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ASSESSMENT OF THE INFLUENCE OF CLIMATE SMART AGRICULTURAL PROJECTS ON FOOD SECURITY IN WEST POKOT COUNTY, KENYA

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Abstract: **Climate-smart agriculture (CSA) is an approach for transforming and reorienting agricultural systems to support food security under the new realities of climate change. The study intended to assess the influence of climate smart agricultural projects on food security in West Pokot County (WPC). Food security is at the center of accelerating economic development. The study was guided by the following objective: to establish the contribution of stakeholders on CSA projects in WPC. It was steered by the basic notion of the systems theory, resilience theory in climate smart agriculture projects, theory of change in adaptation to climate change and the social- ecological theory on food security. The study employed a descriptive research design targeting 260 farmer groups from whom a sample size of 130 was drawn using simple random sampling. Questionnaire was the main primary tool for data collection. Inferential statistics and regression analysis were applied in interpreting the findings from data collected. The study findings will be important in informing policy formulation both at County and National level to address food insecurity while sufficiently mitigating the effects of climate change through implementation of relevant and adaptable climate smart agricultural projects as a form of sustainable agriculture and food security. The results showed that there was a partial positive and statistically significant correlation between food security and CSA Stakeholders influence (r= 0.142, p= 0.049).**

Keywords: **Climate-smart agriculture (CSA), Food security, agricultural systems.**

1. INTRODUCTION

Global Perspective of Climate Smart Agriculture and Food Security

As defined by Lipper et al. (2014), Climate Smart Agriculture is the approach for transforming and reorienting agricultural development under the new realities of climate change. International support for Climate Smart Agriculture and Food Security global efforts has been built on coordinated approaches to climate change, agricultural and food security policy areas, to ensure that capacity strengthening, technology development/transfer and financing enable national CSA actions. This requires greater coherence across multilateral policy processes, including those of the United Nations Framework Convention on Climate Change (UNFCCC), development of the post-2015 Sustainable Development Goals, and work on agricultural and food security policy by the Committee on World Food Security and Nutrition (CFS). The conclusions recently agreed by the Subsidiary Body for Scientific and Technological Advice (SBSTA) at the UNFCCC Climate Talks (Bonn, June 2014), earlier discussion of food security and climate change at the CFS, and discussion in the UNFCCC on integrated approaches to land, may all help to align global policy. There is a consensus that over the coming decades, anthropogenic global climate change will cause dramatic transformations in the world biophysical systems that will affect human settlements, ecosystem services, water resources and food production; all of which are closely linked to human livelihoods (UNFCCC, 2005). These transformations are likely to have widespread implications for individuals, communities, regions and nations. In particular, poor, natural resource-dependent rural households will bear a disproportionate burden of the adverse impacts (Adger, 2001, 2003; Burton). The extent to which these impacts will be felt depends in large part on the extent of local and national adaptations and adaptive capacities (Shah, Fischer & Velthuizen, 2008; Meams & Norton, 2010).Although there is a considerable scientific uncertainty about the future trajectory of climate change, its impacts are already discernible and will increasingly affect the basic elements of life for people around the world (IPCC, 2007). Such impacts include those on numerous agricultural regimes and human health including infectious disease vectors (Adger et al., 2007). Negative impacts in average crop and pasture yield will likely be clearly visible by 2030. For example, in parts of Brazil, rice and wheat yields could decline by 14%, according to their forecast.

Climate smart agriculture (CSA) is a farming system that is famously called triple "win" by both the World Bank (WB) and Food and Agriculture Organization (FAO). FAO 2010 has defined CSA as agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes Greenhouse gases (GHGs) (mitigation) and enhances achievement of national food security and development goals. There is growing acknowledgement that agriculture and food systems need to change regardless of any climate change impacts.

Africa is at the tip of the spear of climate change impacts mainly due to the interactions of multiple stressors, including extreme poverty, over-dependence on rain-fed agriculture, HIV/AIDS prevalence, insufficient public spending on rural infrastructure, knowledge gaps and poor data availability and quality (UNEP, 2005; IPCC, 2007). These stressors contribute to a weak overall adaptive capacity, and thus may compound poverty for vulnerable groups.

