International Journal of Education, Learning and Development

Vol. 10, No.7, pp.28-38, 2022

Print ISSN: 2054-6297(Print)

Online ISSN: 2054-6300 (Online)

An Appraisal on the Readiness of Secondary Schools toward the Attainment of Self-Reliance through Agricultural Science Education in North East Nigeria

[1]Alhamdu Ishaya and 2Dahiru Lamaran Bello

[1&2]Curriculum Department, School of General Education, Aminu Saleh College of Education, Azare, Bauchi State

Citation: Alhamdu Ishaya and Dahiru Lamaran Bello (2022) An Appraisal on the Readiness of Secondary Schools toward the Attainment of Self-Reliance through Agricultural Science Education in North East Nigeria, *International Journal of Education, Learning and Development*, Vol. 10, No.7, pp.28-38

ABSTRACT: *This paper examined the readiness of secondary schools toward the attainment of self-reliance through agricultural science education. Survey research design was adopted for this study. The population of the study comprises of all SSIII students and teachers of agricultural science in the nine selected secondary schools in the north eastern part of Nigeria. Data was collected using researcher's developed questionnaire on four Linkert scale. The data collected was analyzed using descriptive statistics. Some of the major findings of this research was; Nigerian agricultural science curriculum is appropriate in terms of goal and content in making students to be self-reliant after graduation, facilities and equipment for the teaching of Agric science are not adequate in meeting the need of students. Some recommendations were made; funds should be made available for the purchase of equipment for the teaching of practical, awareness should be created to students on the importance of Agric science in making them self-reliant.*

KEYWORDS: appraisal, readiness, secondary schools, self-reliance, agricultural science, education, North East Nigeria

INTRODUCTION

The present global trend toward self-reliance through onward approach to national development has made it inevitable for the citizenry to acquire basic education that can transform them into active and participatory citizens in their society. Evidently FRN (2009.b) in the national policy on education has provided enough theoretical frame-work for actualizing self-reliance through education in Nigeria. It state that, one of the National goals for Nigeria as a Nation include a united, strong and self-reliant Nation. But considering the rate of the nation's dependence on foreign materials resources, the issue of self-reliance can be said to be in dilemma. Bassey (2009) asserts that, self-reliant is that which presuppose the attainment of autonomy without unnecessary resorting to begging or borrowing. He buttresses his point further that "a self-reliant individual is one that achieves steady supply of his needs, one who diversifies his resources to reduce depending on others for assistance".

Looking at the Nigerian education Fafunwa (2004) argued that, the early secondary schools in Nigeria were grammar schools founded after the English system of education which does not mean

well for the growth and development of the Nigerian society. Nigerian needed technical and vocational schools but for selfish reason, these kinds of schools were not established. As a result, education gradually becomes a means of avoiding manual work. Hence, the educational system was greatly criticized and not only for neglect of vocational and technical education but for not being relevant to the peculiar needs of the Nigerian society.

Considering the economic decline, the nations is battling with the need for a truly self-reliant education cannot be disputed. Brubacher (1962) opined that, "It is impossible for a country to change if the education of the country is not undergoing a change" self-reliant education is necessary because it bring about financial autonomy of the individual and also helps sustain the economy of the nation. Although the self-reliant education is said to be in the curriculum of Nigerian education, is it working out well? Does it have an impact on the economy of the nation? Is our school ready to make their students self-reliant? This study is therefore set out to grapple with these issues.

Statement of the Problem

It is a known fact that education is prime instrument for the attainment of growth, development and self-reliant. Nigerian philosophy of education is based on the development of individual into sound and affective citizen and the provision of equal educational opportunities for all citizens of the nations at primary secondary and tertiary levels. one of the subject area is Agricultural science. A good number of students who have completed their secondary education but do not wish to continue with higher education are in dilemma. This is because they are not well equipped with necessary skills to empower themselves. The training acquired at the end of secondary education seems inadequate to make the school leavers competent and self-reliant hence cannot contribute to nation building. The inability of our educational system to train individual who can be self-employed that can make them self-reliant is what is marking our youth involve in banditry and kidnapping among others. It is desirable that a lasting solution be provided. Therefore, it is because of the current economy problems we are facing in this country the study is designed to fill this gap.

