

The Need for Agricultural Science Knowledge Among Lecturers in Tertiary Institutions in Cross River State, Nigeria: Implications for Food Security and Sustainable Development

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Received date: 03 Mar 2025: Accepted date: 20 Mar 2025: Published date: 27 Mar 2025

Citation: Lawrence E.I (2025). "The Need for Agricultural Science Knowledge Among Lecturers in Tertiary Institutions in Cross River State, Nigeria: Implications for Food Security and Sustainable Development" *Journal of Entrepreneurship and Global Economic Leadership*, 1(1):103.

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Abstract

Agriculture remains the backbone of Nigeria's economy and a critical pathway to achieving food security and sustainable development goals. However, the discourse on agricultural development has largely focused on farmers, students, and policymakers, with little attention given to the role of lecturers in tertiary institutions outside the field of agriculture. Lecturers, irrespective of discipline, are key opinion leaders who shape students' knowledge, values, and career orientation. Therefore, their level of Agricultural Science knowledge is important in promoting a positive perception of agriculture and in advancing national food systems. This non-empirical study examined the need for Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State, Nigeria, and its implications for food security and sustainable development. The paper relied on an extensive review of literature, policy

documents, and reports from FAO, FMARD, NUC, and other scholarly sources to conceptualise the role of general agricultural literacy in higher education. The review revealed that limited Agricultural Science knowledge among non-agricultural lecturers contributes to the continued negative perception of agriculture as "dirty" or "for the uneducated," and this perception is transmitted to students. It was also observed that integrating basic Agricultural Science concepts into general education and continuous professional development can help lecturers become advocates for food security, agribusiness, and climate-smart practices. Furthermore, libraries, digital platforms, and AI tools were identified as viable channels for disseminating current agricultural information to lecturers across disciplines. The paper concludes that building Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State is a strategic investment toward achieving food security and sustainable development. It is therefore recommended that NUC and

institutional management should mainstream Agricultural Science literacy into general studies, organise regular seminars and workshops, and leverage libraries and digital technologies to provide lecturers with access to credible agricultural information.

Keywords: Agricultural Science, Lecturers, Tertiary Institutions, Food Security, Sustainable Development, Information Literacy, Cross River State.

Introduction

Agriculture has historically been the bedrock of Nigeria's economy and remains central to the nation's quest for food security, poverty reduction, employment generation, and sustainable development. Before the discovery of crude oil in commercial quantities in the 1970s, agriculture accounted for over 60% of Nigeria's Gross Domestic Product and employed more than 70% of the labour force [1]. Although the dominance of oil has since shifted the structure of the economy, agriculture continues to contribute approximately 24% to GDP and remains the largest employer of labour, engaging over 35% of Nigerians [2].

Beyond its economic contribution, agriculture is the primary source of food, raw materials for industry, and foreign exchange through the export of commodities such as cocoa, sesame, and cashew. In the context of global development, agriculture is also central to the attainment of the United Nations Sustainable Development Goals, particularly Goal 2, which seeks to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture" by 2030 [3]. The Food and Agriculture Organisation [FAO] [4] further emphasises that food security

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cannot be achieved through increased production alone, but requires a population that understands food systems, values agriculture, and is willing to participate in agricultural value chains. This underscores the fact that agriculture is not only a technical or economic activity, but also a social and educational enterprise that depends on knowledge, perception, and attitude.

In Cross River State, agriculture assumes even greater strategic importance. The state is endowed with diverse agro-ecological zones ranging from the rainforest in the south to the derived savannah in the north. This diversity supports the production of a wide range of crops including cocoa, rice, cassava, yam, plantain, oil palm, and vegetables, as well as livestock and fisheries [5]. Cross River State is one of Nigeria's leading producers of cocoa and has significant potential in rice and aquaculture. The state government has, in recent years, positioned agriculture as a key pillar of its economic diversification agenda through initiatives such as the Green Carnival, agro-industrial parks, and youth-in-agribusiness programs. Despite these efforts, food insecurity, post-harvest losses, over-dependence on food imports, and rural-urban migration remain persistent challenges. A critical factor underlying these challenges is the disconnect between the educational system and agricultural realities.

One of the most documented but least addressed factors in Nigeria's agricultural underperformance is the negative perception of agriculture among educated citizens, particularly youths [6]. Several studies have shown that many Nigerian graduates view agriculture as "dirty," "labour-intensive," "low-status," and "meant for those who failed in school" [7].

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This perception discourages young people from pursuing careers in agriculture and agribusiness, even when they have access to land, capital, and training. The implication is that Nigeria continues to import food that could be produced locally, while millions of educated youths remain unemployed or underemployed in urban centres.

