Beyond corrective? An assessment of compensatory disaster risk management approach for food security in the context of climate change in Siaya County, Kenya

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ABSTRACT

Globally, compensatory approach has been practiced through insurance, contingency funding, safety nets, and agricultural subsidies to transfer risks of climate change, aid timely and sufficient response to enhance food security as sustainable Development Goal (SDG) number 2. Climate change has negatively affected food crop production amidst implementation of corrective measures such as drought tolerant crops yet food insecurity is still on the rise. This hence stages curiosity on the next available approach as compensatory disaster risk management to reduce the residual risk of climate change and enhance food security among households in Siaya County. The study assessed the compensatory disaster risk approach in mitigating the negative impacts of climate change for improved food security among households in Siaya County. Pressure and release model was used to guide this study. The study used descriptive research designs. A sample size of 385 households was determined using creative research system for the study where sampling techniques comprised of Multistage and proportionate sampling for household respondents. Secondary data were obtained from the publications, Journals, internet sources and newspapers while primary quantitative data was collected using questionnaires. Descriptive and inferential statistics were used to analyze quantitative data with the help of Statistical Package for Social Scientist (SPSS) Version 20.0. The results are presented in a figure. Findings from the inferential statistical analysis reveals a mixed picture of how households in Siaya County engage with different compensatory risk management strategies to cope with climate risks. Among the options assessed, agricultural subsidies stood out as highly significant ($\chi^2 = 12.19$, $p = 0.001$). This suggests that many households actively make use of these subsidies as a key way of managing the lingering effects of climate-related challenges. On the other hand, strategies such as social safety nets ($\chi^2 = 19.10$, $p = 0.045$) and crop insurance ($\chi^2 = 11.23$, $p = 0.05$) showed low statistical significance. This indicates that while some households use them, the uptake is moderate or somewhat inconsistent across the county. Interestingly, access to contingency funds showed no statistical significance at all ($\chi^2 = 19.10$, $p = 0.09$), pointing to minimal reliance on this particular measure by households. The study concludes that while agricultural subsidies are widely embraced and play a vital role in helping households manage residual climate risks, other risk management options like social safety nets, crop insurance, and contingency funds are either underutilized or inconsistently accessed. These insights underscore the need to strengthen awareness, improve accessibility, and enhance institutional support for a wider range of risk management options. Doing so would better equip households to cope with the ongoing impacts of climate change and improve food security in Siaya County. The findings provide valuable evidence for both national and county governments as they shape policies aimed at managing residual climate risks and promoting food security through risk-sensitive, sustainable development strategies.

Keywords: Climate Change, Compensatory Approach, Disaster Risk Management, Food Security, Siaya County, Kenya

I. INTRODUCTION

Compensatory is an approach that is based on activities that are meant to strengthen the social and economic resilience of individuals and societies in the face of residual risk from the climate change. These are risks that cannot effectively be reduced by corrective practices as posited by the United Nations Strategy for Disaster Risk (UNDRR, 2015) where the risk management activities include preparedness, response and recovery. In the context of food crop production under the changing climate, this study focused on the compensatory aspect of risk management as recovery activities as a mix of different financing instruments, such as national contingency funds, contingent credit, insurance and reinsurance of crops and social safety nets such as cash transfer programs that are pertinent to enhancement of food security in the after math of climate change negative impacts. According to Food and Agriculture Organization, FAO (2019), climate change has remained the main cause of low agricultural production hence insufficiency in food provision mainly from food crops in many communities worldwide and hence compensation as a residual risk management

remains a key approach in transforming agricultural sector. Compensatory risk management approach therefore was meant to help farmers recover from the agricultural losses and also enhance access to food after the negative impacts of droughts and floods as a result of climate change.

Globally, compensatory approach has been practiced to transfer risks through crop insurance from climate change negative impacts, aid timely and sufficient response towards the lost food crops through contingency funds, increased accessibility of the required inputs for food crop production through subsidies and cushion the most affected by droughts and floods through cash transfer programs that can sustain the affected before the next harvest after the negative effects on that might have led to crop loss (FAO, 2017). Compensatory practices such as farm input subsidies have been adopted since the green uprising in Latin America and Asia in 1960 and 1970s while many countries of the world have continued to depend on them for improved food crop production from the changing climate (Wang *et al*., 2019). Other compensatory approaches such as contingency funds and crop insurance to transfer risks from the small-scale farmers to insurance companies and authorities such as governments have also been in use over time in the who world. According to (World Bank, 2022), India as just one of the countries that has well established National Agricultural Insurance scheme that is meant to reduce farmers vulnerability to natural disasters such as droughts and floods has managed to improve their food crops amidst increasing human population and changing climate.