Objectives of the study

The purpose of this study is to make an appraisal on the readiness of secondary schools toward the attainment of self- reliance through agriculture science subject. Specifically, the study is to:

1. Determine the appropriateness of the Nigerian secondary education curriculum of Agric science in terms of the goals, content, method in meeting the skills needed by students in becoming self-reliant through agricultural science as a subject.
2. Determine whether the necessary facilities are available for the teaching and learning of agricultural science as a subject.

Research Questions

This research work will seek to answer the following questions:

1. How appropriate is the present Nigerian secondary education curriculum of Agric science in terms of goals, content and method in meeting the skills needed for students in becoming self-reliant?
2. How adequate are the necessary facilities for teaching agricultural science subject?

Structure of Educational System in Nigerian

The Nigerian educational system comprises of four levels of organization. The first is informal and the remaining three make up the formal system of education, as outline by Uruakpa (1995):

1. **Pre-primary Education**: This is regarded as early child care and development education, although informal, this level of education is meant for children of the age range of 2 to 5 years. These schools were established under degree No.16 of 1985 (National minimum standards and establishment of institutions) It is being run as day care centers and nursery/kindergarten schools by private agencies and individuals. The major objectives are to cultivate and inculcate appropriate schooling attitude and awareness into the young child.
2. **Primary Education**: This is the first level of the formal system of education. It provides a six-year course for children of age range of 6-12 years. This level is regarded as the officially recognized starting point of education, as the key to success or failure of the entire system. The objective includes the preparation for a broad-based education with emphasis on the attainment of permanent and functional literacy, numeracy and effective communicative skills.
3. **Secondary Education**: This is the type of education that children receive after primary school. The secondary school has two stages covering six years' duration. The first stage run classes from J.S.S 1 to J.S.S 3. At the end of J.S.S 3, the students are required to sit for and pass the junior secondary school certificate examination (JSSCE). Most of the students are within the age range of 12-15 years. Those that could not cope with formal education are expected to acquire some vocational skills. The junior secondary school is a talent hunting stage in which children are exposed to both academic and prevocational subject with a view to identifying their talents. The second stage run classes from SS1 to SS3 at the senior secondary level of education. At this level, the student's ability, attitude and interest is considered in subject selection. Although he/she is guided with compulsory, field of study, technology, humanities and business studied. Evaluation and certification is based on the continuous assessment and external examination like WASC and NECO.
4. **Tertiary Education**: Here, a post-secondary education is given to successful students into either university, college of Education, polytechnics and other related institutions. The objectives of higher education include the development of intellectual capacity to understand and appropriate the environment, and the acquisition of appropriate knowledge that will enable the individual function well in the society. The university is the highest level of tertiary education in Nigeria, three sets of university exist-namely, the federal, state and private. Admission is open to all students that passes Joint Admission and Matriculation Board Examination, with a minimum of five (5) credit passes in O-level examination. The student's age range is between 18-22 years. The university award first degree, Master's degree and Ph.D. degree in various disciplines as well as diploma in education and other professional courses. The colleges of education form part of teacher training institutions which they offer three years programme for the award of Nigerian

Certificate in Education. Some of them are degree awarding institutions in affiliation to universities. The polytechnics provides middle level manpower and vocational skills in different areas of specialization. Polytechnics courses are in two phases, each of two years' duration leading to the award of National Diploma (ND) and Higher National Diploma (HND), respectively for another two years. There are also inter university centers, monotechnic, specialized institutions such as school of Health Technology, Colleges of Agriculture and National Teachers Institutions (NTI).

