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# PERCEIVED EFFECTS OF CLIMATE VARIABILITY ON CROP PRODUCTION IN IMO STATE, NIGERIA

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**ABSTRACT**: *This study assessed the effect of climate variability on crop production in Imo State, Nigeria. Climate variability has direct impacts that cause vulnerability to the natural and social systems through changes in average temperatures, temperature extremes and extreme weather events like flooding and droughts. The study described the socio-economic characteristics of the crop farmers, ascertained crop farmers' knowledge on climate variability, determined the perception of farmers on climate variability, and examined the perceived effects of climate variability on food crop yield production. A multistage sampling procedure was used in the selection of one hundred and eighty-three (183) crop-based farmers. Structured questionnaires were used in obtaining data and the data collected were analyzed using frequency, percentage, mean score and multiple regression analysis. Findings show that the mean age was 48.77 years. Majority (71.58%) were females. Majority (78.14%) were married with an average household size of 8 persons. Most (65.57%) had secondary education with an average farming experience of 21.18 years. Average farm size and farm income were 1.24 hectares and ₦33,000.00 respectively. Findings show that farmers had major knowledge of climate variability as zero/minimum tillage practices (99.45%) and knowledge on rain-water harvesting (97.81%) amongst others. Farmers perceived climate variability ($\bar{x}$ = 3.49), starts late and ends early ($\bar{x}$ = 3.45), extremes in temperatures ($\bar{x}$ = 3.39), too much/heavy rains ($\bar{x}$ = 3.396) and long dry spells during the season ($\bar{x}$ = 3.51), amongst others. Crop farmers further perceived that climate variability has resulted in declining crop yields ($\bar{x}$ = 3.35), increased water scarcity on farm ($\bar{x}$ = 3.45), high incidences of pest and diseases ($\bar{x}$ = 3.29), and increased rate of erosion/flooding ($\bar{x}$ = 3.50) amongst others. The study strongly recommends that the extension services should be strengthened so as to pay farmers regular visits to ascertain their challenges on the effects of climate variability and know where to assist them.*

**KEYWORDS:** Perceived, effect, climate, variability, crop, production.



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## INTRODUCTION

Climate variability has a direct impact that causes vulnerability to the natural and social systems through changes in average temperatures, temperature extremes and extreme weather events like flooding and droughts. Effects of climate variation are physical, economic, social and cultural, endangering environmentally based livelihoods of the Nigeria population. Adger *et al*. (2003) posited that poor infrastructure, economic poverty, drought, excess rainfall, poor livestock health, reduced crop yields, low productivity and a range of other problems associated with climate variability will constitute important challenges for African countries in particular. The effect of climate variation is being felt by the whole population but, it will disproportionately affect vulnerable groups and vulnerable populations (Lobell *et al*., 2008).

Effects of climate variabilities on agriculture are different and diverse depending on many factors such as time, location and response strategies (mitigation and adaptation) put in place. Changes in crop development and phonology for instance can cause shortening or lengthening of crop cycles that could lead to decrease or increase in productivity (Nicholas & Nnaji, 2010). They further maintained that structural changes, especially in carbohydrate status of plant, can also occur. This may affect the nutritive value, taste and storage quality of some fruits and vegetables. The unstable conditions of farming can thus affect the overall productivity of farmers, make them avoid farming for some time, produce at capacities below their best or have little gains for their efforts (Fakon, 2008). Climate variation already poses significant negative impacts on the agricultural sector and there has been little commitment to make adaptation a national priority in the country.

Mitigation targets uprooting the major causes of climate variability and offers long-run solutions while adaptation is much more important for the group of developing countries. Fusel (2007) opined that emphasis should be focused on adaptation because human activities have already affected. Climate variability continues given past trends and the effect of emission reductions will take several decades before showing results. Adaptation can be undertaken at the local or national level as it depends less on the actions of others. Uncertainties in weather patterns, rainfall, drought and flooding events make rural farmers who implement their regular annual farm business plan risk total crop failure due to climate change/variability effects. To alleviate this problem, the agricultural sector has been prioritized as the most critical under the current climate variability scenarios as it will have direct impacts on rural livelihood, and also as agriculture is the mainstay of most African national economies. Apart from inter-seasonal and inter-annual variations in climate, Imo State is also vulnerable to extreme weather events such as floods, severe storm and rising sea levels, which translate into loss of food crops, households' food insecurity, households' displacements, starvation and exacerbating conditions that would lead to conflict, war and misery for millions of persons (Umoh *et al*., 2014). In some communities of Imo State, heavy and continuous rainfall exceeding the absorptive capacity of the soil and flow capacity of rivers and streams are common. Inhabited areas situated adjacent to these rivers and streams are subject to recurring inundation rendering the area "flood prone" and exposing rural households to risk. This study specifically described the socio-economic characteristics of the crop farmers in Imo State, ascertained the crop farmers' knowledge on climate variability, determined the perception of crop farmers on climate variability and examined the perceived effects of climate variability on food crop production.


