Assessment of Secondary School Students' Awareness, Attitude and Readiness for Forestry Education in Awka South Local Government Area of Anambra State, Nigeria

Appah, Ogechukwu Rose & Tokede, Abiodun Morenike

Federal College of Forestry, Ibadan, Forestry Research Institute of Nigeria, Ibadan
ogechukwuappah@yahoo.co.uk

Abstract

Forestry education offered in universities and technical institutions in Nigeria is a tool for socio-economic development and environmental sustainability. This study therefore, assessed the awareness, attitude and readiness of secondary school students towards forestry education. The population comprised all senior secondary school three (SS III) students in Awka South Local Government Area of Anambra State. Three hundred and twenty (320) students were selected from eight public secondary schools in Awka South Local Government Area using a three-stage sampling technique. The instrument for data collection is a questionnaire titled Awareness, Attitude and Students' Readiness towards Forestry Education (AASRFE). It was used to obtain information on awareness (R= 0.82), attitude (R= 0.78) and readiness (R= 0.86). Data were analysed using descriptive statistics and regression. The result revealed low awareness, negative attitude and low readiness for forestry education. It also revealed that awareness and attitude can predict students' readiness to enrol for forestry education. Majority of the students are not interested in forestry education, which means that they are not ready to enrol for any course in forestry. It is, therefore, recommended that various forestry agencies should increase forestry career campaigns and sensitization in urban and rural schools.

Introduction

Climate change and global warming have become major issues in Nigeria as well as globally. This is because the rise in temperature of the earth produces adverse effects on human beings and the environment. This leads to major global threats such as deforestation, water pollution and air pollution, desertification, soil degradation and others (Ravindra and Chintankumar 2018). This situation makes it expedient, therefore, to find solutions to emerging climatic changes as a result of global warming. Forest provide important environmental services that contribute to the well-being and security of human beings. They are needed to maintain the atmosphere as its their destruction is a major contributing factor resulting in rising level of carbon dioxides and global warming. Apart from environmental benefits, forests remain a major source of valuable

commodities such as timber, fibre, fuel wood, edible and medicinal plants (Bishop and Landell-Mill, 2002).

Due to the significant role forests play in protecting the earth's climate, more attention has been drawn to the importance of forest resources in recent times (Appah, 2016). To ensure the sustenance of forest resources and their roles in economic development and environmental protection, it is necessary to train sufficient numbers of foresters who will be required to identify and proffer solutions to the emerging problems of global warming (Daramola, 2011). Bandyopadhyay (2008), describes the objectives of education as to equip students with the skill, knowledge, capability to work in a team, carry out strategic thinking and acquire leadership qualities to become useful citizens. This implies that forestry education engenders access to training and empowerment opportunities and is a process by which one acquires relevant and effective knowledge and skills.

Forestry education is crucial to attaining national development goals. It is a tool for socio-economic development and environmental stability (Akande and Larinde 2004). Training to become a forest professional requires a diploma certificate from a technical and vocational institution or a degree from a university. This implies that forestry is offered in universities, technical and vocational training institutions. However, in Nigeria, certificate and diploma programmes in forestry have a much longer history than professional degree education in forestry (Soladoye, 1999). University of Ibadan was the first in Nigeria, to offer training in forestry. The Department of Forestry officially came into being on 2nd October, 1963 at the beginning of 1963/64 academic year (Wyatt-Smith and Redhead 1988). Presently, more than forty universities offer courses in agriculture, forestry and related disciplines in the country (JAMB, 2018).

Some of the current issues addressed by forestry education includes climate change and global warming, biodiversity conservation, soil and environmental education, forest policy, sustainable social and economic development, wildlife management, forest protection and conservation, production of timber and non-timber forest products, tree breeding or farming and natural resource management (JAMB, 2018). In spite of its rich course contents students' enrolment into forestry and its related fields in Nigerian tertiary institutions is not encouraging. This fact is supported by Aleo (2010) who stated that the average annual enrolment for forestry and its related courses both at technical level and professional levels calls for concern. The low enrolment could be attributed to the fact that many are not aware of what the profession entails.

