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Empowering Women for Community-Driven Climate Resilience Farming Practices in Emohua Local Government Area of Rivers State

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Abstract- ***This study investigated how empowering women can foster community-driven climate-resilient farming practices in the Emohua Local Government Area (LGA) of Rivers State. The study was guided by four research objectives and four research questions. A descriptive survey research design was adopted for the study. One hundred ninety-six registered members of women's community-based farmers' cooperatives were chosen as the sample from the population of 250 female farmers. A modified 4-point Likert scale Questionnaire titled "Women Empowerment for Community-Driven Climate Resilience Farming Questionnaire (WECDCRFQ)" was used to collect data. Frequency counts, percentages, mean scores, and standard deviation were used to analyse the collected data. The findings showed that in Emohua LGA, women's empowerment has significantly increased women farmers' involvement in climate-resilient farming initiatives, their capacity to adapt to and adopt climate-related agricultural techniques, their ability to recover from climate-related shocks, and their capacity to transform through creative practices, diversification, long-term planning, and collaborative problem-solving. Based on the findings, the study recommended gender-responsive extension, financial, and policy measures; targeted and inclusive empowerment interventions; improved adaptation-focused empowerment programmes; and continuous capacity-building programmes to increase climate resilience among Nigerian women farmers.***

Keywords: Women Empowerment, Community-Driven, Climate-Related Risks, Recovery Capacity, Climate-Resilience Farming Practices

I. INTRODUCTION

It is increasingly acknowledged that one of the most significant risks to agricultural systems is climate change, especially in poor nations, where smallholder farmers are at risk from changing rainfall patterns, prolonged droughts, and soil degradation. One of the most urgent issues facing the world today is climate change, which poses a threat to ecosystem stability, food security, and human lives, especially in poor nations (Intergovernmental Panel on Climate Change [IPCC], 2023). Droughts, flooding, erratic rainfall, and rising temperatures are drastically changing agricultural systems and lowering crop yields, food security, and rural populations' means of subsistence. For smallholder farmers, who rely on rain-fed agriculture to provide the majority of the nation's food but typically lack access to climate-smart inputs, financing, or extension services, these shifts increase their vulnerability. Extreme rainfall unpredictability, flooding, and land degradation have all affected populations in the Emohua Local Government Area, endangering farming operations.

Smallholder and compound farmers who cultivate corn, yams, cassava, vegetables, oil palm, and mixed crops make up the majority of the community's residents in Emohua LGA. It is essential to highlight that Emohua's socio-ecological environment, which consists primarily of rural villages, dispersed farm holdings, and areas affected by the oil sector, influences farmers' capacity for adaptation to climate change and their sensitivity to it. Women make up the farming workforce and are essential to the production, processing, and sale of food. According to the Food and Agriculture Organisation (FAO, 2021), Nigerian women comprise more than 43 per cent of the agricultural workforce; however, they remain underrepresented in access to productive assets, land tenure, financial services, and extension programs. Gender stereotypes, limited access to land, credit, extension services, decision-making, and climate-smart agriculture training limit women's roles and access to productive resources, despite their crucial roles in agricultural output and household food provision in Emohua LGA

In this regard, empowering women is a vital aspect of climate-resilient farm growth and a gender equity issue. Enhancing women's ability, voice, and access to resources necessary for them to make knowledgeable agricultural and livelihood decisions is a key component of empowering them in agriculture (Kabeer, 1999). Households and communities tend to adopt more climate-resilient and sustainable farming practices when women have access to knowledge, credit, and leadership positions in community development processes. Enhancing women's ability to make strategic decisions about farming, resource access, decision-making, and adaptation methods is known as empowerment.

A practical way to increase the adoption of climate-resilient farming practices at the household and community levels is to empower women by improving their ability to make strategic life decisions related to farming, access to resources, participation in decision-making, and leadership in adaptation practices. Local knowledge, group efforts, and participatory decision-making are central to adaptation in community-driven approaches to climate resilience. It emphasises that local knowledge, group efforts, and the participation of women and the larger farming community are the sources of resilience measures rather than being only implemented top-down. Adopting diverse crops, conserving soil and water, using agroecological techniques, and implementing adaptive livelihood strategies are all examples of climate-resilient agricultural methods that reduce sensitivity to climate risk.

Therefore, integrating women's empowerment into a community-driven strategy can positively impact resilience, ecological stewardship, and social equity. Thus, the purpose of this project is to investigate how community-driven, climate-resilient farming methods might be promoted in the Emohua Local Government Area by empowering women farmers.

1.2 Statement of the Problem

Rivers State's agricultural production is still negatively affected by climate change, resulting in lower yields, post-harvest losses, and increased food poverty. Women farmers in Emohua LGA continue to be disproportionately affected, despite the widespread implementation of adaptation programs. Women in Emohua are unable to pursue climate-resilient farming due to a lack of institutional support, insufficient financing availability, gender bias in agricultural extension services, and limited access to land. Even though there are community-driven projects all over Emohua, men tend to control them, and women's perspectives and experiences are underrepresented in decision-making processes.

In addition to weakening the viability of climate resilience initiatives, this act keeps gender inequity alive. Women farmers in Emohua's rural areas continue to be disproportionately affected by the government's efforts to advance gender mainstreaming and sustainable agriculture, as evidenced by initiatives such as the National Gender Policy in Agriculture. Their capacity to undertake climate-resilient farming is hampered by a lack of institutional support, insufficient financing, gender bias in agricultural extension services, and restricted access to land.

Women's opinions and experiences are underrepresented in decision-making systems in many Emohua LGA villages, where men predominate in community-driven projects. This demonstrates unequivocally that women are not included in local adaptation plans. In addition to maintaining gender disparity, this makes climate-resilience farming methods in the LGA less sustainable. Nonetheless, community women must be empowered to engage in inclusive, community-driven climate resilience farming techniques. Therefore, the purpose of this study is to determine the extent to which women in the Emohua Local Government Area of the State are empowered to engage with community institutions and take an active role in leadership and decision-making processes related to climate-resilient farming methods

1.3 Purpose of the StudyThe purpose of this study is to investigate how empowering women can foster community-driven climate resilience farming practices in Emohua Local Government Area (LGA) of Rivers State. Specifically, the objectives of the study are to:

1. Examine the extent to which empowering women enhances women farmers' participation in community-driven climate resilience farming practices in Emohua LGA of Rivers State.
2. Examine how empowering women enhances women farmers' ability to respond effectively to climate-related risks in in Emohua LGA of Rivers State.
3. Examine the extent to which empowering women enhances women farmers' recovery capacity to climate-related shocks effectively in in Emohua LGA of Rivers State.
4. Examine the extent to which empowering women enhances women farmers' transformation capacity toward for climate-resilence farming practices in rural communities in in Emohua LGA of Rivers State.

