



ADOPTION OF CLIMATE-SMART ADAPTATION STRATEGIES AMONG FARMERS IN ADAVI LOCAL GOVERNMENT AREA OF KOGI STATE

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ABSTRACT

The study evaluated the adoption of climate-smart agricultural strategies by farmers in Adavi Local Government Area (LGA) of Kogi State, Nigeria. A multi-stage sampling technique was adopted to select 150 farmers from the LGA. Structured questionnaire was developed and distributed to the farmers for data collection. Data collected were analyzed through the use of descriptive (frequency distribution, percentages and means) and inferential statistics (Logit Regression Model). The results showed that majority (78.7%) of the respondents were males with a mean age of 27 years. Majority (62.0%) of respondents were married having a mean household size of seven persons. More than half (58.0%) of the farmers had secondary education, operating on a mean farm size of about 5ha. Sixty percent of the farmers had extension contact, while 68.0% did not belong to any cooperative society. Agricultural practices (83.0%), deforestation (77.3%), and house and road constructions (72.0%) were identified as major causes of climate change. While low crop yield (85.3%), rise in atmospheric temperature (81.3%), and land degradation (76.7%) were identified as major effects of climate change. Climate-smart agricultural strategies adopted in response to these changes in climate included; use of tolerant crop varieties (88.0%), bush fallow (84.0%), and use of organic manure (77.3%). Logistics results reveal that extension contact ($B = 3.389$; $P = 0.001$), educational level ($B = 3.360$; $P = 0.050$) and farm size ($B = 4.065$; $P = 0.075$) were statistically significant factors influencing the adoption of CSAPs by farmers. Constraints such as inadequate fund (Mean=2.6), poor extension contact (Mean=2.5), and high cost of adaptation facilities (Mean = 2.4) affect the adoption of climate-smart adaptation strategies by farmers. The study recommended that; government should provide soft loans to farmers to enable them access CSA facilities, extension-farmer linkage should be strengthened to render prompt assistance and guidance to farmers:-

Keywords: CSAPs, Farm, Productivity, Farmers, Rain-fed,

INTRODUCTION

Agriculture is the backbone of Nigerian economy, and smallholder farmers in rural areas constitute the major contributor to food production, the sector also serves as major source of employment and revenue generation. Agriculture plays a fundamental role in economic growth, enhancing food security, poverty reduction and rural development (Wandji, *et al.*, (2021). Consequently, additional sustainable agricultural enterprise participation remains an important part of the efforts to boost food availability, crop production and improve wellbeing in a bid to reduce food and nutrition insecurity which is currently threatening human rights to food accessibility in developing countries (Sennuga and Fadji, 2020). The contribution of agriculture over the years now have witnessed a down turn due to the effect of climate change. Farmers' efforts are thwarted and farm yields nosedived thereby leading to outright poverty and food insecurity. Smallholder farmers are the worst hit in this context, as most of them lack the necessary mitigative and adaptive skills to tackle the problem of climate change. Climate change is an upsurge in the concentration of atmospheric greenhouse gases, resulting in abundant climatic variations across the world (Environmental Energy Studies Institute EESI, 2019). It could be caused by either anthropogenic activities such as overgrazing, burning of fossils, refuse dump, animal husbandry, etc. or natural due to natural forces such as variations in the sun's rays, volcanic eruption etc.

According to Ali (2018), climate change is one of the potential threats to human development and survival – socially, politically, and economically. Change in climate can have impact on many



vulnerable individuals as it relates to awareness, knowledge, and information on where and how people, plants, and animals live as well as other components of agricultural activities. Africa is the least contributor to climate change, however, the continent is more vulnerable to the effects of climate change due to overdependence on rain-fed agriculture, compounded by factors such as widespread poverty, and weak capacity and poor sources of farming information, hence leading to great loss in yield of crops. Agriculture is one of the major causes of climate change. Clearing of land (deforestation) and burning of refuse during crop cultivation lead to the accumulation of greenhouse gases (GHGs) which bring about climate change as most studies attribute about 20 to 25% of all global GHG emission to the production of food, feed, and biofuels, including emission from agriculture-driven land use change (Barnabas, 2020).

