# Effect of Cooperatives Aids on Farmers' Production in Post Flood Disaster in Anambra

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## ABSTRACT

The purpose of the study is to determine how cooperative aid affects farmers' productivity in Anambra State after flooding incidents. Even with climate change making floods more frequent, the government's reaction is frequently insufficient, requiring the creation of new support systems. During flood catastrophes, agricultural cooperatives such as the Anambra State Fishermen Cooperative Society (ASFCS) and the Anambra State Agricultural Cooperatives Multipurpose Union (ASACMU) have been instrumental in delivering relief efforts. By doing this study, we hope to close the knowledge gap about how well cooperative aids can reduce the negative effects of flooding on farmers' yields. Using a mixed-methods approach, 370 farmers were randomly chosen from 118 cooperatives to provide quantitative data, while group interactions provided qualitative insights. The results show that farmers' productivity and different types of cooperative aid have a substantial positive association. Grain and monetary assistance. Farmers' post-flood productivity is positively impacted by resource sharing of agricultural inputs, material aid, training and education, extension information, infrastructure development, and government action. These results highlight how crucial cooperative assistance is to raising farmers' output and resilience in the wake of flood disasters. Among the suggestions include promoting the creation of cooperatives, giving prompt assistance from governmental and non-governmental organizations top priority, enhancing access to agriculture supplies and other necessities, and developing training initiatives that specifically address post-flood issues. In Anambra State, putting these suggestions into practice can improve farmers' resilience and lessen the effects of flooding. In general, this research advances knowledge of the vital role that cooperative aids play in encouraging resilient farming methods and sustainable agricultural practices among farmers in flood-prone areas such as Anambra State.

**Keywords:** Cooperative, Flood Disaster, Farmers, Production & Mitigating AIDS

## BACKGROUND OF THE STUDY

Cooperatives are essential for helping farmers and advancing their financial security (Smith, 2021). These groups give farmers a forum to combine their resources, exchange expertise, and work together to overcome obstacles. Cooperatives offer a substantial boost to farmers' overall productivity and sustainability by reducing the risks and vulnerabilities related to farming.

Flooding can be brought on by excessive rain or by rivers and seas overflowing their banks as a result of high tides, submerging land. It occurs when there is insufficient water absorption in lakes, ponds, river beds,

soil, and vegetation. As a result, excess water runs off the land in amounts that cannot be carried by streams, held in lakes, natural ponds, or artificial reservoirs.

Increased impermeable surface, natural disasters, wildfires, or deforestation, which lowers the amount of plants available to absorb rainfall, can all worsen flooding (Ayooso, 2017). Floods can have a variety of origins and forms. A flash flood, which is caused by extremely dangerous water rising swiftly and moving quickly, could occur. Oceanic coastal flooding can also occur as a result of hurricanes, tsunamis, and storm surges. Flooding may result from the failure of dams or other water-retaining infrastructure. Flooding has recently been linked to climate change and global warming(Famous,2017).

The 2017 floods which occurred in Nigeria between July 2017 to October, 2017 was one of the most devastating in the country. Some of the states affected were Anambra, Kogi, Edo, Cross Rivers, Rivers, Benue, Delta and Bayelsa states, Ologhadien, (2021). The Nigerian government was alerted by the Nigerian Meteorological Agency (NIMET) that there would be above normal rainfall in the country leading to flooding in 12 strategic states in the country but the government ignored the warning. This, coupled with the release of water from the Lagdo dam in cameroun led to the Rivers Benue and Niger overflowing their banks resulting in monumental floods (Odeh, 2016). The impact of the floods was disastrous.

While death toll rose to 95%, people were left without a place to live, farmlands were damaged, drinking water was poisoned, and economic activity was completely halted. The expense of ferrying people escalated because the only modes of transportation available to the impacted towns were local canoes and speed boats. In several towns across the nation, the flood also brought with it the invasion of reptiles including snakes and crocodiles (Odidi, 2017). Farmers around the nation experienced significant financial losses. Food production, marketing, and storage all presented difficulties. Commodity prices rose, and schools were abruptly closed (Famous, 2017).

Due to extensive damage to farmlands, crops, and livestock, the Anambra State flood disaster of 2022 had a major effect on the agricultural industry and resulted in large losses for the state's farmers. Crop devastation was one of the consequences of the flood disaster for farmers. Farmlands were swamped by floodwaters, which caused the loss of sown crops and made it challenging to establish fresh ones. Planting seasons were thrown off, and farmers' capacity to make a living from farming was impacted. Furthermore, the silt and debris transported by the floodwaters have the potential to adversely influence soil fertility and cause long-term harm to the impacted areas' agricultural productivity. In some cost areas, livestock farmers had significant difficulties amid the 2022 flood crisis.

In several coastal areas of Anambra State, including Ifite-Aguleri, Otuocha, etc., all in the Anyamelu, Ogbaru local government area of Anambra State, livestock producers also had significant difficulties during the 2022 flood disaster.

**Statement of the problem**

In Nigeria, flooding occurs annually and is predicted to become more frequent as a result of climate change. The 2017 flood was one of the worst to ever hit Nigeria, and the federal government was unable to handle it since it disregarded early warnings from pertinent agencies (Garba &Chukwujama, 2016). Anambra State Agricultural Cooperatives Multipurpose Union (ASACMU) was one of the cooperatives that was instrumental in helping its members during the flood crisis in Anambra. In Anambra State, ASACMU is a cooperative union that supports and encourages agricultural endeavors among its members. In response to the flood tragedy, ASACMU dispatched its resources to offer prompt assistance to the impacted farmers.

Therefore, one important topic of research that has the potential to improve the lives of farmers in Anambra state is how cooperatives help to mitigate the consequences of flood catastrophes on farmers' performance.

There is currently no research conducted in the state of Anambra on how well cooperatives work to lessen the impact of flood disasters on farmers' productivity. To the best of my knowledge, no research has been done on the impact of cooperative mitigation aids on farmers' post-disaster performance in Anambra state. There are numerous empirical studies on flood catastrophes. Thus, the current effort to reduce this gap is necessary.

**Objective of the study**

The broad objective of this study is to examine the effects of mitigating aids by cooperative on farmers 'production flood disaster.