1.4 Research Questions

1. To what extent has women's empowerment enhanced women farmers' participation in community-driven climate resilience farming practices in in Emohua LGA of Rivers State.?.
2. In what way has women empowerment enhanced women farmers' ability to respond effectively to climate-related risks in in Emohua LGA of Rivers State.?.
3. To what extent has women's empowerment enhanced women farmers' recovery capacity to climate-related shocks effectively in in Emohua LGA of Rivers State.?.
4. To what extent has women empowerment enhanced women farmers' transformation capacity toward for climate-resilence farming practices in rural communities in in Emohua LGA of Rivers State.?.

II. CONCEPTUAL REVIEW

2.1 Women Empowerment

Awareness, susceptibility, and resilience to climate change in agricultural contexts require consideration of gender dynamics. Climate adaptation presents both opportunities and challenges for women, who often make up the majority of farm workers in rural communities. They are key players in climate resilience due to their roles in food production, household welfare, and natural resource management. One of the most essential ideas in the current discourse on global development is women's empowerment. It describes the process through which women take charge of their own lives, become more powerful, and learn to make wise decisions in situations where they were previously excluded from doing so (Kabeer, 1999). Women can become more self-reliant, gain confidence, and make decisions that impact their own and society's well-being through empowerment, which is both a process and a result. Fundamentally, women's empowerment promotes equitable access to opportunities, resources, and decision-making processes, hence challenging established gender disparities. It acknowledges women as active change agents who make significant contributions to sustainable development rather than as passive beneficiaries of development aid.

The process of empowering women has several facets, including social, political, educational, psychological, and economic aspects. Equal access to productive resources, income-generating opportunities, and financial liberty are all components of economic empowerment (Cornwall & Rivas, 2015). It enables women to manage assets, participate in the workforce, and make their own financial decisions. Economically empowered women also have greater negotiating power in their homes and communities, reducing their reliance on men and raising their social standing.

Enhancing women's access to healthcare, education, and social networks that encourage group action is a key component of social empowerment. For example, education is widely acknowledged as a significant factor in women's empowerment. In addition to delaying early marriage and raising healthier, better-educated children, educated women are more likely to take part in political and economic decision-making (World Bank, 2020b). By enhancing reproductive health, lowering maternal mortality, and enabling them to plan their families efficiently, access to high-quality healthcare further empowers women.

Women's active involvement in governance and decision-making processes is a key component of political empowerment. This component aims to ensure women have a say in public issues that impact their lives. However, political empowerment remains one of the most challenging areas, especially in poor

nations, where discriminatory policies and sociocultural barriers prevent women from holding leadership roles. Women in politics encourage equitable resource distribution and gender-sensitive governance, which results in more inclusive and sustainable development outcomes.

Internal mechanisms that increase women's self-efficacy, self-confidence, and belief in their capacity to effect change are referred to as psychological empowerment. It is a natural form of empowerment that makes women more resilient and more driven to oppose repressive structures and to stand up for their rights. Participation in adult education programs, capacity-building seminars, and community development programs frequently reinforces psychological empowerment.

Sustainable development, social fairness, and poverty reduction are all aided by women's empowerment. Women are better able to influence agricultural practices, have greater access to productive assets, and participate in governance, thereby increasing households' and communities' resilience to the effects of climate change. However, institutional gender disparities frequently limit women's access to resources, property ownership, and decision-making processes, which weakens their ability to adapt. Therefore, empowering women within community-driven frameworks is essential for both equity and successful, long-lasting adaptation outcomes.

2.2 Climate Resilience Farming Practices

Agricultural techniques intended to assist farmers in anticipating, absorbing, and recovering from the adverse effects of climate change while preserving or enhancing productivity and livelihoods are referred to as climate resilience farming practices. By strengthening farming systems' ability to adapt, these techniques guarantee long-term viability in the face of climate shocks such as droughts, floods, irregular rainfall, and temperature swings (FAO, 2021). Generally speaking, resilience is the capacity to "bounce back" after a negative disruption. Building systems that are not only productive but also adaptable, sustainable, and environmentally sound is the fundamental goal of climate resilience farming.

The reliance on rain-fed systems, deteriorated soils, and restricted access to adaptive technologies make agriculture in underdeveloped places like sub-Saharan Africa susceptible to climate variability, according to the Intergovernmental Panel on Climate Change (IPCC, 2022). Thus, in the face of increasing climatic hazards, climate resilience farming offers a revolutionary way to protect food security, improve biodiversity, and maintain livelihoods. The concepts of diversification, conservation, innovation, and community involvement guide these approaches. Response, recovery, and transformation are the three adaptive capabilities that resilient farming systems rely on to maintain performance in the face of change. Resilient systems typically display all three types of adaptive capacities, each of which makes a unique contribution to resilience. These are response capacity, recovery capacity and transformation capacity.

Response capacity refers to how your business handles climate-related issues as they arise, both anticipated and unexpected, to prevent or lessen possible harm and seize new opportunities; recovery capacity, on the other hand, refers to having the reserves necessary to quickly and effectively resume whole operation if weather-related occurrences have negatively impacted your business. Transformation capacity refers to the ability to make significant adjustments to your business that enhance its capacity to respond to and recover from changing circumstances, now and in the future.

By viewing resilience as a collection of complementary skills, you can better manage climate threats to your business. It also provides a practical way to evaluate your current risk management plans and make the necessary adjustments to improve your company's overall resilience. As the viability of farming systems is increasingly threatened by the effects of climate change, climate resilience in agriculture has become a primary global concern. Communities that rely heavily on natural resources and rainfed agriculture are more susceptible to the fluctuations and extremes of climate. Lele (2023) argues that structural and functional changes to Earth's natural systems lead to weather instability, increased droughts and floods, and unpredictable rainfall, all of which threaten food security and agricultural output.

The health of the soil, the availability of water resources, and pest incidences are all directly impacted by these climatic disturbances, endangering farmers' livelihoods and the rural economy as a whole. Lele (2023) clarified that the necessity of striking a balance between environmental stewardship and economic development, acknowledging that present unsustainable exploitation jeopardises the welfare of future generations, highlights the urgency of implementing sustainable adaptation strategies. According to Odisu (2015), climate resilience emphasises the adoption of nature-based methods and contemporary technologies to stabilise yields and earnings in areas where agriculture is the primary driver of the economy, in the face of climatic variability.

In the context of Emohua Local Government Area (LGA) of Rivers State, these methods not only reduce short-term hazards but also help smallholder farmers achieve long-term sustainability.