Sub Saharan Africa has also adopted agricultural subsidies for crop yield improvement where according to Ambajo et al. (2021) subsidies are mainly of fertilizers, seeds, pesticides, mechanization, labour and other financial aid. Compensatory practices such as agricultural subsidies, crop insurance have the potential to increase crop yield, food security and economic wellbeing of small-scale farmers in Africa (FAO, 2020). However, Pauw and Thurlow (2014) asserted that most small-scale farmers in developing countries have not embraced the subsidies and crop insurance as compensatory approach towards climate change mitigation on food crops which is due to their low economic disadvantage. This has therefore subjected a majority on other compensatory practices such as relying on supplemental feeding, food for work and cash transfer to the most vulnerable in the community such as the elderly to negative climate change impacts.

Kenya through concerted multi-stakeholder efforts has over the years formulated policies and integrated compensatory approach into agricultural production to protect livelihoods. According to Badiane *et al*., (2016), Kenya like any other African country has employed universal subsidies schemes since 1960, Kenya has also put strategies on agricultural subsidies, developed food crop insurance from drought, pests and floods, initiated cash transfer and contingency funds by the National Government as part of broader risk management framework and as key strategy to de-risk agriculture (GoK, 2020). Kenyan government under the comprehensive crop insurance program that cover main food crops such as maize, beans, sorghum is involved in agricultural loss compensation allocates 50% of its funds to small scale food crop farmers yearly (GoK, 2020). This initiative is implemented in at least thirty Counties with Bomet registering the highest 3610, the least as Kakamega with 15 while Siaya County having 233 registered small-scale food crop farmers. In addition, the Siaya County government has been helping farmers by providing agricultural subsidies since taking charge in 2013. This includes providing seeds and fertilizers at a reduced cost. For instance, in 2014, they offered maize and sorghum seeds worth 4.9 million Kenyan shillings and fertilizer subsidies of 8.5 million Kenyan shillings. The total spent on subsidies over the past three years is 37.1 million Kenyan shillings, not including the money used to buy tractors for subsidized plowing services (Ambajo et al., 2021).

Various compensatory activities are in implementation ranging from agricultural subsidies such as hired tractors, seeds, fertilizers, and also relating to supplemental feeding programs and social safety nets among the most vulnerable populations in the communities. According to the GoK (2022) since devolution of agriculture, Siaya County Government has enrolled a number of agricultural subsidies that included subsidized maize and sorghum seeds amounting to Ksh 4.9 million (US $ 37,692) and fertilizer to a value of 8.5 million (US $ 65,385) in the last financial year. This evidenced compensatory disaster risk management is implemented where the County Governments procures the inputs on behalf of the small-scale farmers and give to them a lower price to increase access of the inputs to a majority which is expected to increase food crop production in the study area. Addition to the fertilizers and seeds, the county Government has also given access to the small-scale farmers tractors for hire at a reduced price of Ksh. 3000 (US $ 23) per ha for ploughing services. Other related compensatory activities are “Inua Jami” program for the elderly vulnerable populations in Siaya County. According to Omondi *et al*., (2023) implementation of cash transfer on the most vulnerable populations in the community such as the elderly and the female headed household in Siaya County have had a positive influence on more income generating and farming practice hence increasing food crop production.

1.1 Statement of the Problem

Siaya County is located in the Lake Victoria basin, which is one of the regions categorized as Arid and Semi-Arid Lands in Kenya (GoK, 2021). An estimated 80% of the farmers in Siaya County are involved in rain fed subsistence growing of crops such as maize, sorghum, millet, beans, sweet potatoes and cassava.