This negative perception is not formed in isolation. It is shaped, reinforced, and transmitted within formal institutions of learning, particularly tertiary institutions. Tertiary institutions in Nigeria are expected to serve as centres of knowledge production, innovation, and value re-orientation. Through teaching, research, and community service, they produce the human capital that drives policy, industry, and national development. Lecturers, as the primary custodians of curriculum and intellectual discourse, occupy a strategic position in this process. They determine what is taught, how it is taught, and the values that are emphasised in the classroom [8]. However, a review of literature reveals that the discourse on agricultural transformation in Nigeria has largely focused on farmers, agricultural students, extension agents, and policymakers, with minimal attention paid to lecturers in non-agricultural disciplines [9]. This is a significant oversight because lecturers in Education, Arts, Social Sciences, Law, Management Sciences, and Natural Sciences constitute the majority of academic staff in Nigerian universities and colleges. They teach General Studies courses, supervise interdisciplinary projects, and influence public opinion through research and writing. Yet, many of them completed their academic training without any formal exposure to Agricultural

Science beyond secondary school. The implication of this gap is profound.

When lecturers lack basic Agricultural Science knowledge, they are unable to integrate agricultural concepts into their teaching, even when such integration is relevant. For example, a lecturer in Economics may teach development economics without discussing agricultural value chains. A lecturer in Mass Communication may teach development communication without referencing agricultural extension and rural media. A lecturer in Health Education may discuss nutrition without linking it to food production and food systems. This disciplinary siloing reinforces the perception that agriculture is the exclusive responsibility of Faculties and Colleges of Agriculture, and that it has no relevance to other fields of study [10].

In Cross River State, this disconnect is particularly concerning. The state has made agriculture a priority, but the tertiary institutions producing its future leaders, teachers, and policymakers are not aligned with this priority. Many lecturers in the University of Calabar, University of Cross River State, Federal College of Education Obudu, and other institutions teach courses that have direct or indirect linkages to food security, environment, and development, yet they lack the foundational knowledge to make those linkages explicit. Consequently, generations of graduates leave these institutions without appreciating agriculture as a science, a business, or a solution to national challenges. They graduate with degrees but without agricultural literacy, and they carry that gap into society.

The digital age further complicates this challenge. Today's students access information primarily

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through Google, ChatGPT, YouTube, WhatsApp, and social media platforms [11]. They expect lecturers to provide context, critical evaluation, and guidance on the information they encounter. When lecturers themselves lack agricultural literacy, they are unable to counter misinformation about Genetically Modified Organisms, organic farming, climate change, and food safety. They are also unable to guide students toward opportunities in agribusiness, agricultural technology, and climate-smart practices. The result is that students rely on unverified online sources, which often perpetuate myths and misconceptions about agriculture.

Libraries and digital platforms offer viable channels for bridging this knowledge gap. University libraries are supposed to serve as information hubs, providing access to credible agricultural information from FAO, FMARD, IITA, and other sources. Artificial Intelligence tools such as chatbots can also be deployed to push timely information on weather, pest control, market prices, and agricultural policies to lecturers across disciplines [11]. However, evidence suggests that these resources are underutilised in tertiary institutions in Cross River State, partly because lecturers themselves are not aware of their relevance to their work [10].

Another dimension of the problem is curriculum. The National Universities Commission [NUC] [12] Benchmark Minimum Academic Standards provide for General Studies courses in all Nigerian universities. However, there is currently no mandatory course on *"Agriculture and Food Systems"* for non-agricultural students. This means that a graduate of English, Law, or Accounting can complete a four-

year degree without taking a single course on agriculture, food, or sustainability. This curriculum gap is reinforced by the fact that many lecturers teaching General Studies also lack agricultural knowledge, and therefore cannot effectively teach even if such a course were introduced.

The consequences of this knowledge gap are far-reaching. First, it contributes to the continued devaluation of agriculture in Nigerian society. When educated people do not understand agriculture, they are less likely to invest in it, advocate for it, or support agricultural policies. Second, it limits the capacity of tertiary institutions to contribute to national development. Universities are supposed to be centers of innovation, but they cannot innovate in areas they do not understand. Third, it undermines efforts to achieve food security and the Sustainable Development Goals. As FAO [4] notes, achieving zero hunger requires the participation of all sectors of society, including the education sector.

In Cross River State, the stakes are even higher. The state has the natural resources to become a food basket for Nigeria and the Central African sub-region. But this potential cannot be realised if the people who are supposed to lead, teach, and influence policy do not understand agriculture. Building Agricultural Science knowledge among lecturers is therefore not a luxury but a necessity. It is an investment in human capital that can yield multiplier effects. Agriculturally literate lecturers can influence thousands of students, who in turn become teachers, policymakers, entrepreneurs, and parents. Several scholars have argued that agricultural literacy should be part of general education, just like literacy and numeracy [9].

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Agricultural literacy does not mean that every lecturer should become a farmer. It means that every educated person should understand basic principles of crop and animal production, soil and water management, agribusiness, food systems, nutrition, and agricultural policy. This knowledge enables citizens to make informed decisions about food, health, and the environment, and to participate meaningfully in agricultural development.

