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# Repositioning Agricultural Education in Nigerian Secondary Schools: The Case for Introducing Horticulture and Gardening as a Crop-Based Trade Subject

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***Abstract-*** ***Nigeria's educational reforms introduced 34 vocational trades which were added to secondary schools, but only Animal Husbandry and Fishery were included. Crop production, which accounts for over 90% of agricultural growth and employs 70% of the workforce, was not included. This left agrarian schools without relevant, affordable options and resultant low enrolment. This study therefore explores the opinions of stakeholders about the introduction of Horticulture and Gardening as a crop-based trade subject in Senior Secondary Schools in South-South Nigeria. Sixty Agricultural Science teachers from six states (Delta, Edo, Bayelsa, Rivers, Akwa Ibom, and Cross River) participated in a qualitative study utilizing Focus Group Discussions. The Phenomenological Qualitative Research Approach was used to assess the data. Findings reveal that most teachers are aware of the current vocational subjects, but many schools do not offer them because of a lack of funding and staff. A crop-based trade subject is widely supported by participants, who point to the great market demand for fruits and vegetables, plenty of fertile land, and less startup costs. The most popular choice was Horticulture and Gardening since it provided useful skills, chances for self-employment, and advantages for food security. Funding, flooding, theft, and inadequate infrastructure are among the difficulties noted, but they are not as serious as those associated with animal-based trade subjects. In order to align secondary education with regional agricultural requirements and national development objectives, the study recommended that the Nigerian Educational Research and Development Council (NERDC) and curriculum planners create a Horticulture and Gardening curriculum, train teachers, and provide resources.***

***Keywords: Agricultural Education, Crop-Based Trade Subject, Horticulture and Gardening, Senior Secondary School, South-South Nigeria***

## I. INTRODUCTION

Nigeria has consistently revised its educational system over the years, primarily to tackle the endemic problems of unemployment, lack of vocational skills to become self-employed and job creators, and for a more functional education for student recipients. Specifically, the 2007 (5th edition) of the National Policy on Education among other reasons aimed to reposition the Nigerian education sector to effectively meet the challenges of the Education for All (EFA) initiative; Millennium Development Goals (MDGs) (now the Sustainable Development Goals); improve and refocus education quality and service delivery for the attainment of National Economic Empowerment and Development Strategy (NEEDS) goals of social and economic transformation, wealth creation, poverty reduction, employment generation and value re-orientation. This new focus aligns with UNESCO (United Nations Education Scientific and Cultural Organization) which remarked that educational reforms in Nigeria, among other revisions, shifted focus to skill training and realignment of curricula to meet the emerging needs of the global economy and knowledge society (UNESCO Nigeria Delegation, 2025).

Agricultural education is a major vocational education subject having many career pathways to engage youths at the secondary school level. These career paths include Animal and Crop Production trades, with a variety of opportunities in the Nigerian educational system for youth engagement according to their natural endowments. Accordingly, the 2007 National Policy introduced a set of 34 new trade subjects, among which were Animal Husbandry and Fishery as the only agriculture-based trades (Nigeria Educational

Research and Development Council [NERDC], 2013; Agbidi & Ikeoji, 2018). This is in spite of such diverse trade pathways neglected other trades in agriculture crop as horticulture and gardening, crop production, agricultural resources and forestry and agricultural products processing among others.

Agriculture in Nigeria includes four sub-activities: crop production, livestock, forestry and fishing, engaging about 70% of Nigeria's workforce (Statista, 2025). Nigeria has a large expanse of cultivable-fertile lands, which makes crop production a viable business. Crop production output in recent times has been a major driver of the agriculture sector, accounting for over 90% of overall nominal growth in the agriculture sector (National Agricultural Extension and Research Liaison Services [NAERLS], 2025). This shows that crop production engages more Nigerians than livestock production.

Further curriculum revisions such as the 6th edition of the National Policy on Education responded to the immense contributions of Agriculture to the Nigerian economy and introduced the trade subjects as entrepreneurship subjects, which envisaged that the secondary schools should provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development, and give training and impart the necessary skills to individuals for self-reliance economically (Federal Republic of Nigeria [FRN], 2013; NERDC, 2025). However, the only two trade subjects provided for in Agriculture are Animal Husbandry and Fishery, both of which come from the Animal production sub-sector, leaving out the entire crop production sub-sector.

This has left out many secondary schools in Nigeria agrarian communities such as parts of Benue, Nasarawa, Edo, Delta, Kogi, Enugu, Anambra, Imo, Cross-River, Kebbi States among other states, with an opportunity to acquire a trade in which they have the natural endowments. With the vast cultivable and fertile soil available in many of these states, opportunities should be provided for their secondary schools to pursue a familiar trade in crop production such as horticulture and gardening.