Where the study set to:

1. determine the effect of grain support on farmer's production in post flood disaster in Anambra State.
2. Ascertain the effect of farm inputs on farmer's production in post flood disaster in Anambra State.
3. examine the effect of financial assistance on farmer's production in Anambra State.
4. Determine the effect of extension information on farmer's production.

**Research Hypotheses**

1. $H_{01}$: There is no significant effect of grain support on farmer's production in Anambra State following a post-flood disaster.
2. $H_{02}$: There is no significant effect of farm inputs on farmer's production in Anambra State after a flood disaster.
3. $H_{03}$: There is no significant effect of financial assistance on farmer's production in Anambra State post a flood disaster.
4. $H_{04}$: There is no significant effect of extension information on farmer's production in Anambra State after a flood disaster

**Mitigating AIDS of Cooperatives**

The actions done by cooperatives to lessen the effects of floods on its members are referred to here. This include offering healthcare, various forms of support, including education and awareness campaigns. Reducing the negative effects of unforeseen occurrences on cooperatives and their members is known as mitigating AIDS, according to the International Cooperative Alliance (ICA). In order to do this, one may need to establish techniques for handling unforeseen circumstances, prepare for probable dangers, and cultivate resilience.

According to Johnston and Bertin (2016), mitigating AIDS is "the process of preparing for recovery and rebuilding and of reducing the impact of disasters, both man-made and natural, on cooperatives and their members." As to Aida's (2013) description, mitigating AIDS within the agricultural cooperative setting refers to "the process of reducing the impact of adverse events, such as droughts, floods, and market shocks, on the productivity and income of cooperative members." In order to promote cooperatives' and its members' performance, the idea of minimizing AIDS of cooperatives entails lessening the impact of unfavorable events as well as planning for recovery and rebuilding. According to Melina (2016), reducing the effects of flood catastrophes via cooperatives necessitates a multifaceted strategy including a range of stakeholders.

Juanita (2018) highlights that in order to reduce the effects on their members, cooperatives must actively participate in pre- and post-disaster planning. This might result from encouraging environmentally friendly initiatives to lessen flood risk, like agroforestry and soil conservation techniques. Cooperatives can also help

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members recover from floods by offering financial services, insurance, and emergency cash. It can take the form of making it easier for participants to share information and resources, which would improve their ability to prevent, respond to, and recover from flood disasters.

**Farmer's Performance**

This refers to farmers who belong to cooperatives and their financial and productive results. To assess how well the initiatives are working, it's critical to gauge how AIDS mitigation has affected their output. The capacity of farmers to meet their goals for production, income, and consumption within the constraints of the resources available to them is the definition of farmer's performance as stated by Keith and Paul (2019). By evaluating yields, incomes, and other productivity and profitability metrics, they proposed that one could gauge the success of farmers. The application of genetic resources in farming performance was the main topic of Adefila (2016).

"The ability of farmers to conserve, manage, and use genetic resources to achieve their production, income, and consumption objectives" was the definition given to a farmer's performance. They maintained that traditional agricultural practices grounded in regional genetic resources might be more resilient and sustainable than contemporary, input-intensive practices.
Agricultural performance, according to Afolami, Obayelu, Agbonlahor, and Lawal-Adebowale (2016), is "the ability of farmers to adapt to changing circumstances and maintain a viable livelihood over time."

They contended that evaluating a farmer's capacity to accept new technology, control risk, and react to market signals might be used to gauge their performance. The notion of farmer performance is intricate and diverse, with numerous approaches to its definition and assessment. The majority of definitions, however, place a strong emphasis on the role that productivity, income, profitability, technology, asset growth, and market capture play in helping farmers perform.

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**Post-Flood Disaster**

n an agricultural setting, the term "flood disaster" refers to the negative effects that flooding causes on crops, livestock, agricultural land, and farming activities as a whole. Floods can have a lasting impact on agricultural productivity and present farmers with major issues (Garandi, 2018). Floods have the potential to cause sediment deposition, soil erosion, and physical structure changes (Vigneshwara, 2018).

Too much water can saturate the soil, which prevents roots from getting oxygen and nutrients, which makes it harder for crops to grow. Floods have the power to drown fields, destroying or seriously harming standing crops. Crop rot, wilting, infections, and decreased production can be caused by extended exposure to water and oxygen deficiency. Additionally, plants may sustain physical harm from debris brought by floodwaters. According to Taiwo, Udunze, and Agbasi (2015), flooding can put livestock's wellbeing at jeopardy because they might become stuck in flooded areas or have trouble getting food and clean water.

Animals may be at danger for health problems if sources of drinking water are contaminated. In addition, the devastation of infrastructure and animal shelters may worsen the effects on cattle. Floods frequently impede regular farming operations like planting, harvesting, and managing livestock. Farmers may have trouble getting to their land, tools, and machinery, which might cause delays or even break their production

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cycles. Farmers may suffer financial setbacks and decreased revenue as a result of this.

In agriculture, flood catastrophe recovery might take a long time. Before farming operations can continue, there may be a need for infrastructure rehabilitation, land drainage, and soil cleanup. For farmers, the loss of capital assets, animals, and harvests can have long-term financial repercussions that impact both their own means of subsistence and the surrounding agricultural economy. Farmers use a variety of mitigation and adaptation techniques to lessen the effects of flood catastrophes. In order to help farmers get ready for impending flood disasters, these can include building protective structures like levees or embankments, putting better land and water management techniques into place, diversifying crops, choosing flood-resistant cultivars, and creating early warning systems.

Farmers depend on governmental and non-governmental organizations as well as community support to help them recover from flood catastrophes (Tewodros, 2017). Programs for financial aid, access to crop insurance, emergency relief, and counseling services are essential for assisting farmers in managing the effects and reconstructing their farming enterprises.

In other words, the term “post-Flood Disaster” describes what happens following a natural disaster, such a flood.

Given that cooperatives and their members may be more susceptible to the aftereffects of these catastrophes, it is critical to investigate the ways in which AIDS mitigation impacts their capabilities and ability to recover. Post-flood disaster was characterized by Srivastava & Srivastava (2017) as “the situation in which farmers face a loss of crops, livestock, and assets due to floods, and have limited access to markets, credit, and other resources.” They contended that farmers may experience long-term impoverishment and food insecurity as a result of a flood disaster.

