RATING OF AGRICULTURAL EDUCATORS ON THE PROSPECT OF AGRICULTURAL EDUCATION IN CASSAVA PRODUCTION AND ENTREPRENEURIAL SKILLS AQUISITION IN DELTA STATE, NIGERIA

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ABSTRACT

The main focus of this paper was to examine agricultural education as a tool for entrepreneurial skills training for sustainable cassava production in Delta State. Four research questions were raised as the design was ex-post-facto using survey technique. The study population comprised the 23 lecturers from Agricultural Science Unit of the department of vocational education, Delta State University, Abraka; Agricultural education department, College of education, Warri; and Agricultural education department, College of education, Agbor. This population was used for the study without sampling. The questionnaire was used to collect data after subjecting it to validation and reliability tests with adequate indices obtained. Data was analysed using tabulations and percentages. The results showed that agricultural education has played many roles in entrepreneurial skills training for crop production such as provision of skills for proper agricultural education of the youths among others. Among the recommendations is the provision of modern and adequate facilities, equipment, tools and implements at the higher level of agricultural education.

Kewords: *Agricultural education, entrepreneurship skills, training. cassava production*

INTRODUCTION

The cassava scientifically known as Manihot esculenta has two main species of Manihot utilissima and Manihot palmata (the sweet and bitter cassava respectively). It originated in North East Brazil and Central America (Agboola, 1979; Ifovwodo and Akpomedaye, 2007). Cassava is a perennial root crop, and it is one of the highest yielding crops in the world. Cassava is widely grown in Nigeria and it appeared to possess the greatest potentials (Agboola, 1979). Africa is the highest producer of cassava in the world and it provides staple food for over 80 million people in the tropical region of Africa (Obiazi, 1991). Cassava is widely used as food for human consumption, feed for livestock and as raw material for industries. Cassava can be processed into tapioca, starch, garri, fufu and flour for human consumption. Cassava has played a vital role in alleviating hunger conditions in Africa by providing a sustained food supply especially when other crops failed. Terminal shoots are used in making vegetable soup.

Cassava can be fed to livestock raw or boiled to pigs, goats, and cattle, stems could be used to make fence. The starch is also used as gum, glue, adhesive, and sizing. Other industrial uses of cassava includes starch, and alcohol production. Cassava leaves are also used as medicine (Obiazi, 1991; Spencer, 1997; Adetunji, 2006; Ifovwodo and Akpomedaye, 2007; Ushieagu and Akpomedaye, 2007). The author has also observed that cassava production is also a veritable source of income and employment to the farmer, and a source of foreign exchange earning to the government. Obiazi (1991) has identified pests and diseases, scarcity of high yielding stem cuttings, weed interference, processing techniques, post harvest storage, and preservation problems as constraints militating against cassava production and utilization.

Afekoro (1990); Adetunji (2006); and Ifovwodo and Akpomedaye, (2007) has summarised the problems of large scale cassava production to include diseases and pests, lack of adequate storage facilities, rapid deterioration of fresh tubers, mechanisation of planting and harvesting, high level of prussic acid content in cassava tube, high cost of production, poor packaging methods, poor linkage between farmers, processing, marketing end users, inadequate marketing infrastructures, poor feeder roads linking cassava farms and processing centres. Adequate training in the various aspects of cassava production is therefore required for entrepreneurial skills development for a sustainable cassava production. These entrepreneurial skills can be inculcated in our graduates through agricultural education.

Olaitan (1988) defined agricultural education as the training of the learner in agricultural production as well as the technique to inculcate it into the learner. Esuruoso (1997) viewed agricultural education as a special field of study which focuses on the training of the human body and mind that will make the individual fit into the society through the acquisition of the right skills, behaviour and attitude. Egbule (2004) opined that agricultural education is the type of education for training learners in the field of the processes of agricultural production including the techniques of delivering the agriculture subject matter. Agricultural education teaches skills including entrepreneurial skills in the general field of agriculture including its teaching methods. Agricultural education could be seen as an occupational education designed to develop a particular knowledge, skills including entrepreneurial skills associated with various farming designs. The term entrepreneurial was derived from the concept of entrepreneur.