The Concept of Agricultural Science

One of the national goals of education at all levels which is linked to the philosophy of Nigeria education is the acquisition of appropriate skills and the development of mental, physical and social abilities and competencies as equipment for the individual to live in and contribute to the development of the society (Federal Republic of Nigeria (2009a), it may not be wrong, therefore, to assume that every level of education in the country should be geared towards self-reliance and employment. Agriculture involves the cultivation of land, raising and rearing of animals for the purpose of provision of food for man, feed for animals and raw materials for industries. The role of agriculture in transforming both the social and economic framework of an economy cannot be overemphasized. It is also essential for the expansion of employment opportunity. reduction of poverty, improvement of income distribution, industrialization and easing the pressure of balance of payments. In effect, it has been the main source of gainful employment and a reliable source of government revenue. About 80 percent of the total population is engaged in agricultural employment in Nigeria.

Agricultural science can be broadly understood as the application of scientific methods and methodologies to improve agricultural practices, including the harvesting, processing, and distribution of food, fiber, and pharmaceutical products (Noll 2015; Olmstead and Rhode 2008). This field historically focused on a wide array of research topics, such as improving production techniques, controlling pests, minimizing the effects of drought, the selective breeding of plants and animals, and research on various socioeconomic topics. It is a multidisciplinary area of research that includes work in both the natural and social sciences and integrates methods originally developed in distinct fields. Indeed, the process of improving agricultural practice often involves the combined efforts of researchers working out of diverse disciplines, such as agronomy, chemistry, ecology, soil science, and the social sciences (Jacobs and Frickel, 2009). By implications, "agricultural science" should be understood as an umbrella term that includes work coming out of various scientific disciplines, with the singular aim of improving agriculture.

The Federal Ministry of Agriculture and Water Resources (1985) noted that agriculture is the mainstay of Nigeria economy with many assigned roles to perform in the course of the country's economic development. Among the roles ascribed to the agricultural sector and those of providing adequate food for an increasing population supplying adequate raw materials to the industrial sector, constituting the major sources of employment and foreign exchange, earning and providing a market for the products of the industrial sector. These important roles necessitate adequate

education in agriculture which can gainfully engage the teeming unemployed population of Nigerian youth. That is why the FRN (2009.b) outlines the seven major objectives of teaching and learning of agricultural science to reflect the;

1. Ability to stimulate students' interest in agriculture
2. Ability to enable students acquire basic knowledge of agriculture.
3. Ability to develop basic agricultural skills in students.
4. Ability to enable students integrate knowledge with skills in agriculture
5. Ability to expose students to opportunities in the field of agriculture
6. Ability to prepare students for further studies in agriculture and
7. Ability to prepare students for occupations in Agriculture.

Attainment of the above objectives depends on teachers' factors and pedagogical approaches. Teachers in this case are agricultural science teachers. Agricultural science teachers are trained and groomed from teacher preparation institutions for quality impact of agricultural skills, knowledge attitudes and values for self-reliance, promotion of agriculture and food security in their future lives and that of the society at large. It is therefore the duty of this set of teachers to; stimulate and sustain student's interest in agriculture, enable students acquire basic knowledge and practical skills in agriculture, enable students integrate knowledge with skills in Agriculture, prepare and expose students to take agriculture as and occupation. Attainment of the goals and objectives of agricultural science depends on effectiveness of teaching and learning in our secondary schools.

Self-Reliance Opportunities through Agricultural science Education

Self-reliance is the ability of an individual to stand on their own without looking for help from some body. Ijere (1995) asserts that, unemployment is among the greatest plagues of Nigeria society and it is therefore not surprising that one of the efforts of government is the provision of educational training for her citizens to be able to face the world of work. Training in vocational agriculture in institutions of learning should be seen as with specific knowledge and skills as to be able to employ themselves on graduation. Vocational agriculture programme is designed to provide knowledge and practical skill in areas of agriculture such as crop production, animal's husbandry, soil science, horticulture, agricultural economics and extension, fishery, forestry and wildlife. Other areas include agricultural Engineering, Agricultural Extension. Aghimien and Nosa Ojo (2001) opined that, a well-trained vocational agriculturist who has the zeal and commitment can use the knowledge and skills acquired in any of the above branches of the subject areas to provide not only self-reliance but can on the long run be an employer of labour in the following fields:

i. **Crop Production:** Food crops like rice, maize, guinea corn, bean, yam, groundnut and cassava can be embarked upon by graduate of vocational agriculture. These crops have short production cycles which make it possible to produce them at least two times a year under natural rainfall. These crops are also of great demand throughout the year as they form the staple food of many