**Farmers Cooperative**

A cooperative is a form of organization or corporate structure that is owned and run by a group of people who unite together to achieve their shared needs and goals in terms of economics, society, and culture. The fundamental tenets of cooperatives are democratic governance, fair benefit and responsibility sharing among members, and voluntary membership. The International Cooperative Alliance (ICA) defines a cooperative as “an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise.”A fundamental characteristic of a cooperative is the democratic control concept, which stipulates that decisions are taken by all members jointly using one person, one vote, regardless ofthe amount of capital contributed by each member

A wide range of industries, including banking, consumer products, housing, utilities, healthcare, and agriculture, are served by cooperatives. They give participants a place to combine their resources and collaborate to accomplish common goals and objectives.

**Farmers output**

The agricultural products or things that farmers generate through their cultivation and farming operations are referred to as farmers’ output (Garandi, 2018). Depending on the type of farming—crop farming, cattle rearing, or a combination of the two—the precise yield may differ. Here are a few instances of what farmers produce:

Farmers grow various crops like grains (wheat, rice, corn), fruits and vegetables, oilseeds (soybeans,

sunflower), pulses (lentils, beans), and cash crops (cotton, tobacco). These crops are harvested and sold in the market or used for further processing.

**Livestock:** Farmers rear animals like cattle, poultry (chickens, turkeys), pigs, sheep, goats, and fish. The output includes dairy products (milk, cheese), meat, eggs, wool, and other animal by-products.

**Effect of mitigating aid to farmers affected by flood disaster on their membership**

he membership and general well-being of farmers impacted by a flood disaster might be greatly impacted by the mitigation of relief. Farmers frequently confront monetary and psychological difficulties that could endanger their livelihoods after flooding destroys their infrastructure, animals, and crops. By offering these farmers mitigating aid, you show that you care about their well-being and assist them in getting over their flood-related losses. This help can take many different forms, including cash support, loan or credit availability, seed and fertilizer distribution, technical assistance, and infrastructure repair.

In addition to providing instant alleviation, help also encourages a feeling of communal support and camaraderie among the impacted farmers. It demonstrates that assistance is provided at trying times and that their concerns are understood. This can strengthen their faith in and commitment to their participation in associations, cooperatives, and agricultural groups. Moreover, prompt and efficient assistance can be extremely important in regaining farmers' self-esteem and drive to carry on farming. It helps them restore their economic stability and self-sufficiency by giving them the resources they need to rebuild their farms and resume agricultural production.

Consequently, farmers might experience a stronger sense of attachment to their membership groups and appreciate the significance of teamwork and solidarity. On the other hand, farmers' membership may suffer if mitigation help is either unavailable or provided insufficiently. Without enough assistance, farmers might find it difficult to recover from losses caused by flooding, which could result in more debt, lower production, or even the decision to give up farming completely. Feelings of disappointment, annoyance, and alienation from their membership organizations may follow from this.Another factor that can undermine farmers' faith in their agricultural organizations is inadequate assistance. Farmers may doubt the value and efficacy of their membership if they feel unsupported during difficult times. This might result in fewer farmers becoming members and a weakening of farmer solidarity.

**Effect of mitigating aid to farmers affected by flood disaster on level of income**

The revenue of farmers impacted by a flood disaster might be positively impacted by mitigating aid. Farmers frequently see a significant decline in revenue as they deal with the disastrous effects of floods on their farming operations. But your assistance can lessen some of the financial strain and help them heal so they can start making money again. Financial aid is one of the main ways that aid can have a positive impact on farmers' income. This assistance, which can come in the form of grants, loans, or subsidies, can help farmers with short-term costs like buying animals, fertilizer, or new seeds, as well as fixing infrastructural damage.

Aid can also help farmers repair their operations and start up again. Farmers can resume their farming endeavors and strive towards earning cash by being supplied with supplies including seeds, fertilizers, and equipment. When farmers need to invest in inputs for upcoming harvests, such as during planting seasons, this help might be especially helpful. Technical assistance, instruction, and capacity-building initiatives are further examples of aid. By providing farmers with the necessary information and abilities to adjust to the conditions that arise after a flood, they can enhance their farming methods and maximize yield. This enhanced effectiveness has the potential to raise production and, in turn, revenue.