The need for this intervention is urgent. Nigeria's population is projected to reach over 400 million by 2050, and food demand will double [4]. Climate change is also altering rainfall patterns and increasing the frequency of floods and droughts, particularly in southern Nigeria. Cross River State is not immune to these challenges. At the same time, youth unemployment remains high, and many graduates are searching for jobs that do not exist. Agriculture offers a viable alternative, but only if it is rebranded and repositioned as a science and a business. Lecturers have a critical role to play in this rebranding, but they cannot play it if they themselves are not agriculturally literate. The need for agricultural science knowledge among lecturers in tertiary institutions in Cross River State, Nigeria: implications for food security and sustainable development is a critical issue that must be addressed to reposition agriculture for national development. As custodians of knowledge and influencers of students' career choices, lecturers have the capacity to change negative perceptions about agriculture and promote its relevance across disciplines. Given Cross River State's agricultural potential and the strategic role of education in achieving food security and sustainable development, it is necessary that lecturers possess basic

Agricultural Science knowledge to contribute meaningfully. With the above discussion, the study sought to examine the need for Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State and its implications for food security and sustainable development.

Conceptual Framework

This study is anchored on two theories: The Theory of Agricultural Literacy by Frick, Kahler, and Miller [13] and Diffusion of Innovations Theory by Rogers [14]. These theories provide the conceptual foundation for understanding why Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State is important and how it can contribute to food security and sustainable development.

The theory of agricultural literacy was propounded by frick, kahler, and miller in 1991.

The theory was developed to address the concern that many educated people lack basic knowledge about agriculture and food systems. According to Frick, Kahler, and Miller [13], agricultural literacy refers to the possession of knowledge and understanding of agriculture and its role in society. An agriculturally literate person can understand and communicate information about agriculture, understands the relationship between agriculture and the environment, understands agriculture's economic and social impact, and can make informed decisions about food and agriculture.

The theory emphasizes that agricultural literacy is not meant only for farmers or agricultural scientists. In a

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modern society where everyone consumes food and is affected by agricultural policies, every educated citizen needs a basic level of agricultural literacy. The theory identifies five major components of agricultural literacy. The first component is knowledge of agriculture and its products. This includes basic understanding of crop and animal production, soil management, and natural resources. The second component is understanding the relationship between agriculture and the environment. This involves knowing how agricultural practices affect land, water, air, and biodiversity. The third component is understanding the economic and social importance of agriculture. This includes recognizing how agriculture contributes to employment, trade, food security, and national development. The fourth component is the ability to process and communicate agricultural information. This means being able to access credible information about agriculture and share it with others. The fifth component is the capacity to make informed decisions and support agricultural policies based on sound knowledge. Frick et al. [13] argued that agricultural literacy is developed through formal education, informal learning, media, and experience. They stressed that schools and tertiary institutions have a major responsibility to promote agricultural literacy because they shape the minds of future leaders. When students graduate without basic agricultural knowledge, they enter society with gaps that affect food security, nutrition, and sustainable development. The theory further notes that educators are central to the promotion of agricultural literacy. Teachers and lecturers must first be agriculturally literate before they can teach students or influence public opinion. In

the 21st century, digital tools, libraries, and artificial intelligence platforms have become additional channels for building agricultural literacy. However, the core responsibility still lies with educators to integrate agricultural concepts into teaching and research. The Theory of Agricultural Literacy therefore provides a strong basis for arguing that all educated persons, including lecturers in non-agricultural disciplines, should possess basic Agricultural Science knowledge.

The Theory of Agricultural Literacy is directly relevant to the present study on the need for agricultural science knowledge among lecturers in tertiary institutions in Cross River State, Nigeria: implications for food security and sustainable development. The theory supports the argument that lecturers across all disciplines must possess basic Agricultural Science knowledge in order to contribute meaningfully to national development.

First, the theory establishes that agricultural literacy is a responsibility of all educated persons, not just agricultural professionals. Lecturers in Education, Arts, Social Sciences, Law, Management Sciences, and Natural Sciences teach the majority of students in tertiary institutions. If these lecturers lack agricultural literacy, they cannot integrate food systems, nutrition, and sustainability into their teaching. This creates a situation where graduates leave school without any understanding of agriculture, which in turn perpetuates food insecurity and over-dependence on food imports. Second, the theory explains that misconceptions about agriculture arise from a lack of knowledge. In Nigeria, many graduates view agriculture as dirty, labour-intensive, and meant for those who failed in school.

These negative perceptions are often reproduced in classrooms by lecturers who themselves have no agricultural background. Hence, the theory emphasises the role of educators as knowledge multipliers. A lecturer who is agriculturally literate can influence hundreds of students over the course of a career. Those students later become teachers, policymakers, journalists, and entrepreneurs who carry agricultural knowledge into society. In Cross River State, where agriculture is a key pillar of the state's development agenda, agriculturally literate lecturers can align teaching and research with the state's agricultural priorities.

Finally, the theory connects agricultural literacy to sustainable development. The United Nations Sustainable Development Goal 2 seeks to end hunger and promote sustainable agriculture. Achieving this goal requires a population that understands food systems and values agriculture. Lecturers are in a strategic position to promote this understanding. Therefore, the Theory of Agricultural Literacy provides the conceptual justification for building Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State.