There is, therefore, a need to create awareness of forestry education among Nigerian children starting from the primary and secondary levels. The incorporation of forestry education into the curriculum of schools at these levels will enhance the people's awareness of the dangers of environmental issues like climate change and global warming (Jekayinfa and Yusuf, 2008). At present, forestry education is absent in primary and secondary school curricula in Nigeria. It is only at the tertiary level that

forestry is known as a career. Also the attitudinal disposition of students towards forestry education can equally influence students' willingness to enroll for forestry. Attitude has been defined as a favourable or unfavourable response or disposition to things, people, events or ideas (Koballa 1995). Students' attitude towards forestry education can be defined as the emotion they associate with forestry education, which can affect their willingness to enroll for forestry education. Considering the fact that there is no trace of forestry as a subject in primary and secondary school curricula in Nigeria prompted the researchers to investigate the awareness and attitude of secondary school students' towards forestry education. This study will ascertain if students' awareness and attitude influence their readiness to study forestry in higher institutions.

Purpose of The Study

The purpose of the study is to determine the awareness, attitude and readiness of students from Awka South Local Government Area of Anambra State to study forestry and its related courses after secondary education. The local government area was selected because it is covered with grassland which makes it vulnerable to erosion. The study will come out with recommendations that will give rise to awareness and positive attitude towards forestry and improve students' enrolment in tertiary institutions that offer forestry and its related courses.

Research questions

Based on the stated purpose of this study, the study will address the following research questions:

1.   What is the students' level of awareness of forestry education?
2.   What is the attitude of students towards forestry education?
3.   To what extent are students ready to study forestry at higher levels of education?
4.   To what extent would awareness and attitude towards forestry education predict students' readiness to study forestry at the tertiary level?

Method

Descriptive and correlational survey were adopted for this study. Descriptive survey study is a type of study where data collected are described in a systematic manner based on the characteristics, features and facts about a given population. Correlational survey seeks to establish the relationship that exists between two or more variables. It does not involve manipulation of variables, rather, it entails the collection of data to describe existing phenomena. The study was carried out in Awka South Local Government Area (LGA) of Anambra State with its headquarters at Amawbia. The local government area (LGA) is made up of nine towns: Amawbia, Awka-ifite, Ezinato, Isiagu, Mbaukwu,

Nibo, Nise, Okpuno and Umuawulu, and. According to 2006 census reported by Federal Republic of Nigeria (FRN 2007), Awka South Local Government Area (LGA) has a population of 189,049 made up of 96,902 males and 92,752 females. Created in 1989 from Awka Local Government Area it is bounded in the north by Awka North L.G.A, in the east by Oji River L.G.A of Enugu State, in the west by Njikoka L.G.A and in the south by Aniocha L.G.A.

The target population for the study comprised all senior secondary school three (SS III) students in Awka South Local Government Area of Anambra State. This population was chosen because they are in their final year and will soon be ready for admission into tertiary institutions. A three stage random sampling procedure was used to select the sample. In the first stage, four towns were randomly selected - Awka-ifite, Nise, Mbaukwu, and Ezinato. In the second stage, two public secondary schools were randomly selected from each town, giving a total eight public secondary schools For the third stage, forty SSIII students (twenty males and twenty females) were randomly selected from each school. This gave a total of three hundred and twenty students.

A questionnaire which was developed by the researchers and titled "Awareness, Attitude and Students' Readiness for Forestry Education" (AASRFE) was used to collect information about students' awareness, attitude and readiness to study Forestry Education at higher levels of education. The questionnaire had four sections A, B, C and D. Section A comprised the student's demographic variables. Section B consisted of seventeen (17) items used to elicit information on students' awareness of what forestry education entails. The response to this was measured on a two-point scale (aware and unaware). Section C and D comprised of fifteen (15) items each, that sought information on students' attitude towards forestry education and their readiness to study forestry in tertiary institutions were measured on a four-point scale (strongly agree, agree, disagree and strongly disagree). The instrument was pilot tested on fifty (50) students who were not included in the sample. Sections B, C and D initially had twenty-five (25) items each before validation but were later reduced to seventeen (17) items for section B and fifteen (15) items for sections C and D. Lawshe Content Validity (CVI) was used to establish the content validity and the value obtained was 0.84. The internal consistency and reliability of the instrument in sections B, C and D were established using Cronbach Alpha to get the values of 0.82 and 0.78 and 0.86 respectively. The questionnaire was administered directly to the students to ensure valid results.