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**Conceptual Framework**

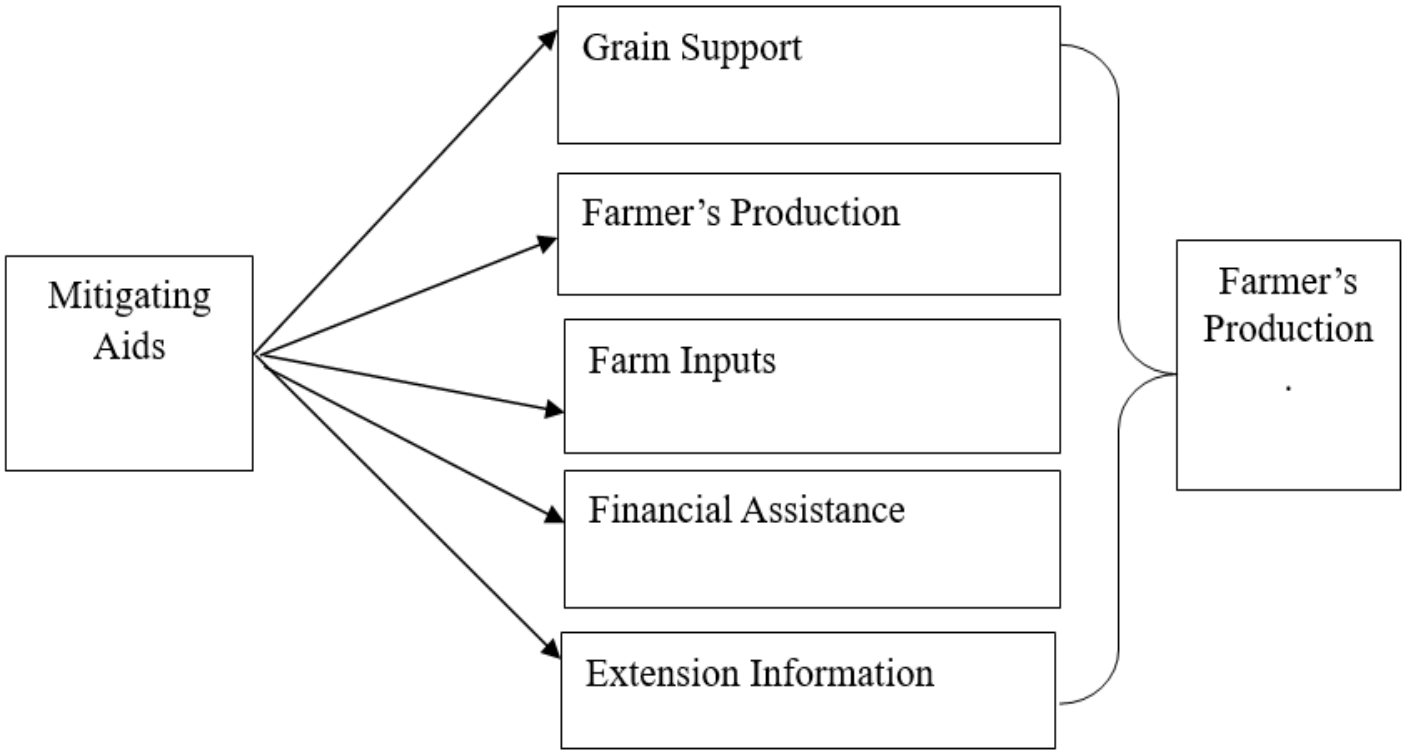


Fig. 1 Conceptual Framework

The conceptual framework provided outlines the potential effects of cooperative aids on farmers' production in the aftermath of a post-flood disaster. Mitigating Aids refers to various forms of assistance provided to farmers to mitigate the adverse effects of floods on their agricultural activities. These aids could include financial support, relief materials, technical assistance, and other forms of aid aimed at helping farmers recover and resume production.

Whereas the support provided to farmers in the form of grains or other agricultural produce, after a flood disaster, farmers may have lost their crops, and providing them with grains can help ensure food security for themselves and their families while they work on restoring their own production. Farm Inputs otherwise are essential resources required for agricultural production, such as seeds, fertilizers, pesticides, and machinery. Post-flood, farmers may need assistance in accessing these inputs to replant their fields and resume production. Cooperatives can play a vital role in coordinating the distribution of these inputs among their members.

**Theoretical Framework**

Resilience theory, which Ann Masten developed in the late 1980s, serves as the foundation for this work. Resilience Theory is a psychological concept that emphasizes people's or groups' capacity to adjust, recover, and flourish in the face of severe hardship, trauma, or stress. It investigates why, in spite of difficult situations, some people are able to preserve good mental health and wellbeing while others may suffer or have unfavorable results. Resilience theory, at its foundation, highlights the dynamic aspect of resilience, emphasizing that it is a process that can be cultivated and maintained over time rather than a set trait.

It acknowledges that a mix of societal, environmental, and personal factors affect resilience. Resilience theory holds that an individual's capacity to overcome adversity is significantly shaped by protective

variables. Personal qualities like optimism, self-worth, and problem-solving abilities can be included in this group of protective variables, as can outside resources like encouraging connections, educational possibilities, socioeconomic stability, and chances for meaningful involvement. Resilience can differ among populations and circumstances, as acknowledged by resilience theory.

For example, resilience in children may focus on factors like parental support, quality education, and stable living conditions. In contrast, resilience in communities might be influenced by factors such as strong social networks, access to healthcare, and economic resources.

**Relevance of Resilience Theory to this study**

Regarding the impact of cooperatives' efforts to mitigate AIDS on farmers' performance following flood disasters, resilience theory is quite pertinent. In the context of catastrophe management and recovery, resilience theory focuses on comprehending how people, communities, and systems may overcome hardship, bounce back, and even flourish.

Resilience theory can offer important insights into farmers' capacity to recover and carry on with their agricultural operations following such a significant disruption in the event of flood catastrophes. Through analyzing how cooperatives reduce the impact of AIDS on farmers' productivity, scientists can pinpoint the elements that support farmers' adaptability in this particular setting.

## EMPIRICAL REVIEW

Rahman and Asif Reza (2016) investigated the impact of cooperatives in lessening farmers' vulnerability following flooding in Bangladesh using a mixed-methods approach. The researchers gathered information from primary and secondary sources, such as focus groups with farmers and cooperative leaders, in-depth interviews with government officials and NGO representatives, and a survey of 200 farmers in Bangladesh's flood-prone districts. A systematic questionnaire was used in the study to gather data on the socioeconomic situation of the farmers, their experiences with flooding, their coping strategies, their access to support services, their opinions of cooperatives, and their performance following cooperative aid.

Econometric methods and descriptive statistics were used to analyze the survey data. Thematic analysis was used to examine the focus group talks and in-depth interviews. The study provided proof that by giving farmers access to credit, inputs, and technical support, cooperatives may significantly lessen their risk to flooding.

Hoontrakul and Chaimahawong (2017) examined the function of cooperatives in post-disaster recovery following the 2011 Thai floods using a case study methodology. Semi-structured interviews were employed to gather data from key informants, who comprised government officials, NGO representatives, and cooperative leaders. The purpose of the interviews was to gather data regarding the cooperative initiatives put in place to aid farmers affected by flooding and the efficiency of these initiatives in aiding farmers' recuperation. Thematic analysis was used to examine the interview data. According to the study, cooperatives were essential to farmers' post-disaster recovery efforts because they offered them marketing services, technical support, and financial support. The significance of cooperative-government collaborations in aiding post-disaster recovery efforts was also emphasized by the study.

## METHODOLOGY

**Research Design:** This study adopts mixed research comprising both qualitative and quantitative designs.

**Area of Study:** Anambra State is situated in the south-eastern part of Nigeria.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

**Population of the Study**

The population of this study is specifically farmers in Anambra, Nigeria. It considers farmers residing in areas such as Ogbaru and Anambra East, local government area of Anambra State. communities such as Odekpe, Aguleri, Umueri, Umuerum, Odekpe and Akili-Ozizors that have been affected by flood disasters.

**Sources of Data:** Two major sources of data collection; (primary and secondary) were used

**Sample size and Sampling:** A total of 370 members of agricultural cooperatives were selected randomly from 118 farmers' cooperatives in the two agricultural zone of Anambra state which constituted the sample size.