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## METHODOLOGY

The study was carried out in Imo State of Nigeria. Imo State is situated in the South-East geopolitical zone of Nigeria. The State is bordered by Abia State on the East and Northeast, Anambra State to the North and Rivers State to the South. Imo State comprises three agricultural zones, namely Owerri Zone, Orlu Zone and Okigwe Zone and is made up of 27 local government areas. The entire crop farmers in Imo State constituted the population of the study. Multistage sampling procedure was used in selecting randomly one hundred and eighty-three (183) crop-based farmers for the study. The data for the study were generated from primary sources with the use of structured questionnaires. The primary data collected were analyzed using descriptive statistical tools to achieve the objectives for the study. Specifically, descriptive statistical tools such as the frequency counts, percentages and mean were used to realize the objectives. A 4-point, Likert-type scale of Strongly Agreed (4), Agreed (3), Disagreed (2) and Strongly Disagreed (1) was used to capture data on the farmers' perception on climate variability and perceived effects of climate variability on crop yield production to get a discriminating index of 2.50 cut-off point. This means any value above or equal to 2.5 indicates agreement with the statement while any value below 2.5 indicates disagreement with the statement.

## RESULTS AND DISCUSSION

### Socio-economic Characteristics of the Crop Farmers

The socio-economic characteristics of crop farmers are as presented in Table 1. The result indicates that for the majority of the farmers, their average age was 48.77 years. The finding shows that the crop farmers are still middle aged and are expected to be active and full of strength. The result shares the view of the findings of Ikehi *et al.* (2022) who asserted that younger farmers are more adaptive to climate change because they are full of energy, physical strength and are always ready to try new ideas. Table 1 also shows that 71.58% of the crop farmers were females while 28.42% were males. This indicates that more females were involved in various crop production than males in the study area. The result is expected as females make most of the households' food decisions and since they are involved more in crop production, they could draw agricultural food produce from their farms to be consumed among household members. The result is in line with the findings of Uduji and Okolo-Obasi (2022), who reported that females constituted the greater proportion of those involved in agricultural production and adaptation to climate change, and that most climate change adaptation strategies have been promoted by females.

Table 2 further shows that 51.0% of the respondents had access to extension services while 49.0% did not. Access to extension service in the context of agricultural technology is expected to influence adoption. Yaron et al. (1992) reported that extension plays an important role in neutralizing the problems that arise from inadequate formal education. Table 2 shows that 48.1% of farmers accessed credit. However, this development could negatively affect the poverty status of cashew producers in the study area owing to the fact that credit is needed to enhance the poverty status of cashew farmers.

The majority (65.57%) of the crop farmers had secondary education. Education will be important in helping farmers understand the best adaptation strategies to climate change in the area. This is in line with Ofuoku and Okompu (2022) that education influences farmers'


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decision making positively and in understanding the method to be used in addressing negative climate change impact. The table further shows that 78.14% of the crop farmers were married. This implies that crop farmers in the area were married and were expected to be responsible according to societal standards. This indicates that the farmers will have access to productive resources such as labour, finance and information to address climate change impact. This result is in line with the findings of Ochi, Ezeamu and Jachin (2022) who found that farmers who are married have access to productive resources to address climate change challenges and increase their output.