In Adavi Local Government Area of Kogi State, a good number of households depend on small-scale farming for their livelihoods. Nevertheless, the growing impacts of climate change demonstrated in irregular rainfall patterns, stretched dry seasons, and rising temperature cause remarkable threats to agricultural productivity and food security in the region. Smallholder farmers in Adavi LGA, like other Sub-Saharan African communities, are highly susceptible to climate variability due to limited access to resources, technology and institutional support. These farmers depend on rain-fed agriculture, making them more prone to change in weather system. Hence, the need to adopt climate-smart agriculture (CSA) has become increasingly imperative. CSA involves practices that viably increase productivity, enhance resilience (adaptation), lessen greenhouse gas emissions (mitigation) and catalyze national food security and societal development. Climate-smart adaptation strategies include adoption of improved crop varieties, agroforestry, unified soil fertility management, water harvesting and conservation agriculture, among others. Regardless, the adoption and effectiveness of these strategies differ based on farmers' awareness, socioeconomic status, institutional support and access to extension services. Despite national and international efforts to encourage CSA, there is dearth empirical evidence on how smallholder farmers in Adavi LGA are adapting to climate change. Understanding the local context, including the challenges, coping mechanisms and support systems accessible to farmers is essential for developing modified interventions. Hence, this study aims at assessing climate-smart adaptation strategies adopted by smallholder farmers in Adavi LGA of Kogi state, Nigeria.

Climate change has appeared as one of the direst challenges affecting agricultural productivity and rural income across Nigeria. Rice production (Ebenehi, *et al.*, 2024) for instance has suffered a lot of setback occasioned by both natural and physical phenomena such as whimsies of weather, flood, drought, and other uncertainties exacerbated by severe land degradations brought by climate change, including dune development from wind erosion, drought and desertification. Apart from agricultural practices, climate change also brings forth an increase in pests and diseases, which can make storage more difficult when necessary due to rising temperatures.

Barnabas (2020) asserts that change in the amount and time of rain has resulted in declining crop yields and has also forced farmers to abandon their traditional crops for those that can endure a change in climate. One of the pronounced impacts of change in world climate is the change in patterns of rainfall around the world and its great effect on the agricultural systems. According to Barnabas (2020), about 80% of world agriculture is rain-fed providing food and jobs for millions of people especially in rural Asia and Africa. Climate change has brought about change in rainfall, evaporation, run-off, and soil moisture level. Where drought is prolonged, the resultant effects are crop failures of peasant farmers like those in Adavi Local Government Area, which will reduce farmers' income and purchasing powers, hence, leading to disruptions in the economic, political, and social lives of the farmers.

In Adavi Local Government Area of Kogi State, smallholder farmers are exposed to such unstable weather conditions such as delayed rainfall, drought and increasing temperatures. These climate fluctuations interfere with farming calendars, lower crop yields, put food security at risk and threaten the household income in the region. Irrespective of the growing threats caused by climate change, the capacity of smallholder farmers in Adavi LGA to adapt remains limited. Many depend on traditional farming practices and lack sufficient access to climate information, extension services, technology, improved farm inputs and financial supports. While climate-smart agriculture (CSA)



provides a pathway to building resilience and encouraging productivity, the level of awareness, adoption and effectiveness of such practices among farmers in Adavi LGA is not well understood.

There is a notable gap in empirical data as regards the specific adaptation strategies employed by farmers in the area, the difficulties they encounter in adopting CSA and the institutional or socioeconomic factors affecting their responses. In the absence of such knowledge, efforts by government agencies, NGOs and development partners to support climate adaptation remain poorly targeted and potentially ineffective. Hence, this study seeks to assess the climate-smart adaptation strategies adopted by smallholder farmers in Adavi LGA, of Kogi state, Nigeria. It is in view of the above that this study wish to ask the following research questions; What are the socioeconomic characteristics of farmers in Adavi Local Government Area?; Are farmers aware of change in their crop yields?; What are farmers' sources of climate change information?; What are the effects of climate change on farmers' yields and livelihood?; What specific climate-smart adaptation strategies are adopted by the farmers?; What roles do agricultural extension services play to facilitate the adoption of CSA practices?; What factors facilitate the adoption of CSA practices?; What constraints do farmers face in adopting CSA practices?

In response to the above research questions, the study addressed the following specific objectives as;

- i). describe the socioeconomic characteristics of farmers in Adavi Local Government Area,
- ii). ascertain farmers' awareness of change in their farm yields,
- iii). identify farmers' sources of climate change information,
- iv). find out the effects of climate change on farmers' yields and livelihood,
- v). ascertain specific climate-smart adaptation strategies adopted by the farmers,
- vi). ascertain the roles played by extension services in facilitating the adoption of CSA practices, vi). determine factors that facilitate adoption of CSA practices, and
- vii). identify constraints to the adoption of CSA practices by farmers.