According to Crowther (1998) an entrepreneur is a person who starts or organises a commercial enterprise especially one involving financial risk; while the word entrepreneurial means the flair, skills and spirit of an entrepreneur. According to Okorie (2000), skill psychologically means ease, rapidity and precision usually of muscular action. It also connotes expertness practised ability, dexterity, and tact. It is an organised sequence of actions,

proficiency executed and usually displaying a flexible but systematic temporal patterning. Skill also means a well established habit of doing something. It involves the acquisition of performance capability. Entrepreneurial skills therefore, means abilities and competencies required by an individual to be able to exploit his natural and artificial environment in order to create and marginalize existing opportunities so as to make an effective independent living (Vesper, 1982; Eze and Ebele, 2009). According to Inegbenebor (1989); Onwuachu and Okoli (2009); entrepreneurial skills refer to the acquisition of relevant skills and competencies that will enable an individual seek and run an enterprise successfully.

Entrepreneurial skills are acquired through training that emphasizes the acquisition and development of appropriate knowledge and skills that enable an individual to maximize the resources around him within the limits of his capability (Ifegbo, 2002). Training means an act of teaching a person or an animal to perform a particular job or skill well, or to behave in a particular way, by regular instruction and practice (Crowther, 1998). In this context, entrepreneurial skill training connotes the teaching of our youths in the tertiary institutions to acquire the skills of large scale cassava production. The term sustainable means something that is endurable, lasting or can continue or be nurtured for a long time (Hornby, 2000).

Sustainable leads to sustainability which involves operating in a way that takes full account of the impact of human activities on the planet, its people and the future (ICAEW, 2004; Asuquo, 2005). Therefore, sustainable cassava production refers to enduring, lasting and continuous production of cassava for a long time and ensuring its positive impact - on lives of the people. Sustainable production has social values (fulfilling people's cultural, materials and spiritual needs in equitable ways); economic values (paying itself, with cost not exceeding income); and ecological values (maintaining the long-term viability of supporting ecosystems) (Ekong, 2003). The concept of production means the making of something or the rendering of any service, which satisfies a human want (Eyiyere, 1981). Here, production refers to the cultivation of cassava (that is, planting, maintenance, harvesting, processing, storage, marketing and usage). Therefore, sustainable cassava production implies the cultivation of cassava in an enduring, lasting and continuous basis to satisfy human want.

The researcher has observed that the role of higher institutions in entrepreneurial skills training of the youths and boosting the food supply base of the country has not been recognised by many Nigerians. This lack of awareness and recognition on the part of many Nigerians concern particularly the production of food crops such as cassava, yam, pepper, melon, maize, wheat, among others. The study was therefore, designed to look into the use of agricultural education as a tool for entrepreneurial skill training for

sustainable cassava production in Delta State. This main purpose of the study was put in a question form as: Could agricultural education serve as a tool for entrepreneurial skills training for a sustainable cassava production in Delta State? The above question was split into sub-questions known as research questions to effectively tackle the main purpose of the study. The following research questions were posed and answered in the study.

1) How do Agricultural educators rate the roles of agricultural education in entrepreneurial skills acquisition for crop production?
2) What problems confront effective agricultural education delivery?
3) What entrepreneurial skills are required in cassava production planning?
4) What entrepreneurial skills are required for cassava planting, maintaining established crops and harvesting of the crops?