In recognition of the disproportionate burden that climate change places on small island developing states (SIDS), FAO supported six African island nations in their efforts to make their agriculture more resilient to climate shocks and boost economic development. The $1.5 million project -- funded through the Africa Solidarity Trust Fund focuses on a variety of activities to mitigate and adapt production to changing climate conditions, and make farming practices overall more efficient. Farmers in Cape Verde, Comoros, Guinea-Bissau, Mauritius, Sao Tome and Principe, and Seychelles benefited from training and knowledge exchanges on climate-smart food production, as well as ways to create viable market opportunities for nutritious food. According to the united nation environmental programme (UNEP), by 2050, between 350 million and 600 million people are projected to experience increased water stress due to climate change. Climate variability and change is projected to severely compromise agricultural production, including access to food across Africa. Towards the end of the 21st century, projected sea level rise will likely affect low-lying coastal areas with large populations. Climate variability and change can negatively impact human health. In many African countries, other factors already threaten human health. For example, malaria threatens health in southern Africa and the Eastern Highlands.

Achieving sustainable *food security* in developing countries with rapidly growing population and a *changing climate* is a major challenge. More food is needed in the future but climate change means less food production potential and poor people will be hit the hardest. Climate-related crop failures, fishery collapses and livestock deaths already cause economic losses and undermine food security, and these are likely to become more severe as global warming continues. As a result, in developing countries, a number of programs that seek to overcome the threats to agriculture and food security in a changing climate through exploring new ways of helping vulnerable rural communities adjust to global changes in climate have been developed. Identifying and addressing the most important interactions, synergies and trade-offs between climate change and agriculture has thus remained a key area for exploration towards achieving food security globally. Implementation of unique, innovative and transformative programs that addresses agriculture in the context of climate variability, climate change and uncertainty about future climate conditions will further steer countries in Africa towards the right direction in attaining food security. According to the Consultative Group on International Agricultural Research (CGIAR), adaptation in the way we produce food, farm our lands and treat our environment will be key to mitigating the effects and ensuring food security. In addition, it is still very important that meaningful adaptation to agricultural practices and attempts to limit emissions are made to ensure the risk posed by climate change on agriculture is manageable.

Responses need to come quickly through application of the best and most promising approaches, tools and technologies. This initiative can only be realized with improved interactions among scientists, researchers, policy makers, civil society, and those who depend on agriculture for their livelihoods. Both local and global action is needed to accelerate the sharing of lessons on institutions, practices and technologies for adaptation and mitigation, with serious commitment to working in partnership, enhancing capacity and addressing societal differences. The increasing global demand for food, as well as for feed and biomass-based raw materials, e.g. fuel and fibre crops, has increased the pressure on the agricultural sector in the past decade, especially in Africa. Addressing the three pillars of food security, i.e. food availability, through enhanced agricultural productivity; access to food, through income generation arising from processing and trading; and use of food, through increasing nutritional quality has been the agenda advanced by the Food and Agriculture Organization of the United Nations. Nutrition-sensitive agriculture has been viewed as the pillar of improved nutrition and better health. Despite the fact that as a system it's just emerging and therefore has not been integrated as such in the agricultural and nutrition concepts and strategies of most countries, the examples derived from a wide range of very different countries and cross-cutting topics do reveal a variety of possibilities and opportunities for incorporating nutrition objectives into agriculture and food systems.

However, climate change impacts combined with high population growth rates, unsustainable agricultural practices, and high levels of land-use change, among others require significant changes in farming practices to increase productivity and at the same time use natural resources more efficiently and sustainably. Examples of these practices include, shifts to new crops and varieties, water and soil conservation measures and planting trees on farms. While none of these practices are new, the way in which they are framed is evolving. Ideally, agricultural production systems managed in a climate-smart way emit fewer greenhouse gases, sequester carbon, and at the same time become more productive and resilient in the face of a changing climate.

Although adaptation and mitigation have been developed as two distinct responses to climate change, the two are often applied in concert. In fact, agricultural strategies that help farmers adapt to climate change may simultaneously reduce greenhouse gas emissions or sequester carbon. Strategies that achieve both aims, while sustainably increasing agricultural productivity, are the essence of the concept of climate-smart agriculture. These world organizations think that carbon financing through implementation of this system will help solve food insecurity in poor and developing countries. As per the fourth assessment report (AR4) (IPCC, 2007) climate change is considered one of the most serious threats to sustainable development in Africa. Studies have shown that about 90% of disasters afflicting the world are related to severe weather and extreme climate change events. Impacts of the projected climate change are expected in many sectors such as economic activities, agriculture, natural resources and physical infrastructure.