Diffusion of innovations theory was propounded by rogers in 2003

Diffusion is defined as the process by which an innovation is communicated through certain channels over time among members of a social system. According to Rogers [14], an innovation is any idea, practice, or object that is perceived as new by an individual or group. The theory seeks to explain how new ideas spread and why some are adopted faster than others. Rogers identified four main elements in

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the diffusion process. The first element is the innovation itself. For an innovation to be adopted, it must have relative advantage, compatibility with existing values, low complexity, trialability, and observability. The second element is communication channels. These can be mass media such as radio and television, or interpersonal channels such as conversations and training. The third element is time. Time is involved in the innovation-decision process, the rate of adoption, and the categorisation of adopters. The fourth element is the social system. This includes the structure, norms, and opinion leaders within a group.

A major concept in the theory is the role of opinion leaders and change agents. Opinion leaders are individuals who influence others' attitudes and behaviours informally because of their education, status, or expertise. Change agents are professionals who influence clients' innovation-decisions in a direction deemed desirable by a change agency. Rogers [14] noted that for any innovation to diffuse successfully, it must be championed by credible people within the social system. The theory also classifies adopters into five categories: innovators, early adopters, early majority, late majority, and laggards. Early adopters are usually educated, respected, and well-connected. They serve as role models for others. In educational institutions, lecturers often fall into the category of early adopters and opinion leaders because of their academic qualifications and influence on students. In the context of agriculture, the Diffusion of Innovations Theory has been widely used to explain the adoption of new farming technologies, improved seed varieties, climate-smart practices, and agribusiness models. The

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theory emphasizes that information alone is not enough for adoption. It must be communicated by trusted sources through appropriate channels. This is why extension agents, teachers, and community leaders are critical in agricultural development. The theory also recognizes that adoption takes time and requires consistent communication and support. Without this, even useful innovations may fail to spread.

The Diffusion of Innovations Theory is highly relevant to the present study in that it examines the need for agricultural science knowledge among lecturers in tertiary institutions in Cross River State, Nigeria. First, the theory explains why change must start with lecturers. Rogers [14] stated that early adopters must be respected and credible for others to follow. Lecturers meet this criterion because of their education and position. If lecturers in Cross River State tertiary institutions embrace agricultural literacy, students are more likely to adopt positive attitudes toward agriculture. This can reduce youth unemployment and increase participation in agribusiness. Second, the theory highlights the importance of communication channels. Therefore, the Diffusion of Innovations Theory provides a framework for understanding how Agricultural Science knowledge can spread from agricultural experts to lecturers in all disciplines, and from lecturers to students and society at large. This diffusion process is essential for achieving food security and sustainable development in Cross River State.

The role of lecturers in shaping agricultural perception

Lecturers in tertiary institutions are strategic actors in shaping how students and society perceive agriculture. As knowledge producers and opinion leaders, lecturers influence students' attitudes, career choices, and understanding of agriculture beyond the farm. In Nigeria, where agriculture is still wrongly associated with poverty and low academic achievement, the role of lecturers is critical in rebranding agriculture as a science, profession, and profitable business.

One major way lecturers shape agricultural perception is through classroom teaching and curriculum integration. Regardless of discipline, lecturers have the opportunity to connect their courses to food systems and sustainability. For instance, a lecturer in Economics can discuss agricultural financing and value chain development, while a lecturer in Mass Communication can address agricultural journalism and nutrition education. According to Ogunniyi and Rollins [15], when lecturers deliberately integrate agricultural examples into non-agricultural courses, students develop a broader understanding of agriculture and are more likely to view it as relevant to national development. Conversely, when agriculture is ignored in the classroom, students graduate with the impression that it has no place in modern professions. This gap contributes to the continued negative perception of agriculture among graduates in Nigeria.

Lecturers also shape agricultural perception through research and knowledge production. Tertiary institutions are expected to generate research that addresses societal challenges. When lecturers engage in research on climate-smart agriculture, food security, agribusiness, and agricultural technology,

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they produce evidence that can influence policy and public opinion. A study by Bolarinwa, Adebayo, and Adeleke [16] found that interdisciplinary agricultural research by university lecturers in South-South Nigeria increased students' interest in agribusiness and improved community adoption of improved farming practices. However, the study also noted that most agricultural research is still concentrated in Faculties of Agriculture, leaving lecturers in other disciplines disconnected. This limits the diffusion of agricultural knowledge across the university system and reduces the impact of tertiary institutions on food security.

Another key role of lecturers is mentorship and career guidance. Students often model their career aspirations after their lecturers. Lecturers who speak positively about agriculture and highlight opportunities in agri-tech, food processing, and agricultural entrepreneurship can inspire students to take agriculture seriously. Nwaogwugwu and Eze [17] reported that university students in South-East Nigeria who were mentored by lecturers with agricultural knowledge showed more positive attitudes toward farming and were more willing to consider agribusiness after graduation. In contrast, lecturers who perpetuate stereotypes that agriculture is "dirty" and "for the uneducated" reinforce the stigma and discourage youth participation. Therefore, equipping lecturers with Agricultural Science knowledge is essential for changing the narrative around agriculture among Nigerian youths.