METHODOLOGY

Description of the Study Area

Adavi LGA lies in central-southern Kogi State and it borders to the north by Okehi LGA, to the south by Ajaokuta LGA, to the east by Lokoja LGA, and to the west by Okene LGA. Geographically, Adavi LGA is situated between Latitude 7° 15" to 8° 51"N and Longitude 6° to 6° 5"E. The LGA covers roughly ~718 km² and had a 2006 census population of about 202,194, with later projections putting the population considerably higher. The topography is generally lowland to gently undulating, with the Guinea forest–savanna climate. The LGA experienced two seasons- rainy and dry seasons; the rainy season starts from early April and terminates in early November, while the dry season begins in late November to late March. Majority of the people are farmers growing crops such as maize, sesame, cassava, millet, beans, etc. These smallholder farmers constitute the population of the study. Out of ten viable communities in the LGA, five were purposively selected due to the intensity of farming activities; these communities are Ogaminana, Kuroko, Adavi-Eba, Ngazi, and zango.

Sampling Technique and Sample Size

A multi-stage sampling technique was employed for the study. Stage 1: Purposive selection of Adavi LGA due to its high agricultural activity. Stage 2: Random selection of Zango, Kuroko, Ogaminana, Ozuri and Egge community within Adavi LGA. Stage 3: From 1,650 registered farmers obtained from the State ADP (Kogi State Agricultural Development Authority) which constitute the sample frame, a sample size of 150 farmers was determined using Taro Yamane formula; and proportionate sampling was used to distribute the respondents to each of the selected communities. The Taro Yamane formula is indicated below;

$$n = \frac{N}{1 + Ne} \quad \dots(1)$$

Where: n = sample size

N = population size

e = margin of error (e.g., 0.5 for 95% confidence)



Method of Data Collection

Data were collected using structured questionnaire administered to the selected farmers, both descriptive and inferential statistics were adopted to analyze data collected. Objectives I, ii, iii, iv, v, and vii were achieved via descriptive statistics such as frequency distributions, percentages, and mean scores, while objective vi was measured using inferential statistics such as Binary Logistic Regression model.

Model Specification

The Binary Logistic Regression Model is given explicitly below;

$$Y = \beta_0 + X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + X_4\beta_4 + X_5\beta_5 + X_6\beta_6 + \dots + X_n\beta_n + \mu \quad \text{----- (Eq. 2)}$$

Where;

Y = Binary logit model taking the value of 1 for adoption of CSAPs and 0 otherwise

X₁ = Extension contact (Yes =1; No =0)

X₂ = Educational level (formal =1; non-formal =0)

X₃ = Access to credit (Income) (Yes =1; No =0)

X₄ = Farm size (Ha)

X₅ = Farming experience (Years)

X₆ = Membership of cooperative (Yes=1; No=0)

μ = Error term

RESULTS AND DISCUSSION

Socioeconomic Characteristics of Farmers

The socioeconomic variables of farmers in the study area is shown in Table 1. Variable such as sex, age, marital status, household size, farm size, farming experience, extension contact and membership of cooperative societies were all captured in the table.



Table 1: Socioeconomic Characteristics of the Respondents

| Characteristic | Freq. | Percent | Mean |
|----------------------------------|-------|---------|------|
| Sex | | | |
| Male | 118 | 78.7 | |
| Female | 32 | 21.3 | |
| Age (Years) | | | |
| 15-20 | 18 | 12.0 | 27.0 |
| 21-25 | 24 | 16.0 | |
| 26-30 | 32 | 21.3 | |
| 30 and above | 76 | 50.7 | |
| Marital Status | | | |
| Single | 21 | 14.0 | |
| Married | 93 | 62.0 | |
| Divorced | 24 | 16.0 | |
| Widowed | 12 | 8.0 | |
| Household Size (Numbers) | | | |
| 1-5 | 34 | 22.7 | 7.1 |
| 6-10 | 95 | 63.3 | |
| 10 and above | 21 | 14.0 | |
| Educational Level (Years) | | | |
| No formal education | 3 | | |
| Primary education | 42 | 28.0 | |
| Secondary education | 87 | 58.0 | |
| Tertiary education | 18 | 12.0 | |
| Farm size (Ha) | | | |
| 1-5 | 102 | 68.0 | 4.8 |
| 6-10 | 31 | 20.7 | |
| 10 and above | 17 | 11.3 | |
| Farm experience (Years) | | | |
| 10-20 | 33 | 22.0 | 23.6 |
| 21-30 | 102 | 68.0 | |
| 30 and above | 15 | 10.0 | |
| Extension contact | | | |
| Yes | 97 | 64.7 | |
| No | 53 | 35.3 | |
| Membership of cooperative | | | |
| Yes | 48 | 32.0 | |
| No | 02 | 68.0 | |