Thus, in the face of increasing climatic hazards, climate resilience farming offers a revolutionary way to protect food security, improve biodiversity, and maintain livelihoods. The concepts of diversification, conservation, innovation, and community involvement guide these approaches. Climate-smart agriculture (CSA), which incorporates the three pillars of productivity, adaptation, and mitigation, is the primary element of climate resilience farming (World Bank, 2020a). CSA encourages better livestock and crop management techniques that increase productivity, enhance resilience, and reduce greenhouse gas emissions. Conservation agriculture, agroforestry, integrated soil fertility management, sustainable water management, and diversity are examples of CSA techniques

2.3 Community-Driven Climate Resilience Farming Practices

The term "community-driven" describes a strategy that puts locals at the centre of identifying, organising, carrying out, and overseeing development or resilience projects that affect their environments and daily lives. To achieve sustainable results that reflect the community's needs, priorities, and expertise, it emphasises group efforts, local ownership, and participatory decision-making (Mansuri & Rao, 2013). Therefore, by encouraging empowerment, inclusion, and accountability within local governance structures, a community-driven strategy differs from top-down or externally imposed interventions.

A community-driven approach acknowledges that development is best sustainable when communities have agency that is, the capacity and power to make choices and assume accountability for their own development path. With the growth of Community-Driven Development (CDD) programs backed by global institutions such as the World Bank and the United Nations Development Programme (UNDP), and by numerous local governments across Africa in the late 1990s and early 2000s. Building social capital, increasing local involvement, and bolstering community institutions capable of creating and implementing contextually appropriate solutions to social, economic, and environmental concerns were the main goals.

The community-driven strategy ensures that local institutions, women, and farmers actively participate in developing and implementing resilience strategies in the agricultural sector. This strategy is consistent with the fact that rural communities have social networks, rich indigenous knowledge systems, and adaptive practices that are essential for mitigating climate-related risks (Agrawal & Gibson, 2019). Communities are more likely to mobilise local resources, oversee project implementation, and ensure accountability in the use of cash or resources when they are in charge of the process and this promotes resilience and sustainability outcomes for the project. Another inclusive method that aims to include women in decision-making is community-driven procedures. Thus, women's involvement in community-driven projects can improve environmental stewardship, household welfare, and adaptability in climate-sensitive industries like farming. Empowerment in these contexts involves more than just gaining access to resources; it also entails strengthening group cohesion and changing social dynamics that shape how societies respond to and recover from external shocks. Community-driven initiatives support social cohesion and collective resilience because they rely on networks of trust, cooperation, and shared accountability, community-driven initiatives support social cohesion and collective resilience. This concept

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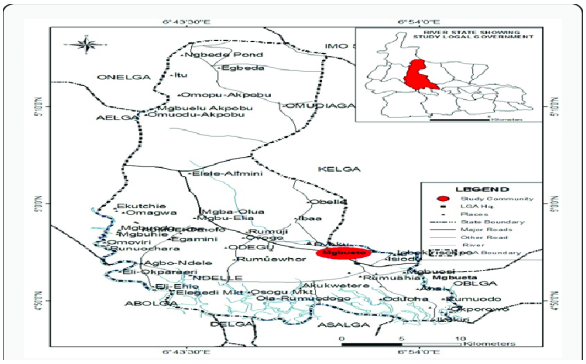
enhances the legitimacy and long-term sustainability of development programs by fostering cooperation among local institutions, traditional leaders, and community members. It encourages locally relevant, culturally grounded, and environmentally sustainable bottom-up adaptation mechanisms for climate resilience.

Community-driven initiatives are essential for fostering group involvement in agricultural innovation, environmental preservation, and livelihood diversification in Rivers State's Emohua Local Government Area. This is because communities in these areas often have strong connections to their land, surroundings, and cultural systems; as a result, they possess local knowledge that may support scientific and policy-driven methods. Community-driven initiatives foster greater ownership and sustainability of results by enabling women farmers to take the initiative in developing and implementing climate-resilient agricultural practices.

III. METHODOLOGY

This study adopted descriptive survey design because it is enables the researcher to systemically collect and analyse data from a population to describe the status, perception and practices that are related to women empowerment and community-driven climate resilience farming in Emohua Local Government Area, which is the area of study. Area of is shown in fig 1.

Fig 1: Map of Emohua LGA



Map of Emohua Local Government Area showing communities where the research was carried out

Emohua LGA was chosen for this study because of its socioeconomic reliance on agriculture, its exposure to environmental issues, and the growing involvement of women in farming-related cooperatives and community development projects. All 250 female farmers in the LGA were the study's target audience. In contrast, 196 registered members of a women's community-based farmers' cooperative across eight villages in Emohua LGA comprised the study's accessible population. Oduoha, Elibrada, Isiodu, Rumuakunde, Rumuche, Rumuohia, Mgbueto, and Mgbuitanwo are these communities. The complete sampling technique was used to select 196 registered members of the women's community-based farmers' cooperative. Instead of using a sample, the total sampling technique examines the entire population of interest. The comparatively small, identifiable, and accessible number of women community-based farmers led to the adoption of this sampling technique.

A modified 4-point Likert-scale questionnaire, titled "Women Empowerment for Community-Driven Climate Resilience Farming Questionnaire (WECDCRFQ)," was used to collect the data. The questionnaire was designed to assess indicators of response, recovery capacity, transformation capacity, and the empowerment dimension of women. Experts in environmental education from the University of Port Harcourt's Department of Adult and Non-Formal Education validated the instrument's face and content validity. Following a pilot test with 20 female farmers in the research area, the instrument was also subjected to a reliability test and Cronbach's Alpha Coefficient statistics as used to analyse data generated. The analysis yielded a dependability index of 0.78, which was deemed satisfactory. This is in line with Nunnally and Bernstein (1994) assertion that a reliability value of 0.70 and above obtained is considered appropriate for internal consistency. One hundred twenty copies, or 96.78% of the 124 copies of the questionnaire that were distributed, were accurately completed and used for data analysis. The final four copies were discarded because they were poorly filled out. Frequency, Percentage mean, and standard deviation were used to analyse the data.

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IV. RESULT AND ANALYSIS

4.1 Results

Research Question One: To what extent has empowering women enhanced women farmers' participation in community-driven climate resilience farming practices in Emohua LGA of Rivers State?.

