't seen high adoption rates due to a lack of awareness programs.

Area Yield Index Insurance (AYII)

AYII was launched by the Kenyan government in partnership with the private sector in March of 2016. The main targets of this program were the semi-commercial maize farmers. This particular insurance program requires the insurance providers to map out defined units of farmland where annual yield is expected to reach a predetermined minimum threshold. The decision for what that threshold should be and how the area units should be mapped out is made through thorough research and experiments. Therefore, if in a given year, the farm yield of any particular area unit does not meet the minimum threshold, it is implied that the farmers lack the economic means to sustain their lives and the insurance program is triggered to send payouts. Unlike the initial stages of the KLIP program where the Kenyan government subsidized 100% of the premium payment, only 50% in the case of the AYII program was subsidized. The individual farmers were required to bear the remainder of the cost. The government was also tasked with financing the data collection programs required to determine annual yields and other necessary variables in order to establish the insurance program, as well as financing awareness programs in the rural regions that encourage wide-range adoption of the AYII program. (World Bank Group, 2017).

Scope of the Program

When the program was piloted in March of 2016, 950 farmers were reported to have bought out the AYII program in the Nakuru, Embu and Bungoma counties of Kenya. Since then, the Kenyan government has made plans to expand to upwards of 33 counties and cover around 87,000 farmers by the end of 2020. There have been no recent reports identifying whether this goal has yet been yet, but expansion to the program has definitely been made since 2016.

Payout Mechanism

As described previously, the AYII program requires the individual farmers to bear 50% of the premium payment while the other 50% of the cost is subsidized by the Kenyan government. If a predetermined area unit fails to meet the minimum threshold of crop yields, the payout is triggered and all the farmers in that given unit receive indemnification. This is a failsafe method as it cannot be manipulated by any single farmer's ineptitude to farm in a single year and also saves cost for the insurance providers by not having to employ field inspectors in order to settle any claims. The payouts are also swift and help the farmers continue their livelihoods and reinvest in their crops for the coming years.

Limitations

- The 50% government subsidy only applies to a maximum of 5 acres in order to prioritize small scale farmers.
- The program is limited to maize and wheat farmers.
- The farmers are first required to pay their share of the premium in order to receive the government subsidy and are not recovered for 50% of the damages if no premium is paid.
- The awareness for risk financing mechanisms in rural communities is incredibly low, which leads to low adoption rates for these programs.
- Since this is a group policy, individual failures of output are not accounted for.

Kilimo Salama (Safe Agriculture)

Kilimo Salama is a weather index insurance that shares the objective of the AYII program of protecting small scale farmers from natural disasters. This innovative insurance product was first launched in 2009 by the Syngenta Foundation for Sustainable Agriculture. In its initial stage, it only covered 200 farmers, however, in 2013, this number grew to 200,000, covering farmers from Kenya, Tanzania and Rwanda. They had been recorded to have made payouts of a sum of 12.3 million USD to their beneficiaries. (Sibiko, 2018) Kilimo Salama became an authorized company by the name of ACRE, or Agriculture and Climate Risk Enterprise, in the year 2014. Kilimo Salama, like most index-based insurance programs, monitors reports from reliable weather stations and records the cumulative rainfall index falling below a predetermined minimum threshold, which would trigger the program. Similar to AYII, it only started with maize and wheat farmers, but has recently expanded to other crop farmers as well. One of the essential elements behind the success of this program was the facilitation of money transfer through the mobile money network, M-PESA. (Greatrex H, 2015) In the year 2011, it expanded into more programs under the title, Kilimo Salama-plus, offering the alternative of only insuring the cost of the crops at a low premium, or insuring the potential output value, paying a higher premium. Most of the monetary transactions and information transfer is made through taking advantage of the well-established mobile network available in the operational regions.

CONCLUSION

Risk financing is still an emerging field in Kenya and similar developing countries, but programs like KLIP, AYII and Kilimo Salama show great promise since general insurances aren't likely to cover massive losses sustained by disasters. That being said, there can be no escaping the fact that adoption rates for these insurance programs have been lower than expected in Kenya and the African region as a whole despite there being clear financial benefits. (Jensen N, 2015) This is likely attributed to an overall lack of awareness and understanding of financial schemes by the rural communities. It is expected that as time progresses, adoption rates will increase and more attention will be given to the field of disaster insurance internationally and more innovative products will enter the market, especially in developing countries where risk exposure and potential for loss is much more significant. As it currently stands, these are the major disaster insurance alternatives available to vulnerable Kenyan communities. Surely, the industry can be expanded and more innovative products may be offered in the future. However, that may largely depend on international funding, political stability in the region, and the willingness of the government.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

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