To assess all aspects of climate change and its impact and formulate realistic strategies to mitigate these effects, the 5th Assessment Report by Intergovernmental Panel on Climate Change (IPCC)synthesizes and evaluates research related to impacts, adaptation and mitigation of climate change since the previous Assessment Reports. The report focuses on two very challenging and interrelated topics; agriculture and food security. Chapter 7, "Food security and food production systems," details the current effects of climate change, the expected decline in crop production by 2030 as a result of climate change, and what farmers can do to mitigate some of the negative impacts. As stated by the chapter authors: "The questions for the chapter are how far climate and its change affect current food production systems and food security and the extent to which they will do so in the future." A key conclusion of the authors is that climate challenge will increase the risk of reduced crop productivity associated with heat and drought stress.

Kenya envisions being a middle- income country with citizens enjoying high quality of life and sustained annual economic growth rate of at least 10% by the year 2030 according to the National Development Blue Print "The Kenya Vision 2030". The agriculture sector has been identified as one of the key sectors to contribute to the projected annual national economic growth. The sector is envisaged to ensure food security, provision of raw materials for agro-industries, creation of employment opportunities, generation of income and foreign exchange earnings.

Climate driven changes affect resources critical for economic development of Kenya. An example is the 1999/2000 La Nina droughts, which left approximately 4.7 million Kenyans facing starvation. In addition, increased average temperatures have led to the spread of vector borne diseases like malaria to areas where the disease is not known to be endemic. Figures compiled by the department of international development(DfID) suggest that between 50,000 and 100,000 people, more than half of them children under five, died in the 2011 Horn of Africa crisis that affected Somalia, Ethiopia and Kenya (where over 3.7 million were affected) with the drought denying the economy a whopping 1.2 trillion over the 2008-2011 period. In Kenya, drought affected two channels including increased mortality of livestock in drought affected areas (that is home to 10% of the country's population) and exercabating increases in food prices. A recent study

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by World Bank has estimated that the direct costs of climate change in Kenya will potentially amount to between one and two billion US Dollars annually by the year 2030.

In response to the challenges and opportunities posed by climate change, Kenya has developed a national climate change response strategy (NCCRS).The mission of NCCRS has been to strengthen and focus nationwide actions towards climate change adaptation and greenhouse gas (GHG) emission mitigation. In effect, most of the climate smart technologies have focused of projects that entail: Producing and Promoting of drought tolerant, diseases and pest resistant as well as early maturing crop varieties, Promoting orphan crops e.g. sorghum, cassava, pigeon pea and sweet potato, Promoting agricultural produce post-harvest processing, storage and value addition, Breeding of animals from various agro ecological zones that adapt well to climatic variances, Providing special livestock insurance schemes to spread and transfer risks. In addition, Kenya stands to benefit from carbon markets by putting in place mitigation measures including the promotion of renewable energy technologies such as wind, solar, geothermal, biomass and small hydro plants as well as a properly planned low carbon public transportation system.

2. INFLUENCE OF STAKEHOLDERS ON CSA PROJECTS IMPLEMENTATION AND FOOD SECURITY

As noted by World Bank (2014), National public, private and civil society stakeholders have key roles in reducing information costs and barriers. In addition to strengthening the capacities of extension systems to disseminate site-specific information, tools such as radio programmes and information and communication technologies (ICTs) can be used. Real-time weather information via ICTs is already being deployed by public and private sector actors in agricultural value chains in many countries, and could be greatly extended to include information relevant to CSA practices.