Table 1: Empowering Women for Participation in Community-Driven Climate Resilience Farming Practices

S/N	Statement	Registered Members of Women Community-Based Farmers' Cooperative N= 196							
		VHE	HE	LE	VLE	Total	X	SD	Decision
1	Community climate-resilient farming projects are actively planned by empowered women farmers.	74 (296) 37.8%	63 (189) 32.1%	49 (98) 25%	10 (10) 5.10%	196 (593)	3.03	0.84	High Extent
2	Women who have access to agricultural training programmes are more likely to participate in climate adaptation initiatives.	57 (228) 29%	72 (216) 36.7%	51 (102) 26%	16 (16) 8.2%	196 (562)	2.87	0.88	High Extent
3	Women's involvement in climate-smart farming is increased when they have access to agricultural inputs (seeds, fertilizer, and tools).	42 (168) 21.4%	106 (318) 54.1%	29 (58) 14.8%	19 (19) 9.7%	196 (563)	2.87	0.89	High Extent
4	Women's involvement in climate-smart farming is increased when they have access to farm inputs (seeds, fertilizer, and tools).	52 (208) 26.5%	107 (321) 54.6%	22 (44) 11.2%	15 (15) 7.7%	196 (588)	3.00	0.83	High Extent
5	When it comes to agricultural adaptation measures, empowered women have a bigger say in communal decision-making.	55 (220) 28.%	94 (282) 48%	40 (80) 20.4%	7 (7) 3.6%	196 (589)	3.01	0.82	High Extent
6	Women are more likely to engage in resilience farming activities when they have access to climate knowledge and extension services.	81 (324) 41.3%	71 (213) 36.2	34 (68) 17.4%	10 (10) 5.1%	196 (615)	3.14	0.78	High Extent
7	In community-driven climate resilience agricultural programmes, empowered women exhibit leadership responsibilities.	41 (164) 21%	111 (333) 56.6%	32 (64) 16.3%	12 (12) 6.1%	196 (573)	2.92	0.86	High Extent
8	Women's awareness and education strengthen their dedication to climate-resilient	89 (356) 45.4%	82 (246) 41.8%	17 (34) 8.7%	8 (8) 4.1	196 (644)	3.29	0.74	High Extent

	and sustainable farming methods.								
9	Empowerment initiatives boost women's self-assurance to work on resilience projects with other community members.	85 (340) 43.4%	75 (225) 38.3%	30 (60) 15.3%	6 (6) 3.%	196 (631)	3.22	0.76	High Extent
10	Gender equity in community-based agricultural decision-making has improved thanks to women's empowerment.	27 (108) 13.8%	105 (315) 53.6%	50 (100) 25.5%	14 (14) 7.1%	196 (573)	2.74	0.91	High Extent
11	In farming communities, empowered women offer creative solutions for climate adaptation.	75 (300) 38.3%	77 (231) 39.3%	38 (76) 19.4%	6 (6) 3.%	196 (613)	3.13	0.79	High Extent
12	Mentorship and training programmes enable women to engage in resilience-oriented farming in an efficient manner	73 (292) 37.2%	57 (171) 29%	42 (84) 214%	24 (24) 12.4%	196 (571)	2.91	0.87	High Extent
	Pooled Mean						3.02		High Extent

The results in Table 1 show that participation in items 1–12 has remained high, indicating that women's empowerment programs-such as training, education, and resource access-have played a significant role in encouraging them to adopt climate-resilient farming techniques. The finding revealed that empowered women farmers actively participated in the planning and implementation of community climate-resilient farming projects. There is broad agreement among respondents that these empowerment initiatives have allowed women to make significant contributions to programme design and decision-making, as seen by the high mean scores and comparatively low standard deviations. The result implies that women have transitioned from passive to active roles in climate resilience initiatives through empowerment. It has been determined that increasing women's participation in climate adaptation initiatives requires access to extension services, climate knowledge, and agricultural training programs. The greater participation in resilience farming activities reported by women who received training and advising services demonstrates the importance of knowledge-based empowerment. The results show that women are more eager and confident to engage in climate-smart farming practices when they are aware of the hazards associated with climate change and the suitable adaptation measures.

Similarly, women's participation in climate-smart agriculture was greatly enhanced by their access to farming equipment, seeds, and fertiliser-specific resources, such as drought-resistant seeds or affordable irrigation tools. The high degree of agreement among respondents underscores the importance of material support in enabling women to implement climate-resilient practices effectively. Participation may be limited in the absence of sufficient inputs, but empowerment initiatives that provide access to these resources, such as subsidised inputs or community tool libraries, unquestionably boost involvement. The findings also demonstrated that, in collective decision-making regarding agricultural adaptation strategies, empowered women have a greater voice. Although the lower mean score on gender equity indicates progress, more work is still needed to achieve complete equality in decision-making processes. The findings show better gender equity in community-based agricultural governance.

Additionally, the results show that empowered women are taking on more leadership positions in community-based climate resilience initiatives, such as leading

farmer groups or coordinating adaptation projects. Their involvement extends beyond execution; they also offer creative solutions, such as developing drought-resistant crop varieties and innovative water-conservation techniques, to address climate adaptation challenges. The findings demonstrated the importance of women's practical expertise and inventiveness in mitigating climate-related hazards in agricultural communities. Initiatives for women's empowerment, education, and awareness had the highest mean scores, indicating that these elements significantly increase women's commitment to sustainable, climate-resilient farming methods. Additionally, empowerment programs increase women's confidence in working with others in the community, which promotes group action in resilience projects.

Furthermore, it was discovered that ongoing training programs and mentoring increased women's productivity in resilience-oriented farming. This underscores the importance of continuing capacity-building to ensure women farmers' long-term participation and effectiveness in climate resilience programs. The pooled mean score also indicated that empowering women has significantly increased their involvement in community-driven climate resilience farming efforts in Emohua LGA. Thus, the findings imply that women's empowerment is an essential strategy for fostering inclusive, sustainable, and successful climate-resilient agricultural development in the research area, as supported by the general pattern of responses and the low variability among items.

Research Question Two: In what way has empowering women enhanced women farmers' ability to respond effectively to climate-related risks in Emohua LGA of Rivers State?