Table 1 further reveals that the mean years of farming experience was 21.18 years. This implies that crop farmers had relatively many years of experience in crop farming and may have been adapting positively to climate change in the area. The result is in line with the study of Okon et al. (2021) who found that farmers with many years of experience are able to make good decisions to grow climate adapted crops, and plan new strategies to climate change to improve output over time. The average household size was 8 persons. Household size determines availability of labour. Most climate change adaptation strategies are labour intensive; therefore, with high households' size, farmers are able to reduce the cost of high labour and still get one of the most trusted forms of labour. The result is in agreement with the study of Ogbuabor and Egwuchukwu (2017) who found that large household size is a proxy for labour in adapting positively to climate change. Also, the majority (72.13%) of the crop farmers belonged to one form of cooperative society or the other in the area which may afford them the opportunity to share information, access credit and labour in addressing the negative impact of climate change in the area. Adebisi et al. (2022) found that membership of cooperatives with common interest enhances members' access to useful information, credit, labour, agricultural extension services and bulk purchase groups.

The Table 3.1 further reveals that the majority (77.59%) of the crop farmers had no contact with extension agents as extension contact is very critical in adaptation to climate change. This is an indication that most of the crop farmers do not have contact with extension agents, which may negatively affect their adaptation to climate change and increase in crop output in the area. The study of Henri-Ukoha and Osuji (2017) asserted that extension contacts promote farmers' understanding of modern farming methods and addresses farmers' challenges in a bid to enhance their output, income and standard of living over time. The mean farm size was 1.24 hectares which implies that the crop farmers have limited farm lands which sometimes are scattered and sparsely distributed, making adaptation to climate change a bit difficult. Table 2 shows that 69.40% of the crop farmers had access to credit while the remaining proportion (30.60%) did not have access to credit. The finding implies that the majority of the crop farmers had sizeable access to credit, which may positively affect their adaptation to climate change in the area. The result of Adetayo (2022) found that credit change adaptation strategies are expensive and with positive access to credit, farmers can adapt to climate change and increase their farm output.

The result in Table 1 reveals that the mean monthly farm income was ₦33,000.00. This is relatively higher and above the Nigeria Monthly National Minimum wage of ₦30,000.00. This relatively high income could be attributed to farmers' membership in cooperatives and access to credit. With high income, farmers are able to adapt adequately to climate change. The study of Adebisi *et al*. (2022) asserted that farmers with higher farm income will make better decisions, use necessary productive inputs in increasing their farming activities and adapting


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to climate change. The type of crop produced were majorly cassava (99.45%), maize (98.36%), vegetables (96.17%), melon (93.44%), cocoyam (89.62%), banana (87.43%), yam (83.60%) and plantain (81.96%). The finding implies that the farmers have more than one type of crops they produce. These could be as a means of diversification against the impact of climate change in the area. The study of Ngukimbin and Shinku (2021) asserted that through crop diversification, farmers can spread production and economic risk over a broader range of crops, thus reducing financial risks associated with unfavorable weather or market shocks. Growing diverse produce may also help financially by expanding the market potential.

**Farmers' Knowledge on Climate Variability**

The result of farmers' knowledge on climate variability reveals that farmers had knowledge on zero/minimum tillage practices (99.45%), knowledge on rain-water harvesting (97.81%), knowledge on the use of sandbag by the riverbank (96.17%), knowledge on the utilization of drainage systems on farmlands (95.62%) and knowledge on farm fallowing initiatives (93.44%) in the area. The finding also shows that farmers had knowledge on changes in planting dates/harvesting dates (91.80%), knowledge on the use of herbicides (90.16%), knowledge on the use of organic manure (87.97%), knowledge on forage conservation (85.7%), knowledge on afforestation/reforestation (83.60%), knowledge on the use of mulching (78.68%) and knowledge on the planting of cover crops (73.77%). The result shows that farmers have knowledge on severe climatic activities and have been adapting to climate change positively in the area. When farmers have knowledge of climate change activities and measures, they are able to practice adaptation strategies to thwart its negative effects (Okoli & Ifeakor, 2014).