Source: Field Survey, 2025

According to Table 1 above, majority (78.7%) of the respondents were males while the females constituted only 21.3%. This implies that men are more involved in farming, and this could be attributed to the strenuous nature of farm operations. Agbonika, *et al.*, (2025) reported that more than half (56.0%) of farmers in Karu Local government area of Nasarawa state were males, this indicates the dominance of male in farm operation; this is expected given the high labour requirement of farming in Nigeria.

The table equally show that slightly half (50.7%) of the respondents were within the age range of 30 years and above, while the mean age of the farmers was 27 years. This also portends that aged people constitute majority of farmers. Majority (62.0%) of these farmers were married with a mean household size of seven persons, implying that the farmers have large household size which could be a plus for readily available labour hands for farm works. A little above average (58.0%) had secondary education, while 28% had primary education and 12% had tertiary education, though 2.0% had no formal education. The findings show that the farmers in the study area are fairly literate, and hence can read and write. Education can be of great importance to the adoption of climate smart agricultural practices as farmers can read about the relevance of adoption of adaptation strategies for resilience to climate shock.



The table also shows that majority (68.0%) of the farmers had farm size between 1-5 hectares, while 11.3% had farm size of ten hectares and above, and the mean farm size was 4.8 hectares. According to Edoke, *et al.*, (2025), almost half (45.4%) of maize farmers in Funtua agricultural zone of Katsina state, Nigeria had farm size between 6-10 hectares; suggesting that these farmers have fairly large farm sizes for their farm operations.

Majority (68.0%) had farming experience of between 21-30 hectares, while the mean farming experience was about 24 years. This shows that the farmers had been in the farm business for quite a number of years such that they may contemplate adapting to climate change effects for sustainability in farm production. Majority (64.7%) of the respondents had extension contact while 35.3% had no contact with extension services. The import of having extension contact could not be over-emphasized, as such linkage can lead to knowledge sharing, education of farmers on best farm practices and awareness of modern strategies of adopting climate smart adaption strategies. Though majority (68.0%) of these farmers did not belong to cooperative societies, while 32.0% were members of cooperative societies. Belonging to cooperative societies has a great advantage such as mentoring, cross-fertilization of ideas, access to donor organizations, and bulk purchase of farm inputs. Those that do not belong may lose such benefits.

Causes of Climate Change

The various causes of climate change is presented in Table 2. According to Table 2, the respondents identified several causes of climate change among these were agricultural practices (83.0%), deforestation (77.3%), house and road constructions (72.0%), search for fossil fuel (65.3%), and solar variations (57.3%). As man open up a virgin land for farming purposes, the soil surface is exposed to the elements of climate change. And as the farmer burns the trashes, several greenhouse gases such as carbon dioxide, sulphur-dioxide etc. are released into the atmosphere which exacerbate climate change. Deforestation which involves clearing of bushes and trees also facilitate climate change. The trees or vegetation that serve as carbon-sink are removed in this process, hence leading to the accumulation of greenhouse gases in the atmosphere that facilitate extreme climatic events. Mendelsohn, *et al.* (2023) reported that, climate change is one of the biggest environmental, social and economic threats that the world is experiencing. It is a threat to fight against hunger, malnutrition, diseases and poverty in Africa and Nigeria in particular, mainly through its impact on agricultural productivity.