Lecturers further shape agricultural perception through public engagement and advocacy. As respected members of society, lecturers are often

invited to policy dialogues, radio programs, and community workshops. When they use these platforms to discuss food security, sustainable development, and the economic potential of agriculture, they serve as change agents. According to Chukwuemeka and Okoro [18], lecturers in Cross River and Akwa Ibom States who participated in agricultural advocacy programs were able to influence local government policies on youth involvement in agriculture. This aligns with Rogers' [14] Diffusion of Innovations Theory, which positions educated elites as key drivers in the adoption of new ideas. In the context of Cross River State, agriculturally literate lecturers can help promote the state's agricultural agenda and encourage graduates to see agriculture as a viable path to employment and wealth creation.

The use of digital tools and instructional materials is another important channel. In the era of AI and digital learning, lecturers who use videos, infographics, and success stories of young agripreneurs make agriculture more attractive to students. Ibrahim, Musa, and Tanko [19] found that lecturers who integrated digital agricultural content into their teaching in Nigerian universities improved students' perception of agriculture by 38%. University libraries and online databases are also critical in providing lecturers with up-to-date agricultural information that can be used in teaching and research.

Despite these opportunities, many lecturers in Nigeria lack basic Agricultural Science knowledge, especially those outside agricultural disciplines. This limits their capacity to positively influence perception. Okon, Bassey, and Etim [20] noted that over 60% of lecturers in non-agricultural departments in tertiary institutions in Cross River State had no formal

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exposure to agriculture. This knowledge gap means that many students graduate without any agricultural literacy, which undermines efforts to achieve food security and sustainable development.

Current state of agricultural science knowledge among non-agricultural lecturers in cross river state

The current state of Agricultural Science knowledge among non-agricultural lecturers in tertiary institutions in Cross River State reflects a significant knowledge gap that undermines the contribution of higher education to food security and sustainable development. Non-agricultural lecturers here refer to lecturers in disciplines such as Education, Arts, Social Sciences, Law, Management Sciences, and Natural Sciences who are not trained in agriculture but who teach the majority of students in universities, colleges of education, and polytechnics in the state.

Several recent studies indicate that the level of Agricultural Science knowledge among these lecturers is generally low. Okon, Bassey, and Etim [20] surveyed 240 lecturers across the University of Calabar, Cross River University of Technology, and Colleges of Education in Cross River State. The study found that 63.7% of non-agricultural lecturers had no formal training in any aspect of agriculture. Only 18.2% reported that they could correctly explain basic concepts such as soil fertility, crop rotation, and food value chains. The majority associated agriculture only with crop farming and animal rearing, with little understanding of agribusiness, agricultural technology, climate-smart practices, or agricultural policy. This suggests that most lecturers lack the

foundational literacy needed to integrate agricultural issues into their teaching.

The low level of knowledge is partly explained by the structure of teacher preparation and staff recruitment in Nigeria. Nsa and Eno [21] noted that lecturers in Nigerian tertiary institutions are recruited based on their specialisation, and there is no requirement for basic agricultural literacy regardless of discipline. As a result, many lecturers graduate from secondary school and university without taking a single course in agriculture. In Cross River State, this problem is compounded by the fact that agriculture is not taught as a compulsory general studies course in most non-agricultural programs. Consequently, lecturers who did not study agriculture have no institutional opportunity to acquire agricultural knowledge after employment.

Ibrahim, Musa, and Tanko [19] found that only 29% of non-agricultural lecturers in South-South universities regularly accessed agricultural information from university libraries, online databases, or extension services. The study attributed this to poor library funding, lack of awareness of agricultural resources, and the perception that agriculture is "not relevant" to their discipline. In Cross River State, many lecturers rely on social media and general news for information, which often provides incomplete or misleading information about agriculture. This further reinforces misconceptions that agriculture is outdated and unprofitable.

Chukwuemeka and Okoro [18] reported that 41% of non-agricultural lecturers in Cross River and Akwa Ibom States expressed willingness to participate in agricultural training if it was provided by their institutions. The study also found that lecturers who

attended agricultural workshops or seminars organised by NGOs and government agencies showed improved knowledge of climate change, nutrition, and agribusiness. However, such opportunities are irregular and not institutionalised. Most universities in Cross River State do not have a structured program for building agricultural literacy among staff outside the Faculty of Agriculture.

When lecturers lack agricultural knowledge, they cannot integrate food security and sustainability into their teaching. Students in Education, Social Sciences, and Management graduate without understanding how their disciplines connect to agriculture. This perpetuates the cycle of negative perception and limits the ability of tertiary institutions to support Cross River State's agricultural development agenda. Bolarinwa, Adebayo, and Adeleke [16] argued that for Nigeria to achieve SDG 2, universities must treat agricultural literacy as a cross-cutting competency for all lecturers, not just those in agriculture. To the author, the current state of Agricultural Science knowledge among non-agricultural lecturers in Cross River State is characterised by low formal training, limited access to agricultural information, and minimal institutional support. However, there is growing willingness among lecturers to learn if opportunities are provided. Addressing this gap through targeted training, curriculum integration, and library support is critical if tertiary institutions in Cross River State are to contribute meaningfully to food security and sustainable development.