**Farmers' Perception of Climate Variability**

The findings of farmers' distribution based on their perception of climate variability in the area are shown in Table 4.14. The findings show that all the items were rated high and with an acceptable discriminatory index. For instance, the farmers stated that rains have become more erratic ($\bar{x}$ = 3.49), rainfall starts late and ends early ($\bar{x}$ = 3.45), there are extremes in temperatures ($\bar{x}$ = 3.39), there are long dry spells during the season ($\bar{x}$ = 3.51) and rains do not come when they normally used to ($\bar{x}$ = 3.58). Furthermore, farmers identified prolonged/extended winter season ($\bar{x}$ = 3.47), short winter season ($\bar{x}$ = 3.44), too much/heavy rains ($\bar{x}$ = 3.39), rainfall distribution within seasons is now poor ($\bar{x}$ = 3.45) and sunshine duration is long and heavy ($\bar{x}$ = 3.34) as their perception on climate variability in the area. The study implies that there is evidence of climate change impact in the area and farmers may have started practicing some measures to reduce its impact in the area. The result agrees with the studies of Okon *et al*. (2021) and Ikehi *et al*. (2022) who found that there is an incidence of climate change in the area and it is increasing negatively, affecting farmers' production and livelihood activities.

**Perceived Effects of Climate Variability on Food Crop Yield Production**

The findings of farmers' perceived effects of climate variability on food crop yield production. The result shows that all the items were rated high, for instance, the farmers stated that declining crop yields ($\bar{x}$ = 3.35), increased water scarcity on farm ($\bar{x}$ = 3.45), high incidences of pest and diseases ($\bar{x}$ = 3.29), increased rate of erosion/flooding ($\bar{x}$ = 3.50), high cost of crop seedlings and inputs ($\bar{x}$ = 3.46) and post-harvest losses and declining of farm income ($\bar{x}$ = 3.54)


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were perceived as a result of climate change impact. The finding implies that climate change and variability are becoming a strong threat to food security (Shumetie & Alemayehu, 2018) and farmers are mostly at the receiving end.

In the same way, farmers perceived the effects of climate variability on crop production as increased waterlog farm road network to farm ($\bar{x}$ = 3.49), increased effect of heat stress on crops (($\bar{x}$ = 3.43), late fruiting of crops and intense weed growth ($\bar{x}$ = 3.48), frequent leaching of nutrient ($\bar{x}$ = 3.30), damage/breaking of plants due to windstorm ($\bar{x}$ = 3.42) and washing away of soil surface applied with fertilizer ($\bar{x}$ = 3.39). The study of Ani *et al*. (2021) asserted that insufficient rainfall and its erratic distribution are among the reasons for reduced crop production, income and low standard. Variability in crop production owing to climate variability will directly result in yield and income variation for farmers. Finally, from the aggregate mean ($\bar{x}$ = 3.43) which is above the discriminatory score ($\bar{x}\geq$2.50), it shows that the farmers correctly perceive climate variability, and it is therefore accepted.

## CONCLUSIONS AND RECOMMENDATIONS

The study, which focused on the effect of climate variability on food crop production in Imo state, Nigeria, shows that the average age of the farmers was 48.77 years, mainly female farmers (71.58%) with only secondary school education; majority were married with a minimum of 8 persons in a household, with 21.18 years farming experience; majority of the farmers were members of a cooperative society, with no contact with extension agents; and the farmers had an average farm size of 1.2 ha, having no access to credit/loan, with a monthly income of #33,000. Farmers further perceived that climate change has resulted in declining crop yields, increased water scarcity on farms, high incidences of pest and diseases, and increased rate of erosion/flooding, amongst others. Arising from the findings of the study, the following recommendations were made: The study found that extension contact is critical to the effect of climate variability; hence, the government should strength extension services so they could always endeavor to pay farmers regular visits to ascertain their challenges on the effects of climate variability and know where to assist them. Though the majority of the farmers had little formal education, they had secondary education. Therefore, agencies responsible for adult literacy should intensify their efforts to provide education for crop farmers especially in rural areas.

## REFERENCES

Adebisi, L.O., Oluwaremilekun, A.A., Asuquo, J., Olufunke, T.O., & Egbodo, B. O. (2022).Effect of climate smart agricultural practices on food security among farming households in Kwara State, North-Central Nigeria, *Agropec. Tropical Goiânia*, 52(3), 4-13.

Adetayo, A.O. (2022). Assessment of Adoption Rate of Climate Change Adaptation Strategies in Kishi, Oyo State, Nigeria, *International Journal of Environmental Monitoring and Analysis*, 10(2), 26-31.

Adger W.N, Dessai S. Goulden M, Hulme M, Lorenzoni I. Nelson D.R, Naess L.O. wolf J, Wreford A (2003). Are there social limits to adaptation to climate change? Change 93:335-354.