Nigerians. Huge capital outlay is not required before one can go into the production of these crops. It can be carried out under subsistence agriculture, where family members can do all the farming operations.

ii. **Production of vegetable crops:** Gainful self-employment skills can be undertaken in the production of vegetable crops such as tomatoes, pepper, amaranthus, fluted pumpkin, cabbage, lettuce and others are of great demand every day for different purposes. Another advantage of vegetable production is that production can be carried out throughout the year especially with the adoption of simple irrigation procedure with good production plan; a vegetable producer can generate income all year round.

iii. **Livestock Production:** In the areas of pigs, goat, and poultry, somebody who chooses to engage in the production of poultry- birds such as fowls, turkey, duck and guinea fowls either for eggs or meat and also pigs, will be fully occupied throughout the year which also guarantees income at regular intervals. Moreover, these enterprises can be undertaken with little and small space of land. In some cases, already built poultry or pig houses can be rented for a fee. After few years of steady growth, these projects are capable of employing not only the livestock, keeper, but other persons in order to cope with husbandry and other activities so as to meet consumers and market demands for products. Other livestock which could be reared include; sheep, and cattle but they require huge capital outlay which a beginner may be unable to provide and large expanse of land which is not easy for a young graduate to provide.

iv. **Fish production:** As a part of an integrated farming approach, a graduate of vocational agriculture involved in poultry production can be more gainfully employed through the rearing of fishes in ponds and/or tanks. Fishes such as catfish and tilapia can utilize waste food materials for good thereby reducing cost of feeding to low minimum. Moreover, fishes are of high demand to market with no discrimination of any kind. More importantly, (hat ponds can be constructed within a living environment is enough encouragement to persons who wish to be engaged in fish production as means of substances.

v. **Establishment of Horticultural gardens:** The establishment of flower gardens where different flowers species are raised for sale to individuals, corporate organizations for beautification of compounds and living environments is becoming a very good source of self-employment. A specialist that operates horticultural gardens can also be involved in landscaping of compounds for private individuals in the raising of seedlings such as those of oil palms which are great demand. The establishment of horticultural garden does not require heavy capital outlay.

vi. **Agricultural products processing:** This is another area of agriculture that is capable of generating good employment for young school leavers. This includes the processing of ripped oil palm fruits and palm kernel, processing of cassava into garri and starch, processing of rice, timber logs and others. With little capital, local processing plant can be fabricated and installed for farm products processing business that will yield regular income.

vii. **Provision of farm services:** A graduate of agricultural education can lie engaged in the provision of farm services such as pest and disease control, transportation of farm commodities, land preparation and with special machines and veterinary services.

Young person's belief about a career's value is influenced by the perceptions, attitudes and expectations of others such as parents, teachers, guidance counselors. It could be implied from the point view of Dick and Rallis that parents play a greater role in their choice of career, some parent look at agriculture as job for the common man in the society thereby discouraging their children from taking agriculture as an occupation.

Challenges Facing the Effective Teaching and Learning of Agricultural Science Education in Secondary Schools

There are many challenges facing the effective teaching and learning of agriculture science in Nigerian secondary school which have invariably lead to poor participation of secondary graduate taking agriculture as an occupation. Modebelu and Nwakpadolu (2013) identified seven major challenges facing Agricultural science education in their quest to achieve effective teaching and learning of the subject that could lead to self-reliant. These are:

i. Inadequate qualified teachers
ii. Absence of farms for practical
iii. Inadequate technical know-how
iv. Inadequate teaching methods
v. Inadequate instructional materials
vi. Poor funding
vii. Poor attitudes of students towards Agriculture