**Methods of Data Analysis**

Descriptive and inferential statistics will because to analyses the data to be collected. Data will be presented in form of tables, and frequency counts, and percentages. Other descriptive instruments such as means and standard deviations were also employed to present and discuss collated data. Likert scale questionnaire was also employed used to obtain data regards to perception of respondents in certain aspects of the study, and especially to obtain data used in the test of hypotheses two, three and four. The Likert questionnaire was in the form of four levels where they answered by 1 = Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree. The interpretation of such results was based on the mean value and the standard deviation. The standard deviation below 0.5 was interpreted as indicating homogeneity of answers (which means the closeness of answers. A standard deviation above 0.5 indicates heterogeneity. Analysis of Variance (ANOVA): ANOVA will equally be employ to test the hypotheses.

## PRESENTATION AND ANALYSIS OF DATA

**Question 1:** What is the impact of grain support on farmer's production in Anambra State following a post-flood disaster?

Table 4.1: impact of grain support on farmer's production **N = 370**

| S/N | ITEMS | SA | A | D | SD | Mean | Std. Deviation | Decision |
|---|---|---|---|---|---|---|---|---|
| 1. | The provision of grain support significantly increases farmers 'production levels in Anambra State after a flood disaster. | 139 | 189 | 10 | 32 | 2.5270 | .84837 | Rejected |
| 2. | Farmers whoreceive grain support show a noticeable improvement in their agricultural output compared to those who do not receive support. | 152 | 167 | 16 | 35 | 3.2486 | .89598 | Accepted |
| 3. | Grain support plays a crucial role in mitigating the negative impact of flood disasters on farmer's production in Anambra State. | 131 | 201 | 8 | 30 | 3.0676 | .82026 | Accepted |
| 4. | The effectiveness of grain support in enhancing farmer's production varies depending on factors such as the quantity and timing of the support. | 152 | 167 | 16 | 35 | 3.4297 | .89598 | Accepted |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5. | Farmers who receive timely and adequate grain support demonstrate higher resilience and quicker recovery in their production activities post-flood disaster. | 139 | 189 | 10 | 32 | 3.2514 | .84837 | Accepted |
| 6 | Grain support positively influences farmer's decision-making processes regarding crop selection and cultivation practices in Anambra State after a flood disaster. | 211 | 112 | 28 | 19 | 3.3162 | .83646 | Accepted |
| 7 | The impact of grain support on farmer's production extends beyond immediate recovery to long-term sustainability and resilience in agricultural activities. | 138 | 174 | 41 | 17 | 3.0324 | .80019 | Accepted |
| 8 | Access to grain support significantly reduces the financial burden on farmers affected by flood disasters, allowing them to allocate resources to other productive activities. | 152 | 167 | 16 | 35 | 2.9946 | .89598 | Rejected |
| 9 | The effectiveness of grain support programs in enhancing farmer's production is influenced by factors such as accessibility, distribution mechanisms, and coordination with other relief efforts. | 201 | 136 | 10 | 23 | 3.4189 | .81679 | Accepted |
| 10 | Farmers perceive grain support as a crucial lifeline that enables them to recover and rebuild their production capacity in Anambra State following a flood disaster. | 203 | 140 | 7 | 20 | 2.8784 | .77953 | Rejected |

Source: Researcher field Survey, 2024

Interpreting the table headed "Impact of Grain Support on Farmer's Production" is shown in Table 4.1 above. The statements regarding grain support that the respondents agreed with all the exceptions of "the provision of grain support significantly increases farmer's production levels in Anambra State after a flood disaster," "Farmers perceive grain support as a crucial lifeline that enables them to recover and rebuild their production capacity in Anambra State following a flood disaster," and "Access to grain support significantly reduces the financial burden on farmers affected by flood disasters, allowing them to allocate resources to other productive activities" were rejected as not being included in the grain support for victims of flood disasters.

**Question 2:** How does the provision of farm inputs affect farmer's production in Anambra State after a flood disaster?

Table 4.2 Effect of provision of farm inputs on farmer's production in Anambra State after a flood disaster
**N = 370**

| **S/N** | **ITEMS** | **SA** | **A** | **D** | **SD** | **X** | Std. Deviation | Decision |
|---|---|---|---|---|---|---|---|---|
| 11. | The provision of farm inputs leads to a substantial increase in farmer's production levels in Anambra State post a flood disaster. | 103 | 89 | 78 | 100 | 2.5270 | 1.16199 | Rejected |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12. | Farmers who have access to quality farm inputs exhibit higher yields and improved agricultural productivity compared to those without access. | 140 | 203 | 6 | 21 | 3.2486 | .74921 | Accepted |
| 13. | The effectiveness of farm inputs in enhancing farmers ' production depends on factors such as the quality, quantity, and timeliness of the inputs provided. | 168 | 108 | 45 | 49 | 3.0676 | 1.05063 | Accepted |
| 14. | The availability of farm inputs significantly contributes to the recovery and resilience of agricultural activities in Anambra State following a flood disaster. | 203 | 130 | 30 | 7 | 3.4297 | .72260 | Accepted |
| 15. | Farmers who receive appropriate farm inputs demonstrate greater adaptability and innovation in their production practices post-flood disaster. | 153 | 176 | 10 | 31 | 3.2514 | .82578 | Accepted |
| 16 | The impact of farm inputs on farmer's production extends beyond immediate recovery to sustainable growth and long-term agricultural development. | 200 | 104 | 49 | 17 | 3.3162 | .87110 | Accepted |
| 17 | Access to farm inputs positively influences farmer's decision-making processes regarding crop selection, planting techniques, and pest management strategies in Anambra State after a flood disaster. | 181 | 60 | 89 | 40 | 3.0324 | 1.07901 | Accepted |
| 18 | The provision of farm inputs alleviates the financial strain on farmers affected by flood disasters, enabling them to invest in essential agricultural inputs and technologies. | 130 | 161 | 26 | 53 | 2.9946 | .99863 | Rejected |
| 19 | The effectiveness of farm input programs in enhancing farmer's production is contingent upon factors such as accessibility, affordability, and technical support services. | 221 | 102 | 28 | 19 | 3.4189 | .83952 | Accepted |
| 20 | Farmers perceive the provision of farm inputs as a crucial support mechanism that enhances their ability to recover and thrive in the aftermath of a flood disaster in Anambra State. | 136 | 119 | 40 | 75 | 2.8784 | 1.11837 | Rejected |

Source: Researcher field Survey, 2024

The findings of a survey or study on the interpretation of the table titled "Effect of Provision of Farm Inputs on Farmer's Production in Anambra State after a Flood Disaster" are shown in Table 4.2 above: It was discovered that all of the assertions made by the respondents were agreed upon, with the exception of "Farm input provision leads to a large improvement in farmers' production levels in Anambra State post-drought crisis, Farm inputs are provided to farmers affected by flood catastrophes, relieving their financial burden and allowing them to invest in vital agricultural technologies and inputs. After a flood disaster in Anambra State, farmers view the supply of farm inputs as an essential support system that improves their capacity to recover and prosper. But were rejected as not part of Effect of Provision of Farm Inputs on Farmer's Production in Anambra State after a Flood Disaster"

**Question 3:** What influence does financial assistance have on farmer's production in Anambra State post a

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

flood disaster?