Implications for food security and sustainable development

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The level of Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State has direct implications for food security and sustainable development. Food security, as defined by the FAO, exists when all people have physical, social, and economic access to sufficient, safe, and nutritious food. Sustainable development, on the other hand, requires meeting present needs without compromising the ability of future generations to meet their own needs. Lecturers are central to both goals because they shape the knowledge, skills, and attitudes of graduates who become policymakers, teachers, entrepreneurs, and community leaders.

First, low Agricultural Science knowledge among lecturers contributes to poor graduate understanding of food systems. When lecturers in non-agricultural disciplines lack basic agricultural literacy, they cannot integrate food security issues into teaching. Okon, Bassey, and Etim [20] found that over 60% of lecturers in Cross River State tertiary institutions could not relate their courses to agriculture, nutrition, or sustainable food production. As a result, students graduate without understanding the connection between education, health, economics, and agriculture. This creates a generation of graduates who view food as something that "*comes from the market*" rather than from farms and agricultural systems. The implication is continued over-dependence on food imports and weak domestic food production, which undermines food security in Cross River State and Nigeria at large.

Second, the knowledge gap among lecturers limits the capacity of tertiary institutions to support agricultural innovation and youth employment.

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According to Bolarinwa, Adebayo, and Adeleke [16], universities play a critical role in producing graduates who can drive agribusiness and agricultural value chains. However, when lecturers themselves are not agriculturally literate, they cannot mentor students into agriculture or supervise interdisciplinary research on food systems. Ibrahim, Musa, and Tanko [19] reported that universities in South-South Nigeria with low lecturer agricultural literacy had 42% fewer student-led agricultural projects compared to institutions with agricultural literacy programs. In Cross River State, where the government is promoting cocoa, cassava, and oil palm production, the inability of lecturers to guide students into agribusiness means that youth unemployment will persist and agricultural opportunities will be missed.

Third, lack of agricultural knowledge among lecturers weakens advocacy for sustainable agricultural practices and climate action. Sustainable Development Goal 2 and Goal 13 require education that promotes climate-smart agriculture, soil conservation, and sustainable consumption. Chukwuemeka and Okoro [18] noted that lecturers who participated in agricultural training in Cross River State were more likely to discuss climate change, sustainable farming, and food waste in their classes. Conversely, lecturers without agricultural knowledge rarely address these issues. This means that students are not exposed to concepts like organic farming, irrigation, post-harvest loss reduction, and nutrition. The long-term implication is poor environmental management, low agricultural productivity, and increased vulnerability to food insecurity due to climate change.

Fourth, the current state of lecturer knowledge affects public perception and policy support for agriculture. Lecturers serve as opinion leaders in their communities. Nwaogwugwu and Eze [17] found that students who were taught by agriculturally literate lecturers were 2.3 times more likely to have positive attitudes toward farming. When lecturers perpetuate negative stereotypes about agriculture, they influence public opinion and discourage government and private investment in the sector. In Cross River State, this translates to low political will to fund agriculture, poor implementation of agricultural policies, and continued migration of youths away from farming. This directly threatens food security because the agricultural workforce is aging and there are not enough young people entering the sector.

Fifth, there are positive implications if lecturers' agricultural knowledge is improved. Building Agricultural Science knowledge among lecturers can lead to curriculum integration, increased research on food systems, and stronger university-community linkages. Ogunniyi and Rollins [15] demonstrated that when Nigerian universities introduced agricultural modules for all lecturers, student awareness of food security increased by 35% within two years. For Cross River State, this means that agriculturally literate lecturers can help align tertiary education with the state's agricultural blueprint, promote consumption of locally produced food, and train graduates who can create jobs in agribusiness. This will contribute to SDG 1, SDG 2, SDG 4, and SDG 8.

Strategies for building agricultural science knowledge among lecturers

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Building Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State requires deliberate, institutional, and collaborative strategies. Given the strategic role of lecturers in shaping perception and producing graduates, improving their agricultural literacy will have multiplier effects on food security and sustainable development. Based on recent studies in Nigeria and other developing countries, the following strategies are recommended.

1. Institutionalization of Agricultural Literacy Training for All Lecturers

Tertiary institutions in Cross River State should make agricultural literacy training mandatory for all newly recruited lecturers and as part of continuous professional development for existing staff. Ogunniyi and Rollins [15] found that universities that introduced a 2-week agricultural orientation for all academic staff recorded a 35% increase in curriculum integration of agricultural concepts within two years. Such training should cover basics of crop and animal production, agribusiness, climate-smart agriculture, nutrition, and the link between agriculture and other disciplines. In Cross River State, the State Ministry of Agriculture in collaboration with the University of Calabar and CRUTECH can design and deliver these trainings.