METHODOLOGY

Descriptive survey research design was adopted for the purpose of this study. Descriptive survey describes what is going on or what exists. According to Brog and Gall (1989) define the term research design as a process of creating an empirical test to support or refute a knowledge claim This design therefore, found suitable to this study on the ground that information will be collected from a representative sample, in order to assess the readiness of secondary school toward attainment of self-reliant through agricultural science in north east Nigeria. The population of this study consist of all SSIII students and teachers of agricultural science in the nine selected secondary schools in the three north eastern state of Nigeria which comprises Bauchi, Borno and Adamawa State. The population of teachers is 44 while that of students is 1085 making the total population of 1129. Purposive sampling technique was used to select sample of schools for the study, stratified sampling technique was use to select students while simple random sampling technique was used to select teachers as sample of the study. The sample for this study comprised of 234 students and 18 teachers making a total of 252 respondents in the three state of Bauchi, Borno and Adamawa states. The instrument used for data collection for this study was researcher developed questionnaire on four points Linkert scale of the question items framed in a positive with strongly agreed, agreed, disagreed, and strongly disagreed. Research question one has 5 items and is for teachers while the second research question is for students and it has 4 items marking the total of 9 items. Research question one is for teachers on the readiness of secondary school toward the achievement of self-reliant among secondary schools graduate through agricultural

science in terms of curriculum, quality of teachers, while research question two for students to determine whether the necessary facilities are available for teaching of agricultural science.

Data collected for this study were analyzed using descriptive statistics of frequency count and percentages were used to analyze the data. Chi-square will be used to test the hypothesis at 0.05 level of significance

Table 1: *Objective 1:* Mean Responses of participants on the appropriateness of the Nigerian secondary education curriculum of Agric science in terms of the goals, content, method in meeting the skills needed by students in becoming self-reliant through agricultural science subject.

S/NO	ITEMS	SA 4	A 3	D 2	SD 1	N	$\overline{X}$	DECISION
1.	One of the goals of agricultural science is to help students in the acquisition of appropriate skills.	8	5	3	2	18	3.22	Agree
2.	Agricultural science promotes the development of mental, social, and physical competencies which help people live and contribute to the development of the society.	11	6	1	0	18	3.55	Agree
3.	The Nigeria secondary school agricultural science curriculum content is relevant in helping students acquire skills that have the potential of making student self-reliant after school.	5	7	4	2	18	2.83	Agree
4.	The agricultural Science curriculum is obsolete and no longer relevant to the modern-day society	2	5	5	6	18	2.16	Disagree
5.	Agricultural science teaching methods have the ability to make a person self-reliant	7	5	4	2	18	2.94	Agree

The data for research objective one was analyzed using mean scores. Five items were presented in the table 1, four (4) of these items all agree: on the appropriateness of the present Nigerian secondary education curriculum in terms of goals, content and method in meeting the skills needed for students in becoming self-reliant and that one of the goals of agricultural science is to help students in the acquisition of appropriate skills (3.22). Agricultural science promotes the development of mental, social, and physical competencies which help people live and contribute to the development of the society (3.55), the Nigeria secondary school agricultural science curriculum content is relevant in helping students acquire skills that have the potential of making student self-reliant after school. (2.83), agricultural science teaching methods have the ability to

make a person self-reliant (2.94). One (1) item disagreed was that the agricultural Science curriculum is obsolete and no longer relevant to the modern-day society (2.16).

4. 3. Table 2: *Research Objective 2*: Determine whether the necessary facilities are available for the teaching of agricultural science.

S/NO	ITEMS	SA 4	A 3	D 2	SD 1	N	$\overline{X}$	DECISION
1.	Agricultural Science teachers are not using relevant instructional materials for teaching	89	79	42	24	234	2.99	Agree
2.	Agricultural science practical are not being carried out in schools	96	82	31	25	234	3.06	Agree
3.	There are available modern equipment and facilities for the teaching and learning of agricultural science in the schools	32	12	85	105	234	1.89	Disagree
4.	The facilities and equipment for the teaching and learning of agriculture science are adequate to meet with the demand of students	12	16	109	97	234	1.00	Disagree

The data for research objective 2 was analyzed using mean scores. The result is presented in table 2. Four (4) items were presented, two (2) items were agreed upon and had mean value of 2.50 and above while two (2) items were disagreed upon and they had mean values lower than 2.50. Agricultural Science teachers do not use relevant instructional materials in teaching (2.99). Agricultural science practical is not being carried out in schools (3.06), while the finding on the availability of modern facilities and equipment for the teaching and learning of agricultural science are not adequate to meet with the demand of students (1.89), the available facilities and equipment for the teaching and learning of agriculture science are adequate to meet with the demand of students (1.00).