Table 4.2 influence of financial assistance on farmer's production in Anambra State post a flood disaster **N = 370**

| S/N | ITEMS | SA | A | D | SD | X | Std. Deviation | Decision |
|---|---|---|---|---|---|---|---|---|
| 21. | 1. Financial assistance plays a pivotal role in facilitating the recovery and revival of farmer's production activities in Anambra State following a flood disaster. | 148 | 205 | 9 | 8 | 3.3324 | .63355 | Accepted |
| 22. | 2. Farmers who receive financial assistance demonstrate higher levels of productivity and resilience in their agricultural operations compared to those without assistance. | 200 | 140 | 9 | 21 | 3.4297 | .72260 | Accepted |
| 23. | 3. The availability of financial assistance enables farmers to overcome immediate financial challenges and invest in essential inputs, equipment, and infrastructure for production post-flood disaster. | 203 | 130 | 30 | 7 | 3.4297 | .72260 | Accepted |
| 24. | 4. Financial assistance contributes to the restoration of farmer livelihoods and income generation capabilities in Anambra State after a flood disaster, thereby promoting economic recovery and stability. | 209 | 101 | 25 | 35 | 3.3081 | .95831 | Accepted |
| 25. | 5. Farmers who have access to financial assistance exhibit greater flexibility and adaptability in responding to the adverse effects of flood disasters on their production activities. | 153 | 176 | 10 | 31 | 3.2189 | .85424 | Accepted |
| 26 | 6. The impact of financial assistance on farmer's production extends beyond immediate recovery to long-term sustainability and growth in agricultural output and income. | 221 | 102 | 28 | 19 | 3.4189 | .83952 | Accepted |
| 27 | 7. Access to financial assistance empowers farmers to implement innovative farming practices, adopt climate-resilient technologies, and diversify their agricultural activities post-flood disaster. | 138 | 174 | 41 | 17 | 3.1703 | .80019 | Accepted |
| 28 | 8. Financial assistance mitigates the financial burden on farmers affected by flood disasters, allowing them to allocate resources to productive investments and crop diversification strategies. | 162 | 187 | 10 | 11 | 3.3541 | .67197 | Accepted |
| 29 | 9. The effectiveness of financial assistance programs in enhancing farmer's production is influenced by factors such as accessibility, timeliness, transparency, and the alignment with farmers' needs and priorities. | 190 | 149 | 10 | 21 | 3.3730 | .79383 | Accepted |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 30 | 10. Farmers perceive financial assistance as acrucial support mechanism that not only helps themrecover from the impacts of flood disasters but also strengthens their capacity to withstand future challenges and uncertainties in Anambra State. | 100 | 170 | 39 | 61 | 2.8351 | 1.00533 | Rejected |

Source: Researcher field Survey, 2024

The findings of a survey or study on the impact of financial aid on farmers' productivity in Anambra State following a flood disaster are shown in Table 4.3: All of the items were found to be agreed upon by the respondents, with the exception of the fact that farmers view financial assistance as an essential means of support that not only helps them recover from the effects of flood disasters but also increases their ability to face challenges and uncertainties in the future in Anambra State.

**Question 4:** How does the availability of extension information influence farmer's production in Anambra State after a flood disaster?

Table 4.4: Availability of extension information influence farmer's production in Anambra State after a flood disaster **N = 370**

| **S/N** | **ITEMS** | **SA** | **A** | **D** | **SD** | **X** | Std. Deviation | Decision |
|---|---|---|---|---|---|---|---|---|
| 31. | 1. The availability of extension information significantly enhances farmers ' production capabilities and decision-making processes in Anambra State following a flood disaster. | 103 | 89 | 78 | 100 | 2.5270 | 1.16199 | Rejected |
| 32. | 2. Farmers who have access to timely and relevant extension information demonstrate improved productivity, efficiency, and resilience in their agricultural practices compared to those without access. | 209 | 130 | 9 | 22 | 3.4216 | .80686 | Accepted |
| 33. | 3. Extension information provides farmers with valuable knowledge, technical guidance, and best practices to address the challenges posed by flood disasters and optimize their production outcomes. | 168 | 108 | 45 | 49 | 3.0676 | 1.05063 | Accepted |
| 34. | 4. Extension information empowers farmers to make informed decisions regarding crop selection, planting techniques, pest management, irrigation methods, and post-harvest handling in Anambra State post a flood disaster. | 159 | 183 | 10 | 18 | 3.3054 | .74806 | Accepted |
| 35. | 5. The impact of extension information on farmer's production extends beyond immediate recovery to sustainable agricultural development, innovation, and capacity building. | 153 | 176 | 10 | 31 | 3.2189 | .85424 | Accepted |
| 36 | 6. Access to extension information fosters knowledge exchange, peer learning, and collaboration among farmers, extension agents, researchers, and other stakeholders, facilitating collective efforts to address post-flood challenges. | 200 | 104 | 49 | 17 | 3.3162 | .87110 | Accepted |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 37 | 7. Extension information enables farmers toadopt climate-resilient and sustainable farming practices, thereby reducing vulnerability to future flood disasters and enhancing long-term agricultural resilience. | 197 | 60 | 102 | 11 | 3.1973 | .94367 | Accepted |
| 38 | 8. Extension information serves as a valuable resource for farmers to stay updated on emerging technologies, market trends, policy changes, and disaster management strategies relevant to their production activities. | 130 | 161 | 26 | 53 | 2.9946 | .99863 | Rejected |
| 39 | 9. The effectiveness of extension information services in enhancing farmer's production is influenced by factors such as the accessibility, relevance, credibility, and usability of the information provided. | 170 | 184 | 9 | 7 | 3.3973 | .63459 | Accepted |
| 40 | Farmers perceive extension information as an essential tool for building their capacity, improving their livelihoods, and promoting agricultural sustainability in Anambra State post a flood disaster | 119 | 120 | 48 | 83 | 2.7432 | 1.13411 | Rejected |