However, agricultural production has been negatively impacted by the frequent droughts and floods leading to low production and hence food insecurity in most of the seasons. There are various corrective disaster management approaches such as soil and water management strategies, drought tolerant crops, pests and disease management, crop diversification, improved storage, and flood management that was expected to address and seek to lessen any negative impact of climatic disaster risks such as droughts and floods. However, food insecurity is still on the rise and at times cause a crisis in Siaya County. This is therefore an indication of lack of resilience of food crops leading to increased susceptibility to the changing climate hence leaving the population with the only remaining risk management option as the compensatory disaster risk management approach encompassing food crop insurance, social safety nets, contingency funds and agricultural subsidies. There was therefore curiosity to investigate the existing compensatory disaster risk management approaches to improve household food security in the in the wake of climate change in Siaya County.

1.2 Research Objective

The objective of this study was to assess the compensatory disaster risk management approach for food security in the context of climate change in Siaya County, Kenya

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Pressure and Release Model

The Pressure and Release (PAR) model, as introduced by Wisner *et al*., (2004), helps us understand that disasters aren't just about natural hazards, but also about how people's lives and systems are made vulnerable over time. It shows how deeper social issues like poverty, poor governance, and environmental issues slowly build pressure, making communities means of livelihoods more exposed to hazards like droughts or floods. In this study, this model becomes especially useful where compensatory disaster risk management were aimed at tackling climate change and safeguarding food security. It helps trace how these underlying problems stack up and turn routine climate events into crises for already struggling communities. By using the PAR model, this a study is expected to better shape practical, people-centered solutions like contingency funds, social safety nets, crop insurance, or community food banks that don't just respond after disasters hit livelihoods, but work to ease the pressures long before hazards arrive. This way, disaster risk management isn't just reactive but part of a bigger plan to protect livelihoods, build food security and strengthen resilience against the residual risks of climate change.

2.2 Empirical Review

Globally, the intensification of climate change has forced communities, governments, and international organizations to rethink how they safeguard food systems. Numerous empirical studies show that climate-resilient agricultural practices such as subsidies, social protection programs have emerged as crucial compensatory mechanisms. For instance, the Food and Agriculture Organization (FAO, 2021) documents how indexed insurance schemes have helped buffer vulnerable populations, especially in drought-prone countries like Ethiopia and India. Interestingly, cross-country data reveals that nations investing in both climate adaptation and inclusive social welfare programs tend to experience lower rates of acute food insecurity, even after severe climate shocks (World Food Program [WFP], 2023). This global shift isn't just about technology, it's about protecting human dignity when people's ability to put food on the table is under siege.

Regionally, food insecurity linked to erratic weather patterns has led to creative, homegrown solutions backed by empirical evidence. The African Risk Capacity (ARC) is a good example, providing insurance payouts to member states like Malawi and Senegal to support communities before droughts spiral into crises (ARC, 2022). Meanwhile, a recent study by Nyang'au *et al.* (2023) in East Africa found that community-based grain banks and farmer cooperatives have helped households stabilize food supplies, especially during lean seasons. These interventions work because they are locally driven, culturally sensitive, and designed with the people they serve in mind. Yet, gaps persist particularly in fragile states, where conflict often undermines compensatory programs, leaving millions to rely on emergency aid.

Recurrent droughts and floods in Kenya have laid bare the country's vulnerability, but empirical studies suggest that targeted interventions are making a difference. A study by Mwongera *et al*. (2020) in arid and semi-arid counties showed that integrating climate-smart agriculture with modern compensatory mechanisms significantly improved household food security. Furthermore, Kenya's Hunger Safety Net Program (HSNP), which offers unconditional cash transfers during droughts, has been widely lauded in research for reducing the incidence of severe hunger (Kiringai & Otieno, 2021). These initiatives remind us that food security isn't just a statistic it's about families, futures, and the right

to live free from the anxiety of an empty granary. As climate change tightens its grip, the resilience of ordinary people, supported by thoughtful policy and local wisdom, will be the lifeline of food systems in Kenya and beyond.

III. METHODOLOGY

3.1 Study Area

The research was conducted in Siaya County, which is one of the six counties in the Nyanza region in Kenya. Siaya County has a land surface area of 2,530 km² with a water surface area of 1,005 km^2. The water surface area forms part of Lake Victoria. It approximately lies between latitude 0º 26´South to 0º 18´ North and longitude 33º 58´ and 34º 33´ East (GoK, 2015).

