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Agricultural Education: An Evidence for Building Resilient Future in Delta North

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Abstract

The aim of this paper is to examined agricultural education: Evidence for building resilient future in Delta North. The study adopted one specific objectives, one research questions and one null hypotheses. A variable stated in study was reviewed in the literature. Human capital theory was used to ascertain the effectiveness of agricultural education in building resilience future. The study considered some empirical studies propounded by other scholars. Cross sectional survey research design method was used in the study. The population of the study comprises of three (300) hundred respondents and it includes agricultural education male and female farmers. A simple random sample technique was used to select one hundred and twenty (120) respondents out of the entire population. The Sample selection consists of 40 agricultural male and 80 female farmers. Questionnaire was used as instrument for data collection and it was validated by two experts in the Department of Agricultural Education University of Benin, Edo State. Data obtained from the respondents shows a reliability index of 0.89 using Pearson's Product Moment Correlation Coefficient. The data was analysed with the use of mean and standard deviation while analysis of variance (ANOVA) was used to test the hypotheses at 0.05 level of significance. The finding of the result shows that agricultural education creates the largest building resilient future in Delta North. The study concluded that school should continue to teaching agricultural education in their curriculum in order to build future resilient. It is recommended that government should provide adequate farming facilities for agricultural education that will build future resilient in Delta North.

Keywords: Agricultural; Education; Building; Resilient; Future.

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Introduction

The percentage of agricultural education in building resilient future among youths in Nigeria cannot be explain based on the fact that agriculture has taken the land space of employability of labor across the country. Agriculture occupies important position in Delta State economics, by providing efficient working skill. Agricultural education provides opportunity for every graduate and none graduate to cultivate food crops that generate capital for household. Agriculture portrays itself as a primary driver of economic growth and source of wealth creation because of its sufficient employment opportunity it has created in Delta North. Agriculture education is a resilient of building effective food production for commercial purposes and wiliness to maintain social responsibility of making young youth productive in future.

Agricultural education is necessary to building resilient future opportunities for sufficient employment capacity for youths that value agricultural benefit and income generated from every production carried out from the sector (Ajaikaye et al.2016). The Federal, State and Local government of Nigeria has recognized the relevant of agricultural education in building resilient future on employed youth in Nigeria today. The pre-vocational subject introduces in the secondary school curriculum down to the university analysed the role of agricultural education play in building positive skill and experience on graduates in Nigeria. The introduction of agricultural education is to equip the young student with the necessary pre-vocation building resilient future skill needed in the work place (Ochi, 2020).

Lucky (2024) defined agricultural education as an institutional training agency that accommodate viable for building resilient future for economic development of any nation. He further said that agricultural education build, natural resources, and land management through experience and guidance to prepare students for job creation. He also said that Agricultural education has been an essential factor in the success of agricultural development in Nigeria by building resilient future. It is that part of the total educational process that provides knowledge, develops skills, and inculcates the attitude necessary for entry and progress in an agri-business. It gets people into jobs that are requiring specialized training in agriculture.

Agricultural education is a field of study that focuses on teaching individuals about various aspects of agriculture, including the science, business, and technology involved in food production, natural resource management, and environmental sustainability. It is designed to prepare students for careers in agriculture, farming, agribusiness, and related industries, combining classroom instruction with hands-on experience.

Although, building resilient future is one of the most essential macro-economies goal and objective in Nigeria, increase in unemployment drastically diminished due to the intervention of agricultural education skill acquire from training youth in school. Building resilient future become necessary since agriculture has been the major sources of employment (Ebube and Aren, 2021). For example, the search for food by the earliest man kept him busy on full time to look for daily bread for their family. Man attempts at the crop husbandry and domestic activity make man gain full building resilient future and at the same time, employer of labour in Nigeria

The adoption of a resilience approach by individual farms may be in a farmer's private interest, it is likely that the 'best' private and social approaches towards management for resilience may differ. For individual farmers the overall goal pursued is often to ensure farm continuity and intergenerational succession. Private resilience will tend to maintain a

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given set of businesses in place and hence the set of skills, abilities and objectives of the present population of farmers Resilient future is defined as a process to save lives, safeguard livelihoods, and lay the foundations for resilience building in Nigeria, FAO is implementing a mix of development and resilience building programme, including emergency response in the Northeast part of the country. The organization defines resilience as the ability of individuals, households, and communities to prevent, anticipate, absorb, adapt, and transform positively, efficiently, and effectively when faced with a wide range of risks and crises while maintaining an acceptable level of functioning without compromising long-term prospects for sustainable development, peace and security, human rights, and well-being for all (FAO, 2023).