Table 2: Table 2: Empowering Women for Ability to Respond Effectively to Climate-Related Risks

S/N	Statement	Registered Members of Women Community-Based Farmers' Cooperative N= 196							
		VHE	HE	LE	VLE	Total	X	SD	Decision
13	Programmes for women's empowerment have improved my understanding of climate change and how it affects farming.	75 (300) 38.3%	70 (210) 35.7%	45 (90) 23%	6 (6) 3.1%	196 (606)	3.09	0.85	High Extent
14	You are now better able to identify early warning indicators of climate hazards thanks to training and awareness efforts for women.	77 (308) 39.3%	75 (225) 38.3%	30 (60) 15.3%	14 (14) 7.1%	196 (607)	3.09	0.89	High Extent
15	Having access to agricultural extension services has improved your ability to make decisions in severe weather.	73 (292) 37.2%	57 (171) 29.1%	42 (84) 21.4%	24 (24) 12.2%	196 (571)	2.91	1.01	High Extent
16	Initiatives for women's empowerment have enhanced your ability to implement climate-smart farming methods.	83 (332) 42.3%	64 (192) 32.7%	39 (78) 19.9%	20 (20) 10.2%	196 (622)	3.17	0.98	High Extent
17	You have been able to diversify your crops to reduce losses from climate shocks thanks to empowerment via education.	75 (300) 38.3%	93 (279) 47.4%	18 (36) 9.2%	10 (10) 5.1%	196 (625)	3.19	0.78	High Extent
18	You now have more access to climate-related knowledge and	90 (360)	78 (234)	22 (44)	6 (6)	196 (644)	3.29	0.79	High Extent

	innovations because to your involvement in empowerment initiatives.	45.9%	39.8%	11.2%	3.1%				
19	Your capacity to plan and modify farming schedules in response to rainfall unpredictability has improved thanks to empowerment programs.	28 (112) 14.3%	116 (348) 59.2%	31 (62) 15.8%	21 (21) 10.7%	196 (543)	2.77	0.86	High Extent
20	Empowerment has given you the confidence to try out new farming technology that lower the dangers associated with climate change.	56 (224) 28.6%	86 (258) 43.9%	41 (82) 20.9%	13 (13) 6.6%	196 (577)	2.94	0.91	High Extent
21	You now have more money to invest in climate-resilient inputs thanks to women's empowerment initiatives.	41 (164) 20.9%	104 (312) 53.1%	35 (70) 17.9%	16 (16) 8.2%	196 (562)	2.87	0.85	High Extent
22	Your community's empowered female farmers are better equipped to bounce back from crop failures brought on by climate change.	36 (144) 18.4%	137 (411) 69.9%	19 (38) 9.7%	4 (4) 2.0%	196 (597)	3.05	0.64	High Extent
23	Women farmers who are empowered take the initiative to ask agricultural and environmental organizations for assistance.	86 (344) 43.9%	72 (216) 36.7%	31 (62) 15.8%	7 (7) 3.6%	196 (629)	3.21	0.87	High Extent
24	Participating in group conversations that support group solutions to climate threats has been made easier for you because to empowerment programs.	84 (336) 42.9%	67 (201) 34.2%	37 (74) 18.9%	8 (8) 4.1%	196 (619)	3.16	0.89	High Extent
25	Women's empowerment has encouraged women farmers to work together to address climate-related issues.	73 (292) 37.2%	88 (264) 44.9%	28 (56) 14.3%	7 (7) 3.6%	196 (619)	3,16	0.82	High Extent
	Pooled Mean						3.07		High Extent

The analysis on Table 2 indicates that women's empowerment has had a high and positive influence on their adaptive capacity, decision-making, and resilience to climate-related challenges, as reflected by the consistently high mean scores across all items. The findings show that empowerment programmes have significantly improved women farmers' understanding of climate change and its effects on farming activities. Respondents largely agreed that training and awareness initiatives enhanced their climate knowledge, enabling them to better recognize climate variability and its implications for agricultural

productivity. This improved understanding forms a critical foundation for effective climate risk response. Closely related to this, the results reveal that training and awareness efforts have strengthened women farmers' ability to identify early warning indicators of climate hazards. The high proportion of Very High Extent and High Extent responses suggests that empowerment initiatives have increased women's preparedness and capacity to anticipate climate-related threats before they escalate into severe losses. Access to agricultural extension services also emerged as an important factor in strengthening women's responses to climate risks. Respondents indicated that extension support improved their decision-making during severe weather conditions, although the slightly higher standard deviation suggests some variation in access or effectiveness of these services among respondents. Nevertheless, the overall result still reflects a high extent of positive influence.

Furthermore, empowerment initiatives were found to enhance women farmers' ability to implement climate-smart farming practices. This demonstrates that empowerment goes beyond awareness, translating into practical actions such as adopting improved farming techniques that reduce vulnerability to climate stressors. The findings further show that education-based empowerment has enabled women farmers to diversify their crops as a strategy for reducing losses from climate shocks. Crop diversification is a key adaptation strategy, and the strong agreement among respondents indicates that empowerment has directly supported adaptive farming decisions. Access to climate-related knowledge and innovations recorded one of the highest mean scores in the table. This suggests that empowerment initiatives have effectively linked women farmers to new ideas, technologies, and practices that strengthen their resilience to climate change. Such access enhances their capacity to cope with and recover from climate-related disruptions.

The results also indicate that empowerment programmes have improved women farmers' ability to plan and adjust farming schedules in response to unpredictable rainfall patterns. Although this item recorded one of the lower mean scores, it still falls within the High Extent category, suggesting that empowerment has positively influenced adaptive planning, even as rainfall variability remains a complex challenge. In addition, empowerment has increased women farmers' confidence to experiment with new farming technologies aimed at reducing climate risks. This confidence is essential for innovation adoption and reflects a shift from risk aversion to proactive adaptation among empowered women. Financial empowerment also played a role, as respondents reported improved capacity to invest in climate-resilient inputs. While access to finance remains a challenge for some women, the overall response indicates that empowerment initiatives have moderately improved women's economic ability to support climate adaptation measures.

At the community level, the findings show that empowered female farmers are better equipped to recover from crop failures caused by climate change. The relatively low standard deviation for this item suggests strong agreement among respondents that empowerment enhances recovery and resilience after climate shocks. Moreover, empowered women farmers were found to take greater initiative in seeking assistance from agricultural and environmental organizations. This proactive behavior highlights increased confidence, agency, and networking capacity resulting from empowerment initiatives. Thus, empowerment programmes have strengthened collective action among women farmers. Respondents agreed that empowerment facilitated participation in group discussions, collaborative problem-solving, and joint efforts to address climate-related challenges. This collective approach enhances shared learning and community resilience. Also, the pooled mean score confirms that empowering women has enhanced women farmers' ability to respond effectively to climate-related risks to a high extent in Emohua LGA. The overall pattern of high mean scores and relatively low standard deviations demonstrates that women's empowerment has significantly strengthened knowledge, skills, confidence, innovation, and collaboration, all of which are essential for effective climate risk management and resilience in farming communities.

Research Question Three: To what extent has empowering women enhanced women farmers' recovery capacity to climate-related shocks effectively in Emohua LGA of Rivers State?.