Curriculum development should include a planned, but purposeful, progressive and systematic process to create positive improvements in the educational system of a nation. This is because every time there are changes or developments happening around the world, the school curricula are affected (Bilbao et al, 2008). Curriculum development should provide answers or solutions to the pressing problems of the world, such as the environment, issues of poverty, climate change and sustainable development (FME, 2025).

There have been concerns over the years regarding the relevance of secondary school curriculum to produce graduates who are ready to enter into occupational areas and reduce unemployment among youths in Nigeria. The introduction of new entrepreneurship trades such as Animal Husbandry and Fishery was an attempt to improve graduates' capacity to become self-employed after secondary school. Unfortunately, there is a glaring absence of crop production-based trade subjects among the newly introduced trades. The result is that many schools do not have any opportunity to practice any agriculture-based trade that aligns well with their natural environments, especially in agrarian communities, whose main source of livelihood lies in the area of crop farming activities. The high cost of starting projects in Animal production and fisheries further discourages secondary school students from choosing any agriculture-based trade for enrollment in the Senior Secondary School Certificate Examination (Africazine, 2025).

This study, therefore, was conceptualized to determine the perception of stakeholders regarding the agriculture-based trade subjects currently implemented in secondary schools as a prelude to developing a curriculum for Horticulture and Gardening, which is a crop production trade to fill this gap.

*Theoretical Framework/Literature Review*

The philosophies of John Dewey and Charles Prosser provide the theoretical framework for this study. Both theories are summarized by Phipps et al, (2008) that "instruction, methods, programme and courses in Agricultural education are based on problems associated with various tasks in Agriculture and natural resources industry; thus the content of the

curriculum is flexible and changing, instruction is systematic and principles and theories are studied as potential solutions to real problems (….p7). Specifically, Charles Prosser advocated that "vocational education should be reserved for those who are motivated and can benefit from it" (Scott, 2014).

In line with this, Prosser and Quigley (1949) stated that "the only reliable source of content for specific training in an occupation is in the experience of masters of that occupation". Motivation includes those processes that arouse and stimulate behaviour, give purpose or direction to behaviour, lead to choosing a particular behaviour and allow a behaviour to persist (Wlodkowski, 1978; Osagiede, 2025).

Curriculum development has shifted focus to an occupationally-oriented approach, which should prepare people for the industry and occupations, and make them ready for employment or become job creators. The absence of a trade subject in crop production aspects of agriculture leaves a huge gap which needs to be filled to satisfy the needs of many secondary school students whose interest and motivation lie in the vast area of crop production. The best approach to develop such is by using the experience of masters of the occupation.

Curriculum development can be described as a purposeful activity undertaken to design or re-design for the realization of certain specific educational objectives. Curriculum should be reviewed and revised regularly so that it is able to serve the changing needs of both students and society (Phipps et al., 2008; FRN, 2013; FME, 2025). Mercy (2014) stated that curriculum development includes all those processes and activities systematically undertaken by either an individual or an institution to come up with an educational programme. According to Phipps et al., (2008), the philosophical and historical foundations of curriculum in career and technical education are different from those of traditional academic courses. Phipps et al., further explained that agricultural education courses are based upon local relevance, and are designed by assessing the needs of the students and the local community; and inputs for course design include the workforce demands of the community, the general interests and needs of students, and opportunities and trends in the area.

Horticulture and Gardening are important aspects of crop production intensively practiced for food production, ornamental engagement and recreational arts (Tichar et al, 2024). They involve the aesthetic cultivation of recreative arts. They involve the aesthetic cultivation of ornamental plants, native plants, fruits, vegetables and flowers in public land, domestic gardens and landscapes (Arteca, 2015; Agbogidi et al., 2025). Horticulture is the agriculture of plants, mainly for food, materials, comfort and beauty for decoration. Horticulture and Gardening are a combination of aspects of agriculture, which includes the aspect of cultivating plants; botany (also called plant science), the science of plant life, environmental design, and the applied arts (Agbogidi et al., 2025). Horticulture and Gardening are both activities involved in plant cultivation, but while horticulture refers to a more scientific specialization occupation, gardening refers to a leisure activity practiced by home or hobbyist gardeners (Agbogidi et al., 2025).