Bellowa and Lucky (2024) said that a resilient future for large organisations means being able to not only withstand shocks but create the flexibility to respond to stresses in the business model, to iterate and continuously make changes. Today, agriculture is not just an occupation, rather it is an industry that create job to over 95 percent of unemployed youth in Nigeria. The large number of unemployed youths get job and become busy in the various forms of agriculture production at different levels. Therefore, training in agriculture education in higher institution of learning need to be seen as a structure or a design built down by government to equip youths with potential knowledge as to be able to employ themselves after graduation. Increase in agricultural productivity; make food cheaper for both urban and rural poor people who spend much of their income on food consumption. Vocational agricultural training is designed in areas of agriculture such as crops science, animal husbandry, soil science, horticulture, agricultural economics, fishery, forestry etc. Graduate of any of this potential skill utilized the knowledge to establish small farming system that will earn income for this household (Umadike, 2021). The effectiveness of building resilience future has led to the following questions to answer, to what extent does agricultural education provide resilience future economy in Delta North?

The negligent of agriculture education was due to the discovery of oil, insufficient infrastructure, insufficient extension services, labour shortages due to rural-urban migration, land degradation as a result of oil community crisis in the Nigeria. The problem of policy inconsistency has reduced the interest of many people in understanding agriculture education. The following as factors hindering job creation in agriculture; Unsuitable government agricultural policies and programme, Civil service bureaucracy Social cultural factors According to them, other problems include under funding of agricultural development projects, natural hazards, transport cost, in adequate local processing and storage facilities and the neglect of the roles of women in agricultural development. Other are poor people who spend much of their income on food consumption.

Conceptual Framework

Agricultural education is defined as a subject that assist people to build, and develop skills, abilities, potentials and other forms of vocational behaviours that help to positive value to the society individual lives (Ogenm 2017). Education has been the instrument of economic development while agricultural education can be view as vocational training design in a curriculum to be taught by professional teacher in form of transformation of knowledge of skills and experience in the life of learners (Agbulu, 2021). Uccor (2019) said that agricultural education is a semi-skill acquisition that provides self-employment for vocational graduates through prescribed activities and projects which are inherent aspects of agriculture.

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Resilience Future: United Nations News, (2022) opined that a resilient future is a vision of a society that can adapt to and withstand challenges and disruptions. It's characterized by a number of factors, including: Preparedness: Being ready for shocks and adapting to climate change. Flexibility: Being able to respond to stresses in a business model and make changes. Equity: Creating programs that are centered on equity and trauma-informed. Williams (2023) said resilience future refers to the capacity creating positive working environment for young unemployed youths that are willing to cultivate agricultural food crops. It is not inherent; it's cultivated. Future resilience is the difference between being at the mercy of the future and being an active part of shaping it.

Ways in which Agricultural Education Build Resilience Future

An individual persons need to prepare for an occupation most especially in the aspect of self-employment to acquire potential skills and competences in various area of occupation gained as job. Learning and training of agricultural education students enable them to organied and manage small scale business of their own and at the same time create resilience future for jobless youths in Nigeria (Agbulu, 2020). Agricultural education impact vocational skill on students who want to be employer of labour to unemployed youths in the society, which is the most specific goals and objectives of the subject curriculum. Student acquire skill require for smooth operation of enterprise. Indeed, graduate of agricultural education are rarely found in agricultural production industries. The little graduate creates employment within themselves by engaging in farming, livestock enterprises, crops production such as poultry, fishery, and pound. To promote the adoption of climate-smart agriculture practices, farmer education and building resilience future initiatives are crucial. Training programs, knowledge-sharing platforms, and farmer field schools help disseminate information on sustainable farming techniques, weather forecasting, and climate risk management. Empowering farmers with knowledge and skills strengthens their resilience and facilitates the wider adoption of climate smart agriculture across Nigeria (UNFCCC, 2021).

Rockefeller (2024) said that agricultural education plays a crucial role in building resilience for the future by equipping individuals, communities, and systems with the knowledge, skills, and tools needed to face and adapt to challenges such as climate change, economic instability, and food insecurity. Here are some ways agricultural education can serve as an instrument for building resilience:

Promoting Climate-Smart Agriculture: Agricultural education equips farmers with the knowledge and skills to adapt to the impacts of climate change, such as erratic weather patterns, droughts, and floods. Educating farmers about drought-resistant crops, soil health management, water-efficient irrigation systems, and agroforestry can help them adapt to changing climatic conditions. Teaching techniques that promote biodiversity, reduce carbon footprints, and conserve natural resources can make agricultural systems more resilient to climate change (Duflo& Banerjee, 2019).