Ani, K. J., Anyika, V. O., & Mutambara, E. (2021).The impact of climate change on food and human security in Nigeria.*International Journal of Climate Change Strategies and Management*, 14(2), 148-167.


Article DOI: 10.52589/RJAED-UZGU3RTQ
DOI URL: https://doi.org/10.52589/RJAED-UZGU3RTQ

Fakon, W.P. (2008). Prioritizing climate change adaptation needs for food security in 2030 *International Journal of Science 31(9) 60-71.*

Fussel, H.M. (2007). Adaptation planning for climate change: concepts, assessment approaches, and key lessons. Sustainability Science.

Henri-Ukoha, A., & Osuji, E. E. (2017).Determinants of Arable Crop Farmers' Use-Levels of Sustainable Soil Management Techniques in Imo State, Nigeria.*Nigerian Journal of Agriculture, Food and Environment.* 13(2), 163-168.

Ikehi, M.E., Ifeanyieze, F.O., Onu, F.M., Ejiofor, T.E., & Nwankwo, C.U. (2022).Assessing climate change mitigation and adaptation strategies and agricultural innovation systems in the Niger Delta.GeoJournal, 18(5), 1-6.

Lobell D, Burke M, Tabaldi C, Mastrandera M, Falan, W and Naylor R (2008). *Prioritizing climate change adaptation used for food security in 2030 science 3(9):607-610.*

Ngukimbin, R. A., &Shinku, B. (2021). Climate change and food security challenges: empirical investigations in Nigeria. *International Journal of Sciences: Basic and Applied Research,* 55(1), 262-273.

Nicholas, O., & Nnaji C. (2010) "Difficulties in adaptation to climate change by farmers in Enugu State, Nigeria. *Journal of Agricultural Extension 14(2), 106-122.*

Ochi, I.B., Ezeamu, E.O., &Jachin, A. M. (2022).The Political Economy ofClimate Change in Nigeria.*School Journal Arts Humanity Social Science,* 10(7), 324-338.

Ofuoku, A. U., &Okompu, D. (2022). Migration among Farmers in Delta State, Nigeria: Is it a Climate Change Adaptation Strategy?.*Journal of Agriculture and Environment for International Development (JAEID), 116*(1), 5-28. https://doi.org/10.36253/jaeid-12076

Ogbuabor, E.J., &Egwuchukwu, E. I. (2017).The Impact of Climate Change on the Nigerian Economy.*International Journal of Energy Economics and Policy,* 7(2), 217-223.

Okoli, J. N., &Ifeakor, C. A. (2014). An overview of climate change and food security: adaptation strategies and mitigation measures in Nigeria. *Journal of Education and Practice*, 5(32), 13-20.

Okon, E. M., Falana, B. M., Solaja, S. O., Yakubu,S. O., Alabi, O. Olo., Okikiola, B. T., &Edeme, A.B. (2021). Systematic review of climate changeimpact research in Nigeria: implication forsustainable developmentHeliyon, 7(9), e07941.https://doi.org/10.1016/j.heliyon.2021.e07941.

Oluwole, A.J., & Shuaib, L. (2016). Assessment of Level of Use of Climate Change Adaptation Strategies Among Arable Crop Farmers Oyo and Ekiti States, Nigeria. *Journal of Earth Science and Climate*, 7(3), 369-372. doi: 10.4172/2157-7617.1000369.

Oranu, C., Achike, A., Zenebe, A., & Teklehaimanot, A. (2018).Comparative Evaluation of Farmers' Perception and Adaptation Strategies to Climate Change and Variability in BakoTibe, Ethiopia and Abeokuta, Nigeria.*American Journal of Climate Change*, 7(5), 611-623.

Uduji, J.I. & Okolo-Obasi, N.E.N. (2022).Gender sensitive responses to climate change in Nigeria: the role of multinationals' corporate social responsibility in oil host communities", *Journal of Global Responsibility* Vol. ahead-of-print No. ahead-of-print.https://doi.org/10.1108/JGR-05-2022-0040

Umoh, G.S., &Eketekpe, F.L. (2010).Climate change and agriculture in the Niger delta.A study of wetlands farmer's adaptation to climate variability in Bayelsa State.InNnamdu J.N., *etal* (Editors). Commercial Agriculture, Banking Reform and Economic downturn; setting a new agenda for Agricultural development in Nigeria proceedings of 11th