Data was analysed using descriptive statistics and regression at 5% level of significance.

Results

Research Question 1: What is the students' level of awareness of forestry education?

S/N	Items	Unaware	Aware	Mean	S.D
1	Sustainable Management	206(64.4%)	114(35.6%)	1.36	0.481
2	Watershed Management	222(69.4%)	98(30.6%)	1.31	0.462
3	Forest Management	148(46.3%)	172(53.7%)	1.54	0.499
4	Production of timber based pro duct for home and export market	202(63.1%)	118(36.9%)	1.37	0.483
5	Biodiversity Conservation	250(78.1%)	70(21.9%)	1.22	0.414
6	Agro forestry Development	199(62.2%)	121(37.8%)	1.38	0.486
7	Wildlife Management	161(50.3%)	159(49.7%)	1.50	0.501
8	Tree Cultivation or Farming	159(49.7%)	161(50.3%)	1.50	0.501
9	Renewal of Natural Resources Development	167(52.2%)	153(47.8%)	1.48	0.500
10	Environmental Management	200(62.5%)	120(37.5%)	1.38	0.485
11	Climate Change and Global Warming	188(58.8%)	132(41.2%)	1.41	0.493
12	Natural Resource Management	192(60.0%)	128(40.0%)	1.40	0.491
13	Curbing Environmental Management	178(55.6%)	142(44.4%)	1.44	0.498
14	Protection of National Resources	172(53.8%)	148(46.2%)	1.46	0.499
15	Food Production	247(77.2%)	73(22.8%)	1.23	0.420
16	Sustainable Social and Economic Development	195(60.9%)	125(39.1%)	1.39	0.489
17	Conservation of Nature	176(55.0%)	144(45.0%)	1.45	0.498

Table 1 shows that the respondents have a low level of awareness of forestry education. Apart from item 3 (forest management) and item 8 (tree cultivation or farming) where 53.7% and 50.3%, respectively, of the students indicated awareness, Other items recorded less than 50%. Over 60% of the respondents are not aware of what Forestry education is meant to address. When asked if sustainable management is included in forestry education, 64.4% were unaware. 69.4% of the respondents were not aware of watershed management. 63.1% of them were not aware of production of timber based products for home and export market, 78.1% were ignorant of biodiversity conservation, 62.2% were not aware of agro-forestry development, 62.5% were not aware of environmental management, 60.0% of them were not aware of natural resource management. 77.2% and 60.9%, respectively, were not aware that forestry education involves food production and sustainable social and economic development.

Research Question 2: What is the attitude of the students towards forestry education?

Table 2. Attitude of students towards forestry education.

S/N	ITEMS	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	S.D
1	I like forestry education.	170(53.1%)	126(39.4%)	11(3.4%)	13(4.1%)	1.158	0.746
2	Forestry education is not a waste of time.	129(40.3%)	116(36.3%)	37(11.6%)	38(11.9%)	1.95	0.997
3	Forestry education will increase my self - confidence.	141(44.1%)	101(31.6%)	47(14.7%)	31(9.7%)	1.90	0.984
4	The idea of being a forester makes me nervous.	102(31.9%)	60(18.8%)	81(25.3%)	77(24.1%)	2.42	1.169
5	Forestry education will provide me with useful knowledge and skills.	189(59.1%)	104(32.5%)	15(4.7%)	12(3.8%)	1.53	0.755
6	Forestry education will provide me with a suitable job.	198(61.8%)	96(30.0%)	13(4.1%)	13(4.1%)	1.50	0.759
7	I will not destroy my future by attending forestry school.	145(45.3%)	85(26.6%)	43(13.4%)	47(14.7%)	1.98	1.085
8	There are job opportunities for forestry professionals.	180(56.3%)	89(27.8%)	28(8.8%)	23(7.2%)	1.67	0.911
9	Forestry education will give me opportunity to do other things.	183(57.2%)	97(30.3%)	17(5.3%)	23(7.2%)	1.63	0.880
10	I will like to know more about forestry education.	46(14.4%)	48(15.0%)	93(29.1%)	133(41.6%)	2.98	1.069
11	I have negative feelings about forestry education.	169(52.8%)	123(38.4%)	12(3.8%)	16(5.0%)	1.61	0.784
12	Forestry education will fetch me a good job.	200(62.5%)	95(29.7%)	12(3.8%)	13(4.1%)	1.49	0.755
13	Forestry education will be useful for me in the future.	100(31.3%)	98(30.6%)	80(25.0%)	42(13.1%)	2.20	1.025
14	I like to spend my spare time farming.	95(29.7%)	92(28.8%)	67(20.9%)	66(20.6%)	2.33	1.109
15	Forestry education	148(46.3%)	80(25.0%)	40(12.5%)	52(16.3%)	1.99	1.114