Table 2: Distribution of Respondents according to Causes of Climate Change

| Causes | *Frequency | Percentage |
|-----------------------------|-------------------|-------------------|
| House and road construction | 108 | 72.0 |
| Deforestation | 116 | 77.3 |
| Agricultural practices | 124 | 83.0 |
| Search for fossil fuel | 98 | 65.3 |
| Volcanic eruptions | 54 | 36.0 |
| Solar variations | 86 | 57.3 |
| Manufacturing industries | 63 | 42.0 |
| Mining | 48 | 32.0 |

Source: Field Survey, 2025 * Multiple Responses

Effects of Climate Change

The effects of climate change on man and his environment is shown in Table 3 below. Findings presented in Table 3 show the various effects of climate on the respondents. According to the table, low crop yields (85.3%), rise in atmospheric temperature (81.3%), food insecurity (80.7%), low income of farmers (74.0%), and loss of farmlands (67.3%) among others were the major effects of climate change asserted by the respondents. Wind and water erosion constantly wash or scooped and moved away top soil which contain valuable plant nutrients to another location that might be needed, hence leading to low crop yields, and food insecurity. This will translate to low income of farmers and lack of resources to purchase farm inputs such as fertilizers, improved seed varieties, and other agro-chemicals. Studies



on climate change and agriculture have consistently shown that shifts in temperature, rainfall patterns, and extreme weather events negatively affect crop yields, soil fertility, and overall productivity (Intergovernmental Panel on Climate Change IPCC, 2022). Ango, *et al.* (2022) assert that, climate change is witnessed due to recurrent occurrence of droughts and floods threatening the livelihood of many farmers that depend on rainfall for farming practices due to the high concentration of carbon-dioxide (Co²) in the atmosphere.

Table 3: Percentage Distribution of Respondents according to Effect of Climate Change

| Effects | *Freq. | Percent. |
|--------------------------------------|---------------|-----------------|
| Land degradation | 115 | 76.7 |
| Low crop yield | 128 | 85.3 |
| Water and air pollution | 89 | 59.3 |
| High incidence of pests and diseases | 96 | 64.0 |
| Rise in sea level | 83 | 55.3 |
| Rise in atmospheric temperature | 122 | 81.3 |
| Loss of farmlands | 101 | 67.3 |
| Food insecurity | 121 | 80.7 |
| Low income of farmers | 111 | 74.0 |
| Coastal flooding | 38 | 25.3 |
| Wind erosion | 54 | 38.0 |

Source: Field Survey, 2025 *Multiple Responses

Climate Change Adaptation Strategies

Farmers adopt several adaptation measures to avert the effects of climate change. Some of these adaptation strategies adopted by farmers are shown in Table 4 below. Findings in Table 4 portray that majority (70.3%) of the farmers adopted one form of adaptation strategies or the other, while 20.7% did not adopt any climate change adaptation strategy. Use of resistant crop varieties (88.0%), agroforestry (85.3%), bush fallow (84.0%), use of organic manure (77.3%), multiple cropping (68.7%), and change of planting date (66.7%) were some of the strategies adopted by the farmers to cushion the effects of climate change. According to FAO (2018), key climate agriculture (CSA) strategies adopted by farmers include use of drought-resistant crops which are specially bred to tolerate water stress and maintain yield stability during periods of inadequate rainfall. Agroforestry and inter-cropping practices enhance soil fertility, reduced soil erosion, and provide multiple sources of income, thereby strengthening farmers’ adaptive capacity.

Table 4: Distribution of Respondents according to Climate Change Adaptation Strategies

| Adoption of CSAPs | Freq. | Percent. |
|------------------------------------|------------|-------------|
| Yes | 119 | 70.3 |
| No | 31 | 20.7 |
| Strategy | *Freq. | Percent. |
| Irrigation | 98 | 63.3 |
| Use of tolerant/improved cultivars | 132 | 88.0 |
| Crop rotation | 106 | 71.0 |
| Multiple cropping | 103 | 68.7 |
| Migration | 95 | 63.3 |
| Correct spacing | 71 | 47.3 |
| Minimum tillage | 88 | 58.7 |
| Change of planting date | 100 | 66.7 |
| Terracing | 41 | 27.3 |
| Bush fallow | 126 | 84.0 |
| Water harvesting | 63 | 42.0 |
| Use of organic manure | 116 | 77.3 |
| Agroforestry | 128 | 85.3 |

Source: Field Survey, 2025 *Multiple Responses

Factors Influencing the Adaptation Strategies by Farmers

The factors influencing the adaptation strategies to climate change effects are shown in Table 5. According to Table 5, The Pseudo R-Square was 0.406, implying that about 42% of the variation in the decision to adopt CSAPs by farmers was explained by the model. Extension contact, educational level and farm size were statistically significant factors that influence the adoption of CSAPs in the study area. Extension contact (B= 3.389) was statistically significant, which implies that, as farmers have contact with extensions there is a probability that farmers will adopt more CSAPs to cushion the effect of climate change. Extension services create awareness and education on the adoption of CSAPs, hence the tendency for farmers to adopt CSAPs. Educational level was also significant at 5% with Coefficient of 3.630, this then suggests that the higher the educational level of farmers the more their likelihood to adopt CSAPs. In addition, farm size had a Coefficient of 4.063 and significant at 10%. This indicates that the higher the farm sizes of farmers the more their probability to adopt CSAPs.