Encouraging Diversification of Crops and Livelihoods: Agricultural education can help farmers diversify both their crops and sources of income, reducing their dependence on a single crop or market and building economic resilience. There is an intention of providing education on the benefits of crop rotation, intercropping, and introducing new, more resilient crops can reduce risks related to pests, diseases, or market fluctuations. It also encouraging smallholder farmers to develop additional agribusinesses, such as food processing, value-

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added products, or eco-tourism, can increase household income and reduce vulnerability to shocks (Duflo& Banerjee, 2019).

Enhancing Food Security and Nutrition: Food security is a critical aspect of resilience. Agricultural education can play a key role in ensuring that individuals and communities have access to sufficient, safe, and nutritious food. Although, it also engage in teaching communities how to grow a variety of nutrient-rich crops, such as vegetables, legumes, and fruits, can improve food security and nutritional outcomes. Providing education on growing food in urban and peri-urban areas helps cities cope with supply chain disruptions and increases local food resilience (UNESCO, 2023). As technology continues to advance, agricultural education can provide farmers with the knowledge to adopt new technologies that enhance productivity, efficiency, and sustainability. Educating farmers about tools like drones, sensors, and GPS technology helps them optimize inputs (water, fertilizers, etc.) and improve yields, reducing environmental impact (Müller, & Kuhlmann, 2020)**.**

Developing Entrepreneurial and Leadership Skills: Agricultural education can develop entrepreneurial and leadership skills that allow individuals and communities to become more resilient to economic, social, and environmental stresses. Training farmers in leadership skills and cooperative management fosters stronger, more unified rural communities that can collectively address challenges. Providing education in agribusiness can help farmers develop new business ventures, create jobs, and ensure that local communities remain economically viable in the face of changing markets. Encouraging farmers to form cooperatives or networks strengthens the collective bargaining power and resource-sharing capabilities, improving resilience to economic or market fluctuations (FAO, 2022).

Theoretical Framework

Human Capital Theory suggests that investment in education and training enhances an individual's skills, knowledge, and capabilities, ultimately improving their productivity and economic value. When applied to agricultural education, this theory can be a powerful framework for understanding how agricultural education can build resilience for the future, both at an individual and community level. Below are ways in which agricultural education, as an instrument for building resilience, aligns with the principles of Human Capital Theory: Human Capital Theory emphasizes the value of acquiring knowledge and skills to improve economic outcomes. In the context of agricultural education, this can be applied by providing learners with the skills necessary to adapt to changing environmental, economic, and technological landscapes.

Climate Resilience: Educating farmers about sustainable farming practices and climate-smart agriculture enables them to adapt to climate variability and environmental changes. By learning about water conservation, drought-resistant crops, and soil health management, individuals can safeguard their livelihoods in the face of climate challenges.

Technological Advancements: Training in modern agricultural technologies, such as precision farming, drones, or biotechnology, equips individuals with the tools to increase efficiency and productivity while reducing environmental impact, making them better prepared for future challenges.

Biakpara, (2022) carried out a research work on impact of agricultural education as a tool for build resilience future in Nigeria. Survey research method was adopted for the study. The study was carried out in Kano state. The study adopted two research questions and two

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hypotheses. The population of study consists of 500 respondents. A random sample technique was used to select 200 respondents. Questionnaire was the major instrument used for data collection. Data collected wad analyse with mean and standard deviation while t-test was used to test the null hypotheses at 0.05 level of significance. The finding of the result shows that agricultural education build resilience future for sustainable economy development. The study concluded that agricultural education provides potential skills for learners that will enable build resilience future. The study recommended that government should allocate largest budget to agricultural education.

Ojo (2022) carried out a study on method of creating job through agricultural education in Nigeria. The study was carried out in Lagos. Descriptive research design wads used for the study. The population of the study consist 190 secondary school students. A random sampling technique was used to select 100 respondents. Questionnaire was the instrument used for data collection the data was validated by experts. Data collected was analyse with chi-square t-test was tested at 0.05 level of significance. The findings of the result show that agricultural education creates job for people through production of crop. The result of the finding concluded that job can be created through fish farming. It is recommended that fish farming help to create job.

Research Questions

The following questions are drawn to guide the researcher.

1. What are the ways agricultural education build resilience future in Delta North?

Hypothesis

The following hypothesis are tested at 0.05 level of significance:

Ho1: There is no significance difference between the mean responses of male and female farmers on ways agricultural education build resilience future in Delta North.