CONCLUSION

This study made an assessment of the readiness of secondary schools towards the attainment of self-reliance through agricultural science in North east Nigeria. The study has shown that education is the most effective development investment a country can make and is one of the critical pathways to promote social and economic development. Among other anomalies, it is observed that although Nigeria has a laudable educational programme as indicated in the National Policy on education towards self-sufficiency and national development much has not been achieved as words have not been matched with action. The crises being experienced by Nigeria today is traceable to the deep-rooted Colonial educational mentality for white collar jobs. For

functional education to replace this trend, there is an urgent need for the acquisition of science, vocational, technology education and their effective application that meet the needs of the nation. Civilization and technological advancement have metamorphosed agricultural practices from the rudimentary practices to the advanced and improved system it is today. The contribution of agricultural education to National Economy is so enormous and this has led to its integration into the curriculum under the 6-3-3-4 system of education in Nigeria, yet very little is done to harness these potentials of the subject at the secondary school level of the Nigerian education system.

Recommendations

The following recommendations are made by this study;

1. There is need for a countrywide sensitization campaign for both students and individual members of the society in order to create consciousness on the importance of agricultural science education to ensure self-reliance.

2. Good governance is one none-negotiable factor necessary for an effective agricultural science education programme in Nigeria. This calls for the need for a positive political will to be able to match words with actions especially in terms of finance, supplying the right equipment in quantity and quality to secondary schools not only across North eastern States of Nigeria but across the six geo-political zones of the country.
3. Funds should be made available for the purchase of equipment for the teaching of practical agriculture.

Acknowledgment

Acknowledged as an Academic based research sponsored by Tertiary Education Trust Fund (TETFund).

References:

Aghimien C.I. & Nosa Ojo (2001): Equipping the youths for self-employment in the new millennium, the role of vocational agriculture. A Paper Presented at the 1st National Conference Organized by the School of Vocational and Technical Education. Tai Solarin College of Education, Ijagun Ijebu Ode

Bassey, P. U. (2009). Affective Characteristic and Students' Performance in Agricultural Science, Southern Senational District of Cross River State. *Unpublished M. Ed Thesis. University of Calabar, Calabar.*

Borg, W.S and Gall M.D (1989). Educational Research: An Introduction (5th Ed) New York: London.

Brubacher, J.S. (1962) Modern philosophies of Education. New York. McGraw Hill Inc. P. 315

Egbule P.E. (2004): *Fundamental and Practice of Agriculture Practice,* Owerri: Totan Publishers Ltd

Fafunwa B.A (2004) History of education in Nigeria. London George Allen and Unwin Ltd. NPS Educational Publishers. P12.

Federal Ministry of Agriculture, *Water Resources and Rural Development (1985):* Agriculture policy for Nigeria.

Federal Republic of Nigeria (2009.a) National Economic Empowerment and Development Strategy (NEEDS), Abuja. National planning commission.

Federal Republic of Nigeria (2009.b) National Policy on Education, 5th Edition, Implication for teacher education. Journal of quantitative of Nigeria, Nsukka.

Ijere M.O. (1995): Policies Required of the State to Facilitate Development and Investment in the Agricultural Sector paper presented on the New Role of Agriculture in Nation Building, Owerri

Jacobs, J., & Frickel, S. (2009). Inter-disciplinary: A critical assessment. *Annual Review of Sociology, 35*, 43-50

Noll, S. (2015). Agricultural science. In M. Largent & G. Montgomery (Eds.), *A Companion to the History of American Science*. New York: Wiley-Blackwell.

P.O Awotunde and Ugonduluwa (2004) Research Method in Education Fab Anieh (Nig.) LTD. Jos.

Uruakpa, J. A. (1995). *The Nigeria Education System.* In J. M. Kosemani (Ed) *Comparative Education: Emergent National System*. Port Harcourt: Abe publishers.