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Table 3: Empowering Women Farmers' for Effective Recovery Capacity to Climate-Related Shocks

S/N	Statement	Registered Members of Women Community-Based Farmers' Cooperative N= 196							
		VHE	HE	LE	VLE	Total	X	SD	Decision
	Programme for women's empowerment have made it easier for female farmers to swiftly recover from crop losses brought on by climate change	80 (320) 40.8%	69 (207) 35.2%	35 (70) 17.9%	12 (12) 6..1%	196 (609)	3.11	1.02	High Extent
27	Women's confidence to resume farming following climatic disasters has been bolstered by access to empowerment initiatives.	71 (284) 36.2%	102 (306) 52%	20 (40) 10.2%	3 (3) 1.5%	196 (633)	3.23	0.91`	High Extent
28	Your ability to modify farm activities during flooding or drought has improved thanks to training you received from women's empowerment programmes.	22 (88) 11.2%	88 (264) 44.9%	67 (134) 34.2%	19 (19) 9.7%	196 (505)	2.58	1.05	High Extent
29	To mitigate the impact of climate shocks, empowered women farmers can diversify their sources of income.	96 (384) 49%	41 (123) 20.9%	49 (98) 25%	10 (10) 5.1%	196 (615)	3.14	1.07	High Extent
30	Initiatives aimed at empowering women have made credit or financial assistance available for post-shock recuperation.	79 (316) 40.3%	50 (150) 25.%	51 (102) 26%	16 (16) 8.2%	196 (584)	2.98	1.15	High Extent
31	Farmers now have better access to modern technology that help them recover from climate disruptions because to women's empowerment.	64 (256) 32.7%	84 (252) 42.9%	29 (58) 14.8%	19 (19) 9.7%	196 (585)	2.99	1.08	High Extent
32	Women who feel empowered are more likely to join cooperative groups that aid in the recovery from the effects of climate change.	74 (296) 37.8%	85 (255) 43.4%	22 (44) 11.2%	15 (15) 7.7%	196 (610)	3.11	1.04	High Extent
33	Women's ability to make decisions on farm recovery measures has improved thanks to empowerment programmes.	60 (240) 30.6%	92 (276) 46.9%	30 (60) 15.3%	14 (14) 7.1%	196 (590)	3.01	1.08	High Extent
34	Women empowerment has strengthened collaboration among women farmers during recovery from adverse weather conditions.	69 (276) 35.2%	79 (237) 40.3%	29 (58) 14.8%	19 (19) 9.7%	196 (590)	3.01	1.05	High Extent

35	Empowered women farmers are better able to secure alternative livelihood options during periods of climate stress.	104 (416) 53.1%	57 (171) 29.1%	27 (54) 13.8%	8 (8) 4.1%	196 (649)	3.31	1.02	High Extent
36	Women empowerment programmes have helped women access community or government relief interventions after climate-related losses	53 (212) 27%	106 (318) 54.1%	29 (58) 14.8%	8 (8) 4.1%	196 (596)	3.04	1.05	High Extent
37	Women's empowerment has fostered psychological resilience and motivation among farmers during post-climate disaster recovery efforts.	60 (240) 30.6%	90 (270) 45.9%	40 (80) 20.4%	6 (6) 3.1%	196 (596)	3.04	1.08	High Extent
38	Collaboration among female farmers throughout the recovery from unfavorable weather circumstances has been strengthened by women's empowerment	48 (192) 24.5%	84 (252) 42.9%	50 (100) 25.5%	14 (14) 7.1%	196 (558)	2.85	1.12	High Extent
	Pooled Mean						3.01		High Extent

Table 3 findings showed a high degree of agreement among respondents that empowerment initiatives have positively influenced their ability to recover effectively from climate-induced challenges. According to respondents, empowerment initiatives have facilitated rapid recovery among female farmers following agricultural losses caused by climate change. The results of the study suggest that empowering measures, including having access to resources, support networks, and skills, are necessary to speed up post-shock recovery. Similar to this, empowerment initiatives greatly increased women's self-confidence in their ability to resume farming following climate disasters, indicating that empowerment fosters resilience and psychological readiness in addition to material recovery. The participants also agreed that training from women's empowerment initiatives had improved their ability to adjust farming practices during drought or floods. This item exhibits moderate effectiveness despite a lower mean score, suggesting that although training has been beneficial, the technical and adaptable components of empowerment programs could be improved. There was also strong support for income diversification as a recovery strategy, indicating that empowered women farmers are better able to lessen the impact of climate shocks by identifying alternative revenue streams.

Despite response variability suggesting unequal access among participants, access to credit and financial aid for post-shock recovery was positively assessed, suggesting that empowerment programmes had somewhat enhanced financial inclusion. Respondents also identified greater access to contemporary technologies that promote recovery from climatic disruptions, underscoring the role that empowerment plays in enabling technological support for recovery. The results also show that women with greater power are more likely to join cooperative organisations that support recovery from the effects of climate change. The result emphasises the crucial role of social capital and group efforts in post-disaster rehabilitation. Empowerment programs that reflected greater agency and autonomy in recovery-related choices also improved women's ability to make decisions on farm recovery initiatives.

The results showed that empowerment programs improved women farmers' cooperation during recovery from unfavourable weather conditions,

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indicating that empowerment promotes networks of support. With the highest mean score, empowered women farmers' capacity to locate other revenue streams amid climate stress was remarkable, underscoring empowerment as a critical component of livelihood resilience. Also, participants concurred that empowerment initiatives had increased access to government or community assistance programs and promoted motivation and psychological fortitude throughout the post-disaster healing process. These results demonstrated the multifaceted advantages of empowerment, encompassing social, psychological, institutional, and economic facets of rehabilitation.

Therefore, the continuously high item mean scores in Table 3 indicate that, in the Emohua LGA, women farmers' recovery capacity has been dramatically improved by women's empowerment. Initiatives for women's empowerment have significantly increased their capacity to bounce back from climate-related shocks by enabling quicker recovery, greater self-assurance, a wider range of livelihoods, access to technology and financing, higher psychological resilience, and stronger teamwork.

Research Question Four: To what extent empowering women enhanced women farmers' transformation capacity toward for climate-resilience farming practices in rural communities in Emohua LGA of Rivers State?.