However, as a trade, Horticulture and Gardening are mutually overlapping aspects of crop production with great potential to equip secondary school graduates with functional skills for self-employment. Hence Janick (2019) stated that horticulture is the branch of plant agriculture dealing with garden crops, generally fruits, vegetables and ornamental plants; while Graham (2013) stated a relationship between Horticulture and Gardening, referring to horticulture as a science using scientific research and the scientific method to produce better and more productive plants, while gardening is a personal or community pursuit to produce environments (personal and public) of beauty and functionality using plants (ornamental and food), water and stone.

The main divisions of horticulture include: Olericulture (the production of vegetable crops); Pomology (the production of edible fruit crops); Floriculture (the production of ornamental crops); and Fruit technology (the preservation of horticulture produce for consumption. Horticulture provides for daily nutrition needs for humans in the form of vitamins, proteins, minerals, and carbohydrates

through fruit and vegetable consumption; it is a source of foreign exchange and personal income; employs many people; and a source of medicines to treat some diseases affecting humans (Hortsicence, 2020). Horticulture has been effectively used to promote mental, social and cognitive functioning of the elderly in care centres (Pouya, 2018).

*Objectives of the Study*

The objective of this study is to determine the opinions of stakeholders about the introduction of Horticulture and Gardening as a crop-based trade subject in South-South Nigerian Senior Secondary Schools. The specific objectives are to:

(i) assess secondary school awareness of and participation in trade subjects;
(ii) determine the necessity and preferences of a crop-based trade subject in Horticulture and Gardening;
(iii) identify possible obstacles to providing Crop-Based Trade Subject in Horticulture and Gardening; and
(iv) adduce the educational and policy implications of the findings.

## II. METHODOLOGY

The perspectives of stakeholders about the introduction of gardening and horticulture as a crop-based trade topic in South-South Nigerian Senior Secondary Schools were gathered through a qualitative approach using Focus Group Discussions (FGDs). The FGDs took place from February 19–20, 2025, and comprised sixty participants, including Agricultural Science teachers from six states (Delta, Edo, Bayelsa, Rivers, Akwa Ibom, and Cross River). With an emphasis on introducing a crop-based trade subject, the discussions examined stakeholders' opinions regarding the inclusion of Horticulture and Gardening trade subjects in the secondary school curriculum. Data was examined utilizing the Phenomenological Qualitative Research Approach (PQRA) to analyze the oral interpretations during FGDs, ensuring credibility, transferability, dependability, and confirmability. This method was adopted to ensure ethical considerations by concealing all participants' identities and collective reporting of results.

## III. FINDINGS AND DISCUSSION

The findings of the FGDs are presented below accordingly based on the specific objectives of the study, followed by the discussion.

*Awareness and Status of Trade Subjects in Secondary Schools*

Participants were requested to express their awareness of the agriculture-based trade subjects and their status in the secondary school curriculum. The study revealed that generally, they were aware, as indicated by a majority of them. However, some of the participants were not specifically aware of the agriculture-based trade subjects. One participant indicated that *'yes, we are aware of the trade subjects of Animal Husbandry and Fishery, even though my school does not offer any'.* Another participant stated outright that *'the only trade subject they have heard of is Marketing, because we have always asked our students to enroll for Agricultural Science, which covers both Animal Husbandry and Fishery'*. From the discussion, it was deduced that more participants indicated that their schools offered either Animal Husbandry, a few offered Fishery. However, a substantial number did not offer any of the two.

Some reasons adduced for not offering either of the two trade subjects include: '*my school is already offering Agricultural Science,'* stated one participant; '*our school does not have any qualified teacher to teach them,'* reported another. Another participant responded that *'it was a management decision to choose another trade subject'*. For participants offering other trade subjects outside Animal-Husbandry and Fishery, such other subjects offered included Marketing, Catering, Data Processing and Computing.

The study by Agbidi and Ikeoji (2018) corroborated the finding that the majority of the participants were aware, stating that Agricultural Science teachers in Delta State were aware of the new Senior Secondary School Trade curriculum. However, an earlier study by Orji (2014) revealed that teachers were not sure about their awareness as well as their acceptance of the new trade curriculum. The new development is in line with Rogers (1995), which posits that over time, an idea or innovation gains momentum and diffuses

through a specific population or social system. The decision to gradually begin to enroll for the trade subject is also in line with the deduction by Agbidi and Ikeoji (2018), which suggested that the behaviour change could have arisen from a new, improved perception by the Agricultural Science teachers about the new curriculum as a worthy innovation that will bring about an expected change.