3.2 Research Design

Descriptive research design was used to assess the compensatory approaches for food security in the context of climate change. Descriptive research studies are for those studies that are concerned with describing the characteristics of a particular individual, or of a group (Kothari, 2004). Nueman (2000) avers that descriptive research has the capacity to describe present status of phenomena, determine the nature of prevailing circumstances. This was then used to sought accurate description of activities compensatory disaster risk management approach as practiced by the households to manage the residual risk from climate change and enhance food security in the study area. Additionally, the study utilized both qualitative and quantitative approaches.

3.3 Target Population

The study target population consisted of household heads from the three sub-Counties namely Alego Usonga, Ugenya, and Bondo of Siaya County. The household heads population were the main respondents in acquiring primary data as they are most affected by the extreme climatic conditions with regard to food crop production and also as the ones mainly intended beneficiaries of compensatory disaster risk management approaches.

3.4 Sampling techniques and sample size

A sample size of 385 was sampled using multistage sampling techniques from the larger Siaya County, Sub Counties, and to the wards. Additionally, purposive sampling was used to sample sub counties such as Alego Usonga with varied climate experiences, Ugenya representing the high altitude, and Bondo representing the low altitude sub counties. Proportionate sampling was then used to sample household heads from the varying numbers in the wards from the sub counties.

3.5 Data Collection Methods

Primary quantitative data from the household heads was mainly collected using questionnaires while qualitative secondary data was collected from journals, reports and magazines.

3.6 Methods of Data Analysis

All the quantitative data from the questionnaires were analyzed using the Statistical Package for Social Scientists (SPSS) version 20.0 for both descriptive and inferential statistics and results are presented in a figure.

IV. FINDINGS & DISCUSSION

4.1 Response Rate

This section analyses and discusses various practices related to compensatory disaster risk management approach such as a) contingency funds, b) crop and livestock insurance, c) safety nets and d) agricultural subsidies to manage the residual risks of floods and drought in the signatures of climate change from the results as presented in Figure 1. The study sought to establish the approaches that are mainly used by the household heads to mitigate the effects of climate change and transfer risk of food crop loss in the study area. The results illustrate that majority 52% (200) were well conversant and had been involved in subsidized agriculture, while minority 2% (8) had accessed contingency fund in the study area.