METHOD AND PROCEDURE

The ex-post-facto design using survey method was adopted for the study with a population of twenty-three lecturers from the Delta State University, Abraka, College of education, Warri and Agbor. With the small numbers of agricultural education lecturers from the three higher institutions in Delta State, the population of twenty three lecturers was used directly for the study without sampling. A self developed structured questionnaire was used for data collection. The data collection instrument was divided into five sections. Section A was concerned with personal data of respondents; Section B - dealt with the roles of agricultural education in entrepreneurial skill training for food crops production; Section C - was focused on the problems confronting effective agricultural education delivery; Section D - addressed cassava production planning entrepreneurial skills required; and Section E - was based on the entrepreneurial skills required for cassava planting, managing established crops, and harvesting of the crops. Questionnaire items were arranged on two-point scale of yes or no.

Face and content validity were established for the instrument. The inputs of two agricultural education lecturers from the Agricultural Science Unit of the department of Vocational Education, and two in the areas of Measurements and Evaluation, Department of Guidance and Counselling all in the Delta State University, Abraka, was sort and obtained. This gave a total of four experts that validated the questionnaire with the final draft made after necessary corrections were made. A test-retest method of reliability was used to establish the reliability of the data collection instrument. The scores from the two tests made with the interval of two weeks were correlated using Pearson Product Moment Statistics. The indices obtained were considered high enough for the study.

The instrument was administered to lecturers in the Delta State University, Abraka, by the researcher himself because he resides there. One

research assistant was used for each of the Colleges of Education at Warri and Agbor respectively, given a total of two research assistants employed for the study. In all cases, the questionnaire was administered to respondents and retrieved after completion. A total of twenty-three copies of the data collection instrument were administered and returned for data analysis. Data was analysed using tabulations and percentages with cut-off point of 50% for sections B - E. Any item with 50% and above was regarded as Required/Accepted and items with 49% and below regarded as Not Required/Not Accepted. Each item in the questionnaire from sections B - E was treated independently in the percentage computations (that is, each item was based on 100%).

RESULTS AND DISCUSSION

Table 1: Responses of Lecturers on the Roles of Agricultural Education in Entrepreneurial Skills training for crop production

Items of Roles	Yes	%	No	%	Decision
Provides skills for proper agricultural education of the youths	23	100	0	0	Accepted
Provides skills for setting up of school-community services centres	13	56.52	10	43.48	Accepted
Provides skills for adequate course content preparation23	100	0	0		Accepted
Provides skills for identification and acquisition of farming equipment, tools and implements	19	82.61	4	17.39	Accepted
Provides skills for proper farmland selection	23	100	0	0	Accepted
Provides skills for selection of high yield varieties of crops	21	91.30	2	8.70	Accepted
Provides skills for planting of crops	23	100	0	0	Accepted
Provides skills for proper soil tilling methods	17	73.91	6	26.09	Accepted
Provides skills for proper crop maintenance measures	23	100	0	0	Accepted
Provides skills for proper harvesting techniques	23	100	0	0	Accepted
Provides skills of traditional and modern crop processing techniques	23	100	0	0	Accepted
Provides skills for effective storage of crops	23	100	0	0	Accepted
Provides skills for effective distribution and marketing of crops	23	100	0	0	Accepted
Provides skills for proper record keeping including sales and funds handling	23	100	0	0	Accepted
Provides skills for sustainable crop production (e.g. cassava)	23	100	0	0	Accepted

Source: Survey 2010

Presented on Table 1 is the data from the responses of lecturers on the roles of Agricultural education in entrepreneurial skills training for crop production. The results indicated that the respondents Accepted all the fifteen items presented. Therefore, agricultural education has many roles in entrepreneurial skills training for crop production.

Table 2: Responses of Lecturers on the Problems Confronting Effective Agricultural Education Delivery.