As shown in Table 2, the findings of this study reflect a negative attitude of students towards forestry education. For instance, over 90% of them stated that they have negative feelings towards forestry education (item 11). Over 75% of them disagreed that forestry education will increase their self-confidence (item 3), provide them with useful knowledge and skills (item 5), provide them with suitable job (item 6), fetch them good jobs (item 12), help protect the environment from loss, waste and harm (item15). Over 60% disagreed that forestry education will be useful for them in the future (item 13), while over 70% of the students wanted to know more about forestry education (item 10).

Research Question 3: To what extent are students ready to study forestry at higher levels of education?

Table 3. Students' readiness to study forestry.

S/N	ITEMS	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean	S.D
1	I will go to a forestry school after my secondary education.	206(64.4%)	97(30.3%)	8(2.5%)	9(2.8%)	1.44	0.683
2	I hate forestry education.	72(22.5%)	59(18.4%)	105(32.8%)	84(26.3%)	2.63	1.10
3	I wi ll be happy to study forestry in future	132(41.3%)	107(33.4%)	39(12.2%)	52(16.3%)	2.07	1.074
4	Forestry education will give me opportunities.	132(41.3%)	80(25.0%)	54(16.9%)	54(16.9%)	2.09	1.119
5	I will be proud to tell people I study forestry in university.	71(22.2%)	50(15.6%)	64(20.0%)	135(42.2%)	2.82	1.199
6	Forestry education will increase my love for forestry.	154(48.1%)	90(28.1)	45(14.1%)	31(9.7%)	1.85	0.995
7	I like to read forestry books.	160(50.0%)	107(33.4%)	33(10.3%)	20(6.3%)	1.73	0.884
8	Forestry education will be boring for me.	78(24.4%)	71(22.2%)	88(27.5%)	83(25.9%)	2.55	1.121
9	Forestry education will make me useful in the society.	77(24.1%)	83(25.9%)	60(18.8%)	100(31.3%)	2.57	1.164
10	I will choose forestry at the UTME	179(55.9%)	100(31.3%)	27(8.4%)	14(4.4%)	1.61	0.819
11	If offered forestry course in higher institution, I won't accept it.	87(27.2%)	70(21.9%)	71(22.2%)	92(28.8%)	2.53	1.172
12	I will like to watch commentaries about forestry education.	105(32.8%)	77(24.1%)	71(22.2%)	67(20.9%)	2.31	1.137
13	Forestry subjects should be included in secondary school curriculum.	81(25.3%)	84(26.3%)	75(23.4%)	80(25.0%)	2.48	1.122
14	Forestry subjects should be included in primary school curriculum.	79(24.7%)	84(26.3%)	75(23.4%)	82(25.6%)	2.50	1.123
15	I will only change to forestry course if my UTME score is low.	65(20.3%)	57(17.8%)	102(31.9%)	96(30.0%)	2.72	1.102

As shown in Table 3, the level of students' readiness to study forestry is low. Over 80% of the students reported that they would apply for other courses and not forestry when filling their Unified Tertiary Matriculation Examinations (UTME) forms (item 10), as they are not ready to attend forestry schools after their secondary education (item 1) and do not like to read forestry books (item 7). 76% of them reported that they will not be happy to study forestry course (item 3). However, 61% of the students reported that they will only go for forestry course if they don't score up to the cut off mark for the courses they like (item 15).

Research Question 4: To what extent would awareness and attitude towards forestry education predict students' readiness to study forestry at the tertiary level?