Table 4: Empowering Women Farmers' for Transformation Capacity Toward Climate-Resilience Farming Practices in Emohua LGA

S/N	Statement	Registered Members of Women Community-Based Farmers' Cooperative N= 196							
		VHE	HE	LE	VLE	Total	X	SD	Decision
39	Your capacity to embrace cutting-edge farming methods that survive climate difficulties has improved thanks to women's empowerment initiatives.	85 (332) 43.3%	56 (168) 28.6%	49 (98) 25%	6 (6) 3.1%	196 (604)	3.08	0.92	High Extent
40	Your confidence in adapting conventional farming practices to improve climate resilience has grown as a result of empowerment programs.	94 (376) 48%	36 (108) 18.4%	42 (84) 21.4%	24 (24) 12.2%	196 (592)	3.02	1.05	High Extent
41	You have been able to diversify your farming operations to lower the risks associated with climate change thanks to training and information from empowerment programs.	83 (332) 42.3%	72 (216) 36.7%	31 (62) 15.8%	10 (10) 5.1%	196 (620)	3.16	0.88	High Extent
42	You now have the ability to try out new crop kinds that are more resilient to flooding and drought.	41 (164) 20.9%	80 (240) 40.8%	59 (118) 30.1%	16 (16) 8.2%	196 (538)	2.74	0.91	High Extent
43	Your ability to withstand agricultural shocks connected to climate change has increased as a result of women's empowerment.	72 (288) 36.7%	62 (186) 31.6%	40 (80) 20.4%	22 (22) 11.2%	196 (576)	2.94	1.01	High Extent
44	Opportunities for empowerment have improved your access to	36 (144)	113 (339)	33 (66)	14 (14)	196 (563)	2.87	0.79	High Extent

	knowledge on strategies for transformation and adaptation to climate change.	18.4%	57.7%	16.8%	7.1%				
45	You now have the confidence to work with other female farmers to create creative solutions for farming that is climate resilient.	62 (248) 31.6%	82 (246) 41.8%	35 (70) 17.9%	17 (17) 8.7%	196 (581)	2.96	0.90	High Extent
46	You transition from subsistence farming to more sustainable and commercial farming has been made possible by empowerment efforts.	73 (292) 37.2%	64 (192) 32.7%	52 (104) 26.5%	7 (7) 3.6%	196 (595)	3.04	0.87	High Extent
47	Through empowerment, you have developed entrepreneurial and leadership abilities that support farming system transformation.	71 (284) 36.2%	78 (234) 39.8%	44 (88) 22.4%	3 (3) 1.5%	196 (609)	3.11	0.77	High Extent
48	Your long-term planning and visioning skills for climate-resilient and sustainable farming have improved as a result of empowerment programs	99 (396) 50.5%	51 (153) 26%	36 (72) 18.4%	10 (10) 5.1%	196 (631)	3.22	0.89	High Extent
49	Your capacity to embrace cutting-edge farming methods that survive climate difficulties has improved thanks to women's empowerment initiatives.	82 (328) 41.8%	60 (180) 30.6%	38 (76) 19.4%	16 (16) 8.2%	196 (600)	3.06	0.97	High Extent
50	Your confidence in adapting conventional farming practices to improve climate resilience has grown as a result of empowerment programs.	58 (232) 29.6%	107 (321) 54.6%	18 (36) 9.2%	13 (13) 6.6%	196 (602)	3.07	0.78	High Extent
	Pooled Mean						3.02		High Extent

Table 3 findings showed a high degree of agreement among respondents that empowerment initiatives have positively influenced their ability to recover effectively from climate-induced challenges. According to respondents, empowerment initiatives have facilitated female farmers' speedy recovery from agricultural losses brought on by climate change. This implies that accelerating post-shock recovery requires empowering interventions such having access to resources, support systems, and skills. In a similar vein, empowerment efforts significantly boosted women's confidence to return to farming after climate disasters, suggesting that empowerment promotes psychological preparedness and resilience in addition to material recovery.

The respondents also concurred that training from programs aimed at empowering women had enhanced their capacity to modify farming operations in the event of drought or flooding. Despite having a relatively lower mean score, this item still shows moderate effectiveness, indicating that while training has been helpful, technical and adaptive aspects of empowerment programs might be strengthened. Regarding income diversification as a recovery approach, there was likewise high agreement, suggesting that empowered women farmers are better

equipped to mitigate the effects of climate shocks by finding alternate sources of income.

Although response variability shows unequal access among participants, access to credit and financial help for post-shock recovery was positively assessed, suggesting that empowerment programs have somewhat enhanced financial inclusion. Respondents also identified having better access to contemporary technology that promote recovery from climatic disruptions, underscoring the role that empowerment plays in enabling technological support for recovery. The results also show that women with more power are more likely to join cooperative organizations that aid in the recovery from the effects of climate change. This emphasizes how crucial social capital and group efforts are to post-disaster rehabilitation. Empowerment programs that reflected greater agency and autonomy in recovery-related choices also improved women's ability to make decisions on farm recovery initiatives.

The results showed that empowerment programs improved women farmers' cooperation during the recovery from unfavorable weather circumstances, indicating that empowerment promotes networks of support. The ability of empowered women farmers to find alternate sources of income during times of climatic stress was noteworthy for having the highest mean score, highlighting empowerment as a key factor in livelihood resilience. Also, participants concurred that empowerment initiatives had increased access to government or community assistance programs and promoted motivation and psychological fortitude throughout the post-disaster healing process. These results demonstrated the multifaceted advantages of empowerment, encompassing social, psychological, institutional, and economic facets of rehabilitation.

4.2 Discussion of Findings

Empowering Women for Participation in Community-Driven Climate Resilience Farming Initiatives

The findings of the study established that women's empowerment has dramatically increased women farmers' participation in climate-resilient farming practices. The study's findings revealed that empowerment increases agency and decreases passive involvement, as they are both active participants and significant contributors to the design and execution of community climate-resilient farming projects. This result is consistent with Oyawole et al. (2020) study findings that established that empowered female plot managers were more likely than their counterparts to adopt specific climate-smart practices, such as green manure and agroforestry. According to research conducted in Bayelsa State by Ifeayin- Obi and Tolumoyi (2025), female farmers are becoming more aware of extension services, such as weather forecasting and flood prediction. Still, access to and use of these services remain limited in the absence of intentional gender-responsive tactics. the study's findings, established that women are more likely to participate in adaptation activities when they receive information and guidance. Women's involvement in climate-resilient agriculture is significantly enhanced by their access to agricultural inputs, including seeds, fertiliser, and tools, as this study reveals. This aligns with the broader idea that effective engagement requires access to resources. Giving women access to information and resources improves their productivity and economic resilience in the face of climate change, according to national conversations on empowerment initiatives (Abeku, 2022). Similar to the high agreement found in this study's findings on material empowerment enhancing involvement, these empowerment efforts provided women with hybrid seeds, nursery skills, and farm inputs, allowing them to adopt climate-smart techniques and diversify revenue streams.

Although gender equity in governance is still developing, the study's results also demonstrate that empowered women have a bigger voice in collective decision-making. Even when actively engaged in climate adaptation measures, women encounter obstacles, including land ownership and financial constraints, that prevent them from fully participating in climate-resilient agriculture in Kebbi State, according to research on gender engagement by Alhassan et al. (2025). This confirms the study's findings that, while there has been progress in decision-making inclusion, full gender equity has not yet been attained, necessitating ongoing policy and empowerment initiatives.