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## APPENDIX

**Table 1: Socio-economic Characteristics of the Crop**

| Socio-economic characteristics | Frequency/mode | Percentage | Mean |
|---|---|---|---|
| Age (Years) | 41-50 years | 56.28 | **48.77** |
| Sex | Female | 71.58 | |
| Education | Secondary | 65.57 | |
| Marital Status | Married | 52.8 | |
| Farming experience (Years) | 20-29years | 61.20 | **21.18 years** |
| Household size (Persons) | 6-10 persons | 63.03 | **8 persons** |
| Organization Membership | Member | 72.13 | |
| Extension Contact | No contact | 77.59 | |
| Farm size | 1.1-1.5 | 61.75 | **1.24ha** |
| Access to credit | Access | 69.40 | |
| Monthly Income | 30,001-40,000 | 55.74 | **₦33,000.00** |

***Source: Field Survey Data, 2023***

**Table 2: Farmers' Knowledge on Climate Variability**

| S/No | Farmers Knowledge on Climate Variability | *Frequency | Percentage |
|---|---|---|---|
| 1 | Knowledge on zero/minimum tillage practices | 182 | 99.45 |
| 2 | Knowledge on rain-water harvesting | 179 | 97.81 |
| 3 | Knowledge on use of sandbag by riverbank | 176 | 96.17 |
| 4 | Knowledge on the utilization of drainage systems on farmlands | 175 | 95.62 |
| 5 | Knowledge on farm fallowing initiatives | 171 | 93.44 |
| 6 | Knowledge on changes in planting dates/harvesting dates | 168 | 91.80 |
| 7 | Knowledge on use of herbicides | 165 | 90.16 |
| 8 | Knowledge on use of organic manuring | 161 | 87.97 |
| 9 | Knowledge on forage conservation | 157 | 85.79 |
| 10 | Knowledge on afforestation/ reforestation | 153 | 83.60 |
| 11 | Knowledge on use of mulching | 144 | 78.68 |
| 12 | Knowledge on planting of cover crops | 135 | 73.77 |

***Multiple responses were recorded; *Source: Field Survey Data, 2023***


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**Table 3: Farmers' Perception of Climate Variability**

| S/No | Perception of Climate Variability | Mean | SD(σ) |
|---|---|---|---|
| 1 | Rains have become more erratic | 3.49 | 0.91 |
| 2 | Rainfall starts late and ends early | 3.45 | 0.89 |
| 3 | Extremes in temperatures | 3.39 | 0.81 |
| 4 | Long dry spells during the season | 3.51 | 0.96 |
| 5 | Rains don't come when they normally used to | 3.58 | 0.98 |
| 6 | Prolonged/extended winter season | 3.47 | 0.90 |
| 7 | Short winter season | 3.44 | 0.85 |
| 8 | Too much/heavy rains | 3.39 | 0.86 |
| 9 | Rainfall distribution within seasons now poor | 3.45 | 0.89 |
| 10 | Sunshine duration is long and heavy | 3.34 | 0.83 |

**Source: Field Survey, 2023**

**Table 4: Perceived Effects of Climate Variability on Food Crop Yield Production**

| S/No | Items | Mean | SD(σ) |
|---|---|---|---|
| 1 | Declining crop yields | 3.35 | 0.79 |
| 2 | Increased water scarcity on farm | 3.45 | 0.84 |
| 3 | High incidences of pest and diseases | 3.29 | 0.73 |
| 4 | Increased in rate of erosion/flooding | 3.50 | 0.86 |
| 5 | High cost of crop seedlings and inputs | 3.46 | 0.81 |
| 6 | Post-harvest losses and declining of farm income | 3.54 | 0.89 |
| 7 | Increased waterlog farm road network to farm | 3.49 | 0.83 |
| 8 | Increased effect of heat stress on crops | 3.43 | 0.82 |
| 9 | Late fruiting of crops and Intense weed growth | 3.48 | 0.84 |
| 10 | Frequent leaching of nutrient | 3.30 | 0.77 |
| 11 | Damage/breaking of plants, due to windstorm | 3.42 | 0.79 |
| 12 | Washing away of soil surface applied with fertilizer | 3.39 | 0.73 |
| | Aggregate Mean Score | 3.43 | 0.81 |

**Source: Field Survey, 2023**



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