Table 4: Summary of multiple regression analysis showing the composite effect

Model	Sum of Square	df	Mean Square	F	Sig	Remark
Regression	2717.349	2	1358.675	54.200	.000	Significant
Residual	7946.448	317	25.068			
Total	10663.797	319				
R = .505 R^2= .255 Adjusted R^2 = .250						

Table 4 shows that the combination of predictor variables (students' awareness and attitude) is effective in predicting students' readiness for forestry education ($F_{(2, 317)}$ = 52.368 < 0.05).   The multiple correlation coefficient of willingness and attitude with readiness for forestry education is .495 and the R Square Adjusted, which estimates the variance accounted for by the combined predictor variable and criterion variable, is .243. This means that awareness and attitude contributed to 24% of the variance in students' readiness to take up forestry education.

Table 5 Relative contribution of awareness and attitude towards students' readiness for forestry education

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig	Sig	Remarks
	B	**Std. Error**				
Constant	9.563	2.944		3.249	.000	
Awareness	.307	.108	.139	2.848	.003	**Significant**
Attitude	.538	.056	.468	9.587	.000	**Significant**

Table 5 shows relative significant contributions of the two dependent variables which are students' awareness and attitude. However, attitude is a more influential predictor of students' readiness to study forestry at the tertiary level than awareness (β = .468 t 9.587 p = .000).

Discussion

The findings from the study revealed that students have low awareness of issues related to forestry education. The finding of this study therefore affirms Areo, Oyewale and Oyewumi's (2019) observation that students are not aware of issues relating to forestry education. This can be attributed to the fact that enough effort has not been made by the stakeholders to educate people on the importance of forestry education to the country.

        The result of the study revealed students' negative attitude towards forestry education the negative attitude could be as a result of their limited knowledge of the subject. They, therefore, need to be sensitized. This finding supports Baliyan and Nenty's

(2015) observation that the attitude of students towards agriculture should be improved by using motivational strategies. Students' negative attitude towards forestry could also be attributed to their perception of the prospects of forestry education as indicated in their response to items 5, 6 and 8 of the attitude to forestry questionnaire. This agrees with Adejoh, Edoka and Shaibu's (2016) discovery that students' attitude towards agricultural science can be attributed to misconceptions about careers in agriculture.

The result also indicated that majority of the students are not interested in forestry education. This could be attributed to the fact that students do not understand what forestry education is about and its prospects since it is not included in the primary and secondary school curricula. This finding corroborates that of Areo *el al.,* (2019) who stressed the need for massive public enlightenment on forestry education and its prospects in order to make the course attractive to students.

Findings from this study also show that students' awareness and attitude towards forestry education have a positive impact on students' readiness to study forestry courses after their secondary school education. It is remarkable that attitude contributed more significantly than awareness. The finding is also in line with Baliyan *et al.,* (2015) and Adejoh *et al.,* (2016) that awareness and attitudinal disposition of secondary school students are among the factors that influence their willingness to enroll for agriculture.

Conclusion

This study assessed the awareness, attitude and readiness of students in Awka South Local Government Area of Anambra State towards forestry education and revealed that majority of the students are ignorant of what is involved in forestry education. This can be attributed to the fact that the relevant agencies of government and tertiary institutions are not doing enough to create public awareness about forestry education and its prospects. The study also revealed that majority of the students are not interested in forestry education and are not ready to enrol for any course in that field. It is also important to note that although students' awareness and attitude towards forestry education could predict students' readiness for forestry, there are still other variables that if added will contribute to the remaining variance (86%) in students' readiness for forestry education.

Recommendations

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

1.   Forest Research Institute, universities and colleges of forestry should educate and enlighten the public on the importance and prospects of forestry education.

2.   There should be effective implementation of forestry education in the school system in Nigeria. Hence, there is a need to introduce forestry as a subject at the foundational levels of primary and secondary schools since, it is at these elementary stages that the potentials of students can be harnessed towards making them understand the need and importance of forestry.

3.   Extension service providers need to put more effort in sensitizing students on the importance of forestry education. This will change the negative attitude of secondary school students towards forestry.

4.   Since awareness and attitude towards forestry education can predict students' readiness to enrol for forestry, various forestry agencies should provide the means by which forestry campaigns can be increased in urban and rural areas.

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