The introduction of the trade subjects of Animal Husbandry and Fishery was aimed at producing secondary school graduates, having relevant functional trade and entrepreneurship skills needed for poverty eradication, job creation and wealth creation (NERDC, 2025), and for preparing people for entry or advancement in agricultural occupations and professions (Phipps et al., 2008). The slow pace of adoption of the trade subjects may not be unconnected with the observation of Agbidi and Ikeoji (2018) and Orji (2014), who noted that Agricultural Science teachers saddled with the task of teaching the trade subjects were not subject specialists and yet were expected to implement the curriculum. This is in line with some participants indicating that their schools did not have qualified staff to teach the subjects. Agbidi et al., (2022) in agreement with this finding revealed that lack of qualified Agricultural Science teachers to handle the trade subjects was a major issue; while Ikeoji et al., (2007) alluded to the need for agriculture teachers to have adequate knowledge of subject matter (cognitive competencies), attitudinal relevance (affective competencies) and technical skills (psychomotor competencies) to be able to teach effectively.

*Need for a Crop-based Trade Subject and Participants' Preference*

The results also showed that a majority of the participants agreed to the need to introduce a crop-based trade subject in addition to Animal Husbandry and Fishery available in secondary schools. The participants indicated that introducing a crop-based subject would offer their school an opportunity to utilize the natural environment that favours crop production activities. One participant stated that, '*it will widen the scope of choice for Agriculture students*', while another indicated that '*a trade subject in crop production is cheaper to practice because of the space available around the school compound*'. Generally, the participants offered other reasons why a crop-based trade subject will be a viable alternative. They mentioned that it is an opportunity for students to acquire skills in crop farming vocation; to meet the needs of students who are interested in crop production activities; crops will provide feeding stuff for livestock and fish; to prepare students for self-employment; and to achieve food security. In the words of one of the participants: '*our school has a large area of land that is very fertile for growing vegetables and other crops*'. Another participant said that he thinks that '*if there was a trade subject in crop production, probably their school would not have opted to offer Marketing, which they do now*'. Another participant asked a rhetorical question, *'who would give students money to purchase livestock when they can easily obtain crop planting materials at little cost to plant in the school farm?'* This suggests that the cost of keeping livestock in schools is prohibitive, especially the cost of maintenance during holidays. From the aforementioned responses, some of the participants attributed their schools' non-inclusion of the agriculture-based trade subject to the absence of a crop-based trade subject.

The findings further revealed that the majority of the participants preferred Horticulture and Gardening, others mentioned Crop Science and Production. Crop Production and Pest Management, and a few mentioned Soil Science and Fertility Management. One participant said that *'horticultural plants are grown for commercial purposes very close to their school and the owner makes a lot of money'. Another participant also said that vegetable production is very lucrative because of the cost of vegetables in the market, especially around urban cities'*. The participants were unanimous that their natural school environment favours a crop-based trade subject instead of Animal Husbandry or Fishery. The findings of this study align with Koomen (2022), who, in a keynote address, highlights horticulture as one of the fastest-growing sub-sectors, employing millions of people, especially women. Koomen further emphasized the importance of competence-based vocational training in horticultural value chains to achieve poverty reduction, food security, and climate-smart farming practices. According to Meyer et al (2016), integrating horticulture into school curricula and partnering with industry for practical training are

essential to build local capacity to drive growth in the sector.

Meyer et al. (2016) further identified high profit potential, entrepreneurship, food security contributions and environmental conservation roles of horticulture as reasons to emphasize skill development and training. Shrestha (2016) reports that the World Health Organization (WHO) recommends that a mature person should consume daily 400 grams of vegetables to live a healthy daily life. However, insufficient access to the market and seasonal fluctuation of available vegetables make it difficult to meet this daily target by rural households. Shrestha further stated that home gardening can be very essential for people to grow vegetables regularly in small pieces of land, so that, using appropriate cultivation techniques, vegetable production can be significantly increased. Horticulture and Gardening as a trade subject has the potential to prepare young people for home gardening activities, as well as offers a great deal of job opportunities to women, young adults and men (Agbogidi et al., 2025).