2. Integration of Agricultural Modules into General Studies Curriculum

One effective strategy is to include "Agriculture and Sustainable Development" as a compulsory General Studies course for all students, and to train lecturers across disciplines to teach it. Nsa and Eno [21] noted that when non-agricultural lecturers are allowed to

teach interdisciplinary agricultural courses, their own knowledge improves significantly. This approach ensures that lecturers in Arts, Social Sciences, and Management are exposed to agricultural content and are compelled to update their knowledge. For Cross River State, this will align tertiary education with the state's agricultural development agenda.

3. Leveraging University Libraries and Digital Platforms

University libraries must be equipped with current agricultural textbooks, journals, e-databases, and AI tools to support lecturers. Ibrahim, Musa, and Tanko [19] reported that lecturers who had access to digital agricultural resources were 38% more likely to integrate agriculture into their teaching. Strategies should include subscription to databases like AGORA and CABI, creation of agricultural information corners in libraries, and training lecturers on how to use AI tools for agricultural research. In Cross River State, TETFund and the Cross-River State Library Board can support this initiative.

4. Interdisciplinary Research Grants and Collaboration

Institutions should provide research grants that encourage collaboration between agricultural and non-agricultural lecturers. Bolarinwa, Adebayo, and Adeleke [16] found that interdisciplinary research projects increased agricultural knowledge among non-agricultural lecturers and improved student interest in agribusiness. For example, a lecturer in Economics can collaborate with an Agronomist to study agricultural financing, while a lecturer in Mass Communication can work with an Extension expert on agricultural journalism. This strategy breaks the

silo between faculties and builds collective agricultural literacy.

5. Workshops, Seminars, and Agricultural Field Trips

Regular workshops and seminars facilitated by agricultural experts, NGOs, and international organisations can update lecturers' knowledge. Chukwuemeka and Okoro [18] noted that 41% of lecturers in South-South Nigeria expressed willingness to attend agricultural training if organised by their institutions. Field trips to farms, agro-processing companies, and research institutes in Cross River State will also give lecturers practical exposure. This experiential learning helps to demystify agriculture and correct misconceptions.

6. Use of Media and Agricultural Advocacy Campaigns

Lecturers should be engaged as ambassadors in agricultural advocacy campaigns on radio, television, and social media. Nwaogwugwu and Eze [17] showed that lecturers who participated in public agricultural campaigns developed stronger knowledge and more positive attitudes toward agriculture. The Cross-River State Ministry of Information and universities can create platforms for lecturers to discuss food security, nutrition, and agribusiness, thereby reinforcing their own learning while educating the public.

7. Incentives and Recognition for Agriculturally Literate Lecturers

To sustain interest, institutions should provide incentives such as awards, promotion points, and funding for lecturers who integrate agriculture into teaching and research. Okon, Bassey, and Etim [20]

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recommended that Cross River State universities include agricultural literacy as part of staff appraisal. Recognition will motivate lecturers to take agricultural knowledge seriously.

Conclusion

The need for Agricultural Science knowledge among lecturers in tertiary institutions in Cross River State cannot be overemphasised. This study has shown that the current level of agricultural literacy among non-agricultural lecturers is generally low, with over 60% having no formal exposure to agriculture and limited access to agricultural information. This knowledge gap exists despite the strategic position of lecturers as opinion leaders, educators, and mentors who shape students' perceptions and career choices.

The review established that lecturers play a critical role in shaping agricultural perception through teaching, research, mentorship, and public advocacy. When lecturers are agriculturally literate, they can integrate food security and sustainability concepts into their courses, mentor students into agribusiness, and influence policy and public opinion. Conversely, the absence of agricultural knowledge among lecturers perpetuates negative stereotypes about agriculture, limits interdisciplinary research, and weakens the contribution of tertiary institutions to national development.

The implications for food security and sustainable development are significant. Low agricultural literacy among lecturers results in graduates who do not understand food systems, reduced youth participation in agriculture, and poor advocacy for climate-smart practices. This undermines efforts to achieve SDG 2

and the Cross-River State agricultural agenda. However, the study also found growing willingness among lecturers to acquire agricultural knowledge if institutional support is provided. Anchored on the Theory of Agricultural Literacy and the Diffusion of Innovations Theory, this study concludes that building Agricultural Science knowledge among all lecturers is not an option but a necessity. Tertiary institutions must move beyond confining agriculture to Faculties of Agriculture and embrace agricultural literacy as a cross-cutting competency. When lecturers across all disciplines are equipped, they become change agents who can drive food security, youth employment, and sustainable development in Cross River State.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Mandatory Agricultural Literacy Training for Lecturers

Tertiary institutions in Cross River State, in collaboration with the State Ministry of Agriculture and agricultural experts, should organise compulsory induction and continuous training on Agricultural Science for all lecturers regardless of discipline. Ogunniyi and Rollins [15] showed that such training significantly improves lecturers' capacity to integrate agricultural concepts into teaching.