Methods

The study employed a survey designed. The area of the study is Delta North. Delta North comprises of urban and rural farmers. The population of the study comprises of (300) male and female farmers. A simple random sampling technique was used to select 40 male and 80 female farmers as respondents to the study. The sample size which gave the total number of 120 was drawn from the entire population. Questionnaire was used as instrument for data collection. A total of 10 items were administered to the respondents and it was validated by two experts in the Department of Agricultural Education University of Benin, Edo State. Data obtained from the respondents shows a reliability index of 0.89 using Pearson's Product Moment Correlation Coefficient. The data was analysed with the use of mean and standard deviation while analysis of variance (ANOVA) was used to test the hypotheses at 0.05 level of significance.

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Results

Research Question I: What are the ways agricultural education build resilience future in Delta North?

Table 1: Mean score of respondents on the ways agricultural education build resilience future in Delta North

S/N	Items: on ways agricultural education build resilience future	$\bar{X}$	S.D	Decision
1.	Promoting Disaster Risk Reduction and Management	3.33	0.67	Accepted
2.	Enhancing Community Collaboration and Knowledge Sharing	3.31	0.66	Accepted
3.	Farmer Field Schools and Community Workshops	3.43	0.69	Accepted
4.	Cooperatives and Networking	3.3	0.66	Accepted
5.	Agribusiness and Entrepreneurship	3.26	0.65	Accepted
6	Agricultural education provides job opportunity for students.	3.38	0.85	Accepted
7	Agricultural education provides labour skill for students.	3.61	0.67	Accepted
8	Agricultural education students build small scale business	3.83	0.57	Accepted
9	Agricultural education has positive impact in building resilience future.	3.4	0.69	Accepted
10	Agricultural education provides scientific skills require when building resilience future	3.69	0.84	Accepted
	Grand mean/SD	**3.45**	**0.79**	

The data presented and above in the table I show that there is no difference in the mean response of respondents on item stated in research question 1. The calculated table revealing the grand mean for both respondents as 3.45 with standard deviation of 0.79 which above the benchmark of decision rule of 2.50 above.

Test of Hypothesis

Ho1: There is no significance difference between the mean responses of male and female farmers on the ways agricultural education build resilience future in Delta North.

Table 2: t-score analysis on the impact of agricultural education and building resilience future in Delta State

Sex	No	$\bar{X}$	S.D	df	t-cal value	Standard error	t-critical value	Level of significance	Decision
Male	40	3.46	0.72	118	0.07	0.14	1.96	0.05	Accepted
Female	80	3.45	0.79						

The above table shows that there is no significant difference in the mean response of male and female farmers on hypothesis tested. The observed t-calculated value of 0.07 is lower than the t-critical value of 1.96 at 0.05 level of significance. Since the t-calculated value is lower than the t-critical value, the hypotheses stated for the study is accepted.

Discussions

The study revealed that all the items listed in research question 1 are agreed to by the respondents. The findings showed that promoting disaster risk reduction and management are built by resilience agricultural education, respondents agreed that enhancing community

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collaboration and knowledge sharing are the ways agricultural education build resilience future. Findings are in agreement with study carried by Duflo& Banerjee, (2019) who said that farm field and community workshops are the ways agricultural education build resilience future. They also indicate that cooperatives and networking are the ways agricultural education build resilience future and Agribusiness and Entrepreneurship are the ways agricultural education build resilience future The findings agreed that agricultural education provides job opportunity for students to build resilience future economy, respondents strongly agreed that agricultural education provide labour skill for students used in building resilience future in Delta State. The findings show that agricultural education students build small scale agrobusiness based on the knowledge acquire from training, while respondents agreed that agricultural education stands as a positive tool that help to build resilience future. Findings indicate that agricultural education provides scientific skills require in the place of work for agricultural students. The findings are in line with Agbulu, (2020), who said that learning and training of agricultural education students enable them to organized and manage small scale business of their own, build resilience future under the climate change in Nigeria.

Conclusion

Based on the findings, the following conclusions are draw below.

i. Agricultural education as a tool, need to be use in building resilience future for job opportunity for students.
ii. Agricultural education students should acquire labour skill that will help create employment for themselves in Delta North.
iii. Agricultural education students should build small scale agro-business based on the knowledge acquire from training in future.

Recommendations

Based on the findings, the following recommendations are as follows:

i. There should free access to farmland that will help to build resilience future agro sector in Delta North.
ii. There should be provision of financial empowerment that will facilitate building of small agro-businesses in future,
iii. There should be provision of basic amenities for agricultural students that willing to create employment within the society.

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