Source: Researcher field Survey, 2024

The results of a survey on how to interpret the table headed "Availability of Extension Information Influence Farmer's Production in Anambra State after a Flood Disaster" are shown in items 31 to 40 of table 4.4 above: According to our findings, all of the items were agreed upon by the respondents, with the following exceptions: Extension information is a valuable resource for farmers to stay informed about emerging technologies, market trends, policy changes, and disaster management strategies relevant to their production activities; It significantly improves farmers' production capabilities and decision-making processes in Anambra State following a flood disaster; In Anambra State, farmers view extension knowledge as a crucial resource for enhancing their ability, enhancing their standard of living, and advancing agricultural sustainability following a flood disaster.

Table 4.6: Farmer's Production Performance **N = 370**

| **S/N** | **ITEMS** | **SA** | **A** | **D** | **SD** | **X** | Std. Deviation | Decision |
|---|---|---|---|---|---|---|---|---|
| 41. | After cooperative intervention, you recorded positive crop yields and livestock. | 103 | 100 | 78 | 98 | 3.3459 | .63698 | Accepted |
| 42. | After cooperative intervention, you recorded excellence or standard achieved in the agricultural products size, appearance, taste, and nutritional value. | 203 | 104 | 21 | 6 | 3.4405 | .72357 | Accepted |
| 43. | After cooperative intervention, you continue to have access and effectively utilize farmland land, water, seeds, fertilizers, pesticides, labor, and machinery to maximize output. | 168 | 108 | 45 | 49 | 3.4297 | .72260 | Accepted |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 44. | After cooperative intervention, your output generated higher per unit of land area, more than your usual past records. | 203 | 160 | 0 | 7 | 3.3081 | .95831 | Accepted |
| 45. | After cooperative intervention, you have ability to maintain or enhance productivity while minimizing negative environmental impacts, of soil degradation, water pollution, and excessive use of chemical inputs. | 153 | 176 | 31 | 10 | 3.2189 | .85424 | Accepted |
| 46 | After cooperative intervention, you have the ability to produce agricultural products at a competitive cost. | 200 | 130 | 23 | 17 | 3.4189 | .83952 | Accepted |
| 47 | After cooperative intervention, you are capable to respond to changing market demands by producing desired crops that align with consumer preferences. | 181 | 129 | 40 | 20 | 3.1703 | .80019 | Accepted |
| 48 | After cooperative intervention, you have the ability to plan and execute farming activities effectively, ensuring timely planting, harvesting, and overall crop management. | 161 | 158 | 30 | 21 | 3.3676 | .67477 | Accepted |
| 49 | After cooperative intervention, you have the ability to approach diversifying your production portfolio to mitigate risks associated with weather fluctuations, market volatility, or pest/disease outbreaks. | 221 | 112 | 20 | 17 | 3.3730 | .79383 | Accepted |
| 50 | After cooperative intervention, you have the ability to ensure sustainable production practices and financial viability, taking into account factors like income generation, return on investment, and long-term farm viability. | 171 | 157 | 20 | 22 | 2.8486 | 1.01416 | Rejected |

Source: Researcher field Survey, 2024

Table 4.6 revealed that the respondents agreed to all the items except that After cooperative intervention, you have the ability to ensure sustainable production practices and financial viability, taking into account factors like income generation, return on investment, and long-term farm viability.

**Test of Hypothesis**

**Objective I**

Table 4.7.1

| **Correlations** | | | |
|---|---|---|---|
| | | Farmers Production | Grain Financial Support |
| Pearson Correlation | Farmers Production | 1.000 | .983 |
| | Grain Financial Support | .983 | 1.000 |
| Sig. (1-tailed) | Farmers Production | . | .000 |
| | Grain Financial Support | .000 | . |
| N | Farmers Production | 370 | 370 |
| | Grain Financial Support | 370 | 370 |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

The correlation coefficient is very high, indicating a significant positive association between Farmers Production and Grain Financial Support, according to table 47.1 examination.

Between Farmers Production and Grain Financial Support, the Pearson correlation coefficient is 0.983. This suggests that these two variables have a very significant positive association with one another. For both variables, the correlation coefficient's significance level, or p-value, is less than 0.001. Given that the correlation is statistically significant, it is unlikely that the observed link happened by accident.

Based on this analysis, we can conclude that there is a very strong and positive relationship between Farmers Production and Grain Financial Support. This suggests that as the level of grain financial support increases, there is a corresponding increase in farmers' production.

Table 4.8.1

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .985[a] | .970 | .970 | 1.30126 | .970 | 11877.321 | 1 | 368 | .000 | .065 |

a. Predictors: (Constant), Resource Sharing farm Inputs

b. Dependent Variable: Farmers Production

Table 4.8.1 provides information about a linear regression model that has been developed to understand the relationship between Farmer's Production and Resource Sharing farm Inputs. R is .985, indicating a strong positive correlation between the two variables.

Where R Square is .970, which means that 97% of the variation in Farmer's Production can be explained by Resource Sharing farm Inputs. The Adjusted R Square is also .970, indicating that the addition of more predictor variables would not improve the model significantly. The standard deviation of 1.30126 is an indication that the average difference between the predicted and actual values of Farmer's Production is 1.30126.

Therefore, R Square Change of .970 revealed that the addition of resource sharing farm inputs has significantly improved the R Square value. Durbin-Watson value of .065 below 2 is an indication of no auto correlation among all variables examined within the model. Based on this table, Farmer's Production and Resource Sharing farm Inputs is a strong predictor of farmers' production.

**Test of Hypothesis II**

Table 4.8.2

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 20111.601 | 1 | 20111.601 | 11877.321 | .000[b] |
| | Residual | 623.126 | 368 | 1.693 | | |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total | 20734.727 | 369 | | | |
| a. Dependent Variable: Farmers Production | | | | | | |
| b. Predictors: (Constant), Resource Sharing farm Inputs | | | | | | |

The Sum of Squares of 20111.601 represents the total sum of squares of the predicted values from the regression model. The Mean Square is calculated by dividing the Sum of Squares by the corresponding degrees of freedom. In this case, the Mean Square is also 20111.601.