*Potential Challenges in Offering Crop-Based Trade Subject in Horticulture and Gardening*

Participants were required to share the challenges faced in implementing the trade subjects (Animal husbandry and fishery) and those envisaged if a crop-based trade is introduced. The potential challenges mentioned multiple times included funding issues, flooding, especially for schools in flood-prone areas, theft of livestock and crops, lack of space and facilities, especially for schools in urban cities, and cattle invasion of crop farms. Also mentioned were a lack of mechanized or motorized tools and equipment, irrigation problems, pest control, and a lack of fertilizers and manures. Regarding funding, the participants were convinced that whether for Animal Husbandry, Fishery or any new crop trade, funding was an issue. Funding was needed to build animal houses, ponds, and purchase livestock, fish or feeds. One participant said, '*many schools are day schools and cannot afford the high cost of supporting animal or crop farming'*. Another participant suggested that *'any type of farm produce will be prone to theft'*. In the case of flooding, one participant stated that *in my school, flooding is a major problem during the peak of the rainy season, and any crops planted are usually destroyed before harvest*. Yet another participant reasoned that *even if we plant crops, there is always fear of cattle invasion when herders overrun the farms and destroy the crops'*.

However, when the overall cost was compared between animal-based and crop-based trade subjects, one participant stated that '*in terms of overall cost of production, it was cheaper* to go into crop production or vegetable production than to keep animals or fish. Various authors have identified challenges facing the proper implementation of agricultural trade subjects ( Otekunrin & Otekunrin 2020; Otekunrin et al, 2019; Alawa et al, 2021). According to Otekunrin and Otekunrin (2020), while a large percentage of secondary school students in Oyo State showed positive attitudes towards farming, such challenges like inadequate land, school gardens, poor infrastructure, insufficient funding and limited capacity of teachers to manage programmes effectively were rife. Also to support the findings of this study, Alawa et al, (2021) mentioned such factors as poor maintenance, lack of input, inadequate technical support and competing curricular demands. Otekunrin et al, (2019) stated further that just having a school farm does not guarantee improved performance of the students except it is purposefully integrated into the teaching plan with active student participation and supervision. These results were also in line with Ejim and Eyororokumoh, (2025), who said that the absence of school farms and laboratories restricts students' opportunities for hands-on learning, which is crucial for mastering agricultural techniques. The views of that outdated curriculum and non-alignment of curriculum with current agricultural practices are major issues, because students acquire knowledge that may not be applicable in contemporary agricultural settings, leading to a lack of employability.

*Educational and Policy Implications of the Findings/Recommendations*

The findings of this study have far-reaching educational and policy implications in the Nigerian educational system.

(i) The absence of a crop-based trade subject in the Senior Secondary School curriculum appears to have compelled schools to select entrepreneurship subjects outside the agriculture-based subjects such as Marketing, Data Processing and

Computing. Clearly, the schools did not have qualified teachers to handle Animal Husbandry and Fishery, which were provided. Many schools in South-South Nigeria are located in farming communities whose major occupations are in crop farming activities. This has implications for curriculum development experts and the Nigerian Educational Research and Development Council (NERDC) to be responsive to local community needs by revising existing curricula and introducing new ones as changes occur. There is a need to provide more options in the agriculture-based trades to cater to the needs of a large proportion of the population to practice a familiar trade. One highly recommended crop-based trade subject is Horticulture and Gardening. Since many communities in south-south Nigeria produce a wide range of crops such as vegetables, fruits and other food crops, which are in very high demand in the markets, it will be a trade subject of interest for the population. The employment opportunities offered in the Horticulture and Gardening trade is an added advantage to attract secondary school students for enrolment purposes.

(ii) Findings also showed that schools did not have qualified teachers to teach Animal Husbandry and Fishery. This means that the new subjects were introduced into schools without prior training and preparation of teachers to handle the subjects. Therefore, subsequent introduction of trade subjects should be preceded by adequate teacher training and preparation by teacher preparation institutions as well as control by the NERDC. This will address the challenge of a lack of qualified teachers to teach the trade subjects.

## IV. CONCLUSION

Curriculum and instruction in the agriculture sector are usually based on problems in the agriculture and natural resources industry, and the content is flexible and changes with time. Various curriculum revisions in Nigeria have targeted providing youths with skills and training to be able to enter into occupational areas and self-employment to tackle the ravaging impact of youth unemployment. The Focus Group Discussion conducted in this study has established that the new trade subjects of Animal Husbandry and Fishery were hardly selected by secondary schools for enrolment due to a lack of teachers and the cost of establishing animal and fishery units in schools.

Secondary School Agricultural Science teachers identified the need to introduce crop-based trade subject such as Horticulture and Gardening, which is a familiar trade in communities in South-South Nigeria. The high cost of establishing animal and fishery units as well as incidents of theft, contributed significantly to poor enrolment of the agriculture-based subjects currently in the curriculum. This study has implications for curriculum experts and educational policy bodies to take relevant actions aimed at developing crop-based trade curriculum such as Horticulture and Gardening to cater to the interests of a large population in Nigeria whose environments favour crop production activities.

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