Climate change gives rise to new and increased demands for collective action. Often, to achieve the scale necessary to significantly reduce risks associated with extreme weather events, coordinated efforts are required by many farmers, those involved in managing communal resources and those managing public lands. Multi-stakeholder dialogues to support improved governance of tenure systems for land and water that take into account the interests of women, poor and marginalized groups are a promising direction, in addition to more traditional efforts to increase tenure security over privately held and managed land. Comprehensive risk-management strategies require a better understanding of the robustness of different risk-management instruments under climate uncertainty **(**Anton, 2013) and coordination of actions by public, private and civil society actors from the international to local levels. National governments could provide mechanisms for proactive and integrated risk management such as a national board that coordinates risk-management strategies and institutions for risk monitoring, prevention and response. The private sector can play a key role in risk management, but effective engagement must be enabled by transparent, efficient and enforceable regulations and innovative public–private partnerships. Social protection programmes that guarantee minimum incomes or food access also affect risk exposure with potential impacts on production choices and there has been considerable expansion globally of such programmes in recent years.

3. RESEARCH METHODOLOGY

The chapter outlines the methodology that was applied in achieving the objective of the study. It therefore focuses on the research design, data collection procedures, the target population; sampling procedure and data analysis techniques. The study adopted a descriptive survey design. This is because, as noted by Best *et al* (2003), the design enables one to capture all important aspects of a situation while employing a unit study and investigation. This is further in line with Namusonge (2010) who observed that the method was best suited for gathering descriptive information where the researcher investigates people or attitudes concerning one or more variables through direct query.

The study targeted 260 farmer groups in West Pokot County. These were farmers who were benefitting from climate smart agricultural projects outlined below. For this study, the sampling frame consisted of the 260 farmer groups from which a sample was drawn for the sole purpose of responding to the study questions. Simple random sampling technique was applied in the selection of the respondent's. The formula K=N/n was used. Where; K= the sampling interval, N=the total population (260) and n= the sample size. K was set at 2 implying that responses were obtained from 130 groups. Questionnaire was the main tool for data collection. A semi structured close-ended questionnaire was administered. Upon completion of data cleaning, Statistical Package for Social Sciences (SPSS) version 21.0 was used in analysis. The questionnaires were semi structured carrying variables of the study and response recorded in Likert scale using a rating of

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1 to 5 where 1 is "Strongly Agree", 2 is "Agree", 3 is "Neutral", 4 is "Disagree", and 5 is "Strongly Disagree". Pilot test was done to test the validity and reliability of the research instrument. Inferential statistics such as Pierson moment coefficient correlation and also multiple regression analysis technique was used to determine the effect of independent variables on the dependent variable.

4. RESULTS AND DISCUSSION

The chapter discusses the research findings as per the analyzed data. The purpose of the study was to assess the influence of climate smart agricultural (CSA) projects on food security in West Pokot County. This put CSA stakeholders as a key aspect of investigation in this study and the results are as discussed below.

One hundred and thirty questionnaires were administered. Out of the 130, 121 questionnaires were dully filled and returned for analysis. This generated a response rate of 93.1 percent. The response rate thus reflected a reliable representation giving the researcher the confidence in results for analyzing the objectives that were being evaluated. Cronbach's alpha correlation coefficient was computed at 95% confidence level for all the variables under study in order to determine the reliability of the research instrument. The value obtained was 0.82, which indicated that the level of internal consistency for the items was 82 percent. Fraenkel and Wallen (2000), notes that parameters are considered reliable when they yield a reliability coefficient of 0.70 or higher. This means that the results obtained indicated a strong reliability and satisfactory level of inter-item reliability. There was a uniform distribution of the respondents across the four sub counties in west Pokot County. 25.6 percent of the respondents were from Pokot south, 24.8 percent from Pokot north, while 25.6 percent and 24 percent were from Pokot west and Pokot central respectively. Male respondents outnumbered female respondents, with males posting a 58.7 percent representation while females had 41.3 percent representation hence an approximate 17.4 percent disparity. Analyzed data from the study revealed that the highest percentage of the respondents (43.0 percent) had acquired education up to secondary school level, while only 3.3 percent had acquired postgraduate education. 10.7 percent of the respondents had acquired a university degree while only 5.8 percent of the respondents had not acquired any formal education. Those who had acquired primary school education accounted for 19.0 percent while 18.2 percent had schooled up to diploma level.

The respondents were requested to indicate the extent to which they agreed that the stakeholders listed participated in implementation of climate smart agricultural projects in West Pokot County. The results of the findings were tabulated as shown in the table 4.1 below:

Table 4.1: Stakeholders and Climate Smart Agricultural Practices.