The F-value is 11877.321, which is large, indicating that the regression model is highly significant. Why, F-value of .000, is less than the typical threshold of .05, suggesting that the regression model is highly significant. Finally, the total sum of squares of the dependent variable (Farmers Production) is 20734.727. Therefore, we concluded that Farmer's production in post flood disaster in Anambra State is positively influenced by resource sharing/farm inputs.

**Objective 3**

Table 4.9.0

| **Correlations** | | | |
|---|---|---|---|
| | | Farmers Production | Financial assistance |
| Pearson Correlation | Farmers Production | 1.000 | 1.000 |
| | Financial assistance | 1.000 | 1.000 |
| Sig. (1-tailed) | Farmers Production | . | .000 |
| | Financial assistance | .000 | . |
| N | Farmers Production | 370 | 370 |
| | Financial assistance | 370 | 370 |

From table 4.9.0 above the Pearson correlation coefficient measures the strength and direction of the linear relationship between two variables. In this case, the correlation coefficient between Farmer's Production and Material Assistance is 1.000, indicating a perfect positive correlation. This means that as one variable increases, the other variable also increases in a linear fashion.

The significance level for both variables is .000, which is less than the typical threshold of .05, suggesting that the observed correlation is statistically significant. It can be concluded that there is a perfect positive correlation between Farmers Production and Material Assistance. The correlation is statistically significant, indicating a strong relationship between these two variables.

Table 4.9.2

**Test of Hypothesis III**

| **ANOVA[a]** | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 20716.869 | 1 | 20716.869 | 426903.334 | .000[b] |
| | Residual | 17.858 | 368 | .049 | | |
| | Total | 20734.727 | 369 | | | |
| a. Dependent Variable: Farmers Production | | | | | | |

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue IV April 2024

b. Predictors: (Constant), Financial assistance

Table 4.9.2 presents the results of an analysis of variance (ANOVA) for the regression model predicting farmers production using financial assistance as the predictor variable.

The Sum of Squares is 20716.869, indicating the total variation in the dependent variable (Farmer's Production) that is explained by the predictor variable (financial assistance). The degrees of freedom for the regression model are 1, and the Mean Square is also 20716.869, which is calculated by dividing the Sum of Squares by the degrees of freedom.

With a very large F-value of 426903.334, indicating a strong relationship between financial assistance and farmer's production. The associated p-value (Sig.) is .000, which is less than the typical significance level of .05, suggesting that the relationship is statistically significant. By implication financial assistance has a positive impact on farmer's production in Anambra State.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .983[a] | .966 | .966 | 1.37769 | .966 | 10556.409 | 1 | 368 | .000 | .062 |

a. Predictors: (Constant), Extension information

b. Dependent Variable: Farmers Production

From table 4.10.2 R Square indicates that approximately 96.6% of the variation in Farmers Production can be explained by the variation in extension information. This suggests that the extension information variable is a strong predictor of Farmers Production. The adjusted R Square is also 0.966, which means that this measure accounts for the number of extension information. The standard error of the estimate is 1.37769, this indicate that the predicted values from the regression model is better fit.

The R Square Change is 0.966 this indicates an increase value when the extension information variable is added to the model. This large increase suggests that the inclusion of Training and Education Extension Information significantly improves the predictive power of the model. The F statistic is 10556.409 and p-value (Sig. F Change) is less than .001, indicating that the addition of extension information to the model is statistically significant. The Durbin-Watson statistic of .062 below 2, indicating no auto correlation.

**Test of Hypothesis 4**

Table 4.10.3

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 20036.256 | 1 | 20036.256 | 10556.409 | .000[b] |
| | Residual | 698.471 | 368 | 1.898 | | |
| | Total | 20734.727 | 369 | | | |

a. Dependent Variable: Farmers Production

b. Predictors: (Constant), Extension information

The 4.10.3 above presents the results of the ANOVA (Analysis of Variance) for the regression model with Farmers Production and extension information as the predictor variable. The sum of squares for the Regression component is 20036.256, indicating the amount of variation in Farmers Production that can be attributed to the extension information. The degrees of freedom for this component is 1, and the mean square is also 20036.256.

With F statistic of 10556.409 and p-value .001 at sig. of .000, indicating that the regression model is statistically significant in explaining the variation in Farmers Production. The mean square for Residual is 1.898, which represents the average amount of unexplained variation in Farmers Production. Therefore, the Total sum of squares is 20734.727, indicating the total amount of variation in Farmers Production is explained by extension information.

Therefore, extension information significantly explains the variation in Farmers Production, as evidenced by the low p-value associated with the F statistic. By implication, extension information positively affects farmer's production in Anambra State.

## CONCLUSION

The study's conclusions regarding the impact of cooperative supports on farmers' output in Anambra State following the flood disaster point to a number of important variables that favorably affect farmers' output. First off, farmers' productivity is greatly increased when grain or cash support is provided. This implies that following a flood disaster, giving farmers the tools and cash they need can aid in their recovery and increase their output.
Second, during the period following a flood disaster, farmer productivity is significantly impacted by resource sharing and access to agricultural supplies. Recovering and increasing agricultural output is facilitated by farmer cooperation and the availability of necessary inputs. Thirdly, farmers' productivity is positively impacted by material help as well. supplying supplies needed for farming operations, like machinery.

Furthermore, training, education, and extension information prove to be valuable in enhancing farmer's production. Access to relevant knowledge, skills, and information empowers farmers to adopt improved practices and technologies, leading to increased productivity. Lastly, infrastructure development and government intervention contribute significantly to farmer's production in Anambra State. The presence of well-developed infrastructure and supportive government policies and programs create an enabling environment for farmers to recover and thrive after a flood disaster.

These findings collectively emphasize the importance of cooperative aids, such as grain/financial support, resource sharing, material assistance, training and education, as well as infrastructure development and government intervention in promoting and sustaining farmers' production in post-flood disaster situations. Implementing these measures can help mitigate the negative impacts of floods and enhance the resilience and productivity of farmers in Anambra State.

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