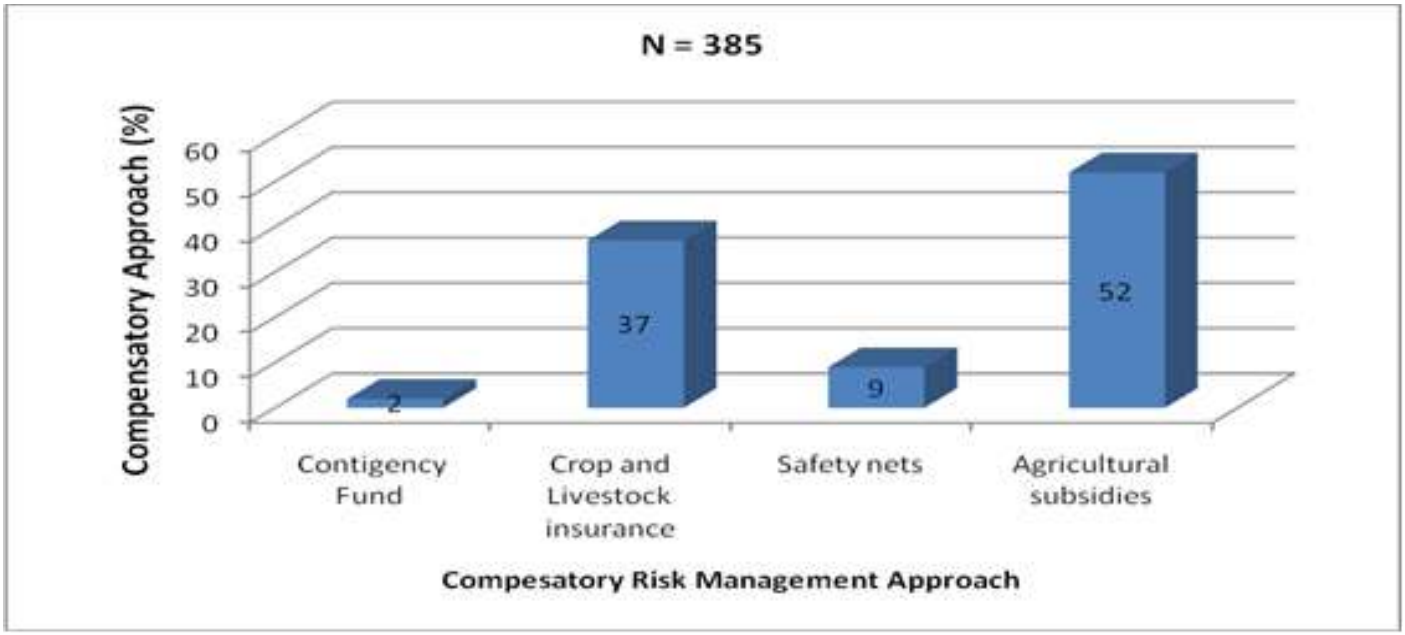

Figure 1
Compensatory Disaster Risk Management Approach Activities in Siaya
Source: Researcher (2025)

4.1.1 Agricultural Subsidies in Siaya County

The study established that some of the subsidy provisions in the study area were mainly of inputs such as subsidized fertilizers, subsidized cost of ploughing using County bought tractors and subsidized certified seeds. Results in Figure 1 show that majority 52% (200) of the household respondents related agricultural subsidy services to management of the residual risks from the effects of climate change in the study area. Additionally, inferential statistics analysis was done as displayed in Table 1 to test the level of significance of agricultural subsidies by the households in the management of the residual risks from climate change impacts. Results displayed a Chi – square test ($\chi^2_{5,0.05} = 12.19$) with p-value of 0.001 at (P<0.05). This showed a high statistical significance of the practice of agricultural subsidies by the households in the Siaya County.

Table 1
Chi-Square Test of Agricultural Subsidy Practices and Residual Risk Management

Variable	Chi-Square (χ^2)	Degrees of Freedom (df)	p-value	Level of Significance (α)
Agricultural Subsidy Practices vs. Residual Risk Management	12.19	5	0.001	0.05

Source: Researcher (2025)

The results from this study agree with Oluwatoba *et al*., (2019) on subsidies for agricultural technology adoption in Uganda where the findings revealed that increased accessibility of the different forms of agricultural subsidies increase adoption hence the potential of managing the residual risks mainly that are from the effects of climate change. According to GoK (2021b), County Government of Siaya has made strides in establishing agricultural subsidies by enacting a bill in 2021 on County agriculture input and subsidies. This enactment was meant to instutionalise and operationalize the County agriculture input subsidies and grants programs to enable farmers access quality and affordable inputs that could be realized by supporting strategic interventions enhancing productivity, value addition, quality improvements and marketing. This intervention therefore could have leveraged the level of engagement in the agricultural subsidies as shown by the results in this study (Dulal *et al*., 2015).

The study established that most of these subsidies are input based where the County Government of Siaya had a program of distributing over 158 tons of subsidized fertilizers costing Ksh. 40 million (US$ 333) to over 200,000 registered farmers. Other subsidized inputs are certified seeds with regard to Siaya zoning agroecologically. “Tractor for hire” where, the County Government has introduced around seventeen (17) tractors hired by the residents at a subsidized cost of Ksh. 2000. These subsidies measures are projected to increase land under cultivation to about 3000 acres an increase production to around 280, 000 bags averagely 18 bags per acre maize production (GoK, 2022).

Agricultural subsidies therefore are a measure in Siaya County through agro ecologically suitable seeds, fertilizers, and the increased land under cultivation to remedy the impact of climate change to improve food crop production. According to Hemmingway and Gunawan (2018), use of improved seeds, inorganic fertilizer and increased mechanization should be expected to increase agricultural productivity mainly in developing countries and for small scale farmers. So in this view, it is an expectation of the respondents that their production will increase and last for longer period pending another season of farming hence bridging the gap of food insecurity that has always been as a result of extreme weather conditions. However, the study learnt that access to these subsidized inputs was a concern. The study revealed that some of these inputs such as the tractors were not adequate to serve all the respondents in a given time hence delaying farming activities against the availability of rains in a season.