Items of Problems	Yes	%	No	%	Decision
Poor funding	23	100	0	0	Accepted
Poor teacher motivation	19	82.61	4	17.39	Accepted
Poor administrative support (e.g. sponsorship to conferences, seminars, workshops and general in-service training)	21	91.30	2	8.70	Accepted
Students' indiscipline	17	73.91	6	26.09	Accepted
Poor and obsolete facilities and equipment	22	95.65	1	4.35	Accepted
Poor community support	20	86.96	3	13.04	Accepted
Developing a coarse of instruction	5	21.74	18	78.26	Rejected
Motivation of students	16	69.57	7	30.43	Accepted
Increase in students' admission	19	82.61	4	17.39	Accepted
Needs of special students	0	0	23	100	Rejected
Students' counselling	17	73.91	6	26.09	Accepted
Technologists, instructors and teachers shortages	19	82.63	4	17.39	Accepted
Agricultural education's public image	10	43.48	13	56.52	Rejected
Poor time management by the teachers	0	0	23	100	Rejected
Relationship among staff	0	0	23	100	Rejected
Qualification of teachers	0	0	23	100	Rejected

Source: Survey 2010

Data on table 2 shows the lecturers' responses on the problems confronting effective agricultural education delivery. As revealed by the table, majority of the items were accepted. Consequently, there are many problems confronting effective agricultural education delivery in Delta State.

Table 3: Responses on Entrepreneurial Skills Required for Cassava Production Planning

Items of Entrepreneurial Skills	Yes	%	No	%	Decision
Ability to state specific objectives for cassava estate management	23	100	0	0	Accepted
Ability to review objectives for the estate management from time to time	23	100	0	0	Accepted
Draw programme for the enterprise	23	100	0	0	Accepted
Identify source of input supplies (e.g. cassava stems, fertilizers, chemicals, etc)	23	100	0	0	Accepted
Identify source of funds for the estate management	23	100	0	0	Accepted
Identify different manpower needs and sources of labour for the enterprise	23	100	0	0	Accepted
Prepare budget for cassava estate management	18	78.26	5	21.74	Rejected
Identify sources of farm equipment/tools	15	65.22	8	34.78	Accepted
Provide means of transports	13	56.62	10	43.48	Accepted
Provide procedures, methods and strategies for cassava estate management	23	100	0	0	Accepted
Provide rules and regulations for the estate mgt	23	100	0	0	Accepted
Provide processing equipment, facilities and tools	23	100	0	0	Accepted
Provide effective strategy for marketing the products	23	100	0	0	Accepted
Provide for contingency in the estate management	19	82.61	4	17.39	Accepted

Source: Survey 2010

Table 3 contained data on cassava production planning entrepreneurial skills required. The results revealed that the respondents accepted the fourteen items presented to them. Indicating that cassava production planning entrepreneurial skills includes the ones stated above.

Table 4: Responses on the Entrepreneurial Skills Required for Cassava Planting, Maintaining Established Crops and Harvesting of the Crops

Items of Entrepreneurial Skills	Yes	%	No	%	Decision
Skills to plant cassava stems at 1m x 1m apart	23	100	0	0	Accepted
Refill ungerminated spaces	17	73.91	6	26.09	Accepted
Apply NPK 15.15.15 fertilizer as at when due and correctly	23	100	0	0	Accepted
Skills to remove weeds as at when due (manual/chemical)	23	100	0	0	Accepted
Apply insecticides, fungicides and other chemicals	23	100	0	0	Accepted
Provide and put security in place and on alert in the estate	23	100	0	0	Accepted
Raise crops to maturity at 6 - 9 months depending on variety and needs	19	82.61	4	17.39	Accepted
Effective and efficient harvesting of the crops	23	100	0	0	Accepted

Source: Survey 2010

Entries on Table 4 shows the data on entrepreneurial skills required for cassava planting, maintaining established crops and harvesting of the crops. It is conspicuous from the results that the respondents accepted all the eight items presented. This means that there are many entrepreneurial skills required for cassava planting, maintaining established crops and harvesting of the crops with the ones stated above inclusive. The findings in this study that agricultural education has many roles in entrepreneurial skills training is in agreement with previous research findings such as Ugiagbe and Umunna (2002); Osborne (1987); Ikeoji (1995) and Ugbomeh and Akpomedaye (2006) that agriculture