Empowering Women for Ability to Respond Effectively to Climate-Related Risks

The results demonstratied that women's empowerment has a favourable impact on women farmers' ability to adapt to and adopt climate-related agricultural techniques. This is in support o, Oyawole et al. (2020) findings that among female plot managers, higher levels of empowerment are associated with a greater likelihood of implementing climate-smart agricultural practices such as agroforestry and green manure, suggesting that empowerment is a crucial factor in practice adoption at the plot level in Nigeria. This study confirms that empowerment programs have improved women's access to climate-related information and their capacity to adopt climate-smart farming practices.

This study's findings, however, also show variation in outcomes regarding decision-making during severe weather conditions and access to extension services, which aligns with research showing gender differences in access to vital agricultural support services in Nigeria. A study conducted in Bayelsa State by Ifeanyi-obi and Tolumoyi (2025) reveals that, while female farmers may be somewhat aware of climate extension services, male farmers have much easier access to and use of them, thereby limiting women's ability to adapt fully. According to Osuji et al. (2025), women's access to extension and climate information services remains skewed, limiting their full benefit, and this may account for the variation in this study's findings across factors such as resource investment and decision-making. This study's findings revealed a strong consensus on community collaboration and collective action. This corroborates Issa et al (2015) study findings. on gendered coping strategies and climate change perceptions in Northern Nigeria, the study showed that female farmers are highly conscious of the effects of climate change and take adaptation measures that are frequently influenced by social roles and local experience. Also Jubreel et al. (2025) found that barriers to women adopting climate-smart practices include limited decision-making power, limited access to credit facilities, and inadequate extension guidance. These structural issues support the notion that, as this study's findings showed, systemic limitations continue to influence the consistency of empowerment effects, even while empowerment improves knowledge and adaptive actions.

Empowering Women Enhanced Women Farmers' Recovery Capacity to Climate-Related Shocks Effectively

The study findings indicated that women farmers' ability to recover from climate-related shocks in Emohua Local Government Area is greatly enhanced by women's empowerment. The result is consistent with studies that emphasises the beneficial effects of capacity-building and empowerment in improving women's resilience to agricultural stress and climate unpredictability such as that of Ememe and Fajimi's (2024), which found that rural women in Lagos State's coastal communities demonstrated resilience through cooperative mobilisation, self-help, and interdependency in response to the effects of climate change, which is consistent with the findings that empowered women show greater confidence to resume farming activities after climatic disturbances and increased participation in cooperative groups. Women's active participation in group activities enhances social support and adaptive capacity, underscoring the importance of empowerment in fostering resource sharing and recovery among female farmers (Ememe & Fajimi, 2024)

In a similar vein, Nigerian research on climate-smart agriculture and empowerment is supported by noted developments in women's capacity to adopt adaptation techniques and technologies. According to Oyawole et al. (2020), women plot managers in Nigeria were more likely than men to implement key climate-smart agricultural practices, such as agroforestry and green manure. This suggests that empowering women can improve adaptive farming techniques and close gender gaps in technology adoption. This is consistent with the study's findings that women farmers can modify their farming practices during times of drought or flooding when they are empowered through training and resource availability. According to Ifeanyi Obi, Henri Ukoha, and Familusi (2024), rural women farmers in Southern Nigeria highlighted improved farming methods and access to finance facilities as critical capacity gaps for successful climate change adaptation. Their findings suggest that empowerment programs that increase knowledge and credit availability are essential for bolstering women's economic sustainability and resilience in the face of climate stresses.

The psychological fortitude and drive displayed by empowered women farmers in the wake of climate shocks support broader data on the susceptibility and adaptive measures of Nigerian women farmers' households. Although socioeconomic constraints make women smallholder farmers in Nigeria disproportionately vulnerable, but increasing their access to adaptation and mitigation strategies reduces vulnerability and promotes resilience.

Empowering Women Farmers' for Transformation Capacity Toward Climate-Resilience Farming Practices

Women's empowerment programmes in Emohua LGA, as revealed in the study, have significantly increased women farmers' ability to implement climate-resilient farming practices, such as creative approaches, diversification, long-term planning, and cooperative problem-solving. This is consistent with an empirical study by Oyawole et al. (2020), which found that women's likelihood of adopting climate-smart practices, such as agroforestry and green manure, is influenced by their level of empowerment, while there are still differences with men in some areas of empowerment and technology adoption. Oyawole et al.'s (2020) findings support this study's results by demonstrating that, despite contextual constraints (such as access to resources or inputs) that can moderate outcomes, empowerment promotes the adoption of resilient farming practices. In the same vein, Obasi et al. (2024) found that productivity gaps between male and female farmers and unequal access to resources are the leading causes of gender disparities in climate-smart agriculture adoption in Southeastern Nigeria, providing additional evidence for the transformative role of empowerment.

Although their study identifies obstacles, it also emphasises that women's ability to adapt and their potential for production increase when they have better access to knowledge and training, two essential elements of empowerment included in this study's findings table. The observed gains in Emohua women's confidence and ability to diversify their businesses and modify traditional behaviours in response to local climate challenges are directly supported by these gender-responsive initiatives. This study further established that empowerment increases resilience and is supported by the findings of Ifeanyi Obi, Henri Ukoha, and Familusi (2024), who found that addressing the needs of rural women is essential to developing capacity. These women indicated a strong need for greater knowledge of climate-adaptive strategies, such as using improved technologies and managing resistant crops. This is consistent with the study findings, which indicate that empowered women farmers have better access to long-term planning and climate-related information, indicating that empowerment programs successfully address identified capacity requirements in the Nigerian setting.

CONCLUSION

Women's empowerment has dramatically increased women farmers' participation in climate-resilient farming practices; their ability to adapt to and adopt climate-related agricultural techniques; ability to recover from climate-related shocks; and women farmers' ability to implement climate-resilient farming practices, such as creative approaches, diversification, long-term planning, and cooperative problem-solving have been on increase in Emohua LGA of Rivers State.

RECOMMENDATION

The study recommended that in Emohua LGA:

1. The provision of regular capacity building empowerment is a continuous process that improves women's capacity to engage with shifting climatic realities, exchange knowledge, and support group resilience initiatives. It is not a one-time solution.
2. To ensure that all women farmers can effectively respond to climate-related risks, there is need for more targeted, inclusive, and sustained empowerment interventions at community level.
3. Provision of empowerment programmes that enhance women's knowledge, abilities, and participation in adaptation technique, this will support women's long-term psychological preparedness and resilience in addition to material recovery.
4. The provision of more gender-responsive extension, finance, and policy interventions to strengthen climate adaptation among women farmers in Nigeria.

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