4.1.2 Social Safety Nets in Siaya County

In Siaya County, there are a range of social safety nets activities for the households such as cash transfer for the elderly, work for food by youth and women, supplemental feeding programs and Kenya national safety program "Inau Jamii" program for the elderly and most vulnerable in the community. Figure 1 results show that 9% (35) of the household respondents in the study area related social safety nets to the management of residual risks from the effects of climate change. Additional results in Table 2 show analysis to test the level of significance of the social safety nets practices was done. From the inferential statistical analysis, a Chi – square result of ($\chi^2_{5,0.05}$ = 19.10) with p-value of 0.045 at (P<0.05) was generated indicating a low statistical significance on the engagement of the households with the social safety nets in managing the residual risks from the effects of climate change in Siaya county.

Table 2

Chi-Square Test of social safety nets and Residual Risk Management

Variable	Chi-Square (χ^2)	Degrees of Freedom (df)	p-value	Level of Significance (α)
Social safety nets vs. Residual Risk Management	19.10	5	0.045	0.05

Source: Researcher (2025)

Siaya County has experienced negative impacts of climate change that has reduced their capability to produce adequate and food safe for all and at all times hence increased chances of food insecurity risk of hunger and malnutrition in the study area. According to Shaheen *et al*., (2023), social safety nets have then over the years become ideal to communities all over the world in where Kenya has become a pioneer in Africa in establishing evidence based social protection mainly to protect most vulnerable households to effects of climate change. The study established that there exists a number of social safety nets in Siaya County. Through Kenya National Safety Net Program (KNSNP), "Inua Jamii" the poor elderly members of the community are covered by this program. This is a strategy to help the poor elderly people who do not have the capacity to farm for themselves and are vulnerable to the effects of the changing climate like flood, drought and heat stress and the resultant consequences of the extreme weather conditions like food insecurity.

The study also observed participation of members of the community and mostly the youth and women in community public works. This mainly entailed participation in access road network clearing of the bushes and drainages. From these activities, the study learnt that those who were involved expected to either be given food such as the maize and beans or be given money to go and purchase food of their preference. This program too, was to support the poor households from food insecurity that was as a result of negative impacts of climate change in Siaya County.

School feeding program was the third identified social safety net program in Siaya County. The program mostly implemented in the lower levels of basic education such as in Primary schools are meant to feed the children from poor households that cannot afford food on daily basis. The study revealed that the program has been a game changer to the children from poor households mainly due to the impact of drought and floods. However, the study observed that there was need for the National government and County government to work closely with other private entities to strengthen the program to avoid delay in disbursement of the funds and increase the spectrum of beneficiaries. This was supported by Rahmato (2013) that however much positive effects the social safety nets have had in communities, there was need to address some of the challenges such as proper identification of the beneficiaries and also widening the spectrum of the beneficiaries to significantly cover considerable households in managing the residual risks as in the case of Siaya county.

4.1.3 Food Crop Insurance in Siaya County

Crop insurance is a form of transferring the risks that which is formally done between individual farmers and the insuring companies with the objective of normalizing the agricultural activities after an impact from the extreme

climatic conditions (GoK, 2021b). Siaya County is one the 29 Counties in Kenya that have benefited from the 117 million insurance payout for small scale farmers. Figure 1 shows that 37% (143) of the household respondents in the study area related food crop insurance practice in managing residual risk from the effects of climate change in the study area. Table 3 show an inferential statistics analysis to test the level of significance of the crop insurance practices displayed a Chi – a square result of ($\chi^2_{5,0.05}$ = 11.23) with p-value of 0.05 at (P=0.05). Analysis therefore shows that there is low statistical significance of the practices of crop insurance in managing the residual risks from the negative impacts of climate change in Siaya County.

Table 3

Chi-Square Test of Food Crop Insurance and Residual Risk Management

Variable	Chi-Square (χ^2)	Degrees of Freedom (df)	p-value	Level of Significance (α)
Food Crop Insurance vs. Residual Risk Management	11.23	5	0.05	0.05

Source: Researcher (2025)

The study established that the crop insurance program was a partnership between the government, county government and the APA insurance company (GoK, 2021b) and has the aim of compensating the individual farmers that have lost crops in the 29 Counties in Kenya, Siaya included. Additionally, in 2020, the government of Kenya developed a policy on insurance of agriculture. This was mainly with regard to the continuous effects and vulnerability of the agricultural lands to droughts, floods and pests together with diseases. The policy was aimed at financing compensation to farmers who are affected by the extreme climatic conditions and ensure resilient livelihood and strengthen food security systems through access. According to GoK (2021b), agricultural insurance is one of the coherent ways of derisking the agricultural sector and reducing vulnerability to farmers.