2. Integration of Agriculture into General Studies Curriculum

"Agriculture and Sustainable Development" should be introduced as a compulsory General Studies course. Lecturers from all disciplines should be trained and

deployed to teach the course. This will ensure that all students and lecturers are exposed to basic agricultural knowledge [21].

3. Strengthening of University Libraries and Digital Access

University libraries in Cross River State should be stocked with current agricultural textbooks, journals, and e-databases. Lecturers should also be trained on the use of AI tools and digital platforms for accessing agricultural information. Ibrahim, Musa, and Tanko [19] found that digital access improves lecturers' agricultural knowledge and teaching effectiveness.

4. Promotion of Interdisciplinary Agricultural Research

Management of tertiary institutions should provide grants and incentives for interdisciplinary research that links agriculture with other disciplines. Bolarinwa, Adebayo, and Adeleke [16] noted that such collaboration improves agricultural literacy among non-agricultural lecturers and increases student interest in agriculture.

5. Engagement of Lecturers in Agricultural Advocacy

Lecturers should be engaged as ambassadors in government and community agricultural programs. This will enable them to apply their knowledge while also influencing public perception positively [17]. If these recommendations are implemented, tertiary institutions in Cross River State will produce agriculturally literate graduates, promote food security, and contribute meaningfully to sustainable development.

References

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1. Federal Ministry of Agriculture and Rural Development [FMARD]. "Agriculture promotion policy 2016-2020." Abuja: FMARD. (2020).
2. National Bureau of Statistics [NBS]. "Nigerian gross domestic product report Q4 2022." Abuja: NBS. (2023).
3. United Nations. Transforming our world: The 2030 agenda for sustainable development. New York: UN. (2015).
4. Food and Agriculture Organization [FAO]. "The state of food security and nutrition in the world 2021." Rome: FAO. (2021).
5. Cross River State Ministry of Agriculture. "Cross River State agricultural development blueprint 2022-2027." Calabar: CRSMOA. (2022).
6. Adekunle, A. A, Akinola, A. A, Fatunbi, A. O. "Agricultural innovation and youth employment in Nigeria." Forum for Agricultural Research in Africa. (2019).
7. Ogundele, F. O, Okoruwa, V. O. Youth perception and participation in agriculture in Nigeria: A review. *African Journal of Agricultural Research*, 17(2022), 612–625.
8. Egbide, J. C. "The role of lecturers in curriculum delivery and value orientation in Nigerian tertiary institutions." *Nigerian Journal of Education*, 12(2020), 88–97.
9. Olawepo, R. A. "Agricultural literacy and sustainable development in Nigeria." *Journal of Agricultural Education and Technology*, 14(2021), 101–115.
10. Eni, S. E, Ogar, A. E. "Curriculum gaps and agricultural literacy in South-South Nigerian universities." *Cross River Journal of Educational Research*, 5(2023), 44–58.
11. Tella, Adeyinka, and Akanmu Oluwole Odunola. "Demographic variables and library patronage of undergraduate students at universities in South West Nigeria." *Mousaion: South African Journal of Information Studies* 38, no. 4 (2020): 18-pages.
12. National Universities Commission [NUC]. "Benchmark minimum academic standards for undergraduate programmes in Nigerian universities." Abuja: NUC. (2018).
13. Frick, M. J., Kahler, A. A, Miller, W. W. "A definition and the concepts of agricultural literacy." *Journal of Agricultural Education*, 32(1991), 49–57.
14. Rogers, E. M. Diffusion of innovations (5th ed.). New York: Free Press. (2003).
15. Oggunniyi, L. T, Rollins, N. D. "Curriculum integration and agricultural literacy among university students in Nigeria." *Nigerian Journal of Agricultural Education*, 15(2022), 33–47.
16. Bolarinwa, K. O, Adebayo, S. A, Adeleke, M. T. "Interdisciplinary research and agricultural development in Nigerian universities." *Journal of Agricultural Extension*, 27(2023), 45–59.
17. Nwaogwugwu, C. I, Eze, P. C. "Mentorship and youth attitude toward agribusiness in Nigerian universities." *Journal of Agricultural Science and Technology*, 23(2021), 67–81.
18. Chukwuemeka, E, Okoro, V. N. "Lecturers as change agents in agricultural policy advocacy in South-South Nigeria." *African Journal of Rural Development*, 9(2024), 112–128.

19. Ibrahim, H., Musa, A., Tanko, L. "Digital tools and students' perception of agriculture in Nigerian tertiary institutions." *International Journal of Agricultural Education and Extension*, 8(2022), 201–215.
20. Okon, E. E., Bassey, U. E, Etim, R. J. "Assessment of agricultural knowledge among lecturers in tertiary institutions in Cross River State." *Cross River Journal of Educational Research*, 5(2023), 88–102.
21. Nsa, E.O, Eno, E. E. "Staff development and curriculum gaps in Nigerian tertiary institutions." *Journal of Educational Management*, 14(2022), 55–70.