Stakeholders and Climate Smart Agricultural Practices.	Strongly involved	Fairly involved	Not sure	Sometimes involved	Never involved	Total
Ministry of Environment and Natural Resources	37.5	22.1	25.4	12.5	2.5	100
Ministry of Agriculture, Livestock and Fisheries	42.5	20.5	12.5	21.0	3.5	100
Ministry of Water and Irrigation	48.3	18.5	20.0	3.0	10.2	100
Ministry of Lands and Physical Planning	19.8	14.5	12.5	7.7	45.5	100
Ministry of Devolution and Planning	35.5	25.4	12.5	14.0	12.6	100
County Government	28.5	13.3	12.7	35.5	10.0	100
National Drought Management Authority	40.0	27.5	8.5	15.5	8.5	100

37.5 percent of the respondents agreed that stakeholders under the ministry of Environment and Natural Resources were strongly involved in the implementation of climate smart agriculture projects. However, 22.1 percent stated that they were fairly involved, 25.4 percent were not sure while 12.5 percent and 2.5 percent reported that the stakeholders from the ministry of environment and natural resources were either involved sometimes or never involved respectively. When asked whether stakeholders in the ministry of agriculture participated in the implementation of CSA projects, 42.5 percent stated that they were strongly involved, 20.5 percent agreed that they were fairly involved while 12.5 percent of the

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respondents were not sure. Only 3.5 percent responded that they were never involved while 21.0 percent said that they were sometimes involved. 48.3 percent reported that stakeholders from the ministry of water and irrigation were strongly involved, 18.5 percent said that they were fairly involved while 20.0 percent said that they were not sure. On the other hand, 3.0 percent of the respondents stated that stakeholders from the ministry of water and irrigation were involved sometimes while 10.2 percent responded that they were never involved. Majority of the respondents responded that stakeholders from the ministry of land and physical planning were never involved, 7.7 percent responded that they were sometimes involved while 12.5 percent were not sure. 19.8 percent reported that they were strongly involved while another 14.5 percent of the respondents stated that stakeholders from the ministry of land and physical planning were fairly involved. When requested to indicate the extent to which the ministry of devolution and planning was engaged in implementation of CSA projects, 35.5 percent and 25.4 percent stated that they were strongly involved and fairly involved respectively. However, 12.6 percent reported that they were never involved, with another 14.0 percent reporting that they were sometimes involved. Only 12.5 percent indicated not being sure. Majority of the respondents said that the county government was involved sometimes (35.5 percent) while 10.0 percent reported that the county government was never involved. On the contrary, 28.5 percent reported that the county government was strongly involved and another 13.3 percent agreed that the county government was fairly involved in the implementation of CSA projects. The highest proportion of the respondents (40.0 percent) reported National Drought Management Authority to be strongly involved, 27.5 percent reported that it was fairly involved while 8.5 percent were not sure. Further, 15.5 percent reported that NDMA was involved sometimes while 8.5 percent stated that they were never involved in the implementation of CSA projects.

The respondents were further requested to indicate the extent to which they agreed that the selected aspects regarding stakeholders' participation in Climate Smart Agricultural Projects influenced food security in West Pokot County. This is illustrated as shown in table 4.2 on the next page.

Table 4.2: Climate Smart Agriculture Stakeholders' Parameters

Climate Smart Agriculture stakeholders parameters	Strongly agree	Agree	Not sure	Disagree	Strongly disagree	Total
Identification and involvement of stakeholders.	23.6	43.4	11.5	9.0	12.5	100
Assessment of stakeholders knowledge and attitudes towards CSA projects	38.0	28.8	7.2	17.5	3.5	100
The application of Stakeholder analysis report	38.8	30.0	2.5	13.8	12.5	100
The corrective intervention by stakeholders in climate smart agricultural practices.	30.0	33.8	7.5	11.3	15.0	100
Availability of CSA project stakeholders engagement plan	18.8	43.8	12.3	13.8	11.3	100