Table 5: Factors Influencing CSA Strategies by Farmers

| Variable | Beta. | Std. Error | Sig. |
|---------------------|---------|------------|----------|
| Intercept | -2.934 | 1.238 | 0.018** |
| Extension contact | 3.389 | 1.035 | 0.001*** |
| Educational level | 3.630 | 1.852 | -0.050** |
| Income | -18.312 | 28120.813 | 0.999 |
| Farm size | 4.065 | 2.285 | 0.075* |
| Farm experience | -1.742 | 1.757 | 0.321 |
| Cooperative society | 0.437 | 0.983 | 0.656 |
| Constant | 16.418 | 28120.813 | 1.000 |
| R-Square: | 0.406 | | |
| Log likelihood: | 68.32 | | |

Source: Author's Survey, 2025 ***Sig. @ 1%; ** Sig. @ 5%, and *Sig.@ 10%

Constraints to the Adoption of Climate Smart Agriculture Practices (CSAPs)

Table 6 presents the various factors militating the smooth adoption of CSAPs by farmers in the study area. According to the findings in Table 6, very serious constraining factors included inadequate finance (Mean=2.6), high cost of improved cultivars (Mean=2.6), poor extension contact (Mean=2.5), and high cost of adaptation facilities (Mean=2.4), while serious constraints were lack of climate change



information and inadequate storage facility (Mean=2.3 respectively) and illiteracy of farmers (Mean=2.1). And pilfering (Mean=1.6), and inadequate transport facility and poor government agricultural policies (M=1.5 respectively) were not considered as serious constraints by the farmers. Many CSA practices such as use of drought-resistant seeds, small-scale irrigation systems, or organic fertilizers require initial capital that smallholder farmers often cannot afford. Without financial support or affordable loan facilities, farmers are unable to adopt CSAPs (Adeleke, 2021). Studies in northern Nigeria have shown that farmers with limited extension contact are significantly less likely to implement climate smart agricultural practices (Obayelu, *et al.* 2019).

Table 6: Mean Distribution of Respondents by Constraints to the Adoption of CSAPs

| Factor | Not Serious (1) | Serious (2) | Very Serious (3) | Total Sum (TS) | Mean | Remark |
|---------------------------------------|-----------------|-------------|------------------|----------------|------|--------|
| Inadequate finance | 11 | 43(86) | 94(288) | 385 | 2.6 | VS |
| Poor extension contact | 7 | 64(128) | 799(237) | 372 | 2.5 | VS |
| Illiteracy of farmers | 26 | 76(152) | 48(144) | 322 | 2.1 | S |
| High cost of adaptations facilities | 12 | 72(144) | 66(198) | 354 | 2.4 | VS |
| Lack of climate change information | 21 | 58(116) | 71(213) | 350 | 2.3 | S |
| Inadequate storage facilities | 28 | 53(106) | 69(207) | 341 | 2.3 | S |
| Pilfering of farm produce | 84 | 46(92) | 20(60) | 236 | 1.6 | NS |
| Inadequate transport facility | 77 | 63(126) | 10(30) | 233 | 1.5 | N S |
| High cost of improved cultivars | 13 | 56(112) | 81(243) | 368 | 2.6 | S |
| Poor government agricultural policies | 93 | 46(92) | 11(33) | 218 | 1.5 | N S |

Source: Field Survey, 2025 VS= Very serious constraints; S= Serious constraints; NS= Not serious constraints.

CONCLUSION AND RECOMMENDATION

Based on the results of this study, inadequate fund (Mean=2.6), poor extension contact (Mean=2.5), and high cost of adaptation facilities (Mean = 2.4) affect adoption of climate-smart adaptation strategies by farmers. The study recommended that; government should provide soft loans to farmers to enable them access CSA facilities, extension-farmer linkage should be strengthened to render prompt assistance and guidance to farmers-

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