is one of the subjects which lay emphasis on manipulative skills and experimentation. Psychomotor skills or practices in agriculture are geared towards production. Akpoyibo (2000) added that practical agriculture is integral and essential part in the teaching of agricultural science so that certain skills are stampede permanently in the students. Croom (2007) has identified provision of a distinct and necessary purpose in the mental development of students, helping students secure the skills necessary to earn a living, and teaching students the dignity of work, as roles of agricultural education. A study conducted by Famiwole (1998) also revealed that agricultural education plays the roles of motivating students, develop saleable skills in the students, assist students in developing and completing outstanding activities, provide students with varieties of experiences, develops knowledge but durable occupational skills, responsibilities and attitude in the students, and encouraging students of agriculture to keep accurate records.

The answer to Research Question 2 that there are many problems confronting effective agricultural education delivery is in support of the findings from other researches (Besmart-Digbori and Akpomedaye, 2008; Bature and Audu, 2010; Onokerhoraye, 2007; Osakwe, 2009; Inomiesa, 2010 and Anakobe, 2002). The problems include poor and obsolete facilities to absence of availability of infrastructures, equipment and materials. Others include poor funding of education programmes, poor teacher motivation, increase in students' enrolment, poor student motivation, poor administrative support, students' indiscipline, poor community support, students' counselling, technologists, instructors and teachers shortages (Ukouze and Olaitan, 2009; Bature and Audu, 2010; Ugiagbe and Umunna, 2002; Ugbomeh and Akpomedaye, 2006; Peretomode, 2080; Anakoba, 2002; Inomiesa, 2010; Osakwe, 2009; Onokerhoraye, 2007; Boone, 2007).

The answer on table 3 showed the cassava production planning skills required. The findings are supported by the report of Olaitan and Mama (2001) and Yalokwu (2002) and Famiwole (1998) that cassava production planning skills involves statement of specific objectives, review of the objectives from time to time as well as to draw up programme and plan for the cassava estate management. The findings were also in agreement with the position of Maryland (2006) and Ifeanyieze and Olaitan (2009) that market research should be made before embarking on large scale cassava production; and Olaitan (2008) that budgeting is important as it would help to indicate the income and expenditure of cassava estate management.

The answer of Research Question 4 identified 7 entrepreneurial skills required for cassava planting, maintaining established crops and harvesting of the crops. The findings are in agreement with Okorie (2000) and Ifovwodo and Akpomedaye (2007) that cassava crops be maintained by regular weed

removal, application of N.P.K. 15.15.15 fertilizer, refill of ungerminated spaces, control weeds, pests and diseases by applying chemicals as well as to determine mature crops and harvesting of the crops.

CONCLUSION AND RECOMMENDATIONS

Agricultural education has many roles to play as a tool for entrepreneurial skills training for sustainable cassava production in Delta State. Certain problems confront agricultural education in its skills training. Sustainable cassava production required some entrepreneurial skills especially for the planning, planting, maintaining established crops and harvesting of the crops. The recommendations below would help to alleviate the problems confronting agricultural education in its skill acquisition training.

- Modern and adequate facilities, equipment, tools and implements should be provided for agricultural education programme particularly at the higher education level.
- Ensuring increase in budgetary allocations to education generally. The UNESCO recommendation of at least 26% of the annual budgetary allocation to education should be strictly and aggressively implemented; and hence adequate funding of agricultural education programme be ensured because it is capital intensive in terms of facilities, equipment, farm implements, tools, laboratory reagents, farm chemicals, seeds and seedlings, livestock among many others.
- There should be far increase in administrative support for agricultural education programme.
- Lecturers and students of agricultural education programme should be adequately motivated.
- There should be increase in community support for agricultural education programme.
- Admission of students into Agricultural education programme be streamlined and not made indiscriminately.
- There is an urgent need to recruit more lecturers, laboratory technologists and farm instructors to save the agricultural education programme from its present dearth of these categories of staff. This would also ensure effective entrepreneurial skills training as well as the overall delivery of the programme to our future farmers and students.

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