From the analyzed data, 23.6percent of the respondents strongly agreed that clear identification and involvement of CSA project stakeholders during implementation of the climate smart agriculture projects influenced food security, while 43.4 percent agreed. However, 12.5percent strongly disagreed while another 9.0 percent of respondents disagreed. Only11.5percent of the respondents were not sure. The respondents were then requested to indicate whether assessment of stakeholders' knowledge and attitudes towards CSA project influenced food security. The largest proportion -38 percent strongly agreed while 28.8 percent agreed. On the other hand only 3.5 percent strongly disagreed while another 17.5 percent disagreed. A small proportion of the respondents -7.2 percent were not sure. The respondents were then required to indicate whether the application of stakeholder analysis report influenced food security. 38.8 percent strongly agreed, 30 percent agreed, 12.5 percent strongly disagreed, 13.8 percent disagreed with 2.5 percent indicating not sure whether the parameter influenced food security or not. The researcher further requested the respondents to show by ticking appropriately whether corrective intervention by climate smart agriculture projects stakeholders had influenced food security. Whilst 30percent strongly agreed, 15percent strongly disagreed. Further, 33.8percent agreed while 11.3percent strongly disagreed. Only 7.5 percent of the respondents were not sure. When the respondents were requested to indicate whether the availability of stakeholders' engagement plan influenced food security, 11.3 percent strongly disagreed while

18.8 percent strongly agreed. Majority of the respondents, 43.8percent agreed with only 13.8 percent disagreeing. 12.3 percent were not sure. The results were in line with those of Kujala (2010) who stated that projects were affected by multiple stakeholders with differing interests and demands. Moreover, it was noted by Ward and Chapman (2008), that stakeholders were the major source of uncertainty in projects. Therefore, robust and meaningful stakeholder management is a crucial element of managing CSA projects successfully.

Correlation:

A Pearson correlation was carried out to determine the relationship between food security and CSA stakeholders.

Variable	Test	Food security
CSA Stakeholders influence	Pearson Correlation	.142**
	Sig. (2-tailed)	.049
	N	121

There was a partial positive and statistically significant correlation between food security and Stakeholders influence ($r= 0.142$, $p= 0.049$).

Regression analysis:

Table 4.3 Summary model

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	76.243[a]	.161	.633

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Nagelkerke R Square (R^2) is the coefficient of determination and it shows how food security varied with CSA policy awareness, CSA stakeholders as well as CSA challenges. The Nagelkerke R Square was 0.633 implying that there was a combined variation of 63.3% of the factors influencing food security. Therefore, there were other factors influencing food security.

Table 4.4: Regression coefficients

Variables in the Equation	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Stakeholders influence	.074	.207	.128	1	.033	1.077	.718	1.615
Constant	5.878	3.493	2.832	1	.092	356.965		

a. Variable(s) entered in step 1: CSA Stakeholders influence

The following regression analysis equation was derived.

$Y= 5.878 + 0.074X_2 + X_e$

Hypothesis testing:

Results of the research further revealed that CSA stakeholders' involvement had a significant influence on the implementation of the climate smart agriculture projects at p value=0.049 (<0.05),with r=0.142. Therefore, the null hypothesis, H_{O2}: Stakeholders did not have significant influence on CSA projects implementation was rejected with the alternative hypothesis (H_{A2}): Stakeholders had significant influence on the implementation of CSA projects being accepted.

5. CONCLUSIONS AND RECOMMENDATIONS

The study employed simple random sampling method in identifying respondents for the research. A sample of 121 respondents from West Pokot County was obtained for purposes of responding to the research questions. 25.6 percent of the respondents were from Pokot south, 24.8 percent from Pokot north, while 25.6 percent and 24 percent were from Pokot west and Pokot central respectively. Questionnaire response rate of 93.1 percent was generated and thus sufficient for developing a conclusive study. Male respondents outnumbered female respondents, with males posting a 58.7 percent representation while females had a representation of 41.3 percent. The results showed that there was a partial positive and statistically significant correlation between CSA projects implementation and CSA Stakeholders influence (r= 0.142, p=

0.049). There was need to release the findings of the study for further scholarly research in other counties as pertains implementation of climate smart agriculture projects. From the findings of the study, it's noble to recommend that climate smart agriculture projects ought to be implemented with adequate training of farmers groups and other stakeholder groups so as to create a pool of members well versed with the principles and knowledgeable in climate smart agriculture to match the recommended project output and outcomes so as to boost food security in West Pokot County. Much more effort needs to go into creating the right structures for enhancing proper stakeholder involvement especially through relevant CSA project strategic plans to promote smooth implementation of climate smart agricultural projects and thus boost food security in all counties.

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