Agricultural insurance can significantly increase growth and development by transferring risks and vulnerabilities from the agricultural systems. However, according to key informants in the Ministry of Agriculture, the plan to insure agriculture still faces great challenges. Some of the challenges identified were from the insurers involving reluctance by the companies to provide cover to farmers that are mainly vulnerable to catastrophic events like drought, floods and pests together with the diseases. It was established that the reluctancy is due to the lack of capacity by the companies to underwrite the risks associated with the catastrophic risks. Additionally, climate change negative effects may continue to affect the small scale farmers due to the low uptake rate by the farmers of the insurance policies. This was found out from the FGDs that majority of the participants indicated that due to poverty they were not able to afford the cover. Hence it was evident that majority of the respondents relied on or hoped for the pilot insurance cover that was not sufficient for the large number of the small scale farmers vulnerable to the climate change impacts.

4.1.4 Contingency funds in Siaya County

Contingency funds are mainly an allocation of funds by either the national government or the county government or any other organization such as NGOs and CBOs in anticipation of harmful events such as hunger, diseases and malnutrition from the extreme climatic events like drought and floods such as in Siaya County (Schneider, 2010). Figure 1 indicate that 2% of the household respondents related the contingency funds access to the management of residual risk from the negative impacts of climate change in the study area. Table 4 shows an inferential statistics analysis to test the level of significance of the access of the contingency funds by the households scored a Chi – square result of ($\chi^2_{5,0.05}$ = 19.10) with p-value of 0.09 at (P>0.05) indicating lack of statistical significance for access of the contingency funds in managing the residual risk from the effects of climate change in Siaya County.

Table 4

Chi-Square Test of Contingency Funds and Residual Risk Management

Variable	Chi-Square (χ^2)	Degrees of Freedom (df)	p-value	Level of Significance (α)
Contingency Funds vs. Residual Risk Management	19.10	5	0.09	0.05

Source: Researcher (2025)

The study established that the contingency funds were intended to aid the affected meet expenses that they had not foreseen. For example, farmers to cater for the expense of buying food to avoid hunger after their expected harvest is negatively impacted on by droughts and floods in the changing climate. This view is supported by Schneider (2010),

that the primary purpose of a contingency fund is to provide a financial safety net, helping individuals and families avoid going into debt or facing severe financial strain when unexpected situations like extreme climatic conditions such as floods, droughts pests and diseases arise.

According to GoK (2022), Siaya County government in previous financial years have allocated contingency funds towards floods and drought impact management. The contingency funds by the County government were meant to lead in mitigation of the climate extreme impacts, however, the study established that the initiative exhibited certain challenges with the allocation occasioned by the poor working relationship between the executive and the county assembly. This has been evident on many occasions where the county assembly has failed to approve the budgets regarding contingency funds hence leading to lack of or limited access to the funds by the households to manage the residual risks after the negative impact of climate change on the agricultural production hence making the households more vulnerable to food insecurity.

The study additionally established that majority of the respondents had no idea about the contingency funds by the County government on extreme climatic change emergencies. It was found out that even if the funds existed, they were never used as had been planned for mitigating effects of the climatic events on agricultural production in Siaya County. Relatively, the participants indicated possibility of the funds being allocated but get diverted to other activities as predictability of the climatic events remain irregular or just lack of priority to disaster risk reduction in the context of food security enhancement.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusions

This study concluded that while agricultural subsidies are widely embraced and play a vital role in helping households manage residual climate risks, other compensatory risk management options like social safety nets, crop insurance, and contingency funds are either underutilized or are inconsistently accessed.

5.2 Recommendations

These insights underscore the need to strengthen awareness, improve accessibility, and enhance institutional support for a wider range of risk management options. Doing so would better equip households to cope with the ongoing impacts of climate change and improve household food security in Siaya County.

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